



MASSACHUSETTS
Department of Elementary
and Secondary Education

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2025 MCAS and MCAS-Alt Technical Report

September 2026

**Prepared by Cognia and the
Massachusetts Department of Elementary and Secondary Education**

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Chapter 1. Overview

1.1 Purposes of the MCAS and This Report

The Massachusetts Comprehensive Assessment System (MCAS) was originally developed in response to provisions in the Massachusetts Education Reform Act of 1993, which established greater and more equitable funding to schools, accountability for student learning, and statewide standards and assessments for students, educators, schools, and districts.

The Act defines the purposes of the MCAS in Chapter 69 of the Massachusetts General Laws as follows:

- Establish “whether students are meeting the academic standards described,” in the state curriculum frameworks, ensuring that “such instruments shall be criterion referenced.” (Ch. 69, Sec. 1I)
- Provide “a comprehensive diagnostic assessment of individual students” in the required grades. (Ch. 69, Sec. 1I)
- Support the annual publication of assessment results in all public schools, districts, and the state. (Ch. 69, Sec. 1I)
- Provide a “competency determination,” defined as the requirement that all high school graduates have fulfilled a measure of the “mastery of a common core of skills and knowledge” in mathematics, science and technology, English, and history and social sciences. (Ch. 69, Sec. 1D)
- Set and activate goals for high standards of innovation, quality, and accountability in schools. (Ch. 69, Sec. 1B)

Additional tests and requirements have been added to the MCAS program to meet the requirements of the No Child Left Behind Act (NCLB) of 2001 and the Every Student Succeeds Act (ESSA) of 2015.

1.1.1 Purpose of MCAS and MCAS-Alt Technical Report

The purpose of this *2025 MCAS and MCAS-Alt Technical Report* is to document the technical quality and characteristics of the 2025 MCAS ELA, Mathematics, grades 5 and 8 Science and Technology/Engineering (STE), high school Biology and Introductory Physics, and grade 8 Civics tests, as well as of the 2025 MCAS-Alt, in order to present evidence of the reliability and the validity of test score interpretations and to describe modifications made to the program in 2025.

Technical reports for previous testing years are available on the Massachusetts Department of Elementary and Secondary Education (DESE) website. The previous technical reports, as well as other documents referenced in this report, provide additional background information about the MCAS program, its development, and its administration.

This report is primarily intended for experts in psychometrics and educational measurement. It assumes a working knowledge of measurement concepts, such as reliability and validity, as well as statistical concepts of correlation and central tendency. For some sections, the reader is presumed to have basic familiarity with advanced

topics in measurement and statistics, such as item response theory (IRT), standard errors of measurement, reliability, and factor analysis.

In addition, this report provides technical evidence showing how the MCAS is designed to fulfill the requirements of the Act described above, as well as federal requirements under ESSA for assessments in ELA, mathematics, and STE.

The MCAS is designed to do the following:

- Assess all students who are educated with Massachusetts public funds in designated grades, including students with disabilities and English learner (EL) students.
- Measure student performance in relation to the state’s learning standards as detailed in the Massachusetts curriculum frameworks. The process for ensuring alignment to the standards begins with the test and item specifications and test blueprints, continues through the development process with rigorous review by educators and other experts, and culminates with the release of test information (including standards alignment) to students, schools, and districts.
- Produce scaled scores and achievement levels that indicate students’ readiness to engage in academic work at the next grade level, and to inform parents and students if they are not on track to meet grade-level standards based on their test results.
- Help families and educators better understand how students are being assessed on the content standards and how instruction can be targeted to achieve better outcomes at the individual or aggregate levels by releasing test items each year and by providing item descriptions, standards, and other related information for all test questions, whether released or unreleased.

1.2 Organization of This Report

This report provides detailed information regarding test design and development, scoring, and analysis and reporting of 2025 MCAS and MCAS-Alt results at the student, school, district, and state levels. This detailed information includes, but is not limited to, the following:

- content descriptions of all tests
- an explanation of test administration
- an explanation of equating and scaling of tests
- statistical and psychometric summaries of the tests
 - item analyses
 - reliability evidence
 - validity evidence

In addition, the appendices contain detailed item-level and summary statistics related to each 2025 MCAS test and its results.

Chapter 1 of this report provides a brief overview, including updates made to the MCAS program during 2025. Chapter 2 explains the guiding philosophy, purposes, uses, components, and validity evidence of the MCAS. The next two chapters cover test design and development, test administration, scoring, and analysis and reporting of

results for the standard MCAS assessments (Chapter 3) and the MCAS Alternate Assessment (Chapter 4). These two chapters include information about the characteristics of test items, how scores were calculated, the reliability of scores, how scores were reported, and validity evidence of results. Numerous appendices are referenced throughout the report.

1.3 Current Year Updates

In 2025, MCAS was transitioned to new online testing, scoring, and reporting platforms. Administration and reporting were handled through eMetric's Lighthouse suite, with educators using the MCAS Portal and student testing in the MCAS kiosk. Scoring was completed by Measurement Inc. (MI) using a combination of human scoring and automated scoring through their Project Essay Grade (PEG) platform.

As part of the transition into a new contract, the braille and screen reader forms were a reuse of the previous test forms. In 2025, MCAS began administering bilingual Spanish/English forms in all subjects except for ELA. In 2025, the first operational grade 8 Civics assessment was administered.

Chapter 2. The State Assessment System: MCAS

2.1 Guiding Philosophy

The MCAS and MCAS Alternate Assessment (MCAS-Alt) programs play a central role in helping all stakeholders in the Commonwealth’s education system—students, parents, teachers, administrators, policy leaders, and the public—understand the successes and challenges in preparing students for higher education, work, and engaged citizenship.

Since the first administration of the MCAS tests in 1998, DESE has gathered evidence from many sources, suggesting that the assessment reforms introduced in response to the Massachusetts Education Reform Act of 1993 have been an important factor in raising the academic expectations of all students in the Commonwealth and in making the educational system in Massachusetts one of the country’s best (e.g., Gong, 1999; Papay et al., 2020; Papay et al., 2024; Thacker & Hoffman, 1999).

2.2 Alignment to the Massachusetts Curriculum Frameworks

All items included on the MCAS tests are developed to measure the standards contained in the Massachusetts curriculum frameworks. Each test item correlates and is aligned with at least one standard in the curriculum framework for its content area.

The 2025 MCAS tests were aligned to the 2017 *Massachusetts Curriculum Framework for English Language Arts and Literacy*, the 2017 *Massachusetts Curriculum Framework for Mathematics*, the 2016 *Massachusetts Science and Technology/Engineering (STE) Curriculum Framework*, and the 2018 *Massachusetts History and Social Science Curriculum Framework*.

All learning standards defined in the frameworks are addressed by and incorporated into local curriculum and instruction, whether they are assessed on MCAS or not.

2.3 Uses of MCAS Results

MCAS results from the ELA and Mathematics tests in grades 3–8 and 10, the STE tests in grades 5 and 8, the grade 8 Civics test, and the high school Biology and Introductory Physics tests are intended as follows:

- To be used within the state’s framework for district accountability and assistance, in accordance with state priorities and federal requirements.
- To provide information to support program evaluation at the school and district levels.
- To provide transparency into student performance through comprehensive reporting on the results of individual students, schools, districts, and the state.
- To help determine ELA, mathematics, and STE competency for awarding the Stanley Z. Koplik Certificate of Mastery Award and the John and Abigail Adams

Scholarship. Starting with the class of 2010, students needed to achieve a passing score on the ELA, mathematics, and STE tests (or successfully file an MCAS appeal) as one condition for high school graduation. This regulation changed in January of 2025, in accordance with state law. For more information, review the [Massachusetts graduation requirements](#).

2.4 Validity of MCAS and MCAS-Alt

Validity information for the MCAS and MCAS-Alt assessments is provided throughout this technical report, including information on

- test design and development;
- administration;
- scoring;
- technical evidence of test quality (classical item statistics, differential item functioning, item response theory statistics, reliability, dimensionality, decision accuracy and consistency); and reporting.

Tables 2-1 and 2-2 summarize validity information for MCAS and MCAS-Alt provided in specific sections of this report. Note that some of these sections will point the reader to additional validity evidence located in the appendices of the report.

Table 2-1. Summary of Validity Evidence for the MCAS Tests

Section	Type of Validity Evidence	Description of Information Provided
3.4 and 3.5 Appendices F and G	Scoring consistency	Scoring consistency, inter-rater agreement, and scoring accuracy
3.6 Appendices H and I	Classical item analyses	Classical item difficulty and discrimination indices, differential item functioning (DIF), dimensionality analysis
3.8 Appendix N	Reliability	Overall reliability and standard error of measurement by test; reliability by student subgroups
3.8.3	Classification consistency by achievement level	Decision accuracy and consistency (DAC): estimates of accuracy for student classification by achievement level and for each achievement level cut score
3.2 and 3.10.1 Appendices A and B	Content-related validity evidence	Test blueprints: item alignment to test blueprints and standards
3.10.2	Construct-related and structural validity evidence	Response process validity evidence
3.6 to 3.8 Appendices J, K, and L	Construct-related and structural validity evidence	Item response theory (IRT) modeling; dimensionality; scaling; differential item functioning
3.9 Appendices N, P, and Q	Consequential validity	MCAS reporting
3.10.5	Consequential validity	Supporting the valid use of MCAS data

Although MCAS-Alt assessment results are sometimes aggregated with MCAS results for the purposes of data reporting and accountability, the technical characteristics of the two assessments are not interchangeable. Therefore, reliability evidence specific to MCAS does not directly apply to the MCAS-Alt. Instead, the aspects of MCAS validity that are most relevant to MCAS-Alt are those related to consequential validity, particularly the use of results for accountability and reporting. In addition, MCAS-Alt has its own reliability evidence and construct-related characteristics, as described below in Table 2-2.

Table 2-2. Summary of Validity Evidence for MCAS-Alt

Section	Type of Validity Evidence	Description of Information Provided
4.2.1 Appendices B and T	Content-related validity evidence	Assessment design (MCAS-Alt test blueprints aligned to MCAS blueprints but with modifications made for the range and complexity of standards); descriptions of primary evidence and supporting documentation; relevance and alignment with the intended test-taking population
4.5.4 Appendices V and W	Cognitive processes	Distributions of score frequencies indicate that the tests elicit the expected range of cognitive processes for this population
4.7.3 Appendix N	Precision over the full continuum	Measurement error calculated over respondent subgroups at each performance level indicates that the tests are sufficiently precise over the full performance continuum
4.10.5, 4.1.3, 4.2.1.1, and 4.6	Validity based on other variables	Resource Guides capturing the judgments of educators and experts about the curricular expectations
4.4, 4.7.3, and 4.8 Appendices G, N, R, and S	Reliability and classical item analyses; subgroup statistics and scoring consistency	Procedures to ensure consistent scoring; inter-rater scoring statistics
4.5 Appendices H and I	Reliability and classical item analyses; subgroup statistics and scoring consistency	Classical item statistics
4.7.1, 4.7.2, and 4.7.3 Appendix N	Reliability and classical item analyses; subgroup statistics and scoring consistency	Overall and subgroup reliability statistics
4.5.3	Construct-related and structural validity evidence	Interrelations among scoring dimensions
4.6 Appendix T	Construct-related and structural validity evidence	Item bias review and procedures

2.5 MCAS Achievement-Level Descriptors

The achievement-level descriptors (ALDs) used to define expectations on the MCAS assessments were established to identify students who are prepared for academic work at the next grade level. Massachusetts's Meeting Expectations achievement level is

also aligned to the level of academic work a student must perform to eventually be prepared for college-level work upon completion of high school.

2.5.1 General Achievement-Level Descriptors

The general ALDs for the MCAS tests at grades 3–8 and 10 are as follows:

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

2.5.2 Grade-Specific Achievement-Level Descriptors

The grade-specific ALDs provided in Appendix A illustrate the knowledge and skills students at each grade are expected to demonstrate on MCAS at each achievement level. Knowledge and skills are cumulative at each level. No descriptors are provided for the Not Meeting Expectations achievement level because a student's work at this level, by definition, does not meet the criteria of the Partially Meeting Expectations level.

Chapter 3. MCAS

3.1 Overview

MCAS tests have been administered to students in Massachusetts since 1998. In 1998, ELA, mathematics, and STE were assessed at grades 4, 8, and 10. In subsequent years, additional grades and content areas were added to the testing program. Following the initial administration of each new test, performance standards were set.

To fulfill the requirements of the No Child Left Behind (NCLB) Act, tests for several new grades and content areas were added to the MCAS in 2006. As a result, all students in grades 3–8 and 10 are now assessed in both ELA and mathematics, and students in grades 5, 8, and 9/10 are assessed in science and technology/engineering (STE). In 2017, MCAS began the transition to tests administered primarily through a computer-based platform. Beginning in 2025, students in grade 8 were also assessed on civics.

The MCAS program is managed by DESE staff with assistance and support from the assessment contractor, Cognia, and its subcontractors. In 2025, the computer-based tests were administered through eMetric's Lighthouse application. Massachusetts educators play a key role in MCAS by serving on a variety of committees related to the development of MCAS test items, the development of MCAS achievement-level descriptors, and the setting of performance standards. The program is supported by a five-member Technical Advisory Committee (TAC).

More information about the MCAS program is available on the [DESE website](#).

3.2 Test Design and Development

In 2025, the MCAS operational tests were administered to grades 3–8 and 10 in both ELA and mathematics, grades 5, 8, and 9/10 in STE, and grade 8 in civics. The tests were administered online with paper accommodations available.

3.2.1 Test Specifications

3.2.1.1 Criterion-Referenced Test

All MCAS test items are developed specifically for Massachusetts and are aligned to content standards in the Massachusetts curriculum frameworks. These content standards are the basis for the reporting categories in each content area and are used to guide the development of test items. Items on MCAS tests are coded to the 2017 Massachusetts curriculum frameworks in ELA and mathematics, the 2016 Massachusetts curriculum framework for STE, and the 2018 Massachusetts curriculum framework for civics. All items are coded to at least one content standard. For STE and civics, items are also coded to a practice, if applicable. Section 3.2.4.1 contains more information about science practices. Section 3.2.5.1 contains more information about civics practices.

3.2.1.2 Item Types

The types of items used in the 2025 administration and their functions, by content area, are described below.

English Language Arts (ELA)

- **Selected-response (SR) items (computer and paper)** are worth 1 or 2 points and consist of the following:
 - **Multiple-choice items** (computer and paper) make efficient use of limited testing time and allow for coverage of a wide range of knowledge and skills within a content area. Each 1-point, multiple-choice item requires students to select the single best answer from four response options. Items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
 - **Two-part, multiple-choice items** (computer and paper) have two parts. In the first part, students select the single best answer from four response options. In the second part, students select, from four response options, the evidence from the stimulus that supports the answer from the first part. (In some limited cases in grade 10, item directions instruct students to select two correct answers in the second part.) The items are machine-scored: correct responses are worth 2 points, partially correct answers are worth 1 point, and incorrect and blank responses receive 0 points. Students who answer the first part incorrectly receive a score of 0; students must answer the first part correctly to receive 1 or 2 points.
 - **Two-point, technology-enhanced (TE) items** (computer only) use computer-based interactions such as inline choice, text highlight and drag and drop that require students to choose from a range of options presented. The items are machine-scored: correct responses are worth 2 points, partially correct answers are worth 1 point, and incorrect and blank responses receive 0 points.
- **Constructed-response (CR) items (computer and paper)** are worth 3 points and are used only in grades 3 and 4 tests. Students are expected to generate approximately one paragraph of text in response to a text-based question. Student responses are hand-scored and receive a score of 3, 2, 1, or 0 points.
- **Essays (ES) (computer and paper)** are on all tests in grades 3–8 and 10 and are text-based. Students are required to type or write an essay in response to a prompt, which is based on the passage or passage set they have read. Essays receive a score of 0–7 possible score points for grades 3–5 and 0–8 possible score points for grades 6–8 and 10.

Section 3.4 contains more details on the scoring of CR and ES items.

Mathematics

- **Selected-response (SR) items (computer and paper)** are worth 1 or 2 points and consist of the following:
 - **Multiple-choice items** make efficient use of limited testing time and allow for coverage of a wide range of knowledge and skills within a content area. The items require students to select the single best

answer from four response options. Items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.

- **Multiple-select items** require students to select two or more correct answers from a set of answer options. Students are typically instructed to select a certain number of options. There are typically five to six options to choose from. Items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
- **Technology-enhanced (TE) items** (computer only) use interactions such as inline choice, hot spot, and drag and drop that require students to choose from a range of options presented. TE items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
- **Two-part items** have two parts (Part A and Part B) and are worth 2 points, each part independently being worth 1 point. They can be multiple-choice, multiple-select, TE, or a combination thereof. Items are machine-scored: students earn 1 point for each correct part and receive 0 points for an incorrect or blank response.
- **Short-answer (SA) items (computer and paper)** are worth 1 or 2 points and consist of the following:
 - **Short-answer items** are used to assess students' skills and abilities to work with brief, well-structured problems that have one solution or a very limited number of solutions (e.g., mathematical computations). The advantage of this type of item is that it requires students to demonstrate knowledge and skills by generating, rather than selecting, an answer. These items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response. For the paper versions of these items, students write their numbers in boxes and then complete a number grid, which is machine-scored.
 - **Technology-enhanced (TE) items** (computer only) use interactions such as fraction models or line plots that require the students to demonstrate knowledge and skills by generating an answer or selecting an answer from a wide range of options. These TE items are machine-scored. For 1-point TE items, students earn 1 point for a correct response and receive 0 points for an incorrect or blank response. Two-point TE items are assessed in grades 4–8 and 10. For 2-point TE items, there are two parts, and each part is worth 1 point. The two parts are scored independently from each other. Students earn 2 points for 2 correct parts, 1 point for only 1 correct part, and receive 0 points for no correct parts.
- **Constructed-response (CR) items (computer and paper)** require students to solve problems and generate responses to prompts. Students are required to use higher-order thinking skills, such as analyzing and explaining, to construct responses. Some CR items include a technology-enhanced part,

such as creating a graph or completing a model using drag and drop technology. Student responses are hand-scored. CR items are worth either 3 or 4 points.

- **Three-point constructed-response items** are used only on the grade 3 test. Students are expected to solve problems and generate one to two sentences in response to a prompt. Student responses are hand-scored. Students earn 3, 2, 1, or 0 score points for these items.
- **Four-point constructed-response items** are used on the grades 4–8 and 10 tests. Students are expected to solve problems and generate one to two sentences in response to a prompt. Student responses are hand-scored. Students earn 4, 3, 2, 1, or 0 score points for these items.

Science and Technology/Engineering (STE)

- **Selected-response (SR) items (computer and paper)** are worth 1 or 2 points and consist of the following:
 - **Multiple-choice items** make efficient use of limited testing time and allow for coverage of a wide range of knowledge and skills within a content area. The items require students to select the single best answer from four response options. Items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
 - **Multiple-select items** require students to select two or more correct answers from a set of answer options. Students are instructed to select a certain number of options. There are typically five options to choose from. Items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
 - **Technology-enhanced (TE) items** (computer only) use interactions such as inline choice, hot spot, and drag and drop that require students to choose from a range of options presented. These TE items are machine-scored. For 1-point TE items, students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
 - **Two-part items** have two parts (Part A and Part B) and are worth 2 points, each part being worth 1 point. They can be multiple-choice, multiple-select, TE, or a combination thereof. Items are machine-scored: students earn 1 point for each correct part and receive 0 points for an incorrect or blank response.
- **Constructed-response (CR) items (computer and paper)** typically require students to process information about a scenario and to use higher-order thinking skills, such as analyzing and explaining, to construct responses to prompts (e.g., identify, describe, explain) about the scenario. The scenario information may include narrative descriptions, models, and data tables or graphs. Some CR items include a technology-enhanced part, such as completing a model using drag and drop technology. Student responses are hand-scored, and each item is worth either 2, 3, or 4 score points. For 2-point

CR items, students may earn 2, 1, or 0 score points. For 3-point CR items, students may earn 3, 2, 1, or 0 score points. For 4-point CR items, students may earn 4, 3, 2, 1, or 0 score points.

Civics

- **Selected-response (SR) items (computer and paper) are worth 1 or 2 points and consist of the following:**
 - **Multiple-choice items** make efficient use of limited testing time and allow for coverage of a wide range of knowledge and skills within a content area. The items require students to select the single best answer from four response options. Items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
 - **Multiple-select items** require students to select two or more correct answers from a set of answer options. Students are instructed to select a certain number of options. There are typically five options to choose from. Items are machine-scored: students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
 - **Technology-enhanced (TE) items** (computer only) use interactions such as inline choice, hot spot, and drag and drop that require students to choose from a range of options presented. These TE items are machine-scored. For 1-point TE items, students earn 1 point for a correct response and receive 0 points for an incorrect or blank response.
 - **Two-part items** have two parts (Part A and Part B) and are worth 2 points, each part being worth 1 point. They can be multiple-choice, multiple-select, TE, or a combination thereof. Items are machine-scored: students earn 1 point for each correct part and receive 0 points for an incorrect or blank response.
- **Constructed-response (CR) items (computer and paper)** typically require students to process information about a scenario and to use higher-order thinking skills, such as analyzing and explaining, to construct responses to prompts (e.g., identify, describe, explain) about the scenario. The scenario information may include narrative descriptions, models, and data tables or graphs. Student responses are hand-scored, and each item is worth either 1 or 4 score points. For 1-point CR items, students may earn 1 or 0 score points. For 4-point CR items, students may earn 4, 3, 2, 1, or 0 score points.

3.2.1.3 Description of Test Designs

The MCAS assessments contain both common and matrix items. The common items are administered to all students and count toward a student's overall score. Matrix items are either field-test or equating items. Field-test items are administered to assess item performance and potential usage as common items in the future. Equating items are used to link one year's results to those of previous years, ensuring comparability of scaled scores between MCAS administrations. Equating and field-test items are distributed among multiple forms of the test for each grade and content area and do not count toward a student's score.

The number of test forms varies by grade and content area and typically ranges from 5 to 22 forms. Each student takes one form of the test and therefore answers a subset of matrix items. Common and matrix items are not distinguishable to test takers. Because all students are given matrix items, an adequate sample size (typically a minimum of 1,500 responses per item) is obtained to produce data that can be used to inform equating decisions and common item selection for future tests.

A computer-based test (CBT) common form and a paper-based test (PBT) common form are developed for grades 3–8 and 10 ELA and mathematics, for grades 5, 8, and 9/10 STE, and grade 8 civics. To create the PBT common form, technology-enhanced items on the CBT form are revised and made into paper-based items, typically multiple-choice items. The PBT items test the same content as the technology-enhanced items on the CBT.

3.2.2 ELA Test Specifications

3.2.2.1 Standards

MCAS grades 3–8 and 10 ELA tests, including all matrix items, are aligned to the following learning standards from the *2017 Massachusetts Curriculum Framework for English Language Arts and Literacy*:

- Anchor Standards for Reading
 - Key Ideas and Details (Standards 1–3)
 - Craft and Structure (Standards 4–6)
 - Integration of Knowledge and Ideas (Standards 7–9)
- Anchor Standards for Language
 - Conventions of Standard English (Standards 1 and 2)
 - Knowledge of Language (Standard 3)
 - Vocabulary Acquisition and Use (Standards 4–6)
- Anchor Standards for Writing
 - Text Types and Purposes (Standards 1–3)
 - Production and Distribution of Writing (Standard 4)

The *2017 Massachusetts Curriculum Framework for English Language Arts and Literacy* can be found on the DESE website.

3.2.2.2 ELA Item Types

The grades 3–8 and 10 ELA tests use several item types, as shown in Table 3-1.

Table 3-1. ELA Item Types and Score Points

Item Type	Possible Raw Score Points	Grade Levels
Multiple-choice (SR)	0 or 1	3–8, 10
Two-part, multiple-choice (SR)	0, 1, or 2	3–8, 10
Technology-enhanced (SR)	0, 1, or 2	3–8, 10
Constructed-response (CR)	0, 1, 2, or 3	3–4
Essay (ES)	0 to 7	3–5
Essay (ES)	0 to 8	6–8, 10

SR = selected-response, CR = constructed-response, ES = essay

3.2.2.3 Passage Types

Passages used in the ELA tests are authentic texts selected for the MCAS assessment. DESE test developers review numerous texts to find passages that possess the characteristics required for use in ELA tests. Passages must

- be of interest to and appropriate for students in the grade being addressed;
- have a clear beginning, middle, and end;
- contain appropriate content;
- support the development of a sufficient number of unique assessment items; and
- be free of bias and sensitivity issues.

Passages range in length from approximately 600 to 2500 words per passage set. Word counts are based on a scale outlined in the passage specifications. Passage sets consist of either a single passage or paired passages. Passages are selected from published works; no passages are specifically written for the MCAS tests.

Passages are categorized into one of two types:

1. **Literary passages** represent a variety of genres: poetry, drama, fiction, biographies, memoirs, folktales, fairy tales, myths, legends, narratives, diaries, journal entries, speeches, and essays. Literary passages are not necessarily fictional passages.
2. **Informational passages** are reference materials, editorials, encyclopedia articles, and general nonfiction. Informational passages are drawn from a variety of sources, including magazines, newspapers, and books.

In 2025, each common form in grades 3–8 included three passage sets, with some forms containing two literary passage sets and one informational passage set, while other forms contained one literary passage set and two informational passage sets. In grade 10, each common form included four passage sets; two sets were literary and two were informational. Across the forms, sets featured single, paired, and one tripled selection in grade 10.

The MCAS ELA test was designed to include a selection of passage sets with a balanced representation, considering gender, race and ethnicity, and socioeconomic status. Another important consideration was that passages are of interest to the tested age group.

Differences among the passages used at each grade level included the length of the passages (typically increasing in length as the grade level increased) and the degree of complexity (increasing sophistication in language and concepts as the grade level increased). Test developers used a variety of readability measures to aid in the selection of appropriate passages at each grade level. In addition, Massachusetts educators used their grade-level expertise when participating in passage selection as members of the Assessment Development Committees (ADCs).

3.2.2.4 ELA Test Design

All items were coded to ELA framework standards. All test questions were associated with a passage set.

Students read a passage set and answered questions that followed. Question types included selected-response items, constructed-response items (grades 3 and 4 only), and essay items. Section 3.2.1.2 contains additional details on item types. Approximately 10–15% of the items were technology-enhanced items.

Test Design by Grade

Grades 3 and 4

The common portion of each test at grades 3 and 4 included three passage sets. Two of the common passage sets included eleven 1- or 2-point selected-response items plus one 7-point text-based essay item or one 3-point constructed-response item. The other common passage set included seven 1- or 2-point selected-response items. Each test contained a total of 44 common points distributed across two testing sessions.

Grade 5

The common portion of each test at grade 5 included three passage sets. Two of the passage sets included eleven 1- or 2-point selected-response items and one 7-point text-based essay item and the other passage set included seven 1- or 2-point selected-response items. The test contained a total of 48 common points distributed across two testing sessions.

Grades 6–8

The common portion of each test at grades 6–8 included three passage sets. Two of the passage sets included eleven 1- or 2-point selected-response items and one 8-point text-based essay item. The other common passage set included seven 1- or 2-point selected-response items. The test contained a total of 50 common points distributed across two testing sessions.

Grade 10

The common portion of each test at grade 10 included four passage sets. Three passage sets in the common portion included seven or eight 1- or 2-point selected-response items and two of those three sets included one 8-point text-based essay item. The fourth common passage set included four 1- or 2-point selected-response items. The test was created with a total of 51 common points but was reported on 49 common points distributed across two testing sessions. (DESE excluded one item that a small number of students reported having technology difficulties with during test administration. This item did not count toward any student's score.)

Matrix

For grades 3–8, the matrix portion included two passage sets. In grades 3 and 4, one matrix passage set included ten 1- or 2-point selected-response items, and either two constructed-response items or one essay. The other matrix passage set included seven 1- or 2-point machine-scored items. In grades 5–8, one matrix passage set included ten 1- or 2-point selected-response items and one essay item, and the other matrix passage set included seven 1- or 2-point selected-response items.

The grade 10 matrix portion included two passage sets. One matrix passage set included eight 1- or 2-point selected-response items and one 8-point text-based essay item. The other matrix passage set included four 1- or 2-point selected-response items.

Table 3-2 shows the recommended testing times. MCAS tests are untimed; therefore, the times shown in the table are approximate.

Table 3-2. ELA Recommended Testing Times, Grades 3–8 and 10

Grade	Session 1 Recommended Testing Time (min)	Session 2 Recommended Testing Time (min)	Total Recommended Testing Time (min)
3	120–150	120–150	240–300
4	120–150	120–150	240–300
5	120–150	120–150	240–300
6	120–150	120–150	240–300
7	120–150	120–150	240–300
8	120–150	120–150	240–300
10	150	90–120	240–270

Common and Matrix Item Distribution

The grades 3–8 and 10 ELA tests were administered to a large majority of students on the computer with relatively few students who were unable to use a computer taking the paper form as an accommodation. The paper form was derived from Form 1 of the CBT. Both forms had the same number of common and matrix points. Table 3-3 shows the distribution of common and matrix items in each 2025 ELA test, by grade level.

Table 3-3. Distribution of ELA Common and Matrix Items by Grade and Item Type

Grade	Test	# of Forms	Common SR Items per Form (1 pt.)	Common SR Items per Form (2 pt.)	Comm on CR Items per Form	Comm on ES Items per Form	Matrix SR Items per Form (1 pt.)	Matrix SR Items per Form (2 pt.)	Matrix SR Items per Form CR ¹	Matrix SR Items per Form ES
3	ELA	4	24	5	1	1	14	3	0–2	0–1
4	ELA	4	24	5	1	1	14	3	0–2	0–1
5	ELA	4	24	5	0	2	14	3	0	1
6	ELA	4	24	5	0	2	14	3	0	1
7	ELA	4	24	5	0	2	14	3	0	1
8	ELA	4	24	5	0	2	14	3	0	1
10	ELA	22 ²	21	7	0	2	9	3	0	1

¹ Each grade 3 and grade 4 matrix form contained either two constructed-response items or one essay item.

² For grade 10, the number of forms listed here includes the two retest forms. Retest forms do not include matrix items.

3.2.2.5 ELA Blueprints

Table 3-4 shows the target and actual (in parentheses) percentages of 2025 common item points by reporting category. Reporting categories were based on the anchor standards in the 2017 Massachusetts curriculum framework for ELA. An in-depth look at the test blueprints is available in Appendix B.

Table 3-4. Target (and Actual) Distribution of ELA Common Item Points by Reporting Category

Reporting Category	Percent of Points at Grade 3	Percent of Points at Grade 4	Percent of Points at Grade 5	Percent of Points at Grade 6	Percent of Points at Grade 7	Percent of Points at Grade 8	Percent of Points at Grade 10
Language	25 (27)	25 (21)	25 (25)	25 (24)	25 (24)	25 (22)	25 (23)
Reading	65 (64)	65 (70)	55 (58)	55 (56)	55 (56)	55 (58)	55 (57)
Writing	10 (9)	10 (9)	20 (17)	20 (20)	20 (20)	20 (20)	20 (20)
Total	100	100	100	100	100	100	100

Percent of Points at Each Grade (+/-5%)

3.2.2.6 ELA Cognitive Levels

Each ELA item is assigned a cognitive level according to the cognitive demand of the item. Cognitive levels are not synonymous with item difficulty. The cognitive level provides information about each item based on the complexity of the mental processing a student must use to answer the item correctly. The three cognitive levels used in ELA tests are described below:

- **Level I (Identify/Recall)**—Level I items require that the student recognize basic information presented in the text. Examples of skills at this level include identifying main ideas/facts/details; recalling and locating details; identifying genre or setting; and identifying definitions, parts of speech, or functions of punctuation. Key words include identify, list, match, recognize, describe, and distinguish.
- **Level II (Infer/Analyze)**—Level II items require that the student understand a given text by making inferences and drawing conclusions related to the text. Examples of skills at this level include understanding the whole text (Big Picture)/generalizing; interpreting, making connections, visualizing, and forming questions; explaining a character's role/motives; determining whether an idea is fact or opinion; filtering important information and key concepts; and determining the meaning of a word in context. Key words include infer, analyze, describe, interpret, determine, conclude, explain, summarize, and classify.

Level III (Evaluate/Apply)—Level III items require that the student understand multiple points of view and be able to project their own judgments or perspectives on the text. Examples of skills at this level include understanding another point of view; analyzing/evaluating an author's purpose, style, and message; arguing/defending a point of view with evidence from the text; using reasoning to determine an outcome; applying information from the text; and synthesizing elements of text(s) to create a whole. Key words include critique, evaluate, analyze, predict, agree/disagree, argue/defend, apply, synthesize, judge, compare, and contrast.

Table 3-5 shows the range of score points and associated percentages by cognitive level on the 2025 operational forms.

Table 3-5. Targeted Percentage of Score Points by Cognitive Skill Level in English Language Arts

Grade	Cognitive Skill Level	Total Points	Percent of Score Points (+/-5)	Score Points
3–4	I	44	5%	0–5
3–4	II	44	70%	29–33
3–4	III	44	25%	10–14
5	I	48	5%	0–5
5	II	48	60%	26–31
5	III	48	35%	14–17
6–8	I	50	5%	0–5
6–8	II	50	60%	27–32
6–8	III	50	35%	16–20
10	I	51	5%	0–5
10	II	51	60%	28–33
10	III	51	35%	16–21

3.2.2.7 ELA Reference Materials

The use of authorized bilingual word-to-word dictionaries was allowed during ELA tests only for current and former ELs. No other reference materials were allowed during the ELA tests.

3.2.3 Mathematics Test Specifications

3.2.3.1 Mathematics Standards

The MCAS grades 3–8 and 10 mathematics tests, including all field-test items, are aligned to the learning standards from the *2017 Massachusetts Curriculum Framework for Mathematics*. The 2017 standards are grouped by domains in grades 3–8 and conceptual categories in grade 10, as shown below:

- Domains for grades 3–5
 - Operations and Algebraic Thinking
 - Number and Operations in Base Ten
 - Number and Operations—Fractions
 - Geometry
 - Measurement and Data
- Domains for grades 6 and 7
 - Ratios and Proportional Relationships
 - The Number System
 - Expressions and Equations
 - Geometry
 - Statistics and Probability
- Domains for grade 8
 - The Number System
 - Expressions and Equations
 - Functions
 - Geometry
 - Statistics and Probability

- Conceptual Categories for grade 10
 - Number and Quantity
 - Algebra
 - Functions
 - Geometry
 - Statistics and Probability

The *2017 Massachusetts Curriculum Framework for Mathematics* can be found on the DESE website.

3.2.3.2 Mathematics Item Types

The 2025 mathematics tests included several item types, as shown in Table 3-6. Approximately 25–30% of the items were technology-enhanced items.

Table 3-6. Mathematics Item Types and Score Points

Item Type	Possible Raw Score Points	Grade Levels
Multiple-choice (SR)	0 or 1	3–8, 10
Multiple-select (SR)	0 or 1	3–8, 10
Technology-enhanced (TE) (SA or SR)	0 or 1 0, 1, or 2	3 4–8, 10
Two-part (SA or SR)	0, 1, or 2	4–8, 10
Short-answer (SA)	0 or 1	3–8, 10
Constructed-response (CR)	0, 1, 2, or 3 0, 1, 2, 3, or 4	3 4–8, 10

SA = short-answer, SR = selected-response, CR = constructed-response

3.2.3.3 Mathematics Test Design

Test Design by Grade

Grade 3

The common portion of the grade 3 test included thirty-six 1-point selected-response or short-answer items and four 3-point constructed-response items. The matrix portion included five 1-point selected-response or short-answer items and one 3-point constructed-response item. The test contained a total of 48 common points distributed across two testing sessions.

Grades 4–6

The common portion of the grades 4–6 tests included thirty-four 1-point selected-response or short-answer items, two 2-point selected-response items, and four 4-point constructed-response items. The matrix portion included three or four 1-point selected-response or short-answer items, one or two 2-point selected-response or short-answer item, and one 4-point constructed-response item. Each test contained a total of 54 common points distributed across two testing sessions.

Grades 7 and 8

The common portion of the grades 7 and 8 tests included thirty-four 1-point selected-response or short-answer items, two 2-point selected-response items, and four 4-point

constructed-response items. The matrix portion included four or five 1-point selected-response or short-answer items, one or two 2-point selected-response or short-answer items, and two 4-point constructed-response items. Each test contained a total of 54 common points distributed across two testing sessions. Items in session two were developed to assess content where the students may need a calculator. These items were either calculator-neutral (calculators are permitted but not required to answer the question) or calculator-active (students are expected to use a calculator to answer the question).

Grade 10

The common portion of the grade 10 test included thirty-two 1-point selected-response or short-answer items, six 2-point selected-response items, and four 4-point constructed-response items. The matrix portion included eight 1-point selected-response or short-answer items, two 2-point selected-response or short-answer items, and two 4-point constructed-response items. Each test contained a total of 60 common points distributed across two testing sessions. Items in session two were developed to assess content where the students may need a calculator. These items were either calculator-neutral (calculators are permitted but not required to answer the question) or calculator-active (students are expected to use a calculator to answer the question).

Table 3-7 shows the distribution of common and matrix points on the 2025 mathematics tests, as well as recommended testing times. Since MCAS tests are untimed, the times shown are approximate.

Table 3-7. Mathematics Recommended Testing Times and Common/Matrix Points per Test, Grades 3–8 and 10

Grade	# of Sessions	Session 1 Recommended Testing Time (in minutes)	Session 2 Recommended Testing Time (in minutes)	Total Recommended Testing Time (in minutes)	Common Points	Matrix Points
3	2	90	90	180	48	8
4–6	2	90	90	180	54	10–11
7–8	2	90	90	180	54	15–16
10	2	90–120	90–120	180–240	60	20

Grades 3–8 and 10 mathematics tests were administered to a large majority of students online with relatively few students taking the paper form as an accommodation. Both the CBT and PBT forms had the same number of common and matrix points. Table 3-8 shows the distribution of common and matrix item types by grade level.

Table 3-8. Distribution of Mathematics Common and Matrix Items by Grade and Item Type

Grade	# of Forms	Common SR/SA/TE (1 pt.)	Common SR/SA/TE (2 pt.)	Common CR (3 pt.)	Common CR (4 pt.)	Matrix SR/SA/TE (1 or 2 pt.)	Matrix CR (3 or 4 pt.)
3	15	36	0	4	0	5	1
4	15	34	2	0	4	5	1
5	15	34	2	0	4	5	1

Grade	# of Forms	Common SR/SA/TE (1 pt.)	Common SR/SA/TE (2 pt.)	Common CR (3 pt.)	Common CR (4 pt.)	Matrix SR/SA/TE (1 or 2 pt.)	Matrix CR (3 or 4 pt.)
6	15	34	2	0	4	5	1
7	12	34	2	0	4	6	2
8	12	34	2	0	4	6	2
10	20	32	6	0	4	10	2

3.2.3.4 Mathematics Blueprints

Tables 3-9 through 3-12 show the target and actual percentages of common item points by reporting category. Reporting categories were based on the Massachusetts curriculum framework domains.

Table 3-9. Target (and Actual) Distribution of Mathematics Common Item Points by Reporting Category, Grades 3–5

Reporting Category	Percent of Points at Grade 3	Percent of Points at Grade 4	Percent of Points at Grade 5
Operations and Algebraic Thinking	30 (31)	20 (20)	15 (15)
Number and Operations in Base Ten	15 (17)	20 (19)	30 (30)
Number and Operations – Fractions	20 (19)	30 (30)	25 (26)
Geometry	10 (8)	10 (11)	10 (10)
Measurement and Data	25 (25)	20 (20)	20 (19)
Total	100	100	100

Percent of Points at Each Grade (+/-5%)

Table 3-10. Target (and Actual) Distribution of Mathematics Common Item Points by Reporting Category, Grades 6 and 7

Reporting Category	Percent of Points at Grade 6	Percent of Points at Grade 7
Ratios and Proportional Relationships	20 (20)	20 (20)
The Number System	20 (20)	20 (20)
Expressions and Equations	30 (30)	25 (25)
Geometry	15 (15)	15 (15)
Statistics and Probability	15 (15)	20 (20)
Total	100	100

Percent of Points at Each Grade (+/-5%)

Table 3-11. Target (and Actual) Distribution of Mathematics Common Item Points by Reporting Category, Grade 8

Reporting Category	Percent of Points at Each Grade (+/-5)
The Number System and Expressions and Equations	40 (39)
Functions	20 (20)
Geometry	30 (30)
Statistics and Probability	10 (11)
Total	100

Table 3-12. Target (and Actual) Distribution of Mathematics Common Item Points by Reporting Category, Grade 10

Reporting Category	Percent of Points at Each Grade (+/-5)
Number and Quantity	15 (15)
Algebra and Functions	35 (35)
Geometry	35 (35)
Statistics and Probability	15 (15)
Total	100

3.2.3.5 Mathematics Cognitive Levels

Each mathematics item is assigned a cognitive level according to the cognitive demand of the item. Cognitive levels are not synonymous with difficulty. The cognitive level provides information about each item based on the complexity of the mental processing a student must use to answer the item correctly. The three cognitive levels used in the mathematics tests are described below:

- **Level I (Recall and Recognition)**—Level I items require that the student recall mathematical definitions, notations, simple concepts and procedures, and apply common, routine procedures or algorithms (that may involve multiple steps) to solve a well-defined problem.
- **Level II (Analysis and Interpretation)**—Level II items require that the student engage in mathematical reasoning beyond simple recall, in a more flexible thought process, and in enhanced organization of thinking skills. These items require a student to make a decision about the approach needed, to represent or model a situation, or to use one or more non-routine procedures to solve a well-defined problem.
- **Level III (Judgment and Synthesis)**—Level III items require that the student perform more abstract reasoning, planning, and evidence-gathering. To answer questions of this cognitive level, the student needs to engage in analyzing and reasoning about an open-ended situation with multiple decision points to represent or model contextual mathematical situations, and solve more complex, non-routine, or less well-defined problems.

Cognitive Levels I and II were represented by items in all grades and across item types. Cognitive Level III was best represented by constructed-response items; an attempt was made to include Level III items at each grade. Table 3-13 shows the target score points and associated score point percentage by cognitive skill level.

Table 3-13. Targeted Percent of Score Points by Cognitive Skill Level in Mathematics

Grade	Cognitive Skill Level	Total Points	Percent of Score Points	Score Points
3	I	48	25–40%	12–20
3	II	48	55–65%	26–32
3	III	48	6–15%	3–7
4–8	I	54	25–40%	13–22
4–8	II	54	55–65%	29–35
4–8	III	54	6–15%	3–8
10	I	60	25–35%	15–21
10	II	60	55–65%	33–39
10	III	60	7–20%	4–12

3.2.3.6 Mathematics Reference Materials

Rulers were provided to students in grades 3–8. Handheld rulers were provided for students taking the paper version of the mathematics test. Students taking the computer-based mathematics test had access to two separate computer-based rulers: a centimeter ruler and a 1/8-inch ruler; students were not permitted to use handheld rulers on the computer-based test.

Reference sheets were provided to students at grades 5–8 and 10. These sheets contain information, such as formulas, that students may need to answer certain items.

The second session of the grades 7, 8, and 10 mathematics tests was a calculator session. All items included in this session were either calculator-neutral (calculators are permitted but not required to answer the question) or calculator-active (students are expected to use a calculator to answer the question). Each student taking the computer-based grade 7 mathematics test had access to a five-function calculator and a scientific calculator during session two of the mathematics test. Each student taking the computer-based grade 8 and grade 10 mathematics tests had access to a scientific calculator, a TI-84 graphing calculator, and a Desmos graphing calculator during session two of the mathematics test. Students taking the paper-based mathematics tests in grades 7, 8, and 10 had access to comparable handheld calculators.

3.2.4 Science and Technology/Engineering (STE) Test Specifications

3.2.4.1 STE Standards and Practices

The STE MCAS tests for grades 5, 8, and 9/10 are aligned to the standards in the 2016 Massachusetts Science and Technology/Engineering (STE) Curriculum Framework. Instructional guidelines help clarify some of the standards and practices.

The grade 5 test is based on the grades 3–5 standards, and the grade 8 test is based on the grades 6–8 standards. The 2016 Pre-K–8 standards are grouped into the following four domains:

- Earth and Space Science
- Life Science
- Physical Science
- Technology/Engineering

The grade 9/10 tests are based on the high school biology standards (Biology test) and the high school introductory physics (Introductory Physics test) standards. The 2016 standards are grouped into four domains for biology:

- Molecules to Organisms
- Heredity
- Evolution
- Ecology

The 2016 standards are grouped into three domains for introductory physics:

- Motion, Forces, and Interactions
- Energy
- Waves

In addition, the STE MCAS tests assess the science and engineering practices incorporated into the standards. Eight practices are included in the standards:

- Asking questions (for science) and defining problems (for engineering)
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations (for science) and designing solutions (for engineering)
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

3.2.4.2 STE Item Types

The grades 5, 8, and 9/10 STE tests include several item types, as shown in Table 3-14.

Table 3-14. STE Item Types and Score Points

Item Type	Possible Raw Score Points	Grade Level
Multiple-choice (SR)	0 or 1	5, 8, and 9/10
Multiple-select (SR)	0 or 1	5, 8, and 9/10
Technology-enhanced (SR)	0 or 1	5, 8, and 9/10
Two-point (SR)	0, 1, or 2	5, 8, and 9/10
Constructed-response (CR)	0, 1, 2, 3, or 4	5, 8, and 9/10

SR = selected-response, CR = constructed-response

3.2.4.3 STE Test Design

In 2025, the common portion of the grades 5 and 8 tests included thirty-two 1-point selected-response items, three 2-point selected-response items, two 2-point constructed-response items, and four 3-point constructed-response items. The tests included two common modules, which are groups of items based on a scenario/phenomenon. Each module contained three 1-point selected-response items and one 3-point constructed-response item. Module items made up 12 points of the test, while discrete items made up 42 points of the test. The matrix portion included six 1-point selected-response items, one 2-point selected-response item, and one 3-point constructed-response item, for a total of 11 points. The test contained a total of 54 common points distributed across two testing sessions. Approximately 30% of the items were technology-enhanced items.

The common portion of the grade 9/10 biology test included thirty-two 1-point selected-response items, four to five 2-point selected-response items, two 3-point constructed-response items, and three 4-point constructed-response items. The common portion of the grade 9/10 introductory physics test included thirty-four 1-point selected-response items, four 2-point selected-response items, two 3-point constructed-response items, and three 4-point constructed-response items. The tests included two common modules, which are groups of items based on a scenario/phenomenon. Each module contained three 1-point selected-response items, zero to one 2-point selected-response items, and one 3-point constructed-response item. Each module was made up of a total of 6 or 8 points and module items in total made up 12 or 16 points of the test; discrete items made up 44 or 48 points of the test. The matrix portion included eleven to thirteen

1-point selected-response items, two to three 2-point selected-response items, one 3-point constructed-response item, and one 4-point constructed-response item, for a total of 24 points. Each form contained a matrix module (field test) and/or discrete items. The test contained a total of 60 common points distributed across two testing sessions. Approximately 30% of the items were technology-enhanced items.

The 2025 Biology test results were reported with item 42 as a two-point item instead of a four-point item. DESE excluded two parts due to irregularities found during scoring. These parts did not count toward any student's score.

Table 3-15 shows the distribution of common and matrix points on the STE tests, as well as recommended testing times. Since MCAS tests are untimed, the times shown are approximate.

Table 3-15. STE Recommended Testing Times and Common/Matrix Points per Test

Grade	# of Sessions	Session 1 Recommended Testing Time (in minutes)	Session 2 Recommended Testing Time (in minutes)	Total Recommended Testing Time (in minutes)	Common Points	Matrix Points
5	2	60–90	60–90	120–180	54	11
8	2	60–90	60–90	120–180	54	11
9/10	2	60–90	60–90	120–180	60	24

The STE tests were administered to a large majority of students on the computer with relatively few students taking the paper form as an accommodation. The paper form was derived from Form 1 of the CBT. Both forms had the same number of common and matrix points. Table 3-16 shows the distribution of common and matrix item types by grade level.

Table 3-16. Distribution of STE Common and Matrix Items by Grade and Item Type

Grade	# of Forms	Comm on SR1 (1 pt.)	Comm on SR2 (2 pt.)	Comm on CR2 (2 pt.)	Comm on CR3 (3 pt.)	Comm on CR4 (4 pt.)	Matrix SR1 (1 pt.)	Matrix SR2/CR2 (2 pt.)	Matrix CR3 (3 pt.)	Matrix CR4 (4 pt.)
5	12	32	3	2	4	0	6	1	1	0
8	12	32	3	2	4	0	6	1	1	0
9/10	13	32–34	4–5	0	2	3	11–13	2–3	1	1

3.2.4.4 STE Blueprints

Tables 3-17 through 3-19 show the target and actual percentages of common item points by content reporting category. Content reporting categories were based on the Massachusetts curriculum framework domains.

Table 3-17. Target (and Actual) Distribution of STE Common Item Points by Reporting Category, Grades 5 & 8

Reporting Category	Percent of Points at Grade 5	Percent of Points at Grade 8
Earth and Space Science	25 (31)	25 (26)
Life Science	25 (23)	25 (26)
Physical Science	25 (31)	25 (26)
Technology/Engineering	25 (15)	25 (22)
Total	100	100

Percent of Points at Each Grade (+/-5%)

Table 3-18. Target (and Actual) Distribution of STE Common Item Points by Reporting Category, Grade 9/10 – Biology

Reporting Category	Percent of Points (+/-5)
Molecules to Organisms	35 (35)
Heredity	25 (25)
Evolution	20 (20)
Ecology	20 (20)
Total	100

Table 3-19. Target (and Actual) Distribution of STE Common Item Points by Reporting Category, Grade 9/10 – Introductory Physics

Reporting Category	Percent of Points (+/-5)
Motion, Forces, and Interactions	50 (50)
Energy	30 (30)
Waves	20 (20)
Total	100

In addition to the content reporting categories, over 50% of the items were coded to an MCAS science and engineering practice category. These items were dually coded, meaning they were coded to both a content reporting category and a practice reporting category. The MCAS science and engineering practice reporting categories are listed in Table 3-20.

Table 3-20. STE Practices Assessed on MCAS

MCAS Practice Category	Science and Engineering Practices
A. Investigations and Questioning	Asking Questions and Defining Problems Planning and Carrying Out Investigations
B. Mathematics and Data	Analyzing and Interpreting Data Using Mathematics and Computational Thinking
C. Evidence, Reasoning, and Modeling	Developing and Using Models Constructing Explanations and Designing Solutions Engaging in Argument from Evidence Obtaining, Evaluating, and Communicating Information

Regarding the STE practices, each content standard includes a reference to one STE practice. For example, standard 5-ESS2-1 states:

Use a model to describe the cycling of water through a watershed through evaporation, precipitation, absorption, surface runoff, and condensation.

Although only a single practice category is referenced within each standard, different practices may be assessed with the associated content. In the example above, items assessing standard 5-ESS2-1 may assess not only the “developing and using models” practice; they may also assess any other practice, such as constructing explanations or analyzing and interpreting data.

Each item that assessed a practice was coded to one of the three practice categories listed in Table 3-20.

3.2.4.5 STE Cognitive Levels

Each STE item is assigned a cognitive skill level according to the cognitive demand of the item. Cognitive levels are not synonymous with difficulty. The cognitive skill describes each item based on the complexity of the mental processing a student must use to answer the item correctly. Only one cognitive skill is designated for each item. STE uses a modified revised Bloom's taxonomy to code items by cognitive level. Items generally fell into either the understanding or applying cognitive skill level; no STE items were at the remembering level. Table 3-21 is an example (grade 5 STE) of the descriptions of the cognitive skills used to categorize the STE test items.

Table 3-21. Grade 5 STE Cognitive Skill Descriptions

Cognitive Skill	Description
Understanding/ Level 1	Students show an understanding of scientific and engineering concepts and skills by: • Ordering events or quantities for a simple phenomenon, such as ordering the age of rock layers. • Completing a simple model, such as labeling some parts of the water cycle or adding an arrow to complete a model showing the path that light takes for an object to be seen. • Identifying a scientific or engineering process, such as erosion or encoding in a given model or based on a description. • Identifying or describing basic characteristics of an organism, substance, object, event, or environment such as the function of a plant's roots or that a desert receives only small amounts of rain. • Interpreting information to determine a straightforward conclusion, such as where volcanoes occur on a map with plate boundaries. • Determining the materials and tools needed for a basic investigation or to build a prototype, such as a ruler for measuring length or a thermometer for measuring temperature. • Describing the purpose of a design feature for a given design solution, such as plastic being used because it is waterproof, or glass being used because it is transparent.
Applying/ Level 2	Students apply their science and engineering knowledge and skills by: • Interpreting data from a graph or table to draw a conclusion, such as the amount of fresh water available for use by humans and other organisms. • Interpreting a model to draw a conclusion, such as determining the flow of energy in a food web. • Completing an unfamiliar or complex model, such as adding an arrow representing a force on an object to show the object is changing speed. • Setting up a data table for an investigation, given certain criteria. • Providing evidence that supports a claim about a scientific or engineering phenomenon, such as using masses of substances to support a claim that the amount of matter stays the same during a phase change of chemical reaction. • Explaining a scientific or engineering concept when given an unfamiliar context, such as how water changes and moves through several steps of the water cycle for a certain watershed.

Cognitive Skill	Description
Applying/ Level 2	- Interpreting a diagram of a design solution to draw a straightforward conclusion, including using a ruler to determine if a design solution meets certain criteria. - Determining what scientific question to ask given certain data and criteria. - Determining which variables should be controlled in an investigation and those that may change, such as amount of water, sunlight, or air in a photosynthesis investigation. - Writing a testable question that can be asked for an investigation. (CR items only)
Analyzing/ Evaluating/ Level 3	Students analyze or evaluate data and information using their science and engineering knowledge and skills by: - Analyzing data from multiple sources or from a complex graph or table to draw a conclusion or develop an explanation, such as comparing weather or climate data from two or more locations. - Drawing a conclusion from a complex model or multiple models using scientific or engineering knowledge, such as analyzing two life cycles and drawing conclusions about the two organisms. - Evaluating two models or prototypes and explaining why one is better than the other. (CR items only) - Revising a complex model to make it more accurate, such as determining an error in a food web and describing how to correct the error. - Explaining how a design can be changed to address several criteria and constraints. (CR items only) Note: Some items will reach this level due to students needing to construct an explanation in a constructed response (CR) based on an application of their knowledge.

Table 3-22 shows the target score points and associated score point percentage by cognitive skill level.

Table 3-22. Targeted Percent of Score Points by Cognitive Skill Level in STE

Grade	Cognitive Skill Level	Total Points	Percent of Score Points	Score Points
5	Understanding 1	54	20–30%	11–17
5	Applying 2	54	40–55%	22–30
5	Analyzing/Evaluating 3	54	20–30%	11–17
8	Understanding 1	54	20–30%	11–17
8	Applying 2	54	40–55%	22–30
8	Analyzing/Evaluating 3	54	20–30%	11–17
9/10	Understanding 1	60	20–30%	12–18
9/10	Applying 2	60	40–55%	24–33
9/10	Analyzing/Evaluating 3	60	20–30%	12–18

3.2.4.6 STE Reference Materials

Rulers were provided for students in all grades. Handheld rulers were provided to students taking the paper version of the STE test. Students taking the computer-based STE tests had access to two separate computer-based rulers: a centimeter ruler and a 1/8-inch ruler; students were not permitted to use handheld rulers on the computer-based tests.

Students were provided with a computer-based five-function calculator in grade 5 and a computer-based scientific calculator in grade 8 and in grade 9/10. Handheld calculators were given to students taking the paper-based tests.

A reference sheet was provided for students taking the introductory physics test. This sheet contains information, such as formulas, that students may need to answer certain items.

3.2.5 Civics Test Specifications

3.2.5.1 Civics Standards and Practices

The Civics MCAS test for grade 8 is aligned to the standards in the 2018 Massachusetts History and Social Science Curriculum Framework.

The 2018 standards are grouped into the following reporting categories:

- Foundations and development of the U.S. political system & government (Topics 1 & 2)
- Institutions and structure of U.S. government & Massachusetts state and local governments (Topics 3 & 6)
- Rights and responsibilities, the U.S. Constitution, and news & media literacy (Topics 4, 5, & 7)

In addition, the Civics MCAS tests assessed the history and social sciences practices incorporated into the standards. The practices listed below are included in the standards:

- Demonstrate civic knowledge, skills, and dispositions.
- Develop focused questions or problem statements and conduct inquiries.
- Organize information and data from multiple primary and secondary sources.
- Analyze the purpose and point of view of each source; distinguish opinion from fact.
- Evaluate the credibility, accuracy, and relevance of each source.
- Argue or explain conclusions, using valid reasoning and evidence.
- Determine next steps and take informed action, as appropriate.

3.2.5.2 Civics Item Types

The Civics test includes several item types, as shown in Table 3-23.

Table 3-23. Civics Item Types and Score Points

Item Type	Possible Raw Score Points
Multiple-choice (SR)	0 or 1
Multiple-select (SR)	0 or 1
Technology-enhanced (SR)	0 or 1
Two-point (SR)	0, 1, or 2
Constructed-response (CR)	0, 1, 2, 3, or 4

SR = selected-response, CR = constructed-response

3.2.5.3 Civics Test Design

The common portion of the test was divided into two sections: a state-level performance task and an end-of-course test. The state-level performance task included seven 1-point selected-response items, three 1-point constructed-response items, and one 4-point constructed-response item. The end-of-course test included twenty-eight 1-point selected-response items, and four 2-point selected response items. The end-of-course

test included two medium sets, which are groups of items based on a common stimulus or set of stimuli. Each medium set contained three 1-point selected-response items. Medium set items made up 6 points of the test, while discrete items made up 30 points of the test. The matrix portion of the state-level performance task included either three 1-point selected-response items and one 1-point constructed-response item or one 4-point constructed response item, for a total of 4 points. The matrix portion of the end-of-course test included either six 1-point selected-response items, two 1-point selected-response items and two 2-point selected-response items, or two medium set items, for a total of 6 points. The test contained a total of 50 common points distributed across two testing sessions. Approximately 25–30% of the end-of-course items were technology-enhanced items.

Table 3-24 shows the distribution of common and matrix points on the Civics test, as well as recommended testing times. Since MCAS tests are untimed, the times shown are approximate.

Table 3-24. Civics Recommended Testing Times and Common/Matrix Points

# of Sessions	Session 1 Recommended Testing Time (in minutes)	Session 2 Recommended Testing Time (in minutes)	Total Recommended Testing Time (in minutes)	Common Points	Matrix Points
2	60	60	120	50	10

The Civics test was administered to a large majority of students online with relatively few students taking the paper form as an accommodation. The paper form was derived from Form 1 of the CBT. Both forms had the same number of common and matrix points. Table 3-25 shows the distribution of common and matrix item types.

Table 3-25. Distribution of Civics Common and Matrix Items by Item Type

# of Forms	Common SR1 (1 pt.)	Common SR2 (2 pt.)	Common CR1 (1 pt.)	Common CR4 (4 pt.)	Matrix SR1 (1 pt.)	Matrix SR2 (2 pt.)	Matrix CR1 (1 pt.)	Matrix CR4 (4 pt.)
12	35	4	3	1	2-9	0-2	0-1	0-1

3.2.5.4 Civics Blueprints

Table 3-26 shows the target and actual percentages of common item points by content reporting category. Content reporting categories were based on the Massachusetts curriculum framework domains.

Table 3-26. Target (and Actual) Distribution of Civics Common Item Points by Reporting Category

Reporting Category	Percent of Points
Foundations and development of the U.S. political system & government	30 (26)
Institutions and structure of U.S. government & Massachusetts state and local governments	33 (36)
Rights and responsibilities, the U.S. Constitution, and news & media literacy	37 (38)
Total	100

Percent of Points (+/-5%)

In addition to the content reporting categories, the items were coded to an MCAS Civics practice category. These items were dually coded, meaning they were coded to both a content reporting category and a practice reporting category. The MCAS Civics practice reporting categories are listed in Table 3-27.

Table 3-27. Civics Practices Assessed on MCAS

MCAS Practice Category	Civics Practices
1. Civic knowledge, skills, and dispositions	Demonstrate civic knowledge, skills, and dispositions.
2. Civics-based questioning and solving civics-related problems	Develop focused questions or problem statements and conduct inquiries. Determine next steps and take informed action, as appropriate.
3. Analyzing points of view and credibility from sources	Analyze the purpose and point of view of each source; distinguish opinion from fact. Evaluate the credibility, accuracy, and relevance of each source.
4. Developing explanations using reasoning and evidence from sources	Organize information and data from multiple primary and secondary sources. Argue or explain conclusions, using valid reasoning and evidence.

3.2.5.5 Civics Cognitive Levels

Each civics item is assigned a cognitive level according to the cognitive demand of the item. Cognitive levels are not synonymous with difficulty. The cognitive skill describes each item based on the complexity of the mental processing a student must use to answer the item correctly. Only one cognitive skill is designated for each item. Civics uses a modified revised Bloom's taxonomy to code items by cognitive level. Items generally fell into either the understanding or applying cognitive skill level; no Civics items were at the remembering level. Table 3-28 shows the descriptions of the cognitive skills used to categorize the Civics test items.

Table 3-28. Civics Cognitive Skill Descriptions

Cognitive Skill	Description
Understanding/Level 1	Students show an understanding of civics concepts and skills by: • Explaining a sequence of events, such as the experiences that led to the Declaration of Independence. • Identifying cause and effect, such as determining characteristics of the Articles of Confederation that led to the creation of the U.S. Constitution. • Identifying a key concept of U.S. government, such as representative democracy, based on a description or primary source. • Identifying the purpose of a source or the point of view of its author, such as describing the position of a political cartoon. • Distinguishing between fact and opinion, such as identifying a factual statement in a news article. • Completing a simple diagram, such as labeling the steps in the process of how a bill may become a law.
Applying/Level 2	Students apply their civics knowledge and skills by: • Interpreting data from a simple table or graph to draw a conclusion, such as determining what proposal a town council should support based on the results of a public opinion survey. • Explaining a civics concept, such as federalism, when given an unfamiliar context. • Determining what evidence from a source can be used to support a claim. • Applying historical or civic knowledge to make an inference in a novel situation, such as determining whether a Federalist or an Anti-Federalist would most likely support a proposed amendment to the U.S. Constitution. • Interpreting an unfamiliar textual or visual source to draw a conclusion, such as determining what characteristic of the U.S. government was influenced by an Enlightenment thinker based on a quotation. • Writing a focus question that can be used to conduct an inquiry. (CR items only)
Analyzing/ Evaluating Level 3	Students analyze or evaluate information and data using their civics knowledge and skills by: • Analyzing information and/or data from multiple sources to support a claim, such as evaluating voter participation data to describe how individuals may participate in the political process. • Analyzing an unfamiliar context to draw conclusions, such as making a claim about the First Amendment based on a description of an unfamiliar Supreme Court decision. • Using evidence from one source to evaluate the point of view of a second source, such as evaluating the claims of an editorial when given additional information. • Using evidence to support a focus question, such as selecting evidence from information about a public policy to support a claim. • Propose solutions to take informed action based on given criteria/constraints. (CR items only) Note: Some items will reach this level due to students needing to construct an explanation in a constructed response (CR) based on an application of their knowledge.

Table 3-29 shows the target score points and associated score point percentage by cognitive skill level.

Table 3-29. Targeted Percent of Score Points by Cognitive Skill Level in Civics

Cognitive Skill Level	Total Points	Percent of Score Points	Score Points
Understanding 1	50	20–30%	10–15
Applying 2	50	40–55%	20–28
Analyzing/Evaluating 3	50	20–30%	10–15

3.2.6 Item and Test Development Process

Table 3-30 provides a detailed view of the item and test development process, in chronological order.

Table 3-30. Overview of Item and Test Development Process

Development Step	Detail of the Process
Select reading passages (for ELA only)	Contractor's test developers find potential passages, which are reviewed by the contractor's internal diversity, equity, and inclusion committee to minimize bias and sensitivity issue prior to the passages going to DESE. The passages are then presented to DESE for initial approval. DESE-approved passages go to Assessment Development Committees (ADCs) composed of experienced educators, and then to a Bias and Sensitivity Committee (BSC) for review and recommendations. ELA items are not developed until passages have been reviewed by an ADC and a BSC. DESE makes the final determination as to which passages will be developed and used on a future MCAS test.
Develop items	Contractor's test developers generate items and edit items from subcontractors that are aligned to Massachusetts standards and specifications.
DESE and educator review of items	1. Contractor sends draft items to DESE test developers for review. 2. DESE test developers review and edit items prior to presenting the items to ADCs. 3. ADCs review items and make recommendations. 4. BSC reviews items and makes recommendations. 5. DESE test developers edit and revise items based on recommendations from ADC and BSC.
Expert review of items	Experts from higher education and practitioners review all field-tested items for content accuracy. Each item is reviewed by at least two independent expert reviewers. Comments and suggested edits are provided to DESE staff for review.
Benchmark constructed-response items and essays	DESE and contractor test developers meet to determine appropriate benchmark papers for the training of scorers of field-tested constructed-response items and essays. Scoring rubrics and notes are reviewed and edited during benchmarking meetings. During the scoring of field-tested items, the contractor contacts DESE test developers with any unforeseen issues.
Item statistics meeting	ADCs review field-test statistics and recommend items for the common-eligible status, for re-field-testing (with edits, for mathematics and discrete STE items, since ELA is passage-based), or for rejection. BSC also reviews items and recommends items to become common-eligible or to be rejected.

Development Step	Detail of the Process
Test construction	Before test construction, DESE provides target performance-level cut scores to contractor's test developers. Contractor proposes sets of common items (items that count toward student scores) and matrix items. Matrix items consist of field-test and equating items, which do not count toward student scores. Each common set of items is delivered with proposed cut scores, including test characteristic curves (TCCs) and test information functions (TIFs). DESE test developers and editorial staff review and edit proposed sets of items. Contractor and DESE test developers and editorial staff meet to review edits and changes to tests. Psychometricians are available to provide statistical information for changes to the common form.
Operational test items	Approved common-eligible items become part of the common item set and are used to determine individual student scores.
Released common items	In 2025, DESE released approximately 50% of the common items for G3–8 and 100% of the common items for high school.

3.2.6.1 Item Development and Review

Initial DESE Item Review

As described in the table above, all passages, items, and scoring guides are reviewed and edited by DESE test developers before presentation to the educator committees for review. Passage selection information can be found in section 3.2.2.3. DESE test developers evaluate new items for the following characteristics:

- **Alignment:** Are the items aligned to the standards?
- **Complexity:** Are the items at the appropriate level of complexity?
- **Content:** Is the content accurate? Does the item elicit a response that shows a depth of understanding of the subject?
- **Contexts:** Are contexts grade-level appropriate? Are they realistic? Are they interesting to students?
- **Grade-level appropriateness:** Are the content, language, and contexts appropriate for the grade level?
- **Distractors:** Have the distractors for selected-response items been chosen based on plausible content errors? What are the distractor rationales?
- **Mechanics:** How well are the items written? Are they grammatically correct? Do they follow the conventions of item writing? Is the wording grade-level appropriate and accessible for all students?
- **Technology:** Are the items scoring correctly? Is the item making the best use of the technology? Is there another type of item that is more appropriate?

After DESE's initial review, DESE and the contractor's test developers work collaboratively to revise the proposed item sets in preparation for ADC review. DESE's initial review, subsequent revision, and following work by committees draws on long standing DESE guidance on standards alignment, appropriateness and quality, as well as newly revised guidance on cognitive complexity. This revised guidance defines three "skill levels" of cognitive complexity, articulates what each level means, and provides example items by grade level.

Assessment Development Committee (ADC) and Bias & Sensitivity Committee (BSC) Reviews

The ADCs and BSCs are each composed of approximately 10–12 Massachusetts educators from across the state (Appendix C contains lists of names). There is an ADC for each content area and grade (e.g., ELA grade 3), and one BSC. ADC and BSC members meet several times a year to review new passages and items and to review data from field-test items. Each ADC meeting is co-facilitated by DESE and Cognia’s test developers. BSC meetings are facilitated by Cognia staff with one DESE test developer in attendance. ADC and BSC members review items using eMetric’s online platform Lighthouse. Each participant enters their “vote” and recommendations, and the facilitators record the consensus of the committee. All ADC and BSC recommendations remain with each item. DESE takes the recommendations of the ADCs and the BSCs into consideration and makes the final decision to approve items to become field-test eligible.

ADC Passage Review (ELA Only)

ELA ADCs review passages before any corresponding items are written. Committee members consider all the elements noted in section 3.2.2.3. Committee members are also asked to consider whether a passage is well-known or comes from a book that is widely taught, since such a passage would likely provide an unfair advantage to those students who are familiar with it. Committee members vote to accept or reject each passage, and the facilitators record the consensus of the group.

For each passage recommended for acceptance, committee members provide suggestions for item development. They also provide recommendations for the presentation of the passage, including suggestions for the purpose-setting statement, words to be footnoted/glossed or redacted, and graphics, illustrations, or photographs to be included with the text.

ADC Item Review

Once DESE test developers have reviewed and edited new items and scoring guides, the items are reviewed by the ADCs. Committee members review and suggest edits to items for the following:

- content accuracy
- grade-level appropriate context and wording
- clearly written stem and question
- clear and accurate graphs, tables, and graphics
- correct answer(s) and scoring notes
- plausible but incorrect distractors
- alignment to correct standard(s)
- alignment to the correct practice (science only)
- alignment to correct cognitive skill
- appropriate use of technology-enhanced items

Members vote to accept, accept with edits (members may include suggested edits), or reject each item. If an item needs significant edits, it will be brought back to the ADC for

review again. The meeting facilitators record the consensus/majority opinion of the group, including the suggested edits or reasoning for rejection.

BSC Passage and Item Review

After passages and items have been approved by the ADCs, they are also reviewed by a separate BSC. The role of the committee is to identify whether a passage or item contains material that is likely to significantly favor or disadvantage one group of students for reasons that are not educationally relevant. The purpose of the committee's review is to ensure that the ability to answer an item correctly reflects a student's learning, not cultural opportunities, or life experiences. Specifically, a passage or item is flagged by the committee if it is insensitive or disrespectful to a student's ethnic, religious, or cultural background (including disability, socio-economic status, and regional differences). The BSC uses a set of guiding questions, which provide the members with a list of considerations in their review of the passages and items for bias and sensitivity. The BSC votes to accept, accept with edits (including suggested edits), or reject (including their reasoning) each passage or item. The meeting facilitators record the consensus of the group.

External Content Expert Item Review

When items are selected to be included on the field-test portion of the MCAS, they are submitted to expert reviewers for their feedback. The task of the expert reviewer is to consider the accuracy of item content. Each item is reviewed by two independent expert reviewers. All expert reviewers for MCAS hold a doctoral degree (either in the content they are reviewing or in the field of education) and are affiliated with an institution of higher education in either a teaching or research position. Each expert reviewer has been approved by DESE. The External Content Experts recommend either accepting, accepting with edits, or rejecting an item, including their reasoning for edits, or rejecting an item. Expert reviewers' comments remain with each item.

Status and Editing of Items

DESE test developers review the recommendations of the ADC, BSC, and expert reviewers and determine whether to revise or reject an item based on the suggested edits. The items are also reviewed and edited by DESE and Cognia editors to ensure adherence to style guidelines in *The Chicago Manual of Style*, *American Heritage Dictionary*, MCAS Style Guidelines, and to sound testing principles. According to these principles, all items should

- demonstrate correct grammar, punctuation, usage, and spelling;
- be written in a clear, concise style;
- contain unambiguous descriptions of what is required for a student to attain a maximum score; and
- be written at a reading level that allows students to demonstrate their knowledge of the subject matter being tested.

3.2.6.2 Field-Testing of Items

Items that pass the reviews as described above are approved to be field-tested. Field-tested items appear in the matrix portions of the tests. Each matrix item is typically

answered by a minimum of 1,500 students, resulting in enough responses to yield reliable performance data.

Scoring of Field-Tested Items

All field-tested items, except for constructed-response items and essays, are machine-scored. These items include multiple-choice, multiple-select, short-answer, and technology-enhanced items.

All field-tested constructed-response items and essays are hand-scored. To train scorers, DESE works closely with the scoring staff to refine rubrics and scoring notes, and to select benchmark papers that exemplify the score points and variations within each score point. Approximately 1,500–2,000 responses per field-tested constructed-response item or essay are scored. Section 3.4 contains additional information on scorers and scoring.

Data Review of Field-Tested Items

Data Review by DESE

DESE test developers review all item statistics as available prior to committee review by the ADCs and BSCs. An item displaying statistics that indicate it did not perform as expected is closely reviewed and, if found to be flawed, it is rejected from the pool of items. After ADC and BSC reviews of item statistics, DESE test developers make final decisions regarding any recommendations.

Data Review by ADCs

The ADCs meet to review the field-test items with their associated statistics. ADCs review the following item statistics:

- item difficulty (or mean score for polytomous items)
- item discrimination
- Differential Item Functioning (DIF)
- distribution of scores across answer options and score points
- distribution of answer options and score points across quartiles
- distribution of unique student responses (for some items)

The ADCs make one of the following recommendations for each field-tested item:

- accept
- edit and field-test again (this recommendation is made for mathematics and discrete STE or civics end-of-course items only)
- reject

Data Review by BSCs

The BSC also reviews the statistics for the field-tested items. The committee reviews only the items that the ADCs have accepted. The BSC pays special attention to items that show DIF when comparing the following subgroups of test takers:

- female compared with male
- Black or African American compared with white
- Hispanic or Latino/a compared with white
- EL and former EL compared with non-EL

3.2.6.3 Item Selection for Operational Test

Cognia’s test developers propose a set of previously field-tested or common, non-released items to be used in the common portion of the test. Test developers work closely with psychometricians to ensure that the proposed tests meet the statistical requirements set forth by DESE. In preparation for meeting with the DESE test developers, the contractor’s test developers consider the following criteria in selecting items to propose for the common portion of the test:

- **Content coverage/match to test design and blueprints.** The test designs and blueprints stipulate a specific number of items per item type and per reporting category for each content area. A broad coverage of standards and cognitive skills is expected. The previous year’s common test should also be considered, and items should not be duplicated.
- **Item difficulty and complexity.** Item statistics drawn from the data analysis of items are used to ensure similar levels of difficulty and complexity from year to year as well as high-quality psychometric characteristics. Items can be reused if they have not been released and were not used the previous year. When an item is reused in the common portion of the test, the latest usage statistics accompany that item.
- **“Clueing” items.** Items are reviewed for any information that might “clue” or help the student answer another item.
- **Item types.** A variety of item types, including approximately 20–30% technology-enhanced items, should populate the common slots.

Field-test items are also selected during form construction. Field-test items are drawn from the field-test eligible pools and should mirror the operational test to the extent needed. If a standard or reporting category is lacking in the common eligible item pool, items should be chosen to fill this need. During assembly of the test forms, the following criteria are considered:

- **Key patterns.** The sequence of keys (correct answers) is reviewed to ensure that the key order appears random.
- **Option balance.** Items are balanced across forms so that each form contains a roughly equivalent number of key options.
- **“Clueing” items.** Items are reviewed for any information that might “clue” or help the student answer another item.
- **Item types.** A variety of item types should populate the matrix slots.

3.2.6.4 Operational Test Draft Review

The proposed operational test is posted for DESE to review. DESE test developers consider the proposed items, make recommendations for changes, and then meet with Cognia’s test developers to construct the final forms of the tests. After form construction meetings, the test forms enter several rounds of review by test developers and editors. Items are checked to ensure that requested changes were made after the test construction meetings, and to ensure that all items are scoring correctly. In addition, items are checked again for any grammatical or “fatal flaw” errors, which are corrected before the test forms are published.

3.2.6.5 Special Edition Test Forms

MCAS Accessibility Features and Accommodations

MCAS is accessible to students with and without disabilities through universal design features in the testing platform and a range of accommodations and accessibility features for students taking the standard tests, and the provision of special edition test forms. To be eligible for a special edition test form, a student must have a disability identified in either an individualized education program (IEP) or in a 504 plan. English learners may also be eligible for selected special test forms and accommodations.

In 2025, MCAS operational tests and retests were available in the following special editions for eligible students:

- **Large-print**—Form 1 of the operational test was translated into a large-print edition. The large-print edition contains all common and matrix items found in Form 1.
- **Braille**—This form included only the common items found in the operational test. If an item indicates bias toward students with visual disabilities (e.g., if it includes a complex graphic that a student taking the braille test could not reasonably be expected to comprehend as rendered), then simplification of the graphic is considered, with appropriate rewording of the item text, as necessary. If a graphic such as a photograph cannot be rendered in braille, or if the graphic is not needed for the student to respond to the item, the graphic is replaced with descriptive text or a caption or eliminated altogether. Three-dimensional shapes that are rendered in two dimensions in print are rendered on the braille test as “front view,” “top view,” and/or “side view,” and are accompanied where necessary by a three-dimensional wooden or plastic manipulative wrapped in a braille-labeled plastic bag. Modifications to original test items for the braille version of the test are made only when necessary, as determined by the braille test subcontractor and DESE staff, and only when they do not provide clues or assistance to the student or change what the item is measuring. When successful modification of an item or graphic is not possible, all or part of the item is omitted, and may be replaced with a similar item.
- **Screen reader**—This accommodation was available only for those students who are blind or have a visual disability. Students who used a screen reader were also given a separate hard-copy braille edition test to have the appropriate braille graphics. All answers are entered onscreen, either by the student using a Braille writing device or by the test administrator.
- **Text-to-speech**—This functionality was embedded in the grades 3–8 and 10 computer-based tests (CBT). Students typically use headphones with this format but may also be tested individually in a separate setting to minimize distractions to other students (from hearing what is being read aloud).
- **American Sign Language (ASL)**—The grade 10 Mathematics computer-based test and the grade 9/10 STE computer-based tests were available to students who are deaf or hard-of-hearing in an American Sign Language edition containing only the common items found in the operational test.

- Spanish-English**—This version of the grade 10 mathematics test and grade 9/10 STE tests were intended for Spanish-speaking EL students who have been in the United States less than 3 years. In 2025, Spanish-English tests were also given in grades 3–8 mathematics, grades 5/8 STE, and grade 8 civics. Spanish-English tests were available in computer- and paper-based formats. Paper-based tests consisted of English-Spanish facing pages (side-by-side), and computer-based tests consisted of “stacked” Spanish text above English text. Students could respond either in Spanish or English. (Note: For all other MCAS test versions, students must respond in English.)

Appendix D includes all accommodations and special edition test forms and lists accessibility features that were available to all students, such as screen magnification and highlighting. After testing was completed, DESE received a list with the number of students who participated in the 2025 MCAS with each accommodation, based on information compiled in Student Registration in the MCAS Portal.

3.3 Test Administration

3.3.1 Test Administration Schedule

The grades 3–8, 10 and HS MCAS tests were administered in 2024–25 with staggered start dates, as shown in Table 3-31.

Table 3-31. Test Administration Schedule—ELA and Mathematics Grades 3–8 & 10, STE 5 & 8, Civics, and High School STE

Content Area	Complete the Student Registration	Receive Test Administration Materials	Test Administration Windows	Deadline to Complete the Principal’s Certification of Proper Test Administration (PCPA)	Deadline for Return of Materials to Contractor (for PBT Only)
November Retests (ELA and Mathematics)	September 16–27	October 30	ELA: November 6–7 Math: November 12–13	November 18	November 19
February Biology and Introductory Physics	December 12–January 8	January 28	February 4–10	February 10	February 11
March Retests (ELA and Mathematics)	January 21–31	February 27	ELA: March 6–7 Math: March 11–12	March 14	March 17
Grades 3–8 ELA	January 21–31	March 10	March 24–April 18	June 9	April 29
Grades 3–8 Mathematics	January 21–31	April 14	April 28–May 23	June 9	May 28
STE Testing Window for Grades 5 and 8	January 21–31	April 14	April 28–May 23	June 9	May 28
Grade 8 Civics*	January 21–31	April 14	April 28–June 6	June 9	June 10

Content Area	Complete the Student Registration	Receive Test Administration Materials	Test Administration Windows	Deadline to Complete the Principal's Certification of Proper Test Administration (PCPA)	Deadline for Return of Materials to Contractor (for PBT Only)
Grade 10 ELA	January 27–February 7	March 11	March 25–April 3*	May 29	April 7
Grade 10 Mathematics	January 27–February 7	May 6	May 20–28*	May 29	May 30
HS Science	April 11–29	May 21	June 4–12*	June 13	June 13

* The prescribed test administration dates for G10 ELA were March 25–26; for G10 Mathematics May 20–21; and for HS Science June 4–5. The rest of these windows included dates for make-up testing.

3.3.2 Security Requirements

Principals were responsible for ensuring that all school personnel complied with the requirements and instructions contained in the *Principal's Administration Manual*. Violations of test security protocols can lead to sanctions and penalties, including delays in reporting test results, invalidation of test results, removal of school personnel from future MCAS administrations, employment consequences, and possible licensure consequences for licensed educators.

In addition to relying on reports of testing irregularities from schools, the MCAS program contracted with Caveon Web Patrol to perform web monitoring. Caveon's web patrol service leverages technology and human expertise to identify, prioritize, and monitor websites, discussion forums, peer-to-peer servers, etc., where sensitive test information may be disclosed or at risk of disclosure. Caveon notified Cognia and DESE of any MCAS content they discovered online. DESE then sent take-down notices to the flagged websites, after which the infringing content was removed.

DESE receives reports of testing irregularities from schools throughout the various test administrations. These irregularities can lead to consequences such as test invalidation or invalidation of individual items. Serious irregularities that may involve educator misconduct are investigated and may be referred to DESE's legal office for a licensure investigation.

DESE performs data analysis on all spring MCAS results and flags schools as outliers if they fall outside certain defined parameters. In cases where the validity of results is called into question, DESE may place student results under review and conduct an investigation to determine whether the results should be reported or permanently invalidated.

DESE also conducts school monitoring during MCAS testing, going into the field and observing schools' test administrations, including observing testing rooms. Observations are conducted with a checklist and any deviations from the testing protocols are noted for correction.

Full security requirements, including details about responsibilities of principals and test administrators, examples of testing irregularities, guidance for establishing and using a document tracking system, and lists of approved and unapproved resource materials,

can be found in the *Spring 2025 Principal's Administration Manual (PAM)*, the *Spring 2025 Test Administrator's Manual for Computer-Based Testing (CBT TAM)*, and the *Spring 2025 Test Administrator's Manual for Paper-Based Testing (PBT TAM)*.

3.3.2.1 Embedded Security Features in Computer-Based Tests

In addition to these universal security protocols, embedded security features in computer-based tests included access codes for each session, proctor password, and the inability to access a test after it has been turned in (unless reactivated at the district or state level.) The 2025 grade 5 STE, grade 8 STE, and grade 8 Civics tests also featured locking sections within the test sessions. At the end of a section, students were informed that they would not be able to change their answers once they proceeded to the next section.

3.3.3 Participation Requirements

In spring 2025, students educated with Massachusetts public funds were required by state and federal laws to participate in MCAS testing. The 1993 Massachusetts Education Reform Act, state law M. G. L. Chapter 69, section 1I, mandates that **all** students in the tested grades who are educated with Massachusetts public funds participate in the MCAS, including the following:

- students enrolled full-time at all publicly funded K–12 schools including
 - district schools
 - charter schools
 - publicly run innovation schools
 - Commonwealth of Massachusetts Virtual Schools
 - educational collaboratives
- students enrolled in private schools receiving special education that is publicly funded by the Commonwealth, including approved and unapproved private special education schools within and outside Massachusetts
- students enrolled in institutional settings receiving educational services at public expense
- students in military families enrolled in public schools
- students in the custody of either the Department of Children and Families (DCF) or the Department of Youth Services (DYS)
- students with disabilities, including students with temporary disabilities such as a broken arm
- students who are English learners (EL)
- students who have been expelled but receive educational services from a district
- foreign exchange students who are coded as #11 under “Reason for Enrollment” in the Student Information Management System (SIMS) in grades 3–8 and 10

Principals were responsible to ensure that all enrolled students participated in testing as mandated by state and federal laws. To certify that **all** students participated in testing as required, principals were required to complete the online Principal's Certification of Proper Test Administration (PCPA) following test administration. Historically, Massachusetts has had an annual state participation rate of over 98% across all

grades, subjects, and assessments. For a summary of participation rates, select the [2025 MCAS Participation Report on DESE's School and District Profiles website](#).

3.3.3.1 Students Not Tested on Standard Tests

A very small number of students educated with Massachusetts public funds were not required to take the standard MCAS tests. These students were strictly limited to the following categories:

- EL students in their first year of enrollment in U.S. schools, who are not required to participate in ELA testing and who are required to participate in the ACCESS for ELLs test
- students with significant disabilities who were unable to take the standard MCAS tests and instead participated in the MCAS-Alt (Chapter 4 contains more information)
- students with a medically documented absence who were unable to participate in make-up testing, including students participating in post-concussion “graduated reentry” plans who were determined to be not well enough for standard MCAS testing

More details about test administration policies and participation requirements for students without disabilities, for students with disabilities, for EL students, and for students educated in alternate settings can be found in the PAM.

3.3.4 Administration Procedures

In 2025, MCAS testing was conducted in schools and in other in-person settings, apart from a small remote testing pilot for students who attend a virtual school.

Principals were responsible for coordinating the school’s 2025 MCAS test administration. This coordination included the following responsibilities:

- understanding and enforcing test security requirements and test administration protocols
- reviewing plans for maintaining test security with the superintendent
- ensuring that all enrolled students participated in testing at their grade level
- coordinating the school’s test administration schedule and ensuring that tests were administered in the correct order and during the prescribed testing windows
- ensuring that test accommodations were properly provided and that transcriptions, if required for any accommodation, were done appropriately. (Accommodation frequencies during 2025 testing can be found in Appendix E [note that the information presented in Appendix E is based on all test takers, and counts are broken out by all students, EL students, and students with IEP/Plan 504]; for a list of test accommodations, review Appendix D.)
- completing and ensuring the accuracy of information provided on the PCPA
- monitoring [DESE’s website](#) throughout the school year for important updates
- reading the Student Assessment Update emails throughout the year for important information
- providing DESE with correct contact information to receive important notices during test administration

More details about test administration procedures, including ordering test materials, scheduling test administration, designating and training qualified test administrators, identifying testing spaces, meeting with students, providing accurate student information, and accounting for and returning test materials, can be found in the PAM.

The MCAS program is supported by the MCAS Service Center, which includes a toll-free telephone line, email, and live chat answered by staff members who provide support to schools and districts. The MCAS Service Center operates weekdays from 7:00 a.m. to 5:00 p.m. (Eastern Time), Monday through Friday.

3.4 Scoring

3.4.1 Scoring Selected-Response and Short-Answer Items

Student responses to SR items and SA math items were machine-scored in the Lighthouse kiosk. Student responses with multiple marks (possible only on paper-based tests) and blank responses were assigned zero points.

Prior to machine-scoring of selected-response items, DESE reviewed all items in Lighthouse and approved all SR answer keys during test construction. The item scoring specifications (in Question and Test Interoperability [QTI]) were configured using the test maps and keys provided for the tests. Once the scoring system was configured, a quality-assurance group verified that the selected responses entered by the student for an item as shown in the uploaded image corresponded to the response recorded in the database, for both the pre-score and the scored student data files.

Scoring for SR items was verified against the specific DESE requirements for the item, the requirement of the test map, which includes the QTI response, and the keys and validations made for an individual student's derived scores per level of the test. This process included a review of all score-value-related fields—such as raw scores, object scores (part one and part two of multi-part items), and strand scores—by test developers, who reviewed data files provided by Cognia Reporting to ensure the score assignments are accurate.

3.4.2 Scoring by Measurement Incorporated

Measurement Incorporated (MI) served as the scoring vendor for the spring 2025 MCAS administration, using its experienced human scoring staff and the Project Essay Grade (PEG) automated scoring engine.

This section summarizes the approach used during the scoring of student responses to MCAS CR items and ELA essay items.

- Scoring was conducted using a synchronous scoring model whereby raters worked from remote locations. Raters used two tools: Microsoft Teams for group training, communication, and monitoring; and MI's Virtual Scoring Center (VSC) to conduct scoring.
- Prior to the start of scoring, raters received a system requirements document and instructions about how to participate in remote, synchronous scoring.
- Raters evaluated student work during a fixed daily schedule under the supervision of scoring directors. Scoring directors used Microsoft Teams to conduct group training and brought raters back into Microsoft Teams for individualized coaching.

- DESE had remote access to Microsoft Teams and VSC to observe scoring and training sessions.
- Raters worked in a private setting and were required to be on camera during training, scoring, and any one-on-one or group coaching sessions.

The scheduling and communication used to coordinate MI's scoring services was managed by the Cognia Scoring Project Manager. The Cognia Scoring Content Manager facilitated the transition of scoring to MI by providing training materials and consultation throughout scoring. MI provided an experienced scoring project team for the scoring of student responses to spring 2025 MCAS CR items and ELA essay items.

3.4.2.1 Preparation of Student Responses

Scoring responses to short-answer, constructed-response, and essay items began by first preparing the documents for scoring. Student identification information, demographic information, and school contact information were converted to alphanumeric format. Digitized student responses to constructed-response items were sorted into specific content areas, grade levels, and items before being scored.

Scoring consistency across scoring departments on all item types was established as follows:

- Cognia provided annotated anchor, practice, and qualification sets for all operational items to MI for review in advance of scoring. Content specialists at MI and Cognia consulted with each other to address any questions and ensure clarity of training materials.
- For operational ELA items that needed additional benchmarked responses, content specialists from Cognia, MI, and DESE collaborated on the establishment of final scoring decisions.
- MI facilitated in-person benchmarking meetings for field-test items.

For computer-based tests, images for field-test CR and essay items were loaded into the Measurement Incorporated Remote Access (MIRA) secure scoring platform.

For paper-based tests, MI scanned each MCAS student answer booklet. Images for field-test CR and essay items were loaded into MIRA. A set of quality control procedures was enacted for scanning paper test forms, including:

- checks of the answer booklet codes against the grade level, to ensure that the correct answer booklets were scanned in each batch;
- counting checks, to ensure that all booklets were accounted for; and
- spot checks, in which the scanned results were checked against randomly selected answer booklets to ensure that the scanners were working as intended.

More information about scoring is provided in Appendix F.

3.4.2.2 Rater Recruitment and Qualifications

MI's Scoring Services Team recruited raters to score student responses to CR items and ELA essay items. To ensure that raters produced accurate and consistent scores, MI recruited individuals with experience successfully scoring responses for other large-scale assessments. MI used each rater's performance on similar projects to assign

them to the grade level, subject area, and item type for which they were most qualified. Raters also were selected based on their past performance in such areas as attendance, punctuality, and cooperation with work procedures and MI policies. MI maintains evaluations and performance data for temporary associates who work on each scoring project to determine employment eligibility for future projects. MI also targeted recruitment of new raters as needed, to continue to identify talent across the country that will best fulfill the human-scoring requirements.

Raters possessed, at a minimum, a four-year college degree. MI collected proof of degree attainment from raters as a condition of employment. Those scoring high school students' responses possessed at least a four-year degree related to the content they were working on or had completed at least two courses related to the content and prior experience scoring student responses in the content area. A summary of raters' backgrounds is provided in Table 3-32.

Table 3-32. Summary of Rater and Scoring Leadership Backgrounds (Operational Scoring)

Education	Raters N	Raters Percent	Leadership N	Leadership Percent
Bachelor's degree or higher	525	61	38	60
Master's degree or higher	337	39	25	40
Teaching Experience	Raters N	Raters Percent	Leadership N	Leadership Percent
Certified or experienced	423	49	34	54
None	439	51	29	46
Scoring Experience	Raters N	Raters Percent	Leadership N	Leadership Percent
Less than a year	120	14	0	0
1–3 years	336	39	0	0
3+ years	406	47	63	100

Raters resided in the United States and properly completed Form I-9¹ to verify their identity and employment authorization. Raters' I-9 forms are retained on file as required by law and made available for inspection by authorized government officers as needed. MI is an equal opportunity employer and believes that a diverse workforce is of the utmost importance. When hiring, MI strives to ensure the work force is diverse across age, ethnicity, and gender.

In selecting team leaders to monitor the raters, MI scoring leaders reviewed records of returning staff. They looked for experienced team leaders with a record of good performance on previous projects and considered raters recommended for promotion to the team leader position.

MI requires scoring project staff (scoring directors, team leaders, raters, and clerical staff) to sign a confidentiality/nondisclosure agreement before receiving any training or viewing any secure project materials. The employment agreement indicates that no participant in training or scoring may reveal information about the test, scoring criteria, or scoring methods to any person.

¹ *Employment Eligibility Form required by the United States Department of Homeland Security U.S. Citizenship and Immigration Services.*

3.4.3 Benchmarking Meetings

Samples of student responses of field-test items were read, scored, and discussed during benchmarking meetings. Attendees included MI Scoring Content leads, a Cognia Scoring representative, Cognia's Content Development and Publishing (CDP) leads, and DESE test developers and content leads. Each benchmarking meeting was content- and grade-specific (e.g., grade 6 ELA). All decisions were recorded and considered final upon DESE signoff.

The primary goals of the field-test benchmarking meetings were to

- revise, as necessary, an item's scoring guide and/or scoring rubric;
- revise, as necessary, an item's scoring notes based on student responses—these, along with scoring guides, provide detailed information about how to score an item;
- assign final score points with justifications to a given set of student responses;
- approve anchor and practice sets of responses that are used to train scorers; and
- score additional responses that may be used for qualification sets.

3.4.4 Scoring of Constructed-Response and Essay Items

Two approaches were employed depending on the content area. Responses to mathematics; STE; high school biology; introductory physics; civics, and ELA constructed-response items were scored exclusively by trained human raters, ensuring consistency with the constructs measured in those subjects. ELA essay items, by contrast, were scored using a hybrid scoring model that combined automated and human scoring. This design aligned scoring practices with the unique demands of each content area while meeting DESE's expectations for validity, reliability, and timely reporting.

Across all content areas except ELA essays, responses at grades 3–8 received a single human score. At the high school level (math, ELA, biology, and physics), each response received two scores. For high school ELA essay items, the first score for both traits was provided by PEG and the second score for each trait was provided by a human. When two scores were assigned, DESE's score-of-record rules determined the reported score. For ELA essay items at grades 3–8, the PEG score served as the score of record for the 90% highest-confidence responses. The remaining 10% lowest-confidence responses were routed to expert human raters who assign the score of record.

Prior to and during automated scoring, student responses were screened to identify non-scorable or special cases (i.e., off-topic responses, blank, alert/crisis content, etc.). These responses were routed to expert human raters for scoring. The raters could assign one of the following condition codes to classify non-scorable responses:

- **Blank:** The response box is completely free of text and punctuation.
- **Non-English:** The response is written in a language other than English or is a mix of English and another language but lacks sufficient English to provide a score.
- **Off Topic (OT):** The response is not related to the task/prompt administered or is not a valid attempt at responding to any task/prompt on the assessment.

- **Direct Copy (DC):** The response copies all or a portion of the prompt/stimuli materials verbatim and offers no attempt to respond to the task/prompt.

Table 3-33 provides an overview of the operational items scored during the Spring 2025 MCAS administration and the scoring method applied.

Table 3-33. Items Scored During the Spring 2025 MCAS Administration

Content Area	Grade	Number of Items	Number of Traits	Score Point Range	Scoring Method
ELA	3	2	1	0–3	Human
ELA	4	2	1	0–3	Human
ELA	3	2	2	0–3/0–4	Hybrid
ELA	4	2	2	0–3/0–4	Hybrid
ELA	5	4	2	0–3/0–4	Hybrid
ELA	6	4	2	0–3/0–5	Hybrid
ELA	7	4	2	0–3/0–5	Hybrid
ELA	8	4	2	0–3/0–5	Hybrid
ELA	10	2	2	0–3/0–5	Hybrid
Mathematics	3	8	1	0–3	Human
Mathematics	4	8	1	0–4	Human
Mathematics	5	7	1	0–4	Human
Mathematics	6	7	1	0–4	Human
Mathematics	7	8	1	0–4	Human
Mathematics	8	6	1	0–4	Human
Mathematics	10	4	1	0–4	Human
STE	5	1	1	0–1	Human
STE	8	1	1	0–1	Human
STE	5	2	1	0–2	Human
STE	8	4	1	0–2	Human
STE	5	6	1	0–3	Human
STE	8	6	1	0–3	Human
Biology	HS	1	1	0–1	Human
Biology	HS	2	1	0–3	Human
Biology	HS	2	1	0–4	Human
Physics	HS	1	1	0–2	Human
Physics	HS	1	1	0–3	Human
Physics	HS	3	1	0–4	Human
Civics	8	3	1	0–1	Human
Civics	8	1	1	0–4	Human

3.4.5 Scoring Staff

The following MI staff members were involved with the scoring of student responses to CR items and ELA essay items.

- The **Director of Performance Assessment Scoring** provided guidance, direction, and leadership to Scoring Services.
- The **Project Manager** was responsible for the communication and coordination between Scoring Services and Cognia.

- The **Scoring Manager** served as the liaison between Scoring Services and the remote scoring team to facilitate staffing assignments and handle logistical matters.
- **Scoring Content Leads** facilitated the training of scoring directors and oversaw all rater training sessions. They monitored the quality and consistency of scoring and the timely completion of scoring.
- **Scoring Directors** were responsible for supervising Raters and Scoring Team Leaders, and for monitoring scoring quality for assigned items.
- **Scoring Team Leaders** directly supervised a team of five to fifteen raters and monitored the scoring quality of assigned items.
- **Raters** scored student responses, participated in training, and responded to feedback about the quality of scoring.

In the sections that follow, Scoring Directors and Scoring Team Leaders are referred to collectively as **scoring leaders**.

3.4.6 Scoring Platforms

The human scoring of student responses to CR items and ELA essays took place in MIRA within MI's Virtual Scoring Center (VSC). MIRA is a kiosk application that provides secure, controlled access to VSC, allowing users to securely work within VSC.

VSC is a secure, centrally administered, password-protected, and HTML-based web application. VSC provides a proven, user-friendly interface to train and qualify raters and allows them to accurately score constructed-response items.

VSC has the following capabilities, which were configured to meet DESE's requirements.

- Defining rater roles and qualifications based on training, security requirements, or prior history
- Managing and randomly routing responses to raters, including independent second reads
- Allowing project leaders to conduct read-behinds, monitor scoring quality, and provide feedback
- Allowing raters to flag responses for a variety of reasons (nonscorable responses, alert responses)
- Generating status reports throughout the project (progress reports, individual scorer performance reports, score distribution reports, and inter-rater reliability reports)
- Importing and exporting data to test delivery and reporting systems

Prior to the start of scoring, the Scoring Manager worked with MI's Scoring Technology team to configure VSC to score student responses to MCAS CR items and ELA essays. A Project Configuration Checklist (PCC) was used to identify CR items and ELA essays and define the scoring rules for VSC. The PCC also identified data thresholds, rules for quality assurance processes, and who should be granted access to reports. Cognia and MI then completed user acceptance testing so that student responses were being routed correctly and that VSC was operating as expected.

Student responses were sent from Cognia to MI and loaded into VSC using integrated web services. Scores were then exported from VSC and sent to Cognia using the same

web services. VSC runs import and export routines several times a day. VSC prioritizes the oldest available responses in the queue so that these responses are scored first. This process facilitates scoring responses so that MI can provide results on time.

3.4.7 Scoring Leader and Rater Training

Cognia prepared the training materials used to score student responses to Spring 2025 MCAS operational CR items and ELA essays. MI's scoring content leads reviewed the materials and participated in discussions to finalize training materials. Table 3-34 describes the training materials produced.

Table 3-34. Materials Developed for MCAS Human Scoring

Material	Description
Anchor sets	Anchor sets are DESE-approved sets consisting of two or three sample responses at each score point. Each response represents a typical response, rather than an unusual or uncommon one. Each response has a well-established true score, meaning there is good agreement regarding the score for the response. Anchor sets are used to clarify the attributes of student responses at each score point.
Practice sets	Practice sets may include unusual, discussion-provoking responses, illustrating the range of responses encountered during operational scoring (including exceptionally creative approaches; responses that are extremely short or disorganized; and responses that show traits of multiple score points). Practice sets are used to refine the raters' understanding of how to apply the scoring rules across a wide range of responses.
Qualification sets	Qualification sets consist of ten responses that are clear, typical examples of each score point. Qualifying sets are used to determine whether raters can use the DESE-approved materials to consistently score student responses.

MI conducted Scoring Director training first, so that Scoring Directors were fully prepared for their responsibilities during training and operational scoring. Scoring Content Leads and the Scoring Manager trained the Scoring Directors on their assigned items, content areas, and grades. Scoring Team Leader and Rater training followed. Training sessions were conducted live using Microsoft Teams.

MI Scoring Content Leads and the Scoring Manager used the following process to deliver training for each human-scored item.

- Presented an overview of the assessment program and training process
- Reviewed the student prompt, passage, and scoring rubric
- Conducted a guided review of anchor responses
- Analyzed each anchor response, its score, and the rationale
- Provided instruction on how to use MIRA and VSC
- Completed an independent scoring activity using a practice set to simulate operational scoring
- Reviewed practice set responses and facilitated a discussion of scores and rationales
- Reinforced scoring criteria, paying particular attention to differences between adjacent score points

Rater training began with a general orientation to MCAS, covering the goals and purposes of the program and any unique features of the test and population. Training for a specific item began with a review of the scoring guide, which included the task, rubric, and scoring notes. All scoring materials were approved by DESE.

As part of training, prospective raters reviewed three sets of student responses, some of which had been introduced during field-test training. Anchor sets were DESE-approved collections of typical responses at each score point. Practice sets included atypical or discussion-provoking responses to broaden raters' understanding. Qualification sets consisted of ten clear, representative responses used to confirm raters' ability to apply the scoring criteria accurately.

Meeting the standard on an item's qualification set was a prerequisite for scoring. Raters were required to achieve at least 70% exact agreement with no non-adjacent scores on either of two qualification sets. For multi-trait ELA items, the accuracy threshold is applied separately to each trait. During the qualification process, raters had access to the prompt and stimulus materials, scoring rubric, and the anchor and practice sets housed in the resource library. After qualifying, each rater received guidance on how to apply condition codes and identify crisis or alert responses.

3.5 Quality Assurance During Operational Human Scoring

Throughout operational scoring, VSC calculates multiple metrics, like validity and inter-rater reliability (described further in the sections that follow), for the pool of items being scored and for sub-pools as needed. MI's system uses these data to generate rater performance data that are incorporated into an automated system to monitor and evaluate rater performance.

Raters and scoring leaders receive daily automated messages that summarize raters' performance, so stakeholders are aware of current performance and any issues that require attention. Scoring Content Leads and the Scoring Manager access specialized reports so they can identify raters who require retraining and/or removal because of issues with accuracy or production. These reports allow scoring managers to identify specific areas that require additional attention and training.

In addition to automated monitoring tools, MI uses the quality assurance processes described in the following sections to score responses accurately and reliably.

3.5.1 Quality Criteria

The Scoring team uses inter-rater score agreement from independent second reads and validity responses to evaluate scoring quality. This means that a rater's scores on responses that are independently second-read by another rater were compared, and exact agreement and exact plus adjacent rates were calculated.

Unacceptable exact or exact plus adjacent agreement triggers *voiding* (resetting) of a rater's scores. A rater is considered to have fallen *below the acceptable thresholds* when, after ten responses they scored have been scored independently by a second rater, one of the following two conditions has been met:

- Exact match inter-rater score agreement on last ten independently second read responses is less than 70 percent
- Exact plus adjacent inter-rater score agreement on last ten independently second read responses is less than 90 percent

3.5.2 Validity Responses

Validity responses are pre-scored student samples embedded within the operational scoring stream to provide ongoing evidence of each rater's accuracy and consistency. These responses, selected by scoring leaders and anchored to consensus scores established during benchmarking, function as a real-time quality control mechanism that detects rater drift, misunderstanding of the rubric, or emerging patterns of leniency or severity. During scoring, validity responses were automatically routed to each rater at a rate of 5% of the responses scored. They were deployed so that they were indistinguishable from regular student responses and scored without the rater's awareness of their status, allowing an unobtrusive and continuous check on the fidelity of scoring.

If validity data indicated that a rater had drifted in their application of the scoring criteria, the rater received a notification explaining the issue and informing them that their Scoring Team Leader would work with them to improve their accuracy. The rater was instructed to pause scoring and review their training materials. If a rater's validity results remained below 70% exact accuracy despite targeted feedback, their scores were reset (voided). Raters who continued to fall below the 70% accuracy threshold despite targeted feedback and one-on-one support from their Scoring Team Leader were removed from the item(s) on which they were struggling, but they were permitted to continue scoring other items where their validity results exceeded the required 70% exact accuracy level.

3.5.3 Read-Behinds

Scoring leaders used results of inter-rater reliability (IRR) derived from independent second reads and validity response data as monitoring tools to determine which raters needed retraining. This retraining was achieved using additional data collected from read-behind scoring.

Raters whose IRR and/or validity results indicated they were drifting from the criteria had their scored sets of responses captured and sent to a read-behind queue. A Scoring Team Leader reviewed the responses and the scores assigned by these raters. The team leader looked for examples of mis-scored responses and returned these responses and the correct scores to the rater for review. The team leader also was able to change incorrect scores during the read-behind process without returning these responses to the raters. This was done when there were many mis-scored responses that contained the same pattern of drift on the rater's part. In this case, the team leader sent the rater a representative sample of responses to address the issue and changed scores on the remainder.

3.5.4 Voiding (Resetting)

The scoring system allowed MI to invalidate a rater's work. At the discretion of scoring leaders, if a rater failed to maintain an accuracy standard of at least 70% based on their performance on embedded validity responses, their work for the impacted time frame was voided. When scores for responses were reset, the affected student responses were routed to other qualified raters for scoring.

3.5.5 Independent Second Reads and Inter-Rater Reliability

Independent second reads (also referred to as double-blind scoring) provide the primary source of evidence for evaluating IRR during operational scoring. Under this procedure, a fixed percentage of responses is routed to two raters for independent review. Each rater scores the response without knowing that it has been assigned to another rater, ensuring that the resulting agreement statistics reflect authentic operational scoring behavior rather than training conditions. For MCAS, 10% of responses to all CR items were randomly selected for an independent second read.

The paired scores generated through this process allow for the estimation of IRR, which reflects the consistency of scores assigned by different human raters to the same student responses. High IRR indicates that raters are applying the rubric in a consistent and replicable manner, supporting fairness and the validity of score-based interpretations. The IRR targets were 70% exact and 90% exact plus adjacent agreement.

MI evaluated IRR using four complementary metrics:

- **Quadratic Weighted Kappa (QWK)** assesses the degree of agreement between raters while accounting for the magnitude of scoring differences.
- **Exact agreement** reflects the percentage of instances where raters assigned the identical score.
- **Adjacent agreement** reflects the percentage of instances where raters' scores differed by no more than one point.
- **Standardized Mean Difference (SMD)** evaluates the presence of systematic scoring severity or leniency across raters.

Summaries of the IRR results are presented in Tables 3-35 through 3-38 for ELA CR, mathematics, civics, and science items, respectively². These tables report the reliability statistics for operational items scored as part of the MCAS and Rhode Island Comprehensive Assessment System (RICAS) assessments. Scoring is conducted jointly, with responses from Massachusetts and Rhode Island combined in a single pool rather than handled separately by state. Accordingly, responses from both states are included in the inter-rater reliability analyses. This joint approach provides a larger pool of double-scored responses, which yields more stable and precise estimates of inter-rater consistency.

Table 3-35. Summary of Inter-Rater Reliability Statistics, ELA CR Items

Item ID	Grade	Score Points	Double-Scored Responses	QWK	Percent Exact	Percent Adjacent	SMD
EL305885122	3	0-3	7367	0.6661	61.2	35.6	-0.0448
EL307375298	4	0-3	7131	0.6106	57.1	37.0	0.1853

² Note: IRR is not reported for ELA Writing essays because this administration did not include double-blind human scoring for this item type, and the hybrid scoring design yields no paired human–machine scores.

Table 3-36. Summary of Inter-Rater Reliability Statistics, Mathematics

Item ID	Grade	Score Points	Double-Scored Responses	QWK	Percent Exact	Percent Adjacent	SMD
MA260584A	3	0-3	7371	0.9342	88.0	11.6	0.0015
MA735951978	3	0-3	7462	0.9113	81.3	17.8	0.0012
MA261857A	3	0-3	7489	0.9383	86.8	12.8	0.0070
MA134930940	3	0-3	7432	0.9416	88.8	10.8	0.0041
MA800780887	4	0-3	7298	0.9229	77.8	21.0	0.0104
MA303335	4	0-3	7299	0.8757	70.6	26.4	-0.0037
MA231875780	4	0-3	7299	0.9439	85.1	14.4	0.0014
MA803957909	4	0-3	7266	0.8545	70.3	27.6	-0.0001
MA232642946	5	0-4	7429	0.9581	84.7	14.2	0.0154
MA715102462	5	0-4	7423	0.9157	77.0	20.6	0.0249
MA903746975	5	0-4	7429	0.8887	70.9	25.2	-0.0223
MA802371654	5	0-4	7445	0.9299	82.1	16.2	0.0063
MA900378821	6	0-4	7459	0.9402	86.7	11.8	0.0080
MA800259417	6	0-4	7430	0.9364	83.5	14.4	-0.0060
MA802907874	7	0-4	7324	0.9551	87.0	12.2	0.0007
MA235900389	7	0-4	7473	0.9539	88.9	10.8	0.0058
MA235905181	7	0-4	7404	0.9528	88.5	10.6	0.0031
MA717248260	7	0-4	7408	0.9407	86.3	12.8	0.0032
MA203085405	8	0-4	7549	0.8497	72.2	25.0	-0.0154
MA236558384	8	0-4	7425	0.9413	81.6	15.8	-0.0414
MA311433	8	0-4	7361	0.892	72.9	25.0	0.0229
MA800473031	8	0-4	7450	0.9439	84.5	14.0	-0.0207
MA315148	10	0-4	65393	0.9103	83.3	16.0	-0.0012
MA135658812	10	0-4	63441	0.964	88.2	11.0	-0.0004
MA713533558	10	0-4	61027	0.9518	83.8	15.6	-0.0034
MA315764	10	0-4	62646	0.938	79.9	18.8	0.0003

Table 3-37. Summary of Inter-Rater Reliability Statistics, Science

Item ID	Grade	Score Points	Double-Scored Responses	QWK	Percent Exact	Percent Adjacent	SMD
SC802761427	5	0-3	6310	0.7956	72.9	25.6	-0.0322
SC630756792	5	0-3	6295	0.8255	71.0	25.2	-0.023
SC317084	5	0-3	6343	0.8045	70.9	26.6	0.0151
SC903955996	5	0-3	6327	0.9319	86.5	12.2	0.0014
SC803732869	5	0-1	5702	0.8974	95.3	3.8	-0.0021
SC630073628	5	0-2	6301	0.7433	79.3	20.0	0.0042
SC290232	8	0-2	6410	0.7065	81.1	17.0	0.0878
SC809268358	8	0-3	6297	0.7325	82.3	15.4	0.0196
SC631441791	8	0-2	6269	0.8861	90.6	8.6	0.0149
SC809178849	8	0-3	6416	0.7262	74.0	23.4	-0.0272
SC005157586	8	0-3	6368	0.7266	71.5	26.0	-0.0032
SC816343670	8	0-1	6255	0.8483	93.0	6.8	-0.0128
SC807830473	10	0-3	51678	0.7929	66.9	29.0	-0.0014
SC313503	10	0-4	52634	0.942	81.4	17.2	0.0012
SC304044565	10	0-1	45338	0.6786	86.4	12.6	-0.0035
SC316277	10	0-4	50952	0.8668	69.9	27.2	0.0044
SC215151206	10	0-3	50780	0.7688	69.0	27.2	-0.0002
SC304762	10	0-4	12892	0.8686	69.7	26.6	0.0028
SC313762	10	0-4	12687	0.9105	77.3	20.8	-0.0135
SC735661218	10	0-2	12670	0.9048	87.8	10.8	-0.0046
SC128528990	10	0-3	12888	0.8562	78.5	19.8	0.0079

Table 3-38. Summary of Inter-Rater Reliability Statistics, Civics

Item ID	Grade	Score Points	Double-Scored Responses	QWK	Percent Exact	Percent Adjacent	SMD
HI302459561	8	0-1	6282	0.5111	78.1	21.2	0.0389
HI302638616	8	0-1	6191	0.3989	70.9	28	0.0966
HI302641557	8	0-4	6185	0.77	69.4	24.2	0.044
HI302448411	8	0-1	6291	0.7131	88.1	11.4	-0.0129

3.5.6 Automated Scoring

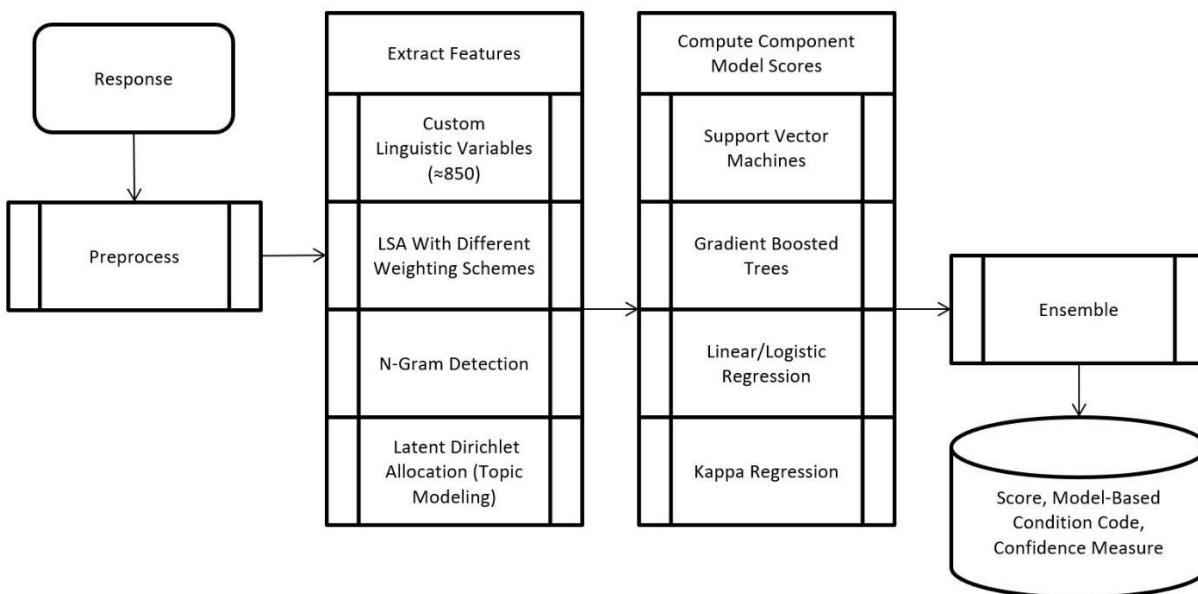
MI's PEG automated scoring technology was used to score responses to MCAS ELA essay items as part of a hybrid (i.e., human-machine) scoring process. This section describes PEG, the training and validation sample and process, and the hybrid scoring process.

3.5.6.1 Project Essay Grade (PEG)

Figure 3-1 presents the architecture of MI's PEG engine. During engine training, this architecture allows PEG to generate hundreds of custom linguistic (rule-based) features, which are determined by codified English linguistic rules such as syntax and semantics and extracted from representative student responses. In addition to rule-

based features, the engine also includes features extracted by Latent Semantic Analysis (LSA) and Latent Dirichlet Allocation (LDA) procedures.

Figure 3-1. PEG Engine Architecture



The scoring engine’s item- and trait-specific scoring models use computed features from the training responses along with the scores assigned to them by human raters. Using hundreds of parameterizations across several machine-learning algorithms, via cross-validation and optimization, the engine determines which algorithms best predict the human-assigned scores. These algorithms draw on many of the latest advances in the field of machine learning to generate linear and non-linear classification and regression models. These approaches typically result in 100 candidate models for a single item or trait. The engine then uses an ensembling procedure to combine the best models into a robust final model. The ensembling procedure utilizes linear regression, where the objective is to maximize a continuous relaxation of QWK, thus maximizing the engine’s agreement with the human raters.

3.5.6.2 Model Training and Validation

Training Data

The training data used to build automated scoring models for the ELA essay items were drawn from field test student responses. A target of 2,000 total responses per item, with at least 200 responses per score point, was established to ensure adequate training coverage and model stability.

To support model development, about 85% of responses for the training set were used to develop the scoring model. About 15% of the 2,000 responses were used as a validation set, which evaluated the model’s accuracy.

Model Training

Component model training requires inputs of response “features.” For items that assess writing quality (essays), the engine processes the responses and calculates approximately 850 linguistic variables that describe the responses in mathematical terms. These variables range in complexity from simple to highly complex. The simple variables measure word count or sentence length, word choice and spelling errors, and the number and severity of grammatical errors. The most complex variables measure patterns that represent style, fluidity, smoothness of transitions, and clarity of communication.

To build an essay scoring model, the engine examines the variables and text features of responses, correlates them with the human scores previously assigned, and identifies those features that have high predictive value. The engine then sends the features to hundreds of different algorithms that compete to see which algorithms best associate the features with the human-assigned scores. These algorithms draw on many of the latest advances in the field of machine learning to generate both linear and non-linear models. Examples of approaches used include Support Vector Machines, Gradient Boosted Trees, and various regression approaches.

Building component models for each item and trait prevents variables from being generalized across items or traits, allowing the engine to faithfully reproduce raters’ application of the scoring rubrics. This means that the resultant models are reasonably robust to gaming attempts, as each represents a unique valuation of the item- (or trait-) specific text features similarly valued by professional raters.

The approaches described typically result in 100 models for a single item or trait. Ensembling is the process of selecting the “best of the best” models, resulting in a small set of strong, yet dissimilar component models. A linear-kappa regression is used to determine the model ensembling weights. The more accurate a given model is, the more weight it carries in the final score decision.

Model Validation

Model validation was conducted at two levels: (1) a global evaluation of overall model performance against human scores, and (2) a subgroup-level evaluation to confirm the models did not unfairly advantage or disadvantage particular student groups.

For global validation, each model was applied to an independent validation set of student responses that had not been used for training. Because even two professional raters will not always agree on the exact score for a given response, model performance was judged relative to the level of agreement observed among human raters. A model was considered valid when its agreement with human scores was at least as strong as the agreement observed between independent human raters.

Evaluation followed the framework proposed by Williamson, Xi, and Breyer (2012³) and relied on several key metrics. Quadratic Weighted Kappa (QWK) measured agreement on numerical scores, with larger disagreements weighted more heavily. Standardized Mean Difference (SMD) measured differences in average scores (human-machine)

³ Williamson, D. M., Xi, X., Breyer, F. J. (2012). A framework for evaluation and use of automated scoring. *Educational Measurement: Issues and Practice*, 31(1), 2–13. <https://doi.org/10.1111/j.1745-3992.2011.00223.x>

relative to pooled standard deviation, capturing systematic tendencies for the model to over- or under-score. Evaluation criteria and thresholds are summarized in Table 3-39.

Table 3-39. Spring 2025 MCAS Model Evaluation Criteria

Criterion	Threshold
Human-machine agreement	$QWK_{HM} \geq 0.65$
Degradation	$QWK_{HH} - QWK_{HM} < 0.10$
Human-machine standardized mean score difference	$ SMD_{HM} < 0.15$

Table 3-40 presents model validation results, by trait, for models that passed all evaluation criteria and were deployed operationally.

Table 3-40. Spring 2025 MCAS Model Validation Results

Grade	Item	Trait	HM N	HM QWK	HH QWK	Degradation	HM SMD
3	EL311063921	DEV	282	0.818	0.837	0.020	0.023
3	EL311063921	CONV	280	0.814	0.785	-0.029	0.008
4	EL208631509	DEV	292	0.827	0.819	-0.008	0.030
4	EL208631509	CONV	288	0.786	0.766	-0.019	0.024
5	EL307267042	DEV	290	0.806	0.831	0.025	0.010
5	EL307267042	CONV	283	0.835	0.820	-0.015	0.015
5	EL736478825	DEV	313	0.829	0.821	-0.008	0.035
5	EL736478825	CONV	303	0.808	0.801	-0.007	0.055
6	EL314484549	DEV	288	0.836	0.880	0.044	0.023
6	EL314484549	CONV	284	0.853	0.861	0.008	0.020
6	EL315605273	DEV	286	0.888	0.903	0.015	0.064
6	EL315605273	CONV	283	0.884	0.891	0.006	0.027
7	EL306400886	DEV	286	0.914	0.909	-0.005	0.003
7	EL306400886	CONV	284	0.894	0.907	0.012	0.042
7	EL310944009	DEV	300	0.904	0.956	0.052	0.050
7	EL310944009	CONV	296	0.935	0.957	0.022	0.025
8	EL206813674	DEV	289	0.918	0.910	-0.008	0.017
8	EL206813674	CONV	286	0.910	0.902	-0.008	0.053
8	EL306640647	DEV	290	0.797	0.891	0.094	0.116
8	EL306640647	CONV	284	0.873	0.854	-0.019	0.004
10	EL309540902	CONV	299	0.890	0.947	0.057	-0.024
10	EL309540902	DEV	292	0.882	0.933	0.051	0.000
10	EL310944009	CONV	300	0.904	0.956	0.052	-0.049
10	EL310944009	DEV	296	0.935	0.957	0.022	-0.025

Note. DEV = Idea Development, CONV = Language Conventions.

In addition to global validation, MI also conducted local (subgroup-level) validation to evaluate potential bias across student groups. Subgroup analyses were conducted when at least 10 paired human-machine scores were available for a given subgroup within an item. A subgroup was flagged for potential bias if the absolute SMD was greater than or equal to 0.125 and statistically significant at the 95% level, with a

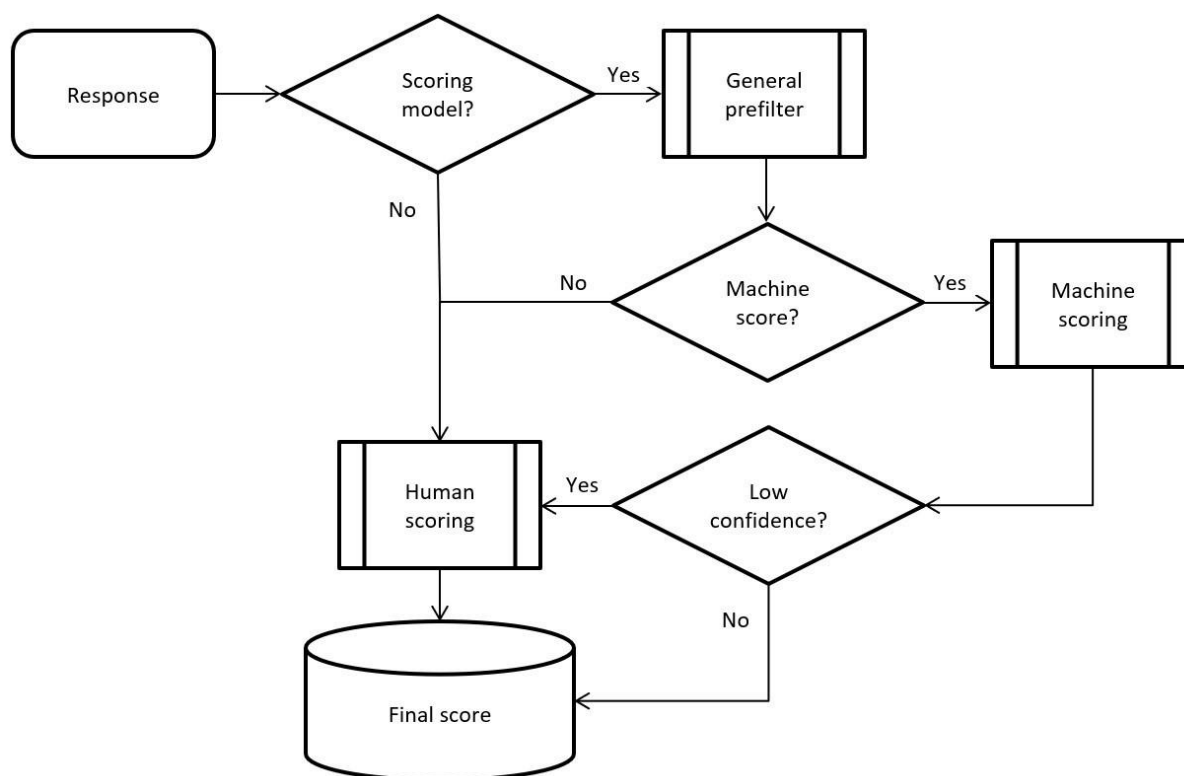
Bonferroni correction applied to adjust for multiple comparisons. An item model was flagged for further review if any subgroup comparison indicated potential bias.

This two-tiered validation approach—global model validation combined with subgroup-level bias analysis—resulted in models that met both psychometric quality standards and fairness expectations before being approved for operational use.

Hybrid Scoring Process

Once models associated with a given item passed validation, subsequent student responses were scored using a hybrid scoring approach. Figure 3-2 shows the response routing rules used during the hybrid scoring process. Upon initial receipt and validation of each response, MI routed responses for those items eligible for automated scoring to the engine and the remainder of the responses directly to VSC for human scoring. After automated scoring, certain responses were then routed to VSC for independent second reads or assignment of a condition code by an expert rater.

Figure 3-2. Response Routing Rules



Prior to being assigned a score by the engine, responses to MCAS ELA essay items were preprocessed to flag likely non-scorable cases (off-topic text or high proportion of copied prompt text), and to identify potentially worrying responses that might indicate a personal student crisis. Flags were used to indicate responses with characteristics that met the definition of condition codes defined in the human-scoring criteria described earlier. For example, the engine flagged responses that copied the prompt or stimuli (DC), were written in a language other than English (NE), were unrelated to the task (OT), or contained alert words or phrases that indicate that the response should be

reviewed by the client. The engine also flagged instances where a numerical score could not be returned, such as responses that were excessively long (more than 30,000 characters), an unexpected character or item ID was sent, the scoring process timed out, or a system error occurred. Table 3-41 presents the pre-processing flags.

Table 3-41. MCAS Flags

Flag	Description	Routed to Human Scoring
0	Standard scoring	If classified in lowest 10% confidence
240	Too long (i.e., 30,000+ characters submitted)	Always
250	Expected essay fields are null or empty; set when nulls are discovered within the processing pipeline.	No, “Blank” condition code automatically assigned
260	In a multipart essay, one or more parts are null, blank, or whitespace.	Always
300	Unexpected character (i.e., non-utf8 string or other encoding issue)	Always
400	Unexpected item_id (i.e., the item_id is not associated with approved scoring model)	Always
500	Scorable alert (i.e., an essay that contains alert language but is otherwise scorable)	Always
620	Applies when the ratio of copied characters exceeds specified threshold (DC)	Always to expert rater
660	Insufficient English language to score (NE)	Always to expert rater
670	Off-Topic (OT)	Always to expert rater
900	Timeout (i.e., unable to complete essay score prediction within time limits). Not client configurable.	Always
950	System error processing essay (i.e., internal error). Not client configurable.	Always

Following pre-processing, the remaining responses were sent to the automated scoring engine, where text features were extracted, the scoring model(s) applied, and responses assigned a score and measure of score confidence. As shown in Table 3-41, the following types of responses were then sent to human raters for scoring.

- Responses flagged for any reason other than being blank.
- Responses flagged as low-confidence. Low-confidence responses straddle the lines between score point values on a rubric and are difficult to score accurately because they exhibit characteristics of multiple score points.
- Responses with characteristics that meet the definition of condition codes as defined in the human-scoring criteria were routed to expert raters for confirmation.

3.5.6.3 Quality Assurance During Automated Scoring

MI’s hybrid scoring approach incorporated multiple layers of quality assurance designed to ensure accuracy, fairness, and reliability throughout the scoring process.

First, automated scoring models were trained exclusively on scores assigned by expert raters, meaning the models were calibrated to reflect the scoring judgments of the most accurate raters. Each model was then validated against industry-standard criteria, including agreement with human raters, stability across samples, and the absence of

systematic bias. As part of this process, fairness was explicitly evaluated by examining model performance across student subgroups to minimize the risk of differential impact.

Second, quality assurance extended to the human scoring process. Embedded validity responses were used to confirm scorer accuracy and monitor consistency over time. This evaluation was used to identify the most accurate raters, who were then designated as experts and tasked with scoring responses flagged by the system as low-confidence. These checks provided ongoing evidence that both human and automated scoring remained aligned with established scoring standards.

Finally, safeguards were built into the operational workflow so that all responses were scored with the highest degree of accuracy. Responses flagged as non-scorable or requiring special handling (alert/crisis content) were routed to scoring leaders or expert raters for review and final scoring.

To evaluate the inter-rater consistency at each score point, Table 3-42 summarizes the proportion of exact agreement by score points at the test level. Item- and trait-level results are also included in Appendix G. The proportion of exact agreement at each score point is calculated as:

$$\frac{\text{Number of responses that are given score X by both rater 1 and rater 2}}{\text{Number of responses that are given score X by rater 2}}$$

For Table 3-42, the following are excluded from the calculation of agreement rates: Spanish-English items, items with fewer than 50 responses with 2 numeric scores, paper responses, and responses with condition code from at least one rater. Screen-reader-accommodated responses are added to the response counts for the non-accommodated version of the item.

As noted in section 3.5.5, human double-blind scoring at a rate of 10% was conducted on the responses for all items across grades and subjects except ELA essay items that were scored by PEG. For grades 3–8 ELA essay items that were scored by PEG, responses with scores that had 10% lowest-confidence measures were routed to human raters. These responses exhibit characteristics of multiple score-points, which increases the chance of PEG assigning an incorrect score. There was no double-blind scoring for these items, so the numbers are not included in the table. For grade 10 essay items that were scored by PEG, human double-blind scoring was conducted at a rate of 100% regardless of the PEG score confidence measure.

Table 3-42. Summary of Proportion of Exact Agreement by Score Points

Content Area	Grade	Number of Score Categories	Number of Included Responses	Exact	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4	Score Point 5
ELA	3	4 (CR)	6,373	61.78	70.82	67.07	53.41	33.93	N/A	N/A
ELA	4	4 (CR)	6,055	58.58	52.55	63.44	56.89	44.51	N/A	N/A
ELA	HS	4 (Conv)	163,878	63.91	68.60	70.77	69.17	89.70	N/A	N/A
ELA	HS	6 (ID)	163,878	55.05	68.84	72.89	65.96	39.82	71.44	25.56
Mathematics	3	4	25,889	86.00	91.77	82.45	82.30	86.07	N/A	N/A
Mathematics	4	5	25,411	75.77	86.71	77.32	68.18	70.90	82.02	N/A
Mathematics	5	5	25,854	78.78	88.15	73.13	71.73	68.66	85.83	N/A
Mathematics	6	5	26,035	85.89	91.63	81.44	78.17	82.04	88.57	N/A
Mathematics	7	5	25,848	87.45	93.29	87.96	83.64	78.90	87.00	N/A
Mathematics	8	5	25,990	77.79	92.81	78.49	62.26	66.52	81.19	N/A
Mathematics	HS	5	261,835	84.37	91.96	84.86	79.88	78.57	83.72	N/A
STE	5	2	5,645	96.26	97.60	92.03	N/A	N/A	N/A	N/A
STE	5	3	6,269	79.74	81.24	79.83	73.66	N/A	N/A	N/A
STE	5	4	25,131	75.76	86.41	65.67	70.20	68.44	N/A	N/A
STE	8	2	6,248	93.12	90.90	94.29	N/A	N/A	N/A	N/A
STE	8	3	12,640	86.12	91.07	73.76	77.07	N/A	N/A	N/A
STE	8	4	18,976	76.33	79.55	78.85	48.68	61.26	N/A	N/A
Biology	HS	2	43,169	86.85	77.15	90.70	N/A	N/A	N/A	N/A
Biology	HS	4	100,830	68.53	81.60	61.28	58.78	59.09	N/A	N/A
Biology	HS	5	102,965	75.90	88.24	76.82	67.51	68.81	74.43	N/A
Introductory Physics	HS	3	12,665	88.82	93.98	82.96	88.17	N/A	N/A	N/A
Introductory Physics	HS	4	12,823	79.15	89.18	66.07	69.85	64.79	N/A	N/A
Introductory Physics	HS	5	38,383	75.20	86.32	73.76	63.66	65.99	59.74	N/A
Civics	8	2	18,616	79.65	77.27	76.84	N/A	N/A	N/A	N/A
Civics	8	5	6,149	69.85	83.87	71.26	64.47	46.98	50.58	N/A

Validity responses were used to monitor the scoring accuracy. Table 3-43 provides a summary of these validity statistics. The exact agreement shown represents the overall agreement across all score points per item. These statistics denote accuracy in scoring; they provide an average of agreement between human rater scores and the validity responses (e.g., agreement with the true scores for each item).

Table 3-43. Summary of Validity Statistics¹

Subject	Grade	Number of Score Categories ²	Number of Validity Responses ³	Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
ELA	3	4 (CR)	4,091	80.26	90.34	84.05	70.84	81.80	N/A	N/A
ELA	3	4 (Conv)	7,005	73.44	87.21	70.16	44.97	90.89	N/A	N/A
ELA	3	5 (ID)	7,005	67.60	90.81	67.45	49.23	62.54	65.95	N/A
ELA	4	4 (CR)	2,115	76.76	0.00 ⁴	75.91	63.96	98.2	N/A	N/A
ELA	4	4 (Conv)	6,539	70.63	76.25	81.21	50.72	77.05	N/A	N/A
ELA	4	5 (ID)	6,539	68.37	79.9	83.86	56.22	45.04	75.93	N/A
ELA	5	4 (Conv)	8,413	73.61	89.16	76.25	57.01	85.09	--	N/A
ELA	5	5 (ID)	8,413	67.00	93.36	79.36	56.81	48.14	64.32	N/A
ELA	6	4 (Conv)	11,248	75.77	79.80	68.64	58.68	91.44	N/A	N/A
ELA	6	6 (ID)	11,248	67.11	78.71	69.42	66.37	60.2	55.55	70.85
ELA	7	4 (Conv)	4,624	84.25	94.21	84.65	74.43	87.97	N/A	N/A
ELA	7	6 (ID)	4,624	74.75	88.72	87.73	75.04	62.05	76.23	0.00
ELA	8	4 (Conv)	8,123	74.99	88.56	74.73	62.27	80.85	N/A	N/A
ELA	8	6 (ID)	8,123	63.10	89.90	75.35	63.38	45.80	49.10	34.81
ELA	HS	4 (Conv)	3,722	90.14	86.35	78.88	75.67	96.40	N/A	N/A
ELA	HS	6 (ID)	3,722	72.47	86.71	79.00	76.38	73.03	53.36	81.01
Math	3	4	25,420	92.37	94.82	73.68	90.01	93.01	N/A	N/A
Math	4	5	20,644	88.27	97.25	74.45	74.86	85.08	87.04	N/A
Math	5	5	23,470	88.61	93.75	85.76	82.39	89.37	92.32	N/A
Math	6	5	24,207	91.21	93.81	95.25	88.78	83.84	96.32	N/A
Math	7	5	28,364	93.09	96.62	95.43	91.18	89.94	94.00	N/A
Math	8	5	23,441	84.86	89.10	81.18	75.73	85.89	96.12	N/A
Math	HS	5	48,122	91.20	95.67	92.22	86.04	87.23	95.62	N/A
STE	5	2	8,881	99.05	98.25	99.70	N/A	N/A	N/A	N/A
STE	5	3	5,596	93.51	97.05	95.46	87.55	N/A	N/A	N/A
STE	5	4	21,906	88.95	94.21	86.12	83.38	92.68	N/A	N/A
STE	8	2	6,754	94.28	94.54	94.11	N/A	N/A	N/A	N/A
STE	8	3	12,753	95.69	98.43	96.89	91.32	N/A	N/A	N/A
STE	8	4	18,204	86.85	95.68	87.04	73.79	91.54	N/A	N/A
Biology	HS	2	11,078	97.02	93.27	99.23	N/A	N/A	N/A	N/A

Subject	Grade	Number of Score Categories ²	Number of Validity Responses ³	Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
Biology	HS	4	10,778	85.91	93.07	82.75	75.92	90.84	N/A	N/A
Biology	HS	5	16,067	92.37	96.23	90.87	88.92	85.95	97.86	N/A
Intro. Physics	HS	3	1,348	94.58	94.91	94.57	94.24	N/A	N/A	N/A
Intro. Physics	HS	4	1,280	91.25	97.88	83.48	77.97	95.15	N/A	N/A
Intro. Physics	HS	5	2,663	90.21	95.58	89.53	79.71	91.30	89.43	N/A
Civics	8	2	15,452	85.52	86.45	84.24	N/A	N/A	N/A	N/A
Civics	8	5	5,056	70.93	88.95	83.80	64.30	36.06	35.61	N/A

1 Includes all operational and equating items.

2 CR = Constructed response; Conv = Conventions; ID = Idea Development

3 This column displays the number of validity reads (how many times all the responses were scored against validity papers) that occurred, not the number of validity papers used.

3.6 Classical Item Analyses

As noted in Brown (1983), “A test is only as good as the items it contains.” A complete evaluation of a test’s quality must include an evaluation of each item. Both Standards for Educational and Psychological Testing (AERA et al., 2014) and the Code of Fair Testing Practices in Education (Joint Committee on Testing Practices, 2004) include standards for identifying quality items. Items should predominantly assess the knowledge and skills that are identified as part of the domain being tested and should avoid assessing irrelevant factors. Items should also be unambiguous and free of grammatical errors, potentially insensitive content or language, and other confounding characteristics. In addition, items must not unfairly disadvantage students—in particular, racial, ethnic, or gender groups.

Both qualitative and quantitative analyses have been conducted to ensure that MCAS items meet these standards. Qualitative analyses, such as those conducted by the ADC committees, are described in earlier sections of this chapter; this section focuses on quantitative evaluations. Statistical evaluations are presented in three parts: (1) difficulty indices and item-test correlations, (2) DIF statistics, and (3) dimensionality analyses. The item analyses presented here are based on the statewide administration of the MCAS assessments in spring 2025. Smaller testing administrations are not reported in this section (i.e., March and November retests and February high school biology and introductory physics tests). Note that the information presented in this section is based only on the operational items, since those are the items on which student scores are calculated. Item analyses, not included in this report, have also been performed for field-test items; the statistics are used during the item review process and during form assembly for future administrations.

3.6.1 Classical Difficulty and Discrimination Indices

All selected-response and constructed-response items are evaluated in terms of item difficulty according to standard classical test theory practices. Difficulty is defined as the average proportion of points achieved on an item and is measured by obtaining the average score on an item and dividing it by the maximum possible score for the item (p -value). Selected-response items are scored dichotomously (correct vs. incorrect), so, for these items, the difficulty index is simply the proportion of students who correctly answered the item. Constructed-response items and essay items are scored polytomously, meaning that a student can achieve scores other than just 0 or 1 (e.g., 0, 1, 2, 3, or 4 for a 4-point constructed-response item). By computing the difficulty index as the average proportion of points achieved, the indices for the different item types are placed on a similar scale, ranging from 0.0 to 1.0 regardless of the item type. Although the p -value index is traditionally described as a measure of difficulty, it is properly interpreted as an easiness index, because larger values indicate easier items. An index of 0.0 indicates that all students earned 0% of the item points, and an index of 1.0 indicates that all students received full credit for the item (i.e., all the item points).

A strong item is one on which higher-ability students perform better than lower-ability students. The correlation between student performance on a single item and total test score is a commonly used measure of this item characteristic. Within classical test theory, the item-test correlation is referred to as the item’s discrimination because it indicates the extent to which successful performance on an item discriminates between

high and low scores on the test. For 2025 MCAS constructed-response items, the item discrimination index used was the Pearson product-moment correlation; for selected-response items, the corresponding statistic is commonly referred to as a point-biserial correlation. The theoretical range of these statistics is -1.0 to 1.0, with a typical observed range for selected-response items from 0.20 to 0.60.

A summary of the item difficulty and item discrimination statistics for each grade and content area combination for the CBT items administered in school is presented in Table 3-44. Note that the statistics are presented for all items as well as separately by item type: selected-response, constructed-response, and essay. The mean difficulty (p -value) and discrimination values shown in the table are within generally acceptable and expected ranges and are consistent with results obtained in previous administrations. Note that the information presented in this section and associated appendices are based only on first-time test takers who are not first-year ELs.

Table 3-44. Summary of Item Difficulty and Discrimination Statistics by Content Area and Grade

Content Area	Grade	Item Type	Number of Items	Difficulty Mean	Difficulty Standard Deviation	Discrimination Mean	Discrimination Standard Deviation
ELA	3	All	31	0.58	0.14	0.48	0.10
ELA	3	MC	24	0.62	0.11	0.45	0.08
ELA	3	OR	6	0.49	0.12	0.56	0.08
ELA	3	ES	1	0.24	N/A	0.75	N/A
ELA	4	All	31	0.64	0.14	0.51	0.10
ELA	4	MC	24	0.65	0.11	0.48	0.08
ELA	4	OR	6	0.60	0.19	0.58	0.08
ELA	4	ES	1	0.35	N/A	0.75	N/A
ELA	5	All	31	0.61	0.17	0.47	0.12
ELA	5	MC	24	0.65	0.16	0.43	0.08
ELA	5	OR	5	0.48	0.16	0.51	0.09
ELA	5	ES	2	0.44	0.06	0.81	0.00
ELA	6	All	31	0.61	0.12	0.49	0.13
ELA	6	MC	24	0.61	0.10	0.44	0.08
ELA	6	OR	5	0.68	0.13	0.58	0.06
ELA	6	ES	2	0.45	0.02	0.84	0.00
ELA	7	All	32	0.62	0.12	0.51	0.13
ELA	7	MC	24	0.66	0.11	0.47	0.07
ELA	7	OR	5	0.53	0.09	0.51	0.09
ELA	7	ES	3	0.46	0.01	0.83	0.01
ELA	8	All	31	0.64	0.12	0.50	0.12
ELA	8	MC	24	0.65	0.12	0.46	0.08
ELA	8	OR	5	0.66	0.09	0.58	0.04
ELA	8	ES	2	0.49	0.02	0.84	0.01
ELA	10	All	29	0.68	0.10	0.51	0.12
ELA	10	MC	21	0.68	0.11	0.47	0.06
ELA	10	OR	6	0.70	0.11	0.54	0.05
ELA	10	ES	2	0.60	0.01	0.86	0.01
Mathematics	3	All	40	0.56	0.13	0.54	0.11
Mathematics	3	MC	18	0.59	0.14	0.48	0.05

Content Area	Grade	Item Type	Number of Items	Difficulty Mean	Difficulty Standard Deviation	Discrimination Mean	Discrimination Standard Deviation
Mathematics	3	OR	22	0.54	0.12	0.59	0.12
Mathematics	4	All	40	0.58	0.13	0.55	0.11
Mathematics	4	MC	13	0.64	0.12	0.49	0.09
Mathematics	4	OR	27	0.55	0.13	0.58	0.10
Mathematics	5	All	40	0.54	0.15	0.51	0.12
Mathematics	5	MC	19	0.61	0.14	0.44	0.08
Mathematics	5	OR	21	0.47	0.13	0.58	0.12
Mathematics	6	All	40	0.52	0.14	0.53	0.13
Mathematics	6	MC	16	0.56	0.14	0.44	0.08
Mathematics	6	OR	24	0.50	0.13	0.59	0.12
Mathematics	7	All	40	0.46	0.15	0.54	0.14
Mathematics	7	MC	21	0.50	0.14	0.46	0.10
Mathematics	7	OR	19	0.42	0.16	0.64	0.13
Mathematics	8	All	40	0.51	0.15	0.56	0.12
Mathematics	8	MC	17	0.60	0.12	0.48	0.09
Mathematics	8	OR	23	0.44	0.13	0.61	0.12
Mathematics	10	All	42	0.51	0.13	0.54	0.13
Mathematics	10	MC	20	0.56	0.11	0.46	0.08
Mathematics	10	OR	22	0.47	0.14	0.62	0.12
STE	5	All	21	0.60	0.14	0.48	0.09
STE	5	MC	12	0.66	0.12	0.43	0.07
STE	5	OR	9	0.53	0.14	0.53	0.08
STE	8	All	21	0.57	0.17	0.46	0.09
STE	8	MC	12	0.64	0.13	0.42	0.07
STE	8	OR	9	0.47	0.17	0.51	0.09
Biology	10	All	42	0.51	0.10	0.50	0.15
Biology	10	MC	20	0.55	0.09	0.44	0.11
Biology	10	OR	22	0.47	0.10	0.57	0.16
Introductory Physics	10	All	43	0.59	0.14	0.52	0.14
Introductory Physics	10	MC	25	0.67	0.09	0.47	0.09
Introductory Physics	10	OR	18	0.48	0.11	0.58	0.16
Civics	8	MC	19	0.56	0.16	0.47	0.09
Civics	8	OR	24	0.56	0.18	0.49	0.12

When interpreting classical item statistics, comparisons should be emphasized among items of the same type.

Caution should be exercised when comparing indices across grade levels. Differences may be due not only to differences in the item statistics on the test but also to differences in student abilities and/or differences in the standards and/or curricula taught in each grade.

In addition to the item difficulty and discrimination summaries presented above, item-level classical statistics are provided in Appendix H. On these MCAS items, the item difficulty and discrimination indices are within generally acceptable and expected

ranges. Very few items were answered correctly at near-chance or near-perfect rates. Similarly, the positive discrimination indices indicate that students who performed well on individual items tended to perform well overall. There is one item with difficulty below 0.20 and no items with discrimination below 0.20. Often, items with relatively lower discrimination are kept in the operational forms to ensure content blueprint coverage. Item-level score point distributions are provided for polytomous items in Appendix I; for each item, the percentage of students who received each score point is presented.

3.6.2 DIF

The *Code of Fair Testing Practices in Education* (Joint Committee on Testing Practices, 2004) explicitly states that subgroup differences in performance be examined when sample sizes permit and that actions be taken to ensure that differences in performance are attributable to construct-relevant, rather than irrelevant, factors. *Standards for Educational and Psychological Testing* (AERA et al., 2014) includes similar guidelines. As part of the effort to identify such problems, psychometricians evaluated the 2025 MCAS items in terms of DIF statistics. One application of the DIF statistics is to use them to evaluate item quality in the ADC and bias committee item review process.

For the 2025 MCAS, the standardization DIF procedure (Dorans & Kulick, 1986) was employed to evaluate subgroup differences. Subgroup differences denote significant group-level differences in performance for examinees with equivalent achievement levels on the test. The standardization DIF procedure is designed to identify items for which subgroups of interest perform differently, beyond the impact of differences in overall achievement. The DIF procedure calculates the difference in item performance for two groups of students at a time, matched for achievement on the total test. Specifically, average item performance is calculated for students at every total score. Then an overall average is calculated, weighting the total score distribution so that it is the same for the two groups. DIF statistics were calculated for all subgroups with at least 75 students. Note that the information presented in this section and the associated appendix is based only on first-time test takers who are not first-year English learners (EL).

For the 2025 MCAS administration, DIF analyses were conducted for all subgroups (as defined in the No Child Left Behind Act) for which the sample size was adequate ($N \geq 75$). Six subgroup comparisons were evaluated for DIF:

- male compared with female
- not EL/former EL (FEL) compared with EL/FEL
- not Low Income compared with Low Income
- white compared with African American/Black
- white compared with Hispanic or Latino
- without disabilities compared to with disabilities

DIF for items is evaluated initially at the time of field-testing. When differential performance between two groups occurs on an item (i.e., a DIF index in the “low” or “high” categories, explained below), it may or may not indicate actual item bias. Consequently, all items with either high or low DIF are examined by content experts and educators to try to identify the cause. If subgroup differences in performance can be traced to differential experience, the inclusion of such items is reconsidered during the item review process. If content experts do not identify a source of bias on the item, the item may be eligible for operational form construction.

After the 2025 spring administration, DIF analyses were conducted again as a post-hoc quality check based on the operational data. The tables in Appendix J present the number of items classified as “low” or “high” DIF in total and by group favored, where positive and negative values indicate preference for the focal and reference groups, respectively. Following Dorans and Holland’s recommendation, items with DIF indices between -0.10 and -0.05 and between 0.05 and 0.10 were categorized as “low” DIF, and values outside the -0.10 to 0.10 range were categorized as “high” DIF.

A high-level review of the DIF results indicates that very few items were flagged for DIF across grades, content areas, and subgroup comparisons. Most items showed no evidence of DIF, and those identified were primarily classified as low DIF, with only isolated instances of high DIF. Additionally, there was no consistent pattern in the direction of DIF (i.e., favoring reference vs. focal groups), suggesting that any observed differences were minimal and not systematic. Overall, these results provide evidence that the bias and sensitivity review after the field-testing effectively ruled out items displaying large DIF for the MCAS Spring 2025 tests.

3.6.3 Dimensionality Analysis

Because tests are constructed with multiple content area subcategories and their associated knowledge and skills, the potential exists for the invocation of multiple dimensions beyond the common primary dimension. Generally, the subcategories are highly correlated with each other; therefore, a primary dimension typically explains the majority of variance in test scores. The presence of one dominant primary dimension is the primary psychometric assumption to support the use of the unidimensional item response theory (IRT) models that are used for calibrating and scaling the 2025 MCAS assessments.

The purpose of dimensionality analysis is to investigate whether violation of the assumption of test unidimensionality is statistically detectable and, if so, (a) the degree to which unidimensionality is violated and (b) the nature of the multidimensionality. Dimensionality analyses were performed on common items for all MCAS test forms used during the spring 2025 administrations. A total of 18 forms were analyzed; the results for these analyses are reported in sections 3.6.3.1 and 3.6.3.2 below.

The dimensionality analyses were conducted using the nonparametric IRT-based methods DIMTEST (Stout, 1987; Stout, Froelich, & Gao, 2001) and DETECT (Zhang & Stout, 1999). Both methods use as their basic statistical building block the estimated average conditional covariances for item pairs. A conditional covariance is the covariance between two items conditioned on true score (expected value of observed score) for the rest of the test, and the average conditional covariance is obtained by averaging across all possible conditioning scores. When a test is strictly unidimensional, all conditional covariances are expected to take on values within random noise of zero, indicating statistically independent item responses for examinees with equal expected scores. Nonzero conditional covariances are essentially violations of the principle of local independence, and such local dependence implies multidimensionality. Thus, nonrandom patterns of positive and negative conditional covariances are indicative of multidimensionality.

DIMTEST is a hypothesis-testing procedure for detecting violations of local independence. The data are first randomly divided into a training sample and a cross-validation sample. Then an exploratory analysis of the conditional covariances is

conducted on the training sample data to find the cluster of items that displays the greatest evidence of local dependence. The cross-validation sample is then used to test whether the conditional covariances of the selected cluster of items display local dependence, conditioning on total score from the non-clustered items. The DIMTEST statistic follows a standard normal distribution under the null hypothesis of unidimensionality.

DETECT is an effect-size measure of multidimensionality. As with DIMTEST, the data are first randomly divided into a training sample and a cross-validation sample (these samples are drawn independently of those used with DIMTEST). The training sample is used to find a set of mutually exclusive and collectively exhaustive clusters of items that best fit a systematic pattern of positive conditional covariances for pairs of items from the same cluster and negative conditional covariances for pairs composed of items from different clusters. Next, the clusters from the training sample are used with the cross-validation sample data to average the conditional covariances: within-cluster conditional covariances are summed; from this sum, the between-cluster conditional covariances are subtracted. This difference is divided by the total number of item pairs, and this average is multiplied by 100 to yield an index of the average violation of local independence for an item pair. DETECT values less than 0.2 indicate very weak multidimensionality (or near unidimensionality); values of 0.2 to 0.4, weak to moderate multidimensionality; values of 0.4 to 1.0, moderate to strong multidimensionality; and values greater than 1.0, very strong multidimensionality (Roussos & Ozbek, 2006).

DIMTEST and DETECT were applied to the operational items of the MCAS tests administered during spring 2025. The data for each grade were split into a training sample and a cross-validation sample. Because DIMTEST had an upper limit of 24,000 students, the training and cross-validation samples for the tests that had over 24,000 students were limited to 12,000 each, randomly sampled from the total sample. DETECT, on the other hand, had an upper limit of 500,000 students, and so every training sample and cross-validation sample used all the available data. After randomly splitting the data into training and cross-validation samples, DIMTEST was applied to each data set to test whether the null hypothesis of unidimensionality would be rejected. DETECT was then applied to each data set for which the DIMTEST null hypothesis was rejected to estimate the effect size of the multidimensionality. Note that the information presented in this section is based only on first-time test takers who are not first-year EL students and who took non-accommodated online forms.

3.6.3.1 DIMTEST Analyses

The results of the DIMTEST analyses indicated that the null hypothesis was rejected at a significance level of 0.05 for every data set. Because strict unidimensionality is an idealization that almost never holds exactly for a given data set, the statistical rejections in the DIMTEST results were not surprising. Indeed, because of the very large sample sizes involved in most of the data sets (over 21,000 in 17 out of 18 tests), DIMTEST would be expected to be sensitive to even quite small violations of unidimensionality.

3.6.3.2 DETECT Analyses

Next, DETECT was used to estimate the effect size for the violations of local independence for the 2019 to 2025 tests. Table 3-45 displays the multidimensionality effect-size estimates from DETECT.

Table 3-45. Multidimensionality Effect Sizes by Grade and Content Area

Content Area	Grade	2019	2021 ¹⁻¹	2021-2	2022	2023	2024	2025
ELA	3	0.27	0.24	0.27	0.20	0.16	0.21	0.23
ELA	4	0.29	0.34	0.25	0.25	0.20	0.25	0.23
ELA	5	0.34	0.44	0.26	0.23	0.23	0.35	0.26
ELA	6	0.42	0.44	0.37	0.33	0.30	0.41	0.18
ELA	7	0.49	0.51	0.26	0.35	0.41	0.42	0.21
ELA	8	0.47	0.32	0.20	0.31	0.34	0.42	0.23
ELA	10	0.26	0.34	N/A	0.28	0.32	0.33	0.40
ELA	Average	0.36	0.38	0.27	0.28	0.28	0.34	0.25
Mathematics	3	0.20	0.23	0.18	0.21	0.19	0.19	0.15
Mathematics	4	0.10	0.12	0.20	0.16	0.11	0.11	0.09
Mathematics	5	0.15	0.26	0.22	0.18	0.10	0.10	0.12
Mathematics	6	0.21	0.21	0.21	0.14	0.17	0.19	0.16
Mathematics	7	0.15	0.34	0.14	0.16	0.15	0.14	0.13
Mathematics	8	0.13	0.19	0.25	0.19	0.16	0.16	0.16
Mathematics	10	0.09	0.11	N/A	0.17	0.13	0.14	0.11
Mathematics	Average	0.15	0.21	0.20	0.17	0.14	0.15	0.13
STE	5	0.08	0.22	0.18	0.09	0.13	0.11	0.09
STE	8	0.08	0.19	0.18	0.13	0.14	0.11	0.08
Biology ²	HS	N/A	N/A	N/A	0.10	0.10	0.10	0.10
Introductory Physics ²	HS	N/A	N/A	N/A	0.10	0.10	0.10	0.11
Civics ²	8	N/A	N/A	N/A	N/A	N/A	N/A	0.12
All Science	Average	0.08	0.21	0.18	0.10	0.12	0.10	0.09

1 In 2021, two sessions in each test were randomly spiraled among students, and each session was analyzed as a separate form (except grade 10 ELA and mathematics). Because each session had a different content blueprint than the entire test, caution should be taken when comparing the 2021 DETECT effect size results to any other year's results.

2 Because 2022 was the first year of the next-generation tests for high school biology and introductory physics, and 2025 was the first operational administration for civics, there were no dimensionality analyses in prior years.

The DETECT values indicate very weak ($\text{DETECT} < 0.2$) multidimensionality for all the 2025 mathematics, STE, and high school science test forms, consistent with previous years' results. The 2025 civics test also showed very weak multidimensionality. The 2025 ELA tests mostly show weak to moderate multidimensionality ($0.2 < \text{DETECT} < 0.4$). Grade 10 ELA tests show moderate multidimensionality ($\text{DETECT} = 0.40$).

Inspection of the DETECT clusters indicated that selected-response/constructed-response separation generally occurred much more strongly with ELA than with mathematics, a pattern that has been consistent across all previous years. Specifically, for the ELA test form with moderate multidimensionality, one set of clusters dominated by selected-response items and another set of clusters dominated by essay items are observed. These results give solid evidence that the essays form a distinct cluster from the selected-response items. As discussed in more detail in section 3.7.3, a two-step equating method is implemented for ELA to prevent dimensionality changes from adversely affecting the maintenance of the scale from year to year.

3.7 MCAS IRT Linking and Scaling

This section describes the procedures used to calibrate, equate, and scale the MCAS tests. During these psychometric analyses, several quality-control procedures and checks on the processes were conducted. These procedures included the following:

- evaluating the calibration processes (e.g., checking the number of cycles required for convergence for reasonableness)
- checking item parameters and their standard errors for reasonableness
- examining test characteristic curves (TCCs) and test information function curves (TIFs) for reasonableness
- evaluating model fit
- evaluating equating items (e.g., delta analyses, b-b analyses, beta analyses)
- examining a-plots and b-plots for reasonableness
- evaluating the scaling results (e.g., comparing look-up tables to the previous year's)

Section 3.7.3 summarizes the equating procedure and results to place the 2025 MCAS tests on the same scale as the previous year. An equating report (Appendix K), which provided complete documentation of the quality-control procedures and results for the spring administration, was reviewed by DESE and approved prior to production of the *Spring 2025 MCAS Individual Student Reports*. Complementary technical information regarding the pre-equated forms (i.e., March and November retests and February high school biology and introductory physics administrations) is provided in Appendix L. Note that the information presented in this section and associated appendices are based only on first-time test takers in the spring 2025 administration who were not first-year ELs and who took non-accommodated online forms.

3.7.1 IRT

All MCAS items are calibrated using IRT. For the 2025 MCAS tests, the three-parameter logistic (3PL) model was used for traditional four-option selected-response items, and the two-parameter logistic (2PL) model was used for binary-scored selected-response and technology-enhanced items (Hambleton & van der Linden, 1997; Hambleton, Swaminathan, & Rogers, 1991). The graded-response model (GRM) was used for polytomous items (Nering & Ostini, 2010), including polytomously scored multi-part items, constructed-response items, and essays.

The 3PL model for selected-response items was defined as:

$$P_i(\theta_j) = P(U_i = 1|\theta_j) = c_i + (1 - c_i) \frac{\exp[Da_i(\theta_j - b_i)]}{1 + \exp[Da_i(\theta_j - b_i)]},$$

where

U represents the scored response on an item,

i indexes the items,

j indexes students,

a represents item discrimination,

b represents item difficulty,

c is the pseudo guessing parameter,

θ is the student proficiency, and

D is a normalizing constant equal to 1.701.

For the 2PL model, this equation was reduced to the following:

$$P_i(\theta_j) = P(U_i = 1|\theta_j) = \frac{\exp[Da_i(\theta_j - b_i)]}{1 + \exp[Da_i(\theta_j - b_i)]}$$

In the GRM for polytomous items, an item was scored in $k + 1$ graded categories, viewed as a set of k dichotomies. At each point of dichotomization (i.e., at each threshold), a two-parameter model was used to model the probability that a student's response falls at or above a particular ordered category, given θ . A polytomous item with $k + 1$ categories was characterized by k item category threshold curves (ICTCs) of the 2-PL form:

$$P_{ik}^*(\theta_j) = P(U_i \geq k|\theta_j) = \frac{\exp[Da_i(\theta_j - b_i + d_{ik})]}{1 + \exp[Da_i(\theta_j - b_i + d_{ik})]}$$

where

U indexes the scored response on an item,

i indexes the items,

j indexes students,

k indexes threshold,

θ is the student ability,

a represents item discrimination,

b represents item difficulty,

d represents threshold, and

D is a normalizing constant equal to 1.701.

After computing k ICTCs in the GRM, $k + 1$ item category characteristic curves (ICCCs), which indicate the probability of responding to a particular category given θ , were derived by subtracting adjacent ICTCs:

$$P_{ik}(\theta_j) = P(U_i = k|\theta_j) = P_{ik}^*(\theta_j) - P_{i(k+1)}^*(\theta_j)$$

where

i indexes the items,

j indexes students,

k indexes threshold,

θ is the student ability,

P_{ik} represents the probability that the score on item i falls in category k , and

P_{ik}^* represents the probability that the score on item i falls at or above the threshold k

$P_{i0}^* = 1$ and $P_{i(m+1)}^* = 0$.

The GRM is also commonly expressed as:

$$P_{ik}(\theta_j) = \frac{\exp[Da_i(\theta_j - b_i + d_{ik})]}{1 + \exp[Da_i(\theta_j - b_i + d_{ik})]} - \frac{\exp[Da_i(\theta_j - b_i + d_{i(k+1)})]}{1 + \exp[Da_i(\theta_j - b_i + d_{i(k+1)})]}$$

Finally, the item characteristic curve (ICC) for a polytomous item was computed as a weighted sum of ICCCs, where each ICCC was weighted by a score assigned to a corresponding category. The expected score for a student with a given theta was expressed as:

$$E(U_i|\theta_j) = \sum_k^{m+1} w_{ik} P_{ik}(\theta_j)$$

where w_{ik} is the weighting constant and is equal to the number of score points for score category k on item i .

Note that for a dichotomously scored item, $E(U_i|\theta_j) = P_i(\theta_j)$. For more information about item calibration and determination, review Lord and Novick (1968), Hambleton and Swaminathan (1985), or Baker and Kim (2004).

3.7.2 IRT Results

IRT calibration was conducted using flexMIRT 3.03 (Cai, 2012). IRT calibration was conducted for the computer-based tests in all grades. Because paper test forms are treated as accommodated forms, item parameters for computer-based items were applied to their paper counterparts. The tables in Appendix K give the IRT item parameters and associated standard errors of all operational scoring items on the spring 2025 MCAS tests. Appendix K contains graphs of the TCCs and TIFs, which are defined below.

TCCs display the expected (average) raw score associated with each θ_j value, between -5.0 and 5.0. Mathematically, the TCC was computed by summing the ICCs of all items that contribute to the raw score. Using the notation introduced in section 3.7.1, the expected raw score at a given value of θ_j was as follows:

$$E(X|\theta_j) = \sum_{i=1}^n E(U_i|\theta_j)$$

where

i indexes the items (and n is the number of items contributing to the raw score),

j indexes students (here, θ_j runs from -5 to 5), and

$E(X|\theta_j)$ is the expected raw score for a student of ability θ_j

TIFs display the amount of statistical information that the test provides at each value of θ_j . Information functions depict test precision across the entire latent trait continuum. There is an inverse relationship between the information of a test and its conditional standard error of measurement (SEM). For long tests, the SEM at a given θ_j is approximately equal to the inverse of the square root of the statistical information at θ_j (Hambleton, Swaminathan, & Rogers, 1991), as follows:

$$SEM(\theta_j) = \frac{1}{\sqrt{I(\theta_j)}}$$

The number of cycles required for convergence for each grade and content area during the IRT analysis can be found in Table 3-46. The calibration went smoothly and converged in all subjects/grades.

Table 3-46. Number of Cycles Required for Convergence

Content Area	Grade	Initial Cycles	FCIP Cycles
ELA	3	119	7
ELA	4	44	7
ELA	5	26	11
ELA	6	35	11
ELA	7	52	10
ELA	8	48	10
ELA	10	119	7
Mathematics	3	38	N/A
Mathematics	4	63	N/A
Mathematics	5	58	N/A
Mathematics	6	54	N/A
Mathematics	7	105	N/A
Mathematics	8	50	N/A
Mathematics	10	81	N/A
STE	5	20	N/A
STE	8	28	N/A
Biology	HS	66	N/A
Introductory Physics	HS	32	N/A
Civics	8	47	N/A

3.7.3 Equating

The purpose of equating is to ensure that scores obtained from different forms of a test are comparable to one another. Equating may be used if multiple test forms are administered in the same year; or one year's forms may be equated to those used in the previous year. Equating ensures that students are not given an unfair advantage or disadvantage because the test form they took is easier or harder than that taken by other students. Section 3.2 contains more information about how the test development process supports successful equating.

3.7.3.1 Equating Design

Post-equating and pre-equating are two methods used in standardized testing to ensure fairness and accuracy in test scores. Post-equating was used for the spring administrations of ELA, mathematics, STE, and high school science tests. Spring 2025 was the first administration of the Civics test and is therefore not included in equating (see Appendix M for the Civics Standard Setting report). Post-equating is well-suited to spring administrations because it estimates item parameters based on the larger sample of operational data, rather than on the smaller field-test samples. Pre-equating was used for the high school retests in March and November as well as the February

high school biology and introductory physics administrations. The pre-equating design is appropriate for these administrations, because the sample sizes are smaller and do not reflect the larger population (i.e., first-time test takers). The spring 2025 administration of the MCAS used a raw score-to-theta equating procedure in which test forms were equated to the theta scale established on the reference form (i.e., the form used in the most recent standard setting). Equating for the spring MCAS used the external anchor test–nonequivalent groups design described by Petersen, Kolen, and Hoover (1989). In this equating design, no assumption is made about the equivalence of the examinee groups taking different test forms (i.e., naturally occurring groups are assumed). Comparability is instead evaluated by using a set of anchor items (also called equating items), assuming they perform in the same way in both groups and can, thus, accurately measure the differences in the two groups. Note that the grades 5 and 8 STE tests were equated using an internal anchor set in spring 2025 to accommodate the field testing of newly designed tasks.

For mathematics and STE, the item parameter estimates for spring 2025 test forms were placed on the reference scale by using the Stocking-Lord method (SL; Stocking & Lord, 1983). A two-step equating approach was taken for ELA because of the finding in the 2022 dimensionality analyses that the dimensionality structure of the test displayed evidence of having changed from 2019. More detail on the 2022 dimensionality analyses can be found in the *2022 Next-Generation MCAS and MCAS-Alt Technical Report*. The spring 2025 ELA equating followed the same procedure as established in 2022. The first step involved applying the SL method for all items except the essay items; thus, isolating any dimensionality variability in the essay items from the estimation of the equating relationship across years. Then, the essay items were brought onto the scale established in the first step by applying the fixed common item parameters (FCIP2; Kim, 2006) method. The FCIP2 method is based on the IRT principle of item parameter invariance. According to this principle, the equating items for both tests should have the same item parameters. After the item parameters for the non-essay items were put on the reference scale (the first step), the FCIP2 method was employed to place the essay items onto the operational scale (the second step). This method is performed by fixing the parameters of the “equating” items (in this case, all non-essay items) to their previously obtained on-scale values and then calibrating using flexMIRT to place the remaining items (in this case, the essay items) on scale.

Prior to implementing the SL method, two evaluations of the equating items were conducted to check for parameter drift, as follows.

- Delta method: compares two years’ delta values (the percent correct transformed into a scale “with an effective range of 6 [very easy item] to 20 [very difficult item]”; Ali & Walker, 2014) for equating items and flags an item if its standardized distance to the principal axis line is at or above 3 in absolute value.
- *b-b* method: compares current year’s freely estimated IRT difficulty parameters with the previous year’s values for equating items and flags an item if its standardized distance to the principal axis line is at or above 3 in absolute value.

During the implementation of the SL method, a third evaluation of the equating items was conducted to check for parameter drift, as follows.

- IRT curve-based beta method: a measure of the weighted average difference between the item response function (IRF) curves between two years for each equating item (Jiang, Roussos & Yu, 2017; Wang & Roussos, 2018). The current year's IRF is calculated based on transformed item parameters using the SL constants estimated with all equating items. The difference index is denoted as β , its estimate is denoted as $\hat{\beta}$, and the following threshold is used to categorize an item into negligible, moderate, or large drift:
 - $|\hat{\beta}| < 0.05$, negligible drift
 - $0.05 \leq |\hat{\beta}| < 0.1$, moderate drift
 - $|\hat{\beta}| \geq 0.1$, large drift

Items that were flagged because of these evaluations are listed in Table 3-47. Although calculations were run using three methods, only the beta method was used to flag outlier equating items for operational purposes. Detailed results from each drift analysis, along with Delta and b-b plots are presented in Appendix K.

Following the statistical evaluation, each of these flagged items went through a content review process to further investigate whether there are construct-irrelevant or relevant factors that may have resulted in the item parameter drift. Anything pertaining to the content being measured is considered a construct-relevant factor, such as any instructional shift in certain content areas. A list of construct-irrelevant factors follows:

- changes to item administration mode
- word/graphic changes to any part of the item
- change to option order
- change in position (e.g., beginning of test vs. end of test)
- whether an item experiences “clueing” in one administration but not in the other
- whether there are test security risks associated with the flagged items
- any other difference that may affect the testing experience

Since no construct-relevant or construct-irrelevant reasons were identified for most flagged items, most of them were kept in the equating sets for spring 2025. One item was dropped from the equating set in grade 3 ELA, grade 7 mathematics, and grade 10 mathematics for showing “large” drift as defined by the beta statistic given above along with content-irrelevant issue or change in the platform.

Table 3-47. Year-to-Year Equating Items Watch List

Content Area	Grade	Item ID	Statistical Reason	Content Reason	Action
ELA	3	IA00280 (EL308824)	Beta analysis	Not identified	Retained for equating
ELA	3	IA00445 (EL626043435)	Beta analysis	Not identified; Large shift/Content-irrelevant technical issue	Removed from equating
ELA	4	IA00408 (EL624647580)	Beta analysis	Not identified	Retained for equating
ELA	6	IA00175 (EL303504)	Beta analysis	Not identified	Retained for equating
Mathematics	4	IA01055 (MA311572)	Beta analysis	Not identified	Retained for equating
Mathematics	4	IA01093 (MA623879088)	Beta analysis	Not identified	Retained for equating
Mathematics	4	IA02819 (MA713583365)	Beta analysis	Not identified	Removed from equating
Mathematics	4	IA04965 (MA800867144)	Beta analysis	Not identified	Retained for equating
Mathematics	5	IA02552 (MA311324)	Beta analysis	Not identified	Retained for equating
Mathematics	5	IA05002 (MA801652356)	Beta analysis	Not identified	Retained for equating
Mathematics	7	IA10268 (MA005205470)	Beta analysis	Not identified; Large shift/Content-irrelevant change in testing platform	Removed from equating
Mathematics	8	IA04665 (MA307399)	Beta analysis	Not identified	Retained for equating
Mathematics	8	IA04957 (MA800770988)	Beta analysis	Not identified	Retained for equating
Mathematics	10	IA04819 (MA735579095)	Beta analysis	Not identified	Retained for equating
Mathematics	10	IA04991 (MA801426792)	Beta analysis	Not identified; Large shift/Content-irrelevant change in testing platform	Removed from equating
STE	5	IA05631 (SC802758561)	Beta analysis	Not identified	Retained for equating
Introductory Physics	HS	IA10657 (SC630578145)	Beta analysis	Not identified	Retained for equating
Introductory Physics	HS	IA10704 (SC800964236)	Beta analysis	Not identified	Retained for equating
Introductory Physics	HS	IA10905 (SC905872783)	Beta analysis	Not identified	Retained for equating

After the evaluation procedures, equating items were then employed in the SL method, and the linking relationship obtained from the SL method was used to transform the item parameters for all items in the spring 2025 computer-based administration onto the target scale. The transformed item parameters were then used to build the raw-score-

to-scaled-score look-up tables for the spring 2025 tests. The SL constants are presented in Table 3-48.

Table 3-48. Stocking and Lord Constants

Content Area	Grade	Slope	Intercept
ELA	3	1.15	-0.26
ELA	4	1.16	-0.33
ELA	5	1.17	-0.27
ELA	6	1.50	-0.35
ELA	7	1.34	-0.38
ELA	8	1.42	-0.26
ELA	10	1.20	-0.35
Mathematics	3	1.22	-0.16
Mathematics	4	1.15	-0.15
Mathematics	5	1.14	-0.24
Mathematics	6	1.16	-0.22
Mathematics	7	1.21	-0.28
Mathematics	8	1.14	-0.22
Mathematics	10	1.15	-0.39
STE	5	1.25	-0.35
STE	8	1.11	-0.38
Biology	10	0.92	-0.02
Introductory Physics	10	0.95	0.05

3.7.4 Achievement Standards

Cutpoints for the MCAS tests were set via standard setting in 2017 for grades 3–8 ELA and mathematics tests, in 2019 for grade 10 ELA and mathematics tests and grades 5 and 8 STE tests, in 2022 for high school biology and introductory physics, and in 2025 for the grade 8 civics test (review Appendix M of this report for the 2025 standard setting report, the *2022 Next-Generation MCAS and MCAS-Alt Technical Report* for the 2022 standard-setting report, the *2019 Next-Generation MCAS and MCAS-Alt Technical Report* for the 2019 standard-setting report, and the *2017 Next-Generation MCAS and MCAS-Alt Technical Report* for the 2017 standard-setting report). Standard setting establishes the theta cutpoints used for reporting each year. These theta cuts are presented in Table 3-49, which also shows the cut scores on the reporting score scale. Student scaled scores on the MCAS tests are reported in integer values from 440 to 560 for all grades and subjects. The operational θ -metric and reporting score scale cut scores will remain fixed throughout the assessment program unless standards are reset.

Table 3-49. Cut Scores on the Theta Metric and Reporting Scale by Content Area and Grade

Content Area	Grade	Theta Cut 1	Theta Cut 2	Theta Cut 3	Scale Score Min	Scale Score Cut 1	Scale Score Cut 2	Scale Score Cut 3	Scale Score Max
ELA	3	-1.581	0.011	1.604	440	470	500	530	560
ELA	4	-1.561	0.031	1.623	440	470	500	530	560
ELA	5	-1.659	0.038	1.734	440	470	500	530	560
ELA	6	-1.591	-0.011	1.570	440	470	500	530	560
ELA	7	-1.560	0.011	1.582	440	470	500	530	560
ELA	8	-1.456	0.051	1.559	440	470	500	530	560
ELA	10	-1.728	-0.299	1.130	440	470	500	530	560
Mathematics	3	-1.377	0.027	1.432	440	470	500	530	560
Mathematics	4	-1.379	0.054	1.487	440	470	500	530	560
Mathematics	5	-1.551	0.025	1.601	440	470	500	530	560
Mathematics	6	-1.518	-0.008	1.502	440	470	500	530	560
Mathematics	7	-1.414	0.031	1.476	440	470	500	530	560
Mathematics	8	-1.496	-0.008	1.479	440	470	500	530	560
Mathematics	10	-1.721	-0.317	1.087	440	470	500	530	560
STE	5	-1.621	-0.112	1.398	440	470	500	530	560
STE	8	-1.499	-0.020	1.459	440	470	500	530	560
Biology	HS	-0.850	0.210	1.300	440	470	500	530	560
Introductory Physics	HS	-1.010	0.120	1.260	440	470	500	530	560
Civics	8	-1.126	0.242	1.609	440	470	500	530	560

3.7.5 Reported Scaled Scores

Because the θ scale used in IRT calibrations is not understood by most stakeholders, reporting scales were developed for the MCAS tests. The reporting scales are linear transformations of the underlying θ scale. As the three θ cutpoints from the standard setting have equal intervals, one single linear transformation was sufficient to transform the θ scale from each performance level category on one reporting scale.

Because the same transformation is applied to all achievement-level categories, and the reported scaled scores preserve the interval scale properties (except for the truncated scaled scores at the lower and upper end of the score scale), it is appropriate to calculate means and standard deviations with scaled scores.

Scaled scores are linear transformations of θ and thus have a psychometric advantage over raw scores. Since the θ scale is used for equating, scaled scores are comparable from one year to the next. Raw scores are not.

The scaled scores are obtained by a simple translation of ability estimates ($\hat{\theta}$) using the linear relationship between threshold values on the θ metric and their equivalent values on the scaled score metric. Students' ability estimates are obtained by mapping their raw scores through the TCC. Scaled scores are calculated using the following linear equation, representing the standard deviation of scaled scores on the first administration of the test:

$$SS = m\hat{\theta} + b$$

where
 m is the slope and
 b is the intercept.

A separate linear transformation is used for each grade and content area combination. Table 3-50 shows the slope and intercept terms used to calculate the scaled scores for each grade and content area. Note that the values in Table 3-50 will not change unless the standards are reset.

Table 3-50. Scale Score Slopes and Intercepts by Content Area and Grade

Content Area	Grade	Slope	Intercept
ELA	3	18.839	499.785
ELA	4	18.846	499.421
ELA	5	17.686	499.335
ELA	6	18.984	500.202
ELA	7	19.098	499.791
ELA	8	19.900	498.981
ELA	10	20.995	506.274
Mathematics	3	21.357	499.413
Mathematics	4	20.938	498.869
Mathematics	5	19.039	499.525
Mathematics	6	19.870	500.165
Mathematics	7	20.758	499.353
Mathematics	8	20.172	500.170
Mathematics	10	21.373	506.775
STE	5	19.875	502.220
STE	8	20.287	500.409
Biology	HS	27.907	493.721
Introductory Physics	HS	26.432	496.696
Civics	8	21.931	494.701

Appendix K contains the raw-score-to-scaled-score look-up table for each spring test; the same information for the pre-equated test forms is provided in Appendix L. The tables show the scaled score equivalent of each raw score for the 2025 MCAS tests. Note that one 2-point item (EL903436123) in grade 10 ELA was flawed due to technical issues, resulting in the max raw score being 49 points. Similarly, one 4-point item (SC304044565) in Biology was scored as a 2-point item due to technical issues, resulting in the max raw score being 58 points. Appendix K contains scaled score distribution graphs for each grade and content area for the spring administration. Appendix L includes the same information on the pre-equated forms.

Appendix N shows achievement-level distributions by content area and grade for the MCAS test administrations for 2021, 2022, 2023, 2024 and 2025. Note that the information presented in Appendix N reports on all test takers who earned an achievement level.

3.8 MCAS Reliability

The Cronbach's α coefficient method (1951) was implemented to assess the reliability of the 2025 MCAS tests. Cronbach's α compares individual item variances to total test variance providing a coefficient of internal consistency. The term "internal" indicates that the index is measured internally to each test of interest, using data that come only from the test itself (Anastasi & Urbina, 1997). A high correlation is evidence that the items complement one another and function well as a group, suggesting that measurement error is minimal. The split-half method requires psychometricians to select items that contribute to each half-test score. The formula for Cronbach's α is given as follows:

$$\alpha = \frac{n}{n-1} \left[1 - \frac{\sum_{i=1}^n \sigma_{(Y_i)}^2}{\sigma_x^2} \right]$$

where

i indexes the item,

n is the total number of items,

$\sigma_{(Y_i)}^2$ represents individual item variance, and

σ_x^2 represents the total test variance.

Note that the information presented in this section and associated appendices are based only on first-time test takers who are not first-year EL students and who took non-accommodated online forms.

3.8.1 Reliability and Standard Errors of Measurement

Table 3-51 presents descriptive statistics, Cronbach's α coefficient, and raw score SEMs (standard errors of measurement) for each content area and grade. Statistics are based on operational items only. The reliability estimates range from 0.88 to 0.93, which are generally considered acceptable ranges.

Table 3-51. Raw Score Descriptive Statistics, Cronbach's Alpha, and SEMs by Content Area and Grade—Computer-based

Content Area	Grade	Number of Students	Raw Score Maximum	Raw Score Mean	Test Statistic Standard Deviation	Test Statistic α	Test Statistic SEM
ELA	3	63,649	44	23.06	9.20	0.90	2.97
ELA	4	62,216	44	26.02	9.33	0.91	2.84
ELA	5	63,664	48	26.82	9.83	0.90	3.15
ELA	6	64,470	50	28.84	10.97	0.91	3.24
ELA	7	64,737	50	28.59	10.56	0.91	3.09
ELA	8	65,482	50	30.14	11.20	0.92	3.25
ELA	10	66,070	49*	32.45	10.78	0.91	3.17
Mathematics	3	63,521	48	26.67	12.05	0.94	3.05
Mathematics	4	61,921	54	30.24	13.26	0.94	3.30
Mathematics	5	63,345	54	28.43	12.83	0.92	3.53
Mathematics	6	64,572	54	27.81	13.35	0.93	3.58

Content Area	Grade	Number of Students	Raw Score Maximum	Raw Score Mean	Test Statistic Standard Deviation	Test Statistic α	Test Statistic SEM
Mathematics	7	64,711	54	24.08	13.10	0.94	3.28
Mathematics	8	65,574	54	27.39	13.65	0.94	3.43
Mathematics	10	64,992	60	30.28	14.74	0.94	3.64
STE	5	63,250	54	30.02	11.49	0.92	3.23
STE	8	65,045	54	27.85	11.26	0.92	3.13
Biology	HS	51,050	58*	29.51	13.21	0.93	3.54
Introductory Physics	HS	12,949	60	32.40	13.52	0.93	3.50
Civics	8	65,047	50	27.07	10.70	0.92	3.07

*Note: Note that one 2-point item (EL903436123) in grade 10 ELA was flawed due to technical issues, resulting in the max raw score being 49 points, and one 4-point item (SC304044565) in Biology was scored as a 2-point item due to technical issues, resulting in the max raw score being 58 points.

Caution must be taken when comparing test reliability between tests of different grades or content areas because alpha coefficients are dependent on test-taking populations and test characteristics. Test-taking population characteristics, such as the range of individual differences in the group (i.e., variability within the population), average ability level of the population that took the exams, test designs, test difficulty, test length, ceiling or floor effect, and influence of guessing, all highly influence reliability coefficients (Anastasi & Urbina, 1997).

3.8.2 Disaggregated Reliability

Appendix O presents reliability coefficients disaggregated by grade and student subgroup and by grade and content reporting category (described in section 3.2). Student subgroups match those publicly reported on DESE's school and district profiles page:

- All Students
- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Multi-Race, Not Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White
- English Learners (EL)
- Former English Learners (Former EL)
- English Learners and Former English Learners (EL/FEL)
- Low Income
- Students with Disabilities (SwD)
- Title 1
- Female
- Male
- Students on a 504 plan (Plan504)

Cronbach's α coefficients were only calculated for student subgroups with 10 or more students. Overall, the results indicate strong reliability across grades, content areas, and student subgroups, with coefficient alpha values generally at or above 0.90 and relatively small, stable SEMs. Reliability estimates are also consistent across subgroups, supporting the precision and comparability of scores across student populations.

The reliability coefficients for student subgroups across grades ranged from 0.80 to 0.95 across the tests, with a median of 0.91 and a standard deviation of 0.02, indicating that reliabilities are considered within a reasonable range. The reliability coefficients for the content reporting categories ranged from 0.49 to 0.90, with a median of 0.72 and a standard deviation of 0.09. Reporting category reliabilities were typically lower than overall test score reliabilities, approximately to the degree expected based on classical test theory (Haertel, 2006). This finding is likely due to the number of items included in the metric, as opposed to the full test. For example, the grade 3 mathematics reporting category of geometry had only 4 items, resulting in a predictably very low reliability statistic of 0.49 (Table P-14), compared to the overall reliability of the grade 3 mathematics test, which is relatively high at 0.94 (Table P-2).

The student subgroup and reporting category reliability results should be interpreted with caution. Cronbach's α may be artificially depressed for subgroups with little variability (Draper & Smith, 1998) and may be impacted by differences in subgroup size. Additionally, qualitative differences among grades and content areas preclude valid inferences about the reliability of the full test score based on statistical comparisons among reporting categories. Further, there is currently no industry standard to interpret the strength of a reliability coefficient when the population of interest is a single student subgroup or reporting category.

3.8.3 Reliability of Achievement-Level Categorization

The accuracy and consistency of classifying students into achievement levels are critical components of a standards-based reporting framework (Livingston & Lewis, 1995). For MCAS tests, students are classified into one of four achievement levels: Not Meeting Expectations, Partially Meeting Expectations, Meeting Expectations, or Exceeding Expectations.

Cognia conducted decision accuracy and consistency (DAC) analyses to determine the statistical accuracy and consistency of the MCAS achievement level classifications. Accuracy refers to the extent to which the achievement level based on test scores matches the achievement level that would have been assigned if the scores did not contain any measurement error. Consistency measures the extent to which the achievement levels based on test scores match the achievement levels based on scores from a second, parallel form of the same test. The Livingston and Lewis (1995) technique was used to estimate both accuracy and consistency from a single administration test.

For the 2025 MCAS tests, after various technical adjustments (described in Livingston & Lewis, 1995), a four-by-four contingency table of accuracy was created for each content area and grade, where cell $[i,j]$ represented the estimated proportion of students whose true score fell into achievement level i (where $i = 1$ to 4) and observed score fell into achievement level j (where $j = 1$ to 4). The sum of the diagonal entries (i.e., the

proportion of students whose true and observed achievement levels matched) signified overall accuracy.

To calculate consistency, true scores were used to estimate the joint distribution of achievement levels on two hypothetical independent, parallel test forms. Following statistical adjustments (per Livingston & Lewis, 1995), a new four-by-four contingency table was created for each content area and grade and populated by the proportion of students who would be categorized into each combination of achievement levels according to the two hypothetical parallel test forms. Cell $[i,j]$ of this table represented the estimated proportion of students whose observed score on the first form would fall into achievement i (where $i = 1$ to 4) and whose observed score on the second form would fall into achievement level j (where $j = 1$ to 4). The sum of the diagonal entries (i.e., the proportion of students categorized by the two forms into the same achievement level) signified overall consistency.

Cognia also measured consistency on the 2025 MCAS tests using Cohen's (1960) coefficient κ (kappa), which assesses the proportion of consistent classifications after removing the proportion of consistent classifications that would be expected by chance. It is calculated using the following formula:

$$\kappa = \frac{(\text{Observed agreement}) - (\text{Chance agreement})}{1 - (\text{Chance agreement})} = \frac{\sum_i C_{ii} - \sum_i C_{i.}C_{.i}}{1 - \sum_i C_{i.}C_{.i}}$$

where

$C_{i.}$ is the proportion of students whose observed achievement level would be level i (where $i = 1-4$) on the first hypothetical parallel form of the test;

$C_{.i}$ is the proportion of students whose observed achievement level would be level i (where $i = 1-4$) on the second hypothetical parallel form of the test; and

C_{ii} is the proportion of students whose observed achievement level would be level i (where $i = 1-4$) on both hypothetical parallel forms of the test.

Because κ is corrected for chance, its values are lower than other consistency estimates.

Results of the DAC analyses are provided in Tables 3-52 and 3-53. The tables include overall accuracy indices with consistency indices displayed in parentheses next to the accuracy values, as well as overall kappa values. In addition to overall accuracy and consistency indices, accuracy and consistency values conditional on achievement level are also given. For the calculation of these conditional indices, the denominator is the proportion of students associated with a given achievement level. Overall ranges for accuracy (0.80–0.85), consistency (0.71–0.78), and kappa (0.59–0.68) indicate that most students were classified accurately and consistently with respect to measurement error and chance. DAC metrics across achievement levels have more variation in terms of accuracy (0.66–0.87) and consistency (0.48–0.79), though most fall in the moderate to high accuracy and consistency.

Table 3-52. Summary of Decision Accuracy and Consistency Results by Content Area and Grade—Overall and Conditional on Achievement Level

Content Area	Grade	Overall	Kappa	Not Meeting Expectations	Partially Meeting Expectations	Meeting Expectations	Exceeding Expectations
ELA	3	0.80 (0.72)	0.59	0.85 (0.75)	0.79 (0.72)	0.81 (0.75)	0.70 (0.50)
ELA	4	0.82 (0.74)	0.61	0.85 (0.76)	0.81 (0.75)	0.83 (0.77)	0.67 (0.48)
ELA	5	0.83 (0.76)	0.63	0.83 (0.72)	0.86 (0.81)	0.81 (0.75)	0.78 (0.61)
ELA	6	0.80 (0.71)	0.59	0.85 (0.76)	0.80 (0.72)	0.78 (0.70)	0.73 (0.59)
ELA	7	0.81 (0.73)	0.61	0.87 (0.79)	0.81 (0.74)	0.79 (0.72)	0.66 (0.49)
ELA	8	0.80 (0.72)	0.61	0.86 (0.78)	0.79 (0.71)	0.79 (0.72)	0.76 (0.64)
ELA	10	0.80 (0.72)	0.59	0.84 (0.74)	0.80 (0.73)	0.82 (0.76)	0.69 (0.55)
Mathematics	3	0.83 (0.75)	0.65	0.87 (0.79)	0.81 (0.74)	0.83 (0.76)	0.80 (0.69)
Mathematics	4	0.84 (0.78)	0.67	0.86 (0.77)	0.85 (0.79)	0.84 (0.79)	0.79 (0.67)
Mathematics	5	0.85 (0.78)	0.67	0.85 (0.76)	0.85 (0.80)	0.84 (0.78)	0.82 (0.69)
Mathematics	6	0.85 (0.78)	0.67	0.85 (0.77)	0.85 (0.79)	0.85 (0.79)	0.81 (0.69)
Mathematics	7	0.84 (0.78)	0.68	0.86 (0.79)	0.85 (0.79)	0.83 (0.76)	0.85 (0.74)
Mathematics	8	0.84 (0.78)	0.68	0.87 (0.79)	0.84 (0.78)	0.84 (0.77)	0.83 (0.72)
Mathematics	10	0.84 (0.77)	0.67	0.80 (0.72)	0.84 (0.79)	0.84 (0.78)	0.87 (0.78)
STE	5	0.81 (0.73)	0.61	0.87 (0.79)	0.80 (0.72)	0.80 (0.74)	0.72 (0.57)
STE	8	0.83 (0.75)	0.63	0.85 (0.76)	0.84 (0.78)	0.80 (0.74)	0.79 (0.63)
Biology	HS	0.83 (0.76)	0.66	0.87 (0.79)	0.83 (0.77)	0.81 (0.74)	0.83 (0.72)
Introductory Physics	HS	0.83 (0.76)	0.64	0.83 (0.72)	0.84 (0.79)	0.83 (0.77)	0.80 (0.67)
Civics	8	0.84 (0.77)	0.68	0.85 (0.76)	0.84 (0.79)	0.82 (0.76)	0.87 (0.79)

For tests, like MCAS, that are associated with the Every Student Succeeds Act (ESSA), the primary concern is distinguishing between students who are proficient and those who are not yet proficient. In this case, accuracy at the Partially Meeting Expectations/Meeting Expectations threshold is critically important, since it summarizes the percentage of students who are correctly classified either above or below the particular cutpoint. Table 3-53 provides the accuracy and consistency estimates and false positive and false negative decision rates at each cutpoint between achievement levels. A false positive is the proportion of students whose observed scores were above the cut and whose true scores were below the cut. A false negative is the proportion of students whose observed scores were below the cut and whose true scores were above the cut.

The accuracy and consistency indices at the Partially Meeting Expectations/Meeting Expectations threshold shown in Table 3-53 range from 0.90–0.93 and 0.87–0.90, respectively. The false positive and false negative decision rates at the Partially Meeting Expectations/Meeting Expectations threshold range from 3%–5% and 3%–5%, respectively. These results indicate that nearly all students were correctly classified with respect to being above or below the Partially Meeting Expectations/Meeting Expectations cutpoint.

Table 3-53. Summary of Decision Accuracy and Consistency Results by Content Area and Grade—Conditional on Cutpoint

Content Area	Grade	Not Meeting Expectations / Partially Meeting Expectations Accuracy (Consistency)	Not Meeting Expectations / Partially Meeting Expectations False Positive	Not Meeting Expectations / Partially Meeting Expectations False Negative	Partially Meeting Expectations / Meeting Expectations Accuracy (Consistency)	Partially Meeting Expectations / Meeting Expectations False Positive	Partially Meeting Expectations / Meeting Expectations False Negative	Meeting Expectations / Exceeding Expectations Accuracy (Consistency)	Meeting Expectations / Exceeding Expectations False Positive	Meeting Expectations / Exceeding Expectations False Negative
ELA	3	0.94 (0.92)	0.02	0.03	0.90 (0.87)	0.05	0.05	0.96 (0.94)	0.03	0.01
ELA	4	0.94 (0.92)	0.02	0.03	0.91 (0.87)	0.05	0.04	0.97 (0.95)	0.02	0.01
ELA	5	0.95 (0.93)	0.02	0.03	0.91 (0.88)	0.04	0.05	0.97 (0.96)	0.02	0.01
ELA	6	0.94 (0.91)	0.03	0.03	0.91 (0.88)	0.04	0.05	0.95 (0.92)	0.03	0.03
ELA	7	0.94 (0.92)	0.03	0.03	0.92 (0.88)	0.04	0.04	0.95 (0.92)	0.03	0.02
ELA	8	0.94 (0.92)	0.03	0.03	0.91 (0.88)	0.04	0.04	0.95 (0.92)	0.03	0.03
ELA	10	0.95 (0.93)	0.02	0.02	0.91 (0.87)	0.04	0.05	0.94 (0.91)	0.03	0.03
Mathematics	3	0.95 (0.92)	0.02	0.03	0.92 (0.89)	0.04	0.04	0.96 (0.94)	0.02	0.02
Mathematics	4	0.95 (0.93)	0.02	0.02	0.92 (0.89)	0.04	0.04	0.96 (0.95)	0.02	0.02
Mathematics	5	0.95 (0.93)	0.02	0.03	0.92 (0.89)	0.04	0.04	0.97 (0.96)	0.02	0.01
Mathematics	6	0.95 (0.93)	0.02	0.03	0.92 (0.89)	0.04	0.04	0.97 (0.96)	0.02	0.01
Mathematics	7	0.95 (0.92)	0.03	0.03	0.93 (0.90)	0.04	0.04	0.97 (0.96)	0.02	0.01
Mathematics	8	0.94 (0.92)	0.03	0.03	0.93 (0.90)	0.04	0.04	0.97 (0.96)	0.02	0.01
Mathematics	10	0.95 (0.93)	0.03	0.02	0.93 (0.90)	0.04	0.03	0.96 (0.95)	0.02	0.02
STE	5	0.95 (0.92)	0.02	0.03	0.92 (0.88)	0.04	0.04	0.94 (0.92)	0.03	0.02
STE	8	0.94 (0.92)	0.03	0.03	0.92 (0.88)	0.04	0.04	0.97 (0.95)	0.02	0.01
Biology	HS	0.94 (0.92)	0.03	0.03	0.93 (0.89)	0.04	0.04	0.96 (0.95)	0.02	0.01
Introductory Physics	HS	0.94 (0.92)	0.02	0.03	0.92 (0.88)	0.04	0.04	0.97 (0.96)	0.02	0.01
Civics	8	0.95 (0.93)	0.02	0.03	0.93 (0.90)	0.03	0.04	0.96 (0.95)	0.02	0.02

Notably, Tables 3-52 and 3-53 use the standard version of the Livingston and Lewis metric as opposed to the adjusted version. The standard version offers greater variability in results and utilizes the same statistical properties for hypothetical forms in the consistency estimations. DAC statistics that are calculated based on groups with smaller variability can be expected to be lower than those calculated based on groups with larger variability. For this reason, the values presented in Tables 3-52 and 3-53 should be interpreted with caution. Similarly, it might be inappropriate to compare DAC statistics liberally across grades and content areas.

3.9 Reporting of Results

The MCAS tests are designed to measure student achievement on the Massachusetts curriculum standards. Consistent with this purpose, results on the MCAS are reported in terms of achievement levels, which describe student achievement in relation to these established state standards. There are four achievement levels for ELA and mathematics in grades 3–8 and 10, grades 5 and 8 science and technology/engineering (STE), high school biology and introductory physics, and, new in 2025, grade 8 civics: Not Meeting Expectations, Partially Meeting Expectations, Meeting Expectations, and Exceeding Expectations. As of spring 2025, Massachusetts assessments no longer include high school chemistry and technology/engineering.

Individual Student Reports (ISRs) and student results labels are the only printed reports; one copy of each was mailed to districts for distribution to schools, which then disseminated the reports to parents/guardians. Individual Student Reports were also made available to schools and districts online in the Download Center of the Lighthouse reporting platform. Section 3.9.1 contains additional details regarding the Individual Student Report.

DESE also provides numerous reports to districts, schools, and teachers through its Edwin Analytics reporting system. Section 3.10.5 provides more information about the Edwin Analytics system, along with examples of commonly used reports. Further, public reporting of aggregate results by school, district, and state are posted on [DOE School and District Profiles](#).

3.9.1 Individual Student Report

An ISR is generated for each student eligible to take the MCAS tests based on Reporting Business Requirements. It is a standalone multi-page color report printed on 8 ½" x 11" paper, duplex. A sample report is provided in Appendix P.

The report was redesigned in 2025 at the start of the new contract. It is designed to present parents/guardians with a detailed summary of their student's MCAS performance and to enable comparisons with other students at the school, district, and state levels. DESE has revised the report's design several times to make the data displays more user-friendly and to add information. The 2017 revisions were undertaken with input from the MCAS Technical Advisory Committee, and from parent focus groups held in several towns across the state, with participants from various backgrounds.

The front cover of the ISR provides student identification information, including student name, grade, date of birth, ID (SASID), local student ID, school name, and district name. The cover also presents general information about the test and how the test results may be used. The cover page also provides an overall summary of the students' results for all assessed subjects for their tested grade. The achievement level scaled

score and student growth percentile (SGP, where applicable) are reported on the cover page. SGP is applicable in grades 4–8 and 10 in ELA and mathematics for students with at least two years of consecutive MCAS results.

Each content area page of the report contains the achievement level, scaled score, and standard error of the scaled score for the content area. If the student does not receive a scaled score, the reason is displayed where the achievement level would be displayed on the cover page. Each achievement level has its own distinct color, and that color is used throughout the report to highlight important report elements based on the student's achievement level and score. The scaled score is presented in numerical format as well as indicated on the visual score as an inverted triangle. The inverted triangle is the color of the earned achievement level. The visual scale's achievement-level display defines each color with the achievement level name and achievement level cut scores. The table with the comparison of the student's scaled score to the average scaled score at the student's school, district, and state levels also displays the previous two scaled scores earned by the student for the subject. All achievement level descriptors are presented on the resource page, which is the last page of the report. A horizontal gray bar is used to represent the standard error for content areas.

The ELA and mathematics subject pages include the SGP graph. The graph shows the student's current year SGP with the standard error. It also shows, for comparison, the average school and average district SGP. When available, two previous year's SGPs are reported for the student in the subject.

If the student took the ELA or mathematics test with one of the following special access accommodations, a note was printed on the report:

- The ELA test was read aloud to the student.
- The ELA essay was scribed for the student.
- The student used a calculator during the non-calculator session of the mathematics test.
- The ELA test was read aloud and was scribed for the student.

A table presents the reporting categories for the content area, along with the points earned by the student for the reporting category, the total points possible for the reporting category, the percentage points earned by the student by the student's school, district, and the state. Science and civics practices are also summarized in the table on those subject pages. The percentages are represented by horizontal bar graphs.

The item grid identifies which items are associated with specific reporting categories, and science/civics practices (practices are not assigned to all items in science) where applicable. A '/' is used to indicate when an item does not have a practice assigned. It shows the student's performance on each item that counts toward a student's score. The score is formatted as the earned score/the maximum points for the items.

The resource page follows the last subject page. The resource page contains the achievement level descriptors as well as information and links to resources for parents/guardians.

The number of pages in the ISR depends on the number of subjects assessed at the student's tested grade.

3.9.2 Student Results Label

A student results label was produced for each student receiving an Individual Student Report. The following information appeared on the label:

- student name
- grade
- birth date
- test date
- student ID (SASID)
- school code
- school name
- district name
- local student ID
- student's scaled score and achievement level for each content area (or the reason the student did not receive a score)

3.9.3 Reporting Business Requirements

To ensure that MCAS results are processed and reported accurately, the documents detailing analysis and reporting business requirements and data processing specifications are updated to reflect any changes/additions necessary for reporting each year. The processing, analysis, and reporting business requirements are observed in the analyses of the MCAS test data and in reporting results. These requirements also guide data analysts in identifying which students will be excluded from school-, district-, and state-level summary computations. The document drives where quality assurance needs to be focused to ensure accuracy of deliverables. A copy of the Analysis and Reporting Business Requirements document for the 2025 MCAS administration is included in Appendix Q.

3.9.4 Quality Assurance

Quality-assurance measures are implemented throughout the analysis and reporting process at Cognia. The data processors and data analysts perform routine quality-control checks of their computer programs. When data are handed off to different units within the data team, the sending unit verifies that the data are accurate before handoff. Additionally, when a unit receives a data set, the first step is to verify the accuracy of the data. Once new report designs were approved by DESE, reports were run using previous administration data, if available, or mock data to test the application of the analysis and reporting business requirements. The populated reports were then approved by DESE.

Another type of quality-assurance measure used at Cognia is parallel processing. One data analyst is responsible for writing all programs required to populate the student-level and aggregate reporting tables for the administration. Each reporting table is assigned to a second data analyst who uses the analysis and reporting business requirements to independently program the reporting table. The production and quality-assurance tables are compared; when there is 100% agreement, the tables are released for report generation.

The third aspect of quality control involves procedures to check the accuracy of reported data. Using a sample of schools and districts, the quality-assurance group verifies that

the reported information is correct. The selection of sample schools and districts for this purpose is very specific because it can affect the success of the quality-control efforts. Two sets of samples, which may not be mutually exclusive, are selected. The first set includes samples that satisfy the following criteria:

- one-school district
- two-school district
- multi-school district
- private school
- special school (e.g., a charter school)
- small school that does not have enough students to report aggregations
- school with excluded (not tested) students

The second set of samples includes districts or schools that have unique reporting situations that require the implementation of a decision rule. This set is necessary to ensure that each rule is applied correctly.

The quality-assurance group uses a checklist to implement its procedures. Once the checklist is completed, sample reports are circulated for review by psychometric and program management staff. The appropriate sample reports are then sent to DESE for review and signoff.

3.10 MCAS Validity

One purpose of this report is to describe the technical and reporting aspects of the MCAS program that support valid score interpretations. According to the *Standards for Educational and Psychological Testing* (AERA et al., 2014), considering intended uses and interpretations of test results and conformance to these uses are of paramount importance regarding valid score interpretations. These considerations are addressed in this section.

Many sections of this technical report provide evidence of validity, including sections on test design and development, test administration, scoring, scaling and equating, item analysis, reliability, and score reporting. Taken together, these sections provide a comprehensive presentation of validity evidence associated with the MCAS program.

3.10.1 Test Content Validity Evidence

Test content validity demonstrates how well the assessment tasks represent the curriculum and standards for each content area and grade level. Content validity is rooted in the item development process, including how the test blueprints and test items align to the curriculum and standards. All items are developed, edited, administered, reviewed, and scored to represent the expectations from the state curriculum frameworks. This process is described further in sections 3.2, 3.3, and 3.4.

The following are all components of validity evidence based on test content: item alignment with Massachusetts curriculum framework content standards, item bias, sensitivity, and content appropriateness review processes, adherence to the test blueprint, use of multiple item types, use of standardized administration procedures with accommodated options for participation, and appropriate test administration training. As discussed earlier, all MCAS items are aligned to specific Massachusetts curriculum framework content standards and undergo several rounds of review for content fidelity and appropriateness.

A 2017 content alignment study on the MCAS tests, conducted by Boston College researchers under the leadership of Michael Russell found a high degree of content alignment (the *2019 Next-Generation MCAS and MCAS-Alt Technical Report*, Appendix T, contains study details). For mathematics, over 90% of the domains assessed across the grade level tests showed high levels of alignment. For ELA, alignment was also found to be strong across grade levels and domains. When both the items and essay scoring criteria were considered, over 95% of the alignment considerations were deemed adequate. Only two domains, Grade 7 and Grade 8 Reading Informational Text, were identified as candidates for improved alignment. In addition, analyses of the level of agreement among panel members' ratings showed high levels of agreement for most ratings following the consensus process. While the study found a few select opportunities to improve alignment, the results from the analyses provide evidence of strong alignment across most of the tests examined.

3.10.2 Response Process Validity Evidence

DESE ensures that evidence of response process validity is collected and reported for all new MCAS item types used in the assessments. DESE conducted a 2019 study to determine the readiness of grade 10 students and educators in Massachusetts schools to respond to the MCAS items. Two standalone field tests were administered to students in every high school in the state. Data from these standalone field tests were then analyzed to determine both the psychometric properties of the test items and the field tests as well as the response time students took to successfully respond to the test.

Student response time data were used to filter out the results of students who did not spend sufficient time on their answers. The data from the remaining motivated students were used to examine item discrimination and ensure that new scoring rubrics were keyed correctly. Test forms were then developed from these sampled results.

3.10.3 Internal Structure Validity Evidence

Evidence of test validity based on internal structure is presented in detail in the discussions of item analyses, reliability, and scaling and linking in sections 3.6 through 3.8. Technical characteristics of the internal structure of the assessments are presented in terms of classical item statistics (item difficulty, item-test correlation), DIF analyses, dimensionality analyses, reliability, SEM, and IRT parameters and procedures. In general, item difficulty and discrimination indices were within acceptable and expected ranges. Very few items were answered correctly at near-chance or near-perfect rates. Similarly, the positive discrimination indices indicate that most items were assessing consistent constructs, and students who performed well on individual items tended to perform well overall.

Furthermore, to evaluate whether different reporting categories constitute statistically different dimensions, an item-level confirmatory factor analysis (CFA) was conducted to assess the internal structure of the MCAS ELA and mathematics assessments in grade 10 from the 2018–19 administration. The CFA model for each test was specified such that the number of factors equaled the number of reporting categories, and each item loaded onto the factor that corresponded to the reporting category to which the given item contributed. The results showed very high correlations between different factors, suggesting that there is very little unique variance among the given set of reporting categories. In other words, different reporting categories are essentially measuring the same thing. These results are highly consistent with the unidimensionality results from

the DIMTEST and DETECT analyses, as well as the previous CFA analyses conducted on MCAS ELA and mathematics assessments in grades 3–8 in 2017–18. Although the CFA analysis suggested unidimensionality among different reporting categories, the high and positive factor loadings do suggest the items provide good measurement for each reporting category. Unidimensionality, meaning items from one reporting category correlate highly to other reporting categories, can be evidence that students have learned different content areas within each subject in an integrated fashion.

3.10.4 Validity Evidence in Relationship to Other Variables

DESE continues collecting evidence to evaluate the extent to which the MCAS assessments measure “student readiness for the next level” of schooling, such as readiness for the next grade level, or readiness for postsecondary education. In 2019, DESE conducted concurrent validity studies. The studies compared student results on the MCAS tests to course grades and course-taking in middle school and high school. Specifically, the relationships among MCAS results and student course grades in the respective subjects (in ELA and mathematics) showed that MCAS results were more strongly associated with course grades than other covariates tested, including course level, economic disadvantage, being on an IEP, or being an English learner. In mathematics in grades 8 and 10, MCAS achievement levels were significantly associated with taking advanced mathematics courses. Convergent validity evidence was also reported between MCAS test portions and subjects.

3.10.5 Efforts to Support the Valid Use of MCAS Data

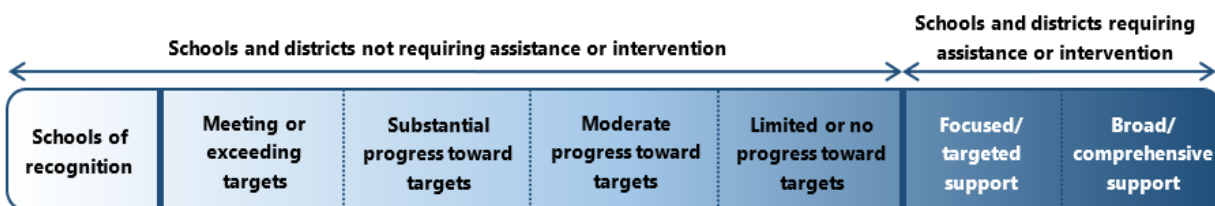
DESE takes many steps to support the intended uses of MCAS data, as listed in section 2.3 of this report. This section examines some of the reporting systems and policies designed to address each use.

Use 1: Determining school and district progress toward the goals set by the state and federal accountability systems.

In 2018, DESE updated its accountability plan to conform to state and federal requirements. Measures of student achievement and growth are prominently featured alongside other indicators in the new school and district accountability system. Each school’s performance on all measures is compared to its targets and to the performance of other schools in the state. The system includes incentives designed to focus schools on their lowest-performing students from prior years.

In the system, schools are placed into categories that describe their performance relative to state goals. As shown in Figure 3-3, the categories reflect how much assistance or intervention each school requires under the system. School and district accountability report cards are publicly available on the DESE website.

Figure 3-3. School Categories in Massachusetts Accountability System



Students with significant cognitive disabilities who are unable to take the MCAS exams even when accommodations are provided can participate in the MCAS-Alt, which requires that students submit an MCAS-Alt Skills Survey as well as a collection of work samples and other documentation that demonstrates their proficiency on the state standards. Technical information on the MCAS-Alt is presented in Chapter 4 of this report.

Use 2: Providing information to support program evaluation at the school and district levels.

Use 3: Providing transparency into student performance through comprehensive reporting on the results of individual students, schools, districts, and the state.

Each year, student-level data from each test administration are shared with parents/guardians and school and district stakeholders in personalized ISRs. The current versions of these reports (samples are provided in Appendix P) were designed with input from groups of parents. These reports contain scaled scores and achievement levels from the current year and prior years, as well as norm-referenced student growth percentiles, which calculate how a student's current score compares to that of students who scored similarly on the prior one or two tests in that subject. They also contain item-level data broken down by standard. The reports include links that allow parents and guardians to access the released test items on the DESE website.

DESE's secure data warehouse, Edwin Analytics, provides users with more than 150 customizable reports that feature achievement data and student demographics geared toward educators at the classroom, school, and district levels. All reports can be filtered by year, grade, subject, and student demographic group. In addition, Edwin Analytics gives users the capacity to generate their own reports, with user-selected variables and statistics. These reports can help educators review classroom and school patterns, reflect on practice from last year, and plan for incoming classes based on previous performance. DESE monitors trends in report usage in Edwin Analytics. Between June and November (the peak reporting season for MCAS), over one million reports are run in Edwin Analytics, with approximately 400,000 reports generated in August when schools review their preliminary assessment results in preparation for the return to school.

Examples of two of the most popular reports are provided on the following pages. The MCAS School Results by Standards report, shown in Figure 3-4, indicates the mean percentage of possible points earned by students in the school, the district, and the state on MCAS items assessing particular standards/topics. The reporting of total possible points provides educators with a sense of how reliable the statistics are, based on the number of test items/test points. The School/State Diff column allows educators to compare their school or district results to the state results. Filters provide educators with the capacity to compare student results across nine demographic categories, which include gender, race/ethnicity, low-income status, and special education status.

The MCAS Growth Distribution report, shown in Figure 3-5, presents the distribution of students by student growth percentile band across years. For each year, the report also shows the median student growth percentile and the percentage of students scoring Meeting or Exceeding Expectations. Teachers, schools, and districts use this report to monitor student growth from year to year. As in the report above, all demographic filters can be applied to examine results within student groups.

Figure 3-4. Example of School Results by Standards Report—Mathematics, Grade 7



CU306 Spring 2025 MCAS District and School Results by Standards
Mathematics All Students

District: Amesbury (00070000)
School: Amesbury Middle (00070013)
Grade: Grade 7

[Contact Us](#)

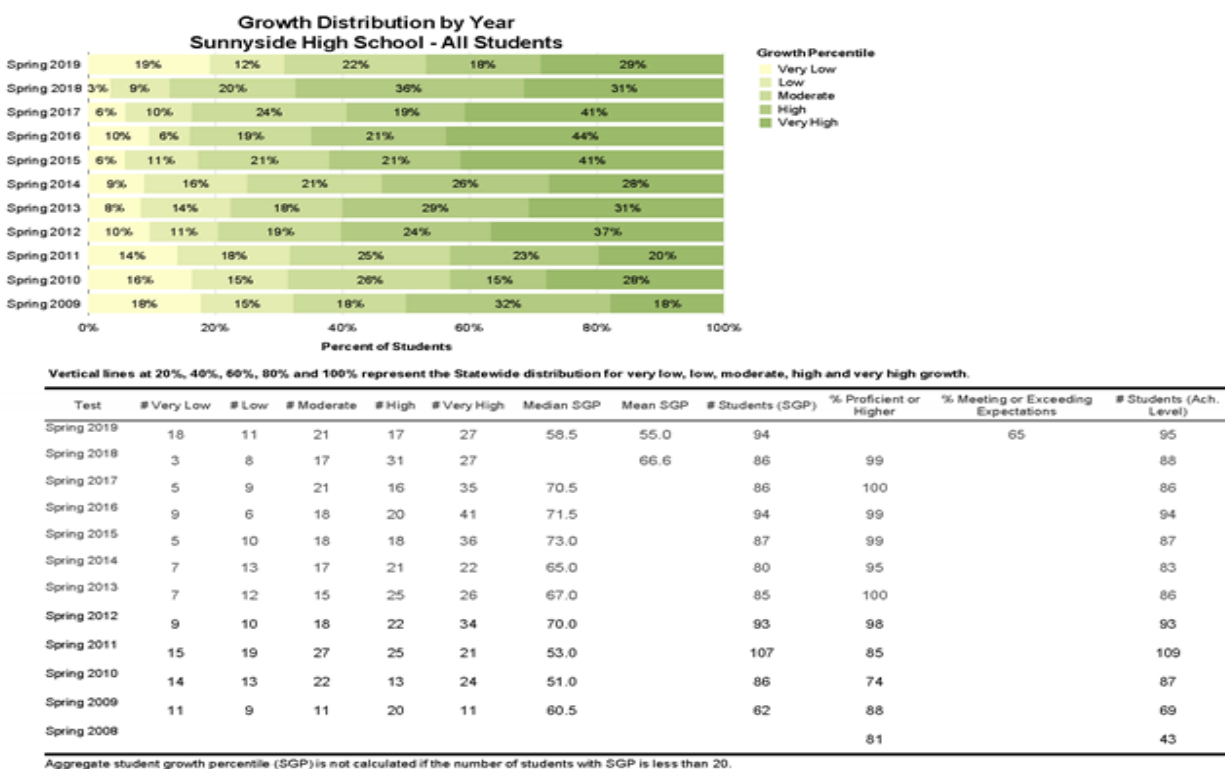
All Students (127)

Standards: MA 2017 Standards

	Possible Points	School % Possible Points	District % Possible Points	State % Possible Points	School/State Diff
Mathematics					
All items	54	40%	39%	44%	-4
Question Type					
Constructed Response	16	32%	31%	39%	-6
Short Answer	7	42%	41%	44%	-2
Selected Response	31	43%	42%	47%	-4
Domain / Cluster					
Expressions and Equations	13	35%	34%	38%	-3
Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	8	31%	30%	36%	-6
Use properties of operations to generate equivalent expressions.	5	42%	40%	41%	0
Geometry	8	29%	29%	38%	-9
Draw, construct, and describe geometrical figures and describe the relationships between them.	6	21%	20%	31%	-11
Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	2	56%	55%	60%	-4
Ratios and Proportional Relationships	11	54%	52%	53%	1
Analyze proportional relationships and use them to solve real-world and mathematical problems.	11	54%	52%	53%	1
Statistics and Probability	11	39%	38%	48%	-9
Draw informal comparative inferences about two populations.	2	30%	30%	40%	-10
Investigate chance processes and develop, use, and evaluate probability models.	7	40%	39%	48%	-8
Use random sampling to draw inferences about a population.	2	45%	45%	55%	-10
The Number System	11	40%	39%	43%	-3
Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	11	40%	39%	43%	-3

Note: MCAS results are suppressed for group counts less than 10 and school results only include students enrolled in the school since October 1.

Figure 3-5. Example of Growth Distribution Report—ELA, Grade 10



Aggregated assessment data in Edwin Analytics are also available on the DESE public website through the school and district profiles at profiles.doe.mass.edu. In both locations, stakeholders can select links to view released assessment items, the educational standards they assess, and the rubrics and model student work at each score point. The public is also able to view each school's progress toward the performance goals set by the state and federal accountability system.

The high-level summary provided in this section documents DESE's efforts to promote uses of state data that enhance student, educator, and LEA outcomes while reducing less-beneficial unintended uses of the data. Collectively, this evidence documents DESE's efforts to support the use of MCAS results by parents, educators, and leaders in addition to the use of MCAS results as a component of school accountability.

Chapter 4. MCAS Alternate Assessment (MCAS-Alt)

4.1 MCAS-Alt Overview

4.1.1 Background

This chapter presents evidence in support of the technical quality of the MCAS Alternate Assessment (MCAS-Alt) and documents the procedures used to conduct, score, and report student results on MCAS-Alt student assessments. These procedures have been implemented to ensure, to the extent possible, the validity of score interpretations based on the MCAS-Alt. While flexibility is built into the MCAS-Alt to allow educators to customize academic goals at an appropriate level of challenge for each student, the procedures described in this report are also intended to constrain unwanted variability wherever possible.

For each phase of the alternate assessment process, this chapter includes a separate section that documents how the assessment evaluates the knowledge and skills of students with the most significant cognitive disabilities to grade-level content standards that are significantly less complex in depth and in breadth. Together, these sections provide a basis for the validity of the results.

This chapter is intended primarily for a technical audience and requires highly specialized knowledge and an understanding of measurement concepts. However, educators, parents/guardians, and the public will also be interested in how the assessments both inform and emerge from daily classroom instruction.

4.1.2 Purposes of the Assessment System

MCAS is the state's program of student academic assessment, implemented in response to the Massachusetts Education Reform Act of 1993. Statewide assessments, along with other components of education reform, are designed to strengthen public education in Massachusetts and to ensure that all students receive challenging instruction based on the standards in the Massachusetts curriculum frameworks. The law requires that the curriculum of all students whose education is publicly funded, including students with disabilities, be aligned with state standards. MCAS is designed to improve teaching and learning by reporting detailed results to districts, schools, and parents/guardians; and to serve as the basis, with other indicators, for school and district accountability. Only students with the most significant cognitive disabilities that are designated by their Individualized Education Program (IEP) team may participate in the MCAS-Alt.

The Every Student Succeeds Act (ESSA) requires that states with alternate assessments adopt a definition of students with the most significant cognitive disabilities and that only those students that meet this definition may participate in a state's alternate assessment. Through stakeholder meetings, collaboration with special education leaders and educational advocates, and consultation with other state education agencies, DESE developed the following definition.

Massachusetts defines students with the most significant cognitive disabilities as students who demonstrate all four of the following criteria:

1. have cognitive disabilities evidenced by significant delays in attaining age-level academic achievement standards, even with systematic, extensive individually designed instruction, related services, and modifications; and
2. have cognitive disabilities that significantly impact their educational performance and ability to apply learning from one setting to another; and
3. require extensive, direct individualized instruction and substantial support to achieve measurable gains on the challenging State academic content standards for the grade in which the student is enrolled; and
4. perform significantly below average in general cognitive functioning and adaptive behavior. This is defined as a student functioning two or more standard deviations below the mean on commonly accepted norm-referenced assessments in both cognitive functioning and adaptive behavior (e.g., two or more adaptive skill areas such as daily living skills, communication, self-care, social skills, and academic skills).

The MCAS-Alt is intended to do the following:

- document students' achievement and progress in learning the skills, knowledge, and concepts outlined in the state's alternate academic curriculum frameworks
- determine whether students with the most significant cognitive disabilities are receiving a program of instruction based on the state's academic learning standards
- determine how much students have learned in the specific areas of the academic curriculum being assessed

The MCAS-Alt was developed between 1998 and 2000 and has been refined and enhanced each year since its initial implementation in the 2000–2001 school year.

4.1.2.1 Rationale

ESSA requires states to include an alternate assessment option for students with the most significant cognitive disabilities. This requirement ensures that those students receive academic instruction based on the state's learning standards, have an opportunity to demonstrate knowledge like their peers on the state assessment, and are included in reporting and accountability. Alternate assessment results provide accurate and detailed feedback that can be used to identify challenging instructional goals for each student. When schools are held accountable for the performance of students with disabilities, these students are more likely to receive consideration when school resources are allocated.

4.1.3 Format

The MCAS-Alt consists of a structured set of evidence collected during instructional activities in each subject to be assessed during the school year, plus a standardized MCAS-Alt Skills Survey that measures the degree to which students have already learned the range of skills covered by a particular strand or domain of the frameworks.

Educators are required to use the results of the skills survey to identify particular standards and levels of complexity at which to begin assessing the student. The MCAS-Alt also includes the student's demographic information, parent/guardian verification and signoff, and a school calendar, all of which are submitted to the state each spring. Preliminary 2025 results were reported to schools in June, with final results provided in September.

4.2 MCAS-Alt Test Design and Development

4.2.1 Test Content and Design

MCAS-Alt assessments are required for all grades and content areas in which standard MCAS tests are administered. In the MCAS-Alt, the range and level of complexity of the standards being assessed have been modified, yet without altering the essential components or meaning of the standards. The MCAS-Alt content areas and strands/domains required for the assessment of students in each grade are listed in Table 4-1.

Table 4-1. MCAS-Alt Requirements in Each Category

Grade	ELA Strands Required	Mathematics Domains Required	STE Strands Required	Civics Strands Required
3	- Language - Reading - Writing	- Operations and Algebraic Thinking - Measurement and Data	N/A	N/A
4	- Language - Reading - Writing	- Operations and Algebraic Thinking - Numbers and Operations – Fractions	N/A	N/A
5	- Language - Reading - Writing	- Number and Operations in Base Ten - Number and Operations – Fractions	For any three of the four STE disciplines,* select one core idea in each discipline and assess six entry points within each core idea.	N/A
6	- Language - Reading - Writing	- Statistics and Probability - The Number System	N/A	N/A
7	- Language - Reading - Writing	- Ratios and Proportional Relationships - Geometry	N/A	N/A
8	- Language - Reading - Writing	- Expressions and Equations - Geometry	For any three of the four STE disciplines,* select one core idea in each discipline and assess six entry points within each core idea.	Civics
10	- Language - Reading - Writing	Any three of the five mathematics conceptual categories: - Functions - Geometry - Statistics and Probability - Number and Quantity - Algebra	Select three core ideas in <u>one</u> of the following disciplines: - Biology - Introductory Physics	N/A

* Earth and Space Science, Life Science, Physical Sciences, Technology/Engineering

4.2.1.1 Access to the Grade-Level Curriculum

Students with the most significant cognitive disabilities are expected to achieve the same standards as their peers without disabilities. However, they may need extensive support to learn the necessary knowledge and skills and are likely to require instruction in smaller segments and at a slower pace. DESE's *Alternate Academic Achievement Standards for the Massachusetts Curriculum Frameworks* (also known as the *Resource Guides*) are intended to assist educators in teaching and assessing appropriately challenging, standards-based academic skills and content aligned with grade-level standards, as required by law.

The *Resource Guides* identify student-centered academic outcomes, called entry points, based on each grade-level content standard. Entry points consist of academic outcomes based on the “essence” of the grade-level content but presented at modified levels of complexity and difficulty. Entry points provide a roadmap for students to make steady progress toward eventually meeting standards at grade-level complexity.

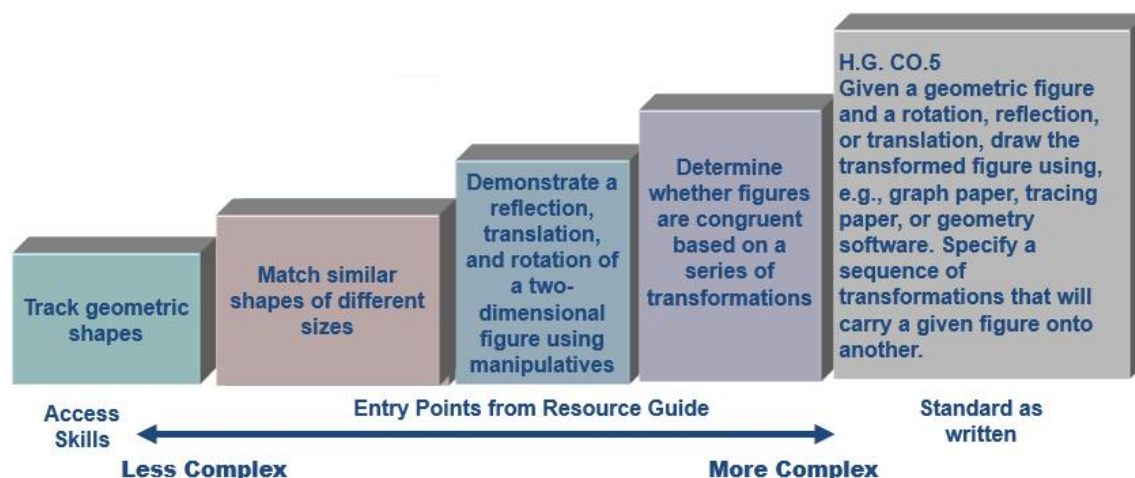
If students with the most significant cognitive abilities cannot yet address entry points even at the lowest levels of complexity and even with the use of instructional accommodations, those students are instructed and assessed on the acquisition of access skills, which describe the communication and motor skills practiced during age-appropriate activities based on the standards. Entry points and access skills are listed in the *Resource Guides* in ELA, mathematics, STE, and civics for every curriculum framework standard.

How Resource Guides Were Developed

After each curriculum framework was developed or subsequently revised, DESE convened panels of experts in each content area to adapt the general education curriculum standards for students with the most significant cognitive disabilities. Panelists included content specialists, assessment experts, special educators familiar with students with the most significant cognitive disabilities, higher education faculty, parents and advocates, and members of the state's contractor team. Panelists for each content area are listed on the acknowledgements page of each *Resource Guide* on the DESE webpage.

Each panel reviewed the standards in their respective content area and identified the main ideas, key skills, and content knowledge contained in each standard. Once panelists agreed upon the content, they determined entry points, standards-based outcomes at successively lower levels of complexity than are typically expected of students who are achieving the grade-level standards as originally written. First, the panels determined entry points at the lowest level of complexity at which a student could address the standard without losing its essence. Then, they determined additional entry points at successively higher levels of complexity so teachers could identify and select the entry point at a challenging and attainable level of complexity appropriate for each student. This continuum of complexity allows educators to progress to higher levels of complexity once lower complexity entry points are mastered by the student. A model of how students who take the MCAS-Alt access the grade-level curriculum using entry points that address the essence of the standard is shown in Figure 4-1.

Figure 4-1. Accessing the Grade-Level Curriculum Using Entry Points (Mathematics Example)



The process of developing the entry points was repeated in each of the content areas and was replicated each time revisions were made to the curriculum frameworks. Subsequently, special educators familiar with students with the most significant cognitive disabilities developed access skills appropriate for students who are unable to address the content and skills at even the lowest level of complexity. Access skills include only motor and communication skills addressed during a standards-based activity in the required strand/domain and are intended for a very small number of students with the most unique, complex, and significant cognitive disabilities. Each Resource Guide lists the standards as written for students in each grade together with entry points and access skills intended for students with the most cognitive disabilities who are designated to participate in the MCAS-Alt.

4.2.1.2 Assessment Design

The MCAS-Alt assessments consist of a completed MCAS-Alt Skills Survey, a collection of primary evidence, supporting documentation, and other required information.

MCAS-Alt Skills Survey

The MCAS-Alt Skills Survey (Appendix R) is a standardized component of the MCAS-Alt that educators must administer to each student before selecting an entry point or access skill in the subject required for assessment. The survey determines a student's current level of academic knowledge, skills, and abilities across a broad range of standards. The results of the skills survey are intended to be used as the basis for selecting an entry point or access skill listed in the *Resource Guide* in each subject scheduled for assessment. The survey is also intended to familiarize teachers with the range of entry points in a strand/domain that are available for the assessment.

The survey lists the important skills in each strand/domain/conceptual category/discipline from least to most complex. The skills represented on each survey were identified in collaboration with content experts as the skills that represent the "knowledge of most worth" within each strand.

To complete the skills survey, teachers may use the sample tasks provided on the survey, design their own tasks, use classroom observations, class assignments, progress reports, or locally administered assessments to determine the degree to which the student can perform each skill listed in the survey. A sample strand from the survey is shown in Table 4-2.

Table 4-2. MCAS-Alt Skills Survey–Reading Sample Strand (Informational or Literary Text)

Based on a literary or informational text read by or to the student, student can:	A 0 Percent (unable)	B Up to 25 Percent (rarely)	C Up to 50 Percent (occasionally)	D Up to 75 Percent (more often than not)	E Up to 100 Percent (almost always)
1. Identify the main character(s) in the text.	N/A	N/A	N/A	N/A	N/A
2. Identify the setting of the text.	N/A	N/A	N/A	N/A	N/A
3. State key details from the text.	N/A	N/A	N/A	N/A	N/A
4. Identify events (or ideas) presented in the text.	N/A	N/A	N/A	N/A	N/A
5. Identify the central (main) idea of the text.	N/A	N/A	N/A	N/A	N/A
6. Explain <i>why</i> or <i>how</i> something occurred in the text.	N/A	N/A	N/A	N/A	N/A
7. Identify and define unknown words in the text; or match words or phrases from the text to their meaning.	N/A	N/A	N/A	N/A	N/A
8. Differentiate between a fact and the author's opinion.	N/A	N/A	N/A	N/A	N/A
9. Describe the author's point of view.	N/A	N/A	N/A	N/A	N/A

A follow-up skills survey, though not required, is recommended after the selected skill has been taught to note the student's progress, especially if the student will attend a different classroom the following year.

Primary Evidence

For the evidence collection portion of the MCAS-Alt, the ELA-language, ELA-reading, and mathematics strands require the inclusion of an instructional data chart (e.g., field data chart, line graph, or bar graph) and two or more pieces of primary evidence in each assessed strand, plus other supporting documentation that shows or describes the student's performance of the targeted skill.

The data chart must indicate the following:

- the student's performance of the targeted skill based on the learning standard being assessed
- tasks performed by the student on at least eight distinct dates, with a brief description of each activity
- percentage of accuracy for each performance
- percentage of independence for each performance
- progress over time, including an indication that the student has attempted a new skill

Two or more pieces of primary evidence must document the student's performance of the same skill or outcome identified on the data chart. Primary evidence may include

- work samples (created by the student or dictated to a scribe using the student's primary mode of communication),
- photographs of one or more classroom activities, and
- audio or video clips of the student performing the targeted activity.

Each piece of primary evidence must clearly show the final product of an instructional activity and be labeled with

- the student's name,
- the date of the activity,
- a brief description of what the student was asked to do and how the task or activity was conducted,
- the percentage of accuracy for the task or activity, and
- the percentage of independence during the task or activity (i.e., the degree to which the student demonstrated knowledge and skills without the use of prompts or cues from the teacher).

The data chart and at least two additional pieces of primary evidence comprise the core set of evidence required in each strand, with the exception of the ELA–Writing strand and STE strands.

The MCAS-Alt for ELA–Writing consists of a skills survey, one baseline writing sample (not included in the student's score), plus three final writing samples in any of three writing types generated using the student's primary mode of communication. Final writing samples are included in the final score.

The MCAS-Alt assessments for STE in grades 5 and 8 and in high school consist of primary evidence in three STE disciplines. Each discipline includes evidence of three entry points within the same core idea. STE evidence consists of the skills survey plus three work samples that integrate the STE content with three of the eight science practices described in the 2016 Massachusetts Curriculum Framework for STE. The STE assessment for high school consists of a skills survey and three different core ideas in one discipline (either biology or introductory physics). Each core idea consists of three work samples documenting three different science practices, one for each summary sheet.

The MCAS-Alt assessment for Civics is administered in grade 8 only and consists of a skills survey; three summary sheets, one for each core idea; and three pieces of student evidence.

A detailed description of the instructions given to educators who are conducting the MCAS-Alt is provided in section 4.3, MCAS-Alt Test Administration.

Supporting Documentation

In addition to the required pieces of primary evidence, supporting documentation may be included at the discretion of the teacher to indicate the context in which the activity was conducted. Supporting documentation may include any of the following:

- photographs showing how the student engaged in the context of the instructional activity

- tools, templates, graphic organizers, or models used by the student
- reflection sheet or evidence of other self-evaluation activities that document the student's self-awareness, perceptions, choices, decision-making, and self-assessment of the work they created and/or the learning that occurred as a result. For example, a student may respond to questions such as these:
 - What did I do? What did I learn?
 - What did I do well? What am I good at?
 - Did I correct my inaccurate responses?
 - How could I do better? Where do I need help?
 - What should I work on next? What would I like to learn?
- work sample description labels providing important information about the activity or work sample

4.2.1.3 Assessment Dimensions (Scoring Rubric Areas)

Trained and qualified scorers examine each piece of evidence in the strand and apply the criteria described in the *Guidelines for Scoring 2025 MCAS-Alt* (Appendix S), using the MCAS-Alt Rubric for Scoring Each Strand, to produce a subscore for the strand based on the following:

- completeness of assessment materials
- level of complexity and alignment with learning standards in the Massachusetts curriculum frameworks in the content area being assessed
- accuracy of the student's responses to questions or performance of specific tasks
- independence demonstrated by the student in responding to questions or performing tasks
- self-evaluation of each task or activity (e.g., reflection, self-correction, goal-setting)
- generalized performance demonstrating the skill in different instructional contexts or using different materials or methods of presentation or response

Each strand is scored in each of five rubric dimensions, further described in section 4.4.3.1. Rubric dimensions and possible scores are as follows:

- Level of Complexity (score range of 1–5)
- Demonstration of Skills and Concepts (M, 1–4)
- Independence (M, 1–4)
- Self-Evaluation (M, 1, 2)
- Generalized Performance (1, 2)

(Note: a score of “M” would signify insufficient evidence or information to generate a numerical score in a dimension.)

Scores in Level of Complexity, Demonstration of Skills and Concepts, and Independence are combined to yield a strand subscore; those subscores are combined, as shown in the Analysis and Reporting Business Requirements (Appendix Q), to yield an overall score in the content area. Students taking alternate assessments based on alternate academic achievement standards (AA-AAAS) receive scores of either Progressing, Emerging, or Awareness.

4.2.2 Test Development

4.2.2.1 Test Specifications

MCAS-Alt Skills Survey

For each strand, educators must complete the MCAS-Alt Skills Survey, indicating the student's performance in a broad range of skills. Educators then use the information in the skills survey to select a targeted skill from the *Resource Guide* in the content area and strand(s) required for assessment. Only those entry points or access skills that the student was unable to perform accurately and independently at least 50% of the time on the MCAS-Alt Skills Survey may be selected for the MCAS-Alt.

Evidence for English Language Arts (Language and Reading Only) and Mathematics Strands

Each portfolio strand must include a data chart documenting the student's performance of the targeted skill being assessed in the required content area (i.e., the percentage of accuracy and independence of each performance). Data are collected on at least eight different dates to determine the degree to which the skill has been mastered. On each date, the data must indicate the percentage of correct versus inaccurate responses given by the student, and whether the student required cues, prompts, or other assistance to respond (i.e., the overall percentage of independent responses by the student). Each data chart must include a brief description of activities conducted on each date and must describe how the activity addressed the measurable outcome being assessed. Data are collected either during routine classroom instruction or during tasks and activities set up specifically to assess the student. The data chart may include performance data from either a single activity or task; or from a series of responses to specific tasks summarized for each date.

In addition to the data chart, each strand must include at least two individual work samples (including photographs, if the evidence is too large, fragile, or temporary in nature) that documents the percentage of accuracy and independence of the student's responses on a given date, based on the measurable outcome that was also documented on the data chart.

The following information must be provided in a work description or on the evidence itself:

- student's name
- date
- content area, strand/domain, and learning standard being assessed
- entry point being assessed during the activity
- a summary of the percent of student's accuracy and independence during the activity
- description of the activity

Evidence for ELA–Writing

The ELA–Writing strand requires a completed MCAS–Alt Skills Survey and at least three writing samples that demonstrate the student’s expressive communication skills, based on any combination of the following text types:

- Opinion (grades 3–5)/Argument (grades 6–8 and 10)
- Informative/Explanatory
- Narrative, including Poetry

In addition to three writing samples, one baseline sample must be submitted, which may include either an outline, completed graphic organizer, or draft of a writing assignment. The baseline sample should provide information to guide additional instruction in writing in that text type. Teachers are also required to pre-score the student’s three final writing samples using a rubric provided by DESE for that purpose. Appendix T contains the Scoring Rubric for ELA–Writing.

Evidence for Science and Technology/Engineering (STE) Strands (Grades 5 & 8)

The format described below is intended to encourage the teaching of units of science based on a core idea, rather than assessing isolated skills. Teachers are directed to complete these steps:

Step 1: Select three of the following STE disciplines:

- Earth and Space Science
- Life Science
- Physical Science
- Technology/Engineering

Step 2: Conduct the STE Skills Survey available to determine the optimal grade-span at which to select entry points for the student. The STE Skills Survey must be conducted once for the entire STE content area, not for each discipline, and must include all eight science practices.

Step 3: Select a core idea within the chosen discipline that is relevant and that engages and challenges the student.

Step 4: Select three entry points or access skills. Three different science practices must be addressed within the selected entry points or access skills. This step encourages teachers to design interrelated activities that address a theme or unit of study.

Step 5: List the following information on each STE Summary Sheet:

- student’s name
- date
- core idea
- entry point addressed during the activity
- numbered science practice for that entry point
- accuracy and independence for each task or response in the activity, and the summary percent
- description of the activity

Step 6: Attach three pieces of primary evidence (i.e., work samples) to their corresponding completed STE Summary Sheet. Photographs and/or videos may be submitted as primary evidence if they are labeled and clearly show the final product of instruction.

Evidence for High School Science Strands

Assessment formats differ depending on the educator's selection of the disciplines described below.

Step 1: Choose Biology or Introductory Physics.

Step 2: Conduct the MCAS-Alt STE Skills Survey to determine the grade-span at which to select entry points in each science practice for the student. Only one skills survey is required for high school biology and introductory physics.

Step 3: Select three core ideas within the chosen discipline from the STE Resource Guide that engage and challenge the student.

For each core idea:

Step 4: Select three entry points or access skills. Three different science practices must be addressed within the selected entry points or access skills. If entry points seem too complex at the grade level of the student, select entry points from earlier grade-level clusters in the same core idea. Use the information in the STE skills survey to assist with selection.

Follow Steps 5 and 6 above for each of the three core ideas.

Evidence for Civics (Grade 8 Only)

New in 2025, students in grade 8 were assessed in civics. The *2018 History and Social Science Framework* emphasizes that students understand their role in a democratic society and its institutions. The eight topics of the framework are grouped into three core ideas to provide educators with a manageable and clear alternate assessment.

- Core Idea A: Foundations and development of the U.S. political system & government
- Core Idea B: Institutions and structures of U.S. government & Massachusetts state and local governments
- Core Idea C: Rights and responsibilities, the U.S. Constitution, news and media literacy

The requirements for completing the alternate assessment in Civics are as follows:

1. Complete one Civics Skills Survey
2. Complete three Civics Summary Sheets (one for each Core Idea, A, B, and C). Each Civics Summary Sheet includes:
 - entry point/access skill
 - student evidence that documents the entry point/access skill
 - accuracy and independence percentages

4.3 MCAS-Alt Test Administration

4.3.1 Preparing the MCAS-Alt for Submission

The student's MCAS-Alt must include all elements listed below. Required forms can either be found in the *2025 Educator's Manual for MCAS-Alt* or completed using the online MCAS-Alt Forms and Graphs program.

- Artistic cover designed and produced by the student and inserted in the front window of the three-ring binder
- MCAS-Alt cover sheet containing important information about the student
- Student's introduction to their MCAS-Alt produced as independently as possible by the student using their primary mode of communication (e.g., written, dictated, or recorded on video or audio) describing "What I want others to know about me as a learner"
- Verification form signed by a parent, guardian, or primary care provider signifying that they have reviewed the student's completed MCAS-Alt materials or, at minimum, were invited to do so. (In the event no signature was obtained, the school must include a record of attempts to invite a parent, guardian, or primary care provider to view the student's completed MCAS-Alt materials.)
- School calendar indicating dates in the current academic year on which the school was in session; the calendar is used to verify the dates specified on the data chart and in other evidence.
- MCAS-Alt Skills Survey completed for each strand/domain/discipline required for assessment
- Strand cover sheet describing the accompanying set of evidence for a particular strand
- Work sample description attached to each piece of primary evidence providing required labeling information. (If work sample description labels are not used, this information must be written directly on each piece.)
- Writing scoring rubric for ELA–Writing only completed by the teacher for each of three final writing samples
- STE Summary Sheet completed by the teacher
- Civics Summary Sheet completed by the teacher

The contents listed above, plus all primary evidence and supporting documentation, comprise the student's MCAS-Alt.

4.3.2 Participation Requirements

4.3.2.1 Identification of Students

All students educated with Massachusetts public funds, including students with disabilities educated inside or outside their home districts, must be engaged in an instructional program guided by the standards in the Massachusetts curriculum frameworks and must participate in statewide assessments that correspond with the grades in which they are reported in SIMS. Students with the most significant cognitive

disabilities who are unable to take the standard MCAS tests, even with accommodations, may take the MCAS-Alt, as determined by the student's IEP team.

4.3.2.2 Participation Guidelines

A student's IEP team determines how the student will participate in MCAS and other state- and district-wide assessments, either by taking the test routinely or with accommodations, or by taking the alternate assessment if the student meets the eligibility definition for a student with the most significant cognitive disabilities. The participation guidelines for students taking the MCAS-Alt are described below and in the participation section of the *Educator's Manual for MCAS-Alt* available on the DESE website. Information on how a student with a disability will participate in state- and district-wide testing must be documented in the student's IEP and revisited on an annual basis.

The Decision-Making Tool for MCAS Participation (Appendix U) is intended for use by IEP teams to make annual decisions regarding appropriate student participation in MCAS. Recent revisions to the tool included the addition of specific criteria (Appendix V) for determining which students may be considered for accommodations when taking the standard MCAS and which are eligible to participate in the MCAS-Alt. IEP teams are strongly encouraged to use the tool to guide the team's discussion and decision-making regarding statewide assessments.

The student's team must consider the following questions each year for each content area scheduled for assessment:

- Can the student demonstrate knowledge and skills, either fully or partially, on the standard MCAS test under routine conditions?
- Can the student demonstrate knowledge and skills, either fully or partially, on the standard MCAS test with accommodations? If so, which accommodations are necessary for the student to participate?
- If the answer to the above questions is no and the student has a significant cognitive disability, review the options below to determine whether the student qualifies to take the alternate assessment (MCAS-Alt). (Note: Alternate assessments are intended only for students with the most significant cognitive disabilities who are unable to take standard MCAS tests, even with accommodations. Students should not be identified for alternate assessments based solely on a particular disability, placement in a specific classroom or program, previous low achievement on the tests, or EL status.)

The student's team must then review the options provided in Figures 4-2 and 4-3.

Figure 4-2. Participation Guidelines—Option 1

Characteristics of Student's Instructional Program and Local Assessment	Recommended Participation in MCAS
<i>If the student is</i> a) generally able to demonstrate knowledge and skills on a computer- or paper-based test, either with or without test accommodations, and is	<i>Then</i> the student should take the computer- or paper-based MCAS test, either with or without accommodations.

Characteristics of Student's Instructional Program and Local Assessment	Recommended Participation in MCAS
b) working on learning standards at, near, or somewhat below grade-level expectations,	

Figure 4-3. Participation Guidelines—Option 2

Characteristics of Student's Instructional Program and Local Assessment	Recommended Participation in MCAS
<i>If the student has a significant cognitive disability and is</i> a) generally unable to demonstrate knowledge and skills on a paper-and-pencil test, even with accommodations; and is b) working on learning standards that have been substantially modified due to the nature and severity of their disability; or is c) receiving intensive, individualized instruction in order to acquire, generalize, and demonstrate knowledge and skills,	<i>Then</i> the student should take the MCAS Alternate Assessment (MCAS-Alt).

4.3.2.3 2025 MCAS-Alt Participation Rates

MCAS-Alt participation rates are provided in the [2025 MCAS-Alt State Summary](#), including the comparative rate of participation in each MCAS assessment format (i.e., routinely tested, tested with accommodations, or alternately assessed), available on the DESE website.

4.3.3 Educator Training

During October 2024, educators and administrators received training on conducting the 2025 MCAS-Alt. Attendees had the option to participate in one of three sessions: an introduction to MCAS-Alt for educators new to the alternate assessment, an update for those with previous MCAS-Alt experience, or an overview for school and district administrators.

Topics for the introduction session included the following:

- decision-making regarding which students should take the MCAS-Alt
- alternate assessment requirements in each grade and content area
- developing measurable outcomes using the *Resource Guide to the Massachusetts Curriculum Frameworks for Students with Disabilities* and collecting data on student performance and progress based on measurable outcomes

Topics for the update session included the following:

- a summary of the previous year
- updates and reminders for 2025
- completing quality alternate assessments
- ensuring appropriate designation of students for MCAS-Alt

Topics for the administrators' overview session included the following:

- MCAS-Alt overview
- MCAS-Alt statewide results from previous year
- who should take the MCAS-Alt
- supporting teachers who conduct the MCAS-Alt, principal's role in MCAS-Alt
- the federally mandated cap on the percentage of students who may be assessed through an alternate assessment based on alternate academic achievement standards

From January to March 2025, educators attended virtual training and in-person review sessions during which they were able to discuss their students' alternate assessments that were under development and have their questions answered by MCAS-Alt training specialists.

4.3.4 Support for Educators

A total of 53 MCAS-Alt training specialists were trained by DESE in the 2024–2025 school year to support teachers conducting the MCAS-Alt in their districts, as well as to assist at DESE-sponsored assessment training and review sessions from January to March 2025. In addition, DESE staff provided ongoing technical assistance throughout the year via email and telephone to educators with specific questions about their students' alternate assessments.

The MCAS Service Center provided toll-free telephone support to district and school staff regarding test administration, reporting, training, materials, and other relevant operations and logistics. The Cognia project management team provided extensive training to the MCAS Service Center staff on the logistical, programmatic, and content-specific aspects of the MCAS-Alt, including web-based applications used by the districts and schools to order materials and schedule shipment pickups. Informative scripts were used by the Service Center coordinator to train Service Center staff in relevant areas such as web support, enrollment inquiries, and discrepancy follow-up and resolution procedures.

4.4 MCAS-Alt Scoring

The MCAS-Alt reflects the degree to which a student has learned and applied the knowledge and skills outlined in the Massachusetts curriculum frameworks. The MCAS-Alt measures progress over time, as well as the highest level of achievement attained by the student on the assessed skills, considering the degree to which cues, prompts, and other assistance were required by the student in learning each skill. Scorers were rigorously trained and qualified based on the criteria outlined in the *Guidelines for Scoring 2025 MCAS-Alt* (Appendix S).

4.4.1 Scoring Logistics

MCAS-Alt assessments were scored in Portsmouth, New Hampshire, from April 8–May 9, 2025. DESE and Cognia trained and closely monitored scorers to ensure that scores were accurate.

Each student's MCAS-Alt was reviewed and scored by trained scorers according to the procedures described in section 4.4.3. Scores were entered into a computer-based scoring system designed by Cognia and DESE, and scores were frequently monitored for accuracy and completeness.

Security was maintained at the scoring site by restricting access to unscored assessments to DESE and Cognia staff, and by locking assessments in a secure location before and after each scoring day.

MCAS-Alt scoring leadership staff included several floor managers (FMs) who monitored the scoring room. Each FM managed a group of tables at the elementary, middle, or secondary level. A Table Leader (TL) was responsible for managing a single table with assigned scorers. Communication and coordination among scorers were maintained through daily meetings between FMs, TLs, and scoring leadership to ensure that critical information and uniform scoring rules were implemented across all grade clusters.

4.4.2 Recruitment, Training, and Qualification of Scoring Personnel

4.4.2.1 Scorer Training Materials

The MCAS-Alt Project Leadership Team (PLT), including DESE and Cognia staff plus four contracted teacher consultants, met daily over the course of scoring in 2025 and periodically throughout the 2024–2025 school year to accomplish the following:

- nominate prospective MCAS-Alt training specialists to serve as scoring specialists for the 2025 scoring institute
- select sample strands to use to train, calibrate, and qualify scorers in 2025
- discuss which recurring issues and concerns to address during the following fall educator training sessions

All sample strands were scored using the *2025 Guidelines for Scoring MCAS-Alt*, noting any scoring concerns or discrepancies that arose during the review. Concerns were resolved by referring to guidelines and requirements in the *2025 Educator's Manual for MCAS-Alt* and by following additional scoring rules agreed upon by the PLT.

Of the alternate assessments reviewed the previous year, several sample strands were set aside as possible exemplars to train, qualify, and calibrate scorers for the current year. These strands consisted of solid examples of each score point on the scoring rubric.

Each of these samples was scored by all four MCAS-Alt teacher consultants. Of the scores, only scores in exact agreement in all five scoring dimensions—Level of Complexity, Demonstration of Skills and Concepts, Independence, Self-Evaluation, and Generalized Performance—were considered as possible exemplars.

4.4.2.2 Recruitment

Through multiple hiring agencies, Cognia recruited prospective scorers and TLs for the MCAS-Alt Scoring Center. All TLs and many scorers had previously worked on scoring projects for other states' test or alternate assessment administrations, and all had four-year college degrees.

Additionally, the PLT recruited MCAS-Alt training specialists, many of whom had previously served as scoring specialists, to assist DESE and Cognia. Eight MCAS-Alt training specialists were selected to participate in scoring and were designated as scoring specialists to assist in verifying that scores of "M" (indicating that evidence was missing or insufficient to determine a score) were accurate, and in the training/retraining of TLs.

4.4.2.3 Training

Scorers

Scorers were trained in all rubric dimensions. Scorers reviewed scoring rules and participated in the mock scoring of numerous sample strands selected to illustrate examples of each rubric score point. Scorers were given detailed instructions on how to review data charts and other primary evidence to tally the rubric area scores using an automated, customized computer program called AltScore. Trainers facilitated discussions and review among scorers to clarify the rationale for each score point and describe special scoring scenarios and exceptions to the general scoring rules.

Table Leaders and Floor Managers

In addition to the training received by scorers, TLs and FMs received training in logistical, managerial, and security procedures, as well as maintaining the accuracy, reliability, and consistency of scorers at tables under their supervision.

4.4.2.4 Qualification of Scorers

Before scoring actual student assessments, each potential scorer was required to take a qualifying assessment consisting of eight sample strands that contained a total of 178 score points. The threshold percentage for qualification on the 178 available score points was 85%.

Scorers

Scorers who did not achieve the required percentages were retrained using another qualifying assessment. Those who achieved the required percentages were authorized to begin scoring student assessments. If a scorer did not meet the required accuracy rate on the second qualifying assessment, they were released from scoring. Following the 2025 training session, 2 of 48 scorers were unable to qualify on their first attempt. These individuals were retrained and were able to qualify after passing a subsequent qualifying assessment.

Table Leaders and Floor Managers

TLs and FMs were qualified by DESE using the same methods and criteria used to qualify scorers, except that they were required to achieve a score of 90% correct or higher on the qualifying test. All 6 TLs and 4 FMs qualified on their first attempt following the training session.

4.4.3 Scoring Methodology

A scoring rubric was developed in which three of five categories are based on student performance; two reflect the effectiveness of the student's program; and one on whether the evidence submitted was sufficient in scope and quantity to allow a score to be determined.

- Completeness: whether the submitted evidence was sufficient to allow a score to be determined
- Level of Complexity: the relative difficulty of academic tasks and knowledge attempted by the student (counts toward the final overall score)
- Demonstration of Skills and Concepts: the accuracy of the student's performance (counts toward the final overall score)
- Independence: cues, prompts, and other assistance provided to the student during tasks and activities being assessed (counts toward the final overall score)
- Self-Evaluation: the extent to which opportunities were provided for the student to evaluate, reflect upon, self-correct, set goals, and select examples of the student's own performance (context of the instruction; not counted toward the final overall score)
- Generalized Performance: the number of contexts and instructional approaches provided to and used by the student to perform tasks and demonstrate knowledge and skills (program quality; not counted toward the final overall score)

4.4.3.1 Scoring English Language Arts (except ELA–Writing) and Mathematics

Guided by a TL, scorers at each table reviewed and scored assessments from the same grade. Scorers were permitted to ask TLs questions as they reviewed assessments. In the event a TL could not answer a question, the FM assisted. In the event the FM was unable to answer a question, DESE staff members were available to provide clarification.

Scorers were randomly assigned an assessment to score by their TL. Scorers were required to ensure that the required strands for each grade were submitted and then to determine if each submitted strand was complete. A strand was considered complete if it included a data chart with at least eight different dates related to the same measurable outcome, and two additional pieces of evidence based on the same outcome.

Once the completeness of the assessment was verified, including the submission of a completed MCAS-Alt Skills Survey, each strand was scored in the following dimensions:

- A. Level of Complexity (LOC)
- B. Completeness
- C. Demonstration of Skills and Concepts (DSC)
- D. Independence (Ind)
- E. Self-Evaluation (S-E)
- F. Generalized Performance (GP)

The 2025 MCAS-Alt score distributions for all scoring dimensions are provided in Appendix I.

Scorers used the AltScore scoring program to score MCAS-Alt assessments. Scorers were guided through the scoring process by answering a series of yes/no and fill-in-the-blank questions onscreen, which were used by the program to calculate the correct score and provide scorer comments to the school submitting the assessment. Use of the computer-based scoring application allowed scorers to 1) focus exclusively and sequentially on each assessment product and record the necessary information, rather than keeping track of products they had previously reviewed; and 2) automatically calculate the scores.

A. Level of Complexity

The score for Level of Complexity reflects at what level of difficulty (i.e., complexity) the student addressed curriculum framework learning standards and whether the measurable outcomes were aligned with assessment requirements and with descriptions of the activities documented in the assessment products. Using the *Resource Guide*, scorers determined whether the student's measurable outcomes were aligned with the intended learning standard, and if so, whether the evidence was addressed at grade-level performance expectations, was modified below grade-level expectations (entry points), or was addressed through skills in the context of an academic instructional activity (access skills).

Each strand was given a Level of Complexity score based on the scoring rubric for Level of Complexity (Table 4-3) that incorporated the criteria listed above.

Table 4-3. Scoring Rubric for Level of Complexity by Score Point

1	2	3	4	5
The strand reflects little or no basis in, or is unmatched to, curriculum framework learning standard(s) required for assessment.	Student primarily addresses social, motor, and communication "access skills" during instruction based on curriculum framework learning standards in this strand.	Student addresses curriculum framework learning standards that have been modified below grade-level expectations in this strand.	Student addresses a narrow sample of curriculum framework learning standards (one or two) at grade-level expectations in this strand.	Student addresses a broad range of curriculum framework learning standards (three or more) at grade-level expectations in this strand.

B. Completeness

Scorers confirmed that a “core set of evidence” was submitted and that all evidence was correctly labeled with the following information:

- the student's name
- the date of performance
- a brief description of the activity
- the percentage of accuracy
- the percentage of independence

If evidence was not labeled correctly, or if pieces of evidence did not address the measurable outcome stated on the strand cover sheet or work description, that evidence was not scorable.

Brief descriptions of each activity on the data chart were also considered in determining the completeness of a data chart. Educators had been instructed during educator training workshops and in the *2025 Educator's Manual for MCAS-Alt* that “each data chart must include a brief description beneath each data point that clearly illustrates how the task or activity relates to the measurable outcome being assessed.” One- or two-word descriptions were not likely to be considered sufficient to document the relationship between the activity and the measurable outcome and therefore would result in the exclusion of those data points from being scored.

A score of M (i.e., evidence was missing or was insufficient to determine a score) was given in both Demonstration of Skills and Concepts and Independence if

- a completed data chart documenting the student's performance of the same skill on at least eight dates was not submitted; and/or
- at least two pieces of scorable primary evidence were not submitted.

A score of M was also given if any of the following was true:

- A completed MCAS-Alt Skills Survey was not submitted for the strand.
- The data chart listed the percentages of both accuracy and independence at or above 80% at the beginning of the data collection period, indicating that the student was not learning a challenging new skill in the strand and was instead addressing a skill they had already learned.
- The data chart did not document the measurable outcome on at least eight different dates; the measurable outcome was not based on a required learning standard or strand; and/or the evidence did not indicate the student's accuracy and independence on each task or trial.
- Two additional pieces of primary evidence did not address the same measurable outcome as the data chart or were not labeled with all required information.

C. Demonstration of Skills and Concepts

Each strand is given a score for Demonstration of Skills and Concepts based on the degree to which a student gave correct (accurate) responses in demonstrating the targeted skill.

If a “core set of evidence” was submitted in a strand, it was scored for Demonstration of Skills and Concepts by first identifying the “final-1/3 time frame” during which data were collected on the data chart (or the final three data points on the chart, if fewer than 12 points were listed). Then, an average percentage was calculated based on the percentage of accuracy for

- all data points in the final-1/3 time frame listed on the data chart, and
- all other primary evidence in the strand produced during or after the final-1/3 time frame (provided the piece was not already included and counted on the chart).

Based on the average percentage of accuracy in the data points and evidence in the final-1/3 time frame, the overall score in the strand was determined using the rubric shown in Table 4-4.

Table 4-4. Scoring Rubric for Demonstration of Skills and Concepts by Score Point

M	1	2	3	4
The strand contains insufficient information to determine a score.	Student's performance is primarily inaccurate and demonstrates minimal understanding in this strand. (0%–25% accurate)	Student's performance is limited and inconsistent with regard to accuracy and demonstrates limited understanding in this strand. (26%–50% accurate)	Student's performance is mostly accurate and demonstrates some understanding in this strand. (51%–75% accurate)	Student's performance is accurate and is of consistently high quality in this strand. (76%–100% accurate)

D. Independence

The score for Independence reflects the degree to which the student responded without cues or prompts during tasks or activities based on the measurable outcome being assessed. For strands that included a core set of evidence, Independence was scored by identifying the final-1/3 time frame listed on the data chart (or the final three data points, if fewer than 12 points were listed). Then, an average percentage was calculated based on the percentage of independence for

- all data points during the final-1/3 time frame listed on the data chart, and
- all other primary evidence in the strand produced during or after the final-1/3 time frame (provided the piece was not already included on the chart).

Based on the average percentage of Independence of the data points and evidence in the final-1/3 time frame, the overall score in the strand was determined using the rubric shown in Table 4-5.

A score of M was given both in Demonstration of Skills and Concepts and in Independence if any of the following was true:

- At least two pieces of scorable primary evidence and a completed data chart documenting the student's performance of the same skill were not submitted.

- The data chart listed the percentages of both accuracy and independence at or above 80% at the beginning of the data collection period, indicating that the student did not learn a challenging new skill in the strand and was addressing a skill they had already learned.
- The data chart did not document a single measurable outcome based on the required learning standard or strand on at least eight different dates, and/or did not indicate the student's accuracy and independence on each task or activity.
- Two additional pieces of primary evidence did not address the same measurable outcome as the data chart or were not labeled with all required information.

Table 4-5. Scoring Rubric for Independence by Score Point

M	1	2	3	4
The strand contains insufficient information to determine a score.	Student requires extensive verbal, visual, and/or physical assistance to demonstrate skills and concepts in this strand. (0%–25% independent)	Student requires frequent verbal, visual, and/or physical assistance to demonstrate skills and concepts in this strand. (26%–50% independent)	Student requires some verbal, visual, and/or physical assistance to demonstrate skills and concepts in this strand. (51%–75% independent)	Student requires minimal verbal, visual, and/or physical assistance to demonstrate skills and concepts in this strand. (76%–100% independent)

E. Self-Evaluation

The score for Self-Evaluation indicates the frequency of activities in the strand that involve self-correction, task-monitoring, goal-setting, reflection, and overall awareness by the student of their own learning. Each strand was given a score of M, 1, or 2 based on the scoring rubric shown in Table 4-6.

Table 4-6. Scoring Rubric for Self-Evaluation, Individual Strand Score by Score Point

M	1	2
Evidence of self-correction, task-monitoring, goal-setting, and reflection was not found in this strand.	Student infrequently self-corrects, monitors, sets goals, and reflects in this content area—only one example of self-evaluation was found in this strand.	Student frequently self-corrects, monitors, sets goals, and reflects in this content area—multiple examples of self-evaluation were found in this strand.

F. Generalized Performance

The score for Generalized Performance reflects the number of contexts and instructional approaches used by the student to demonstrate knowledge and skills in the strand. Each strand was given a score of either 1 or 2 based on the rubric shown in Table 4-7.

Table 4-7. Scoring Rubric for Generalized Performance by Score Point

1	2
Student demonstrates knowledge and skills in one context or uses one approach and/or method of response and participation in this strand.	Student demonstrates knowledge and skills in multiple contexts or uses multiple approaches and/or methods of response and participation in this strand.

4.4.3.2 Scoring ELA–Writing

Prior to submission, teachers were asked to pre-score each of their student’s three final writing samples using the state-provided Writing Scoring Rubric in Appendix T, according to the appropriate text type:

- Opinions/Arguments
- Informative/Explanatory texts
- Narrative (including Poetry)

MCAS-Alt scorers verified that the MCAS-Alt Skill Survey for the strand was complete and that the scores submitted by the teacher were based on the writing sample generated by the student, not on any text generated by the teacher. The rubric scores were lowered by scorers in cases where writing rubric scores did not accurately reflect the student’s own work.

Writing samples were to be produced as independently as possible by the student. If teachers provided text for the student or applied their own revisions to the student’s work, that must have been reflected in the rubric scores, particularly in the area of Independence. Teachers were expected to explain how edits and revisions were made and indicate how the student contributed to the creation of the sample.

Writing samples were required to be produced using the student’s primary mode of communication; for example, dictated to a scribe, with the scribe assuming the use of capital letters and basic punctuation. Teachers were permitted to submit a student’s constructed response to reading comprehension questions or other topics as the basis for their writing samples, even if those responses were already included in the evidence compiled for another strand.

4.4.3.3 Scoring Science and Technology/Engineering

For STE in grades 5 and 8, teachers selected any three of the following STE disciplines:

- Earth and Space Science
- Life Science
- Physical Science
- Technology/Engineering

Teachers were required to create one STE strand within each of the three selected disciplines, each based on a different learning standard and core idea.

For high school STE, teachers selected either biology or introductory physics. Teachers were required to create three strands within the selected discipline, each based on a different learning standard and core idea.

For each strand submitted, the scorer confirmed the following using the AltScore program:

- One MCAS-Alt STE Skills Survey was submitted for the entire content area.
- The student's name, valid date, % of accuracy, and % independence were listed on at least three STE Summary Sheets.
- The activities on the three STE Summary Sheets reflected the same core idea.
- Three different science practices were represented from the selected entry points or access skills.
- At least three STE Summary Sheets had primary evidence attached.

After verifying the above, the scorer used the AltScore program to rate complexity, accuracy, independence, and self-evaluation for the three STE Summary Sheets.

4.4.3.4 Scoring Civics

The requirements for Civics (grade 8 only) included submitting one strand comprised of three different Civics Core Ideas.

For each strand submitted, the scorer confirmed the following using the AltScore program:

1. One MCAS-Alt Civics Skills Survey was submitted.
2. The student's name, valid date, % of accuracy, and % independence were listed on at least three Civics Summary Sheets.
3. Three Civics Summary Sheets were completed with one submission each for Civics Core Idea A, Core Idea B, and Core Idea C.
4. Each Civics Summary Sheet had primary evidence attached that aligned with the selected skill from the Resource Guide.

After verifying the above, the scorer used the AltScore program to rate complexity, accuracy, independence, and self-evaluation for the three Civics Summary Sheets.

4.4.3.5 Monitoring Scoring Quality

The FM oversaw the general workflow in the scoring room and monitored overall scoring consistency and accuracy, particularly among TLs. The TLs ensured that scorers at their table were consistent and accurate in their scoring. Scoring consistency and accuracy were maintained using two methods: double-blind scoring and resolution (i.e., read-behind) scoring.

4.4.3.6 Double-Blind Scoring

In double-blind scoring, two scorers independently score a response, without knowing either the identity of the other scorer or the score that was assigned. Neither scorer knows how responses will be (or have already been) scored by another randomly selected scorer. For each scored assessment, at least one was double-scored for each

scorer each morning and afternoon or, at minimum, every fifth assessment each day (i.e., 20% of the total scored by a scorer).

Scorers were required to maintain a scoring accuracy rate of at least 80% exact agreement with the TL's score. The TL would monitor and retrain any scorer whose inter-rater consistency fell below 80% agreement by reviewing discrepant scores with the responsible scorers and determining when or if they might resume scoring. Throughout the 2025 session, no scorer had an overall inter-rater consistency rate fall below the 80% threshold to require TL intervention.

Table 4-11 in section 4.7.3 shows the percentages of inter-rater agreement for the 2025 MCAS-Alt.

4.4.3.7 Resolution Scoring

Resolution scoring refers to the rescoring of an assessment by a TL and a comparison of the TL's score with the score assigned by the previous scorer. If there was exact score agreement, the first score was retained as the score of record. If the scores differed, the TL's score became the score of record.

Resolution scoring was conducted on all assessments during the first full day of scoring. After that, a rescoring was performed at least once each morning, once each afternoon, and on every fifth subsequent assessment per scorer.

The required rate of agreement between a scorer and the TL's score was 80% exact agreement. A double score was performed on each subsequent assessment for any scorer whose previous scores fell below 80% exact agreement and who resumed scoring after being retrained, until 80% exact agreement with the TL's scores was established.

4.4.3.8 Tracking Scorer Performance

A real-time, cumulative data record was maintained digitally for each scorer. Each scorer's data record showed the number of strands and complete assessments scored, plus their inter-rater consistency in each rubric dimension.

In addition to maintaining a record of scorers' accuracy and consistency over time, leadership also monitored scorers for output, with slower scorers remediated to increase their production. The overall ratings were used to enhance the efficiency, accuracy, and productivity of scorers.

4.5 MCAS-Alt Classical Item Analyses

As noted in Brown (1983), "A test is only as good as the items it contains." A complete evaluation of a test's quality must therefore include an evaluation of each item. Both *Standards for Educational and Psychological Testing* (AERA et al., 2014) and the *Code of Fair Testing Practices in Education* (Joint Committee on Testing Practices, 2004) include standards for identifying high-quality items. While the specific statistical criteria identified in these publications were developed primarily for general assessments rather than alternate assessments, the principles and some of the techniques apply to the alternate assessment framework as well. Both qualitative and quantitative analyses are conducted to ensure that the MCAS-Alt meets these standards. Qualitative analyses are

described in earlier sections of this chapter; this section focuses on quantitative evaluations.

Quantitative analyses presented here are based on the statewide administration of the 2025 MCAS-Alt and include three of the five dimension-scores on each task (Level of Complexity, Demonstration of Skills and Concepts, and Independence). Although the other two dimension scores (Self-Evaluation and Generalized Performance) are reported, they do not contribute to a student's overall achievement level; therefore, they are not included in quantitative analyses.

For each MCAS-Alt subject and strand, dimensions are scored polytomously across tasks according to scoring rubrics described previously in this chapter. Specifically, a student can achieve a score of 1, 2, 3, 4, or 5 on the Level of Complexity dimension and a score of M, 1, 2, 3, or 4 for both the Demonstration of Skills and Concepts and the Independence dimensions. Dimensions within subjects and strands are treated as traditional test items, since they capture or represent student performance against the content of interest; therefore, dimension scores for each strand are treated as item scores for the purpose of conducting quantitative analyses.

Statistical evaluations of MCAS-Alt include difficulty and discrimination indices, structural relationships (correlations among the dimensions), and bias and fairness. Item-level classical statistics—item difficulty and discrimination values—are provided in Appendix H. Item-level score distributions for each item (i.e., the percentage of students who received each score point) are provided in Appendix I. Note that the Self-Evaluation and Generalized Performance dimension scores are also included in Appendix I.

4.5.1 Difficulty and Discrimination

As in the MCAS assessment, the traditional measure of difficulty, p -value, was calculated for items on the MCAS-Alt (for more information review section 3.6.1). It is worth mentioning that using norm-referenced criteria such as p -values to evaluate test items is somewhat contradictory to the purpose of a criterion-referenced assessment like the MCAS-Alt. Criterion-referenced assessments are primarily intended to provide evidence of individual student progress relative to a standard rather than provide a comparison of one student's score with other students. In addition, the MCAS-Alt makes use of teacher-designed instructional activities, which serve as a proxy for test items to measure performance. For these reasons, the generally accepted criteria regarding classical item statistics should be cautiously applied to the MCAS-Alt.

The selection of an appropriate criterion total score is crucial to the interpretation of the discrimination index. For the MCAS-Alt, the sum of the three-dimension scores, excluding the item being evaluated, was used as the criterion score. For example, in grade 3 ELA, total test score corresponds to the sum of scores received on the three dimensions included in quantitative analyses (i.e., Level of Complexity, Demonstration of Skills and Concepts, and Independence) across both Language and Reading strands.

The discrimination index used to evaluate MCAS-Alt items was the Pearson product-moment correlation, which has a theoretical range of -1.00 to 1.00.

A summary of item difficulty and item discrimination statistics for each grade and content area is presented in Table 4-8. The mean difficulty values shown in the table

indicate that, overall, students performed well on the items on the MCAS-Alt. In assessments designed for the general population, difficulty values tend to be in the 0.40 to 0.70 range for most items. Because the nature of alternate assessments is different from that of general assessments, and because few guidelines exist as to criteria for interpreting these values for alternate assessments, the values presented in Table 4-8 should be interpreted with caution.

Table 4-8. Summary of Item Difficulty and Discrimination Statistics by Content Area and Grade

Content Area	Grade	Number of Items	p-Value Mean	p-Value Standard Deviation	Discrimination Mean	Discrimination Standard Deviation
ELA	3	9	0.75	0.21	0.42	0.05
ELA	4	9	0.76	0.21	0.40	0.12
ELA	5	9	0.76	0.20	0.43	0.08
ELA	6	9	0.76	0.20	0.39	0.08
ELA	7	9	0.76	0.20	0.39	0.08
ELA	8	9	0.77	0.20	0.39	0.06
ELA	10	9	0.77	0.19	0.39	0.10
Mathematics	3	6	0.82	0.18	0.56	0.13
Mathematics	4	6	0.82	0.18	0.56	0.17
Mathematics	5	6	0.82	0.18	0.59	0.11
Mathematics	6	6	0.82	0.18	0.59	0.11
Mathematics	7	6	0.83	0.18	0.60	0.11
Mathematics	8	6	0.82	0.18	0.58	0.11
Mathematics	10	15	0.83	0.17	0.39	0.13
STE	5	12	0.80	0.17	0.49	0.20
STE	8	12	0.80	0.16	0.40	0.15
Biology	HS	9	0.81	0.17	0.44	0.18
Introductory Physics	HS	9	0.79	0.16	0.45	0.21
Civics	8	3	0.80	0.19	0.54	0.27

4.5.2 Structural Relationships Among Dimensions

By design, the achievement-level classification of the MCAS-Alt is based on three of the five scoring dimensions (Level of Complexity, Demonstration of Skills and Concepts, and Independence). These dimensions were carefully examined by exploring the relationships among student dimension scores with Pearson correlation coefficients. A very low correlation (near zero) would indicate that the dimensions are not related; a low negative correlation (approaching -1.00) indicates that they are inversely related (i.e., that a student with a high score on one dimension had a low score on the other); and a high positive correlation (approaching 1.00) indicates that the information provided by one dimension is similar to that provided by the other dimension. The average correlations among the three dimensions by content area and grade level are shown in Table 4-9.

Table 4-9. Average Correlations Among the Three Scoring Dimensions by Content Area and Grade

Content Area	Grade	Number of Items Per Dimension	Average Correlation Between Comp/Ind	Average Correlation Between Comp/Sk	Average Correlation Between Ind/Sk	Correlation Standard Deviation Comp/Ind	Correlation Standard Deviation Comp/Sk	Correlation Standard Deviation Ind/Sk
ELA	3	3	0.15	0.17	0.10	0.05	0.10	0.07
ELA	4	3	0.09	0.14	0.10	0.04	0.15	0.10
ELA	5	3	0.24	0.17	0.18	0.13	0.13	0.03
ELA	6	3	0.16	0.19	0.11	0.05	0.10	0.08
ELA	7	3	0.15	0.17	0.09	0.04	0.10	0.06
ELA	8	3	0.13	0.17	0.12	0.04	0.12	0.06
ELA	10	3	0.07	0.20	0.11	0.03	0.13	0.07
Mathematics	3	2	0.17	0.11	0.05	0.03	0.01	0.01
Mathematics	4	2	0.14	0.12	0.08	0.01	0.02	0.02
Mathematics	5	2	0.26	0.14	0.10	0.09	0.08	0.02
Mathematics	6	2	0.23	0.15	0.10	0.03	0.01	0.01
Mathematics	7	2	0.22	0.16	0.12	0.01	0.05	0.00
Mathematics	8	2	0.18	0.15	0.08	0.02	0.01	0.00
Mathematics	10	5	0.10	0.14	0.18	0.03	0.07	0.11
STE	5	4	0.16	0.09	-0.03	0.06	0.04	0.03
STE	8	4	0.00	0.16	-0.01	0.09	0.10	0.03
Biology	HS	3	0.06	0.20	-0.01	0.03	0.03	0.04
Introductory Physics	HS	3	-0.06	0.37	-0.06	0.11	0.02	0.08
Civics	8	1	0.05	0.05	-0.02	N/A	N/A	N/A

Comp = Level of Complexity; Sk = Demonstration of Skills and Concepts; Ind = Independence

The average correlations between every two dimensions range from very weak (absolute values between 0.00 and 0.20) to weak (absolute values between 0.20 and 0.40) for all tests. The three dimensions (Level of Complexity, Demonstration of Skills and Concepts, and Independence) are designed to capture related but distinct aspects of student performance that together inform achievement-level classifications, rather than reflect a single, unidimensional construct. As such, low to moderate positive correlations among these dimensions are expected, indicating that they provide complementary, non-redundant information. The observed weak correlations are consistent with this design and support the interpretation that each dimension contributes unique information to the overall score. Note that the correlations are based on small numbers of item scores and small numbers of students and should therefore be interpreted with caution.

4.5.3 Differential Item Functioning

The *Code of Fair Testing Practices in Education* (Joint Committee on Testing Practices, 2004) explicitly states that subgroup differences in performance should be examined when sample sizes permit and that actions should be taken to ensure that differences in performance are because of construct-relevant, rather than irrelevant, factors. *Standards for Educational and Psychological Testing* (AERA et al., 2014) includes similar guidelines.

When appropriate, the standardization differential item functioning (DIF) procedure (Dorans & Kulick, 1986) is employed to evaluate subgroup differences. The standardization DIF procedure is designed to identify items for which subgroups of interest perform differently, beyond the impact of differences in overall achievement. However, because of the small number of students who take the MCAS-Alt, and because those students take different combinations of tasks, it was not possible to conduct DIF analyses. Conducting DIF analyses using groups of fewer than 200 students would result in inflated type I error rates (Yu et al., 2008).

4.5.4 Measuring Intended Cognitive Processes

Appendix W (Summary of MCAS-Alt Score Frequencies) provides the frequency of scores in each strand's rubric area by grade and content area. Since not all grades and content areas will use all strands and scores, some table cells are blank. Although scores tend toward the center of the rubric, this is an expected outcome for the population taking the alternate assessment. There is still the expected frequency of scores at the highest or lowest ends of the rubric when a substantial population has taken the test, indicating that the tests elicit evidence across the full expected range of rubric areas and measure the full range of intended cognitive processes.

4.6 MCAS-Alt Bias/Fairness

Fairness is validated through the assessment development processes, and in the development of the standards themselves, which were thoroughly vetted for bias and sensitivity. The *Resource Guides to the Massachusetts Curriculum Frameworks for Students with Disabilities* provide instructional and assessment strategies for teaching students with disabilities the same learning standards (by grade level) as general education students. The *Resource Guides* are intended to promote access to the general curriculum, as required by law, and to assist educators in planning instruction and assessment for students with the most significant cognitive disabilities. *Resource Guides* were developed by diverse panels of education experts in each content area, including DESE staff, testing contractor staff, higher education faculty, MCAS Assessment Development Committee members, curriculum framework writers, and regular and special educators. Each section was written, reviewed, and validated by these panels to ensure that each modified standard (entry point) embodied the essence of the grade-level learning standard on which it was based and that entry points at varying levels of complexity were aligned with grade-level content standards.

Specific guidelines direct educators to conduct the MCAS-Alt based on academic outcomes in the content area and strand being assessed, while maintaining the flexibility necessary to meet the needs of diverse learners. The requirements for constructing alternate assessments necessitate teaching challenging skills based on grade-level content standards to all students. Thus, all students taking the MCAS-Alt are taught academic skills based on the standards at an appropriate level of complexity.

Issues of fairness are also addressed in the scoring procedures. Scoring procedures hold scorers to high standards of accuracy and consistency, using monitoring methods that include frequent double-scoring, monitoring, and recalibrating to verify and validate assessment scores. These procedures, along with DESE's review of each year's MCAS-Alt results, indicate that the MCAS-Alt is being successfully used for the purposes for which it was intended. Section 4.4 describes in greater detail the scoring rubrics used, selection and training of scorers, and scoring quality-control procedures.

These processes ensure that bias due to differences in how individual scorers award scores is minimized.

4.7 MCAS-Alt Characterizing Errors Associated with Test Scores

As with the classical item statistics presented in section 4.5, three of the five-dimension scores on each task (Level of Complexity, Demonstration of Skills and Concepts, and Independence) were used as the item scores for purposes of calculating reliability estimates. Due to the way in which student scores are awarded, using an overall achievement level rather than a total raw score, it was not possible to run decision accuracy and consistency (DAC) analyses.

4.7.1 MCAS-Alt Overall Reliability

In section 4.5, individual item characteristics of the 2025 MCAS-Alt were presented. Although individual item performance is an important focus for evaluation, a complete evaluation of an assessment must also address the way in which items function together and complement one another. There are several methods of estimating an assessment's reliability. As with the MCAS test, Cronbach's α was used to assess the reliability of the 2025 MCAS-Alt. The formula is as follows:

$$\alpha = \frac{n}{n-1} \left[1 - \frac{\sum_{i=1}^n \sigma_{(Y_i)}^2}{\sigma_x^2} \right]$$

where

i indexes the item,

n is the number of items,

$\sigma_{(Y_i)}^2$ represents individual item variance, and

σ_x^2 represents the total test variance.

Table 4-10 presents Cronbach's α coefficient and raw score standard errors of measurement (SEMs) for each content area and grade.

Table 4-10. Cronbach's Alpha and SEMs by Content Area and Grade

Content Area	Grade	Number of Students	Number of Items Per Dimension	Test Statistic Maximum	Test Statistic Mean	Raw Score Standard Deviation	Raw Score α	Raw Score SEM
ELA	3	886	3	39	27.91	3.55	0.62	2.20
ELA	4	831	3	39	28.38	3.27	0.60	2.06
ELA	5	736	3	39	28.29	3.49	0.65	2.07
ELA	6	807	3	39	28.39	3.39	0.63	2.07
ELA	7	724	3	39	28.42	3.31	0.61	2.07
ELA	8	641	3	39	28.31	3.45	0.62	2.13
ELA	10	678	3	39	28.62	3.25	0.62	2.01
Mathematics	3	773	2	26	20.88	1.60	0.57	1.05
Mathematics	4	710	2	26	20.92	1.64	0.58	1.06

Content Area	Grade	Number of Students	Number of Items Per Dimension	Test Statistic Maximum	Test Statistic Mean	Raw Score Standard Deviation	Raw Score α	Raw Score SEM
Mathematics	5	636	2	26	20.94	1.62	0.62	1.00
Mathematics	6	734	2	26	20.93	1.64	0.60	1.04
Mathematics	7	639	2	26	21.07	1.49	0.62	0.92
Mathematics	8	551	2	26	20.89	1.64	0.59	1.06
Mathematics	10	661	5	39	30.30	3.63	0.83	1.49
STE	5	715	4	39	29.78	3.46	0.75	1.73
STE	8	624	4	39	29.77	3.49	0.72	1.84
Biology	HS	555	3	39	30.22	3.29	0.70	1.81
Introductory Physics*	HS	89	3	39	29.86	3.17	0.65	1.88
Civics	8	643	1	26	10.19	0.97	N/A	N/A

**Due to the small sample size of the tested population, the calculations do not produce meaningful values.*

An alpha coefficient toward the high end (greater than 0.50) is taken to mean that the items are likely measuring very similar knowledge or skills; that is, they complement one another and suggest that the test is a reliable assessment. However, the interpretation of reliability estimate coefficient should consider the characteristics of the testing sample (such as the variability within the sample) and the test (such as the test length). For MCAS-Alt, considering the special population and the short test length, the range of the α coefficient in the 2025 assessments is reasonable.

4.7.2 Student Subgroup and Achievement Level Reliability

The reliability coefficients discussed in the previous section were based on the overall population of students who participated in the 2025 MCAS-Alt. Appendix O presents reliabilities by student subgroups taking MCAS-Alt as well as by MCAS-Alt achievement level. Student subgroups are listed in section 3.8.2. Cronbach's α coefficients were calculated using the formula defined on the previous page, based only on the members of the student subgroup or achievement level; values are calculated only for groups with 10 or more students.

For several reasons, the results documented in this section must be interpreted carefully. First, inherent differences between grades and content areas preclude making valid inferences about the quality of a test based on statistical comparisons with other tests. Second, reliability coefficients are dependent not only on the measurement properties of a test but also on the statistical distribution of the studied subgroup. For example, it is apparent in Appendix O that subgroup sample sizes may vary considerably, which results in natural variation in reliability coefficients. Moreover α , which is a type of correlation coefficient, may be artificially depressed for subgroups with little variability (Draper & Smith, 1998). Third, there is no industry standard to interpret the strength of a reliability coefficient, and this is particularly true when the population of interest is a single subgroup.

Tables O-19 through O-24 in Appendix O show a range of SEM from 0.55–5.51, which is reasonable and relatively stable over each grade and achievement-level category, demonstrating that the precision of the MCAS-Alt is consistent across the full achievement continuum.

Limiting the analyses to individual performance levels reduces the variability for each subgroup when compared to the whole, which likely indicates greater measurement error estimates in comparison to the true measurement error within the group and should be interpreted with caution.

4.7.3 Inter-rater Consistency

Section 4.4 describes the processes that were implemented to monitor the quality of the hand-scoring of student responses. One of these processes was double-blind scoring of at least 20% of student responses in all strands. Results of the double-blind scoring, used during the scoring process to identify scorers who required retraining or other intervention, are presented here as evidence of the reliability of the MCAS-Alt. A third score was required for any score category in which there was not an exact agreement between scorer 1 and scorer 2. A third score was also required as a confirmation score when either scorer 1 and/or scorer 2 provided a score of M for Demonstration of Skills and Concepts and Independence or a score of 1 for Level of Complexity.

A summary of the inter-rater consistency results is presented in Table 4-11. Results are aggregated across the tasks by content area, grade, and number of score categories (five for Level of Complexity and four for Demonstration of Skills and Concepts and Independence). The table shows the number of items, number of score categories, number of included scores, exact agreement percentage, adjacent agreement percentage, the correlation between the first two sets of scores, and the percentage of responses that required a third score. This information is also provided at the item level in Appendix G.

Table 4-11. Summary of Inter-rater Consistency Statistics Aggregated Across Items by Content Area and Grade

Content Area	Grade	Items	Number of Score Categories	Number of Included Scores	Percentage Exact	Percentage Adjacent	Percentage Correlation	Percentage Third Scores
ELA	3	6	4	1,708	98.13	1.81	0.99	3.10
ELA	3	3	5	958	97.91	2.09	0.87	3.03
ELA	4	6	4	3,268	98.23	1.62	0.99	3.55
ELA	4	3	5	1,787	98.38	1.62	0.87	4.09
ELA	5	6	4	1,358	98.23	1.69	0.99	2.58
ELA	5	3	5	802	98.63	1.37	0.89	3.37
ELA	6	6	4	1,344	97.99	1.71	0.98	3.27
ELA	6	3	5	784	98.72	1.28	0.86	3.19
ELA	7	6	4	1,892	98.36	1.48	0.99	2.80
ELA	7	3	5	1,085	98.99	1.01	0.88	2.86
ELA	8	6	4	1,524	98.16	1.64	0.99	3.22
ELA	8	3	5	876	98.97	1.03	0.93	3.08
ELA	10	6	4	2,222	98.51	1.40	0.99	3.15
ELA	10	3	5	1,275	97.80	2.20	0.85	3.76
Mathematics	3	4	4	998	98.50	1.50	0.98	2.71
Mathematics	3	2	5	639	97.97	2.03	0.85	2.03
Mathematics	4	4	4	1,988	99.04	0.96	0.99	1.56
Mathematics	4	2	5	1,194	98.83	1.17	0.90	1.26
Mathematics	5	4	4	860	98.84	1.16	0.98	2.21

Content Area	Grade	Items	Number of Score Categories	Number of Included Scores	Percentage Exact	Percentage Adjacent	Percentage Correlation	Percentage Third Scores
Mathematics	5	2	5	539	99.63	0.37	0.97	0.56
Mathematics	6	4	4	816	99.02	0.98	0.98	1.59
Mathematics	6	2	5	518	98.26	1.74	0.84	1.74
Mathematics	7	4	4	1,158	98.53	1.47	0.97	2.16
Mathematics	7	2	5	720	99.31	0.69	0.92	0.97
Mathematics	8	4	4	930	99.68	0.32	0.99	0.43
Mathematics	8	2	5	584	99.49	0.51	0.96	0.51
Mathematics	10	10	4	2,098	99.19	0.81	0.99	1.10
Mathematics	10	5	5	1,266	99.37	0.63	0.96	1.18
STE	5	8	4	1,412	99.50	0.42	0.99	0.50
STE	5	4	5	788	97.59	2.41	0.83	2.41
STE	8	8	4	1,554	98.78	1.16	0.99	2.25
STE	8	4	5	854	98.95	1.05	0.93	1.05
Biology	HS	6	4	1,758	99.15	0.85	0.99	0.97
Biology	HS	3	5	981	98.88	1.12	0.94	1.33
Introductory Physics	HS	6	4	282	98.58	1.06	0.97	1.77
Introductory Physics	HS	3	5	157	100.00	0.00	1.00	0.00
Civics	8	2	4	458	98.25	1.53	0.98	2.62
Civics	8	1	5	288	98.61	1.39	0.90	1.39

4.8 MCAS-Alt Comparability Across Years

The issue of comparability across years is addressed in the progression of learning outlined in the *Resource Guide to the Massachusetts Curriculum Frameworks for Students with Disabilities*. Comparability is also addressed in the scoring procedures. Consistent scoring rubrics are used each year along with rigorous quality-control procedures that hold scorers to high standards of accuracy and consistency, as described in section 4.4. Scorers are trained using the same procedures, models, examples, and methods each year.

A look-up table mapping dimension scores to achievement levels (refer to Table 4-12) allows for annual comparability of student scores. The achievement levels and the descriptions of alternate academic achievement levels (available in the *Resource Guides* on the DESE website) remain relatively consistent each year because the students taking alternate assessments perform well below the students taking the standard MCAS assessments. This consistency ensures that the meaning of students' alternate assessment scores is comparable from one year to the next. Names and descriptors for alternate and grade-level academic achievement standards are shown in Appendix X. Table 4-12 shows the achievement-level look-up table (i.e., the achievement level corresponding to each possible combination of dimension scores), which is used each year to combine and tally the overall content area achievement level from the individual strand scores. In addition, achievement-level distributions for each of the last four years are provided in Appendix N.

Table 4-12. MCAS-Alt Strand Achievement-Level Look-Up Table

Level of Complexity	Demonstration of Skills	Independence	Achievement Level
2	1	1	1
2	1	2	1
2	1	3	1
2	1	4	1
2	2	1	1
2	2	2	1
2	2	3	1
2	2	4	1
2	3	1	1
2	3	2	1
2	3	3	2
2	3	4	2
2	4	1	1
2	4	2	1
2	4	3	2
2	4	4	2
3	1	1	1
3	1	2	1
3	1	3	1
3	1	4	1
3	2	1	1
3	2	2	1
3	2	3	2
3	2	4	2
3	3	1	1
3	3	2	2
3	3	3	3
3	3	4	3
3	4	1	1
3	4	2	2
3	4	3	3
3	4	4	3
4	1	1	1
4	1	2	1
4	1	3	1
4	1	4	1
4	2	1	1
4	2	2	1
4	2	3	2
4	2	4	2
4	3	1	1
4	3	2	2
4	3	3	3
4	3	4	3
4	4	1	1
4	4	2	2
4	4	3	3

Level of Complexity	Demonstration of Skills	Independence	Achievement Level
4	4	4	3
5	1	1	1
5	1	2	1
5	1	3	2
5	1	4	2
5	2	1	1
5	2	2	2
5	2	3	3
5	2	4	3
5	3	1	1
5	3	2	2
5	3	3	3
5	3	4	4
5	4	1	1
5	4	2	2
5	4	3	3
5	4	4	4

4.9 MCAS-Alt Reporting of Results

Cognia created two primary reports for the MCAS-Alt: the MCAS-Alt Feedback Form and the Individual Student Report (ISR).

4.9.1 Feedback Forms

One feedback form is produced for each student who submitted the MCAS-Alt; it serves as a preliminary score report intended for the student's educator. Content area achievement level(s), strand dimension scores, and comments relating to those scores are printed on the form.

4.9.2 Individual Student Report

The ISR provides the final scores (overall content area achievement level and rubric dimension scores in each strand) for each student who submitted the MCAS-Alt. It also provides background information on the MCAS-Alt, participation requirements, the purposes of the assessment, an explanation of the scores, and contact information for further information. The student's achievement level displayed for each content area is shown relative to all possible achievement levels. The student's dimension scores are displayed in relation to all possible dimension scores for the assessed strands. One printed copy of the report is provided to be sent home by the school.

In 2025, the MCAS-Alt ISR was redesigned to replicate the look and feel of the newly redesigned MCAS ISR. Also new in 2025, schools were able to access an online PDF of the ISR in the Download Center in the Lighthouse reporting platform. A sample report is provided in Appendix Y. The report was printed on 8 ½" x 11" paper, duplex. The number of pages depended on the number of assessments for the grade. The design of the subject score pages did not change from the previous version of the report. However, because MCAS testing was removed from the competency determination for high school graduation, students were no longer able to earn achievement levels Exceeding Expectations, Meeting Expectations, Partially Meeting Expectations, and Not

Meeting Expectations. These levels were greyed out on the report with a note “Only students taking the standard MCAS tests can attain these achievement levels.” A checkmark was used on each subject page to indicate the earned achievement level. The achievable levels were Progressing, Emerging, Awareness, Incomplete. The cover page was the first page of the multipage report and summarized overall results for all subjects assessed at the student’s testing grade. The last page of the report listed resources for families and more context around testing and in particular for students with significant cognitive disabilities.

4.9.3 Reporting Business Requirements

To ensure that reported results for the MCAS-Alt are accurate relative to the collected evidence, the reporting business requirements are updated before each reporting cycle. The reporting business requirements are observed in the analyses of the MCAS-Alt data and in the reporting of results. They are included in Appendix Q. The document describes the deliverables for the MCAS-Alt program. It logs changes to the program from the previous year, which affect the reporting of the results. It contains the rules around calculating the scores and achievement levels for each subject as well as the determination of participation statuses. It contains specific reporting rules for the ISR and the feedback form.

4.9.4 Quality Assurance

Quality-assurance measures are implemented throughout the entire process of analysis and reporting at Cognia. The data processors and data analysts working with MCAS-Alt data perform quality-control checks of their respective computer programs. Moreover, when data are handed off to different units within the Reporting Services Department, the sending unit verifies that the data are accurate before handoff. Additionally, when a unit receives a data set, the first step performed is verification of the accuracy of the data.

Quality assurance is also practiced through parallel processing. One production data analyst is responsible for writing all programs required to populate the individual student and aggregate reporting tables for the administration. Each reporting table is also assigned to another quality-assurance data analyst, who uses the analysis and reporting business requirements to independently program the reporting table. The production and quality-assurance tables are compared; if there is 100% agreement, the tables are released for report generation.

A third aspect of quality control involves the procedures implemented by the quality-assurance group to check the accuracy of reported data on PDF reports. Using a sample of students, the quality-assurance group verifies that the reported information is correct. The selection of specific students sampled for this purpose may affect the success of the quality-control efforts.

The quality-assurance group uses a checklist to implement its procedures. Once the checklist is completed, sample reports are circulated for psychometric checks and review by program management. The appropriate sample reports are then sent to DESE for review and signoff.

4.10 MCAS-Alt Validity

One purpose of the *2025 MCAS and MCAS-Alt Technical Report* is to describe the technical aspects of the MCAS-Alt that contribute validity evidence in support of MCAS-Alt score interpretations. According to the *Standards for Educational and Psychological Testing* (AERA et al., 2014), considering intended uses and interpretations of test results and conformance to these uses are of paramount importance in relation to valid score interpretations. These considerations are addressed in this section.

Recall that the score interpretations for the MCAS-Alt include using the results to make inferences about student achievement on the ELA, mathematics, STE, and civics content standards; to inform program and instructional improvement; and as a component of school accountability. Thus, as described below, each section of the report (development, administration, scoring, item analyses, reliability, performance levels, and reporting) contributes to the development of validity evidence and, taken together, the sections form a comprehensive validity argument in support of MCAS-Alt score interpretations.

4.10.1 Test Content Validity Evidence

Test content validity is determined by identifying how well the assessment tasks represent the curriculum and standards for each content area and grade level. The primary evidence described in section 4.2.1 describes how the range and level of complexity of the standards being assessed have been modified to fit the needs of the MCAS-Alt testing population yet retain the essential components or meaning of the standards. The MCAS-Alt content areas and strands/domains required for the assessment of students in each grade are listed in Table 4-1, providing evidence the assessment is well-aligned to the same content standards applied to all Massachusetts students.

4.10.2 Internal Structure Validity Evidence

Evidence based on internal structure is presented in detail in the discussions of item analyses and reliability in sections 4.5 and 4.7. Technical characteristics of the internal structure of the assessment are presented in terms of classical item statistics (item difficulty and item-test correlation), correlations among the dimensions (Level of Complexity; Demonstration of Skills and Concepts; and Independence), fairness/bias, and reliability, including alpha coefficients and inter-rater consistency.

4.10.3 Validity Based on Cognitive Processes

Evidence based on cognitive processes is presented in section 4.5.4 and in Appendix W. An examination of score frequencies by content area by grade by subject shows that student scores are most common in the expected ranges for the population and that the tests measure the full range of intended cognitive processes.

4.10.4 Adequate Precision Across the Full Performance Continuum

Evidence indicating precision across the full performance continuum is presented in section 4.7.3 and in Appendix O. Standard errors of measurement calculated over students at each achievement level indicate that the tests provide an adequately precise estimate of student achievement across the full performance continuum.

4.10.5 Validity Based on Relations to Other Variables

The *Resource Guides to the Massachusetts Curriculum Framework for Students with Disabilities* (described in sections 4.1.3, 4.2.1.1, and 4.6) are used by Massachusetts educators to identify standards-based instructional goals for students. The guides also serve as the basis for the selection of the specific knowledge and skills on which the student will be assessed on the MCAS-Alt. The *Resource Guides* capture the judgments of educators and experts about the curricular expectations and constitute a form of external criteria. By basing each student's assessment on the guides, the educator implementing the MCAS-Alt brings their skills survey results and evidence collection into alignment with these judgments.

4.10.6 Response Process Validity Evidence

Response process validity evidence pertains to information regarding the cognitive processes students use as they respond to items on an assessment. The MCAS-Alt directs educators to identify measurable outcomes for students based on the state's curriculum frameworks and to collect data and work samples that document the extent to which the student engaged in the intended cognitive process(es) to meet the intended goal. The scoring process is intended to confirm the student's participation in instructional activities that were focused on meeting the measurable outcome, and to provide detailed feedback on whether the instructional activities were sufficient in duration and intensity for the student to meet the intended goal.

4.10.7 Efforts to Support the Valid Reporting and Use of MCAS-Alt Data

The assessment results of students who participate in the MCAS-Alt are included in all public reporting of MCAS results and in the state's accountability system. Annual state summaries of the participation and achievement of students on the MCAS-Alt are available on the DESE website.

To ensure that all students were provided access to the Massachusetts curriculum frameworks, federal and state laws and DESE policy require that all students in grades 3–8 and 10 are assessed each year on their academic achievement and that all students are included in the reports provided to parents, guardians, teachers, and the public. The alternate assessment ensures that students with the most significant cognitive disabilities have an opportunity to “show what they know” and receive instruction at a level that is challenging and attainable based on the state's academic learning standards.

Aside from legal requirements, another important reason to include students with significant disabilities in standards-based instruction is to explore their capacity to learn standards-based knowledge and skills. While learning “daily living skills” is critical for those students to function as independently as possible, academic skills are important for all students in terms of post-secondary, career, and community success, and are the primary focus of teaching and learning in the state's public schools. Standards in the Massachusetts curriculum frameworks are defined as “valued outcomes for all students.” Evidence indicates that students with significant disabilities learn more than anticipated when given opportunities to engage in challenging instruction with the necessary support.

As a result of taking the MCAS-Alt, students with significant disabilities have become more “visible” in their schools and have a greater chance of being considered when decisions are made to allocate staff and resources to improve their academic achievement.

Appendix Y shows the MCAS-Alt ISR provided to parents and guardians. The achievement-level descriptors provided on the first page of that report, as well as in Appendix X, describe students’ performance at each alternate academic achievement standard.

4.10.8 Summary

The *Standards for Educational and Psychological Testing* (2014) define validity as “the degree to which evidence and theory support the interpretations of test scores for proposed uses of tests” (p. 11). Elaborating on that definition, the *Standards* assert that “it is the interpretations of test scores for proposed uses that are evaluated, not the test itself” and that “validation logically begins with an explicit statement of the proposed interpretation of test scores, along with a rationale for the relevance of the interpretation to the proposed use” (p. 11). This definition applies specifically to intended interpretations and uses of test scores, rather than to the broader program of curriculum and instruction in which a testing program is embedded or to the surrounding education and school improvement policies and aspirations for student learning.

Further, the *Standards* state that “a sound validity argument integrates various strands of evidence into a coherent account of the degree to which existing evidence and theory support the intended interpretations of test scores for specific uses” (p. 21).

The evidence for validity and reliability presented in this chapter supports the use of the MCAS-Alt assessment to make inferences about the knowledge, skills, abilities, and achievement of students with significant disabilities based on the skills and content described in the Massachusetts curriculum frameworks for ELA, mathematics, and STE. As such, this evidence supports the use of MCAS-Alt results for the purposes of programmatic and instructional improvement and as a component of school accountability.

MCAS-Alt assessment results are sometimes aggregated with other MCAS results. Therefore, validity information with respect to reliability and content-related validity provided for MCAS also pertains, to some extent, to the MCAS-Alt. In addition, MCAS-Alt also includes reliability and dimensionality characteristics and other evidence specific to the alternate assessment, as described in section 4.10 and summarized in Table 2-2.

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Appendices

APPENDIX A
GRADE-SPECIFIC ACHIEVEMENT-LEVEL DESCRIPTORS

MCAS Next-Generation Achievement-Level Descriptors English Language Arts

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

MCAS Next-Generation Achievement-Level Descriptors English Language Arts

General: All grades (grades 3–8 and 10)

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

ELA All Grades	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Reading	Demonstrates partial understanding of what a text implies and states explicitly; cites limited textual support for conclusions; incompletely summarizes key details and ideas; provides a partial analysis of a character, an event, or an idea in grade-appropriate texts Demonstrates partial understanding of words and phrases used in a text; provides limited understanding of how structural elements, point of view, or purpose affects the content and style in text(s) Makes basic comparisons between texts; shows partial understanding of content in diverse media; partially evaluates and analyzes claims and evidence in text(s)	Demonstrates sufficient understanding of what a text implies and states explicitly; cites solid textual support for conclusions; appropriately summarizes key details and ideas; provides a mostly complete analysis of a character, an event, or an idea in grade-appropriate texts Demonstrates general understanding of words and phrases used in a text; provides general understanding of how structural elements, point of view, or purpose affects the content and style in text(s) Makes appropriate comparisons between texts; shows solid understanding of content in diverse media; appropriately evaluates and analyzes claims and evidence in text(s)	Demonstrates comprehensive understanding of what a text implies and states explicitly; cites in-depth textual support for conclusions; skillfully summarizes key details and ideas; provides a sophisticated analysis of a character, an event, or an idea in grade-appropriate texts Demonstrates in-depth understanding of words and phrases used in a text; provides sophisticated understanding of how structural elements, point of view, or purpose affects the content and style in text(s) Makes insightful comparisons between texts; shows sophisticated understanding of content in diverse media; insightfully evaluates and analyzes claims and evidence in text(s)

ELA All Grades	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Writing	Produces basic writing with limited selection and explanation of evidence and details related to grade-appropriate texts, topics, or subject areas Produces writing with little development of a central idea or sequenced events, limited organization, and basic expression of ideas Exhibits partial awareness of task, purpose, and audience	Produces solid writing with appropriate selection and explanation of evidence and details related to grade-appropriate texts, topics, or subject areas Produces writing with appropriate development of a central idea or sequenced events, moderate organization, and adequate expression of ideas Exhibits sufficient awareness of task, purpose, and audience	Produces clear writing with skillful selection and explanation of evidence and details related to grade-appropriate texts, topics, or subject areas Produces writing with full development of a central idea or sequenced events, effective organization, and clear expression of ideas Exhibits full awareness of task, purpose, and audience

ELA All Grades	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Language	Demonstrates limited reading vocabulary of general academic and domain-specific words and phrases in grade-appropriate texts Demonstrates limited understanding of unfamiliar words in text and shows partial understanding of word parts and word relationships in word meanings Demonstrates little control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates solid reading vocabulary of general academic and domain-specific words and phrases in grade-appropriate texts Demonstrates solid understanding of unfamiliar words in text and shows sufficient understanding of word parts and word relationships in word meanings Demonstrates mostly consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates comprehensive reading vocabulary of general academic and domain-specific words and phrases in grade-appropriate texts Demonstrates comprehensive understanding of unfamiliar words in text and shows full understanding of word parts and word relationships in word meanings Demonstrates consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics

MCAS Next-Generation Achievement-Level Descriptors English Language Arts

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

MCAS Next-Generation Achievement-Level Descriptors English Language Arts

Grade 3

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

ELA Grade 3	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Reading	Demonstrates partial understanding of what a text states explicitly; cites limited textual support; demonstrates incomplete understanding of key details and how they support the main idea; provides a partial description of a character, an event, or an idea in grade 3 texts Demonstrates partial understanding of words and phrases (e.g., figurative language); demonstrates a limited understanding of structural elements and different points of view Makes basic comparisons between texts; shows partial understanding of information presented in illustrations; partially compares and contrasts important points in text(s)	Demonstrates sufficient understanding of what a text states explicitly; cites solid textual support; demonstrates appropriate understanding of key details and how they support the main idea; provides a mostly complete description of a character, an event, or an idea in grade 3 texts Demonstrates general understanding of words and phrases (e.g., figurative language); demonstrates a general understanding of structural elements and different points of view Makes appropriate comparisons between texts; shows solid understanding of information presented in illustrations; appropriately compares and contrasts important points in text(s)	Demonstrates comprehensive understanding of what a text states explicitly; cites in-depth textual support; demonstrates in-depth understanding of key details and how they support the main idea; provides a comprehensive description of a character, an event, or an idea in grade 3 texts Demonstrates in-depth understanding of words and phrases (e.g., figurative language); demonstrates a clear understanding of structural elements and different points of view Makes effective comparisons between texts; shows clear understanding of information presented in illustrations; effectively compares and contrasts important points in text(s)

ELA Grade 3	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Writing	Produces basic writing with limited selection and explanation of facts and details related to grade 3 texts, topics, or subject areas Produces writing with little development of a central idea or sequenced events, limited organization, and basic expression of ideas Exhibits partial awareness of task, purpose, and audience	Produces solid writing with appropriate selection and explanation of facts and details related to grade 3 texts, topics, or subject areas Produces writing with appropriate development of a central idea or sequenced events, moderate organization, and adequate expression of ideas Exhibits sufficient awareness of task, purpose, and audience	Produces clear writing with effective selection and explanation of facts and details related to grade 3 texts, topics, or subject areas Produces writing with full development of a central idea or sequenced events, effective organization, and clear expression of ideas Exhibits full awareness of task, purpose, and audience
Language	Demonstrates limited reading vocabulary of grade 3 academic and domain-specific words and phrases Demonstrates limited understanding of unfamiliar words in text; shows partial understanding of word parts and word relationships in word meanings Demonstrates little control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates solid reading vocabulary of grade 3 academic and domain-specific words and phrases Demonstrates solid understanding of unfamiliar words in text; shows sufficient understanding of word parts and word relationships in word meanings Demonstrates mostly consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates comprehensive reading vocabulary of grade 3 academic and domain-specific words and phrases Demonstrates comprehensive understanding of unfamiliar words in text; shows full understanding of word parts and word relationships in word meanings Demonstrates consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics

MCAS Next-Generation Achievement-Level Descriptors English Language Arts

Grade 4

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

ELA Grade 4	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Reading	Demonstrates partial understanding of what a text implies and states explicitly; cites limited textual support; incompletely summarizes key details and main ideas; provides a partial description of a character, an event, or an idea in grade 4 texts Demonstrates partial understanding of words and phrases (e.g., figurative language); provides a limited understanding of structural elements and different points of view Makes basic comparisons between texts; shows partial understanding of information presented in media; partially explains important points and themes in text(s)	Demonstrates sufficient understanding of what a text implies and states explicitly; cites solid textual support; appropriately summarizes key details and main ideas; provides a mostly complete description of a character, an event, or an idea in grade 4 texts Demonstrates general understanding of words and phrases (e.g., figurative language); provides a general understanding of structural elements and different points of view Makes appropriate comparisons between texts; shows solid understanding of information present in media; appropriately explains important points and themes in text(s)	Demonstrates comprehensive understanding of what a text implies and states explicitly; cites in-depth textual support; skillfully summarizes key details and main ideas; provides a comprehensive description of a character, an event, or an idea in grade 4 texts Demonstrates in-depth understanding of words and phrases (e.g., figurative language); provides a clear understanding of structural elements and different points of view Makes effective comparisons between texts; shows clear understanding of information present in media; effectively explains important points and themes in text(s)

ELA Grade 4	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Writing	Produces basic writing with limited selection and explanation of facts and details related to grade 4 texts, topics, or subject areas Produces writing with little development of a central idea or sequenced events, limited organization, and basic expression of ideas Exhibits partial awareness of task, purpose, and audience	Produces solid writing with appropriate selection and explanation of facts and details related to grade 4 texts, topics, or subject areas Produces writing with appropriate development of a central idea or sequenced events, moderate organization, and adequate expression of ideas Exhibits sufficient awareness of task, purpose, and audience	Produces clear writing with effective selection and explanation of facts and details related to grade 4 texts, topics, or subject areas Produces writing with full development of a central idea or sequenced events, effective organization, and clear expression of ideas Exhibits full awareness of task, purpose, and audience
Language	Demonstrates limited reading vocabulary of grade 4 academic and domain-specific words and phrases Demonstrates limited understanding of unfamiliar words in text; shows partial understanding of word parts, word relationships, and nuances in word meanings Demonstrates little control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates solid reading vocabulary of grade 4 academic and domain-specific words and phrases Demonstrates solid understanding of unfamiliar words in text; shows sufficient understanding of word parts, word relationships, and nuances in word meanings Demonstrates mostly consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates comprehensive reading vocabulary of grade 4 academic and domain-specific words and phrases Demonstrates comprehensive understanding of unfamiliar words in text; shows full understanding of word parts, word relationships, and nuances in word meanings Demonstrates consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics

MCAS Next-Generation Achievement Level Descriptors English Language Arts

Grade 5

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

ELA Grade 5	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Reading	Demonstrates partial understanding of what a text implies and states explicitly; provides limited textual support through the use of quotations or paraphrasing; incompletely summarizes key details and main ideas; provides a partial analysis of a character, an event, or an idea in grade 5 texts Demonstrates partial understanding of words and phrases (e.g., figurative language); provides a limited explanation of how structural elements or points of view influence text(s) Makes basic comparisons between texts; shows partial understanding of information present in multiple sources or media; partially analyzes important points and themes in text(s)	Demonstrates sufficient understanding of what a text implies and states explicitly; provides solid textual support through the use of quotations or paraphrasing; appropriately summarizes key details and main ideas; provides a mostly complete analysis of a character, an event, or an idea in grade 5 texts Demonstrates general understanding of words and phrases (e.g., figurative language); provides a general explanation of how structural elements or points of view influence text(s) Makes appropriate comparisons between texts; shows solid understanding of information present in multiple sources or media; appropriately analyzes important points and themes in text(s)	Demonstrates comprehensive understanding of what a text implies and states explicitly; provides in-depth textual support through the use of quotations or paraphrasing; skillfully summarizes key details and main ideas; provides a comprehensive analysis of a character, an event, or an idea in grade 5 texts Demonstrates in-depth understanding of words and phrases (e.g., figurative language); provides a clear explanation of how structural elements or points of view influence text(s) Makes effective comparisons between texts; shows clear understanding of information present in multiple sources or media; effectively analyzes important points and themes in text(s)

ELA Grade 5	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Writing	Produces basic writing with limited selection and explanation of facts and details related to grade 5 texts, topics, or subject areas Produces writing with little development of a central idea or sequenced events, limited organization, and basic expression of ideas Exhibits partial awareness of task, purpose, and audience	Produces solid writing with appropriate selection and explanation of facts and details related to grade 5 texts, topics, or subject areas Produces writing with appropriate development of a central idea or sequenced events, moderate organization, and adequate expression of ideas Exhibits sufficient awareness of task, purpose, and audience	Produces clear writing with effective selection and explanation of facts and details related to grade 5 texts, topics, or subject areas Produces writing with full development of a central idea or sequenced events, effective organization, and clear expression of ideas Exhibits full awareness of task, purpose, and audience
Language	Demonstrates limited reading vocabulary of grade 5 academic and domain-specific words and phrases Demonstrates limited understanding of unfamiliar words in text; shows partial understanding of word parts, word relationships, and nuances in word meanings Demonstrates little control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates solid reading vocabulary of grade 5 academic and domain-specific words and phrases Demonstrates solid understanding of unfamiliar words in text; shows sufficient understanding of word parts, word relationships, and nuances in word meanings Demonstrates mostly consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates comprehensive reading vocabulary of grade 5 academic and domain-specific words and phrases Demonstrates comprehensive understanding of unfamiliar words in text; shows full understanding of word parts, word relationships, and nuances in word meanings Demonstrates consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics

MCAS Next-Generation Achievement-Level Descriptors English Language Arts Grade 6

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

ELA Grade 6	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Reading	Demonstrates partial understanding of what a text implies and states explicitly; uses quotations and paraphrases to partially support conclusions; incompletely summarizes text; provides a partial analysis of a character, an event, or an idea in grade 6 texts Demonstrates partial understanding of meanings (e.g., figurative, connotative, technical) and effects (e.g., on mood) of words and phrases; demonstrates limited understanding of how structural elements and point of view contribute to the development of ideas Makes basic comparisons between texts; partially integrates information in different media or formats; partially analyzes important claims, arguments, or themes in text(s)	Demonstrates sufficient understanding of what a text implies and states explicitly; uses quotations and paraphrases to generally support conclusions; appropriately summarizes text; provides a mostly complete analysis of a character, an event, or an idea in grade 6 texts Demonstrates general understanding of meanings (e.g., figurative, connotative, technical) and effects (e.g., on mood) of words and phrases; demonstrates general understanding of how structural elements and point of view contribute to the development of ideas Makes appropriate comparisons between texts; solidly integrates information in different media or formats; appropriately analyzes important claims, arguments, or themes in text(s)	Demonstrates comprehensive understanding of what a text implies and states explicitly; uses quotations and paraphrases to insightfully support conclusions; skillfully summarizes text; provides a sophisticated analysis of a character, an event, or an idea in grade 6 texts Demonstrates in-depth understanding of meanings (e.g., figurative, connotative, technical) and effects (e.g., on mood) of words and phrases; demonstrates sophisticated understanding of how structural elements and point of view contribute to the development of ideas Makes insightful comparisons between texts; skillfully integrates information in different media or formats; insightfully analyzes important claims, arguments, or themes in text(s)

ELA Grade 6	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Writing	Produces basic writing with limited selection and explanation of evidence and details related to grade 6 texts, topics, or subject areas Produces writing with little development of a central idea, a claim, or sequenced events; limited organization; and basic expression of ideas Exhibits partial awareness of task, purpose, and audience	Produces solid writing with appropriate selection and explanation of evidence and details related to grade 6 texts, topics, or subject areas Produces writing with appropriate development of a central idea, a claim, or sequenced events; moderate organization; and adequate expression of ideas Exhibits sufficient awareness of task, purpose, and audience	Produces sophisticated writing with skillful selection and explanation of evidence and details related to grade 6 texts, topics, or subject areas Produces writing with full development of a central idea, a claim, or sequenced events; skillful organization; and rich expression of ideas Exhibits full awareness of task, purpose, and audience

ELA Grade 6	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Language	Demonstrates limited reading vocabulary of grade 6 academic and domain-specific words and phrases Demonstrates limited understanding of unfamiliar words in text and shows partial understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates little control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates solid reading vocabulary of grade 6 academic and domain-specific words and phrases Demonstrates solid understanding of unfamiliar words in text and shows sufficient understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates mostly consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates comprehensive reading vocabulary of grade 6 academic and domain-specific words and phrases Demonstrates comprehensive understanding of unfamiliar words in text and shows full understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics

MCAS Next-Generation Achievement-Level Descriptors English Language Arts Grade 7

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

ELA Grade 7	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Reading	Demonstrates partial understanding of what a text implies and states explicitly; uses quotations and paraphrases to partially support conclusions; incompletely summarizes text; provides a partial analysis of the interactions of characters, events, or ideas in grade 7 texts Demonstrates partial understanding of meanings (e.g., figurative, connotative, technical) and effects (e.g., on mood) of words and phrases; demonstrates limited understanding of how structural elements and point of view contribute to the development of ideas Makes basic comparisons between texts; partially integrates information in different media or formats; partially analyzes important claims, arguments, or themes in text(s)	Demonstrates sufficient understanding of what a text implies and states explicitly; uses quotations and paraphrases to generally support conclusions; appropriately summarizes text; provides a mostly complete analysis of the interactions of characters, events, or ideas in grade 7 texts Demonstrates general understanding of meanings (e.g., figurative, connotative, technical) and effects (e.g., on mood) of words and phrases; demonstrates general understanding of how structural elements and point of view contribute to the development of ideas Makes appropriate comparisons between texts; solidly integrates information in different media or formats; appropriately analyzes important claims, arguments, or themes in text(s)	Demonstrates comprehensive understanding of what a text implies and states explicitly; uses quotations and paraphrases to insightfully support conclusions; skillfully summarizes text; provides a sophisticated analysis of the interactions of characters, events, or ideas in grade 7 texts Demonstrates in-depth understanding of meanings (e.g., figurative, connotative, technical) and effects (e.g., on mood) of words and phrases; demonstrates sophisticated understanding of how structural elements and point of view contribute to the development of ideas Makes insightful comparisons between texts; skillfully integrates information in different media or formats; insightfully analyzes important claims, arguments, or themes in text(s)

ELA Grade 7	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Writing	Produces basic writing with limited selection and explanation of evidence and details related to grade 7 texts, topics, or subject areas Produces writing with little development of a central idea, a claim, or sequenced events; limited organization; and basic expression of ideas Exhibits partial awareness of task, purpose, and audience	Produces solid writing with appropriate selection and explanation of evidence and details related to grade 7 texts, topics, or subject areas Produces writing with appropriate development of a central idea, a claim, or sequenced events; moderate organization; and adequate expression of ideas Exhibits sufficient awareness of task, purpose, and audience	Produces sophisticated writing with skillful selection and explanation of evidence and details related to grade 7 texts, topics, or subject areas Produces writing with full development of a central idea, a claim, or sequenced events; skillful organization; and rich expression of ideas Exhibits full awareness of task, purpose, and audience

ELA Grade 7	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Language	Demonstrates limited reading vocabulary of grade 7 academic and domain-specific words and phrases Demonstrates limited understanding of unfamiliar words in text and shows partial understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates little control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates solid reading vocabulary of grade 7 academic and domain-specific words and phrases Demonstrates solid understanding of unfamiliar words in text and shows sufficient understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates mostly consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates comprehensive reading vocabulary of grade 7 academic and domain-specific words and phrases Demonstrates comprehensive understanding of unfamiliar words in text and shows full understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics

MCAS Next-Generation Achievement-Level Descriptors English Language Arts Grade 8

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

ELA Grade 8	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Reading	Demonstrates partial understanding of what a text implies and states explicitly; uses quotations and paraphrases to partially support conclusions; incompletely summarizes text; provides a partial analysis of connections among characters, events, or ideas in grade 8 texts Demonstrates partial understanding of meanings (e.g., figurative, ironic, allusive) and effects (e.g., on mood) of words and phrases; demonstrates limited understanding of how structural elements and point of view contribute to the development of ideas Provides a basic analysis between texts; partially integrates information from different media or formats; partially analyzes important claims, arguments, or themes in multiple texts	Demonstrates sufficient understanding of what a text implies and states explicitly; uses quotations and paraphrases to generally support conclusions; appropriately summarizes text; provides a mostly complete analysis of connections among characters, events, or ideas in grade 8 texts Demonstrates general understanding of meanings (e.g., figurative, ironic, allusive) and effects (e.g., on mood) of words and phrases; demonstrates general understanding of how structural elements and point of view contribute to the development of ideas Provides an appropriate analysis between texts; solidly integrates information from different media or formats; appropriately analyzes important claims, arguments, or themes in multiple texts	Demonstrates comprehensive understanding of what a text implies and states explicitly; uses quotations and paraphrases to insightfully support conclusions; skillfully summarizes text; provides a sophisticated analysis of connections among characters, events, or ideas in grade 8 texts Demonstrates in-depth understanding of meanings (e.g., figurative, ironic, allusive) and effects (e.g., on mood) of words and phrases; demonstrates sophisticated understanding of how structural elements and point of view contribute to the development of ideas Provides an insightful analysis between texts; skillfully integrates information from different media or formats; insightfully analyzes important claims, arguments, or themes in multiple texts

ELA Grade 8	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Writing	Produces basic writing with limited selection and explanation of evidence and details related to grade 8 texts, topics, or subject areas Produces writing with little development of a central idea, a claim, or sequenced events; limited organization; and basic expression of ideas Exhibits partial awareness of task, purpose, and audience	Produces solid writing with appropriate selection and explanation of evidence and details related to grade 8 texts, topics, or subject areas Produces writing with appropriate development of a central idea, a claim, or sequenced events; moderate organization; and adequate expression of ideas Exhibits sufficient awareness of task, purpose, and audience	Produces sophisticated writing with skillful selection and explanation of evidence and details related to grade 8 texts, topics, or subject areas Produces writing with full development of a central idea, a claim, or sequenced events; skillful organization; and rich expression of ideas Exhibits full awareness of task, purpose, and audience

ELA Grade 8	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Language	Demonstrates limited reading vocabulary of grade 8 academic and domain-specific words and phrases Demonstrates limited understanding of unfamiliar words in text and shows partial understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates little control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates solid reading vocabulary of grade 8 academic and domain-specific words and phrases Demonstrates solid understanding of unfamiliar words in text and shows sufficient understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates mostly consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates comprehensive reading vocabulary of grade 8 academic and domain-specific words and phrases Demonstrates comprehensive understanding of unfamiliar words in text and shows full understanding of word parts, figurative language, word relationships, and nuances in word meanings Demonstrates consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics

MCAS Next-Generation Achievement-Level Descriptors English Language Arts

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

MCAS Next-Generation Achievement-Level Descriptors English Language Arts

Grade 10

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

ELA Grade 10	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Reading	Partially analyzes what a text implies and states explicitly; uses little evidence to support the analysis; incompletely identifies and analyzes the development of a central idea or theme of a text; provides a limited analysis of how characters, events or ideas are developed and interact across sufficiently complex texts Partially determines meanings (e.g., figurative, connotative, technical) of words and phrases and analyzes how they impact meaning and tone; demonstrates limited understanding of how structural elements and point of view contribute to the overall development of ideas or purpose Provides a basic analysis between texts; partially integrates information from different sources; partially analyzes and evaluates important claims, arguments, or themes in multiple texts	Adequately analyzes what a text implies and states explicitly; uses sufficient evidence to support the analysis; appropriately identifies and analyzes the development of a central idea or theme of a text; provides a mostly complete analysis of how characters, events or ideas are developed and interact across sufficiently complex texts Appropriately determines meanings (e.g., figurative, connotative, technical) of words and phrases and analyzes how they impact meaning and tone; demonstrates general understanding of how structural elements and point of view contribute to the overall development of ideas or purpose Provides an appropriate analysis between texts; solidly integrates information from different sources; appropriately analyzes and evaluates important claims, arguments, or themes in multiple texts	Insightfully analyzes what a text implies and states explicitly; uses strong and thorough evidence to support the analysis; skillfully identifies and analyzes the development of a central idea or theme of a text; provides a sophisticated analysis of how characters, events or ideas are developed and interact across sufficiently complex texts Skillfully determines meanings (e.g., figurative, connotative, technical) of words and phrases and analyzes how they impact meaning and tone; demonstrates sophisticated understanding of how structural elements and point of view contribute to the overall development of ideas or purpose Provides an insightful analysis between texts; skillfully integrates information from different sources; insightfully analyzes and evaluates important claims, arguments, or themes in multiple texts

ELA Grade 10	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Writing	Produces basic writing with limited selection and explanation of evidence and details related to sufficiently complex texts, topics, or subject areas Produces writing with little development of a basic central idea, thesis, or sequenced events; limited organization; and basic expression of ideas Exhibits partial awareness of task, purpose, and audience	Produces solid writing with appropriate selection and explanation of evidence and details related to sufficiently complex texts, topics, or subject areas Produces writing with adequate development of a solid central idea, thesis, or sequenced events; moderate organization; and appropriate expression of ideas Exhibits sufficient awareness of task, purpose, and audience	Produces clear and sophisticated writing with skillful selection and explanation of evidence and details related to sufficiently complex texts, topics, or subject areas Produces writing with full development of an insightful central idea, thesis, or sequenced events; skillful organization; and rich expression of ideas Exhibits full awareness of task, purpose, and audience
Language	Demonstrates limited reading vocabulary of sufficiently complex academic and domain-specific words and phrases Partially determines the meaning of unfamiliar words in text using a variety of strategies; shows partial understanding of various grammatical rules and literary devices in a text Demonstrates little control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates solid reading vocabulary of sufficiently complex academic and domain-specific words and phrases Sufficiently determines the meaning of unfamiliar words in text using a variety of strategies; shows sufficient understanding of various grammatical rules and literary devices in a text Demonstrates mostly consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics	Demonstrates comprehensive reading vocabulary of sufficiently complex academic and domain-specific words and phrases Skillfully determines the meaning of unfamiliar words in text using a variety of strategies; shows full understanding of various grammatical rules and literary devices in a text Demonstrates consistent control of the standard English conventions of sentence structure, grammar, usage, and mechanics

MCAS Next-Generation Achievement-Level Descriptors Mathematics

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

MCAS Achievement-Level Descriptors

Mathematics: Grades 3 through 8 and 10

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Mathematics All Grades	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Conceptual Understanding and Procedural Knowledge	• Demonstrates partial understanding of the grade appropriate numeration system • Performs some calculations and estimations • Identifies examples of basic math facts or mathematical concepts • Mostly reads and sometimes constructs graphs, tables, and charts	• Applies understanding of the base-ten system and fractions to interpret numbers and solve problems • Performs most calculations and estimations • Describes mathematical concepts and generates examples and counterexamples of concepts • Represents data and mathematical relationships using equations, verbal descriptions, tables, and graphs	• Performs complex calculations and estimations • Selects the best representations for a given set of data • Explains relationships between models such as equations, verbal descriptions, tables, and graphs • Applies math facts and connects mathematical concepts from various areas of mathematics, and uses the concepts to develop generalizations • Recognizes and makes use of structure, discerning patterns by seeing complicated things as single objects

Mathematics All Grades	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Problem Solving	• Applies learned procedures to solve routine problems • Uses concrete objects or pictures to help conceptualize and solve problems	• Applies learned procedures and mathematical concepts to solve a variety of problems, including multi-step problems • Solves problems using multiple methods • Demonstrates the relationships between operations used to solve problems and the context of the problems	• Generates strategies and procedures to solve non-routine problems • Solves problems using multiple methods, evaluating reasonableness of intermediate steps leading to the standard algorithms • Draws connections between strategies • Analyzes givens, constraints, and relationships in problems, using multiple methods and appropriate tools
Mathematical Reasoning	• Applies some reasoning methods to solve routine problems	• Uses a variety of reasoning methods to solve routine and non-routine problems • Uses symbols to solve routine mathematical problems	• Reasons abstractly and quantitatively, using multiple reasoning methods to solve complex problems and provides justification for the reasoning • Decontextualizes situations and represents them symbolically
Mathematical Communication	• Identifies and uses basic terms	• Uses logical forms of representation (e.g., text, graphs, symbols) to illustrate steps to a solution	• Uses logical forms of representation (e.g., text, graphs, symbols) to justify solutions and solution strategies • Constructs viable arguments and critiques the reasoning of others, attending to precision

MCAS Next-Generation Achievement-Level Descriptors Mathematics

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

MCAS Achievement-Level Descriptors

Mathematics: Grade 3

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Mathematics Grade 3	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Operation and Algebraic Thinking	- Determines products and quotients of whole numbers - Solves one-step word problems by multiplying and dividing within 100 with limited accuracy - Determines the unknown whole number in a multiplication or division equation - Recognizes simple arithmetic patterns	- Interprets products and quotients of whole numbers - Solves word problems by multiplying and dividing within 100 accurately - Solves two-step word problems with unknowns in equations involving all four operations - Applies the properties of multiplication - Recognizes arithmetic patterns - Recognizes products of two single-digit numbers - Uses equal groups and arrays to solve word problems involving multiplication and division within 100 - Consistently uses estimation strategies to assess the reasonableness of answers	- Creates and solves equations with unknown factors to solve word problems - Explains arithmetic patterns using the properties of operations - Uses area models to solve word problems involving multiplication and division within 100 - Recognizes products of two single-digit numbers and the related division facts
Number and Operations in Base Ten	- Uses place value to round two-digit numbers to the nearest 10 - Solves problems by adding and subtracting within 1000 using various strategies with limited accuracy	- Uses place value to round three-digit numbers to the nearest 10 - Fluently adds and subtracts within 1000 using various strategies - Solves problems involving multiplication of a one-digit whole number by multiples of 10 in the range 10–90	- Uses algorithms to add and subtract within 1000 and multiply one-digit whole numbers by multiples of 10 in the range 10–90, and explain why they work - Recognizes the relationship between addition and subtraction

Mathematics Grade 3	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Number and Operations – Fractions	- Visually identifies fractional parts of a whole - Recognizes equivalent fractions - Compares two fractions with like numerators or like denominators	- Identifies fractional parts of a whole - Identifies and represents fractions on number lines or other visual fraction models that are already created - Generates equivalent fractions - Represents whole numbers as fractions - Compares fractions with like numerators and denominators by reasoning about their size using visual fraction models that are already created, and symbols $<$, $>$ and $=$	- Explains fraction equivalence - Recognizes and explains fractional equivalence of whole numbers - Creates visual fraction models to justify the size comparison made about two fractions that refer to the same whole.
Measurement and Data	- Tells, writes and measures time to the nearest minute - Identifies appropriate tools and units of measurement to solve problems - Uses line plots to solve problems - Uses scaled picture graphs and bar graphs to solve problems - Finds area by using non-standard units - Solves mathematical problems involving perimeters of polygons, including finding the perimeter given the side length	- Solves word problems involving addition and subtraction of time intervals in minutes - Selects and uses appropriate tools and units of measure to solve problems - Draws simple scaled picture graphs and bar graphs and uses them to solve one-step problems - Generates measurement data using rulers marked with halves and fourths of an inch - Creates line plots with whole numbers, halves and fourths to record and show data to solve problems - Finds area by using standard units - Relates multiplication and addition to area - Determines area by decomposing shapes into non-overlapping rectangles and adding the areas of the non-overlapping parts - Solves mathematical problems involving perimeters of polygons, including finding an unknown side length and identifies rectangles with the same perimeter and different area	- Uses estimation to solve word problems involving measurement - Draws scaled picture graphs and scaled bar graphs and uses them to solve two-step problems - Differentiates perimeter from area - Interprets scaled picture and bar graphs, and line plots - Solves mathematical and real-world problems involving perimeters of polygons, including finding an unknown side length and is able to reproduce rectangles with the same perimeter and different area

Mathematics Grade 3	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Geometry	- Identifies two-dimensional shapes based on their sides and angles - Partitions shapes into parts	- Describes two-dimensional shapes based their sides and angles - Partitions shapes into parts with equal areas and expresses the area as a unit fraction of the whole	Compares and classifies two-dimensional shapes based on their sides and angles

MCAS Achievement-Level Descriptors

Mathematics: Grade 4

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Mathematics Grade 4	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Operation and Algebraic Thinking	- Interprets a multiplication equation as a comparison - Solves multiplication and division word problems - Solves two-step word problems using the four operations with whole numbers, including problems where remainders must be interpreted - Identifies multiplication facts through 12×12 - Identifies factor pairs in the 1-100 range - Identifies a pattern that follows a rule	- Recognizes verbal statements of multiplicative comparisons as multiplication equations. - Represents multiplication and division word problems using drawings and equations - Uses the four operations to solve multi-step word problems and represents the problems by equations - Identifies related multiplication and division facts through 12×12 - Finds factor pairs in the 1-100 range and recognizes that a whole number is a multiple of each of its factors - Distinguishes between prime and composite numbers in the range 1-100 - Identifies a pattern that follows a rule and generates a pattern, given a rule	- Explains the difference between multiplicative and additive comparison - Uses equations to represent problems, and justifies solutions with estimation - Identifies multiples and their corresponding factors and distinguishes between prime and composite numbers. - Generates patterns not explicit to the rule - Uses estimation to assess the reasonableness of answers

Mathematics Grade 4	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Number and Operations in Base Ten	• Reads and writes whole numbers using base-ten number names and expanded form • Uses place value understanding to round whole numbers to the thousands place • Solves problems involving multiplication of four-digit numbers by a one-digit numbers • Solves problems involving quotients and remainders with up to three-digit dividends and one-digit divisors based on place value and properties of operations	• Uses place value to recognize that in a multi-digit number, a digit in any place represents 10 times as much as it represents in the place to its right • Compares two multi-digit numbers based on place value position using $<$, $>$ and $=$ • Uses place value understanding to round whole numbers to the ten thousands place • Adds and subtracts whole numbers using the standard algorithm • Solves problems involving multiplication of two-digit numbers by two-digit numbers • Solves problems involving quotients and remainders with up to four-digit dividends and one-digit divisors, using the relationship between multiplication and division understanding	• Uses place value understanding to round whole numbers up to one million • Uses understanding of structure to explain the standard algorithm for addition and subtraction. • Solves problems involving multiplication of four-digit numbers by one-digit, and justifies solutions by using equations, rectangular arrays or area models. • Justifies solutions using equations, rectangular arrays, and/or area models

Mathematics Grade 4	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Number and Operations – Fractions	• Recognizes equivalency in fractions • Compares fractions with different numerators and different denominators by using common denominators or common numerators • Decomposes fractions into a sum of fractions and uses visual fraction models to solve problems • Multiplies a fraction by a whole number	• Explains why fractions are equivalent using visual fraction models • Consistently compares two fractions when the two fractions refer to the same whole • Consistently compares two decimals when the two decimals refer to the same whole • Compares fractions with different numerators and different denominators by comparing to a benchmark fraction • Adds and subtracts fractions with like denominators • Decomposes fractions into a sum of fractions and uses equations to solve problems • Adds and subtracts mixed numbers with like denominators by replacing with equivalent fraction and by using properties of operations or the relationship of addition and subtraction • Uses visual fraction models and equations to solve word problems involving multiplication of a fraction by a whole number • Uses decimal notation to represent fractions with denominators of 10 and 100 • Compares decimals to hundredths by reasoning about their size	• Generates equivalent fractions including fractions greater than 1 • Decomposes fractions into a sum of fractions and justifies solutions to problems with visual fraction models and equations • Justifies the conversion of a fraction with denominator of 10 to an equivalent fraction with a denominator of 100 and expresses it as a decimal

Mathematics Grade 4	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Measurement and Data	- Solves measurement problems involving whole numbers using all four operations - Solves measurement problems involving perimeter and area - Interprets data presented in line plots (dot plots) and uses addition and subtraction of fractions to solve problems involving line plots - Identifies concepts of angles and angle measurement	- Solves problems involving converting measurements from larger units to smaller units - Creates line plots (dot plots) in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$), to display given data, and uses addition and subtraction of fractions solve problems involving line plots - Uses a protractor to measure, sketch or interpret an angle - Finds unknown angles in diagrams - Justifies solutions to perimeter and area problems	- Reasons about relative sizes of measurement units within one system of units - Sketches an angle without a protractor
Geometry	Identifies right triangles, points, lines, line segments, rays, angles, perpendicular and parallel lines, lines of symmetry	- Identifies right triangles and draws points, lines, line segments, rays, angles, perpendicular and parallel lines, in two dimensional shapes - Classifies two-dimensional shapes based on their attributes, including the presence and absence of parallel or perpendicular lines or angles of a specified size. - Recognizes lines of symmetry in two-dimensional figures and identifies line-symmetric figures	Draws two-dimensional shapes based on attributes.

MCAS Achievement-Level Descriptors

Mathematics: Grade 5

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Mathematics Grade 5	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Operation and Algebraic Thinking	- Recognizes when parentheses, brackets, or braces are appropriately used in numerical expressions - Given two rules, generates numerical patterns	- Uses parentheses, brackets, or braces to write, interpret and evaluate numerical expressions - Interprets numerical expressions without evaluating - Given two rules, identifies the relationship between corresponding terms	Given two rules, forms and graphs ordered pairs and interprets the relationship between corresponding terms

Mathematics Grade 5	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Number and Operations in Base Ten	- Recognizes that in a multi-digit number, including a decimal, a digit in any place represents 10 times as much as it represents in the place to its right or 1/10 of what it represents in the place to its left - Reads decimals to thousandths using base 10 numerals, number names, and expanded form - Identifies which comparison symbols to use when comparing decimals to hundredths - Uses various strategies to solve problems involving all operation with whole numbers including quotients with division limited to four-digit dividends and 2-digit divisors - Solves problems involving addition and subtraction with decimals to tenths - Identifies the quotient of whole numbers	- Uses whole number exponents to denote powers of 10 - Uses place value to round decimals to any place - Fluently multiplies multi-digit whole numbers - Writes decimals to thousandths using base ten numerals, number names, expanded form and comparison symbols - Compares decimals using base ten numerals, number names and comparison symbols $<$, $>$ and $=$ - Uses various strategies to solve problems involving all operation with whole numbers including quotients with division limited to four-digit dividends and 2-digit divisors and explains using rectangular arrays and/or area models - Applies understandings of models for decimals, place value, and properties of operations to add, subtract, multiply and divide decimals to hundredths - Solves mathematical and real-world problems involving multiplication of whole numbers and decimals to hundredths using the standard algorithm. - Uses models to find the quotients of whole numbers. - Solves problems involving all operations on decimals to hundredths.	- Uses place value understanding of multi-digit numbers including decimals to explain patterns in the number of zeros and the placement of the decimal point, when multiplying a number by powers of 10. - Compares decimals using expanded form - Makes reasonable estimates of decimal results - Explains understandings of models for decimals, decimal notation, and properties of operations to add, subtract, multiply and divide decimals to hundredths - Uses the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers to understand and explain why the procedures for multiplying and dividing finite decimals make sense.

Mathematics Grade 5	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Number and Operations – Fractions	- Adds and subtracts fractions with like denominators (including mixed numbers) - Uses visual fraction models to multiply fractions or whole numbers by fractions - Finds areas or rectangles with fractional side lengths by tiling with unit squares - Recognizes multiplication as scaling by comparing the factors with computation	- Adds and subtracts fractions with unlike denominators (including mixed numbers) - Uses visual fraction models to solve real-world problems by multiplying fractions or whole numbers by fractions, and fractions by mixed numbers - Shows that the area of rectangles with fractional side lengths, found by tiling with unit squares, is the same as multiplying the side lengths - Recognizes multiplication as scaling by comparing the factors without computation - Interprets division of a unit fraction by a non-zero whole number and division of a whole number - Solves real-world and mathematical problems involving division of a unit fraction by a non-zero whole number and a whole number by a unit fraction	- Applies understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators in the context of solving word problems. - Uses understanding of fraction equivalence to make sense of sums and differences of fractions and makes reasonable estimates of them. - Uses the relationship between multiplication and division of fractions to solve and explain mathematical and real-world problems including finding the area of rectangles with fractional side lengths, finding quotients of division of non-zero whole number by unit fractions
Measurement and Data	- Converts among different-sized measurement units within a given measurement system - Interprets and represents data presented in line plots (dot plots) to solve problems - Recognizes volume as an attribute of solid figures and calculates volume of right rectangular prisms by packing it	- Applies conversion among different-sized measurement units within a given measurement system to solve multi-step real-world problems - Uses a line plot (dot plot) to represent data and uses operations on fractions to solve problems involving the line plots - Recognizes volume as additive and calculates volume by finding the total number of same-size units of volume required to fill a space without gaps or overlaps.	- Uses appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume with application of the volume formula - Decomposes three-dimensional shapes and finds volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes and relate to the volume formula - Solves real world application problems

Mathematics Grade 5	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Measurement and Data	with unit cubes, counting unit cubes, and with standard and non-standard units	Decomposes three-dimensional shapes and finds volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes	requiring the application of $V = lwh$ and $V = Bh$
Geometry	- Represents mathematical and real-world problems by locating points in the first quadrant - Identifies two-dimensional figures based on properties	- Represents mathematical and real-world problems by locating and graphing in the first quadrant - Classifies two-dimensional figures in a hierarchy based on properties	- Solves mathematical and real-world problems by graphing in the first quadrant and interpreting the coordinate values of points based on the context of the situation - Applies knowledge of number and length to the order and distance relationships of a coordinate plane

MCAS Achievement-Level Descriptors

Mathematics: Grade 6

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Mathematics Grade 6	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
The Number System	- Interprets quotients of fractions to solve problems - Identifies greatest common factors or least common multiples - Uses positive and negative numbers to describe quantities having opposite directions or values - Solves mathematical problems by using all operations on multi-digit decimals - Graphs ordered pairs in all four quadrants to solve problems - Interprets statements of order for rational numbers	- Computes quotients of fractions to solve problems - Uses prime factorization to find the greatest common factors, least common multiples to solve problems - Represents quantities in real-world context on a number line, explaining the meaning of zero - Uses the understanding of structure to explain the standard algorithm to divide multi-digit numbers - Uses the standard algorithm to fluently operate on multi-digit decimals - Finds the absolute value of a rational number by recognizing its distance from zero on the number line - Uses the standard algorithm to divide multi-digit numbers - Computes all operations on multi-digit decimals - Solve problems by graphing in all four quadrants and finds distances between points with same first coordinate or same second coordinate - Interprets and writes statements of order for rational numbers	- Applies interpretation of quotients of fractions to solving word problems - Uses visual fraction models to solve word problems involving computing quotients of fractions - Applies number theory concepts to the solution of problems. - Solves problems involving order and absolute value of rational numbers

Mathematics Grade 6	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Ratios and Proportional Relationships	- Identifies part to part and part to whole relationships - Uses rate language in the context of a ratio relationship - Sometimes solves unit rate problems	- Solves problems requiring part to part ratios to be converted to part to whole ratios - Consistently solves unit rate problems - Uses rate reasoning to solve problems - Finds the percent of a quantity - Uses ratio reasoning to convert measurement units within measurement systems - Interprets and manipulates models with ratios such as tape diagrams, tables, and double number lines to compare ratios	- Determines what percent of a quantity is a given amount - Explains when to use part to part ratios, and when to use part to whole ratios to solve problems - Uses ratio reasoning to convert measurement units between measurement systems - Creates models with ratios such as tape diagrams, tables, and double number lines to compare ratios - Relates mass of an object to its volume to solve problems
Expressions and Equations	- Evaluates given expressions and equations involving whole-number exponents to solve problems - Identifies parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient)	- Interprets, evaluates, and writes expressions and equations involving whole-number exponents - Views one or more parts of an expression as a single entity - Generate and identify equivalent expressions - Relates tables and graphs to equations - Writes and solves equations of the form $x + p = q$ and $px = q$ - Solves and graphs inequalities that represent a constraint or condition in a mathematical or real-world problem. - Analyzes the relationships between dependent and independent variables in real-world problems.	- Writes and graphs inequalities that represent a constraint or condition in a mathematical or real-world problem - Creates equations of the form $x + p = q$ and $px = q$ from a given situation - Uses equations to describe relationships between quantities

Mathematics Grade 6	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Geometry	- Solves mathematical problems involving areas of triangles, including right triangles and quadrilaterals - Solves mathematical problems involving volume of right rectangular prisms with whole number edge lengths - Represents three-dimensional figures using nets - Given coordinates of a polygon, draws the polygon on a coordinate plane	- Solves real-world problems involving areas of triangles, including right triangles and quadrilaterals by decomposing shapes, rearranging or removing pieces, and relating shapes to rectangles - Finds volume of right rectangular prisms with fractional edge lengths - Uses nets of three-dimensional figures to find the surface area - Given coordinates of a polygon on a coordinate plane, finds lengths of the sides of the polygon	- Reasons about geometric shapes and their measurements - Develops, and justifies formulas to solve mathematical and real-world problems that involve areas of triangles, including right triangles, and quadrilaterals - Applies the formula for volume of right rectangular prisms with fractional edge lengths - Applies knowledge of nets to solve mathematical and real-world problems involving surface area - Given coordinates of a polygon (without a coordinate plane), finds lengths of the sides of the polygon and applies these techniques to solve real-world problems
Statistics and Probability	- Recognizes a statistical question - Visually recognizes measures of center and variability - Interprets dot plots and histograms	- Solve problems involving finding the measures of center and variability - Constructs dot plots, histograms, box plots and circle graphs given real-world situations	- Recognizes that a data distribution may not have a definite center, and different ways to measure center can yield different values, and uses this understanding to interpret a situation - Describes and summarizes numerical data sets, identifying clusters, peaks, gaps, and symmetry in a real-world problem

MCAS Achievement-Level Descriptors

Mathematics: Grade 7

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Mathematics Grade 7	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
The Number System	- Represents addition and subtraction on a horizontal and vertical number line - Operates with rational numbers	- Recognizes situations in which opposite quantities combine to make zero - Operates with rational numbers in mathematical and real-world problems - Translates between rational numbers and decimals	- Translates from repeating decimal form of a rational number to fraction form - Interprets quotient and remainder of rational numbers - Applies properties of operations as strategies to add, subtract, multiply and divide
Ratios and Proportional Relationships	- Recognizes a proportional relationship - Uses ratios and proportionality to solve simple mathematical problems, including percent problems	- Represents a proportional relationship by equations - Sometimes uses ratios and proportionality to solve multi-step mathematical and real-world problems, including percent problems - Interprets the meaning of any point on a graph of a proportional relationship	Consistently uses ratios and proportionality to solve multi-step mathematical and real-world problems, including percent problems

Mathematics Grade 7	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Expressions and Equations	• Uses properties of operations to add and subtract linear expressions • Solves simple mathematical problems using numerical and algebraic expressions and equations • Identifies simple arithmetic and geometric sequences from tables, graphs, words, and expressions. • Extends patterns in simple arithmetic and geometric sequences from tables, graphs, words, and expressions.	• Uses properties of operations to expand linear expressions • Uses properties of operations to factor linear expressions • Given a real-world problem, rewrites expressions in different forms to show understanding of the problem • Interprets the solution of an inequality in a real-world problem • Solves multi-step mathematical and real-world problems using numerical and algebraic expressions and equations • Fluently converts between different forms • Create equations and inequalities to solve problems • Graphs the solutions of an inequality	• Uses properties of operations to factor linear expressions and interprets the result in the context of a problem • Justifies solutions to multi-step problems • Analyzes patterns and determines expressions for simple arithmetic and geometric sequences using tables, graphs, words, and expressions

Mathematics Grade 7	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Geometry	• Draws triangles with given conditions • Applies the formulas to find the circumference of circles • Applies the formulas to find the area of two-dimensional figures, including circles • Recognizes attributes of angles (supplementary, complementary, vertical, adjacent)	• Constructs triangles with given conditions and describes some of their attributes • Describes the shape of the two-dimensional face of the figure that results from slicing three-dimensional figures. • Solves problems involving the relationship between area and circumference of circles • Solves problems involving the surface area and volume of three-dimensional shapes • Solves mathematical problems involving scale drawings • Solves multi-step problems using attributes of angles (supplementary, complementary, vertical, adjacent)	• Finds unknown supplementary, complementary, vertical, and adjacent angles by solving equations
Statistics and Probability	• Makes inferences about a population by examining the sample population • Visually compares two populations based on measures of center and variability • Differentiates between representative and non-representative samples • Identifies probability as a number between 0 and 1 • Finds probabilities of simple events	• Uses random sampling to draw inferences about a population • Recognizes the probabilities of 0 through 1 as likely, unlikely, or neither. • Develops probability models and uses it to find probabilities of events • Finds probabilities for compound events using organized lists, tables, and tree diagrams	• Evaluates probability models • Designs and uses a simulation to generate frequencies for compound events • Computes the differences of the centers as a multiple of the measure of variability for two populations

MCAS Achievement-Level Descriptors

Mathematics: Grade 8

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Mathematics Grade 8	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
The Number System	Distinguishes between rational and irrational numbers	- Recognizes that rational and irrational numbers have decimal expansions - Uses rational approximations of irrational numbers to compare the size of irrational numbers - Finds approximate location of irrational numbers on the number line - Finds rational approximations of irrational numbers	- Estimates the values of expressions with irrational numbers - Converts a decimal expansion which repeats eventually to a rational number

Mathematics Grade 8	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Expressions and Equations	- Identifies the properties of integer exponents - Know that $\sqrt{2}$ is irrational - Uses and evaluates square roots of small squares - Graphs proportional relationships, and identifies the unit rate as the slope - Solves one-variable linear equations with one or many solutions - Recognizes that the point of intersection of two linear equations is the solution	- Applies the properties of integer exponents to generate equivalent expressions - Performs operations with decimals and scientific notation - Uses and evaluates cube roots of small cubes - Uses numbers in the form of a single digit times an integer power of 10 to estimate the magnitude and relationships of quantities - Uses scientific notation and chooses appropriate units of measurement for varying magnitudes - Uses linear equations and systems of linear equations to represent and solve problems. - Compares proportional relationships represented in different ways - Recognizes the difference between proportional and non-proportional in linear relationships - Solves one-variable linear equations with rational coefficients - Solves systems of two linear equations algebraically or graphically in real-world and mathematical problems	- Uses numbers in the form of a single digit times an integer power of 10 to estimate the magnitude and interpret relationships of quantities in word problems - Uses linear equations and systems of linear equations to represent, analyze, and solve problems. - Use similar triangles to explain why the slope is the same between any two distinct points on a non-vertical line in the coordinate plane - Derives the equation $y=mx$ for a line through the origin and the equation $y=mx + b$ for a line intercepting the vertical axis b - Estimates solutions to systems of two equations from a graph - Uses understanding of a proportional relationship and structure to interpret the meaning of b, the vertical axis intercept

Mathematics Grade 8	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Functions	- Identifies a relationship as a function - Interprets the equation of a linear function	- Determines the rate of change and initial value of a function from a table or graph - Compares the properties of functions represented in different ways - Writes a function to model a linear relationship - Determines the rate of change of a function from a table, graph, or description - Describes or sketches functional relationships represented graphically	- Identifies functions as linear and non-linear from graphs or equations - Interprets the rate of change of a function from a table, graph, equation, or description
Geometry	- Identifies the properties of rotations, reflections and translations - Uses the relationship among the sides of a right triangle to solve problems - Translates and reflects two dimensional figures - Uses Pythagorean theorem to find the hypotenuse	- Describes the congruence relationship between two congruent figures - Describes the effect of transformations on two-dimensional figures using coordinates - Describes the similarity relationship between two similar figures - Rotates two-dimensional figures around the origin - Finds angle sum and exterior angle of triangles, angles created when parallel lines are cut by a transversal, and angle-angle criterion for similarity of triangles - Applies the Pythagorean theorem to find distances between points on the coordinate plane - Applies the Pythagorean theorem to determine the unknown side lengths in right triangles in mathematical and real-world problems - Solves mathematical and real-world problems involving volume of cones, cylinders, and spheres	- Use informal arguments to establish facts about the angle sum and exterior angle of triangles, angles created when parallel lines are cut by a transversal, and angle-angle criterion for similarity of triangles - Justifies Pythagorean theorem and its converse - Given the volume of a cone, finds unknown dimensions of the cone - Given the volume of a cylinder, finds unknown dimensions of the cylinder - Given the volume of a sphere, finds unknown dimensions of the sphere

Mathematics Grade 8	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Statistics and Probability	• Describes the patterns associated with bivariate data • Identifies and constructs a line of best fit	• Constructs and interprets scatter plots • Constructs and interprets two-way tables • Uses the equation of a linear model to solve problems	• Interprets the slope and intercept of linear models • Analyzes scatter plots • Analyzes relative frequencies in two-way tables

MCAS Next-Generation Achievement-Level Descriptors Mathematics

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

MCAS Achievement-Level Descriptors

Mathematics: Grade 10

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Mathematics Grade 10	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Number and Quantity	- Rewrites expressions involving integer exponents using the properties of exponents - Uses units as a way to understand problems and chooses units consistently in formulas - Chooses the scale and the origin in graphs and data displays - Identifies significant figures in recorded measures and computed values based on the context given and the precision of the tools used to measure - Identifies appropriate quantities for the purpose of descriptive modeling	- Rewrites expressions involving radical and rational exponents using the properties of exponents - Performs operations on rational and irrational numbers - Determines whether the solution of operations on two numbers would be rational or irrational - Interprets units consistently in formulas and uses units to solve multi-step problems. - Interprets the scale and the origin in graphs and data displays - Defines appropriate quantities for the purpose of descriptive modeling - Chooses a level of accuracy appropriate to limitations on measurement when reporting quantities - Describes the effects of approximate error in measurement and rounding on measurements and on computed values from measurements	- Explains how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of radical exponents - Explains why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational

Mathematics Grade 10	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Algebra	- Usually interprets parts and structures of linear expressions - Chooses an equivalent form of an expression to reveal properties of the quantity represented by the expression - Identifies, combines, and expands like terms when performing operations on polynomial expressions - Creates linear equations and inequalities in one variable and uses them to solve problems - Creates equations in two variables to represent relations between quantities - Graphs the equations on coordinate axes with labels and scales - Rearranges formulas to highlight a quantity of interest using the same reasoning as in solving equations - Solves and explains each step in solving linear equations and	- Consistently interprets parts of an expression based on real-world context - Usually interprets the structure of quadratic and exponential expressions with integer exponents - Factors polynomial expressions - Creates quadratic and exponential equations in one variable and uses them to solve problems - Creates equations with more than two variables - Represents constraints by linear equations/ inequalities and by systems of linear equations/inequalities - Constructs viable arguments to justify or refute a solution method for linear equations/inequalities - Usually solves linear equation/inequalities in one variable involving absolute value - Solves a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically - Finds and is able to explain the solutions of linear equations $y = f(x)$ and $y = g(x)$	- Interprets complicated expressions by viewing one or more of their parts as a single entity - Chooses and produces an equivalent form of an expression to explain properties of the quantity represented by the expression - Completes the square in a quadratic expression to reveal the maximum or minimum value of the function it defines - Recognizes that the system of polynomials is similar to the system of integers in that they are both closed under certain operations - Interprets solutions of linear equations or inequalities as viable or non-viable options in a modeling context - Uses the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions - Derives the quadratic formula - Recognizes when solutions of a quadratic equation results in non-real solutions and write them as $a \pm bi$ for real

Mathematics Grade 10	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Algebra	inequalities in one variable • Solves system of linear equations exactly and approximately • Knows that the graph of an equation in two variables is the set of all its solutions • Graphs the solutions of linear inequality in two variables	approximately, using technology to graph the functions and make tables of values • Graphs the solution set of a system of linear inequalities in two variables	numbers a and b • Proves that, given a system of equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions

Mathematics Grade 10	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Functions	- Knows the structure of a function and uses function notation to evaluate and interpret functions - Distinguishes between an arithmetic and a geometric sequence - Interprets key features of graphs and tables for a function that models a relationship - Calculates and interprets the average rate of change of a function presented symbolically or as a table - Graphs linear functions to show intercepts - Compares properties of functions each represented algebraically, graphically, numerically in tables, or by verbal descriptions - Distinguishes between situations that model linear functions and exponential functions - Constructs linear functions given a graph, a description of a relationship, or input-output pairs - Draws comparisons between exponential and linear graphs	- Interprets symmetries of graphs and tables in terms of the quantities - Relates the domain of a function to its graph - Estimates the rate of change from a graph. - Graphs functions and uses the properties of functions to create equivalent functions - Interprets zeros, maximum/minimum values, and symmetry of the graph - Writes quadratic and exponential functions to describe relationship between quantities - Determines an explicit expression or steps for calculation from a context - Writes arithmetic and geometric sequences both recursively and with an explicit formula - Identifies the effect on a graph of a function by replacing $f(x)$ with $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$ for specific values of k - Finds the inverse of a linear function - Constructs exponential functions given a graph, a description of a relationship, or input-output pairs - Draws comparisons between exponential and quadratic graphs - Interprets the parameters in a linear function	- Recognizes that sequences are functions that are sometimes defined recursively - Interprets relative maximums and minimums and end behavior of graphs and tables in terms of the quantities - Uses graphs to show relative maximums and minimums; symmetries; and end behavior - Graphs piecewise-defined functions, including step functions - Creates equivalent functions to explain different properties of the function - Uses process of completing the square in a quadratic function to show zeros, maximum/minimum values, and symmetry of the graph - Determines a recursive process, or steps for calculation from a context - Uses recursive and explicit formulas to model situations, and translates between the two forms - Utilizes technology to experiment with cases and illustrates an explanation of the effects on the graph of linear, quadratic, exponential, or absolute value functions - Interprets the parameters in an exponential function

Mathematics Grade 10	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Geometry	- Knows precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc - Represents rigid transformations in the plane - Compares transformations that preserve distance and angle to those that do not and identifies a sequence of transformations that will carry a given figure onto another - Finds angle sum and exterior angle of triangles, angles created when parallel lines are cut by a transversal, and angle-angle criterion for similarity of triangles - Uses congruence and similarity criteria for triangles to solve problems - Uses Pythagorean Theorem to solve right triangles - Uses coordinates to compute perimeters of polygons and	- Uses geometric descriptions of rigid motions to solve problems - Applies properties of polygons to the solutions of problems - Verifies experimentally the properties of dilations given by a center and a scale factor - Uses congruence and similarity criteria for triangles to prove relationships in geometric figures - Knows that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles - Uses Pythagorean Theorem to solve right triangles in applied problems - Identifies relationships among inscribed angles, radii, and chords - Uses the fact that the length of the arc intercepted by an angle is proportional to the radius to solve problems - Uses the slope criteria for parallel and perpendicular lines to solve geometric problems - Finds the point on a directed line segment between two given points that partitions the segment in a given ratio	- Develops definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments - Explains how the criteria for triangle congruence follow from the definition of congruence in terms of rigid motions - Makes formal geometric constructions - Proves theorems about: - triangles - parallelograms - circles - polygons - Proves the Pythagorean Theorem using triangle similarity - Explains the relationship between the sine and cosine of complementary angles - Uses trigonometric ratios to solve right triangles in applied problems - Uses relationships among inscribed angles, radii, and chords to solve problems - Derives the formula for the area of a sector. - Derives the equation of a circle to find the center and the radius - Derives the equation of a parabola given a

Mathematics Grade 10	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Geometry	areas of triangles and rectangles • Uses volume formulas for cylinders, cones, and spheres to solve problems	• Uses volume formulas for pyramids to solve problems	focus and directrix • Uses coordinates to prove simple geometric theorems algebraically, including the distance formula and its relationship to the Pythagorean Theorem • Proves the slope criteria for parallel and perpendicular lines • Uses dissection arguments, Cavalieri's principle, and informal limit arguments to give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone

Mathematics Grade 10	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Statistics and Probability	- Represents data with plots on the real number line - Usually uses statistics appropriate to the shape of the data distribution to compare center and spread of two or more different data sets - Usually interprets differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers) - Interprets relative frequencies in the context of the data - Represents data on two quantitative variables on a scatter plot and describes how the data are related - Fits a linear function for a scatter plot that suggests a linear association and interprets the slope and the intercept of the model - Informally assesses the fit of a function by plotting and analyzing residuals - Describes events as subsets of a sample space using characteristics of the outcomes, or as unions, intersections, or complements of other events - Constructs and interprets two-way frequency tables of data when two categories are associated with each object being classified	- Consistently uses statistics appropriate to the shape of the data distribution to compare center and spread of two or more different data sets - Consistently interprets differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers) - Recognizes possible associations and trends in the data contained in a two-way frequency table - Fits a linear function to the data and uses the fitted function to solve problems in the context of the data - Computes and interprets the correlation coefficient of a linear fit - Distinguish between dependent and independent events - Uses a two-way table to approximate conditional probabilities - Recognizes the concepts of conditional probability and independence in everyday language and everyday situations - Applies the addition rule to calculate probabilities	- Applies the addition rule and interprets the answer in terms of the model - Distinguishes between correlation and causation - Knows that the conditional probability of A given B is $P(A \text{ and } B)/P(B)$ and uses it to solve problems - Explains the concepts of conditional probability and independence in everyday language and everyday situations

MCAS Next-Generation Achievement-Level Descriptors Science and Technology/Engineering

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

Grade 5 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

STE Grade 5	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Disciplinary Core Ideas	Demonstrates a partial understanding of some scientific concepts and processes by identifying and sometimes describing or providing evidence for these concepts and processes. Uses some basic scientific terms in common scientific examples.	Demonstrates a solid understanding of many scientific concepts and processes by mostly describing, explaining, and providing evidence for these concepts and processes. Mostly applies appropriate scientific terms in a variety of applications, including common science examples and some novel situations.	Demonstrates a comprehensive, in-depth understanding of many scientific concepts and processes by consistently describing, explaining, and providing evidence for these concepts and processes. Consistently applies scientific terms in appropriate contexts in both common science examples and many novel situations.

STE Grade 5	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Scientific and Engineering Practices	Identifies a testable, scientific question for an investigation. Completes a simple, commonly used model. Uses simple graphs or data to draw general conclusions about a familiar scientific investigation or phenomena. Identifies evidence to support a claim. Describes a benefit or drawback of simple design features given a familiar device or prototype.	Develops some testable, scientific questions for an investigation. Completes or uses a model and describes some strengths and weaknesses of the model. Analyzes multiple sources of data, including graphs and tables, to draw conclusions about a familiar scientific investigation or phenomena. Provides some evidence to support a claim and constructs basic explanations for scientific phenomena or results from an investigation. Analyzes design features of a familiar device or prototype and describes a benefit or drawback of the design.	Consistently develops testable, scientific questions for an investigation. Creates a model, consistently describes the strengths and weaknesses of the model, and provides information for how to improve the model. Analyzes multiple sources of data, including graphs and tables, to draw conclusions about a novel or complex scientific investigation or phenomena. Provides several pieces of evidence to support a claim and constructs thorough explanations for scientific phenomena or results from an investigation. Analyzes design features of a novel device or prototype and constructs an explanation for how the design features meet criteria for success or are limited by constraints.

Grade 5 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Earth and Space Science	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
ESS1. Earth's Place in the Universe	Identifies the Sun, the Moon, and Earth in a model. Recognizes that the Sun is a star. Recognizes that people at different locations on Earth may experience day and night at the same time. Given a pattern of moon phases, selects the Moon phase that completes the pattern. Recognizes that shadows change over the course of a day because of the apparent movement of the Sun. Supports a claim with evidence that an environment has changed over time, such as a forested area that was once covered by water. Classifies whether geologic structures were formed by erosion or deposition.	Completes a model of the Sun, the Moon, and Earth and mostly describes the movements of each. Recognizes that the Sun is the only star in our solar system. Constructs an explanation for why people on Earth experience day and night. Describes how the Moon reflects the Sun's light and makes a pattern over approximately one month. Uses a model to show the pattern of the Moon over a week or a month. Completes a model showing the relationship between a shadow's length and the position of the Sun in the sky. Generally, describes the processes of erosion or deposition. Identifies the relative age of rock layers based on the position of the rock layers.	Develops a model of the Sun, the Moon, and Earth and consistently describes the movements of each. Explains why the Sun appears brighter than other stars. Constructs an explanation with evidence for why people at one location on Earth are experiencing day while people at another location on Earth are experiencing night. Explains how the Moon's reflection of the Sun's light and the orbit of the Moon are responsible for the phases of the Moon. Constructs an explanation for why the length and direction of a shadow changes during a day. Constructs an explanation with evidence of how erosion and deposition can change geologic structures or an area over time.

Earth and Space Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ESS2. Earth's Systems	Uses weather data tables or simple graphs to describe one of the following: precipitation, wind speed, or temperature for an area. Differentiates between two different types of climates. Completes a simple model of the water cycle. Identifies on a map where a volcano or earthquake is likely to occur. Recognizes evidence of weathering or erosion in a diagram or simple description. Interprets simple graphs to draw general conclusions about the relative amounts of fresh and saltwater on Earth.	Analyzes simple weather data patterns to describe expected weather for an area. Analyzes climate data for several different regions and describes differences in weather patterns. Recognizes that different regions can have different climate types. Completes a model of the water cycle and describes what is happening in most of the water cycle stages. Analyzes a map to locate where mountain ranges, ocean trenches, volcanoes, and earthquakes are likely to occur. Describes the processes of weathering and erosion and applies them to common examples, such as landslides, canyons, valleys, etc. Analyzes a map to identify water sources as fresh or saltwater, including fresh water stored in glaciers and polar ice caps.	Analyzes and interprets graphs and tables to draw conclusions about various weather patterns. Explains the difference between weather and climate and uses climate data to draw conclusions about the expected weather patterns of different climate types (e.g., desert, tropical, tundra). Develops a model of the water cycle, including absorption and surface runoff, and describes how heat energy is needed for water to cycle. Explains why mountain ranges, ocean trenches, volcanoes, and earthquakes occur at plate boundaries. Explains how landscapes change due to weathering and erosion and provides examples of each process. Describes different sources of fresh water and saltwater and explains why it is important to understand the relative amounts of these types of water on Earth.

Earth and Space Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ESS3. Earth and Human Activity	Categorizes some common examples of renewable and nonrenewable energy resources. Identifies one way to reduce human impact on the environment for a given situation. Identifies one design solution to reduce the impact of a weather event, such as a hurricane, or other natural event, such as an earthquake, on humans. Identifies a testable question about a filter to determine how well the filter will work.	Explains why some sources of energy are considered renewable and others are not. Consistently categorizes energy sources as either renewable or nonrenewable. Describes different ways to reduce human impact on the environment for a given situation. Identifies multiple design solutions to reduce the impact of a weather event or other natural event on humans. Develops a testable question about how to improve the design of a filtering system and provides information about how to answer the question.	Explains how humans have impacted the environment in different ways and constructs explanations for how to reduce those impacts on the environment. Identifies multiple design solutions to reduce the impact of a weather event or other natural event on humans and explains how each design solution could reduce the impact. Develops testable questions about how to make several improvements to the design of a filtering system and provides evidence for how the improvements will better filter the water.

Grade 5 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Life Science	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
LS1. From Molecules to Organisms: Structures and Processes	Completes a model of an organism's life cycle and describes the importance of one stage of the life cycle. Supports a claim with evidence about how the function of an animal or plant structure helps it to survive. Recognizes that photosynthesis is important for the survival of a plant.	Compares the life cycles of two organisms and describes similarities between the two life cycles, including the importance of some of the stages. Supports claims with evidence about how different functions of animal or plant structures help the animal or plant to survive. Completes a model showing some of the inputs (sunlight, air, water) or outputs (sugars) of photosynthesis.	Constructs an explanation for why each stage of the life cycle is important, using examples of both plants and animals. Supports claims with evidence about how several structures of animals and plants allow for the survival, growth, and reproduction of different organisms. Develops a model showing the inputs and outputs of photosynthesis and explains the importance of photosynthesis for the survival and growth of a plant.

Life Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS2. Ecosystems: Interactions, Energy, and Dynamics	Analyzes a simple food web or other model and identifies the ecological role of some of the organisms. Recognizes that the energy organisms depend on originates from the Sun. Describes one way animals and plants use energy. Identifies the function of a composteur and one design element of a composteur. Identifies a type of organism (bacteria or fungi) that breaks down dead organisms.	Analyzes a food web or other model, identifies the ecological roles of several of the organisms, and describes some of the roles of the organisms. Analyzes a model and describes the flow of energy through a simple food web. Analyzes several composteur designs and describes some advantages and disadvantages of each design. Describes the importance of decomposers in recycling matter back to the soil.	Analyzes food webs and other models and consistently describes the ecological roles of the organisms. Completes a model to show energy transfer through a food web and describes how energy is transferred from one organism to another. Analyzes several composteur designs, describes several advantages and disadvantages of each, and explains which composteur is best to use. Explains what would happen to an ecosystem without decomposers and explains how decomposers recycle matter back into both the soil and air.

Life Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS3. Heredity: Inheritance and Variation of Traits	Provides observable evidence that traits are inherited from a parent. Recognizes that some basic characteristics are inherited, while others are a result of the environment.	Analyzes data and draws some conclusions about familiar traits that are inherited and characteristics that are a result of the environment.	Analyzes novel data and draws conclusions about traits that are inherited and characteristics that are a result of the environment.
LS4. Biological Evolution: Unity and Diversity	Identifies the type of environment where an organism once lived based on fossilized remains. Supports a claim with one piece of evidence for how some individuals within a population may have a survival advantage over other individuals in the population. Uses evidence, such as an organism's structure, to describe how an organism is well adapted to its environment. Recognizes what may happen to an organism if its environment changes and it is unable to move away.	Classifies fossils based on their physical characteristics, including the type of environment where the fossilized organism once lived. Supports a claim with several pieces of evidence for how some individuals within a population may have a survival advantage over other individuals in the population. Identifies an example of how an organism is well adapted to its environment. Describes what will happen to a population if individuals within that population are unable to reproduce.	Constructs an explanation for why the fossil record is incomplete due to many organisms not being fossilized. Given data about the characteristics of a novel organism, draws conclusions and explains how the organism is well adapted to its environment. Explains, with evidence, if an organism is likely to survive environmental changes. Explains why reproduction is critical to the survival of a species.

Grade 5 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Physical Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS1. Matter and Its Interactions	Analyzes a simple particle model of matter and identifies the phase of the substance. Completes a graph to show the masses of substances after a phase change or after a chemical reaction. Analyzes a simple set of data to determine the best material to use in a common situation, based on the material's characteristic properties. Determines if a chemical reaction occurred or if a mixture was formed during an investigation and provides one piece of evidence to support the claim.	Analyzes a particle model of a substance before and after a phase change to determine phases of the substance and the phase change that occurred. Constructs an explanation about how mass is conserved during a phase change or a chemical reaction. Analyzes a set of data about materials, identifies the best material to use in a given situation, and provides evidence for the reasoning. Develops a question to determine if a chemical reaction occurred or if a mixture was formed during an investigation and provides possible answers to the question with pieces of evidence to support the answers.	Analyzes particle models of substances before and after phase changes to determine the phase change that occurred and describes whether heat was added or removed. Describes an investigation that could be used to show that mass is conserved during a phase change or chemical reaction. Analyzes multiple sets of data to determine the best materials to use in a variety of different situations, based on the material's characteristic properties. Supports the conclusions with evidence from the data. Describes an investigation that could be used to determine if a chemical reaction will occur or if a mixture will be formed when two substances are combined and includes information about evidence that would be needed to make the determination.

Physical Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS2. Motion and Stability: Forces and Interactions	Interprets a diagram to determine if balanced forces are acting on an object. Labels a model showing the direction of the gravitational force on an object on Earth. Identifies if two magnets will be attracted to each other or repelled from each other based on the magnets' orientations. Recognizes that either an attractive or a repulsive force exists between two magnets.	Determines if the motion of an object will change, based on a diagram showing the forces acting on the object. Describes how friction affects the motion of an object. Completes a model showing the direction of the gravitational force on multiple objects that are on or near the surface of Earth. Completes a model of the poles on several magnets based on whether the magnets attract each other or repel each other.	Completes a diagram of the forces acting on an object based on whether the object is at rest, moving at a constant speed, or changing speed and explains the reasoning. Describes how different surface textures affect friction. Constructs an explanation about the gravitational force exerted by Earth on objects always being toward the center of Earth. Describes an investigation that could be used to determine the poles of magnets and explains what evidence could be used to make this determination.

Physical Science	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
PS3. Energy	Interprets a graph that shows the relationship between speed and kinetic energy. Identifies one type of energy that is produced when a collision occurs. Describes one way that energy can be moved from one place to another. Interprets a familiar situation to describe one way that stored energy is converted to another type of energy.	Describes the relationship between the speed of an object and the kinetic energy of that object. Describes the energy conversions that take place when two objects collide. Interprets a given scenario and describe one way that energy is transferred in the scenario. Describes two energy conversions in a given situation including kinetic energy being converted to electrical energy and/or stored energy being converted into another type of energy.	Completes a graph showing the kinetic energy of object as the speed of the object changes and explains why the graph should be completed in that way. Constructs an explanation about the energy conversions that take place when two objects collide and supports the explanation with evidence. Analyzes a novel scenario and describes multiple ways that energy is transferred from place to place and how energy is converted in multiple ways.
PS4. Waves and Their Applications in Technologies for Information Transfer	Recognizes that waves can cause an object to move. Uses a simple model of a wave to show that the wave has a regular pattern. Recognizes that light must be reflected off an object and enter the eye for the object to be seen. Given a communication system, identifies one component (encoder, decoder, receiver, sender) of the system.	Generally, describes that waves carry energy and can cause objects to move. Completes a model showing that a wave has a regular pattern of motion. Develops a model to show how light reflects off an object and enters the eye so the object can be seen. Describes at least two components of a given communication system.	Constructs an explanation about how an object can be moved by the energy of a wave. Explains how objects are seen by the eye, using evidence from a given scenario. Consistently describes the components of a communication system for a given scenario.

Grade 5 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Technology/ Engineering	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ETS1. Engineering Design and ETS3. Technological Systems	Identifies a criterion for success and a constraint when given a simple design problem. Identifies one solution to a simple engineering design problem. Analyzes different representations of a simple design solution and chooses the most appropriate one for a given situation. Identifies the importance of a prototype. Identifies the difference between an innovation and an invention.	Describes several criteria for success and constraints when given a design problem. Generates a solution to an engineering design problem and generally explains how the solution could be successful based on evidence. Analyzes different representations of a design solution, chooses the most appropriate representation for the given situation, and explains the reasoning. Identifies several design features of a prototype and explains how these features are important to the design of the prototype. Analyzes a design feature of a prototype and explains the importance of a prototype. Describes one innovation to an existing technology. Provides an example of an invention, including common examples and some novel examples.	Explains how certain criteria for success and constraints will impact the solution to a design problem. Generates two or more solutions to an engineering design problem and explains in detail how the solutions could be successful and identifies possible failure points for each solution. Describes an appropriate representation for a design solution and explains the reasoning. Describes several design features of prototypes and explains the benefits and possible limitations of each. Explains why prototypes are constructed and explains the importance of redesigning a prototype. Explains why a novel technology is an innovation or an invention, given a description of the technology.

MCAS Next-Generation Achievement-Level Descriptors Science and Technology/Engineering

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

Grade 8 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

STE Grade 8	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Disciplinary Core Ideas	Demonstrates a partial understanding of some scientific concepts and processes by identifying and sometimes describing or providing evidence for these concepts and processes. Uses some basic scientific terms in common scientific examples.	Demonstrates a solid understanding of many scientific concepts and processes by mostly describing, explaining, and providing evidence for these concepts and processes. Mostly applies appropriate scientific terms in a variety of applications, including common science examples and some novel situations.	Demonstrates a comprehensive, in-depth understanding of many scientific concepts and processes by consistently describing, explaining, and providing evidence for these concepts and processes. Consistently applies scientific terms in appropriate contexts in both common science examples and many novel situations.

STE Grade 8	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Scientific and Engineering Practices	Identifies a testable, scientific question for an investigation. Completes a simple, commonly used model. Uses simple graphs or data to draw general conclusions about a familiar scientific investigation or phenomena. Identifies evidence to support a claim. Describes a benefit or drawback of simple design features given a familiar device or prototype.	Develops some testable, scientific questions for an investigation. Completes or uses a model and describes some strengths and weaknesses of the model. Analyzes multiple sources of data, including graphs and tables, to draw conclusions about a familiar scientific investigation or phenomena. Provides some evidence to support a claim and constructs basic explanations for scientific phenomena or results from an investigation. Analyzes design features of a familiar device or prototype and describes a benefit or drawback of the design.	Consistently develops testable, scientific questions for an investigation. Creates a model, consistently describes the strengths and weaknesses of the model, and provides information for how to improve the model. Analyzes multiple sources of data, including graphs and tables, to draw conclusions about a novel or complex scientific investigation or phenomena. Provides several pieces of evidence to support a claim and constructs thorough explanations for scientific phenomena or results from an investigation. Analyzes design features of a novel device or prototype and constructs an explanation for how the design features meet criteria for success or are limited by constraints.

Grade 8 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Earth and Space Science	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
ESS1. Earth's Place in the Universe	Completes a model of the Earth-Sun-Moon system to show either a solar or a lunar eclipse. Identifies the basic pattern of the moon phases. Recognizes that the tilt of Earth's axis causes the seasons. Recognizes that gravity affects high and low tides, Earth's orbit, and the Moon's orbit. Recognizes that the Milky Way galaxy contains many solar systems, and that Earth is one planet within our solar system. Identifies the bottom layer of rock as the oldest and the top layer of rock as the youngest.	Develops a model showing the positions of the Sun, the Moon, and Earth during a solar or a lunar eclipse. Completes a model of the moon phases. Compares the intensity of sunlight at different locations on Earth during different seasons of the year. Analyzes models to determine where high and low tides occur based on the position of the Moon. Describes the role that gravity plays in orbital motions. Orders the planets, our solar system, the Milky Way galaxy, and the universe by their relative sizes. Analyzes a model showing several layers of rock and draws conclusions about the relative ages of the fossils found in the rock layers.	Constructs an explanation for why people see solar and lunar eclipses on Earth. Constructs an explanation for why people on Earth observe the phases of the Moon. Analyzes a graph to describe how changes in the duration and intensity of sunlight during a year determines the seasons. Supports conclusions with evidence from the graph. Completes models showing where high and low tides occur and explains why there are high and low tides in these locations. Compares and draws conclusions about the force of gravity on planets, moons, asteroids, comets, etc. in our solar system. Analyzes a model showing several layers of rock containing a fault to draw a conclusion about the relative age of the fault.

Earth and Space Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ESS1. Earth's Place in the Universe	Identifies some of the processes that play a role in the formation of rock.	Uses rock layers and fossil evidence to describe how the geology of a particular area has changed over time, such as from a sea floor to a forest.	Constructs an explanation for how rock layers and geologic structures, such as canyons, volcanoes, mountains, and beaches, are formed through weathering, erosion, heat, pressure, and/or deposition.

Earth and Space Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ESS2. Earth's Systems	Uses a model to show that geologic structures, such as volcanoes and mountain ranges, are formed where plates are pushed together. Recognizes that surface structures continue to change over time due to geologic processes, such as weathering, erosion, glaciation, and the movement of Earth's plates. Completes a model showing the primary steps of the water cycle. Analyzes weather data and draws simple conclusions about the precipitation and temperature of an area. Recognizes that temperatures near the ocean are more stable than temperatures of inland locations.	Uses a model to describe the role of convection currents in the movement of Earth's plates and identifies where convection currents occur. Describes how geologic processes form and shape geologic structures, such as mid-ocean ridges, mountains, and volcanoes, and cause geologic events, including earthquakes, landslides, and volcanic eruptions. Analyzes maps and other evidence to draw conclusions about the movement of Earth's plates. Describes the role of solar energy and gravity in the water cycle. Describes the weather conditions that typically occur when cool and warm air masses collide.	Constructs an explanation for how the movement of Earth's plates causes various geologic events, such as earthquakes, volcanic eruptions, and tsunamis. Uses data to explain the relative time scales different geologic structures form over. Supports a claim about the movement of Earth's plates using several pieces of evidence, such as the shapes of continents and the locations of specific fossils and types of rock. Describes evidence that glaciers were once present in an area. Constructs an explanation for how each stage of the water cycle is dependent upon energy from the Sun and/or the Earth's gravity. Describes how air masses move and how the movement of air masses affects the weather in an area.

Earth and Space Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ESS3. Earth and Human Activity	Analyzes a basic map to draw general conclusions about the distribution of minerals or fossil fuels on Earth. Identifies one way that humans can mitigate the impact of increases in human population on natural resources and the environment. Analyzes a simple graph or data table to draw conclusions about how climate change is affecting an area.	Provides a partial explanation for why some resources, such as fossil fuels, water, and mineral/ores, are unevenly distributed on Earth. Describes various ways that humans can mitigate the overuse of Earth's resources, such as using renewable energy sources, recycling, using public transportation, etc. Constructs an explanation that human activities, such as fossil fuel combustion, agriculture, and deforestation, have played a role in rising global temperatures.	Explains why natural resources are unevenly distributed on Earth. Analyzes data, including graphs and maps, to draw conclusions about how humans use natural resources and identifies some ways human can mitigate the overuse of these resources. Constructs an explanation using evidence that human activities, such as fossil fuel combustion, agriculture, and deforestation, have played a role in rising global temperatures over the past century. Describes several ways humans can mitigate the effects of climate change.

Grade 8 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Life Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS1. From Molecules to Organisms: Structures and Processes	Recognizes that animal, plant, and bacterial cells have some shared characteristics and some different characteristics. Recognizes some parts of a cell and the function of some cell parts. Describes two body systems and how they work together. Identifies some behaviors and structures of plants and animals that enables them to survive and successfully reproduce. Identifies a characteristic that is inherited and a characteristic that is mostly a result of the environment. Recognizes that all organisms need an energy source and nutrients to survive.	Uses the characteristics of cells to categorize an organism as an animal, plant, or bacteria. Given a diagram of a cell, identifies the cell parts and describes most functions of the cell parts. Generally, describes how different body systems work together. Provides evidence for how some organisms are able survive and reproduce more than other organisms. Analyzes information about an organism to determine which characteristics are inherited and which characteristics are mostly a result of the environment. Describes how carbohydrates, proteins, and fats are broken down to support cell growth and to release energy (cellular respiration).	Compares animal, plant, and bacterial cells and identifies both similarities and differences between them. Consistently describes the functions of cell parts. Describes how the interactions between body systems can be affected by a condition or disease based on the functions of the body systems. Explains how various structures and behaviors can provide survival and reproductive advantages to plants and animals. Uses evidence to explain why some characteristics are inherited and other characteristics are a result of both inheritance and the environment. Using a model, explains how food molecules are broken down and rearranged to provide nutrients for cell growth and energy for cellular processes.

Life Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS2. Ecosystems: Interactions, Energy, and Dynamics	Interprets graphs to determine whether the size of a population increased, decreased, or stayed the same. Identifies one ecological relationship (competitive, predator-prey, parasitic, or mutually beneficial) when given a description of the interaction of two organisms. Recognizes that the biodiversity of a population is positively correlated with its size. Identifies how an ecosystem and how an organism living in the ecosystem can be helped by a human action.	Analyzes population data, including graphs, to describe changes in the size a particular population over time. Identifies several ecological relationships when given the interactions of organisms in an environment (including analyzing a food web). Completes models to show the cycling of matter through photosynthesis, cellular respiration, and decomposition. Uses a model of an ecosystem to describe how a disruption to the ecosystem can have an effect on an organism in the ecosystem. Describes multiple ways how the biodiversity of a population can be increased. Describes several ways an ecosystem and the organisms living in the ecosystem can be helped by human actions.	Constructs an explanation for the reasons why populations grow versus decline over time. Analyzes a complex food web and describes the ecological roles of the organisms. Consistently describes the roles of producers, primary, secondary, tertiary consumers, and decomposers in a model. Develops a model to show the cycling of matter and energy through an ecosystem, including the role of photosynthesis, cellular respiration, and decomposition. Uses a model of an ecosystem to construct an explanation with evidence for how a natural or manmade disruption to the environment can affect multiple populations in the ecosystem. Evaluates competing designs for protecting an ecosystem and its inhabitants from threats such as climate change, habitat loss, pollution, or overharvesting of resources.

Life Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS3. Heredity: Inheritance and Variation of Traits	Uses a model to show that chromosomes are made up of genetic information. Identifies one benefit of sexual reproduction or one benefit of asexual reproduction. Recognizes that offspring from sexual reproduction inherit genes and characteristics from two parents. Analyzes a simple Punnett square to determine the expected percentage of offspring with a certain trait.	Completes a model to show that chromosomes hold genes and genes hold the instructions for proteins. Describes mutations as changes to genes. Identifies examples of mutations that are harmful, beneficial, or neutral to changes in traits of an organism. Describes some of the benefits and drawbacks of sexual versus asexual reproduction. Completes a Punnett square to determine the expected percentage of offspring that will inherit certain genotypes (allele pairs) and phenotypes (traits).	Develops a model to show that chromosomes are made up of genes and that genes contain the instructions for proteins, which determine the inherited characteristics of an organism. Describes how a mutation may be harmful, neutral, or beneficial to an organism depending on its interactions with the environment. Constructs an explanation for why some organisms benefit from asexual reproduction while other organisms benefit from sexual reproduction. Develops a model to show that sexual reproduction results in sets of chromosomes (found in the nucleus) from each parent, and therefore an allele for each gene is inherited from each parent.

Life Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS4. Biological Evolution: Unity and Diversity	Analyzes fossil evidence to draw conclusions about different organisms living at different times. Compares a structure in a living organism to a structure from a fossilized organism and draws a conclusion about their similarity. Recognizes that individuals with certain inherited characteristics have a higher probability of surviving than individuals without those characteristics. Identifies one difference between natural selection and artificial selection.	Analyzes fossil evidence to describe how the environment in an area has changed over geologic time. Explains how living and fossilized organisms can have similar body structures with similar or different functions. Identifies examples of natural selection and generally explains why they are examples of natural selection. Compares examples of natural selection and artificial selection.	Constructs an explanation using fossil evidence for how similar structures can be used to infer whether two types of organism share a recent common ancestor. Constructs an explanation for how a trait can become more common in a population over time due to natural selection. Describes advantages and disadvantages of both natural and artificial selection.

Grade 8 MCAS Next-Generation Achievement-Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Physical Science	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
PS1. Matter and Its Interactions	Identifies that all living and non-living things are made-up of atoms. Identifies that mixtures can be separated by physical means. Using data, identifies one piece of evidence that a chemical reaction or a physical change occurred. Interprets a particle model to determine the three states of matter shown in the model. Recognizes that a new substance is formed when a chemical reaction occurs. Given data, determines if energy is being absorbed or released in a chemical reaction. Calculates the density of an object given its mass and volume.	Completes a model showing how atoms form compounds and molecules. Describes how mixtures are made up of pure substances that can be separated by physical means. Using data, identifies multiple pieces of evidence that a chemical reaction or a physical change occurred. Partially describes how particle motion, spatial arrangement, or temperature of a substance change when thermal energy is added to or removed from the substance. Completes a bar graph to show the conservation of mass in a chemical reaction or a physical change. Given a chemical reaction, identifies if it is exothermic and endothermic based on whether or not thermal energy is released or absorbed. Describes, compares, and calculates the densities of different materials.	Analyzes a chemical formula to determine the number of each type of atom that makes up a given molecule. Analyzes data to determine which substances are pure substances. Explains the difference between a chemical reaction and a physical change and provides multiple pieces of evidence to support the explanation. Consistently describes how particle motion, spatial arrangement, and temperature of a substance change when thermal energy is added to or removed from the substance. Relates temperature to a measure of average kinetic energy and recognizes that temperature/kinetic energy does not change as a substance is changing state. Supports a claim that matter is not created or destroyed during a chemical reaction or a physical change, using evidence from an investigation. Describes the difference between an endothermic and exothermic reaction. Supports the description with evidence from a chemical reaction. Determines whether an object would float or sink in water due its density and supports the answer with evidence.

Physical Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS2. Motion and Stability: Forces and Interactions	Given a model, recognizes that an object that applies a force to another object will also experience a force acting on it. Recognizes that the speed of an object will change if the mass of the object changes and the forces acting on the object are constant. Recognizes that the speed of an object will change if the forces acting on the object are not balanced. Recognizes that two positive charges or two negative charges will repel each other, and a negative charge and a positive charge will attract each other. Completes a model, to show that gravitational forces are always attractive. Using a model, describes how an object can exert forces on another object, even when the objects are not in contact with each other.	Analyzes models to draw conclusions about the forces acting on objects during a collision. Completes a graph to show how the change in speed of an object, with a constant net force acting on it, depends on the mass of the object. Completes a model to show whether the speed of an object will increase, decrease, or remain constant based on the forces acting on an object. Completes a model to show how the distance between two electric charges or the magnitudes of the charges affects the strength of the forces between the charges. Describes how the mass of objects affects the gravitational forces on the objects. Completes a model of the electric, magnetic, or gravitational field around an object.	Develops models to show the forces acting on objects before, during, and after a collision. Develops a model to show how the change in speed of an object depends on the mass of the object and the net force acting on the object. Uses data to construct an explanation about how the distance between two electric charges or the magnitudes of the charges affects the strength of the force between the charges. Develops a model showing the relative magnitudes of gravitational forces acting between two objects. Completes a model of the electric, magnetic, or gravitational field between two objects.

Physical Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS3. Energy	Interprets a graph to show how the kinetic energy of an object relates to the speed of the object, or vice versa. Interprets data to describe what will happen to an object's kinetic energy as its potential energy decreases. Identifies the flow of thermal energy from hot to cold. Identifies an example of conduction, radiation, or convection. Describes how it takes more time to heat an object that has more mass than an object (of the same material) with less mass. Using a graph, determines how an increase in average kinetic energy of an object results in an increase in temperature.	Completes a graph to show how the kinetic energy of an object relates to the speed of the object, or vice versa. Analyzes information, including graphics and data, and generally describes how the kinetic and potential energies of an object compare at different heights, when energy is conserved. Analyzes the conversions of different types of potential energy into kinetic energy and vice versa to draw conclusions about energy conservation. Generally, describes how thermal energy is transferred through conduction, radiation, and convection and generally describes ways this heat flow can be increased or decreased in a given situation. Analyzes data and draws conclusions to describe how certain materials will better conduct thermal energy compared to others. Describes how average kinetic energy is related to temperature.	Uses a graph to show how the kinetic energy of an object relates to the speed of the object, or vice versa, and explains the reasoning. Analyzes information, including graphics and data, and consistently describes how the kinetic and potential energies of an object compare at different heights, and is able to explain that energy is conserved. Explains how different types of potential energies are converted to kinetic energy and vice versa. Explains how thermal energy is transferred through conduction, radiation, and convection and fully describes ways the rate of this heat flow can be increased or decreased in a given situation. Constructs an explanation to show the relationships among the amount of energy transferred between objects, how well materials of the objects retain or radiate heat, the masses of the objects, and the changes in the average kinetic energies of the object's materials.

Physical Science	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS4. Waves and Their Applications in Technologies for Information Transfer	Completes a model of a wave to show its frequency, amplitude, or wavelength. Given a model, sometimes identifies where waves are reflected, absorbed, or transmitted through a material. Identifies when a signal is either encoded or transmitted.	Compares two waves' frequencies, amplitudes, and wavelengths, and sometimes describes how these characteristics will affect the waves. Completes a model showing reflection, absorption, and transmission of a wave, including how waves are refracted. Describes the processes of encoding and transmitting.	Compares two or more waves' frequencies, amplitudes, and wavelengths, and consistently describes how these characteristics will affect the pattern of a wave. Develops a model to explain how waves are reflected, absorbed, or transmitted in a given situation, including how waves are refracted.

Grade 8 MCAS Next-Generation Achievement- Level Descriptors

Science and Technology/Engineering

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Technology/ Engineering	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ETS1. Engineering Design	Identifies criteria and constraints of a design problem. Identifies one solution to a simple problem. Uses a simple design matrix to determine the best solution. Sometimes solves simple scale problems, given the actual measurement or the scaled measurement. Analyzes a design feature of a prototype and identifies the importance of a prototype.	Describes some criteria and constraints of a design problem. Describes a solution to a problem and explains how it could be successful based on evidence. Uses a design matrix to draw conclusions about possible solutions. Solves scale problems, given the actual measurement or the scaled measurement. Generally, describes appropriate design features of a prototype and describes the importance of a prototype.	Describes several criteria and constraints of a design problem. Describes several solutions to a problem and explains their limitations and benefits based on evidence. Uses a design matrix to draw conclusions about possible solutions and explains the reasoning. Explains when a scale drawing should be used and determines an appropriate scale for a given situation. Consistently describes appropriate design features of prototypes for a given situation.

Technology/ Engineering	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ETS2. Materials, Tools, and Manufacturing	Recognizes basic properties of common materials (such as wood, metal, and plastic). Given data, chooses a material for a design problem given its characteristics. Given a set of tools, chooses the best tool for a given task. Identifies and describes some of the manufacturing processes (forming, separating, conditioning, assembling, finishing, quality control, and safety). Identifies an advantage or a disadvantage of using a computer or a human for a given task.	Describes properties (such as flexibility, ductility, hardness, thermal conductivity, electrical conductivity, and melting point) of common materials and generally uses the materials for appropriate design solutions. Describes the best tools to use for a given situation. Generally, describes a few steps of the manufacturing process in a given situation. Provides an advantage and a disadvantage of using a computer or a human for a given task.	Evaluates different materials and determines the best materials to use for a given design problem. Explains the reasoning, giving both drawbacks and benefits of the materials. Consistently describes several steps of the manufacturing process in a given situation. Provides multiple advantages and/or disadvantages of using a computer or a human for a given task.

Technology/ Engineering	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
ETS3. Technological Systems	Identifies and describes the functions of some components of a communication system (source, encoder, transmitter, receiver, decoder, and storage). Given a diagram, identifies and describes some of the functions of some components of a vehicle (structural, propulsion, guidance, suspension, and control subsystems). Given a diagram, identifies and describes some of the parts of a structural system (foundation, decking, wall, and roofing). Given a diagram, identifies a force (tension, torsion, compression, and shear) acting on a structure. Given a transportation, structural, or communication system, identifies some of the components of an engineering system: inputs, processes, outputs, and feedback.	Completes a model and describes the functions of several components of a communication system. Completes a model and describes most of the functions of some components of a vehicle. Identifies and describes most of the parts of a given structural system. Identifies and describes two forces acting on a shown structure. Identifies live and dead loads for a given scenario. Given a transportation, structural, or communication system, identifies and describes several components of an engineering system.	Develops a model and describes the functions of the components of a communication system. Develops a model and describes most of the functions of the components of a transportation system. Consistently identifies and describes the parts of a given structural system. Consistently identifies and describes forces acting on a shown structure. Describes live and dead loads for a given scenario. Given a transportation, structural, or communication system, consistently identifies and describes components of an engineering system.

High School Biology MCAS Next-Generation Achievement-Level Descriptors

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

High School MCAS Next-Generation Achievement-Level Descriptors

Biology

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

HS Biology	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Disciplinary Core Ideas	Demonstrates a partial understanding of some scientific concepts and processes by identifying and sometimes describing or providing evidence for these concepts and processes. Uses some basic scientific terms in common scientific examples.	Demonstrates a solid understanding of many scientific concepts and processes by mostly describing, explaining, and providing evidence for these concepts and processes. Mostly applies appropriate scientific terms in a variety of applications, including common science examples and some novel situations.	Demonstrates a comprehensive, in-depth understanding of many scientific concepts and processes by consistently describing, explaining, and providing evidence for these concepts and processes. Consistently applies scientific terms in appropriate contexts in both common science examples and many novel situations.

HS Biology	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Scientific and Engineering Practices	Identifies a testable, scientific question for an investigation. Completes a simple, commonly used model. Uses simple graphs or data to draw general conclusions about a familiar scientific investigation or phenomena. Identifies evidence to support a claim. Describes a benefit or drawback of simple design features given a familiar device or prototype.	Develops some testable, scientific questions for an investigation. Completes or uses a model and describes some strengths and weaknesses of the model. Analyzes multiple sources of data, including graphs and tables, to draw conclusions about a familiar scientific investigation or phenomena. Provides some evidence to support a claim and constructs basic explanations for scientific phenomena or results from an investigation. Analyzes design features of a familiar device or prototype and describes a benefit or drawback of the design.	Consistently develops testable, scientific questions for an investigation. Creates a model, consistently describes the strengths and weaknesses of the model, and provides information for how to improve the model. Analyzes multiple sources of data, including graphs and tables, to draw conclusions about a novel or complex scientific investigation or phenomena. Provides several pieces of evidence to support a claim and constructs thorough explanations for scientific phenomena or results from an investigation. Analyzes design features of a novel device or prototype and constructs an explanation for how the design features meet criteria for success or are limited by constraints.

HS Biology	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS1. From Molecules to Organisms: Structures and Processes	Identifies some of the most common elements that make up organic macromolecules. Describes a basic function of a type of organic macromolecule (carbohydrate, lipid, nucleic acid, or protein). Identifies the source of energy and the major reactants and products of photosynthesis by their names or chemical formulas. Describes ATP as a source of usable energy and that it is produced in mitochondria. Describes some major events of the cell cycle (including interphase, mitosis, cytokinesis) and their purposes. Identifies complementary base pairs for a DNA sequence and for an mRNA sequence. Identifies that a gene codes for a protein and describes one function of a protein.	Analyzes models to classify most organic macromolecules and identifies all common elements for a given example. Analyzes models of monomers to determine some types of organic macromolecules and describes some basic functions of these macromolecules. Constructs or completes models of photosynthesis using the names or chemical formulas of reactants and products and describes the importance of photosynthesis. Constructs or completes models of cellular respiration using the names or chemical formulas of reactants and products and describes the importance of cellular respiration. Completes a model to describe how major events of the cell cycle, including DNA replication, allow a cell to grow and survive. Describes the structure of DNA and how its structure affects its function. Describes how genes code for proteins through transcription and translation and describes several functions of proteins. Recognizes that all cells within the same organism have the same genes.	Analyzes models of monomers to consistently identify their organic macromolecules and describes the functions of these molecules. Constructs an explanation about the important uses of the products of photosynthesis for both plants and animals. Analyzes data to determine the relative amount of ATP that is generated by organisms under different conditions. Explains how ATP is used in a variety of ways by both animal and plant cells. Constructs an explanation about how the sequence of events of the cell cycle allows organisms to grow and survive. Describes specific functions of several proteins, including enzymes, hormones, and structural proteins. Calculates the percentage of one type of nitrogenous base for a DNA molecule using complementary base pairs. Analyzes and creates models of DNA, RNA, and amino acid chains to describe the products of replication, transcription, or translation. Analyzes data to determine when a gene is expressed and to determine whether replication, transcription, or translation occurs.

HS Biology	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS1. From Molecules to Organisms: Structures and Processes	Completes a basic model to generally describe how a body system works. Describes one way the body maintains homeostasis.	Describes several functions of proteins. Describes the functions of structures and organs of body systems. Interprets models to draw a conclusion about the way the human body maintains homeostasis.	Constructs an explanation about why different types of cells express different genes, which results in different cell functions. Analyzes data to draw conclusions about how body systems work together to support life functions. Constructs explanations about how body systems work to restore homeostasis when conditions change.

HS Biology	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS2. Ecosystems: Interactions, Energy, and Dynamics	Describes birth and immigration as factors that increase population size, and death and emigration as factors that decrease population size. Identifies some basic ecological relationships (such as predation, competition, mutualism), when given an example. Interprets a basic food web to identify simple ecological relationships. Analyzes a food web to identify the trophic level of a species. Recognizes that less energy is available at higher trophic levels in an energy pyramid. Identifies some carbon cycle processes and recognizes that carbon is released or stored in the environment depending on the process. Recognizes that the biodiversity of an ecosystem is affected by the number of species in the ecosystem.	Describes how various biotic and abiotic factors affect a population's birth rate, death rate, immigration rate, or emigration rate. Describes several ecological relationships and determines evidence that supports claims about ecological relationships. Analyzes a food web to describe changes to populations resulting from an increase or decrease of another population. Uses an energy pyramid to calculate the amount of energy that is expected to be stored in different trophic levels. Completes a carbon cycle model showing how carbon is moved through both biotic and abiotic parts of an ecosystem. Describes how the biodiversity of an ecosystem is affected by the number of individuals within a species (genetic diversity is lower in smaller populations). Describes some characteristics of invasive species and how these characteristics can affect other species in an ecosystem.	Analyzes multiple factors (such as species interactions, human activities, and natural phenomena) to solve problems relating to population size and carrying capacity of an ecosystem. Analyzes complex food webs and constructs explanations about various interactions in the food web as the sizes of populations change. Constructs an explanation for why only about 10% of the energy stored in one trophic level will be available to the next higher trophic level and how having less energy available reduces the number of organisms that can be supported at higher trophic levels. Constructs an explanation for how several carbon cycle processes interact within an ecosystem and how changes in the environment can disrupt the cycle. Explains how biodiversity of an ecosystem can be impacted by both the number of species in that ecosystem as well as the number of individuals within a species. Constructs thorough explanations for how and why invasive species can affect an ecosystem.

HS Biology	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS2. Ecosystems: Interactions, Energy, and Dynamics	Describes one-way invasive species can impact other species in an ecosystem. Identifies human impacts (climate change, pollution, habitat destruction) on an ecosystem and describes some ways to address them.	Analyzes data to determine the human impact on an ecosystem and describes several ways to reduce the impact of human activity on the ecosystem.	Evaluates several solutions for either reducing the impact of human activity on an ecosystem or restoring an ecosystem and explains the benefits and drawbacks of these solutions.

HS Biology	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS3. Heredity	Identifies the general purpose of meiosis, that gametes come from two parents, and that egg and sperm combine to produce offspring. Recognizes that inherited traits are encoded in an organism's DNA and RNA. Completes a simple model to show how a mutation in a DNA sequence can change an mRNA codon. Identifies that only mutations in a gamete can be passed from parent to offspring and that mutations can be a source of genetic diversity. Identifies simple inheritance patterns for a given trait. Identifies genotypes for a certain trait, completes a Punnett square for a given cross, and calculates the expected percentage of offspring for a given genotype or phenotype. Identifies the genotype of an individual in a basic pedigree when the inheritance pattern is given.	Analyzes and completes a basic model of meiosis. Describes the product of fertilization as a zygote (a diploid cell) containing genetic information from both parents. Describes how mutations in DNA can lead to the production of different amino acids and therefore different proteins. Interprets a model of crossing over and concludes that genetic variability increases as a result of crossing over. Interprets information to consistently determine inheritance patterns. Constructs and completes Punnett squares and calculates the expected percentages of genotypes and phenotypes of crosses for a given scenario. Analyzes a pedigree to determine the inheritance pattern of a trait. Describes how polygenic traits are influenced by the expression of multiple genes. Describes how environmental factors can influence the expression of some inherited traits.	Constructs an explanation of why meiosis is important for maintaining the number of chromosomes from one generation to the next. Explains how crossing over, independent assortment, and random pairing of gametes contribute to the genetic diversity of offspring. Constructs an explanation for how a mutation in a DNA code may or may not result in a phenotypic (trait) change. Analyzes Punnett squares to determine the expected genotype and phenotype percentages for sex-linked traits. Analyzes a complex pedigree to determine genotypes and phenotypes of individuals and to make predictions about future offspring of parents in the pedigree. Uses data to explain the likelihood that a certain trait will be more influenced by genetics or by the environment.

HS Biology	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
LS4. Evolution	Identifies some types of evidence (genomes, amino acids, fossils, homologous structures) that support the process of evolution. Recognizes that individuals with certain traits survive and produce more offspring than individuals without those traits. Describes that, in general, two organisms from the same species are able to mate and produce offspring. Recognizes that isolated populations generally have a smaller gene pool than larger populations. Recognizes that viruses are unable to reproduce outside of a host cell and that bacteria reproduce through asexual reproduction.	Explains how evolution can be supported by evidence that demonstrates common ancestry. Completes a cladogram to show the evolutionary relationships among several species. Describes how an advantageous heritable trait allows individuals in a population to survive and reproduce more than individuals without that trait. Describes how to determine whether two organisms are closely related and/or from the same species. Describes the role of genetic drift or gene flow in the speciation or extinction of a population. Describes how bacteria and viruses adapt quickly to changing environments due to their high mutation rate and the ability to quickly reproduce.	Constructs an explanation based on a model, such as a cladogram, to support a claim about the evolutionary relatedness of species and explains why comparing genomes provides the best evidence that two species are closely related. Constructs a thorough explanation about evolution, including conditions (heritable variation, differential fitness) that need to be met for evolution to occur and how there will be changes in the frequency of alleles (or traits) within a population over time. Analyzes a situation to determine evidence of selection pressures that could influence the evolution of a population. Constructs explanations based on data for how genetic drift, gene flow, mutations, and natural selection can play a role in the speciation or extinction of a population. Analyzes the results of an investigation to determine conditions that will support the growth of bacteria or viruses.

High School Introductory Physics MCAS Next-Generation Achievement-Level Descriptors

Next-Generation Achievement-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

High School MCAS Next-Generation Achievement-Level Descriptors

Introductory Physics

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

HS Physics	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Understanding and Application of Disciplinary Core Ideas	Demonstrates a partial understanding of some scientific concepts and processes by identifying and sometimes describing or providing evidence for these concepts and processes. Uses some basic scientific terms in common scientific examples.	Demonstrates a solid understanding of many scientific concepts and processes by mostly describing, explaining, and providing evidence for these concepts and processes. Mostly applies appropriate scientific terms in a variety of applications, including common science examples and some novel situations.	Demonstrates a comprehensive, in-depth understanding of many scientific concepts and processes by consistently describing, explaining, and providing evidence for these concepts and processes. Consistently applies scientific terms in appropriate contexts in both common science examples and many novel situations.

HS Physics	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Scientific and Engineering Practices	Identifies a testable, scientific question for an investigation. Completes a simple, commonly used model. Uses simple graphs or data to draw general conclusions about a familiar scientific investigation or phenomena. Identifies evidence to support a claim. Describes a benefit or drawback of simple design features given a familiar device or prototype.	Develops some testable, scientific questions for an investigation. Completes or uses a model and describes some strengths and weaknesses of the model. Analyzes multiple sources of data, including graphs and tables, to draw conclusions about a familiar scientific investigation or phenomena. Provides some evidence to support a claim and constructs basic explanations for scientific phenomena or results from an investigation. Analyzes design features of a familiar device or prototype and describes a benefit or drawback of the design.	Consistently develops testable, scientific questions for an investigation. Creates a model, consistently describes the strengths and weaknesses of the model, and provides information for how to improve the model. Analyzes multiple sources of data, including graphs and tables, to draw conclusions about a novel or complex scientific investigation or phenomena. Provides several pieces of evidence to support a claim and constructs thorough explanations for scientific phenomena or results from an investigation. Analyzes design features of a novel device or prototype and constructs an explanation for how the design features meet criteria for success or are limited by constraints.

HS Physics	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS1. Matter and Its Interactions	Interprets a model to determine that energy is released during the processes of fission, fusion, and radioactive decay.	Analyzes a model to determine whether fission, fusion, or a radioactive decay (alpha, beta, or gamma) process occurred.	Analyzes incomplete models of fission, fusion, and radioactive decay and describes the results of each in terms of energy and products.
PS2. Motion and Stability: Forces and Interactions	Solves simple problems involving average speed, velocity, and acceleration. Interprets a motion graph to determine how the graphed variable changes over time. Interprets a scenario to determine the relative magnitude of a force. Determines a net force using Newton's 2nd law or by interpreting a free-body force diagram with two colinear forces. Solves simple momentum and change in momentum (impulse) problems. Interprets a model to determine whether two charges will attract or repel. Describes how the magnitude of charges or the distance between charges affects electrostatic forces. Describes how the masses of objects or the distance between objects affect gravitational forces.	Solves problems involving acceleration, velocity, and change in position for a given time. Analyzes motion graphs and their slopes to solve for and compare speeds, velocities, accelerations, and net forces. Analyzes free-body force diagrams to determine which diagram represents a given system. Solves for an unknown force by interpreting a model with two or more colinear forces when also given the net force. Solves for the total momentum or change in momentum of a system. Interprets a model to determine the direction an object will move after a collision. Compares the magnitude and the direction of the forces that two objects exert on each other when they collide. Compares models of pairs of masses or charges to order the magnitude of the gravitational or electrostatic forces. Completes a model to represent electrostatic forces between charges. Interprets a model to support a claim that an electric current produces a magnetic field or a	Solves a motion problem by analyzing a model and then applying information from the model to solve for velocity or acceleration. Explains how changing a system would affect an object's velocity or acceleration. Solves force problems by analyzing motion graphs and then models the forces involved using free-body force diagrams. Analyzes a motion graph and then applies information from the graph to solve a momentum problem. Describes that the total momentum of a system stays the same during a collision and solves for velocity or mass by applying conservation of momentum. Explains how forces involved in a collision can be minimized. Applies proportional reasoning to solve for how changing the distance between a pair of masses or a pair of charges affects the forces between the pair. Applies proportional reasoning when multiple variables are changed to determine the forces between a pair of masses or charges.

HS Physics	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS2. Motion and Stability: Forces and Interactions	Solves simple problems using Ohm's Law when given two of the three variables (current, voltage, or resistance). Identifies a schematic symbol for a simple circuit element and generally explains its role.	claim that a changing magnetic field produces an electric current. Describes how a change to a circuit affects current, voltage, or resistance. Interprets a series circuit diagram with several circuit elements and solves for current, resistance, or voltage. Interprets simple series or parallel circuit diagrams and explains which circuit elements will have the same current through them and which elements will have the same voltage drop across them.	Describes the effect of a gravitational or electrostatic force between two objects by solving for the force using either Newton's law of gravitation or Coulomb's law. Explains that the interplay of electric and magnetic forces is the basis for electric motors and generators. Analyzes series and parallel circuit diagrams with multiple circuit elements to compare and solve for current, voltage, and resistance.

HS Physics	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS3. Energy	Solves for gravitational potential energy when given the height and mass of an object. Describes an example of energy being converted from one form to another. Interprets a model to determine a location where gravitational potential energy or kinetic energy is either the greatest or the least. Solves simple problems for work when given the force and distance. Solves efficiency problems when given energy in and energy out. Interprets a simple graph to determine when thermal equilibrium is reached. Recognizes that heat flows from a substance with a higher temperature to a substance with a lower temperature. Recognizes the relationship between average molecular motion and temperature. Describes the relative amount of force between two magnets as they are moved closer together or farther apart.	Analyzes a model of a system and then uses information from the model to calculate kinetic energy or gravitational potential energy. Describes that energy cannot be created or destroyed, but energy may enter or leave a system. Compares an object's kinetic energy at two positions or an object's potential energy at two positions when mechanical energy is conserved. Analyzes data to solve mechanical energy problems. Interprets a model of a device and explains how to increase the efficiency of the device. Explains how the temperatures in two substances change as the substances reach thermal equilibrium. Describes how changing the mass of a substance affects the energy required to cause a temperature change. Analyzes electric field diagrams and determines the direction and relative strength of the electric field around two charges. Explains how the energy stored in a field between two magnets or two charges changes when they are moved different distances apart.	Constructs an explanation for how kinetic energy and potential energy change over time in a given model. Explains how the mechanical energy of a system can change, due to work being done on the system by a force, while maintaining the law of conservation of energy. Solves complex work problems, including first solving for initial and final mechanical energy. Analyzes a graph to compare the energy efficiency of multiple devices. Explains how the average molecular motion of molecules in two substances changes as the substances reach thermal equilibrium, and how energy is conserved in a system as thermal equilibrium is reached. Analyzes a model and solves problems for the amount of heat transferred in a system, the specific heat of a substance, or the initial or final temperature of a substance. Interprets a model to describe the motion of a freely moving charged particle and the energy stored in the field between two charged particles.

HS Physics	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
PS4. Waves and Their Applications in Technologies for Information Transfer	Solves simple wave problems for velocity/speed, wavelength, or frequency when given two of these three variables. Identifies the wavelength of a wave on a model. Solves simple wave problems involving period and frequency when given one of the variables. Identifies differences between mechanical waves and electromagnetic waves. Recognizes the relationships between frequency and pitch of a sound wave as well as between frequency and energy of a light wave. Identifies evidence of light behaving like a wave or light behaving like a particle. Interprets simple models of the photoelectric effect. Interprets simple models of common wave behaviors, including resonance, diffraction, refraction, and interference.	Analyzes data to determine additional information needed to solve wave problems. Describes how the particles in a medium move when a longitudinal or transverse wave travels through the medium. Describes several properties of mechanical waves and electromagnetic waves. Compares multiple electromagnetic waves in terms of frequency, energy, and wavelength. Analyzes a model and explains the causes of resonance and refraction. Analyzes a model of a technology or device and describes how wave behaviors or the photoelectric effect are used in the technology or device.	Analyzes models of waves and uses information from the models to solve problems. Interprets a graph with relative speeds of mechanical waves to determine the states of matter of various media. Constructs an explanation with evidence about how light can behave like a wave and how it can behave like a particle. Explains the relationship between photon energy and the electrons ejected by the photoelectric effect. Analyzes a model of constructive and destructive interference and determines the amplitude of a wave pulse that results from the interference. Analyzes how a technology or device uses waves and describes how changing the properties of the waves would influence the device.

Grade 8 Civics MCAS Achievement Level Descriptors

General MCAS Achievement Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

Grade 8 Civics Achievement Level Descriptors

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge and skills students demonstrate on MCAS at each level. **Knowledge and skills are cumulative at each level.** No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Civics Grade 8	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Content Standards	Demonstrates a partial understanding of some civics concepts and processes by identifying and sometimes describing or providing evidence for these concepts and processes. Uses some basic civics terms in common history and social science examples.	Demonstrates a solid understanding of many civics concepts and processes by mostly describing, explaining, and providing evidence for these concepts and processes. Mostly applies appropriate civics terms in a variety of applications, including common history and social science examples and some novel situations.	Demonstrates a comprehensive, in-depth understanding of many civics concepts and processes by consistently describing, explaining, and providing evidence for these concepts and processes. Consistently applies appropriate civics terms in a variety of contexts including common history and social science examples and many novel situations.
Understanding and Application of History and Social Science Practices	Demonstrates a partial understanding of civic knowledge, skills, and dispositions by identifying, and sometimes describing, how individuals engage in active and responsible citizenship. Identifies a focus question or problem statement for an inquiry. Uses information from a source to draw general conclusions about a familiar civics concept. Identifies evidence to support a claim.	Demonstrates a solid understanding of civic knowledge, skills, and dispositions by mostly describing and explaining how individuals engage in active and responsible citizenship. Develops a focus question or problem statement for an inquiry. Organizes and analyzes information and data from multiple primary and/or secondary sources to draw conclusions about a familiar civics concept.	Demonstrates a comprehensive, in-depth understanding of civic knowledge, skills, and dispositions by consistently describing, explaining, and providing evidence for how individuals engage in active and responsible citizenship. Consistently develops focus questions and/or problem statements for an inquiry. Organizes and analyzes information and data from multiple primary and secondary sources to draw conclusions about a novel or complex civics concept.

Civics Grade 8	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of History and Social Science Practices	Describes one-way individuals can participate in civic life.	Constructs a basic argument or explanation using some evidence and reasoning for a civics concept. Determines next steps in a scenario where individuals take informed action to address a basic civic issue.	Constructs a thorough argument or explanation using several pieces of evidence and valid reasoning for a civics concept. Determines multiple ways individuals can take informed action to address a complex civic issue.

Foundations of Government (Topics 1 and 2)

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes some characteristics of democratic and republican principles that were found in ancient Athens and the Roman Republic, such as how the power of governing is held in the hands of the people. Uses a source to identify natural rights as an important principle in the American Revolutionary period. Recognizes that British ideas and colonial government bodies helped develop practices for self-government in colonial America.	Describes and explains the democratic and republican principles that were developed in ancient Athens and the Roman Republic and are found in the U.S. government, including voting rights, trial by jury, and representative government. Describes some Enlightenment concepts that influenced the American Revolution, such as criticizing England's monarchy in the Declaration of Independence and the need to have separation of government powers. Given a description of British ideas and colonial practices of government, such as the Mayflower Compact, town meetings, and colonial legislatures,	Compares democratic and republican characteristics in ancient Athens or the Roman Republic to characteristics of the U.S. government and explains the similarities and differences. Analyzes ideas from the Enlightenment period to explain how those concepts were used during the American Revolution, such as the use of natural rights and the social contract in the Declaration of Independence, and in the framework of the U.S. government, such as the integration of separation of powers within the U.S. Constitution. Uses evidence from multiple sources to explain how British ideas and political institutions in the colonies created forums for self-governance that were

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Identifies a feature of the U.S. government based on a description of the government of the Iroquois Confederacy. Recognizes that opposition to British authority contributed to the American colonists declaring independence. Identifies basic concepts in the Declaration of Independence, including equality, right to liberty, and that governments are responsible for protecting these rights. Recognizes that the Articles of Confederation created a weak national government and identifies one of the weaknesses. Identifies an issue debated at the Constitutional Convention and identifies one way the issue was resolved. Identifies one Federalist or Anti-Federalist position on an issue debated during the ratification of the U.S. Constitution. Identifies that the U.S. Constitution creates a framework for the structure and function of the U.S. government, including articles and amendments. Describes the Bill of Rights as a list of rights that were added to the U.S. Constitution to protect some individual freedoms.	describes how these practices prepared American colonists for self-government. Describes a similarity or difference between the U.S. government and the government of the Iroquois Confederacy. Describes multiple experiences or events, including British taxation policy and lack of representation in government, that contributed to the American colonists declaring independence. Uses an excerpt of the Declaration of Independence to explain key ideas such as equality, natural rights, the common good, and the purpose of government. Uses information about the Articles of Confederation to describe how weaknesses of the national government led to the Constitutional Convention. Explains how a major issue debated at the Constitutional Convention, such as representation in Congress, was resolved in the U.S. Constitution. Compares Federalist and Anti-Federalist positions on an issue debated during the ratification of the U.S. Constitution. Provides a general description of the different parts of the U.S. Constitution, including the Preamble, Articles 1 to 3, and the Bill of Rights.	maintained in the U.S. political system, such as town meetings and state legislatures. Analyzes a description of the government of the Iroquois Confederacy and supports a conclusion using evidence about how the Iroquois Confederacy influenced the development of the U.S. government. Uses evidence and reasoning to explain why the American colonists declared independence. Analyzes a novel situation and constructs an explanation for how concepts described in the Declaration of Independence, including equality, natural rights, the common good, and the purpose of government, were applied. Uses critical events (such as Shays' Rebellion) to explain how weaknesses in the government under the Articles of Confederation (such as the inability of the national government to form an army) led to the Constitutional Convention. Analyzes several major issues debated at the Constitutional Convention, including the distribution of power among the branches of government and between the federal and state governments, and constructs an explanation for how the issues were addressed in the U.S. Constitution. Compares Federalist and Anti-Federalist positions on an issue debated during the ratification of the U.S. Constitution and uses evidence to explain how the issue was addressed in the U.S. government.

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Identifies the First Amendment protection of freedom of speech as part of the Bill of Rights.	Describes several amendments in the Bill of Rights and how they are meant to protect some individual freedoms.	Explains the roles and powers outlined in each section of the U.S. Constitution, including the Preamble, Articles 1 to 3, and the Bill of Rights. Explains why some Anti-Federalists wanted to add the Bill of Rights to protect some individual freedoms as a condition for ratifying the U.S. Constitution.

Structures of Government (Topics 3 and 6)

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Identifies Congress as the legislative branch, the office of the President as the executive branch, and the Supreme Court as the judicial branch. Identifies the roles of the branches of government, (e.g., legislative branch makes the laws, the executive branch carries out the laws, and the judicial branch interprets laws). Recognizes that the checks and balances system was designed to prevent one branch of government from becoming too powerful.	Describes the separate positions of the three branches of government: Congress (the Senate and the House of Representatives) as the legislative branch, the President and the executive agencies as the executive branch, and the Supreme Court and other federal lower courts as the judicial branch. Describes some of the powers of the three branches of the federal government, such as: - the Senate and House of Representatives work together to create legislation, approve federal spending, or declare war - the president, the Cabinet, and executive departments and agencies carry out laws, conduct foreign policy, nominate justices, or command the military	Explains the processes that the three branches of the federal government use to carry out their powers, such as: - how Congress passes legislation through committees and hearings, or how elections and political parties affect Congress - how the president, the Cabinet, and executive departments and agencies distribute the responsibility to carry out laws - how legal challenges move between levels of the federal court system, including lower federal courts and the Supreme Court Analyzes a novel situation to describe the purpose of the checks and balances system and explains how the branches of government can check each other,

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes that U.S. Senators and Representatives run for and are elected to office. Identifies some of the processes that are part of presidential elections. Recognizes that the president and Congress each play a role in the nomination and confirmation process for some positions in the executive and judicial branches. Identifies some ways that political parties support candidates in state or national elections. Identifies that state governments and the federal government have shared powers, such as making laws, and recognizes that national laws apply to the entire country but state laws apply only to the state in which they were enacted. Recognizes that both the U.S. and Massachusetts constitutions protect some individual rights, such	the Supreme Court and lower federal courts can use judicial review to decide whether laws and executive orders are constitutional, or can resolve disputes between states Describes the checks and balances system and identifies ways one branch of government can check the power of another branch of government, such as how the president can veto a bill passed by congress to prevent the bill from becoming a law. Compares and contrasts how U.S. Senators and U.S. Representatives are elected to office for different term lengths. Describes how a president is elected, including the role of the Electoral College. Describes how the president nominates individuals for Cabinet and Supreme Court positions and Congress confirms or rejects the nominations. Describes the role of political parties in elections, such as nominating candidates and helping voters learn about candidates. Describes some powers of the Massachusetts state government, such as issuing driver's licenses, and describes some powers of the federal government, such as coining money, as defined by the U.S. and Massachusetts constitutions.	such as examining a historical example of a federal law passed by Congress and signed by the president that was challenged and reviewed by the U.S. Supreme Court. Analyzes a scenario to explain why U.S. Senators and U.S. Representatives are elected for different terms. Explains the processes of a presidential election (campaigns, primaries, and general elections) and describes the role of the popular vote and the Electoral College in an election. Uses evidence to explain why the executive branch nominates individuals for Cabinet and Supreme Court positions and the legislative branch confirms or rejects the nominations. Analyzes campaign materials to explain how political parties shape elections by nominating candidates, creating party platforms, and fundraising to help a candidate win the election. Compares and contrasts the powers of the federal government and the Massachusetts state government as outlined in the U.S. and Massachusetts constitutions. Analyzes a scenario to distinguish between an enumerated power in either the U.S. or

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
as the freedom of religion, and identifies the Bill of Rights as a list of some of these protections. Identifies that the Massachusetts Constitution protects some rights that are not provided by the U.S. Constitution. Recognizes that governments at the federal, state, and local levels share some responsibilities and have different responsibilities. Identifies that the Massachusetts state government has three branches: the executive branch, the legislative branch, and the judicial branch. Describes that state and local taxes support some public facilities and services.	Describes the difference between an enumerated power that is listed in the U.S. or Massachusetts constitutions and an implied power as an action that is necessary to carry out an enumerated power. Describes some of the individual rights protected under the U.S. Constitution through the Bill of Rights and 14th Amendment and under the Massachusetts Constitution, such as freedom of speech and equal protection under the law. Identifies that powers not granted to the federal government in the U.S. Constitution are reserved for the state governments by the Tenth Amendment. Identifies one right that is protected by the Massachusetts Constitution that is not provided by the U.S. Constitution, such as the right to an education. Contrasts some responsibilities of local and state governments, such as funding and creating policies for public schools, with responsibilities of the federal government that address national concerns, such as negotiating international treaties. Describes the three branches of the Massachusetts state government as: - the executive branch that carries out state laws through the governor and executive agencies - the legislative branch that makes state laws through state representatives and state senators	Massachusetts constitution, such as the power to tax, and an implied power, such as creating an agency to collect taxes. Analyzes multiple sources to compare some of the individual rights protected under the U.S. Constitution, including the Bill of Rights and the 14th Amendment, and Article 1 of the Massachusetts Constitution. Explains that the Tenth Amendment to the U.S. Constitution is important to state governments because it establishes that powers not granted to the federal government in the Constitution are reserved for state governments, such as the power to create laws about education. Explains how the Massachusetts Constitution provides additional rights to residents than what is provided by the U.S. Constitution, such as the right to an education and the right to a clean environment. Analyzes multiple sources to explain how the different branches within the Massachusetts state government fulfill their responsibilities. Uses evidence and reasoning to explain how state and local governments use taxes to support public facilities and services.

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes positions or structures of local government in Massachusetts, such as mayor, school committee, or town meetings.	the judicial branch that interprets state laws through the Supreme Judicial Court and lower courts Describes some tax-supported facilities and services provided by state and local governments, such as public schools and libraries. Describes positions and structures of local government in Massachusetts, including city councils, select boards, town meetings, and county offices.	Analyzes a scenario to explain how local governments in Massachusetts make decisions for the community, enact local laws, and provide services for residents.

Rights and Responsibilities (Topics 4, 5, and 7)

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes that individuals who are born in the United States are U.S. citizens. Identifies one right or responsibility of citizens, such as voting in federal elections. Recognizes that individuals may engage in civic/political activities that relate to their communities and activities that relate to their personal lives. Identifies examples of fundamental principles and values of U.S. political and civic life, such as equality and representative democracy. Identifies some ways individuals can participate in the political process, such as voting or registering with a political party. Interprets information from a source, such as an electoral college map, to identify a concept related to elections. Recognizes leadership qualities when given information describing political leaders. Identifies that individuals work with elected leaders to create policies. Recognizes that public service positions support government responsibilities in carrying out laws and providing public services.	Uses information from a scenario to describe that an individual born outside of the United States must complete a process in order to become a U.S. citizen. Describes some rights and responsibilities of citizens, such as serving as a juror and holding federal elected office. Determines whether an activity is related to civic/political life or private life. Describes fundamental principles and values of U.S. political and civic life, such as justice, liberty, and the rights of individuals. Describes opportunities for citizens to participate in the political process through elections, political parties, and interest groups. Interprets information or data from a source, such as a political party platform, to draw a conclusion about elections. Uses information from sources to describe the qualities of good political leaders at local, state, or national levels. Describes how policies that benefit the people are created when individuals work and cooperate with elected leaders.	Analyzes a scenario to explain at least one way how an individual may become a citizen of the United States, including the naturalization process. Analyzes a scenario to distinguish between civic/political activities and private activities. Analyzes a scenario to explain how fundamental principles and values, such as the common good or due process, are part of U.S. political and civic life. Explains how citizens participate in the political process through elections (voting, running for office), through political parties (registering with a party, supporting a campaign), or through interest groups (raising awareness on an issue, joining an organization). Analyzes information or data from multiple sources and uses evidence to support a conclusion about elections. Analyzes a scenario and evaluates the leadership qualities of political leaders at local, state, or national levels. Explains why public policies may be more effective when individuals work with elected leaders to create those policies.

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Based on a given scenario, identifies that liberty may be in conflict with equality/authority or that individual rights may be in conflict with the common good. Recognizes that elected representatives reflect the views of their constituents in creating laws and making public policy. Based on a scenario, identifies an example of political courage as an elected representative making a decision that is morally right but may be unpopular. Identifies an example of political protest, such as a demonstration, based on a source. Interprets a chart created by a policy research organization to identify perspectives related to a public policy or issue. Recognizes that the U.S. Constitution has changed over time through amendments. Recognizes that Congress has passed laws over time to expand protections for civil rights. Recognizes that the U.S. Supreme Court can declare acts of Congress unconstitutional.	Identifies some tax-supported public service positions and describes how some public servants help carry out laws or provide public services. Uses information from sources to describe how liberty may be in conflict with equality/authority or how individual rights may be in conflict with the common good in a given scenario. Describes one role of elected representatives, such as representing constituents in government and creating legislation. Using information from a scenario, describes how an elected representative has demonstrated political courage. Describes how political protest may lead to changes in policies or legislation in a democratic government. Uses information or data from a chart or graph created by a policy research organization to identify next steps for a policy. Uses information from a source to describe that the U.S. Congress has the power to stretch its authority to make laws that are necessary for the country even if the laws are not listed in the U.S. Constitution. Describes how some amendments to the U.S. Constitution expanded rights, such as extending the right to vote in federal elections to African Americans, women, and young adults.	Based on a scenario, explains why some public service positions are necessary to help carry out laws or provide public services at local, state, and national levels. Analyzes sources related to conflicts that occur in democratic governments, such as liberty in conflict with equality/authority or individual rights in conflict with the common good, to explain why these tensions may occur in a given scenario. Explains that elected representatives engage in multiple job functions, such as creating legislation, communicating with constituents, and campaigning in elections. Based on a scenario about an elected representative, determines how the individual has either demonstrated political courage or demonstrated actions that have failed to live up to the ideals of the U.S. Constitution. Analyzes sources to explain how political protest may influence public policy by drawing attention to injustice, mobilizing support for a cause, and persuading elected officials to pass new laws. Analyzes information and data from a policy research organization and uses evidence to support a conclusion about a public policy or issue. Explains how the “necessary and proper” clause allows the U.S. Congress to stretch its powers and make laws that are needed for the country, even if the issue is not listed as a power in the U.S.

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Identifies that the U.S. Supreme Court selects which cases to hear, primarily appeals from lower courts. Recognizes that some U.S. Supreme Court cases have led to significant changes over time in individuals' lives, such as in cases related to protecting First Amendment rights. Identifies freedom of the press as a right protected under the First Amendment. Recognizes that the free press can provide different information and views about government and politics. Identifies the purpose of news articles to inform the public and the purpose of editorials to provide an opinion on an issue. Recognizes that digital news and social media provide both benefits to a democratic society, such as increasing the availability of information, and challenges, such as making it more difficult to determine the credibility of sources. Identifies a strategy for evaluating information, such as reading multiple sources on the same topic.	Identifies the institution of slavery as the main cause of the Civil War and describes how changes to the U.S. Constitution after the war helped to expand civil rights and the power of the federal government to enforce those rights. Uses information from sources to describe how some laws passed by Congress have expanded protections for civil rights over time to include groups that were not previously included. Describes the principle of judicial review as the power of the U.S. Supreme Court to review Congressional laws that are challenged. Completes a diagram to describe the process of how cases go through the U.S. Supreme Court and how the Court issues decisions. Based on a scenario, describes how Supreme Court cases have made changes in individuals' lives, such as in cases related to the equal protection clause. Describes freedom of the press as the right to express and publish views without government censorship. Uses information from two print sources with different views on a civic issue to explain how the free press affects public discourse. Compares and contrasts the differences between news articles and editorials, op-eds, or political cartoons.	Constitution, and that this is often referred to as the "elastic clause." Explains why some amendments were added to the U.S. Constitution and how those amendments helped to expand rights to individuals, such as the 14th Amendment (citizenship rights, equal protection of laws), the 19th Amendment (women's right to vote), and the 26th Amendment (lowers voting age in federal elections). Analyzes sources to explain that unresolved debates about slavery at the nation's founding led to the Civil War and that postwar amendments to the U.S. Constitution abolished slavery and helped to expand both civil rights and the federal government's power to enforce those rights. Uses evidence and reasoning to explain how some laws enacted by Congress, such as the 1964 Civil Rights Act and the 1990 Americans with Disabilities Act, expanded civil rights and equal protection by prohibiting legal discrimination based on race, gender, or disability. Uses information from a source to explain how the U.S. Supreme Court uses judicial review to review Congressional legislation when challenged. Analyzes a U.S. Supreme Court case to explain how cases reach the Supreme Court after an appeal from a lower court, that the Supreme Court chooses which cases to hear, and that the Supreme Court issues a majority decision that may also include a dissenting opinion.

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Uses information from an editorial or op-ed to identify the purpose of the source.	Analyzes a source to describe how digital news and social media affect public discourse about a civic issue. Uses information from a source to describe specific methods for evaluating information, such as comparing an editorial to a news article. Analyzes an editorial, op-ed, or political cartoon to describe the point of view of the source.	Analyzes multiple U.S. Supreme Court decisions to support a claim about how the Court’s decisions affected people’s lives, such as in cases where individual rights may be in conflict with other national interests. Analyzes a scenario to explain the role of freedom of the press in maintaining a healthy democracy. Analyzes multiple sources to draw conclusions about how the free press helps citizens keep government power accountable to the people. Analyzes sources, including news articles, political cartoons, editorials, and op-eds, to support a claim about a civic issue. Evaluates the benefits and challenges of digital news and social media on how policy decisions are made in a democratic society. Analyzes multiple sources to evaluate the claims and evidence in information presented in various formats, including political cartoons and commentaries. Analyzes an editorial, op-ed, or political cartoon related to a public policy issue and uses evidence and reasoning to construct an explanation about the issue.

APPENDIX B

TEST DESIGN AND BLUEPRINT SPECIFICATIONS

The following tables present the test design and blueprints for English language arts; they include numbers of items and total number of points for each item type. The percentage of points in each reporting category is also presented.

Distribution of ELA Common Items by Session and Item Type—Grade 3

Session	Number SR1	Number SR2	Number CR	Number ES	Total Number	Points SR1	Points SR2	Points CR	Points ES	Total Points
1	9	2	0	1	12	9	4	0	7	20
2	15	3	1	0	19	15	6	3	0	24
Total	24	5	1	1	31	24	10	3	7	44

Item Types: 1 SR1 = MC; 2 SR2 = 2-pt MC or TE; 3 CR (hand scored); 7 ES

Reporting Categories	G3
Language	25% +/-5%
Reading	65% +/-5%
Writing	10% +/-5%
Totals	100%

Distribution of ELA Common Items by Session and Item Type—Grade 4

Session	Number SR1	Number SR2	Number CR	Number ES	Total Number	Points SR1	Points SR2	Points CR	Points ES	Total Points
1	9	2	0	1	12	9	4	0	7	20
2	15	3	1	0	19	15	6	3	0	24
Total	24	5	1	1	31	24	10	3	7	44

Item Types: 1 SR1 = MC; 2 SR2 = 2-pt MC or TE; 3 CR (hand scored); 7 ES

Reporting Categories	G4
Language	25% +/-5%
Reading	65% +/-5%
Writing	10% +/-5%
Totals	100%

Distribution of ELA Common Items by Session and Item Type—Grade 5

Session	Number SR1	Number SR2	Number ES	Total Number	Points SR1	Points SR2	Points ES	Total Points
1	9	2	1	12	9	4	7	20
2	15	3	1	19	15	6	7	28
Total	24	5	2	31	24	10	14	48

Item Types: 1 SR1 = MC; 2 SR2 = 2-pt MC or TE; 7 ES

Reporting Categories	G5
Language	25% +/-5%
Reading	55% +/-5%
Writing	20% +/-5%
Totals	100%

Distribution of ELA Common Items by Session and Item Type—Grades 6–8

Session	SR1	Number SR2	Number ES	Total Number	Points SR1	Points SR2	Points ES	Total Points
1	9	2	1	12	9	4	8	21
2	15	3	1	19	15	6	8	29
Total	24	5	2	31	24	10	16	50

Item Types: 1 SR1 = MC; 2 SR2 = 2-pt MC or TE; 8 ES

Reporting Categories	G6–8
Language	25% +/-5%
Reading	55% +/-5%
Writing	20% +/-5%
Totals	100%

Distribution of ELA Common Items by Session and Item Type—Grade 10*

Session	Number SR1	Number SR2	Number ES	Total Number	Points SR1	Points SR2	Points ES	Total Points
1	9	3	1	13	9	6	8	23
2	12	4	1	17	12	8	8	28
Total	21	7	2	30	21	14	16	51

Item Types: 1 SR1 = MC; 2 SR2 = 2-pt MC or TE,); 8 ES (hand scored)

*A 2-point SR item was excluded from reporting because a small number of students reported having difficulties with technology during test administration.

Reporting Categories	G10
Language	25% +/-5%
Reading	55% +/-5%
Writing	20% +/-5%
Totals	100%

The following tables present the test design and blueprints for mathematics; they include numbers of items and total number of points for each item type. The percentage of points in each reporting category is also presented.

Distribution of Mathematics Common Items by Session and Item Type—Grade 3

Session	Number MS1	Number HS3	Number Matrix*	Total Number	Points MS1	Points HS3	Points Matrix*	Total Points
1	18	2	3	23	18	6	3	27
2	18	2	3	23	18	6	5	29
Total	36	4	6	46	36	12	8	56

* Equating and/or Field Test per form

Item Types	Max Points	Scored
SA/SR	1	MS1
CR	3	HS3

Reporting Category	G3 Percents	G3 Points
OA - Operations & Algebraic Thinking	30%	14–15
NBT - Number & Operations in Base Ten	15%	7–8
NF - Number & Operations-Fractions	20%	9–10
G - Geometry	10%	4–5
MD - Measurement & Data	25%	12

Distribution of Mathematics Common Items by Session and Item Type—Grades 4–5

Session	Number MS1	Number MS2	Number HS4	Number Matrix*	Total Number	Points MS1	Points MS2	Points HS4	Points Matrix*	Total Points
1	17	1	2	3	23	17	2	8	3–4	30–31
2	17	1	2	3	23	17	2	8	6–7	33–34
Total	34	2	4	6	46	34	4	16	9–11	63–65

* Equating and/or Field Test per form

Item Types	Max Points	Scored
SA/SR	1	MS1
SA/SR	2	MS2
CR	4	HS4

Reporting Category	G4 Percents	G4 Points	G5 Percents	G5 Points
OA - Operations & Algebraic Thinking	20%	10–11	15%	8
NBT - Number & Operations in Base Ten	20%	10–11	30%	16
NF - Number & Operations-Fractions	30%	16	25%	13–14
G - Geometry	10%	5–6	10%	5–6
MD - Measurement & Data	20%	10–11	20%	10–11

Distribution of Mathematics Common Items by Session and Item Type—Grade 6

Session	Number MS1	Number MS2	Number HS4	Number Matrix*	Number Total	Points MS1	Points MS2	Points HS4	Points Matrix*	Points Total
1	17	1	2	3	23	17	2	8	3-4	30-31
2	17	1	2	3	23	17	2	8	6-7	33-34
Total	34	2	4	4	46	34	4	16	9-11	63-65

* Equating and/or Field Test per form

Item Types	Max Points	Scored
SA/SR	1	MS1
SA/SR	2	MS2
CR	4	HS4

Reporting Category	G6 Percents	G6 Points
RP - Ratios & Proportional Relationships	20%	10–11
NS - The Number System	20%	10–11
EE - Expressions & Equations	30%	16
G - Geometry	15%	8
SP - Statistics & Probability	15%	8

Distribution of Mathematics Common Items by Session and Item Type—Grade 7

Session	Number MS1	Number MS2	Number HS4	Number Matrix*	Total Number	Points MS1	Points MS2	Points HS4	Points Matrix*	Total Points
1	17	1	2	4	24	17	2	8	7–8	34–35
2	17	1	2	4	24	17	2	8	7–8	34–35
Total	34	2	4	8	48	34	4	16	14–16	68–70

* Equating and/or Field Test per form

Item Types	Max Points	Scored
SA/SR	1	MS1
SA/SR	2	MS2
CR	4	HS4

Reporting Category	G7 Percents	G7 Points
RP - Ratios & Proportional Relationships	20%	10–11
NS - The Number System	20%	10–11
EE - Expressions & Equations	25%	13–14
G - Geometry	15%	8
SP - Statistics & Probability	20%	10–11

Distribution of Mathematics Common Items by Session and Item Type—Grade 8

Session	Number MS1	Number MS2	Number HS4	Number Matrix*	Number Total	Points MS1	Points MS2	Points HS4	Points Matrix*	Points Total
1	17	1	2	4	24	17	2	8	7–8	34–35
2	17	1	2	4	24	17	2	8	7–8	34–35
Total	34	2	4	8	48	34	4	16	14–16	68–70

* Equating and/or Field Test per form

Item Types	Max Points	Scored
SA/SR	1	MS1
SA/SR	2	MS2
OR	4	HS4

Reporting Category	G8 Percents	G8 Points
NSEE - The Number System and Expressions & Equations	40%	21–22
F - Functions	20%	10–11
G - Geometry	30%	16
SP - Statistics & Probability	10%	5–6

Distribution of Mathematics Common Items by Session and Item Type—Grade 10

Session	Number MS1	Number MS2	Number HS4-OR	Number Matrix*	Total Number	Points MS1	Points MS2	Points HS4-OR	Points Matrix*	Total Points
1	16	3	2	6	27	16	6	8	10	40
2	16	3	2	6	27	16	6	8	10	40
Total	32	6	4	12	54	32	12	16	20	80

* Equating and/or Field Test per form

Item Types	Max Points	Scored
SA/SR	1	MS1
SA/SR	2	MS2
CR	4	HS4

Reporting Categories	1.8	G10 Points
NQ - Number & Quantity	15%	9
AF - Algebra & Functions	35%	21
G - Geometry	35%	21
SP - Statistics & Probability	15%	9

The following tables present the test design and blueprints for science, technology, and engineering; they include numbers of items and total number of points for each item type. The percentage of points in each reporting category is also presented. The number of matrix points varies between sessions to keep the number of items constant while allowing for field testing of different item types. The total number of points on the test is constant. Additionally, the science practices are identified. Finally for introductory physics, the target percentage of points from items that are considered quantitative is provided.

Distribution of STE Common Items by Session and Item Type¹—Grades 5 & 8

Session	Number MS1	Number MS2	Number HS2	Number HS3	Number Matrix ²	Total Number	Points MS1	Points MS2	Points HS2	Points HS3	Points Matrix ²	Total Points
1	20	1	1	3	0	25	20	2	2	9	0	33
2	12	2	1	1	8	24	12	4	2	3	11	32
Total	32	3	2	4	8	49	32	6	4	12	11	65

¹ Item types: machine scored 1 or 2 points (MS1 or MS2); human scored 3 or 4 points (HS3 or HS4). A module is a stimulus with three MS1, one MS2 (or 2 additional MS1) and one HS3, totaling 6 points.

² Equating and/or Field Test per form; may also be modules.

Code	Reporting Category	Grade 5 % (+/-5%)	Grade 5 Points	Grade 8 %	Grade 8 Points
ES	Earth and Space Science	25	12–14	25	12–14
LS	Life Science	25	12–14	25	12–14
PS	Physical Science	25	12–14	25	12–14
TE	Technology/Engineering	25	12–14	25	12–14

Code	Practice Category
A	Investigations and Questioning
B	Mathematics and Data
C	Evidence, Reasoning, and Modeling

Distribution of Biology Common Items by Session and Item Type¹—Grade HS

Session	Number MS1	Number MS2	Number HS3	Number HS4	Number Matrix ²	Number Total	Points MS1	Points MS2	Point HS3	Points HS4	Points Matrix ²	Total Points
1	16	2	1	2	8	29	16	4	3	8	11-13	42-44
2	16	3	1	1	8	29	16	6	3	4	11-13	40-42
Total	32	5	2	3	16	58	32	10	6	12	24	84

¹ Item types: machine scored 1 or 2 points (MS1 or MS2); human scored 3 or 4 points (HS3 or HS4). A module is a stimulus with three MS1, one MS2 (or 2 additional MS1) and one HS3, totaling 8 points.

² Equating and/or Field Test per form; may also be modules.

Code	Reporting Category	%	Points
MO	Molecules to Organisms	35	21
HE	Heredity	25	15
EV	Evolution	20	12
EC	Ecology	20	12

Code	Practice Category
A	Investigations and Questioning
B	Mathematics and Data
C	Evidence, Reasoning, and Modeling

Distribution of Introductory Physics Common Items by Session and Item Type¹—Grade HS

Session	Number MS1	Number MS2	Number HS3	Number HS4	Number Matrix ²	Total Number	Points MS1	Points MS2	Points HS3	Points HS4	Points Matrix ²	Total Points
1	16	2	1	2	9	30	16	4	3	8	12-13	43
2	18	2	1	1	8	30	18	4	3	4	11-12	41
Total	34	4	2	3	17	60	34	8	6	12	24	84

¹ Item types: machine scored 1 or 2 points (MS1 or MS2); human scored 3 or 4 points (HS3 or HS4). A module is a stimulus with three MS1, one MS2 (or 2 additional MS1) and one HS3, totaling 6 points.

² Equating and/or Field Test per form; may also be modules.

Code	Reporting Category	%	Points
MF	Motion, Forces, and Interactions	50	30
EN	Energy	30	18
WA	Waves	20	12

Code	Practice Category
A	Investigations and Questioning
B	Mathematics and Data
C	Evidence, Reasoning, and Modeling

Quantitative
35–50% of the test (by points) should be quantitative (21–30 points).

The following tables present the test design and blueprints for history and social science; they include numbers of items and total number of points for each item type. The percentage of points in each reporting category is also presented. Additionally, the history and social science practices are identified.

Distribution of Civics Common Items by Session and Item Type¹ (Discrete)

Session	Number MS1	Number MS2	Number HS1	Number HS4	Number Matrix ²	Total Number	Points MS1	Points MS2	Points HS1	Points HS4	Points Matrix*	Total Points
State-level Performance Task	7	0	3	1	1 or 4	12 or 15	7	0	3	4	4	18
End-of-Course Test	22	4	0	0	4 or 6	30 or 32	22	8	0	0	6	36
Total	29	4	3	1	5, 8, or 10	42, 45, or 47	29	8	3	4	10	54

¹ Item types: machine scored 1 or 2 points (MS1 or MS2); human scored 1 or 4 points (HS1 or HS4). A medium set is a stimulus or set of stimuli with three MS1, totaling 3 points.

² Equating and/or Field Test per form; may also be medium sets.

Code	Reporting Category	% (+/-5%)	Points
FG	Foundations and development of the U.S. political system & government (RC1: Topics 1 & 2)	30	14
GS	Institutions and structure of U.S. government & Massachusetts state and local governments (RC2: Topics 3 & 6)	33	17
RR	Rights and responsibilities, the U.S. Constitution, and news & media literacy (RC3: Topics 4, 5, & 7)	37	19

Code	Practice Category
CK	Civic knowledge, skills, and dispositions (standard 1)
CQ	Civics-based questioning and solving civics-related problems (standards 2, 7)
AS	Analyzing points of view and credibility from sources (standards 4, 5)
ER	Developing explanations using reasoning and evidence from sources (standards 3, 6)

APPENDIX C
MCAS COMMITTEE MEMBERSHIP

English Language Arts

2024–25 Assessment Development Committee Members

Grade	Last Name	First Name	School Name	School District/Affiliation
3	Benedetto	MaryBeth	Madeline English School	Everett Public Schools
3	Gregory	Megan	N/A	Scituate Public Schools
3	Maucione	Lisa	DeMello School	Dartmouth Public Schools
3	McCarty Byrd	Chaitra	Hyannis West	Barnstable Public Schools
3	Mehari	Genet	Roger Clap Elementary School	Boston Public Schools
3	Merrill	Corey	John F. Kennedy School	Somerville Public Schools
3	Olson	Cindy	Blanche A. Ames Elementary	Easton Public Schools
3	Peritz-Smith	Ivy	Swift River Elementary School	Belchertown Public Schools
3	Pettus	Anna	Morris Elementary	Lenox Public Schools
3	Rita	Laura	Frank H Freedman	Springfield Public Schools
3	Smith	Alyson	Woodville	Wakefield Public Schools
3	Walsh	Meghan	John A. Crisafulli School	Westford Public Schools
4	Arzuaga	Gabrielle	N/A	Community Day Charter Public Schools
4	Babson	Kristin	Byam Elementary	Chelmsford Public Schools
4	Huber	Dana	Lincoln School	Lowell Public Schools
4	Keating	Michelle	Alfred G. Zanetti Montessori School	Springfield Public Schools
4	Matthews	Monica	Foster Elementary School	Hingham Public Schools
4	Melanson	Kristina	Lawrence W. Pingree	Weymouth Public Schools
4	Morin	Alicia	Peter Thacher Elementary School	Attleboro Public Schools
4	Murphy	Karen	Lincoln-Thomson Elementary	Lynn Public Schools
4	Palmer	Leah	N/A	Martha's Vineyard Public Schools
4	Primiano	Karen	Mary Rowlandson Elementary School	Nashoba Regional School District
4	Silva	Holly	Barnstable United Elementary	Barnstable Public Schools
4	White	Lisa	N/A	Plymouth Public Schools
5	Bilodeau	Michelle	Gerena Community School	Springfield Public Schools
5	Byrd	Brandon	Barnstable United Elementary School	Barnstable Public Schools
5	Campbell	Joanne	Captain Samuel Brown Elementary School	Peabody Public Schools
5	Devine	Lisa	Hill	Revere Public Schools
5	Hogan	Erin	N/A	Westford Public Schools
5	James	Julie	Wamsutta Middle School	Attleboro Public Schools

Grade	Last Name	First Name	School Name	School District/Affiliation
5	Krasowski	Sarah	Lincoln-Thomson	Lynn Public Schools
5	Hall	Megan	Bridge Boston Charter School	Bridge Boston Charter School
5	Murray	Elizabeth	Thomas Hamilton Primary School	Weymouth Public Schools
5	Newell	Melissa	N/A	Lowell Public Schools
5	Rumbelow	Alison	Mary Rowlandson Elementary	Nashoba Regional School District
6	Baxter	Jeanne	Easton Middle School	Easton Public Schools
6	Campbell	Brian	Wellesley Middle School	Wellesley Public Schools
6	DiSarcina	Jennifer	Eliot Innovation K-8	Boston Public Schools
6	Lavoie	Elizabeth	Justus C. Richardson Middle School	Dracut Public Schools
6	Martinsen	Robyn	Douglas Middle School	Douglas Public Schools
6	Matson	Julie	Hopkinton Middle School	Hopkinton Public Schools
6	McPartland	Jennifer	N/A	East Bridgewater Public Schools
6	Moroso	Taylor	W.L. Chenery Upper Elementary School	Belmont Public Schools
6	Rugg	Raymond	Benjamin Friedman Middle School	Taunton Public Schools
6	Sayles	Julia	B.F. Butler Middle School	Lowell Public Schools
6	Vowels	Heather	Lynnfield Middle School	Lynnfield Public Schools
7	Angell	Elizabeth	Murphy K-8 School	Boston Public Schools
7	Bettano	Judith	J. Henry Higgins Middle School	Peabody Public Schools
7	Cangemi	Pamela	Williams Middle School	Longmeadow Public Schools
7	Costa	Lauren	Joseph H Martin Middle school	Taunton Public Schools
7	DeLisle	Kimberly	Point Webster Middle School	Quincy Public Schools
7	Doiley	Pamela	Boston Community Leadership Academy	Boston Public Schools
7	Fadden	Nicholas	Samoset Middle School	Leominster Public Schools
7	Gervais	Jacklyn	Plymouth Community Intermediate School (PCIS)	Plymouth Public Schools
7	Jordan	Colleen	Silver Lake Regional Middle School	Silver Lake Regional School District
7	Quinn	Anita	Agawam Junior High School	Agawam Public Schools
7	Stanton	Jessica	Littleton Middle School	Littleton Public Schools
7	Wright	Molly	Marblehead Community Charter Public School	Marblehead Community Charter Public School
8	Boyle	Michelle	Natick Public Schools	Natick Public Schools
8	Byers	Kathleen	Somerset Middle School	Somerset Public Schools
8	Costello	Terry	Community Day Charter Public School	Community Day Charter Public School
8	Dickey	Brian	N/A	Springfield Public Schools

Grade	Last Name	First Name	School Name	School District/Affiliation
8	Galligan	Mark	N/A	Pembroke Public Schools
8	Griswold	Andrea	Mohawk Trail Regional School	Mohawk Trail Regional
8	Hammond	Kejohna	N/A	Boston Public Schools
8	Lefebvre	Daniel	Dartmouth Middle School	Dartmouth Public Schools
8	Palladino	Kathryn	Greater Lowell Technical High School	Greater Lowell Regional Vocational School District
8	Rierner	Emily	Oxford High School	Oxford Public Schools
8	Stimson	Aaron	North Attleborough Middle School	North Attleborough Schools
8	Testa Adams	Kathleen	Coelho Middle School	Attleboro Public Schools
10	Egan	Aleisha	Ashland High School	Ashland Public Schools
10	Fialho	Luis	Springfield Central High School	Springfield Public Schools
10	Grant	Sarah	Methuen High School	Methuen Public Schools
10	Hayes Frohock	Kristin	Dracut High School	Dracut Public Schools
10	Hill	Andrew	Upper Cape Cod Regional Technical School	Upper Cape Cod Regional Technical School
10	Jacob-Dolan	Peter	Bedford High School & John Glenn Middle School	Bedford Public Schools
10	Johnson	Eric	Ludlow High School	Ludlow Public Schools
10	Marino	Monica	Whittier Regional Vocational Technical High School	Whittier Regional Vocational Technical
10	Mulcahy	Kerry	Doherty Memorial High School	Worcester Public Schools
10	Nyamwaya	Dolly	N/A	Lynn Public Schools
10	Raymond	Benjamin	Marshfield High School	Marshfield Public Schools
10	Sabella	Anna	Haverhill High School	Haverhill Public Schools

Mathematics

2024–25 Assessment Development Committee Members

Grade	Last Name	First Name	School Name	School District/Affiliation
3	Edwards	Kathleen	William A. Berkowitz Elementary School	Chelsea Public Schools
3	Hanafin	Megan	Marshall and Locke Middle Schools	Billerica Public Schools
3	Hopson	Sarah	N/A	Agawam Public Schools
3	Johnson	Kendra	Station Avenue Elementary School and Dennis-Yarmouth Intermediate School	Dennis-Yarmouth Regional School District

Grade	Last Name	First Name	School Name	School District/Affiliation
3	Kalagher-Travaglio	Colleen	Walter J. Paton Elementary	Shrewsbury Public Schools
3	Larocque	Kathleen	S. Christa McAuliffe Elementary School	Lowell Public Schools
3	Larssen	Monica	South End	Springfield Public Schools
3				
3	Manning	Adam	Woodland Elementary School	Milford Public Schools
3	Norvin	Daphne	Eliot K-8 Innovation School	Boston Public Schools
3	Vanderpoel	Deborah	Mosier Elementary School	South Hadley Public Schools
3	Werb	Shira	Richardson Olmsted	Easton Public Schools
4	Bille	Jessica	Lincoln-Thomson Elementary School	Lynn Public Schools
4	Boucher	Ashley	William A. Berkowitz Elementary School	Chelsea Public Schools
4	Cleaves	Wendy	N/A	Quabbin Regional School District
4	Gilmartin	Deborah	Thomson Elementary School	North Andover Public Schools
4	Gogoi	Elizabeth	George R. Austin Intermediate School	Freetown/Lakeville Public Schools
4	Johnston	Christine	Roberta G Doering Middle School	Agawam Public Schools
4	LaPointe	Cynthia	Staff Sargent James J. Hill	Revere Public Schools
4	Marchesiani	Jenn	N/A (district employee)	Plymouth Public Schools
4	Massa	Michelle	Welch School	Peabody Public Schools
4	Sirois	Michelle	Woodland Elementary School	Milford Public Schools
4	Smalley	Michael	Franklin Elementary	Newton Public Schools
4	Young	Katherine	Attleboro Public Schools	Attleboro Public Schools
5	Bujalski	Anna	Henry Whittemore Elementary School	Waltham Public Schools
5	Cabrera	Benjamin	North Andover Public Schools	North Andover Public Schools
5	Carlson	Kara	Nantucket Intermediate School	Nantucket Public Schools
5	DeSimone	Stacey	Tobin Montessori Public School	Cambridge Public Schools
5	Flynn	Michelle	B.H. Wood School	Plainville Public Schools
5	Jackson	Shane	Woodland Elementary School	Milford Public Schools
5	Montapert	Demetrios	Hayden-Mcfadden	New Bedford Public Schools
5	Powers	Jennifer	N/A	Plymouth Public Schools
5	Raposa	Laura	Russell Street School	Littleton Public Schools
5	Read	Taylor	Barnstable United Elementary	Barnstable Public Schools
5	Romaniak	Kaitlin	Roberta Doering School	Agawam Public Schools
5	Young	Jennifer	Helen Keller Elementary School	Franklin Public Schools
6	Andrews	Jessica	Wareham Middle School	Wareham Public Schools
6	Anusauskas	Cathy	Hopkinton middle school	Hopkinton Public Schools

Grade	Last Name	First Name	School Name	School District/Affiliation
6	Buchanan	Susan	JFK Middle School	Northampton Public Schools
6	DeRosa	Jeanne	Kennedy Middle School	Natick Public Schools
6	Edmonds	Amber	Johnny Appleseed Elementary	Leominster Public Schools
6	Gratta	Michael	Stoklosa Middle School	Lowell Public Schools
6	Haley	Erin	Bryantville Elementary	Pembroke Public Schools
6	Mazzone	Monique	Auburn Middle School	Auburn Public Schools
6	Medor	Vanessa	Brooke Charter Schools	Brooke Charter Schools
6	Noe	Danielle	Roberta G. Doering Middle School	Agawam Public Schools
6	Torkomian	Michele	Robert J. Coelho Middle School	Attleboro Public Schools
6	Weckbacher	Lindsay	Easton Middle School	Easton Public Schools
7	Benotti	Julie	Plymouth South Middle School	Plymouth Public Schools
7	Aron	Boros	Bigelow Middle School	Newton Public Schools
7	Brown	Anne	Dartmouth Middle School	Dartmouth Public Schools
7	Fowler	Jennifer	Marshall Middle School	Billerica Public Schools
7	Holden	Seth	Grafton Middle School	Grafton Public Schools
7	Lorusso	Melissa	Somerset Middle School	Somerset Public Schools
7	Malone	Taylor	Bridge Boston Charter School	Bridge Boston Charter School
7	Rubacha	Kimberly	Agawam Junior High School	Agawam Public Schools
7	Schlegel	Joanna	William Diamond Middle School	Lexington Public School
7	Spicer	Cristina	Watertown Middle School	Watertown Public Schools
7	Tarallo	Susan	District Level	Leominster Public Schools
7	Weinhold	Jeniffer	Henry J. Robinson	Lowell Public School
8	Agruso	Cynthia	Agawam Junior High School	Agawam Public Schools
8	Bowman	Adrienne	Ohrenberger	Boston Public Schools
8	Collins	Andrea	Greater Lowell Technical High School	Greater Lowell Technical High School
8	Edmonds	Margaret	Memorial Middle School	Fitchburg Public Schools
8	Fedora	Robin	CMA	Central Mass Collaborative
8	Keaney	Kelli	Charles E. Brown Middle School	Newton Public Schools
8	Perez	Kate	N/A	Westfield Public Schools
8	Seidell	Debbie	Revere High School	Revere Public Schools
8	Simkins	Nicole	Robert J. Coelho Middle School	Attleboro Public Schools
8	Stewart	Megan	Lowell High School	Lowell Public Schools
8	Wilson	Cory	King Philip Regional High School	King Philip Regional School District
8	Yun	Yujuan	Boston Adult Technical Academy	Boston Public Schools

Grade	Last Name	First Name	School Name	School District/Affiliation
10	Belley	Colleen	Greater Lawrence Technical School	Greater Lawrence Technical School
10	Conlon	Jonathan	Groton-Dunstable Regional High School	Groton-Dunstable Regional School District
10	Johnson	Deatrice	N/A	Springfield Public Schools
10	Johnston	Mark	Lynn Classical	Lynn Public Schools
10	Lacombe	Lisa	Bristol-Plymouth Regional Technical High School	Bristol-Plymouth Regional Technical School
10	Macomb	Elizabeth	Dennis Yarmouth High School	Dennis Yarmouth Regional School District
10	Marini	Audra	Worcester Technical High School	Worcester Public Schools
10	Miles	Victoria	TEC Connections Academy Commonwealth	Walpole
10	Pillai	Jayashree	Natick High School	Natick Public Schools
10	Pires	Aderito	Ludlow High School	Ludlow Public Schools
10	Pollard	Stephanie	Mount Wachusett Community College	Higher Education
10	Santiago-Lizardi	Filiberto	New Mission High School	Boston Public Schools
10	Shea	Micaela	Greater New Bedford Regional Vocational Technical High School	Greater New Bedford Regional Vocational Technical High School

Science and Technology/Engineering (STE)

2024–25 Assessment Development Committee Members

Grade	Last Name	First Name	School Name	School District/Affiliation
5	Bugler	Diane	Captain Samuel Brown	Peabody Public Schools
5	Callahan	Judy	Egremont Elementary School	Pittsfield Public Schools
5	Cummiskey	William	Community Day Charter School, Lawrence	Community Day Charter School, Lawrence
5	Laliberte	Kimberly	N/A	Fall River Public Schools
5	Levi	Rebecca	Central Middle School	Stoneham Public Schools
5	Lynch	Janet	N/A	Boston Public Schools
5	Maheshwari	Kritika	Collegiate Charter School of Lowell	Collegiate Charter School of Lowell
5	Maier-Garcia	Susan	Hoosac Valley Middle School	Hoosac Valley Regional School District
5	Riordan	Alison	N/A	Plymouth Public Schools
5	Thompson	Danielle	Steward and Proctor	Topsfield Public Schools
5	Turgeon	Matthew	Fairview Veterans Memorial Elementary	Chicopee Public Schools
5	Turmel	Kathryn	Comprehensive Grammar School	Methuen Public Schools
8	Dieringer	Kristina	Dr. Kevin Hurley Middle School	Seekonk Public Schools
8	Facques	Karen	Hawthorne Brook Middle School	North Middlesex Regional School District
8	Franz	Mary	Holten Richmond Middle School	Danvers Public Schools
8	Hogan	Janet	Mansfield High School	Mansfield Public Schools
8	Larose	Evelyn	Central Office (STE Department)	Boston Public Schools
8	Little	Donna	Samoset and Sky View	Leominster Public Schools
8	Schibuk	Elizabeth	Conservatory Lab Charter school	Conservatory Lab Charter School
8	Serino	Kristina	Veterans Middle School	Marblehead Public Schools
8	Singh	Amieland	Birchland Park Middle School	East Longmeadow Public Schools
8	Thornton-Genova	Kerry	Hopkinton Middle School	Hopkinton Public Schools
8	Walia	Rhea	Oxford Middle School	Oxford Public Schools
8	Walsh	Derek	Groton Dunstable Regional Middle School	Groton Dunstable Regional School District
Biology	Bengiovanni	Erin	Collegiate Charter School of Lowell	Collegiate Charter School of Lowell
Biology	Burns	Jaclyn	Salem High School	Salem Public Schools
Biology	Davidson	Tom	West Springfield HS	West Springfield Public Schools

Grade	Last Name	First Name	School Name	School District/Affiliation
Biology	Dube	Jennifer	Greater Lawrence Technical School	Greater Lawrence Regional Vocational Technical School
Biology	Hernando Cupido	Miguel Angel	Chelsea High School	Chelsea Public Schools
Biology	King	Seneca	Boston Adult Technical Academy	Boston Public Schools
Biology	Madsen	Heather	Greater New Bedford Regional Vocational Technical High School	Greater New Bedford Regional Vocational Technical High School
Biology	Menice	Constance	Westford Academy	Westford Public Schools
Biology	Pekarcik	Cara	North Quincy High School	Quincy Public Schools
Biology	Pouliot	Amber	Claremont Academy	Worcester Public Schools
Biology	St. Amand	Ronald	N/A (District-wide)	Springfield Public Schools
Biology	Wiebe	Amy	Stoughton High School	Stoughton Public Schools
Intro Physics	Burdick	Shawn	Mt. Greylock Regional School	Mt. Greylock Regional School District (Williamstown)
Intro Physics	Fallon	Samantha	Walpole High School	Walpole Public Schools
Intro Physics	Kline	Danielle	Roger L Putnam Vocational Technical Academy	Springfield Public Schools
Intro Physics	Murray	Craig	Silver Lake Regional High School	Silver Lake Regional
Intro Physics	Morey	Shannon	Abbott Lawrence Academy	Lawrence Public Schools
Intro Physics	Ng	Gerald	Newton South High School	Newton Public Schools
Intro Physics	Pourmand	Mahshid	Wellesley High School	Wellesley Public School
Intro Physics	Sebell Shavit	Tal	Cambridge Rindge and Latin	Cambridge Public Schools
Intro Physics	Shapiro	David	Natick High School	Natick Public Schools
Intro Physics	Tan	Zechariah	Weston High School	Weston Public Schools
Intro Physics	Tsan	Florence	Brighton High School	Boston Public Schools
Intro Physics	Valentine	Adriel	Community Charter School of Cambridge	Community Charter School of Cambridge

History and Social Science - Civics (HSS)

2024–25 Assessment Development Committee Members

Grade	Last Name	First Name	School Name	School District/Affiliation
8	Dickson	John	Monomoy Regional High School	Monomoy Regional School District
8	Furtado	Kerri	John J. Doran	Fall River Public Schools
8	LaRoche	Irene	Amherst Regional Middle School	Amherst-Pelham Public Schools
8	LeBlanc	Lisa	Lunenburg Middle School	Lunenburg Public Schools
8	Mckay	Jennifer	O'Maley Innovation Middle School	Gloucester Public Schools
8	McShera	Margaret	Grafton Middle School	Grafton Public Schools
8	McWhorter	Joan	Manchester-Essex Middle School	Manchester-Essex Regional School District
8	Mezzetti	Mary Kate	Ottoson Middle School	Arlington Public Schools
8	Smith	Matthew	Francis W. Parker Essential Charter School	Francis W. Parker Essential Charter School
8	St Pierre	Sharon	Dupont Middle School	Chicopee Public Schools
8	Turner	Bryce	KIPP Academy Lynn, KIPP Academy Boston	KIPP Academy Boston
8	Yendriga-Norberg	Lisa	Sumner G. Whittier School	Everett Public Schools

Bias and Sensitivity (BSC)

2024–25 Committee Members

Committee	Last Name	First Name	School Name	School District/Affiliation
BSC	Callahan	Judy	Egremont Elementary School	Pittsfield
BSC	Charbonneau	Nichole	Old Rochester Regional Junior High School	Old Rochester Regional (Mattapoisett)
BSC	Goldner	Daniel	Acton Boxborough High School	Acton Boxborough Regional School District
BSC	Gould	Michelle	N/A	Holyoke Public Schools
BSC	Hadly	Elizabeth	N/A	Boston Public Schools
BSC	Han	Caroline	N/A	Wayland Public Schools
BSC	Haughton	Ann	Forest Park Middle School	Springfield Public Schools
BSC	Mahmud	Amatul	N/A	Cambridge Public Schools
BSC	Martin	Dr. Paula	Clark Univ (Adjunct)	Clark University
BSC	McGuire	Shannon	GNBVT	Greater New Bedford Regional Vocational Technical High School

Committee	Last Name	First Name	School Name	School District/Affiliation
BSC	Miller	Tammi	Dr. Kevin M. Hurley Middle School	Seekonk Public Schools
BSC	Mulrean	Gabrielle	Mason Rice	Newton Public Schools
BSC	Nguyen Ippolito	Thao	Atlantic Middle School	Quincy Public Schools
BSC	O'Kane	Meredith	Furnace Brook Middle School	Marshfield Public Schools
BSC	Ostendorf	Raymond	Western New England University	Western New England University
BSC	Perry	Jen	N/A	Lawrence Public Schools
BSC	Regan	Vinnie	Mary Walsh Elementary	Springfield Public Schools
BSC	Slavinsky	Michael	Falmouth High School	Falmouth Public Schools
BSC	Strus	Jinnee	Francis W Parker Charter Essential School	Francis W. Parker Charter School District
BSC	Terrien	Brandon	Old Colony	Old Colony Regional Vocational Technical High School
BSC	Tootle	Yvette	N/A	Westfield Public Schools
BSC	Trehwella	Jessica	Lowell High School	Lowell Public Schools
BSC	Trinh	Courtney	Southeastern Regional Vocational Technical High School	Southeastern Regional High School
BSC	Wolfson	Ross	N/A	Waltham Public Schools
BSC	Wolfson	Karen	District-wide position	Sudbury Public Schools

APPENDIX D
ACCESSIBILITY FEATURES AND TEST ACCOMMODATIONS



Accessibility and Accommodations Manual for the 2025 MCAS Test Administrations

**Including Participation Requirements for Students with Disabilities and
English Learners**

Updated February 7, 2025



This document was prepared by the
Massachusetts Department of Elementary and Secondary Education
Russell D. Johnston
Acting Commissioner

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Purpose of this Manual

The purpose of this manual is to provide the accessibility and accommodations policies that apply to the Massachusetts Comprehensive Assessment System (MCAS) test administrations in 2025. As announced in the [June 18, 2024, edition of the Student Assessment Update](#), beginning in 2025, DESE is transitioning from PearsonAccess Next and TestNav to new testing systems. Starting in February 2025, the MCAS Portal will be the new MCAS test administration platform, and the MCAS Student Kiosk will be the student testing platform. Accordingly, accessibility features and accommodations may be implemented differently than in previous systems.

Intended Audience and Recommended Use

This *Accessibility and Accommodations Manual* provides valuable planning information for educators working with students with disabilities and with English learners (ELs). Classroom teachers, special educators, 504 plan coordinators, Individualized Education Program (IEP) team chairs, and school administrators should familiarize themselves with the MCAS accessibility and accommodations policies in this manual in order to understand the use of supports for student participation in MCAS.

This manual provides guidance and information about the following topics:

- MCAS participation requirements for students with disabilities, ELs, and ELs with disabilities
- which students with disabilities should be considered for the MCAS Alternate Assessment (MCAS-Alt) based on alternate academic achievement standards
- the availability, selection, and use of
 - **universal accessibility features**, which provide tools and supports for *all* students
 - **designated accessibility features** intended for *all* students, but which must be authorized by the principal
 - **test accommodations** for students with disabilities and students who are ELs

Use this manual in conjunction with the [Student Registration Guide](#) to correctly assign and report the use of selected accommodations.

The accessibility features and accommodations described here will also be listed in Appendix C of the *MCAS Principal's Administration Manual* (PAM).

Educators may wish to consult with DESE staff throughout the year as they plan for providing access, accommodations, and unique supports for students participating in the required state-wide assessments. Please contact DESE's Office of Student Assessment Services at mcas@mass.gov or 781-338-3625.

I. Overview of MCAS Accessibility and Accommodations

A. Introduction

State and federal laws require that all students educated with Massachusetts public funds, including students with disabilities and students identified as English learners (ELs), participate in MCAS assessments scheduled for their grade levels.

The assessment options indicated on the following pages are based upon (a) accommodations research; (b) generally accepted practices and procedures currently in use for statewide assessments; (c) previous versions of MCAS accommodations policies; and (d) the recommendations of Massachusetts stakeholders who were members of the MCAS Accessibility and Accommodations Workgroup.

The application of universal design principles to the MCAS assessments, in conjunction with the accessibility and accommodations policies described in this manual, is intended to reduce stigmas associated with accessibility differences and remove barriers to participation in the MCAS assessments for *all* students, not just students with disabilities and English learners. Many accessibility features are embedded into the MCAS Student Kiosk computer-based testing platform, and others can be readily applied to the equivalent paper-based test for students who are unable to take tests on a computer. Universal design gives local administrators autonomy in determining appropriate testing conditions within their schools.

To ensure that students receive all accessibility features and/or accommodations to which they are entitled, DESE recommends that test coordinators develop a table or spreadsheet prior to test administration that lists where, when, and with whom students will be testing, and which accessibility features and accommodations each student will need.

The following are not listed as accessibility features or accommodations in this manual because they must be provided to *all* students on MCAS tests, including students with disabilities and ELs:

- untimed test sessions until the end of the school day, as needed
- assistance as needed from a test administrator in using the MCAS Student Kiosk computer-based testing platform, specifically related to navigation according to the guidance in the Test Administrator's Manual for each test administration

Furthermore, all students should have the opportunity to review the MCAS tutorial and practice tests (to be posted on the [MCAS Resource Center](#) in winter 2025) prior to test administration to become familiar with how to access the computer-based tests. Refer to the [MCAS Principal's Administration Manual \(PAM\)](#) for each test administration for guidance on these.

B. Important Updates and Reminders

The following are updates related to accessibility features and accommodations for the winter and spring 2025 test administrations:

- Two additional universal accessibility features will be available: general masking and reverse contrast.
- Beginning in 2025, MCAS tests will be translated into Spanish for Mathematics, Science, and Civics tests at grades 3–8 (in addition to the high school tests in Mathematics and Science).
- Civics is a required assessment for students in grade 8, and accessibility features and accommodations are available for the Civics MCAS assessment. Students identified as having the most significant cognitive disabilities and whose IEPs designate the MCAS-Alt must

participate in the MCAS-Alt in Civics beginning this school year.

- Approved graphic organizers, checklists, and supplemental reference sheets posted to the DESE website are now provided in PDF format, based on requests from schools and districts.
- The MCAS Student Kiosk is the new computer-based testing platform. Although the MCAS Student Kiosk is similar to the previous computer-based test format, there are minor differences. Students and educators should review the computer-based practice tests prior to test administration.
- Student Registration (SR), like the previous SR/PNP process, is used to assign students specific test accommodations. Student Registration will be completed in the MCAS Portal, which is the new test administration and management website for the MCAS tests beginning in 2025.
- Text-to-speech is not a form-dependent accommodation in the new systems. The accommodation can be added during testing if necessary without voiding the student's test.
- To provide greater clarity about which students are eligible for the MCAS Alternate Assessment (MCAS-Alt), an updated definition for students with the most significant cognitive disabilities is provided in Part III of this manual.

Please see the Crosswalk of Terminology for more information related to the transition to the MCAS Portal and the MCAS Student Kiosk.

Please note the following updates to this document:

- Guidance for text-to-speech and the human read-aloud accommodation is included to affirm that these accommodations provide equivalent access and can be used interchangeably by the student, unless otherwise specified.
- Guidance for speech-to-text and the human scribe accommodation is included to affirm that these accommodations provide equivalent access and can be used interchangeably by the student, unless otherwise specified.

C. Accessibility Features and Accommodations

Accessibility features and accommodations for MCAS tests are listed in the following categories:

- **Universal Accessibility Features (UFs):** tools and supports that are available to *all* students, either on the computer-based tests or their paper-based equivalents; some may need to be requested prior to testing via SR.
- **Designated Accessibility Features (DFs):** flexible test administration procedures that may be used with *any* student at the discretion of the principal or test coordinator
- **Accommodations (As):** specific supports available only to students with disabilities as detailed in a student's IEP or 504 plan and ELs
- **Special Access Accommodations (SAs):** may be provided to students who meet certain guidelines and criteria described in this document
- **English Learner Accommodations (EAs):** accommodations available to ELs who do not have disabilities

II. Accessibility Features for All Students

A. Universal Accessibility Features (UFs)

Universal Accessibility Features are tools and supports available to *all* students on the MCAS tests and are either built into the MCAS computer-based test platform or provided by a test administrator on the computer- or paper-based test.

The UF listed with the designation of **(SR)** in the table below must be identified in the Student Registration **prior to the start of testing**.

Table 1. Universal Accessibility Features Available to All Students

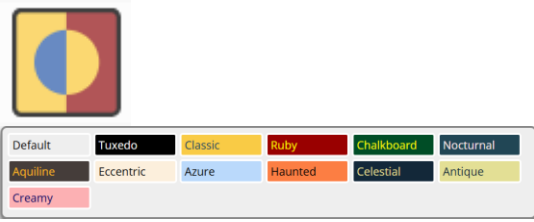
#	Computer-Based Testing Icon in the Student Kiosk (if Available)	Computer-Based Testing Description	Paper-Based Testing
UF1		Highlighter tool Highlights text in four colors: yellow, pink, purple, and green. Note: Highlighting will not be retained if the student exits the test, submits the test, pauses the test for more than 60 minutes, or if the test abruptly closes.	Highlighter Colored pencils and yellow highlighters may be used, but students must use a #2 pencil only to answer all test questions.
UF2		Color contrast Changes the background color and text color during testing.	Colored overlays or tinted lens(es)
UF3		Screen zoom tool Enlarges screen content to 150%, 200%, and 300%.	Magnification tool/device or low-vision aid
UF4 (SR)		Enlarged cursor/Mouse pointer tool Students can select an enlarged and colored cursor.	Enlarged pencil/modified writing instrument
UF5		Line reader tool Masks text so only part of the text can be viewed at one time.	Tracking device , such as a straight edge or similar tool

Table 1. Universal Accessibility Features Available to All Students (cont.)

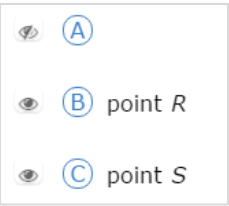
#	Computer-Based Testing Icon in the Student Kiosk (if Available)	Computer-Based Testing Description	Paper-Based Testing
UF6		Answer masking (available for multiple-choice items) Students can click an icon of an eye to toggle between hiding answer choices and having them reappear.	Mask text or answer(s) using a blank card or cutout
UF7		Answer eliminator (available for multiple-choice items) Students can mark an “X” through each answer option the student believes is incorrect. (Note: Answer choices cannot be selected while crossed out.)	Use a pencil to eliminate answer choices in their booklet (Note: Students should take care not to eliminate answer bubble options, as stray marks will lead to an incorrect score.)
UF8		Item flag/Bookmark Students can select the star icon to save a question to come back to later and can select the down arrow to access a review screen to navigate to another test question.	Use a blank place marker to mark a question for later review (Note: Sticky notes are <i>not</i> allowed.)
UF9	Audio aid (e.g., amplification device) (Note: Smartphones may not be used.)	N/A	N/A
UF10		Notepad Students can type in their own notes on each test question. New for 2025 , the notepad is now available for all subject-area tests. Note: Notes written in the notepad will not be retained if the student exits the test, submits the test, pauses the test for more than 60 minutes, or if the test abruptly closes.	Scratch paper is required for all students
UF11	Test administrator reads aloud selected words (or signs selected words , in the case of a student who is Deaf or Hard-of-Hearing), as requested by the student (not permitted on ELA tests). The student may point to a word or phrase and request the word to be read aloud or signed. Test administrator quietly reads aloud or signs the selected word(s) or phrase; test administrator may not explain or define words. Students using this feature may be tested alongside other students in groups of any size.	N/A	N/A

Table 1. Universal Accessibility Features Available to All Students (cont.)

#	Computer-Based Testing Icon in the Student Kiosk (if Available)	Computer-Based Testing Description	Paper-Based Testing
UF12	Test administrator redirects the student's attention to the test without coaching or assisting the student to answer any questions (e.g., test administrator reminds student to stay focused; it is not permissible to say, "Add more to your response" or "Make sure to answer all questions.")	N/A	N/A
UF13	Test administrator repeats or clarifies <i>general test administration directions</i> from the appropriate Test Administrator's Manual scripts to the student, as needed.	N/A	N/A
UF14		New for 2025 General masking Students can mask certain parts of the test interface or question. Students can add multiple masking squares, reposition them, and resize them.	Masking Student can use blank paper/index card to mask test content.
UF15		New for 2025 Reverse contrast Students can reverse all colors on screen (e.g., from light to dark).	N/A

B. Designated Accessibility Features (DFs)

Most students will be tested in their regular classrooms according to the guidelines and schedule intended for all students. However, principals have the flexibility to test *any* student, including those without identified disabilities and non-ELs, using the designated accessibility features described in Table 2, as long as all requirements for testing conditions, test security, and staffing are met.

It is advisable, although not required, to include designated accessibility features in the IEP or 504 plan of a student with a disability who requires them.

Table 2. Designated Accessibility Features Available to Any Student

Feature #	Accessibility Feature
DF1	Small group test administration (May include up to a total of 10 students.)
DF2	Individual (one-to-one) test administration (Student must be tested in a separate setting.)
DF3	Frequent brief supervised breaks
DF4	Separate or alternate test location (Can be a group of one or more students; the location should be specified, e.g., library, homeroom)
DF5	Seating in a specified area of the testing room, including the use of a study carrel (If listed in an IEP or 504 plan, the specific area should be described.)
DF6	Adaptive or specialized furniture (e.g., seating, desk, or lighting)
DF7	Noise buffer , such as noise-canceling earmuffs/headphones or white noise (Note: music or other recordings may <i>not</i> be played, unless granted as a <i>unique accommodation</i> by DESE.)
DF8	Familiar test administrator
DF9	Student reads test aloud to self: Student must be tested in a separate setting, unless a low-volume device (e.g., a Whisperphone) is used.
DF10	Specific time of day
DF11	Stop Testing policy: The student should be given the opportunity to attempt each test session. If the student does not appear to be responding to test questions after a period of 15–20 minutes, the test administrator may ask if the student is finished. If so, the test administrator may collect the student’s test materials and the student may either sit quietly or be excused from the test setting.

III. MCAS Participation Requirements for Students with Disabilities

A. Background

This section provides guidelines for IEP team members and educators who develop 504 plans to determine how each student with a disability will participate in MCAS.

State and federal education laws mandate that *all* students with disabilities who are educated with Massachusetts public funds participate in annual statewide assessments. See the Department’s website for details on [student participation requirements](#).

Students with disabilities are required to participate in all MCAS assessments scheduled for their grade. Students with the most significant cognitive disabilities who are unable to take the standard tests, even with accommodations, may instead take the MCAS Alternate Assessment (MCAS-Alt), which is the state assessment based on alternate achievement standards. Schools should use the table below, as well as the decision-making tool in [Appendix B](#), to assist in determining how students will participate in MCAS.

Table 3. MCAS Participation for Students with Disabilities

Option	Description
1	The student participates in standard MCAS testing under routine testing conditions.
2	The student participates in standard MCAS testing using necessary accessibility features and accommodations to demonstrate knowledge and skills.
3	The student meets the definition of “students with the most significant cognitive disabilities” and participates in the MCAS-Alt.

B. Definition of a Student with a Disability

For the purpose of MCAS participation, a student with a disability is defined as a student with a consented-to IEP provided under the Individuals with Disabilities Education Improvement Act of 2004 and the Massachusetts General Laws, Chapter 71B, or a plan provided under Section 504 of the Rehabilitation Act of 1973 (i.e., a 504 plan).

Only a student’s IEP team or 504 plan coordinator can make decisions about which test accommodations are appropriate for the student and whether the student should take the standard or alternate assessment based on alternate achievement standards. Assessment decisions for students with disabilities are made on an annual basis in each subject area for each student and must be listed in the student’s IEP or 504 plan. The principal is responsible for ensuring that each student is assessed using the test format and accommodations listed in the student’s IEP or 504 plan.

Students Diagnosed with Concussions

The Department has issued [guidelines](#) and MCAS testing policies for students who are returning to school after being diagnosed with a concussion. Please refer to this information before making decisions about MCAS testing for a student who has had a concussion.

C. Definition of Students with the Most Significant Cognitive Disabilities

As required by federal regulation [34 CFR 200.6\(e\)](#), Massachusetts defines “students with the most significant cognitive disabilities” as students who meet **all** of the following criteria:

- have cognitive disabilities evidenced by significant delays in attaining age-level academic achievement standards, even with systematic, extensive individually designed instruction, related services, and modifications
- have cognitive disabilities that significantly impact their educational performance and ability to apply learning from one setting to another
- require extensive, direct individualized instruction and substantial supports to achieve measurable gains on the challenging state academic content standards for the grade in which the student is enrolled
- perform significantly below average in general cognitive functioning and adaptive behavior. **“Significantly below average” is defined as a student functioning two or more standard deviations below the mean on commonly accepted norm-referenced assessments in both cognitive functioning and adaptive behavior (e.g., two or more adaptive skill areas such as daily living skills, communication, self-care, social skills, and academic skills).**

Massachusetts’s definition of “students with the most significant cognitive disabilities” applies to a small number of students with disabilities **for purposes of their participation in statewide alternate assessments** (i.e., MCAS-Alt). IEP teams must consider DESE’s guidance when determining whether a student satisfies this definition and is therefore eligible to participate in an alternate assessment.

In accordance with federal regulations, “the identification of a student as having a particular disability as defined in the Individuals with Disabilities Education Act or as an English learner does **not** determine whether a student is a student with the most significant cognitive disabilities.” 34 C.F.R. § 200.6(d)(1)(i) (emphasis added). Moreover, “a student with the most significant cognitive disabilities is **not** identified solely on the basis of the student’s previous low academic achievement, or the student’s previous need for accommodations to participate in general State or districtwide assessments.” 34 C.F.R. § 200.6(d)(1)(ii) (emphasis added).

D. Students with Complex and Significant Disabilities Who May Require a Grade-Level or Competency Portfolio

When the complexity of a student’s disability presents significant challenges to standardized computer- or paper-based testing, even with the use of accommodations, and the **student is working at or close to grade-level expectations**, the student’s IEP team or 504 plan coordinator may determine that the student should participate in MCAS by completing the grade-level (grades 3–8) or competency (high school) portfolio in one or more subjects. More information on grade-level and competency portfolios is available in the [MCAS Grade-Level and Competency Portfolio Manual](#).

Below are circumstances for which a grade-level or competency portfolio may be appropriate:

- a student with a significant emotional, behavioral, or other disability, who is unable to maintain sufficient concentration to participate in standard MCAS testing, even with accommodations
- a student with a significant health-related disability, neurological disorder, or other complex disability, who cannot meet the demands of a standardized test administration
- a student with a significant motor, communication, or other disability, who requires more time than is available for testing, even with extended time (i.e., the student is unable to complete a test session in a single school day)

IV. MCAS Accommodations for Students with Disabilities

A. Background

The information in this section is intended to guide decision-making regarding the selection of accommodations for MCAS testing. As required by [34 CFR 300.160](#), the state provides districts with these guidelines for the provision of appropriate accommodations on the MCAS tests.

B. Understanding Accommodations for Students with Disabilities

Purpose of Test Accommodations

A test accommodation is a change in the way a test is administered or the way in which a student responds to test questions. Test accommodations are intended to accomplish the following:

- offset the effects of the student's disability and remove barriers to participation in the assessment
- provide the necessary conditions for a student to demonstrate knowledge and skills effectively on statewide assessments
- provide the opportunity to report test results for students who require accommodations
- provide test results that are comparable to those of students who did not receive accommodations
- yield results that do not affect the validity or reliability of the interpretation of scores for their intended purposes

Use of test accommodations should never replace appropriate and rigorous instruction based on grade-level standards in the subject being tested.

Eligibility for Test Accommodations

ELIGIBLE: any student with an identified disability that is documented in an IEP or 504 plan

The right of a student with a disability to receive allowable accommodations on MCAS tests is protected by both federal and state laws. The student's IEP or 504 plan must specify which MCAS accommodation(s) a student will receive, and the IEP must be approved by the parent/guardian (or student over age 18) before an accommodation may be used by the student. Similarly, a student's 504 plan must already be in place or under development. In cases where a 504 plan is under development, the school staff responsible for writing the plan must have already met and agreed upon the necessary MCAS accommodation(s) before the accommodation may be provided. It is also advisable (though not required) to list any *designated accessibility features* (DFs—see Table 2) in students' IEPs and 504 plans to ensure these will be provided. IEP teams and 504 plan coordinators should be trained annually on these guidelines.

NOT ELIGIBLE: students without identified disabilities that are documented in an IEP or 504 plan

A student who does not have a documented disability and is not served by either an IEP or 504 plan is not eligible to receive accommodations on MCAS tests, regardless of whether the student already receives support or accommodations during classroom instruction.

General Requirements for Test Accommodations

Accommodations are based on the individual needs of a student with a disability and may only be provided when **all** of the following conditions have been met:

- The student **has a disability** that is identified in an IEP or 504 plan and **requires the use of one**

or more accommodations to participate in MCAS testing.

- The accommodation is listed in this manual (or prior written approval has been obtained from the Department for a unique accommodation); the **accommodation is listed** in the student's IEP under "State- and District-Wide Assessment" and the **IEP has been signed** by the student's parent/guardian prior to the date of test administration; or the accommodation is listed as an MCAS accommodation in a **504 plan** developed for the student.
- The student generally **uses the accommodation** (with rare exceptions) during routine classroom instruction and assessment in the subject, and the student is **comfortable and familiar** with its use. Use of an accommodation during routine instruction does not *necessarily* qualify a student to receive the same accommodation during MCAS testing; for example, the student must meet additional criteria to receive a **special access accommodation** on an MCAS test.
- If a **special access accommodation** will be provided, the student's profile meets all the criteria to receive the accommodation, as shown in Table 6.

Accommodations may **not** do any of the following:

- alter, explain, simplify, paraphrase, or eliminate any test question, reading passage, writing prompt, or multiple-choice answer option
- provide verbal or nonverbal clues or suggestions that hint at or give away the correct response to the student
- contradict test administration requirements or result in a violation of test security, such as in these examples:
 - Test questions may not be modified, reordered, or reformatted in any way for any student.
 - Paper-based tests may not be photocopied, photographed, scanned, altered, or duplicated.
 - Screen shots of computer-based tests may not be taken or reproduced.
 - English-language dictionaries are **not** permitted for any student on MCAS tests.

If the above conditions have been met and the accommodation is listed in the IEP or 504 plan, the accommodation(s) **must be provided** to the student during MCAS testing. If an accommodation is provided that does not meet the conditions stated above or that is not listed in a student's plan, the student's test score **may be invalidated**.

In the event a test accommodation is provided that was *not* listed in the student's IEP or 504 plan, or if a student was *not* provided a test accommodation listed in the plan, the school should contact the Department at 781-338-3625 or by email at mcas@mass.gov for technical assistance.

Nondisclosure Acknowledgment Forms

Test administrators for students using certain accommodations must sign an [MCAS Nondisclosure Acknowledgment](#) prior to testing. The form can be downloaded from the DESE website and is required for the administration of the following accommodations:

A2, A3.1, A3.2, A3.3, A5, A6.1, A8, A10.1, A10.2, A11, A12, A13, A14, A15, SA1.2, SA2, SA3.1, SA3.2, SA6, EL3.2, EL4.1, EL4.2

C. Selecting Accommodations for Students with Disabilities

Accommodations are intended to offset the effects of a disability to allow a student to participate effectively in MCAS testing. When selecting testing accommodations, educators should do the following:

- **Determine the learning challenges** the student is experiencing.
 - Look at the student's classroom performance, not just the nature or type of disability.

- **Brainstorm the use of various accommodations and universal and designated accessibility features** with IEP team members and other adults familiar with the student.
 - What supports were used successfully with students who have similar learning profiles?
- **Try out the accessibility features and accommodation(s)** in different instructional and assessment settings and make adjustments as needed.
 - Be sure the student is comfortable using the accessibility feature or accommodation and becomes familiar with its use.
 - Encourage the student to become familiar with the basic functionality of the computer-based testing platform prior to testing through taking online **practice tests** and viewing the **student tutorial** prior to test administration.
- **Evaluate whether the accessibility feature or accommodation addresses the student's need.**
 - If not, revise the plan to provide accommodation(s) and supports accordingly.
- **If the accessibility feature or accommodation addresses the challenge,**
 - determine whether the accessibility feature or accommodation is allowed for MCAS testing in that specific subject area, since some accommodations are available for ELA only (see Tables 1, 2, 4–6); and
 - develop or amend the IEP or 504 plan accordingly, listing each accommodation (required) or accessibility feature (optional) for the specific MCAS test(s).

Unique Accommodations Requests

If a student with a disability or an English learner requires an accommodation that is not listed in Tables 1, 2, 4–6, or 8, the school may request approval from DESE to use a unique accommodation.

Unique accommodations may **not** do any of the following:

- fundamentally change the test or the construct being measured by the test
- assist the student in obtaining the answers to test questions
- violate test security requirements

The school may request approval for the use of a unique accommodation by submitting the request to mcas@mass.gov at least two weeks prior to testing. If approved by DESE, the student's IEP or 504 plan must include the approved unique accommodation.

Identifying Accommodations on the Student Registration

Accommodations listed with the designation of **(SR)** in the tables below must be identified in the Student Registration **prior to the start of testing**.

The following form-dependent accommodations must be assigned correctly before testing. If not assigned correctly, a student's test will need to be stopped and a new test will need to be set up, and the student may need to retake a portion of the test. These accommodations are listed with the

 symbol below. More information about these accommodations is available in Appendix A of the [MCAS Student Registration Guide](#).

Form-dependent accommodations for CBT:

- ASL video edition of the grade 10 Mathematics test and June high school Science tests
- Compatible assistive technology
- Human read-aloud
- Human signer

- Screen reader
- Spanish/English edition for Mathematics, Science, and Civics tests

Form-dependent accommodations for PBT:

- Large print
- Braille

Updating IEPs and 504 Plans

State regulation CMR 603 28.04(3) requires that IEP teams annually review students' IEP plans so that plans reflect the most current needs of each student. It is also recommended that students' 504 plans be reviewed on an annual basis. The teams should decide which, if any, accommodations and accessibility features are necessary for the student to participate in MCAS testing scheduled for the student. We recommend that consideration be given to whether the student requires a paper-based rather than a computer-based test, and, if so, in which subjects. The principal is responsible for ensuring that students are provided with the test accommodations listed in their IEPs or 504 plans during testing.

For ELs with disabilities, accommodation decisions should be made by the student's language-based team—an informal team of adults familiar with the EL student—and documented in writing using the sample Documentation of Accommodations for an EL Student (or similar) form provided on the DESE website.

If a Student Refuses an Accommodation

If a student refuses to use an accommodation listed in their plan during testing, the school should document in writing that the student was offered an accommodation but refused it, and they should keep the documentation on file. The student should be told that the accommodation will remain available during testing if they need it. The student should *not* be asked to sign an agreement acknowledging that they have refused an accommodation, nor should they be asked to waive their right to receive an accommodation that is listed in their IEP or 504 plan. An optional sample Student Accommodation Refusal form is available on the DESE website.

If the IEP team agrees that the listed accommodation is no longer needed by the student, the accommodation should be removed from the plan at the next scheduled meeting (or should be listed in the plan "as requested by the student"). Written approval must be obtained from the parent/guardian (or student over 18 years of age) for new or amended IEPs before a change in accommodations can go into effect.

Similarly, 504 plans must reflect only those accommodations that are required by the student as determined by educators familiar with the student.

D. Descriptions of MCAS Accommodations

Tables 4–6 and 8 list the MCAS accommodations available to students with disabilities on the computer-based test, and where applicable, the comparable accommodation on the paper-based test. MCAS accommodations are grouped into the following categories:

- **Test Presentation:** changes to the format in which the test is presented to the student (Table 4)
- **Response:** changes to the procedures, supports, or devices used to facilitate a student's response to test questions (Table 5)
- **Special Access:** accommodations intended for a small number of students with significant

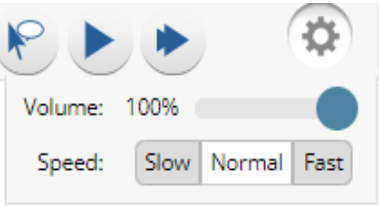
delays in reading, writing, or performing calculations to offset the effects of a disability that would otherwise severely limit or prevent their participation in the assessment, and that may affect the interpretation of the test results (Table 6)

- **EL Accommodations:** available to ELs with and without disabilities (Table 8)

Table 4. Test Presentation Accommodations for Students with Disabilities

#	Computer-Based Test	Paper-Based Test
A1 (SR)	Paper-based edition of the MCAS test may be administered as an accommodation to a student who is unable to use a computer or take the computer-based test due to a disability.	N/A
A2 (SR)	N/A (See UF3 and UF4 in Table 1 for information on screen magnification and enlarged cursor/pointer tool)	Large print New for 2025, large-print materials will be presented as approximately 24-point font size on 8.5" x 11" paper (i.e., a standard-sized test booklet). • Large-print special instructions will accompany the large-print test. • Either the student or the test administrator must transcribe the student's responses verbatim from the large-print test & answer booklet into the standard test & answer booklet and returned according to instructions in the PAM so the student will receive credit. (See additional procedures listed in Appendix C.) • Test administrators for students using accommodation A2 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation. ⚠ See Appendix A of the <u>MCAS Student Registration Guide</u> for important information about assigning this accommodation.
A3.1 (SR) A3.2	A3.1 – Screen reader: ONLY for a student who is blind and uses the assistive technology program JAWS or NVDA	A3.2 – Braille edition (hard copy): • All answers must be either scribed or transcribed verbatim

#	Computer-Based Test	Paper-Based Test
(SR) A3.3 (SR)	• A separate hard-copy Braille edition test with the appropriate Braille graphics will automatically be sent for this accommodation. • All responses must be entered onscreen, either by the student or test administrator. • Test administrators for students using accommodation A3.1 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation. ⚠ See Appendix A of the <u>MCAS Student Registration Guide</u> for important information about assigning this accommodation. See <u>Appendix E: Guidelines for Using Assistive Technology as an MCAS Test Accommodation</u> for additional information about this accommodation.	into the student's standard booklet and returned according to instructions in the PAM so the student will receive credit. (See additional procedures listed in Appendix C.) • Braille special instructions will accompany the Braille test. • Test administrators for students using accommodation A3.2 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation. ⚠ See Appendix A of the <u>MCAS Student Registration Guide</u> for important information about assigning this accommodation.
A3.1 (SR) A3.2 (SR) A3.3 (SR)	A3.3 – Assistive Technology: Students who are not blind but use JAWS, NVDA, and ZoomText may use this form to allow their assistive technology program to integrate with the computer-based test. A separate hard-copy Braille edition test will not be automatically sent; schools that need one should call the MCAS Service Center to request one. Test administrators for students using accommodation A3.3 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation. ⚠ See Appendix A of the <u>MCAS Student Registration Guide</u> for important information about assigning this accommodation.	N/A
	See <u>Appendix E: Guidelines for Using Assistive Technology as an MCAS Test Accommodation</u> for additional information about this accommodation.	

#	Computer-Based Test	Paper-Based Test
	Note for A3.1, A3.2, and A3.3 Previewing Braille test content by test administrators: Under secure conditions supervised by the principal, Braille test administrators may review Braille test materials up to four days prior to testing once they are received by the school for the purpose of preparing to orient the student. Test materials may not be removed from the school.	
A4 (SR)	 Text-to-speech (TTS): computer reads text aloud for Mathematics, Science, and Civics (not ELA). Test takers can play, pause, or stop audio, and can skip content by selecting specific portions of text to be read aloud. Test takers can adjust the volume and speed at which content is read aloud. - For students who require that text be read aloud, IEP teams should consider whether TTS is preferable to a human reader (or vice versa). Human read-aloud provides the same accessibility support as TTS, and the two can be used interchangeably, unless otherwise specified (e.g., “text-to-speech is preferable, but human reader is acceptable”). - TTS may be used either with headphones or without headphones in a separate setting. - Students should view the tutorial and take an online TTS practice test prior to testing. Note: TTS for ELA is a special access accommodation (SA1.1). See Table 6 for guidelines and criteria to receive this accommodation.	
A5 (SR)	Human read-aloud for Mathematics, Science, and Civics (not ELA) Human read-aloud provides the same accessibility support as TTS, and the two can be used interchangeably unless otherwise specified (e.g., “text-to-speech is preferable, but human reader is acceptable”). Note: For computer-based testing, schools may choose to have test administrators read the test over the student’s shoulder, or create test administrator logins so that test administrators can log in to their own test on their own device in order to read aloud. - If using test administrator logins, test administrators will need their own computer to sign in to their own version of the test. (Students will sign in and record responses using their student logins.) - For instructions on creating test administrator logins for human read-aloud, test coordinators should refer to Appendix F. - Note: Reading aloud the ELA test is a special access accommodation (SA1.2). See Table 6 for guidelines and criteria to receive this accommodation.	

#	Computer-Based Test	Paper-Based Test
	Review Appendix D: Procedures for Providing the Human Read-Aloud. Test administrators for students using accommodation A5 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation. See Appendix A of the MCAS Student Registration Guide for important information about assigning this accommodation.	
A6.1 (SR)	Human signer for Mathematics, Science, Civics and for ELA test questions (but not ELA reading passages): • If using test administrator logins, test administrators will need their own computer to sign in to their own version of the test. (Students will sign in and record responses using their student logins.) • For instructions on creating test administrator logins for human signer, test coordinators should refer to Appendix F. • The test must be signed exactly as it appears. The signer may not provide assistance to the student regarding the meaning of words, intent of any test question, or how to respond to any test questions. The signer may finger-spell key words in addition to providing the sign for a term. The signer may sign emphasis only when indicated by bold or italicized text. • The test must be administered either individually or to a small group of 2–5 students receiving the human signer accommodation. • If preferred, selected words, phrases, or sections may be signed to the student, as requested, rather than signing the entire test. • Signing the ELA reading passages is a special access accommodation (SA2). See Table 6 for guidelines and criteria to receive this accommodation. • Previewing test content by human signers: Under secure conditions supervised by the principal, interpreters may review test materials up to four days prior to testing (unless given special permission for an earlier review). Test materials may not be removed from the school nor accessed online outside of the school. • Test administrators and interpreters for students using accommodation A6.1 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation. ▲ See Appendix A of the MCAS Student Registration Guide for important information about assigning this accommodation.	
A6.2 (SR)	 ASL video editions of the computer-based spring 2025 MCAS grade 10 Mathematics and June high school Science tests (not available for February high school Science or the ELA and Math retests). The icon to the right shows how the ASL video	N/A (See A6.1 for Human Signer)

#	Computer-Based Test	Paper-Based Test
	appears in the student testing platform. • An embedded ASL video is built into these computer-based tests. • Students may turn on, turn off, pause, and control the signing speed of the ASL video. • Students should view the tutorial and take online ASL practice tests prior to testing to become familiar with the features of the ASL video player. ⚠ See Appendix A of the MCAS Student Registration Guide for important information about assigning this accommodation.	
A7	Human signer for test directions only (from the appropriate Test Administrator's Manual scripts) for a student who is Deaf or Hard-of-Hearing	
A8	Track student progress by assisting the student to move from one test question to the next Students requiring this accommodation may have attention challenges and require supports and redirection to participate in multi-page assessments. Test administrators for students using accommodation A8 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation.	

Table 5. Response Accommodations for Students with Disabilities

#	Computer-Based Test	Paper-Based Test								
A9 (SR)	Use of approved graphic organizers, checklists, or supplemental reference sheets:									
	Only the approved ELA organizers and supplemental mathematics reference sheets <u>made available by DESE</u> (<i>new for 2025</i>, posted in PDF format) may be used as accommodations on ELA and Mathematics. These have been developed for use on MCAS tests based on the most current versions of the curriculum framework standards measured by the tests, the MCAS test design, expectations for how student essays and text-based responses will be scored, and educator input.									
	Exception: ELA graphic organizers <i>without</i> text (e.g., paper with only lines, arrows, boxes, dots) may be used without DESE approval by students who have this accommodation listed in their IEP or 504 plans.									
	For STE, students may use a <u>sample reference sheet</u>, or schools may submit a customized reference sheet for DESE approval, as follows:									
	<table><tr><th>MCAS Test Administration</th><th>Reference Sheet Submission Deadline</th></tr><tr><td>February High School Science</td><td>January 10, 2025</td></tr><tr><td>Spring Grades 5 and 8 STE</td><td>March 7, 2025</td></tr><tr><td>June High School Science</td><td>April 25, 2025</td></tr></table>	MCAS Test Administration	Reference Sheet Submission Deadline	February High School Science	January 10, 2025	Spring Grades 5 and 8 STE	March 7, 2025	June High School Science	April 25, 2025	
MCAS Test Administration	Reference Sheet Submission Deadline									
February High School Science	January 10, 2025									
Spring Grades 5 and 8 STE	March 7, 2025									
June High School Science	April 25, 2025									
	- Individualized reference sheets approved prior to the 2022–23 school year must be resubmitted for approval for use on the 2025 STE tests. - All science reference sheets submitted for approval must be accompanied by a completed <u>cover sheet</u>.									
	Students may not use reference sheets that have already been filled out prior to the beginning of the test administration, and test administrators must check to confirm that they are providing students with blank sheets. Additional guidance is provided on the first page of each supplemental reference sheet posted to the DESE website.									
A10.1 (SR)	Scribe responses (A10.1) for Mathematics, Science, and Civics (<i>not ELA</i>) A human scribe will record the student’s responses verbatim (i.e., as dictated or signed by the student) <i>at the time of testing</i> , either on the computer-based test or in the student’s paper-based test. (See <u>Appendix C</u> for specific guidance on providing the scribe accommodation.) Often for students with motor, processing, or expressive language difficulties, or who have had a recent injury (such as a broken hand or arm). Department approval is not required for using a scribe with a 504 plan that is under development for student with a recent injury. Scribing responses for ELA is a special access accommodation (SA3.1). See Table 6 for guidelines and criteria to receive this accommodation. Test administrators for students using accommodation A10.1 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation.									

Table 5. Response Accommodations for Students with Disabilities (cont.)

#	Computer-Based Test	Paper-Based Test
A10.2 (SR)	Speech-to-text (A10.2) for Mathematics, Science, and Civics (not ELA). Students use a computer-based voice recognition program (other than a smartphone) that generates responses by converting speech into text. • A speech-to-text accommodation provides the same access as a human scribe, and the two can be used interchangeably, unless otherwise specified. • If the student will use both scribe and speech-to-text on one test, schools should select speech-to-text during Student Registration or in the MCAS Portal user interface instead of human scribe. • All answers must be either scribed or transcribed verbatim into the student's standard booklet and returned according to instructions in the PAM so the student will receive credit. (See additional procedures listed in Appendix C.) • Students who use speech-to-text will need headphones/Whisperphones unless they are tested individually in a separate setting. Note: Speech-to-text for ELA is a special access accommodation (SA3.2). See Table 6 for guidelines and criteria to receive this accommodation. Test administrators for students using accommodation A10.2 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation. See <u>Appendix E: Guidelines for Using Assistive Technology as an MCAS Test Accommodation</u> for additional information about this accommodation.	
A11	Responses recorded by student on special paper or specialized device: • Responses must be transcribed into the student's computer-based test or test & answer booklet by a test administrator <i>anytime during the testing window</i>. • Students who transcribe their own responses must do so <i>during the test session</i> and must finish on the day in which the test session began. • See <u>Appendix C</u> for guidelines on transcribing student responses. • Test administrators for students using accommodation A11 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation.	
A12 (SR)	N/A	Typed responses: • Responses must be printed out, one per page, and inserted in the student's test & answer booklet with all required header information typed on each page (see the <u>PAM</u>). • Schools should not transcribe students' responses into their test & answer booklet. • After being printed, responses must be deleted from the device. Test administrators for students using accommodation A12 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation.

Table 5. Response Accommodations for Students with Disabilities (cont.)

#	Computer-Based Test	Paper-Based Test
A13	Student records responses on a device (other than a smartphone) for the purpose of playing back and transcribing the recorded segment(s). Students that use stand-alone text-to-speech software or an audio recording device to listen to their draft response should also have accommodation A11 listed in their IEP or 504 plan. Responses must be deleted from the device once they have been transcribed into the student's test. Test administrators for students using accommodation A13 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation.	
A14	Responses signed onto video (for a student who is Deaf or Hard-of Hearing), then transcribed by the student onscreen or into the test & answer booklet during playback. The video must be deleted after transcription. Test administrators for students using accommodation A14 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation.	
A15	Monitor placement of responses in the appropriate area onscreen or in the test & answer booklet by the test administrator Test administrators for students using accommodation A15 must sign an <u>MCAS Nondisclosure Acknowledgment</u> before administering this accommodation.	
A16	Refreshable Braille Display/Braille note-taker (specific external device used in conjunction with screen reader for student who is blind or has a vision impairment) A hard-copy edition of the Braille test must also be ordered and the screen reader test must be selected.	Braille note-taker (specific external device used in conjunction with hard-copy Braille test) Braille notes should be placed in the school's return shipment.
A17	Braille writer (specific external device used in conjunction with screen reader and hard-copy Braille test) A hard-copy edition of the Braille test must also be ordered and the screen reader test must be selected.	Braille writer (specific external device used in conjunction with the hard-copy Braille test). A printout of each response may be generated and inserted in the student's test & answer booklet, with all required information on each page (also see the <u>PAM</u>).

Table 5. Response Accommodations for Students with Disabilities (cont.)

#	Computer-Based Test	Paper-Based Test
A18 (SR)	<i>New for 2025</i> Word Prediction for Mathematics, Science, and Civics (<i>not</i> ELA) An assistive technology tool for writing that provides a list of suggested words for the student to select based on letters typed by the student. Note: The word prediction tool is embedded into the MCAS Student Kiosk. See <u>Appendix E</u> if attempting to use a school-owned word prediction application. Note: Word Prediction for ELA is a special access accommodation (SA6). See Table 6 for guidelines and criteria to receive this accommodation.	NA

Special Access Accommodations for Students with Disabilities

Special access accommodations are intended for use by a *very small number of students with significant delays in word decoding/reading, writing, or performing basic numerical calculations* who would not otherwise be able to access the test because a disability severely limits or prevents them from performing the skill in question. Teams must exercise caution when considering whether a student requires a special access accommodation, since these accommodations alter part of what the test is designed to measure. Teams must apply the guidelines and criteria described for each special access accommodation listed in Table 6.

Test results for students who take the test using special access accommodations should be interpreted with caution. Parents/guardians and schools should not infer that the student has expertise in the skill being accommodated. A notation will accompany the results of students who use a special access accommodation.

The Department continues to review each district's rate of use of special access accommodations.

Although test accommodations should generally be consistent with accommodations used for instruction, the use of a special access accommodation during instruction does not automatically qualify a student to receive the same accommodation on an MCAS test, unless the student meets the guidelines and criteria described on the following pages.

IEP and 504 teams should make consistent, appropriate, and defensible decisions regarding the use of special access accommodations for each student based on locally administered diagnostic assessments. Teams should amend the IEPs and 504 plans of students who have been previously designated for special access accommodations, but who do not meet the criteria listed in Table 6.

Schools should be careful to provide special access accommodations only to students who are entitled to them. Students who receive these accommodation but do not have them listed in their IEPs **are likely to have their tests invalidated**.

Table 6. Special Access Accommodations for Students with Disabilities

#	Computer- and Paper-Based Tests
SA1.1 (SR) and SA1.2 (SR)	Text-to-speech (SA1.1) or human read-aloud (SA1.2) for ELA only, including oral presentation of test questions, response options, and passages - Text-to-speech may be used either with or without headphones. If headphones are used, the student may be tested in a typical-sized group. If headphones are not used, the student must be tested individually. - Text-to-speech and human read-aloud may be used interchangeably, unless otherwise specified. - A human reader may either read aloud from the computer-based test (signed in to a nearby computer or sitting next to the student) or from the paper-based test. A human reader may read aloud to a group of up to five students. This accommodation is intended for a very small number of students with disabilities resulting in substantial reading deficits, as documented in locally administered diagnostic evaluations and observations. To receive the text-to-speech or human read-aloud accommodation for ELA, the student must meet all of the following criteria: - be virtually unable to read, even after varied and repeated attempts to teach the student to do so (i.e., the student is at the beginning stages of learning to read, and not simply reading below grade level), as determined by locally administered diagnostic evaluations (reading below the second grade-level) - receive ongoing intervention to learn the skill of reading - use this accommodation routinely (except during instruction in learning to read) The human read aloud (SA1.2) may also be provided to a student who is blind or has a visual impairment and uses a screen reader and/or is unable to use Braille on the tests and retests listed above. If the student will use a screen reader and if the screen reader accommodation is indicated, a separate hard copy Braille test edition will be sent to the school to allow the student to access the appropriate Braille graphics (see accommodation A3.1). - Note: For computer-based testing, schools may choose to have test administrators read the test over the student’s shoulder, or create test administrator logins so that test administrators can log in to their own test on their own device in order to read aloud. - If using test administrator logins, test administrators will need their own computer to sign in to their own version of the test. (Students will sign in and record responses using their student logins.) - For instructions on creating test administrator logins for human read-aloud, test coordinators should refer to Appendix F. Review Appendix D: Procedures for Providing the Human Read-Aloud. Test administrators for students using special accommodation SA1.2 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation. ⚠ See Appendix A of the MCAS Student Registration Guide for important information about assigning this accommodation.

Table 6. Special Access Accommodations for Students with Disabilities (cont.)

#	Computer- and Paper-Based Tests
SA2 (SR)	Human signer for ELA, including reading passages, questions, and answer options: This accommodation is intended for students who are Deaf or Hard-of-Hearing and who are severely limited or prevented from reading, as documented in locally administered diagnostic evaluations. The student must meet all the following criteria: • be virtually unable to read (i.e., decode text), even after varied and repeated attempts to teach the student to do so (i.e., the student is at the very beginning stages of learning to read, and not simply reading below grade level), due to a documented disability and/or history of early and prolonged lack of exposure to and use of language • use this accommodation routinely, except during reading instruction • receive ongoing intervention to learn the skill The student must be tested in a group of no more than five students, unless approval is obtained from the Department to increase the group size in rare circumstances. • Note: For computer-based testing, schools may choose to have test administrators use the student’s test for signing content to the student or create test administrator logins so that test administrators can log in to their own test on their own device in order to sign the test. • If using test administrator logins, test administrators will need their own computer to sign in to their own version of the test. (Students will sign in and record responses using their student logins.) • For instructions on creating test administrator logins for human signer, test coordinators should refer to Appendix F. ⚠ See Appendix A of the MCAS Student Registration Guide for important information about assigning this accommodation. Test administrators for students using accommodation SA2 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation.
SA3.1 (SR)	Scribe responses ELA: A human scribe (SA3.1) will record the student’s responses verbatim (i.e., as dictated by the student) <i>at the time of testing</i>, either onscreen (computer-based test) or in the student’s test & answer booklet (paper-based test). This accommodation is intended for students who have the following: • documented significant motor difficulties or difficulties producing writing • a recent injury (such as a broken hand or arm) that makes it difficult to produce responses. For many of these students, dictating to a scribe is the only way to demonstrate their composition skills. Students will dictate their responses to a human, who will then record the students’ responses verbatim. A human scribe and speech-to-text provide the same access and can be used interchangeably, if the student is familiar with the features. Students should be allowed to develop planning notes via the scribe and to view the scribed material. The student must be tested in a separate setting.

Table 6. Special Access Accommodations for Students with Disabilities (cont.)

#	Computer- and Paper-Based Tests
	See Appendix C for specific guidance on providing the scribe accommodation. Test administrators for students using accommodation SA3.1 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation.
SA3.2 (SR)	Speech-to-text (SA3.2) for ELA: Students use a speech recognition program that converts voice to written text. This accommodation is intended for students who have the following: • documented significant motor or processing difficulties • a recent injury (such as a broken hand or arm) that makes it difficult to produce responses. • Students taking the computer-based test will be able to use an embedded speech-to-text tool that functions within MCAS Student Kiosk. This embedded assistive technology will allow students to dictate their responses directly into the computer-based test without using a separate adjacent (external) device. Refer to Appendix E for a step-by-step guide on accessing and using this feature. ○ If students use their own AT devices, all assessment content must be deleted from these devices after the test for security purposes. • Students who use speech-to-text will need headphones/Whisperphones, unless they are tested individually in a separate setting. This accommodation is intended for students who have significant challenges producing written text, which can result from significant motor or processing difficulties. Test administrators for students using accommodation SA3.2 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation.
SA4 (SR)	Calculator device (including addition/subtraction or multiplication/division tables) on a noncalculator session for Mathematics tests: Students taking the computer-based test will be able to use an embedded calculator (or a handheld calculator). This accommodation is intended for a small number of students with documented disabilities that severely limit or prevent them from performing basic calculations without a calculation device or other mathematics tool, as documented in locally administered diagnostic evaluations, even after varied and repeated attempts to teach the student to do so. The student must meet all of the following criteria: • be virtually unable to calculate (i.e., unable to perform single-digit addition, subtraction, multiplication, or division without a calculation device or other mathematics tool) • use the calculation device or tool during routine instruction in mathematics • receive ongoing intervention to learn the skill

Table 6. Special Access Accommodations for Students with Disabilities (cont.)

#	Computer- and Paper-Based Tests
	Students using handheld calculators to fulfill SA4 should be tested in their own group to minimize confusion during test administration. Please contact Student Assessment Services at 781-338-3625 or mcas@mass.gov to request approval of a unique calculation device.
SA5 (SR)	 Spell checker for ELA, including an external spell-checking device for the paper-based test; or in conjunction with the typed response accommodation for the paper-based test: This accommodation is intended for a small number of students with disabilities that severely limit or prevent them from spelling correctly, even after varied and repeated attempts to teach the student to do so. The student must meet all the following criteria: • be unable to spell simple words (i.e., at the beginning stages of learning how to spell), as documented by locally administered diagnostic evaluations • produce understandable written work only when provided this accommodation, which the student uses during routine instruction • receive ongoing intervention to learn the skill The student may <i>not</i> use grammar check or access the internet during the test.
SA6 (SR)	Word prediction for ELA tests, which provides a choice of frequently used words after the student types the first few letters of a word: Students using the word prediction special access accommodation for the computer-based ELA test will be able to use an embedded word prediction that functions within the MCAS Student Kiosk. Refer to Appendix E for a step-by-step guide on accessing and using this feature. For paper-based tests, a word prediction application must be used at a separate external computer, and a test administrator or the student must transcribe the selected word(s) into the student's test & answer booklet. (See Appendix C for information and guidelines on transcribing student responses.) This accommodation is intended for a small number of students who meet the following criteria: • have a disability that results in significant challenges to generate written responses • requires access to word prediction to produce basic written expression commensurate with the student's skills • Test administrators for students using accommodation SA6 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation.

Procedures for Students with Diabetes Who Use a Cell Phone to Control a Continuous Glucose Monitor (CGM) or an Insulin Pump

For students with diabetes who use a cell phone application to monitor blood glucose levels with a CGM, or to control an insulin pump, the Department recommends that the school test coordinator consult with the school nurse, and that the school nurse follow the student’s Individual Health Care Plan and/or 504 plan/IEP in regard to remote monitoring of blood glucose levels. The student may retain the cell phone during testing in order to monitor blood glucose levels, or to control the pump, provided that the student is tested in a small group (no more than 10 students) or individually, so that the test administrator can closely monitor the student and ensure that the phone is not used for any other purpose.

V. MCAS Participation Requirements for English Learners (ELs)

ELs in grades 3–8 must participate in all MCAS tests scheduled for their grade, regardless of the language program or services they are receiving or the amount of time they have been in the United States, with one exception: Spring 2025 ELA testing is *optional* for ELs who enrolled in U.S. schools **after March 1, 2024**, and who were not reported in the March 2024 SIMS report. If a first-year EL participates in ELA testing, results are reported for diagnostic purposes only.

Grade 10 EL students must participate in ELA testing, with the same exceptions for first-year ELs as noted above. Grade 10 ELs must also participate in the grade 10 Mathematics test. EL students in high school must participate in one of the high school Science tests by the end of grade 10.

In addition, all EL students are required to participate in the ACCESS for ELLs tests to comply with federal and state laws.

Table 7. EL Participation Requirements for Spring 2024 MCAS Tests

Students	ELA	Mathematics	STE
First-Year EL	<i>Optional</i> ²	Required	Required
All Others	Required	Required	Required

¹ Results for first-year EL students are **not** included in MCAS school and district summary results.

² Optional, provided that the student has participated in ACCESS for ELLs testing.

Questions regarding the **identification screening, placement, and reclassification of EL students** should be directed to the Office of Language Acquisition at el@doe.mass.edu. For additional details, refer to OLA’s Guidance on English Learner Education Services and Programming document on the Department’s website.

A. Foreign Exchange Students

Foreign exchange students who are coded in SIMS as #11 under “Reason for Enrollment” in grades 3–8 and 10, regardless of whether they are determined to be English learners, are required to participate in the MCAS tests specified for the grade in which they are reported. These students are also required to participate in ACCESS for ELLs testing if they are reported in SIMS as English learners.

VI. MCAS Accessibility and Accommodations for English Learners

In addition to the accessibility features listed elsewhere in this manual, several accommodations are also available to ELs, as described in Table 8. Table 8 describes the relative suitability of each accommodation for students who are at beginning, intermediate, and advanced levels of English proficiency.

A. Selecting Accessibility Features and Accommodations for EL Students

Identifying which universal and designated accessibility features (Tables 1 and 2) and accommodations (Tables 4, 5, and 6) are appropriate for an EL should be done by a group of educators familiar with the student.

The decision-making team may include any of the following:

- the student
- the student's English-as-a-Second-Language (ESL) educator
- a school administrator (principal/assistant principal)
- a general educator (subject area teacher)
- a special educator (if appropriate)
- a parent or guardian

Decision-making teams are encouraged to determine appropriate accessibility features and accommodations for EL students as early as possible in the school year to ensure that the student becomes familiar with them prior to MCAS test administration. Accessibility features and accommodations are intended to remove barriers and allow EL students to demonstrate their knowledge and skills more effectively.

Because a student's level of English language proficiency is transitional, and the student's linguistic needs will differ from one year to the next, universal and designated accessibility features and accommodations should be examined and revised annually as the EL student makes progress toward attaining English proficiency.

Decision-Making Procedures

When selecting accessibility features and accommodations for EL students, classroom teachers should do the following:

- Examine the range of supports allowed on MCAS tests, and evaluate which supports may help the EL student access the curriculum and take assessments more effectively.
 - *Has a particular accessibility feature and/or accommodation been used successfully in the past to assist students in similar situations and at similar English proficiency levels?*
- Try out the selected supports during routine instruction to determine whether they meet the student's needs.
 - *Does the feature and/or accommodation help the student overcome the barriers posed by developing English language proficiency?*
 - *Is the student comfortable using the feature or accommodation?*
- Observe the student using the accessibility feature or accommodation in the classroom (or if possible, across different classrooms and school settings), and inform members of the decision-making team which accessibility features or accommodations seem appropriate and effective.

- Based on the classroom trial, select the appropriate features and/or accommodations for use on the MCAS tests.
- Document which accessibility features or accommodations were chosen, listing them either on the [sample form](#) or a similar locally developed form, and maintain this information in the student's file.

Involving Students in Selecting and Using Accommodations

The more that students are involved in the accommodations selection process, the more likely they are to use them. As students' English proficiency increases, and especially as students reach adolescence and the desire to be more independent increases, students can help determine when the support is no longer useful. Students are likely to increase their self-advocacy abilities over time and ensure that they receive the selected supports during testing. Educators should play a role in assisting students to advocate on their own behalf regarding accessibility features and accommodations.

B. Accommodations for Students Who Are English Learners (ELs)

In addition to the universal features and designated features (Tables 1 and 2) available to all students, the accommodations listed in Tables 8 and 9 are available to all ELs, with and without disabilities, on MCAS tests.

Note that *some* EL accommodations must be designated in the Student Registration (**SR**) prior to the start of testing. These accommodations are noted with a designation of (**SR**) in Table 8. The names of certain accommodations and the process for their selection in the SR are identical to accommodations for students with disabilities, although the EL accommodations have unique codes (e.g., EL1).

Table 8. Accommodations for ELs	
EL1 (SR)	Paper-based edition: ELs in their first year of schooling in the U.S. or ELs with little or no familiarity with technology may take the MCAS paper-based test as an accommodation. • ELs should have the opportunity to take computer-based practice tests prior to selecting the paper-based test. • Administering the ELA test to a first-year EL is <i>optional</i>.
EL2	Approved Bilingual Word-to-Word Dictionary and Glossary (English/Native language) • This accommodation is available to students who are currently or were ever reported as EL. • Paper bilingual word-to-word dictionaries and glossaries are permitted during MCAS testing. Schools should make sure that EL students are familiar with, and comfortable using, paper editions. • Schools that currently use e-book versions, such as from wordtoword.com, in regular instruction and classroom assessments may use them during MCAS testing. See Appendix G for more information.
EL3.1 (SR) and EL3.2 (SR)	Text-to-speech (TTS) (EL3.1) computer reads text aloud for Mathematics, STE and Civics (not ELA): • The TTS and human read-aloud accommodations provide the same access and can be used interchangeably, if necessary. • TTS is in English only.

Table 8. Accommodations for ELs

	Human read-aloud (EL 3.2) for Mathematics, STE and Civics (not ELA): The test must be administered in a separate setting either individually or to a group of 2–5 students all of whom are receiving the human reader accommodation. Review Appendix D: Procedures for Providing the Human Read-Aloud. Test administrators for students using accommodation EL3.2 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation.
EL4.1 (SR) and EL4.2 (SR)	Scribe or speech-to-text for Mathematics, STE, and Civics (not ELA), consisting either of: - a human scribe (EL4.1), who records student’s responses verbatim <i>at the time of testing</i>. See Appendix C for specific guidance on providing the scribe accommodation; or - a speech-to-text (EL4.2) computer program that converts voice to written text. - A speech-to-text accommodation provides the same access as a human scribe, and the two can be used interchangeably, unless otherwise specified. Students using the speech-to-text accommodation for the grade 5 and 8 STE tests and for high school Biology will be able to use an embedded speech-to-text tool. Test administrators for students using accommodation EL4.1 or EL4.2 must sign an MCAS Nondisclosure Acknowledgment before administering these accommodations.
EL5	Test administrator reads aloud/repeats/clarifies general administration directions in English (from the appropriate Test Administrator’s Manual scripts)
EL6	Test administrator reads aloud/repeats/clarifies general administration directions (from the appropriate Test Administrator’s Manual scripts) in student’s native language, if a native language speaker is available
EL7 (SR)	Spanish/English edition: New for 2025, the Spanish/English is available for all Mathematics, STE, and Civics tests: - Spanish/English tests are available in computer- and paper-based formats. The computer-based tests consist of stacked text, Spanish text above English text; paper-based tests consist of Spanish and English on facing pages (side-by-side). - These tests are intended for Spanish-speaking ELs who have been in the U.S. less than 3 years. - Students may respond either in Spanish or English. (Note that for all other MCAS tests, students may respond only in English.) - When signing in to the computer-based Spanish/English test, students may select the language (Spanish or English) in which they would like to see the MCAS Student Kiosk icons and directions. This selection is made prior to entering the test.

Table 8. Accommodations for ELs	
EL8 (SR)	Word prediction for Mathematics, Science, and Civics (<i>not</i> ELA) tests, which provides a choice of frequently used words after the student types the first few letters of a word: - For computer-based tests, students will be able to use an embedded word prediction tool that functions within the MCAS Student Kiosk. (See Appendix E for a step-by-step guide on accessing and using this feature.) - For paper-based tests, a word prediction application must be used at a separate external computer, and a test administrator or the student must transcribe the selected word(s) into the student’s test & answer booklet. (See Appendix C for information and guidelines on transcribing student responses.) Test administrators for students using accommodation EL8 must sign an MCAS Nondisclosure Acknowledgment before administering this accommodation.

Table 9 provides guidance regarding the suitability of EL accommodations based on the English language proficiency (ELP) level of the student.

Table 9. Selecting Accommodations for English Learners

#	Accommodation	Level of Proficiency Beginning	Level of Proficiency Intermediate	Level of Proficiency Advanced
EL1	Paper-based editions for ELs with low levels of English proficiency and/or no familiarity with technology who are in their first calendar year of enrollment in a U.S. school	⊙	○	○
EL2	Approved bilingual word-to-word dictionary and glossary (English/Native language)	○	●	●
EL3.1 and EL3.2	Text-to-speech (EL3.1) for the computer-based Mathematics, STE or Civics tests (in English <i>only</i>); OR Human read-aloud (EL3.2)	⊙	⊙	○
EL4.1 and EL4.2	Human scribe (EL4.1) for Mathematics, STE or Civics tests Speech-to-text (EL4.2) for Mathematics, STE, or Civics tests	●	⊙	○
EL5	Test administrator reads aloud/repeats/clarifies general administration directions in English	●	⊙	○
EL6	Test administrator reads aloud/repeats/clarifies general administration directions in student's native language	●	⊙	○
EL7	Spanish/English editions of the Mathematics, STE or Civics tests	●	⊙	○
EL8	Word Prediction on the Mathematics, STE or Civics tests (<i>not ELA</i>)	●	⊙	○

KEY:

- **Recommended** for use by English learners at this ELP level
- ⊙ **May be appropriate** for use by English learners at this ELP level
- **May not be appropriate** for English learners at this ELP level

Appendix A: MCAS and ACCESS for ELLs Accessibility Features and Accommodations at a Glance

The tables below present a crosswalk of all accessibility features and accommodations, for ease of assigning them and adding them to Student Registration (SR) for MCAS and for assigning them correctly for English learners participating in ACCESS tests.

Accessibility Features for MCAS and ACCESS for ELLs

Feature Number	Accessibility Feature	SR Column	Available for ACCESS for ELLS
UF1	Highlighter tool	N/A	Yes
UF2	Color contrast	N/A	Yes
UF3	Screen zoom tool	N/A	Yes
UF4	Enlarged cursor/Mouse pointer tool	Column Q	No
UF5	Line reader tool	N/A	Yes
UF6	Answer masking	N/A	No
UF7	Answer eliminator	N/A	No
UF8	Item flag/Bookmark	N/A	No
UF9	Audio aid	N/A	Yes
UF10	Notepad	N/A	Yes
UF11	Test administrator reads aloud (or signs) selected words	N/A	Yes, only for Listening, Speaking, and Writing
UF12	Test administrator redirects student's attention to the test	N/A	Yes
UF13	Test administrator reads aloud, repeats, or clarifies <i>general test administration directions</i>	N/A	Yes
UF14	General masking	N/A	No
UF15	Reverse contrast	N/A	No
DF1	Small group test administration (May include up to a total of 10 students.)	N/A	Yes
DF2	Individual (one-to-one) test administration	N/A	Yes
DF3	Frequent brief supervised breaks	N/A	Yes
DF4	Separate or alternate test location	N/A	Yes
DF5	Seating in a specified area	N/A	Yes
DF6	Adaptive or specialized furniture	N/A	Yes
DF7	Noise buffer	N/A	Yes
DF8	Familiar test administrator	N/A	Yes
DF9	Student reads test aloud to self	N/A	Yes
DF10	Specific time of day	N/A	Yes
DF11	Stop Testing policy	N/A	Yes

Accommodations for Students with Disabilities for MCAS and ACCESS for ELLs

Accommodation Number	Accommodation	SR Column	Available for ACCESS for ELLS
A1	Paper-based test	Column L	Yes
A2	Large-print <i>PBT only</i>	Column AI	Yes
A3.1	Screen reader	Column AL	No
A3.2	Braille edition	Column AJ	Yes
A3.3	Assistive Technology	Column AM	No
A4	Text-to-speech <i>Math, STE, and Civics tests only</i>	Column S	No
A5	Human read-aloud <i>Math, STE, and Civics tests only</i>	Column T	Yes, only for Listening, Speaking, and Writing
A6.1	Human signer <i>Math, STE, and Civics tests only</i>	Column U	No
A6.2	ASL video <i>Grade 10 Math and June high school Science only</i>	Column AK	No
A7	Human signer for test directions only	N/A	Yes
A8	Track test items	N/A	No
A9	Approved graphic organizer or supplemental reference sheet	Column R	No
A10.1	Scribe responses <i>Math, STE, and Civics tests only</i>	Column V	Yes, only for Listening, Speaking, and Writing
A10.2	Speech-to-text <i>Math, STE and Civics tests only</i>	Column W	Yes, only for Listening, Speaking, and Writing
A11	Responses recorded on special paper	N/A	Yes
A12	Typed responses <i>PBT only</i>	Column AH	
A13	Student records responses on a recording device	N/A	No
A14	Responses signed onto video	N/A	No
A15	Monitor placement of responses	N/A	Yes
A16	Refreshable Braille display	N/A	Yes
A16	Braille note-taker	N/A	Yes
A17	Braille writer	N/A	Yes
A18	Word Prediction <i>Math, STE, and Civics tests only</i>	Column X	No

Special Access Accommodations for Students with Disabilities for MCAS and ACCESS for ELLs

Accommodation Number	Special Access Accommodation	SR column	Available for ACCESS for ELLS
SA1.1	Text-to-speech for ELA	Column Y	N/A
SA1.2	Human read-aloud for ELA	Column Z	Yes, for Listening, Speaking and Writing if in their IEP. If needed for the reading ACCESS domain, then the student is exempt.
SA2	Human signer for ELA	Column AA	No
SA3.1	Scribe for ELA	Column AB	N/A
SA3.2	Speech-to-text for ELA	Column AC	N/A
SA4	Calculator for Mathematics non-calculator sessions	Column AF	N/A
SA5	Spell checker for ELA	Column AG	No
SA6	Word prediction for ELA	Column AD	No

Accommodations for ELs for MCAS and ACCESS for ELLs

Accommodation Number	Accommodation	SR Column	Available for ACCESS for ELLS
EL1	Paper-based test	Column K	Yes
EL2	Word-to word dictionary and glossary	N/A	No
EL3.1	Text-to-speech <i>Math, STE and Civics tests only</i>	Column S	No
EL3.2	Human read-aloud <i>Math, STE, and Civics tests only</i>	Column T	Yes, only for Listening, Speaking, and Writing
EL4.1	Scribe responses <i>Math, STE, and Civics tests only</i>	Column V	Yes, only for Listening, Speaking, and Writing
EL4.2	Speech-to-text <i>Math, STE, and Civics tests only</i>	Column W	Yes, only for Listening, Speaking, and Writing
EL5	Test administrator reads aloud, repeats, or clarifies <i>general test administration directions</i>	N/A	Yes
EL6	Test administrator reads aloud, repeats, or clarifies <i>general administration directions in student's native language</i>	N/A	Yes. Can read directions or clarify in native language. Cannot repeat.

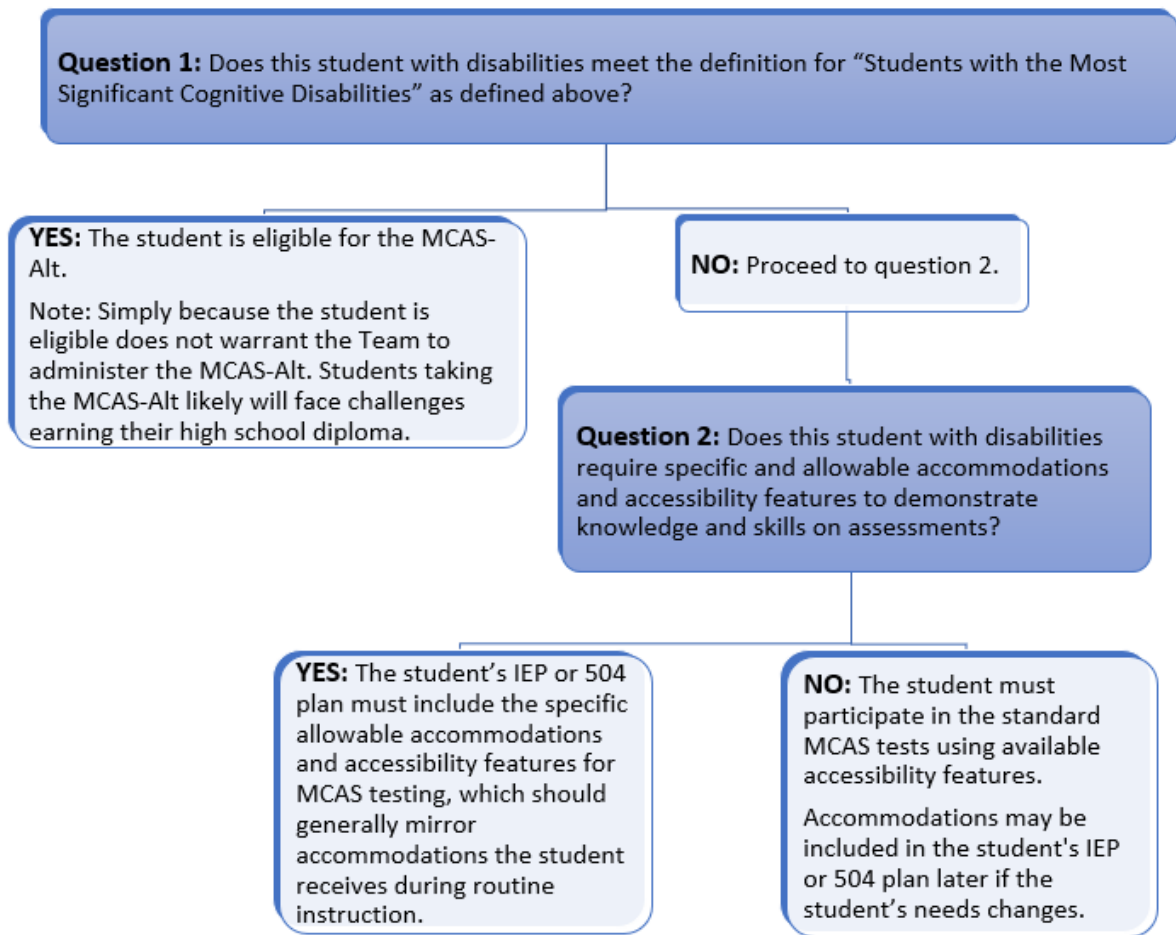
Accommodation Number	Accommodation	SR Column	Available for ACCESS for ELLS
EL7	Spanish/English edition <i>Math, Science, and Civics tests only</i>	Column AE	No
EL8	Word prediction <i>Math, Science, and Civics tests only</i>	Column X	No

Appendix B: Decision-Making Tool for MCAS Participation by Students with Disabilities

Use the definition and questions below to guide discussions of how students will participate in MCAS testing.

Massachusetts defines “students with the most significant cognitive disabilities” as those who meet **all** the following criteria:

- have cognitive disabilities evidenced by significant delays in attaining age-level academic achievement standards, even with systematic, extensive individually designed instruction, related services, and modifications
- have cognitive disabilities that significantly impact their educational performance and ability to apply learning from one setting to another
- require extensive, direct individualized instruction and substantial supports to achieve measurable gains on the challenging State academic content standards for the grade in which the student is enrolled
- perform significantly below average in general cognitive functioning and adaptive behavior
Note: “Significantly below average” is defined as a student functioning two or more standard deviations below the mean on commonly accepted norm-referenced assessments in both cognitive functioning and adaptive behavior (e.g., two or more adaptive skill areas such as daily living skills, communication, self-care, social skills, and academic skills).



Appendix C: Procedures for Scribing and Transcribing Student Responses

The human scribe (A10.1, SA3.1, EL4.1) and speech-to-text (A10.2, SA3.2, EL4.2) accommodations allow students to produce responses orally to a test administrator who will type the responses (or write in the student’s test & answer booklet) or into a speech recognition device. Students who receive one of these accommodations may respond to test questions through one of the following:

- verbal dictation to a human scribe
- a speech-to-text device or other augmentative/assistive communication device (e.g., picture/word board)
- signing (e.g., American Sign Language, signed English, Cued Speech)
- gesturing or pointing
- eye-gazing

Guidelines for Administering the Human Scribe Accommodation (A10.1, SA3.1, EL4.1)

- A scribe may administer this accommodation only to **one student at a time** during a test session. The student must be tested in a separate setting.
- If scribing responses into a paper-based booklet, the scribe must produce legible text. For computer-based tests, the scribe will type directly into the student’s computer-based test.

- The scribe must transcribe the student's responses verbatim and may not prompt, correct, or question the student regarding the content of the responses. The scribe may request that the student restate (or sign) words, phrases, or sentences, as needed. The scribe may not edit or alter the student's dictated response in any way.
- A student using a scribe must be given the same opportunities as other students to plan and draft a written response. The scribe may write an outline, plan, or draft as directed by the student, and must record the draft response or outline exactly as dictated.

Additional Guidance on Scribing for ELA (SA3.1)

- The scribe will spell all words correctly.
- The scribe will assume all sentences begin with a capital and end with a period. Other than that, at the beginning of a sentence the scribe should request clarification from the student about the use of capitalization and punctuation. The scribe must also allow the student to review and edit what the scribe has written.
- The scribe will orally confirm spelling of homonyms and commonly confused homophones, e.g., *than* and *then*; *to*, *two*, and *too*; *there*, *their*, and *they're*.
- After the student has finished dictating their response(s), the scribe must do the following:
 - ask the student to review the draft and make any necessary edits, including capitalization, punctuation, and paragraph breaks
 - either allow the student to make edits independently or have the student direct the scribe to make the edits
 - not assist the student in making decisions during the editing process
- The scribe will make the student's requested changes, even if incorrect.
- The student will confirm the correctness of the response.

Guidelines for Transcribing Student Responses

Circumstances may occur during test administration that may require a test administrator to **transcribe** a student's responses onscreen or in their test & answer booklet. These situations may include the following:

- Answers were recorded in the wrong section or an incorrectly assigned computer-based test or test & answer booklet.
- A student took the test using a special test format requiring that answers be transcribed; e.g., Braille or large-print. (Braille responses must be transcribed by persons fluent in Braille.)
- A student used speech-to-text software, or augmentative communication, or an assistive technology device **that is not compatible with the MCAS Student Kiosk** and printed their responses for transcription by a test administrator.
- A student recorded answers on blank paper as an accommodation, instead of in the computer-based test or test & answer booklet.
- The test & answer booklet or document became unusable (e.g., torn, wrinkled, or contaminated).

Transcribing responses by a test administrator may occur at any time until the end of the testing window under secure conditions supervised by the principal (or designee). In cases where a student's responses must be transcribed *after* test administration is completed but before the end of the testing window, the following conditions apply:

- At least two persons must be present during any transcription of a student's responses. At least one of the individuals must be an authorized test administrator; the other may be a principal or designee.
- The student's response must be transcribed verbatim into the booklet or computer-based test.
- The student's original printed responses must either be securely shredded or placed in the school's return shipment.

Appendix D: Procedures for Providing the Human Read-Aloud

Procedures for Standard Oral Presentation

Human readers who provide the read-aloud accommodation (A5, SA1.1, EL3.2) to a student on the MCAS tests must follow these procedures to ensure a standard oral presentation of the assessments:

- Readers must be trained locally to administer each assessment, as indicated in the appropriate Test Administrator's Manual.
- Readers must read verbatim (word-for-word) only the text onscreen or in the test & answer booklet without changing, emphasizing, or adding words. Readers may not clarify anything (except for test directions), provide additional information, assist, or influence the student's selection of a response in any way.
- Readers must speak in a clear and consistent voice throughout the test administration, using correct pronunciation and without vocal inflections that may provide clues to, or mislead, a student. Readers should review the appropriate practice test prior to the start of testing, in order to become familiar with the words, terms, symbols, signs, and/or graphics that will be read aloud to the student.
- Readers should emphasize only the words printed in boldface, italics, or capital letters and inform the student that the words are printed that way. No other emphasis or vocal inflection is permitted.
- Readers may repeat passages, test questions, and response options, as requested, according to the needs of the student. Readers should not rush through the test and should ask the student if they are ready to move to the next question.
- Readers may not attempt to solve mathematics problems or determine the correct answers to test questions while reading, as this may result in pauses or changes in inflection that might mislead the student.
- Readers must attempt to maintain a neutral facial expression, neither smiling nor frowning during the test, which may be interpreted by the student as approval or disapproval of the student's answers.
- Readers must be familiar with the student's IEP or 504 plan and should know in advance which accommodations are required by the student, and for which tests the student is designated to receive a Human Reader.
- Readers must be aware of whether a student requires additional tools, devices, or adaptive equipment that has been approved for use during the test, such as a magnifier, closed circuit television (CCTV), abacus, braille, slate and stylus.
- When reading a word that is pronounced like another word with a different spelling, the reader

may spell the word after pronouncing it, if there is any doubt about which word is intended.

- Readers must spell any words requested by the student.
- When reading passages, readers must be aware of punctuation marks. Readers may read the passage or selected lines a second time, with all punctuation marks indicated.
- When test questions refer to a particular line or lines of a passage, readers should reread the lines before reading the question-and-answer choices. For example, the reader should say, “Question X refers to the following lines...,” then read the lines to the student, followed by Question X and the response options.
- When reading selected response questions, readers must give equal stress to each response option and read all of them before waiting for a response.
- If the student’s responses are also being scribed, and the student designates a response choice by letter only (“D,” for example), the reader must ask the student if they would like the response to be reread before the answer is recorded in the answer booklet.
- If the student chooses an answer before the reader has read all the answer choices, the reader must ask if the student wants the other response options to be read.
- After the reader finishes reading a test question and all response options, the reader must pause and allow the student to pause before responding. If the pause has been lengthy, say: “Do you want me to read the question or any part of it again?”

General Procedures

- Human readers may read the test aloud to a group of no more than 5 students, provided that each student has the Human Reader accommodation/accessibility feature listed in an IEP, 504 plan, or EL accommodation.
- Should students request not to have a human reader, they should continue to test without the accommodation. The human read-aloud accommodation should remain *available* until a revised IEP or 504 plan is developed.
- All students in the group must be taking the same test form, since test questions will differ on each form of the test.

Appendix E: Guidelines for Using Assistive Technology as an MCAS Test Accommodation

These guidelines will assist schools in determining how specific assistive technology (AT) programs may be used by students with disabilities for MCAS computer-based testing.

Assistive Technology is categorized into the following three groups for the purpose of MCAS testing:

1. **Embedded Assistive Technology:** Assistive Technology programs that are embedded in the MCAS Student Kiosk computer-based testing platform.
2. **Compatible assistive technology:** Assistive Technology, such as Screen Readers and Dragon Naturally Speaking, that are **external** (a school-owned program) but are compatible with the MCAS Student Kiosk.
3. **AT on a separate device:** Assistive Technology programs that may be incompatible with the MCAS Student Kiosk and must be **used on separate device** in order for the student to access the MCAS test. Schools must request approval prior to administration by contacting mcas@mass.gov.

Group 1: Embedded AT Programs in the MCAS Student Kiosk

This group includes AT programs that are embedded within the MCAS Student Kiosk and are available as described below.

The following accommodations must be selected in advance in the Student Registration (SR) process.

- ASL Video (**SR**)
- Enlarged Cursor/ Pointer (**SR**)
- Spell Checker (**SR**) for the MCAS ELA tests; automatically available on Mathematics, STE, and Civics tests
- Calculator (**SR**) for the noncalculator session of the Mathematics tests; automatically available for Mathematics (in the calculator session) and STE tests
- Speech-to-Text (**SR**)
- Text-To-Speech (**SR**)
- Word Prediction (**SR**)

Group 2: Assistive Technology Confirmed as Compatible with the MCAS Student Kiosk

The Screen Reader and the Assistive Technology test forms permit students to use their own assistive technology program within the MCAS Student Kiosk.

The following accommodations must be selected in advance in the Student Registration (SR) process.

- **Screen Reader (SR)**
 - The screen reader test form is for students using JAWS 2021® and NVDA. Other screen reader programs may not be compatible with the screen reader test form.
- **Compatible AT Accommodation (SR)**
 - In the MCAS Student Kiosk, the external compatible assistive technology accommodation is available for students who require Windows-based third-party

accessibility software. Note that this accommodation is only available in the Windows® MCAS Student Kiosk. Due to the MCAS Student Kiosk's security features and the variability among assistive technologies, some assistive technology software may not be compatible with the MCAS Student Kiosk, even with the selected Assistive Technology accommodated form. Test coordinators will follow the guidelines below to determine if the Assistive Technology accommodation needs to be assigned for the assistive technology to work with MCAS Student Kiosk or whether a separate computer is necessary for the student's AT program.

Determining Compatibility of Assistive Technology

Some assistive technology can be used with the MCAS Student Kiosk with or without the Compatible Assistive Technology accommodation.

Many commonly used Windows-based speech-to-text programs (e.g., Windows dictation, Dragon Professional) can be used with the MCAS Student Kiosk without the Compatible Assistive Technology accommodation, provided the software is running prior to launching the kiosk. Speech-To-Text (STT) programs can be used for basic dictation, but editing commands (i.e., voice commands used to select and edit text that was previously dictated) will not function. If the student closes the STT application during testing, the student must exit the kiosk, restart the STT program, and then re-log into the kiosk to continue testing with STT (shortcut keys cannot be used to launch the application while the kiosk is open).

Important Note: The Compatible Assistive Technology accommodation reduces kiosk security controls to allow third-party software to operate in conjunction with the kiosk. If the Compatible Assistive Technology accommodation is used, test administrators should closely monitor students using this accommodation to ensure that test security is not compromised.

Test Coordinator Responsibilities

Prior to operational testing, test coordinators must use practice tests to do the following:

- Ensure the student's assistive technology will work with MCAS Student Kiosk.
- Determine whether the student's Compatible Assistive Technology accommodation must be assigned to use assistive technology.
- Provide the student an opportunity to practice using assistive technology with the MCAS Student Kiosk.

Students should use the MCAS practice tests to become familiar with these tools, accessibility features, and accommodations prior to testing.

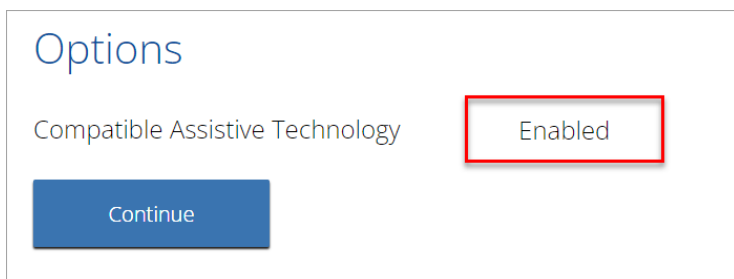
If the preferred third-party assistive technology does not work well with the MCAS Student Kiosk Assistive Technology accommodation, see the instructions under Group 3: Assistive Technology Not Compatible and Requires a Second Computer.

Using the Assistive Technology Accommodation

1. School staff should first verify that the Assistive Technology accommodation has been selected for a student by navigating to the Students page in the Administration section of the MCAS Portal, selecting the student, and then selecting the Accommodations tab.

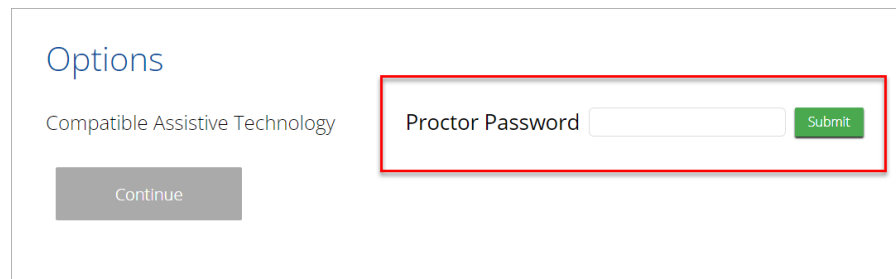


2. Open the third-party accessibility application on the testing device and log in to the application if necessary.
3. Launch the MCAS Student Kiosk.
4. Student enters their username and password to log in to the MCAS Student Kiosk.
5. Student selects the session and enters the session access code.
On the Options screen, verify that the student has Assistive Technology listed as Enabled, which indicates that they were assigned the Assistive Technology accommodation. There should additionally be a field for the test administrator to enter the proctor password.



Note: The student will only see Assistive Technology listed as enabled on the Options screen if they are using the MCAS Student Kiosk **on Windows**. If they are using a browser or other operating system kiosk (e.g., the macOS MCAS Student Kiosk), this accommodation will not be available.

6. The test administrator will enter the proctor password.



Options

Compatible Assistive Technology

Enabled

Continue

Note: The proctor password is located on the Administration home page of the MCAS Portal. The student will not be allowed to advance past the accommodations Options screen without the test administrator entering the correct proctor password.

dese

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[Enrollment Transfer](#)
[Classes](#)
[Test Scheduling](#)
[Materials Management](#)
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Home

Welcome to the MCAS Portal.

This site provides access to MCAS test administration and reporting tasks. If you need assistance with this site, please contact the MCAS Service Center at mcas@cognia.org or 800-737-5103, or you may chat with the Service Center by clicking [here](#).

Technology Coordinators: Download and install the MCAS Student Kiosks onto student testing devices using the links in the table below.

Chromebook	Chrome Web Store Note: The name of the app is "MCAS"
iPad	Apple App Store Note: The name of the app is "ITester." The first time the app is used on a student testing device, select "MCAS"
Windows	Student Kiosk for Windows
Mac	Student Kiosk for Mac
Linux	Student Kiosk for Linux

Proctor password for

Cyber Falls Sch1-001 (Cyber Falls)

Change

hsmd9bh9

Site Readiness login for

Cyber Falls Sch1-001 (Cyber Falls)

Username: WSR-00-771777-001

Password: 00-771777-001

After the test administrator enters the proctor password, the student will be able to successfully use their assistive technology software, which will display as additional windows or an interface on top of the kiosk on screen.

- When the student submits the test session and returns to the profile screen, the Compatible Assistive Technology accommodation will be disabled.

Group 3: Assistive Technology Not Compatible and Requires a Separate Computer

If the student's specific AT program is not compatible with the MCAS Student Kiosk and therefore must be accessed by the student using a separate external (i.e., stand-alone) computer, a test administrator must assist the student to transition between the external device used for the student's AT and the computer used by the student for their test (if CBT) or the student's paper-based test (if PBT). All responses generated using an external assistive technology device must be transcribed verbatim by a test administrator (or the student) onto the student's computer-based test or into their paper-based booklet.

Stand-alone AT programs are prohibited for MCAS testing if they provide coaching or assistance to the student or allow a student to access the internet.

Please contact the Department at mcas@mass.gov for approval to use stand-alone AT devices or programs and for specific test administration instructions.

Appendix F: Procedures for Creating Test Administrator Logins for Human Read-Aloud and Human Signer

For computer-based testing for human read-aloud and human signer classes, schools may choose to have test administrators read the test over the student's shoulder, or create test administrator logins so that test administrators can log in to their own version of the test on their own device in order to read aloud or sign the test.

If using test administrator logins, test administrators will need their own computer to sign in to their own version of the test and will need the MCAS Student Kiosk downloaded and installed on that computer. (Students will sign in and record responses using their student logins on their own devices.) School or district test coordinators will need to create a test administrator login for each test administrator for each human read-aloud or human signer class.

Instructions for Preparing Test Administrator Logins Prior to Testing

The test administrator login will allow the test administrator to sign in to the test on the MCAS Student Kiosk to see the same test questions that their students see, to be able to read aloud or sign the test to their students. **Responses should not be entered using a test administrator login; all test administrator login tests will be voided at the end of testing.**

1. There are two options for creating a test administrator login in the MCAS Portal.

Option 1: Manually add a student to the MCAS Portal on the Students page using the field definitions outlined below.

Option 2: Add the test administrator login as a student during the Student Registration file upload.

Test administrator logins should use the following field definitions. Any fields not listed below should be left blank.

Column of Student Registration file	Field Name	Field notes
A	District code	The testing district
B	School code	The testing school
C	SASID	Begin with your 8-digit school code. Add “01”, “02”, etc. to the end of your school code for each test administrator login needed. Example: For a school whose code is 77665555, their test administrator login SASIDs would be 7766555501, 7766555502, 7766555503, etc.
D	Student grade	The grade level for the test that is being administered
E	Last name	Enter in “TA LOGIN”
F	First name	The test administrator’s first name
I	Date of birth	Enter in “01/01/1900”
J	Test code	The test code for the test that is being administered
L	Test format	“O”
Select Y for one of the following if administering the Human Read Aloud accommodation:		
T	Human Read Aloud Standard	“Y” if administering Math, STE, or Civics
Z	Human Read Aloud Special	“Y” if administering ELA
Select Y for one of the following if administering the Human Signer accommodation:		
U	Human Signer Standard	“Y” if administering Math, STE, or Civics
AA	Human Signer Special	“Y” if administering ELA

2. Once the test administrator logins have been added to the MCAS Portal, create a class for the students requiring a human read aloud or human signer accommodation for that content area. See additional information on creating classes in the Guide to the MCAS Portal, available on the [MCAS Resource Center](#) this fall.
 - a. Add the appropriate student(s) to the class.
 - b. Add the test administrator login to the class.
 - c. Save the class.
3. Schedule the class to take the appropriate test. See additional information on scheduling tests in the Guide to the MCAS Portal, available on the [MCAS Resource Center](#) this fall.

Instructions on Using Test Administrator Logins: During and After Testing

1. Ensure all students, including the test administrator login, are assigned the human read aloud (or human signer) accommodated form.

To view the form a student or test administrator is assigned to for a test, navigate to the Test Scheduling page in the Administration section of the MCAS Portal. Then select the organization, program, content area, and test from the selection drop-down, the list will update to show classes scheduled for the selected test. Then select the View Details/Student Logins link for the class scheduled, view the forms on the Scheduled Tests details page under the Form Name column for each student, as shown in the screenshot below.

☐	Last Name 🔍	First Name 🔍	Username 🔍	Password 🔍	Form Name 🔍	Date/Time Created	Test Report Code	Status
☐	Student	James	1888446157	2yadhfs	MAT08-HumanSigner-Form1	11/18/2024 4:12:58 PM	+	Session 1:Not Started
☐	Student	Steven	3557280177	hkuz3qyf	MAT08-HumanReadAloud-Form1	11/18/2024 4:12:58 PM	+	Session 1:Not Started

2. After testing, school test coordinators should void the test administrator login tests.

Appendix G: Policy on Bilingual Word-to-Word Dictionaries/Glossaries for ELs during MCAS Testing

As in the past, students who are currently or were ever reported as EL may use printed copies of authorized bilingual word-to-word dictionaries and glossaries during MCAS testing. DESE is providing **guidance on electronic dictionaries** for use during MCAS testing. Schools that currently use e-book versions as described below in regular instruction and classroom assessments may use them during MCAS testing. **Note that smartphones, including electronic dictionaries on smartphones, continue to be prohibited.**

Schools that have access to additional iPads or Android tablets for MCAS testing may use e-book bilingual word-to-word dictionaries from wordtoword.com. These bilingual dictionary e-books can be accessed through an iPad app or Android app. Note that these apps are free to use and provide a sign-in to a school account; however, schools must first purchase each bilingual dictionary e-book from the website. Purchased e-books from this site will expire after 18 months.

In order to use this option, the tablet **must be put into kiosk mode during testing** so that only the Word-to-Word app is available.

To assist in maintaining test security while using this app, students must be tested in small groups (up to 10 students).

DESE recommends administering practice tests to students using the app so that they can familiarize themselves with how they will plan their desk space during MCAS testing using two devices (one for the Word-to-Word app and one for the student testing device) and scratch paper.

Questions may be directed to DESE's Office of Student Assessment Services at mcas@mass.gov, and schools are invited to contact DESE after MCAS test administration with feedback on these applications to assist in future updates.

APPENDIX E
ACCOMMODATION FREQUENCIES

Table E-1. Numbers of Students with IEPs/504 Plans Tested with and without Accommodations by Content Area and Grade*

Content Area	Grade	Total Number of Students Tested	Total Number of Students with IEPs/504 Plans Tested with Accommodations	Total Number of Students with IEPs/504 Plans Tested without Accommodations
ELA	3	65,390	10,420	7,789
ELA	4	63,685	12,397	5,933
ELA	5	64,985	13,210	5,784
ELA	6	65,552	13,523	5,562
ELA	7	65,588	13,227	5,478
ELA	8	66,193	12,923	5,809
ELA	10	67,091	12,026	6,027
ELA	Total	458,484	87,726	42,382
Mathematics	3	66,639	11,404	6,835
Mathematics	4	64,997	12,956	5,436
Mathematics	5	66,211	13,591	5,443
Mathematics	6	66,675	13,815	5,257
Mathematics	7	66,674	13,346	5,325
Mathematics	8	67,264	13,132	5,547
Mathematics	10	67,576	11,784	5,997
Mathematics	Total	466,036	90,028	39,840
STE	5	66,015	13,316	5,644
STE	8	66,775	12,757	5,706
STE	Total	132,790	26,073	11,350
Biology	HS	53,019	9,341	5,020
Introductory Physics	HS	13,406	2,134	1,192
Civics	8	66,757	12,527	5,880

*Includes English Learners with IEP/504 Plans.

Table E-2. Numbers of English Learners (ELs) without Disabilities Tested with and without EL Accommodations by Content Area and Grade

Content Area	Grade	Total Number of Students Tested	Total Number of ELs Tested with EL Accommodations	Total Number of ELs Tested without EL Accommodations
ELA	3	65,390	211	7,952
ELA	4	63,685	201	6,464
ELA	5	64,985	121	4,541
ELA	6	65,552	124	3,634
ELA	7	65,588	175	4,068
ELA	8	66,193	126	4,175
ELA	10	67,091	112	4,346
ELA	Total	458,484	1,070	35,180
Mathematics	3	66,639	6,581	2,786
Mathematics	4	64,997	5,822	2,061
Mathematics	5	66,211	4,238	1,597

Content Area	Grade	Total Number of Students Tested	Total Number of ELs Tested with EL Accommodations	Total Number of ELs Tested without EL Accommodations
Mathematics	6	66,675	3,142	1,744
Mathematics	7	66,674	3,466	1,955
Mathematics	8	67,264	3,447	1,952
Mathematics	10	67,576	2,567	2,995
Mathematics	Total	466,036	29,263	15,090
STE	5	66,015	4,218	1,597
STE	8	66,775	3,329	2,026
STE	Total	132,790	7,547	3,623
Biology	HS	53,019	2,211	2,780
Introductory Physics	HS	13,406	525	616
Civics	8	66,757	3,320	2,037

Table E-3. Numbers of Students with IEPs/504 Plans Tested with Accommodations by Accommodation Type and Grade—ELA

Accommodation Description	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Paper-Based Test Edition	231	156	167	119	86	100	168
Graphic Organizer / Reference Sheet	9,785	11,932	12,811	13,226	12,959	12,734	11,840
Text-to-Speech_Special	1,904	2,110	2,098	1,965	1,925	1,314	1,426
Human_Read_Aloud_Special	1,244	1,145	987	700	472	309	390
Human_Signer_Special	20	16	19	13	21	13	21
Human_Scribe_Special	1,071	1,259	1,106	779	581	368	300
Speech_to_Text_Special	695	953	1,153	1,116	941	599	467
Spell Checker	407	556	789	903	942	841	1,023
Word_Prediction_Special	276	348	474	483	484	423	377
Typed_Responses	6	2	9	10	10	11	18
Large_Print_Test_Edition	17	18	11	10	10	10	14
Braille_Test_Edition	1	1	2	4	1	3	2
Screen_Reader_Edition	8	1	8	8	11	9	17
Compatible_Assistive_Technology	5	13	13	14	9	8	16
Total*	15,670	18,510	19,647	19,350	18,452	16,742	16,079

* The totals may differ from those in Table F-1 because individual students may have more than one accommodation.

Table E-4. Numbers of Students with IEPs/504 Plans Tested with Accommodations by Accommodation Type and Grade—Mathematics

Accommodation Description	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Paper-Based Test Edition	189	174	173	123	99	100	200
Graphic_Organizer_Reference_Sheet	9,599	11,689	12,686	13,156	12,813	12,697	11,470
Text_to_Speech_Standard	6,406	6,950	6,944	6,490	5,631	5,248	3,548
Human_Read_Aloud_Standard	1,782	1,664	1,408	897	661	507	517
Human_Signer_Standard	15	19	15	21	23	22	16
Human_Scribe_Standard	945	1,042	927	672	480	414	285
Speech_to_Text_Standard	710	880	1,117	1,039	939	803	435
Spanish_English	108	91	95	105	102	81	71
Calculation_Device	481	731	884	1,491	1,843	1,732	2,281
Word_Prediction_Standard	236	210	220	176	153	145	70
Typed_Responses	2	1	4	3	8	8	8
Large_Print_Test_Edition	13	15	9	7	5	8	13
Braille_Test_Edition	1	1	0	2	1	1	2
ASL_Edition	0	0	0	0	0	0	13
Screen_Reader_Edition	7	0	8	5	7	7	5
Compatible_Assistive_Technology	3	6	6	8	8	8	3
Total*	20,497	23,473	24,496	24,195	22,773	21,781	18,937

* The totals may differ from those in Table F-1 because individual students may have more than one accommodation.

Table E-5. Numbers of Students with IEPs/504 Plans Tested with Accommodations by Accommodation Type and Grade—STE

Accommodation Description	Grade 5	Grade 8
Paper-Based Test Edition	150	91
Graphic_Organizer_Reference_Sheet	12,317	12,338
Text_to_Speech_Standard	6,779	5,006
Human_Read_Aloud_Standard	1,375	484
Human_Signer_Standard	16	23
Human_Scribe_Standard	911	401
Speech_to_Text_Standard	1,175	821
Spanish_English	80	79
Word_Prediction_Standard	232	145
Typed_Responses	4	7
Large_Print_Test_Edition	11	8
Screen_Reader_Edition	7	5
Compatible_Assistive_Technology	5	8
Total*	23,062	19,416

* The totals may differ from those in Table F-1 because individual students may have more than one accommodation.

Table E-6. Numbers of Students with IEPs/504 Plans Tested with Accommodations by Accommodation Type and Grade—Biology

Accommodation Description	Grade 9	Grade 10
Paper-Based Test Edition	46	37
Graphic_Organizer_Reference_Sheet	6,542	2,482
Text_to_Speech_Standard	2,375	905
Human_Read_Aloud_Standard	273	98
Human_Signer_Standard	11	7
Human_Scribe_Standard	151	76
Speech_to_Text_Standard	360	118
Spanish_English	23	20
Word_Prediction_Standard	51	27
Typed_Responses	5	1
Large_Print_Test_Edition	10	2
Braille_Test_Edition	3	2
ASL_Edition	6	0
Screen_Reader_Edition	5	1
Compatible_Assistive_Technology	7	0
Total*	9,868	3,776

* The totals may differ from those in Table F-1 because individual students may have more than one accommodation.

Table E-7. Numbers of Students with IEPs/504 Plans Tested with Accommodations by Accommodation Type and Grade—Introductory Physics

Accommodation Description	Grade 9	Grade 10
Paper-Based Test Edition	16	0
Graphic_Organizer_Reference_Sheet	1,990	75
Text_to_Speech_Standard	638	37
Human_Read_Aloud_Standard	68	0
Human_Scribe_Standard	43	1
Speech_to_Text_Standard	106	8
Spanish_English	13	2
Word_Prediction_Standard	21	1
Typed_Responses	3	0
Large_Print_Test_Edition	2	0
Braille_Test_Edition	3	0
ASL_Edition	2	0
Screen_Reader_Edition	2	0
Total*	2,907	124

* The totals may differ from those in Table F-1 because individual students may have more than one accommodation.

Table E-8. Numbers of Students with IEPs/504 Plans Tested with Accommodations by Accommodation Type and Grade—Civics

Accommodation Description	Grade 8
Paper-Based Test Edition	85
Graphic_Organizer_Reference_Sheet	12,084
Text_to_Speech_Standard	4,596
Human_Read_Aloud_Standard	449
Human_Signer_Standard	22
Human_Scribe_Standard	381
Speech_to_Text_Standard	808
Spanish_English	80
Word_Prediction_Standard	230
Typed_Responses	10
Large_Print_Test_Edition	10
Screen_Reader_Edition	5
Compatible_Assistive_Technology	9
Total*	18,769

* The totals may differ from those in Table F-1 because individual students may have more than one accommodation.

Table E-9. Numbers of English Learners without Disabilities Tested with EL Accommodations by Accommodation Type and Grade—ELA¹

Accommodation Description	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Paper-Based Test Edition ²	8	0	0	0	1	1	22
Graphic Organizer / Reference Sheet	87	82	61	56	75	72	73
Human Read-Aloud_Special	14	20	5	1	2	0	5
Text-to-Speech	113	114	52	79	97	56	45
Human Scribe_Special	4	6	4	2	5	0	1
Speech-to-Text_Special	10	21	9	6	10	4	11
Spell Checker	1	0	3	1	3	7	2
Word Prediction_Special	22	27	13	14	21	9	10
Large Print	0	0	0	0	0	1	0
Braille	0	0	1	0	0	0	0
Total	259	270	148	159	214	150	169

¹ DESE does not collect data on three EL accommodations available for the ELA tests (Approved Bilingual Word-to-Word Dictionaries, Test Administrator Clarifies General Directions in English, and Test Administrator Clarifies General Directions in Native Language).

² The Paper-Based Test Edition accommodation is only available to first-year English learners.

Table E-10. Numbers of English Learners without Disabilities Tested with EL Accommodations by Accommodation Type and Grade—Mathematics

Accommodation Description	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Paper-Based Test Edition ¹	34	15	0	0	2	2	40
Graphic Organizer / Reference Sheet	119	107	81	83	87	88	81
Human Read-Aloud_Standard	353	291	171	31	13	10	17
Text-to-Speech_Standard	5,851	5,052	3,588	2,601	2,712	2,755	1,051
Human Scribe_Standard	38	29	28	16	6	7	3
Speech-to-Text_Standard	163	162	173	143	179	114	103
Spanish-English Edition ²	656	747	769	718	910	819	1,517
Word Prediction_Standard	512	386	439	443	535	488	98
Large Print	0	0	0	0	0	1	0
Calculation Device	0	2	1	3	5	7	7
Screen Reader	1	0	0	0	0	0	0
Total	7,727	6,791	5,250	4,038	4,449	4,291	2,917

¹ The Paper-Based Test Edition accommodation is only available to first-year English learners.

Table E-11. Numbers of English Learners without Disabilities Tested with EL Accommodations by Accommodation Type and Grade—STE

Accommodation Description	Grade 5	Grade 8
Paper-Based Test Edition ¹	0	2
Graphic Organizer / Reference Sheet	68	73
Text-to-Speech_Standard	3,606	2,715
Human Read-Aloud_Standard	169	6
Human Scribe_Standard	28	4
Speech-to-Text_Standard	171	113
Spanish-English Edition	715	769
Word Prediction_Standard	432	461
Large Print Test	0	1
Total	5,189	4,144

¹ The Paper-Based Test Edition accommodation is only available to first-year English learners.

Table E-12. Numbers of English Learners without Disabilities Tested with EL Accommodations by Accommodation Type and Grade—Biology

Accommodation Description	Grade 9	Grade 10
Paper-Based Test Edition ¹	11	35
Graphic Organizer / Reference Sheet	31	23
Text-to-Speech_Standard	719	388
Human Read-Aloud_Standard	6	0
Human Scribe_Standard	2	0
Speech-to-Text_Standard	33	13
Spanish-English Edition	623	476
Word Prediction_Standard	23	25
Total	1,448	960

¹ The Paper-Based Test Edition accommodation is only available to first-year English learners.

Table E-13. Numbers of English Learners without Disabilities Tested with EL Accommodations by Accommodation Type and Grade—Introductory Physics

Accommodation Description	Grade 9	Grade 10
Paper-Based Test Edition ¹	0	1
Graphic Organizer / Reference Sheet	9	7
Text-to-Speech_Standard	203	32
Human Read-Aloud_Standard	28	0
Speech-to-Text_Standard	3	0
Spanish-English Edition	196	97
Word Prediction_Standard	11	10
Total	450	147

¹ The Paper-Based Test Edition accommodation is only available to first-year English learners.

Table E-14. Numbers of English Learners without Disabilities Tested with EL Accommodations by Accommodation Type and Grade—Civics

Accommodation Description	Grade 8
Paper-Based Test Edition ¹	2
Graphic Organizer / Reference Sheet	73
Text-to-Speech_Standard	2,641
Human Read-Aloud_Standard	6
Human Scribe_Standard	3
Speech-to-Text_Standard	111
Spanish-English Edition	808
Word Prediction_Standard	485
Large Print Test Edition	1
Total	4,130

¹ The Paper-Based Test Edition accommodation is only available to first-year English learners.

APPENDIX F
MCAS 2025-26 SCORING SPECIFICATIONS

Massachusetts Comprehensive Assessment System 2025–2026 Scoring Specifications

Revised: Tue, Feb 10, 2026

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Project information

Executive summary

The purpose of this document is to detail the procedures, staffing, quality assurance, and automated scoring processes for evaluating student responses to constructed response items, extended response items, and ELA essays for the Massachusetts Comprehensive Assessment System (MCAS). This document is a comprehensive guide for managing scoring operations, achieving accuracy thresholds, and maintaining fairness and security throughout the scoring process.

Summary of changes for 2025–2026

Here is a list of the primary changes to the scoring specifications for the 2025-2026 scoring year.

- Sections for field test quality assurance and platform setup have been added. This will facilitate clearly describing the scoring rules for evaluating student responses to field test items.
- Scoring specifications for operational ELA essays (ES) have been separated into their own section. This will help differentiate the specifications for automated scoring.
- ELA extended response (ER) items are being field tested for the first time in Spring 2026. MI will generally follow the scoring process for constructed response items. Each ER response will receive scores for two traits: Written Expression and Standard English Conventions. A study to determine whether automated scoring can be used to score ERs will be conducted. Another document will include details for this study.
- The section on the detection of special conditions during automated scoring of ELA essays has been revised, focusing on a plain language description of how to treat each special condition. These changes will improve the ability to identify student responses that should receive an evaluation by a human rater.
- A section has been added describing the process for conducting an annual human scoring rescore analysis of equating items.
- Sections have been added describing the reports available during scoring. DESE will have access to a suite of reports in VSC and Cognia will receive customized reports throughout scoring windows.
- Graphics have been added that show key scoring processes, focusing on quality assurance measures embedded, how anomalous responses are routed for

review and resolution, and how crisis responses are routed and escalated to Cognia.

- A glossary has been added to clarify key terms and ensure their common understanding.
- A separate Training Scoring Plan has been created which will travel along with the Scoring Specifications. This includes details of Measurement Incorporated (MI) systems and the expectations for scoring leads and raters during the scoring process.

Project information

Table 1 provides summary information regarding the MCAS scoring project.

Table 1: MCAS project information

Contract Name	MCAS Gr 3-8 and High School (Gr 10)
Contract Year	2025-2026
Contract Code	1639

Glossary

- **Adjacent agreement:** When a rater's score differs from the benchmark by only one point.
- **Agreement threshold:** The minimum accuracy required for a rater to remain eligible to score.
- **Anchor set:** Benchmark examples that illustrate scoring criteria.
- **Comparability study:** A process in which 200 previously scored responses for each equating item are inserted ("seeded") into the scoring queue to verify that scoring is consistent across years.
- **Equating item:** A test item included in the assessment to ensure that scores are comparable across different administrations.
- **Exact agreement:** When a rater's score matches the benchmark exactly.
- **Expert rater:** Raters determined to be the most accurate based on quality metrics, and who are exclusively authorized to score low confidence responses.
- **Independent second read:** An independent review of a random sample of student responses to an item by a second rater who doesn't know the first rater's score.

- **Inter-rater reliability (IRR):** The consistency of scores assigned by different raters to the same responses when scoring independently.
- **Item-level removal:** Preventing raters from continuing to score a particular item.
- **Low confidence responses:** Responses for which PEG assigned a score with low confidence measure. The PEG assigned scores for those responses are voided and the response is routed for human review.
- **Measurement Incorporated Remote Access (MIRA):** A kiosk application that provides secure, controlled access to VSC, allowing users (raters and clients) to securely work within VSC.
- **Non-adjacent agreement:** When a rater's score differs from the benchmark by two or more points.
- **Practice set:** Responses used for rater training before qualification.
- **Project Essay Grade (PEG):** The automated scoring system used to score responses to ELA essay items.
- **Qualification set:** A set of pre-scored responses used to determine whether a rater can score an item.
- **Qualification threshold:** The minimum accuracy a rater must achieve on a qualification set to be eligible to score an item.
- **Rater:** Trained to score one or more items and grouped into teams that are supervised by a scoring team leader.
- **Rater-benchmark score agreement:** How closely a rater's scoring matches the benchmark scores assigned to validity responses by scoring leaders.
- **Rater drift:** A change in scoring consistency over time.
- **Recalibration:** Corrective steps to realign a rater's scoring.
- **Read behind:** A review of a rater's responses by a scoring leader. The scoring leader has access to the rater's score. This process is used to coach raters.
- **Read behind rate:** The percentage of a rater's work reviewed by a scoring leader.
- **Remediation:** Targeted coaching or feedback to improve rater performance.
- **Rescore analysis:** A process in which 200 previously scored responses for each equating item are inserted ("seeded") into the scoring queue to verify that scoring is consistent across years.
- **Resetting (voiding) scores:** Removing previously assigned scores due to low validity or IRR performance.
- **Resolution queue:** A workflow for resolving scoring discrepancies.
- **Score of record:** The official, final score for a response.
- **Scoring director:** Provides rater training, oversees the quality and progress of scoring, and supervises scoring team leaders.

- **Scoring leadership or scoring leaders:** The collective term for team leaders and scoring directors.
- **Team leader:** Oversees the quality and progress of scoring for a group of raters.
- **Training materials:** The collective term for the materials used for rater training, including the item/prompt, stimuli, rubric, anchor set, practice set, and qualifying set(s).
- **Validity monitoring:** Ongoing checks of rater accuracy using validity responses.
- **Validity response:** A pre-scored student response used to check a rater's accuracy.
- **Virtual Scoring Center (VSC):** The online platform used to facilitate human scoring operations.

Cognia and MI staffing

The current Cognia Program Managers for the MCAS project are Erin Maskwa and Taylor Grondin. What follows are lists of key scoring staff and descriptions of various scoring team roles.

Scoring Services at Cognia

- **Manager Scoring Content:** Sandy Sinclair
- **Scoring Content Specialist II:** Janice Knox

Scoring Services at MI

- **Lead Scoring Manager:** Patrick Blakemore
- **ELA Content Scoring Manager:** Ramona Moore
- **Math Content Scoring Manager:** Greg Zinner
- **Science Content Scoring Manager:** Michael Curylo
- **Civics Content Scoring Manager:** Patrick Blakemore

Project management

- **Cognia:** Jimmy Hartman
- **MI:** Chad Barrett, Joe Sipper

MI Scoring team roles

- **Scoring manager:** Guides scoring content managers and coordinates MCAS scoring activities.
- **Scoring content manager:** Oversees human scoring and supervises scoring directors for their assigned content area. Attends benchmarking meetings.
- **Scoring director:** Oversees human scoring of one or more items and supervises scoring team leaders.
- **Scoring team leaders:** Oversees the work of a group of raters as they work on one or more items.
- **Scoring leaders:** Scoring team leaders and scoring directors, collectively, are frequently called scoring leaders.
- **Raters:** Trained to score one or more items and are grouped into teams supervised by a scoring team leader.
- **Expert raters:** The most accurate raters, as determined by validity or other metrics, and are the only raters allowed to score those responses identified by the automated scoring system as being assigned a score with low confidence.

Test administrations

MCAS assessments will be administered during the following timeframes during the 2025-2026 academic year.

- **November 2025** Grade 10 ELA and Grade 10 Math Retests
- **February 2026** High School Biology and Introductory Physics
- **Spring 2026** MCAS assessments
 - Grades 3-8 ELA, Grades 3-8 Math, Grade 10 ELA, Grade 10 Math
 - Grades 5 and 8 Science and Technology/Engineering (STE), High School Biology, High School Introductory Physics
 - Grade 8 Civics

Testing platform

MCAS assessments are administered online using eMetric's **iTester** platform. MCAS assessments also are administered on paper as an accommodation for those students requiring a paper test.

Scoring platform

MI’s **Virtual Scoring Center** (VSC) is used to conduct human scoring of MCAS CR and ER items and ELA essays. MI’s **Project Essay Grade** (PEG) is used to conduct automated scoring of ELA essays.

Administration types

Table 2 shows the various administration types.

Table 2: MCAS administration types

☒ Operational	☒ Equating ☐ Standalone ☒ Embedded ☐ N/A	☒ Field Test ☐ Standalone ☒ Embedded ☐ N/A
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Required client meetings

Scoring responses to constructed response items, extended response items, and ELA essays require the convening of **benchmarking meetings** each year. Benchmarking meetings for 2026 will be held in person at Cognia’s Portsmouth location or an alternate location to be agreed upon, if needed. The purpose of the meetings is to select training materials and determine the scoring rules for field test items. The dates and times will be agreed upon, and detailed benchmarking plans will outline procedures for each meeting.

There will be a pre-benchmarking Zoom meeting for each content area for all attendees of benchmarking meetings, including DESE, Cognia, and MI staff. The purpose of these meetings is to clarify expectations for the meetings and describe tasks that will occur after benchmarking. Cognia will be responsible for setting up these meetings and developing the agenda. MI will facilitate the meetings.

Student counts

Table 3 shows estimates for the number of students that will participate in the English online version of each MCAS test. These estimates are taken from actual numbers from previous administrations.

- For the November retests, the student counts come from November 2024 actual numbers.
- For the February tests, the student counts come from February 2025 actual numbers.
- For the Spring tests, the student counts come from Spring 2025 actual numbers.

Table 3 appears on the next page.

Table 3: Estimated English computer-based testing student counts (Spanish test not included)

Content	Date	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	10/HS
Math	November Retest 2025	N/A	N/A	N/A	N/A	N/A	N/A	1,667
Math	Spring 2026	67,820	65,950	67,022	67,842	68,122	68,923	70,424
ELA	November Retest 2025	N/A	N/A	N/A	N/A	N/A	N/A	1,908
ELA	Spring 2026	68,707	66,936	68,222	69,097	69,847	70,403	73,053
Civics	Spring 2026	N/A	N/A	N/A	N/A	N/A	68,451	N/A
Science	Feb. 2026 Biology	N/A	N/A	N/A	N/A	N/A	N/A	3,682
Science	Feb. 2026 Intro Physics	N/A	N/A	N/A	N/A	N/A	N/A	738
Science	Spring 2026 STE	N/A	N/A	66,654	N/A	N/A	68,507	N/A
Science	Spring 2026 Biology	N/A	N/A	N/A	N/A	N/A	N/A	56,858
Science	Spring 2026 Intro Physics	N/A	N/A	N/A	N/A	N/A	N/A	14,226

Table 4 shows estimates for the number of students that will participate in the English paper version of each MCAS test. These estimates are taken from actual numbers from previous administrations.

- For the November retests, the student counts come from November 2024 actual numbers.
- For the February tests, the student counts come from February 2025 actual numbers.
- For the Spring tests, the student counts come from Spring 2025 actual numbers.

Table 4 appears on the next page.

Table 4: Estimated English paper-based student counts (Spanish tests not included)

Content	Date	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	10/HS
Math	Nov. 2025 Retest	N/A	N/A	N/A	N/A	N/A	N/A	7
Math	Spring 2026	300	400	250	200	200	200	350
ELA	Nov. 2025 Retest	N/A	N/A	N/A	N/A	N/A	N/A	8
ELA	Spring 2026	1100	700	800	900	650	550	450
Civics	Spring 2026	N/A	N/A	N/A	N/A	N/A	150	N/A
Science	Feb. 2026 Biology	N/A	N/A	N/A	N/A	N/A	N/A	150
Science	Feb. 2026 Intro Physics	N/A	N/A	N/A	N/A	N/A	N/A	40
Science	Spring 2026 STE	N/A	N/A	200	N/A	N/A	150	N/A
Science	Spring 2026 Biology	N/A	N/A	N/A	N/A	N/A	N/A	200
Science	Spring 2026 Intro Physics	N/A	N/A	N/A	N/A	N/A	N/A	50

Table 5 shows estimates for the number of students that will participate in the Spanish online version of each MCAS test. These estimates are taken from actual numbers from previous administrations. Note that the ELA tests are not translated into Spanish.

- For the November retests, the student counts come from November 2024 actual numbers.
- For the February tests, the student counts come from February 2025 actual numbers.
- For the Spring tests, the student counts come from Spring 2025 actual numbers.

Table 5 appears on the next page.

Table 5: Estimated Spanish computer-based student counts

Content	Date	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	10/HS
Math	Nov. 2025 Retest	N/A	N/A	N/A	N/A	N/A	N/A	67
Math	Spring 2026	1,063	1,325	1,489	1,181	1,363	1,555	1,888
Civics	Spring 2026	N/A	N/A	N/A	N/A	N/A	1,199	N/A
Science	Feb. 2026 Biology	N/A	N/A	N/A	N/A	N/A	N/A	324
Science	Feb. 2026 Intro Physics	N/A	N/A	N/A	N/A	N/A	N/A	124
Science	Spring 2026 STE	N/A	N/A	1,276	N/A	N/A	1,650	N/A
Science	Spring 2026 Biology	N/A	N/A	N/A	N/A	N/A	N/A	2,442
Science	Spring 2026 Intro Physics	N/A	N/A	N/A	N/A	N/A	N/A	501

For Math, Science, and Civics items administered in Spanish: Responses will be scored by raters proficient in both English and Spanish.

Table 6 shows estimates for the number of students that will participate in the Spanish paper version of each MCAS test. These estimates are taken from actual numbers from previous administrations. Note that the ELA tests are not translated into Spanish.

- For the November retests, the student counts come from November 2024 actual numbers.
- For the February tests, the student counts come from February 2025 actual numbers.
- For the Spring tests, the student counts come from Spring 2025 actual numbers.

Table 6 appears on the next page.

Table 6: Estimated Spanish print-based student counts

Content	Date	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	10/HS
Math	Nov. 2025 Retest	N/A	N/A	N/A	N/A	N/A	N/A	20
Math	Spring 2026	10	10	10	10	10	10	75
Civics	Spring 2026	N/A	N/A	N/A	N/A	N/A	10	N/A
Science	Feb. 2026 Biology	N/A	N/A	N/A	N/A	N/A	N/A	5
Science	Feb. 2026 Intro Physics	N/A	N/A	N/A	N/A	N/A	N/A	5
Science	Spring 2026 STE OP	N/A	N/A	10	N/A	N/A	10	N/A
Science	Spring 2026 Biology	N/A	N/A	N/A	N/A	N/A	N/A	75
Science	Spring 2026 Intro Physics	N/A	N/A	N/A	N/A	N/A	N/A	10

For Math, Science, and Civics items administered in Spanish: Responses will be scored by raters proficient in both English and Spanish.

Item counts

Table 7 shows the total numbers of operational, equating, and field test items requiring scoring for each MCAS test.

Table 7: Scope of work by item type and number for each grade and administration

Content	Date	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10/HS
Math	Nov. 2025 Retest	N/A	N/A	N/A	N/A	N/A	N/A	4 OP CR 4
Math	Spring 2026 Op	4 OP CR3	4 OP CR4	4 OP CR4	4 OP CR4	4 OP CR4	4 OP CR4	4 OP CR4
Math	Spring 2026 Op	2 EQ CR3	2 EQ CR4	2 EQ CR4	2 EQ CR4	2 EQ CR4	2 EQ CR4	2 EQ CR4
Math	Spring 2026 Op	4 FT CR3	4 FT CR4	4 FT CR4	4 FT CR4	5 FT CR4	5 FT CR4	10 FT CR4

Content	Date	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade10/ HS
ELA	Nov. 2025 Retest	N/A	N/A	N/A	N/A	N/A	N/A	2 OP ES (5-3)
ELA	Spring 2026 Op	1 OP ES (4-3)	1 OP ES (4-3)	2 OP ES (4-3)	2 OP ES (5-3)	2 OP ES (5-3)	2 OP ES (5-3)	2 OP ES (5-3)
ELA	Spring 2026 Op	1 OP CR3	1 OP CR3	N/A	N/A	N/A	N/A	N/A
ELA	Spring 2026 Op	2 EQ CR3	2 EQ CR3	N/A	N/A	N/A	N/A	N/A
ELA	Spring 2026 Op	8 FT ER (3-2)	8 FT ER (3-2)	8 FT ER (3-2)	4 FT ER (3-2) 4 FT ES (5-3)	4 FT ER (3-2) 4 FT ES (5-3)	4 FT ER (3-2) 4 FT ES (5-3)	12 FT ES (5-3)
Civics	Spring 2026 Op	N/A	N/A	N/A	N/A	N/A	3 OP CR1 1 OP CR4 6 FT CR1 2 FT CR4	N/A
Science	Feb 2026 HS Biology	N/A	N/A	N/A	N/A	N/A	N/A	2 OP CR3 3 OP CR4
Science	Feb 2026 Intro. Physics	N/A	N/A	N/A	N/A	N/A	N/A	2 OP CR3 3 OP CR4
Science	Spring 2026 Op	N/A	N/A	2 OP CR2	N/A	N/A	2 OP CR2	Biology:
Science	Spring 2026 Op	N/A	N/A	4 OP CR3	N/A	N/A	4 OP CR3	2 OP CR3
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	3 OP CR4
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	1 EQ CR3 1 EQ CR4
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	4 FT CR3
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	12 FT CR4
Science	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Intro Physics:
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	2 OP CR3
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	3 OP CR4
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	1 EQ CR3 1 EQ CR4
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	6 FT CR3
Science	Spring 2026 Op	N/A	N/A	13 FT CR3	N/A	N/A	10 FT CR3	14 FT CR4

Legend

• OP = Operational • FT = Field Test • EQ = Equating	• CR = Constructed Response (CR3 = 3pt; CR4 = 4 pt) • ES = Essay (Grs. 3-5: 7pt (4, 3), Grs. 6-8, 10: 8pt (5,3)) • ER = Extended Response (new for Grs. 3-8, 5pt (3,2))
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Operational scoring quality assurance measures for constructed response items

Exhibit 1 and Exhibit 2 show the routing of a student's response through the human scoring process. The sections following the exhibits describe the quality assurance measures that will be used during the scoring of student responses to MCAS constructed response items, including extended response items. These sections do not include ELA essay scoring.

Exhibit 1 appears on the next page.

Exhibit 1: Process for human scoring constructed response operational items, Grades 3-8

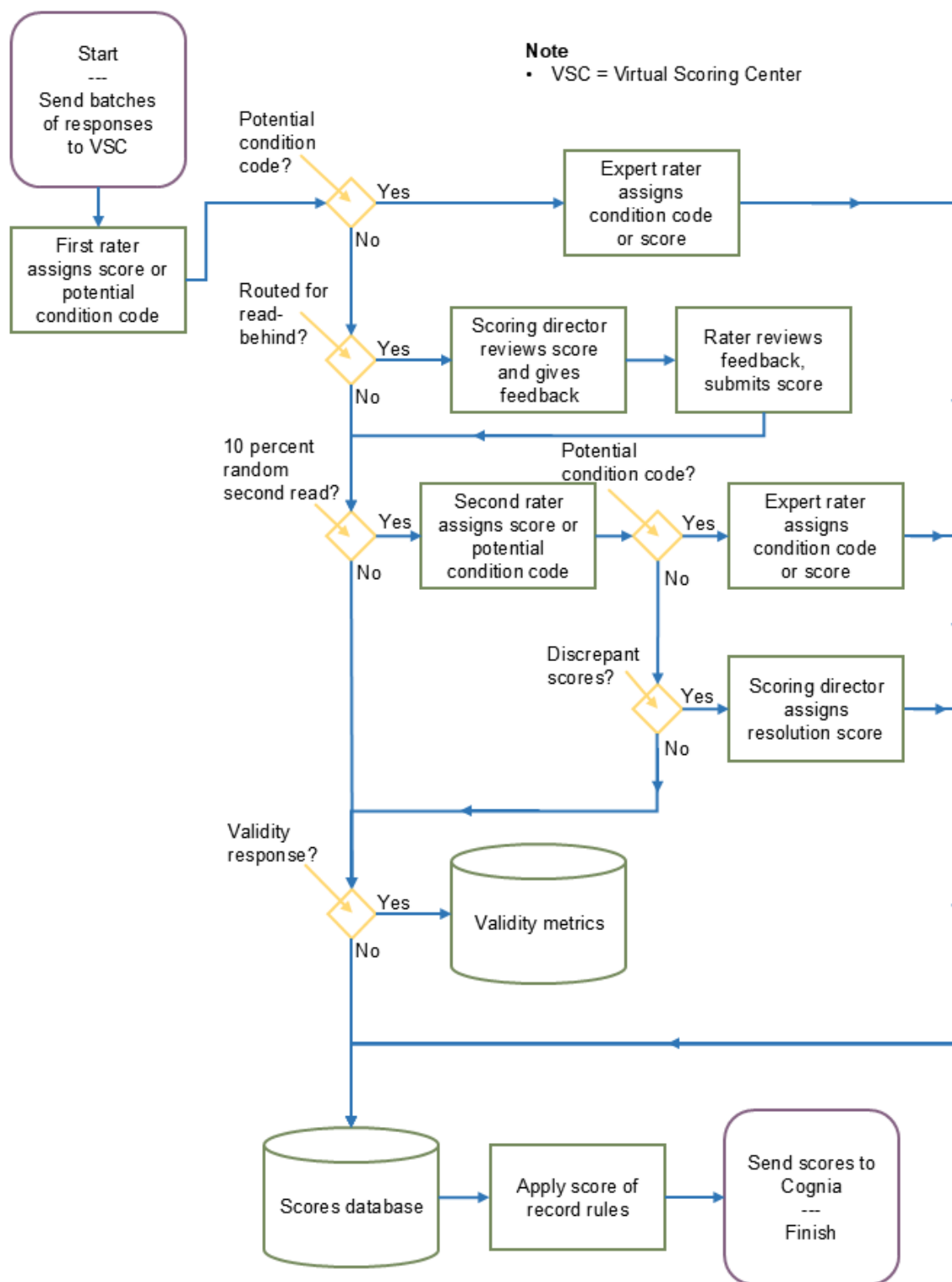
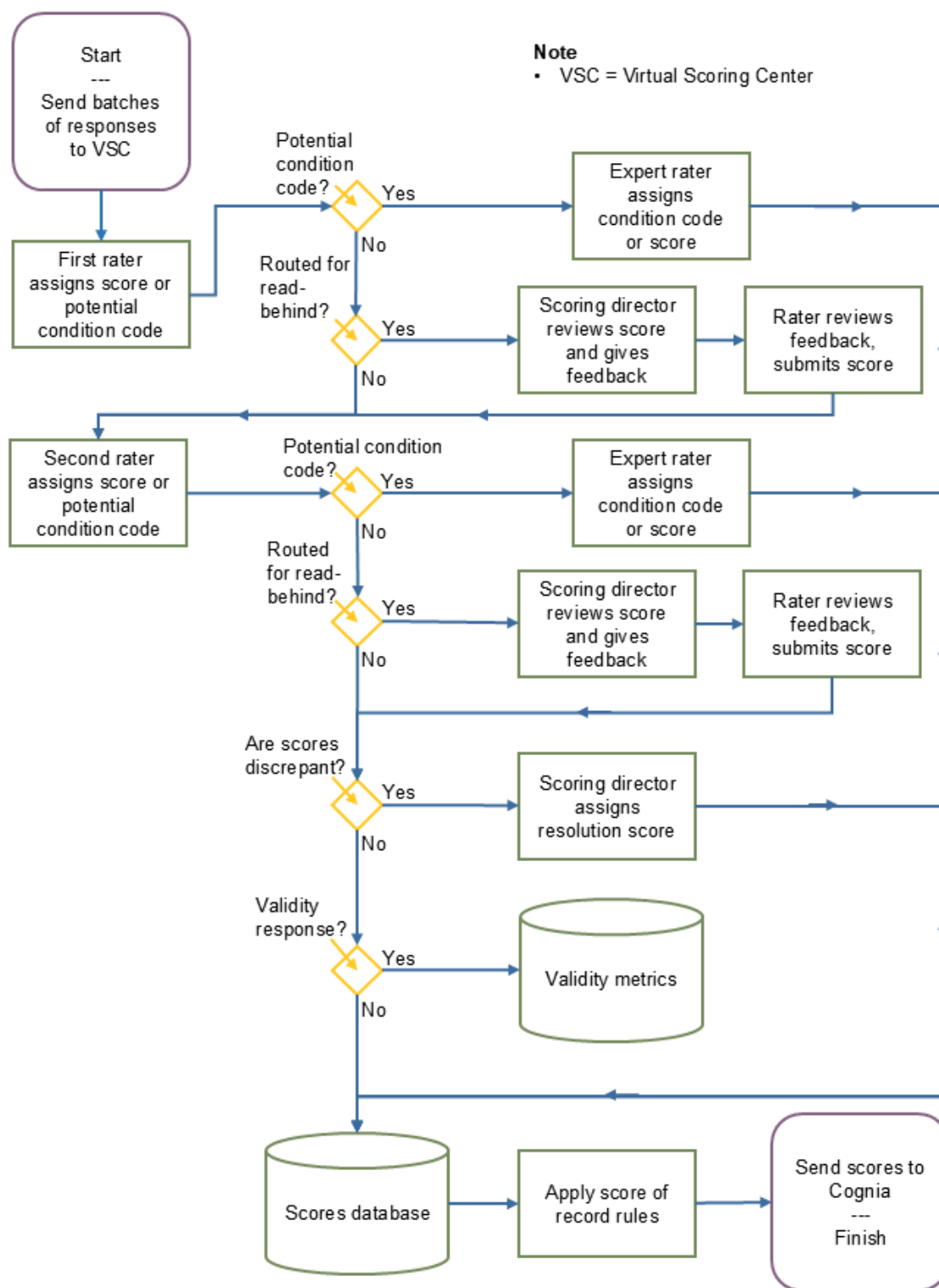


Exhibit 2: Process for human scoring constructed response operational items, High School



Percent agreement for constructed response operational items

The scoring team will use rater-benchmark score agreement to evaluate scoring quality. This means that a rater's scores on validity responses will be compared to the benchmark score for the response, and exact agreement and adjacent agreement rates will be calculated. Benchmark agreement rates have been established for qualifying to score, when the rater's scores are compared to the benchmark score for each response in the qualification set (see page 20). Benchmark agreement rates have been established for operational constructed response human scoring, when the rater's scores are compared to the benchmark score for each validity response the rater encounters (see page 22).

When a rater's rater-benchmark score agreement rates fall below the target thresholds, scoring leaders conduct an analysis of the rater's work and complete any required remediation. For example, the scoring leader may void (reset) some of a rater's work, increase the read behind rate for the rater, and/or provide one-on-one coaching to improve performance.

Qualification sets for constructed response operational items

MI will use **two qualification sets** during operational scoring. Each qualification set has ten responses. Both qualification sets will be approved by DESE. Raters are required to take the first qualification set, and only those who fail are required to take the second qualification set. The following notes apply to the use of qualification sets for MCAS operational scoring.

- Responses are displayed for raters in random order
- Scoring content Managers and scoring directors who prepare and conduct the training do not need to qualify

Additional notes

- During benchmarking meetings, starting in 2026, responses for one qualification set will be selected for each item across all content areas and grade levels. For ELA, in the event that enough responses may not be available to select responses to fill a full qualification set, the benchmarking team will select from

available responses and provide guidance to MI about selecting the remaining responses.

- For items not benchmarked this year, MI will continue to select responses from previously scored sets to build the first qualification set, to the extent possible. MI also will build the second qualification set based on responses from the training packs and extra responses scored during the benchmarking meetings.

Qualification threshold for constructed response operational items

Table 8 shows the qualification threshold for rater performance on qualification sets, by score point range.

Table 8: Qualification set threshold for operational items

Score point range	Qualification exact agreement for raters	Qualification exact agreement for scoring team leaders	Qualification exact plus adjacent agreement for raters and scoring team leaders
0-1	90%	100%	100%
0-2	80%	90%	100%
0-3	80%	90%	100%
0-4	70%	80%	100%
0-5	70%	80%	100%

Note: For Civics, there is no qualification requirement for CR1s, but raters must qualify on the CR4 in the same task before scoring associated CR1s.

Read behind rate for constructed response operational items

A scoring leader reads behind raters each day, especially early in the scoring window. This involves capturing a set percentage of scored responses (5 to 10 percent to start, depending on the item) for a rater, reviewing the rater's assigned score, and then sending feedback to the rater. Raters who qualified on their second attempt will have their initial read behind percentage set higher (typically, around 20 percent).

Once validity results identify the most and least successful raters, read behind percentages are adjusted at the rater and item level. Read behind percentages for most successful raters will be set as low as five percent. Read behind percentages for less successful raters can be set as high as 100 percent.

The function of the read behind process is to coach raters. The recorded score for a response used in the read behind process is entered by the rater after feedback from the scoring leader. The scoring leader accepts the score entered by the rater before the score is recorded.

Independent second read rates for constructed response operational items

Independent second reads are reviews of a random sample of student responses to an item by a second rater. The second rater's review is independent of the first rater, meaning the second rater does not know the score assigned by the first rater. The scores from the first and second reads are reconciled using the score of record rules described on page 23. The minimum operational independent second read rates are:

- **Grades 3-4 ELA CRs:** 10 percent
- **Grades 3-8 Math:** 10 percent
- **Grades 5 and 8 STE:** 10 percent
- **Grade 8 Civics:** 10 percent
- **Grade 10 Math:** 100 percent
- **High School Biology and Introductory Physics:** 100 percent

Recalibration sets for constructed response operational items

Recalibration sets are administered as needed. MI uses validity responses as the main tool for recalibrating individual raters, but if there is evidence of group-wide drift, a scoring leader will create and deploy a recalibration set to correct the trend. The recalibration set is added to the resource library in VSC and the scoring leader provides guidance about how to interpret the responses in the recalibration set.

Validity responses for constructed response operational items

Validity responses are required for scoring constructed response items. Validity responses are included in the live response pool at a rate of five percent. These responses are selected to be representative of the operational pool of responses and adequately discriminate between raters who can apply the criteria consistently and those who do not. Validity responses generally resemble other operational responses.

Validity response selection begins when two raters agree on the score for a response. A scoring leader selects the response and confirms the score provided by the two raters. The response is routed to a scoring manager or scoring content director for approval to use the response for validity.

Voiding scores for constructed response operational items

Unacceptable validity performance triggers *voiding* (resetting) of a rater's scores. A rater is considered to have fallen *below the acceptable thresholds* when, after they have scored ten validity responses, one of the following two conditions has been met.

- Exact match rater-benchmark score agreement on last ten validity responses is less than 70 percent
- Exact plus adjacent rater-benchmark score agreement on last ten validity responses is less than 90 percent

Rater-benchmark score agreement refers to the degree to which a rater's scores on validity responses align with the benchmark scores. Benchmark scores are established by scoring leaders and serve as the standard against which rater performance is evaluated.

At the end of each day, VSC calculates updated agreement rates for each rater. If, at the end of any day, a rater's agreement metrics fall below the acceptable thresholds, then the rater's scores for the day will be reset. When scores are reset, both reading 1 and reading 2 are reset. This means that raters who are at or above the rater-benchmark thresholds are also subject to score resets. Table 9 shows an example of how the voiding process works by presenting the agreement rates for one rater, scoring one item, over five days.

Table 9: Example of implementing MCAS voiding rules for a single rater

Date and time	Number of validity responses read	Percentage of exact match	Percentage of adjacent match	Number of validity responses used for calculations	Percentage of exact match	Percentage of adjacent match	Scores voided?
Mon, 2000	4	75	100	N/A	N/A	N/A	No
Tue, 2000	3	67	67	N/A	N/A	N/A	No
Wed, 2000	5	60	100	12	67	92	Yes
Thu, 2000	6	83	83	11	73	91	No
Fri, 2000	6	83	83	12	83	83	Yes

Raters who fall below the acceptable thresholds on a given item receive feedback from a scoring leader (chat messages, read behinds, encouragement to flag responses for review). Raters who continue to perform below the acceptable thresholds are subject to removal from scoring the constructed response item at the scoring leader's discretion.

Score of record/resolution rules for constructed response operational items

This section describes the score of record resolution/rules for **MCAS constructed response items**. The score of record rules for essays are documented on page 39.

Grades 3-4 ELA CRs, Grades 3-8 Math, Grades 5 and 8 STE, and Grade 8 Civics

- **Condition:** Two scores (provided by two raters when scoring is independent)
- **Resolution:** If the first score and second score are **adjacent** (differ by one score point), the first score is the score of record. If the first score and second score are **non-adjacent** (differ by more than one score point), the response is sent to a resolution queue to be scored by a scoring leader. The resolution score is the score of record.

Table 10 shows examples of the application of this score of record rule. Note that read behinds are not used to determine the score of record because, after receiving feedback from a scoring leader, the rater enters the agreed-upon score. The score is recorded when the scoring leader accepts the score entered by the rater.

Table 10: Samples of applying the score of record rules for MCAS CR items, Grs. 3-8

MCAS Resolution Table Constructed response Items Grades 3-8			
Rater #1 Human	Rater #2 Human	Scoring Leader Resolution	Final
4	4	N/A	4
4	1	2	2
0	1	N/A	0
2	4	3	3
1	2	N/A	1
2	0	2	2

Grade 10 Math, HS Biology, and HS Introductory Physics

- **Condition:** Two scores (provided by two raters when scoring is independent)
- **Resolution:** If the first score and the second score are **adjacent** (differ by one score point), the higher score is the score of record. If the first score and second score are **non-adjacent**, the response is sent to a resolution queue to be scored by a scoring leader. The resolution score is the score of record.

Table 11 shows examples of the application of this score of record rule. Note that read behinds are not used to determine the score of record because, after receiving feedback from a scoring leader, the rater enters the agreed-upon score. The score is recorded when the scoring leader accepts the score entered by the rater.

Table 11 appears on the next page.

Table 11: Samples of applying the score of record rules for MCAS CR items, High School

MCAS Resolution Table Constructed response Rules High School			
Rater #1 Human	Rater #2 Human	Scoring Leader Resolution	Final
4	4	N/A	4
4	1	2	2
0	1	N/A	1
2	4	3	3
1	2	N/A	2
2	0	2	2

Equating constructed response items

MCAS equating items are embedded in the operational assessment. Eighteen hundred (1,800) responses will be scored for each equating item, with the following exceptions:

- Score only 1,000 responses for **Introductory Physics** due to the lower number of students taking the test.
- There are no hand-scored equating items in the **Grade 8 Civics** test.
- There are no hand-scored equating items in **Grades 5-8 and Grade 10 ELA**.

Rescore analysis of equating constructed response items

Cognia and MI will conduct rescore analyses as a part of the equating item evaluation. Rescore analyses are performed on human-scored constructed response items to ensure consistency in scoring across years. To detect rater drift, 200 student responses from a previous administration are rescored by raters during the current administration. Then, the resulting scores from the current year are compared to the previous scores on the same set of 200 student responses. The results of this analysis will be included in the annual equating report.

Table 12 shows the numbers of items and responses that will be Included in the rescore analysis.

Table 12 appears on the next page.

Table 12: MCAS equating constructed response item rescore analysis item and response counts

Content area and grades	Number of items per grade	Number of rescore responses per item	Total number of items	Total number of responses
English Language Arts , Grades 3-4	2	200	4	800
Math , Grades 3-8, and 10	2	200	14	2,800
Science , Grades 5 and 8, HS Biology, and HS Introductory Physics	2	200	8	1,600

The following steps will be performed during the rescore analysis.

- **Gather student responses.** MI and Cognia will work together to gather student responses for each administration's equating constructed response items. Generally, equating items do not change from year to year. However, if an item is

introduced for which student responses are not already in MI's system, Cognia will coordinate with the previous MCAS scoring contractor to receive the needed responses. MI will be responsible for gathering responses for items already in VSC.

- **Import student responses into VSC.** MI will import the student responses into VSC.
- **Score student responses.** MI will score the student responses. The student responses for this study will be interspersed into scoring batches alongside operational responses. These responses must be scored by qualified raters rather than scoring leaders.
- **Report results to Cognia.** MI will provide the score results to Cognia using a data file layout agreed upon between the two organizations.

Operational ELA essay item scoring quality assurance

Description of automated scoring processes and procedures

Automated scoring process for ELA essay operational items

The automated scoring of student responses to ELA essay operational items will be conducted using MI's Project Essay Grade (PEG) engine. The engine is trained to replicate the scoring patterns of expert raters by utilizing a large, representative sample of student responses. The training data are split, with approximately 85 percent allocated for model training and ensemble creation, and the remaining 15 percent reserved for validation purposes. During training, the engine identifies hundreds of linguistic features within the responses and applies machine learning to correlate these features with the scores assigned by human raters. Separate scoring models are developed for each item, and these models are subsequently evaluated against initial performance criteria using the reserved validation set.

Model building results will be presented to DESE for approval. In the case where model performance is not as expected, MI will use scores and responses from the current test administration to retrain the model. MI will communicate to Cognia any instances where this approach is used and provide updates on the attempts to retrain and deploy models.

Accuracy and validity of automated scoring for ELA essay items

MI's hybrid human/machine scoring approach includes three features designed to improve the accuracy and validity of scores. First, a measure of the automated scoring model's confidence in scoring each student response is considered. This confidence measure indicates the extent of alignment between the responses used to train the scoring model and a given response the system just scored. Specifically, the confidence measure indicates the extent to which a given response reflects characteristics of multiple rubric score points (straddles score point lines). In this way the confidence measure quantifies the predicted accuracy of the automated score while serving as a good indicator of scoring difficulty for humans. Second, measures of rater accuracy produce data that scoring leaders use to identify which raters are producing the most accurate scores at any given time. And third, MI will human score student responses as

a check on the automated system and generate human-automated scoring agreement rates.

- For **Grades 3-8**, The engine score will serve as the score of record for the 90 percent of responses classified as higher confidence. For the remaining 10 percent of responses classified as lowest confidence, the engine score will be considered invalid. These responses will be routed to expert human raters who will assign the score of record. In addition, MI will conduct an independent second read of a random sample of 10 percent of student responses for each ELA essay operational item. When the human and automated scores do not match, MI will use the resolution rules on page 39.
- For **High School**, MI will conduct a human independent second read of 100 percent of student responses scored by the engine. When the human and automated scores do not match, MI will use the resolution rules on page 39.

Evaluation criteria for automated scoring of ELA essay operational items

MI recommends and typically uses the evaluation criteria described in the following sections to assess the performance of automated scoring models. These criteria, adapted from the framework proposed by Williamson, Xi, and Breyer (2012), ensure that models maintain a high level of alignment with human scoring while minimizing discrepancies and preserving fairness across different groups of test takers. Key considerations include maintaining a strong agreement between automated and human scores, limiting the degradation of agreement relative to human-human agreement, and achieving an SMD between human and automated scores within an acceptable range. These thresholds ensure both overall accuracy and equity in the application of automated scoring.

Criteria for global model evaluation of ELA essay operational items

The global criteria focus on the overall performance of the model across the entire population of test takers. These criteria verify that the model will deliver reliable results comparable to human scoring across various assessment conditions and task types. The focus is on making sure that the model will provide consistent, accurate scoring while minimizing any large-scale bias or errors.

1. **Agreement of automated scores with human scores**

This criterion measures the alignment between the automated scoring model and human raters. The agreement, evaluated using Quadratic Weighted Kappa (QWK), should meet or exceed 0.65.

- **Threshold:** $QWK \geq 0.65$
- **Rationale:** This is an extension of the QWK threshold of 0.70 recommended by Williamson et al. (2012). We lower the threshold slightly to 0.65 to account for the skewed distributions often observed in educational assessment data, while making sure that the automated scoring model closely replicates human judgment.

2. **Degradation from human-human agreement**

This criterion assesses how much the model deviates from the agreement between two human raters. The difference between human-human agreement (QWK_{HH}) and human:machine agreement (QWK_{HM}) must remain below 0.1, demonstrating that the model does not introduce significant errors.

- **Threshold:** $QWK_{HH} < 0.1, QWK_{HM} < 0.1$
- **Rationale:** This threshold verifies that any discrepancies introduced by the automated model are minimal and do not substantially reduce the scoring quality relative to human raters.

3. **Standardized Mean Score Difference (SMD) between human and automated scores**

The Standardized Mean Difference (SMD) between human and automated scores should fall within 0.1 to 0.15. This criterion ensures that the overall distribution of scores from the automated system closely matches the distribution from human raters.

- **Threshold:** $|SMD_{HM}| < 0.15$
- **Rationale:** A deviation in the SMD indicates that the scores produced by the automated model are significantly skewed compared to human scores, which could impact score fairness or decision-making based on the scores.

Criteria for subgroup model evaluation of ELA essay operational items

MI considers the performance of the automated scoring model across key demographic subgroups as a check of fairness and to mitigate bias. Subgroup criteria are critical for detecting whether the model performs equitably across diverse populations (gender, race, linguistic background). By evaluating subgroup performance, we can identify and address any disparities that may arise in the scoring process. Subgroups for evaluation will have a minimum sample size of 75 responses.

1. **Agreement of automated scores with human scores (subgroup level)**

Similar to the global criterion, we measure the agreement between automated scores and human raters at the subgroup level using QWK. The same threshold of $QWK \geq 0.65$ is applied to make sure that no subgroup experiences significantly lower scoring accuracy compared to others.

- **Threshold:** $QWK \geq 0.65$
- **Rationale:** Subgroup-specific evaluations verify that the automated scoring model does not introduce biases that disproportionately affect certain groups. A high level of agreement across subgroups confirms that the model maintains fairness.

2. **Degradation from human-human agreement (subgroup level)**

The difference in agreement between human-human and human-machine scores for each subgroup should remain below 0.1 so that the model's performance is not significantly worse for any particular subgroup compared to human scoring.

- **Threshold:** $QWK_{HH} < 0.1$, $QWK_{HM} < 0.1$
- **Rationale:** This verifies that subgroup performance remains consistent with global performance, maintaining reliability and fairness across different populations.

3. **Standardized Mean Score Difference (SMD) between human and automated scores (subgroup level)**

For each subgroup, the SMD between human and automated scores must be within 0.10. This tighter threshold (compared to the global SMD threshold) makes sure that automated scoring does not introduce score disparities for specific groups.

- **Threshold:** $|SMD_{HM}| < 0.10$
- **Rationale:** Subgroup SMDs help to identify whether the model introduces any systematic biases that may disadvantage specific demographic groups. The result is equitable scoring outcomes.

The following demographic subgroups will be included as part of the fairness evaluation for MCAS automated scoring models.

- Male compared with female
- Not Low Income compared with Low Income
- Not EL/FEL compared with EL/FEL
- Students without Disabilities compared with Students with Disabilities
- White compared with African American/Black
- White compared with Asian
- White compared with Hispanic or Latino
- White compared with Multi-Race, Non-Hispanic/Latino

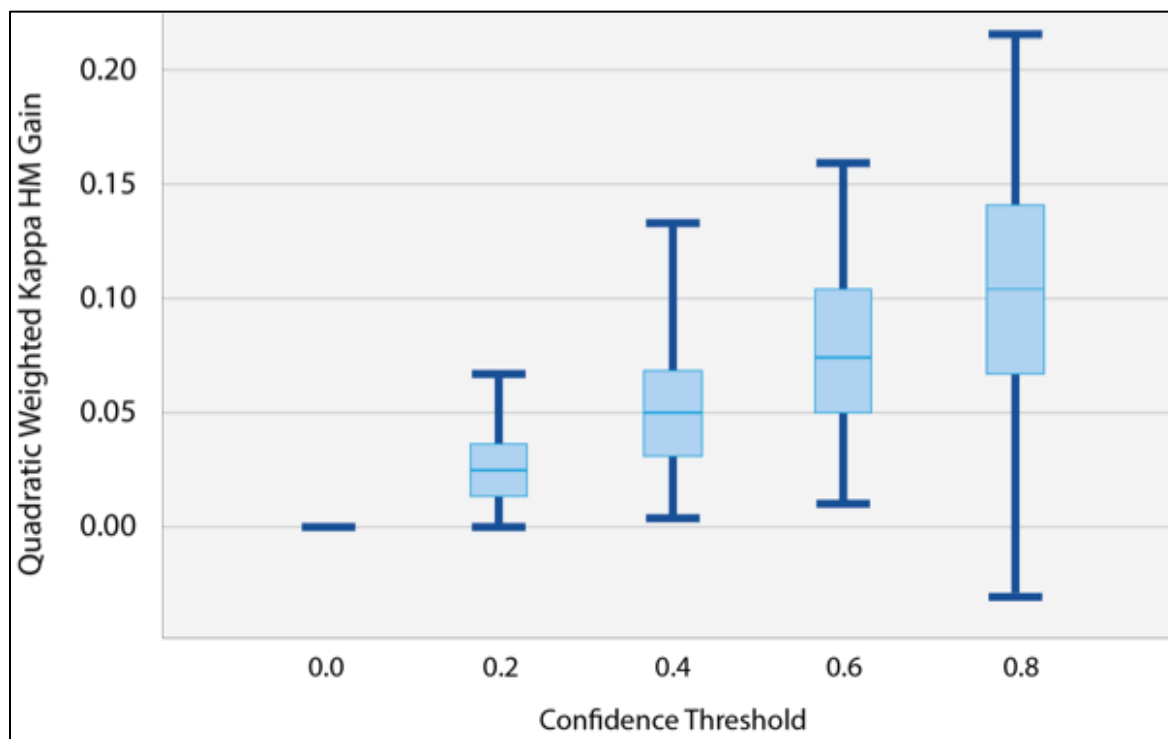
Automated scoring confidence measure for ELA essay operational items

MI's hybrid scoring solution incorporates a human-in-the-loop approach. This system uses a confidence measure to identify low-confidence responses—those that straddle the lines between score point values on a rubric and are difficult to score accurately because they exhibit characteristics of multiple score points. These low-confidence responses are routed to expert raters for evaluation. By integrating human raters into the process preemptively and strategically, MI makes sure that challenging responses receive the careful attention they require. At the same time, high-confidence responses, which are more straightforward, are efficiently handled by the scoring engine.

Exhibit 3 (from Palermo & Wibowo, 2024¹) illustrates how adopting confidence threshold values can result in improved human-machine agreement. The exhibit shows that adopting confidence threshold values improves human-machine agreement by directing low-confidence responses, those more likely to cause disagreement between human raters and the scoring engine, to expert raters. In contrast, not adopting confidence thresholds allows challenging responses to remain within the automated scoring pool, reducing human-machine agreement.

¹ Palermo, C., & Wibowo, A. (2024). Automated essay evaluation at scale: Hybrid automated scoring/hand scoring in the summative assessment program. In M. D. Shermis & J. Wilson (Eds.), *The Routledge International Handbook of Automated Essay Evaluation* (pp. 23–39). New York, NY: Routledge.
<https://doi.org/10.4324/9781003397618-3>

Exhibit 3: Typical gain in human-machine agreement by increasing the confidence threshold value



Process for automated scoring of operational ELA essays

Exhibit 4 and Exhibit 5 show the routing of a student's operational ELA essay response through MI's hybrid automated/human scoring process. The process diagrams show two methods for detecting student responses that may require the assignment of a condition code (anomalous responses).

- The **anomalous response detection process** uses a set of new measures, being introduced for 2025-2026, to improve detection of semantically and topically off-topic responses, repetition of stimulus materials (including directions), and responses containing text repetition. This process uses both algorithm-based rules and a specifically trained large-language model to improve detection.
- The **PEG engine** uses algorithm-based rules, different from those used during anomalous response detection, to identify responses that are off topic, direct copy, and contain text repetition.

The sections following the exhibits describe the quality assurance measures that will be used during the operational scoring of student responses to ELA essays. ELA essays

are scored for two traits (idea development and standard English conventions). Quality assurance measures apply to each trait.

Exhibit 4: Process for automated scoring of operational ELA essays, Grades 3-8

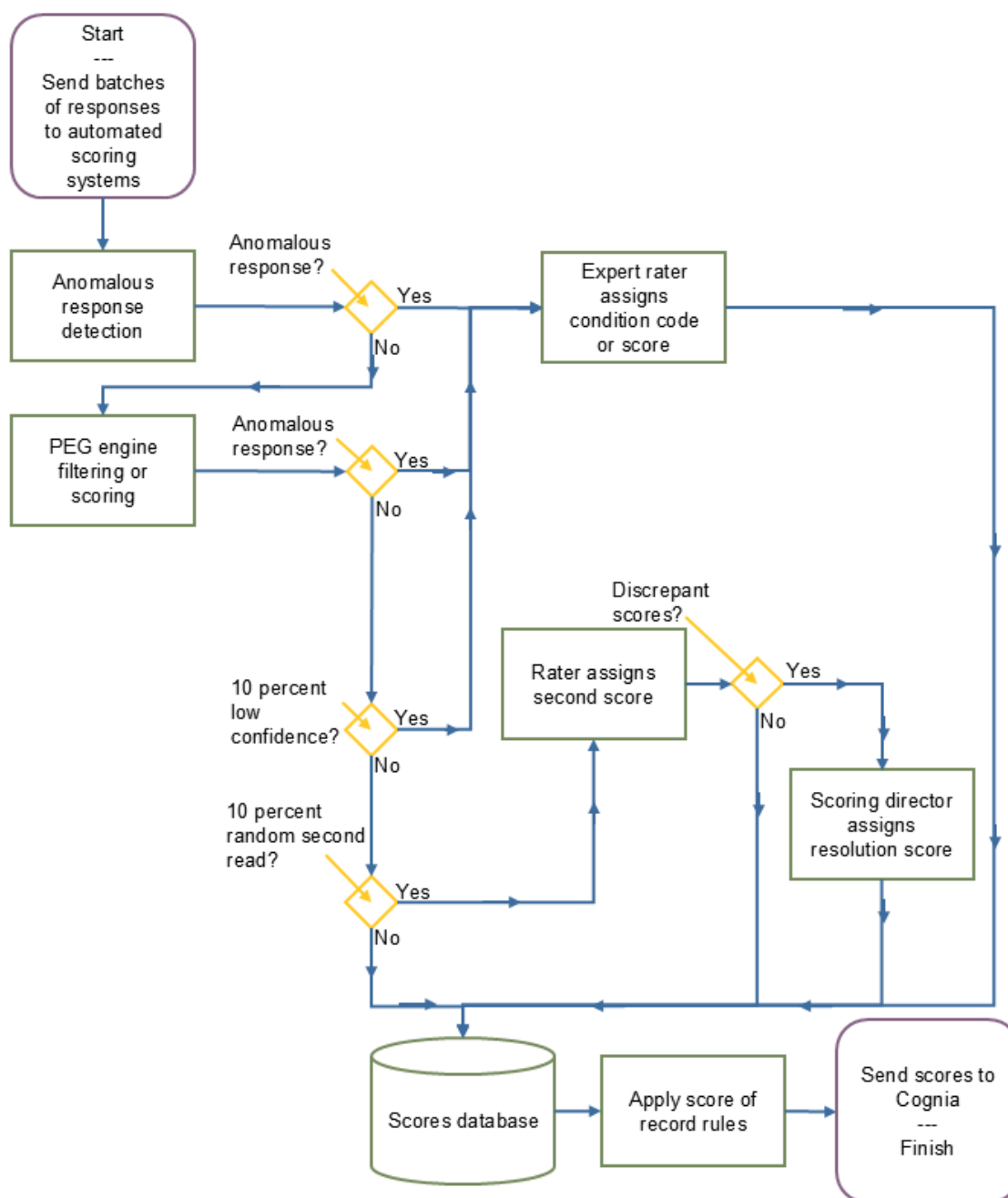
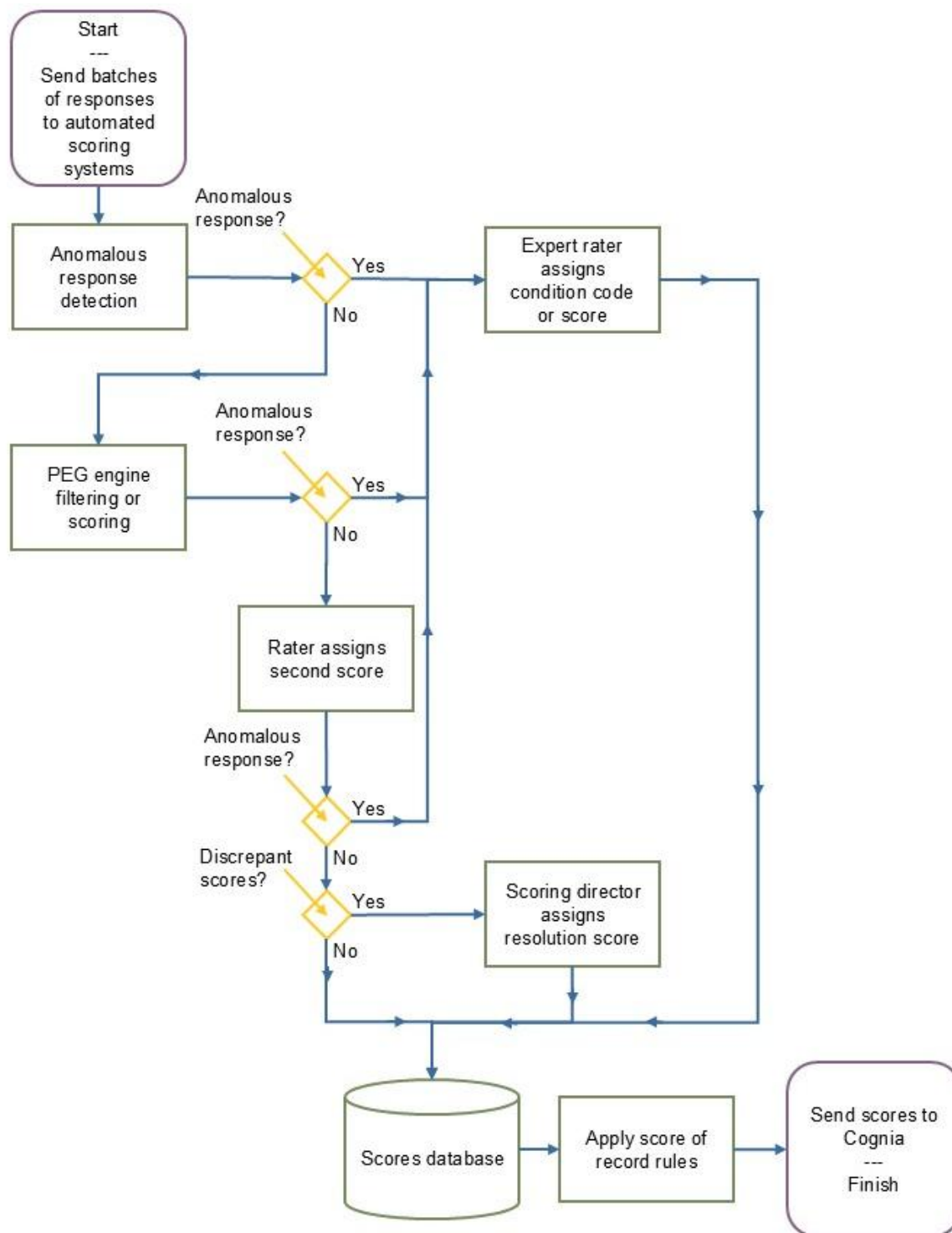


Exhibit 5: Process for automated scoring of operational ELA essays, Grade 10



Percent agreement for ELA essay operational items

The scoring team will use rater-benchmark score agreement to evaluate human scoring quality. This means that a rater's scores on validity responses will be compared to the benchmark score for the response, and exact agreement and adjacent agreement rates will be calculated. Benchmark agreement rates have been established for qualifying to score, when the rater's scores are compared to the benchmark score for each response in the qualification set (see this page). Benchmark agreement rates have also been established for operational ELA essay human scoring, when the rater's scores are compared to the benchmark score for each validity response the rater encounters (see page 38).

When a rater's rater-benchmark score agreement rates fall below the target thresholds, scoring leaders conduct an analysis of the rater's work and complete any required remediation. For example, the scoring leader may void (reset) some of a rater's work, increase the read behind rate for the rater, and/or provide one-on-one coaching to improve performance.

Qualification sets for ELA essay operational items

MI will use **two qualification sets** during operational human scoring of ELA essay operational items. Each qualifying set has ten responses. Both qualifying sets will be approved by DESE. Raters are required to take the first qualification set, and only those who fail are required to take the second qualification set. The following notes apply to the use of qualification sets for MCAS operational scoring.

- Responses are displayed for raters in random order
- Scoring content managers and scoring directors who prepare and conduct the training do not need to qualify

Additional notes

- During benchmarking meetings, starting in 2026, responses for one qualification set will be selected for each item across all content areas and grade levels. For ELA, responses may not be available to complete a full qualification set. The benchmarking team will select from available responses and provide guidance to MI about selecting the remaining responses.

For items not benchmarked this year, MI will continue to select responses from previously scored sets to build the first qualification set, to the extent possible. MI also

will build the second qualification set based on responses from the training packs and extra responses scored during the benchmarking meetings.

Qualification threshold for operational ELA essay items

Table 13 shows the qualification threshold for rater performance on qualification sets, by score point range. For multi-trait ELA essay items, the passing thresholds must be met for each trait.

Table 13: Quality assurance thresholds for operational ELA essay items

Score point range	Qualification exact agreement for raters	Qualification exact agreement for scoring team leaders	Qualification exact plus adjacent agreement for raters and scoring team leaders
0-3	80%	90%	100%
0-4	70%	80%	100%
0-5	70%	80%	100%

Read behind rate for ELA essay operational items

A scoring leader reads behind raters each day, especially early in the scoring window. This involves capturing a set percentage of scored responses (5 to 10 percent to start, depending on the item) for a rater, reviewing the rater's assigned score, and then sending feedback to the rater. Raters who qualified on their second attempt will have their initial read behind percentage set higher (typically, around 20 percent).

Once validity results identify the most and least successful raters, read behind percentages are adjusted at the rater and item level. Read behind percentages for most successful raters will be set as low as five percent. Read behind percentages for less successful raters can be set as high as 100 percent.

The function of the read behind process is to coach raters. The recorded score for a response used in the read behind process is entered by the rater after feedback from the scoring leader. The scoring leader accepts the score entered by the rater before the score is recorded.

Independent second read rates for operational ELA essays

For **Grades 3-8 ELA essays**, MI will adhere to the following independent second read rates during hybrid automated/human scoring. The second read is conducted independent of the first read, meaning the second rater has no information about the score provided by the first rater.

- A human independent second read of a random sample of 10 percent of student responses scored by the automated scoring engine.
- A human independent second read of the 10 percent of student responses that the automated scoring engine has identified as having the lowest confidence. These responses are routed to an expert rater.

For **ELA Grade 10 essays**, each response is given two scores. One score is from the automated scoring system (PEG) and one score is from a rater.

For all grades, differences in scores given by the first rater (PEG) and second rater (human) are resolved using the score of record rules found on page 39.

Recalibration sets for ELA essay operational items

Recalibration sets are administered as needed during human scoring of ELA essay operational items. MI uses validity responses as the main tool for recalibrating individual raters, but if there is evidence of group-wide drift, a scoring leader will create and deploy a recalibration set to correct the trend. The recalibration set is added to the resource library in VSC and the scoring leader provides guidance about how to interpret the responses in the recalibration set.

Validity responses for ELA essay operational items

Validity responses are required for human scoring of ELA essay operational items. Validity responses are included in the live response pool at a rate of five percent. These responses are selected to be representative of the operational pool of responses and adequately discriminate between raters who can apply the criteria consistently and those who do not. Validity responses generally resemble other operational responses.

Validity response selection begins when two raters agree on the score for a response. A scoring leader selects the response and confirms the score provided by the two raters. The response is routed to a scoring manager or scoring content director for approval to use the response for validity.

Voiding scores for ELA essay operational items

Unacceptable validity performance during human scoring of ELA operational items triggers *voiding* (resetting) of a rater's scores. A rater is considered to have fallen *below the acceptable thresholds* when, after they have scored ten validity responses, one of the following two conditions has been met. For ELA essay items, each trait (idea development, standard English conventions) is evaluated independently.

- Exact match rater-benchmark score agreement on last ten validity responses is less than 70 percent
- Exact plus adjacent rater-benchmark score agreement on last ten validity responses is less than 90 percent

Rater-benchmark score agreement refers to the degree to which a rater's scores on validity responses align with the benchmark scores. Benchmark scores are established by scoring leaders and serve as the standard against which rater performance is evaluated.

At the end of each day, VSC calculates updated agreement rates for each rater. If, at the end of any day, a rater's agreement metrics fall below the acceptable thresholds, then the rater's scores for the day will be reset. When scores are reset, both reading 1 and reading 2 are reset. This means that raters who are at or above the rater-benchmark thresholds are also subject to score resets. Table 14 shows an example of how the voiding process works by presenting the agreement rates for one rater, scoring one item, over five days.

Table 14: Example of implementing MCAS voiding rules for a single rater

Date and time	Number of validity responses read	Percentage of exact match	Percentage of adjacent match	Number of validity responses used for calculations	Percentage of exact match	Percentage of adjacent match	Scores voided?
Mon, 2000	4	75	100	N/A	N/A	N/A	No
Tue, 2000	3	67	67	N/A	N/A	N/A	No
Wed, 2000	5	60	100	12	67	92	Yes
Thu, 2000	6	83	83	11	73	91	No
Fri, 2000	6	83	83	12	83	83	Yes

Raters who fall below the acceptable thresholds on a given item receive item-specific feedback from a scoring leader (chat messages, read behinds, encouragement to flag responses for review). Raters who continue to perform below the acceptable thresholds are subject to removal from scoring the ELA essay item at the scoring leader's discretion.

Score of record/resolution rules for operational ELA essay items

This section describes the score of record resolution/rules for **MCAS ELA essays**

Grades 3-8

- **Condition:** Low confidence (invalid) PEG score, resulting in assignment of a score by an expert rater. For each response scored by PEG, the system assigns a confidence measure. The lower the confidence measure, the more likely the score for the response is near the border between two score points. The 10 percent lowest confidence responses will be evaluated by expert raters who are best able to determine which score should be assigned to the response.
- **Score of Record:** The **human score** is the score of record.

Grades 3-8

- **Condition:** Random independent second read by a rater (One PEG and one human score).

- **Score of Record**
 - If the first score and the second score are **adjacent** (differ by one score point), the PEG score is the score of record.
 - If the first score and second score are **non-adjacent**, the response is sent to a resolution queue to be scored by a scoring leader (human). The human resolution score is the score of record.

Table 15 shows examples of the application of this score of record rule. Note that read behinds are not used to determine the score of record.

Table 15: Samples of applying the score of record rules for ELA essays, Grs. 3-8

MCAS Resolution Table ELA Essay Items Grades3-8			
Rater #1 PEG	Rater #2 Human	Scoring Leader Resolution	Final
4	4	-	4
4	1	2	2
0	1	-	0
2	4	3	3
1	2	-	1
2	0	2	2

Grade 10

- **Condition:** One PEG and one human score.
- **Resolution:** If the first score and the second score are **adjacent** (differ by one score point), the **higher score** is the score of record, regardless of whether the higher score is provided by the human rater or the automated scoring engine. If the first score and second score are **non-adjacent**, the response is sent to a resolution queue to be scored by a scoring leader. The resolution score is the score of record.
- **Score of record:** The score determined from the **resolution rules**.

Table 16 shows examples of the application of this score of record rule for grade 10. Note that read behinds are not used to determine the score of record.

Table 16: Samples of applying the score of record rules for ELA essays, Grade 10

MCAS Resolution Table ELA Essays Grade 10			
Rater #1 PEG	Rater #2 Human	Scoring Leader Resolution	Final
4	4	-	4
4	1	2	2
0	1	-	1
2	4	3	3
1	2	-	2
2	0	2	2

ELA essay operational item condition code detection using automated scoring tools

Condition code detection is integrated into the automated scoring system's pre-processing workflow, which takes place before the response is scored. The pre-processing workflow identifies potentially inappropriate or off-topic responses and routes the response to expert raters for human scoring. Only responses that pass these checks are scored by the automated scoring engine. The system is configured to detect the following potential condition code and anomalous responses scenarios in a student response:

- **Blank or effectively blank submissions (BL).** No text or only whitespace/placeholder characters.
- **Non-English responses (NE).** Responses written primarily in a language other than English.
- **Off-topic responses (OT).** The automated scoring system flags responses that are semantically or topically unrelated to the assigned task or passages/stimulus material.
- **Direct copy of directions, prompts, or stimulus text (DC).** (No meaningful attempt to respond.) The automated scoring system checks responses against source materials provided in advance, such as directions, prompts, and stimulus passages—anything on the screen when the student interacts with the item. MI must be provided with these materials so they can make the materials available to the engine. The system uses thresholds to flag responses (the proportion of copied text in the response). Responses that meet or exceed these thresholds are routed to human review.

- **Anomalous inputs.** The automated scoring system flags corrupted/garbled submissions or responses that are short or long relative to expectations.
- **Ambiguous or mixed cases.** Student responses where the automated scoring system cannot determine validity with confidence (partial prompt copying with some original content, significant text repetition within a response, unusual formatting).
- **Crisis responses.** Responses suggesting self-harm, harm to others, abuse, or threats—including those targeting race, ethnicity, sexual orientation, religion, or political beliefs—are flagged as potential crisis responses and routed for immediate review by the scoring manager.

Any response falling into these categories (except for blank or effectively blank submissions) is withheld from automated scoring and routed to expert raters to assign the appropriate condition code or score, as applicable. This human-in-the-loop routing and resolution process provides a safeguard for edge cases and ambiguous content.

Field test scoring quality assurance measures for constructed response, extended response, and essay items

The following sections describe how scoring quality assurance measures will be used during the scoring of student responses to MCAS field test items (constructed response items, extended response items, and ELA essays).

Number of responses to score for constructed response, extended response, and essay field test items

MI will score 2,000 field test responses for extended response items and essay items. For High School Introductory Physics, all field test constructed responses will be scored, which is expected to be approximately 1,000 responses per item. MI will score 1,800 field test responses for all other constructed response items.

The number of raters assigned to each field test item is carefully managed to provide representative scoring and maintain adequate pacing. To that end, no fewer than five raters will be assigned to score each field test item. Each response will receive a score from one rater unless the response is randomly selected to undergo an independent second read. See page 45 for the independent second read rate for field test items. No rater will score more than 20 percent of student responses for a field test item. Only expert raters, those with the highest quality metrics during operational scoring, will be selected to conduct field test scoring.

Percent agreement for constructed response, extended response, and essay field test items

The scoring team will use inter-rater score agreement to evaluate scoring quality. This means that a rater's scores on responses that are independent second read by another rater will be compared, and exact agreement and adjacent agreement rates will be calculated.

When the inter-rater score agreement rates fall below the target thresholds, scoring leaders conduct an analysis of the rater's work and complete any required remediation. For example, the scoring leader may void (reset) some of a rater's work, increase the

read behind rate for the rater, and/or provide one-on-one coaching to improve performance.

Qualifying set for constructed response, extended response, and essay field test items

MI will use **one qualifying set** during human scoring of constructed response, extended response, and essay field test items. The qualifying set has ten responses. Raters who fail the qualifying set will be assigned to another item or removed from the project. The following notes apply to the use of qualification sets for MCAS field test scoring.

- Responses are displayed in random order for raters
- Scoring content managers and scoring directors who prepare and conduct the training do not need to qualify

Qualification threshold for constructed response, extended response, and essay field test items

Table 17 shows the qualification threshold for rater performance on the qualification set for constructed response, extended response, and essay items, by score point range. For essay items, the passing thresholds must be met for each trait.

Table 17: Qualification set threshold for constructed response and ELA essay field test items

Score point range	Qualification exact agreement for raters	Qualification exact agreement for scoring team leaders	Qualification adjacent agreement for raters and scoring team leaders
0-1	90%	100%	100%
0-2	80%	90%	100%
0-3	80%	90%	100%
0-4	70%	80%	100%
0-5	70%	80%	100%

Note: For Civics, there is no qualification requirement for one-point constructed response items (CR1s), but raters must qualify on the four-point constructed response item (CR4s) in the same task before scoring associated CR1s.

Read behind rate for constructed response operational items

A scoring leader reads behind raters each day, especially early in the scoring window. This involves capturing a set percentage of scored responses (5 to 10 percent to start, depending on the item) for a rater, reviewing the rater's assigned score, and then sending feedback to the rater. Raters who qualified on their second attempt will have their initial read behind percentage set higher (typically, around 20 percent).

The function of the read behind process is to coach raters. The recorded score for a response used in the read behind process is entered by the rater after feedback from the scoring leader. The scoring leader accepts the score entered by the rater before the score is recorded.

Independent second read rate for constructed response, extended response, and essay field test items

Second reads are independent reviews of a random sample of student responses to an item by a second rater. The first read and second read are reconciled by using the score of record rules on page 46. For field test scoring, MI will conduct independent second reads on 10 percent of responses for each item.

Recalibration sets for constructed response, extended response, and essay field test items

Recalibration sets are used as needed. MI uses inter-rater agreement as the main tool for identifying raters requiring retraining and feedback. However, if there is evidence of group-wide drift, a scoring leader will create and deploy a recalibration set addressing the trend.

Voiding scores for constructed response, extended response, and essay field test items

Unacceptable inter-rater agreement triggers *voiding* (resetting) of a rater's scores. A rater is considered to have fallen *below the acceptable thresholds* when, after ten responses they scored have been scored independently by a second rater, one of the following two conditions has been met.

- Exact match inter-rater score agreement on last ten independently second read responses is less than 70 percent
- Exact plus adjacent inter-rater score agreement on last ten independently second read responses is less than 90 percent

Inter-rater score agreement refers to the degree to which a rater's scores on responses independently second read by another rater align.

Following each data export, which occurs three times each day, VSC calculates updated agreement rates for each rater. If, following any data export during the day, a rater's agreement metrics fall below the acceptable thresholds, then the rater's scores for the entire day will be reset. When scores are reset, both reading 1 and reading 2 are reset. This means that raters who are at or above the inter-rater thresholds are also subject to score resets. Table 18 shows an example of how the voiding process works by presenting the agreement rates for one rater, scoring one item, over five days.

Table 18: Example of implementing MCAS voiding rules for a single rater

Date and time	Number of validity responses read	Percentage of exact match	Percentage of adjacent match	Number of validity responses used for calculations	Percentage of exact match	Percentage of adjacent match	Scores voided?
Mon, 2000	5	60	100	N/A	N/A	N/A	N/A
Tue, 2000	6	67	83	11	64	91	Yes
Wed, 2000	4	75	75	10	70	80	Yes

Raters who fall below the acceptable thresholds on a given item receive feedback from a scoring leader (chat messages, read behinds, encouragement to flag responses for review). Raters who continue to perform below the acceptable thresholds are subject to removal from scoring the constructed response item at the scoring leader's discretion.

Score of record/resolution rules for constructed response, extended response, and essay field test items

This section describes the score of record resolution/rules for MCAS constructed response, extended response, and ELA essay items.

Grades 3-8 ELA, Grades 3-8 Math, Grades 5 and 8 STE, and Grade 8 Civics

- **Condition:** Two scores (provided by two raters when scoring is independent)
- **Resolution:** If the first score and second score are adjacent (differ by one score point), the first score is the score of record. If the first score and second score are non-adjacent (differ by more than one score point), the response is sent to a resolution queue to be scored by a scoring leader. The resolution score is the score of record.

Table 19 shows examples of the application of this score of record rule. Note that read behinds are not used to determine the score of record because, after receiving feedback from a scoring leader, the rater enters the agreed-upon score. The score is recorded when the scoring leader accepts the score entered by the rater.

Table 19 appears on the next page.

Table 19: Samples of applying the score of record rules for MCAS constructed response field test items, Grades 3-8

MCAS Resolution Table Constructed response Items Grades 3-8			
Rater #1 Human	Rater #2 Human	Scoring Leader Resolution	Final
4	4	-	4
4	1	2	2
0	1	-	0
2	4	3	3
1	2	-	1
2	0	2	2

Grade 10 ELA, Grade 10 Math, HS Biology, and HS Introductory Physics

- **Condition:** Two scores (provided by two raters when scoring is independent)
- **Resolution:** If the first score and the second score are adjacent (differ by one score point), the higher score is the score of record. If the first score and second score are non-adjacent, the response is sent to a resolution queue to be scored by a scoring leader. The resolution score is the score of record.

Table 20 shows examples of the application of this score of record rule. Note that read behinds are not used to determine the score of record because, after receiving feedback from a scoring leader, the rater enters the agreed-upon score. The score is recorded when the scoring leader accepts the score entered by the rater.

Table 20: Samples of applying the score of record rules for MCAS constructed response field test items, High School Math, Biology, and Introductory Physics

MCAS Resolution Table Constructed response Rules High School			
Rater #1 Human	Rater #2 Human	Scoring Leader Resolution	Final
4	4	-	4
4	1	2	2
0	1	-	1
2	4	3	3
1	2	-	2
2	0	2	2

MCAS condition codes

During scoring of student responses to MCAS constructed response items, extended response items, and ELA essays there may be responses that do not meet the criteria described in the scoring rubric. These responses may be assigned a *condition code*. Raters can assign condition codes, but when they do, the response will be sent to a special queue where a scoring leader will confirm that the condition code is valid. Condition codes may be assigned to responses to operational, field test, and equating items.

Table 21 shows the condition codes DESE has chosen to implement for the scoring of student responses to MCAS items. Eligible condition codes may vary between items. Such differences will be indicated in the item's scoring training materials. Following the table are notes about the criteria for assignment of each condition code.

Table 21: MCAS condition codes by content area and type

Content area	Item type	Condition code Blank (BL)	Condition code Non-English (NE)	Condition code Off Topic (OT)	Condition code Direct Copy (DC)	Condition code Unreadable (PBT only)	Condition code Wrong location (PBT only)
ELA	Essay	Y	Y	Y	Y	Y	Y
ELA	CR	Y	Y	Y	N	Y	Y
ELA	ER	Y	Y	Y	Y	Y	Y
Math	CR	Y	Y	Y	N	Y	Y
Civics	CR	Y	Y	Y	N	Y	Y
STE	CR	Y	Y	Y	N	Y	Y

Blank (BL): No deliberate characters or marks in the answer space.

- **For handwritten responses**, any stray marks on handwritten responses results in the student assigned the *Off Topic* code.
- If a **student responds in the wrong location** and there is clearly a legitimate response to another item on the assessment, the response should be evaluated and scored accurately.

Non-English (NE): The response is written entirely in a language other than English or is a mix of English and another language but lacks sufficient English to provide a score. Student responses written in Spanish on the Spanish/English form will be scored.

Off Topic (OT): A response that is not related to the task/prompt administered or is not a valid attempt at responding to any task/prompt on the assessment. This includes responses indicating a refusal by the student to address the prompt or participate in the assessment and non-sensical keystrokes indicating a refusal to respond to the prompt.

Direct copy (DC): The response copies all or a portion of the prompt/stimuli verbatim and offers no attempt to respond to the task/prompt.

Unreadable: *This condition is applicable to paper-based testing only.* Any condition that renders the image or the student's work indecipherable.

Wrong Location: *This condition is applicable to paper-based testing only.* A clearly legitimate response to another item on the assessment. The response should be evaluated and scored accurately.

Handling crisis responses

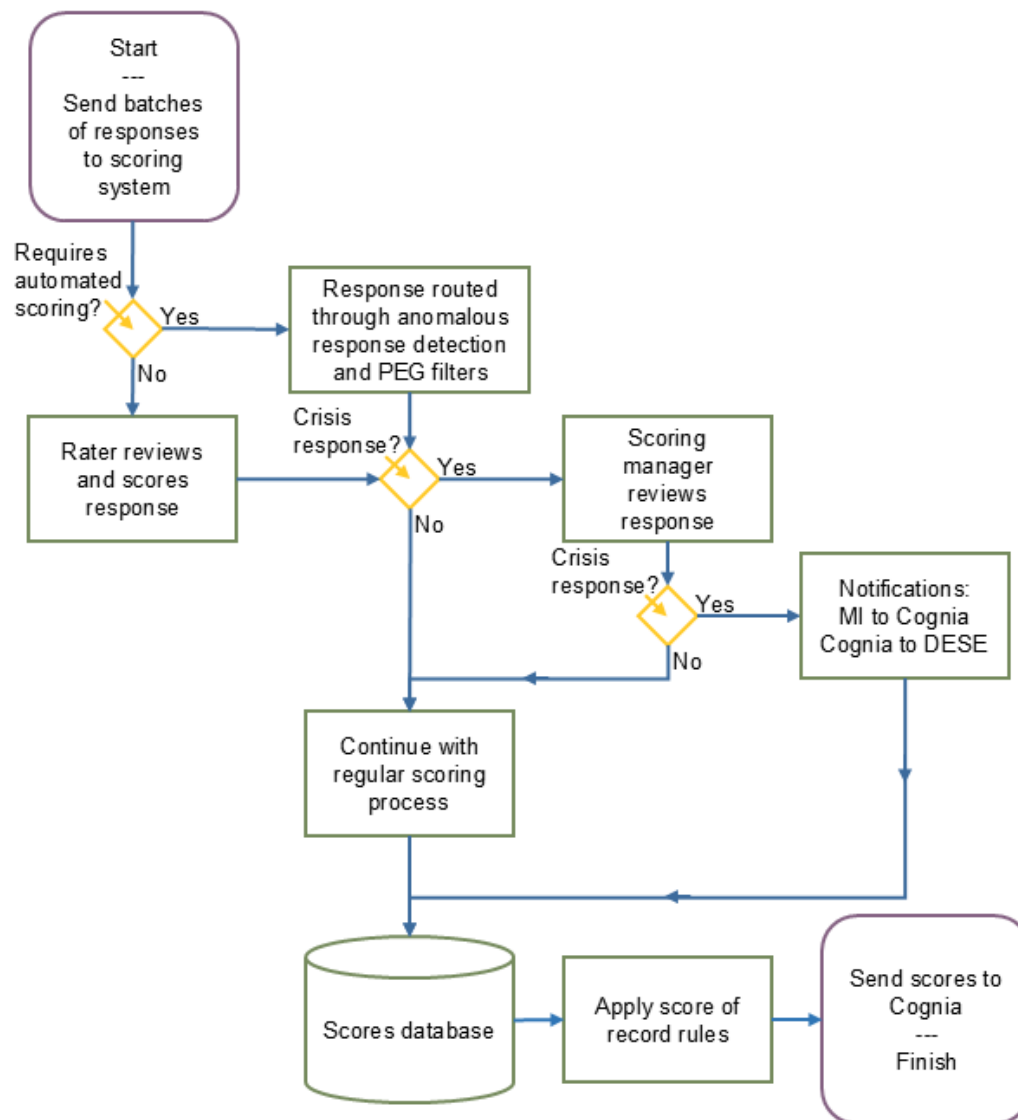
A crisis response indicates that a student may present a danger to themselves or others, the student or another child is in danger, or any indications of child abuse. A response also may constitute a crisis if it describes situations that indicate abuse or intent to harm as related to someone's race, ethnicity, sexual orientation, religious beliefs, and political opinions. The process for handling a crisis response is as follows.

- Raters are trained to recognize crisis responses.
- A rater clicks the *Alert* button in VSC, sending the response to the alerts queue. Or the automated scoring engine identifies a potential crisis response and routes the response to the alerts queue.
- At least once per day, the MI scoring manager checks the alerts queue for any new alerts.

- The scoring manager reviews the new alerts and either accepts or rejects each response as an alert. The scoring manager will review a student's responses to all items to aid in determining the gravity of the crisis.
- When confirmed as an alert response, MI will notify Cognia. All further activity by MI stops and Cognia will assume responsibility.

Cognia's program manager will take appropriate steps to further process an alert response by obtaining the student's responses to all items and providing pertinent information to DESE within one business day after a crisis response has been identified. Exhibit 6 shows the process of escalating crisis responses to DESE.

Exhibit 6: Crisis response routing process



Scoring staff requirements

Table 22 shows the requirements that raters and scoring leaders must possess before being allowed to score student responses to MCAS constructed response items, extended response items, and ELA essays.

Table 22: Scoring staff requirements¹

Level	Minimum Education Requirements
Rater	Grades 3-8 tests • Four-year college degree • Passed at least two college classes related to the content area being scored High school tests • Four-year college degree • Possesses a degree related to the content area being scored or has successfully completed at least four college classes related to the content area being scored
Scoring Leaders²	All tests • Four-year college degree • Possess a degree related to the content area being scored or has successfully completed at least four college classes related to the content area being scored • Demonstrated experience scoring large-scale standardized tests in the content being scored

¹ **Raters and scoring leaders** cannot be under contract with Massachusetts schools, including as teachers, administrators, and paraprofessionals.

² The term **scoring leaders** refers to the following job titles: scoring team leaders, scoring directors, and scoring managers.

MI's assigned scoring manager for the MCAS program will work with personnel managers to select raters for MCAS from a diverse pool of experienced raters. They will verify that each proposed rater meets DESE's minimum requirements.

Prospective raters must complete a document attesting that they meet the requirements; will follow DESE-approved scoring and security procedures; and will not disclose item, student, and score information. Acknowledging these requirements is built into VSC, which means that raters routinely attest to these requirements. MI will evaluate rater performance and make decisions regarding rater retention for the next season.

Standard reports available in VSC

DESE will have access to a suite of reports in VSC. To access the reports, users log into VSC and click on *Reports* from the landing page. Exhibit 7 shows the report selection screen in VSC. The available reports are listed on the left, and search/sort/filter criteria are positioned in the center of the page.

Exhibit 7: VSC Reports selection screen

The screenshot displays the VSC Reports selection interface. On the left, a sidebar lists available reports under the heading "by Response". The selected report, "Cumulative Inter-Rater Reliability by Item", is highlighted. The main area shows the title "Cumulative Inter-Rater Reliability by Item" and a form for search and filter criteria. The form includes fields for Project Name, Client, Site, Subject, Sub-Subject, Grade, Item, and Trait, each with a dropdown menu. A checkbox for "Highlights on Report" is also present. At the bottom, there are three buttons: "View", "Export", and "IT Threshold".

by Response

Cumulative Inter-Rater Reliability by Item

Project Name: [Redacted]

Client: [Redacted]

Site: ALL

Subject: ALL

Sub-Subject: ALL

Grade: ALL

Item: [Redacted]

Trait: ALL

Highlights on Report: ☐

View Export IT Threshold

by Response

- Q Daily Validity Performance by Reader
- Q Daily Combined Validity Performance by Reader
- Q Cumulative Inter-Rater Reliability by Item
- Q Cumulative Inter-Rater Reliability by Reader
- Q Cumulative Combined Inter-Rater Reliability by Reader
- Q Cumulative Inter-Rater Resolution
- Q Cumulative Score Distribution by Item
- Q Cumulative Score Distribution by Reader

MI developed the following reports in VSC to aid scoring leaders in evaluating the quality of scoring and to keep DESE informed about scoring quality.

- Daily Inter-Rater Reliability by Item
- Cumulative Inter-Rater Reliability by Item
- Daily Inter-Rater Reliability by Scorer
- Cumulative Inter-Rater Reliability by Scorer
- Summary Inter-Rater Reliability
- Daily Score Distribution by Item
- Cumulative Score Distribution by Item
- Daily Score Distribution by Scorer
- Cumulative Score Distribution by Scorer
- Summary Score Distribution
- Daily Validity Performance by Item
- Cumulative Validity Performance by Item
- Daily Validity Performance by Response
- Cumulative Validity Performance by Response
- Daily Validity Performance by Scorer
- Cumulative Validity Performance by Scorer

Inter-rater reliability (IRR) reports: Provide the percentage of exact, adjacent, and non-adjacent agreement for scorable responses.

Score point frequency distribution reports: Provide the percentage per score point and include the mean and standard deviation for each item.

Validity performance reports: Provide the percentage of exact, adjacent, and non-adjacent agreement for validity responses and are used to monitor drift.

Exhibit 8 and Exhibit 9 show two examples of the types of reports that can be generated by the VSC system.

Exhibit 8: Sample Cumulative IRR by Item report

Item	Total Read	Total Read Scorable	Second Read	% Non-Adj Low	% Adj Low	% Exact	% Adj High	% Non-Adj High	% Mismatch NS	% MM NS/Score	R1 Mean	R2 Mean
20395	65840	64649	16866	0.0	4.8	90.4	4.8	0.0	0.0	0.0	0.12	0.11
20544	22	21	6	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.44	0.67
20706	22	20	6	0.0	0.0	100.0	0.0	0.0	0.0	0.0	1.29	2.00
20824	22	21	6	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.39	0.00
21132	66404	65925	17198	0.0	7.6	84.7	7.6	0.0	0.0	0.0	1.02	1.06
21173	22	20	6	0.0	0.0	100.0	0.0	0.0	0.0	0.0	1.00	1.33
21187	65177	64816	16910	0.0	9.8	80.4	9.8	0.0	0.0	0.0	0.95	0.94
Item	Total Read	Total Read Scorable	Second Read	% Non-Adj Low	% Adj Low	% Exact	% Adj High	% Non-Adj High	% Mismatch NS	% MM NS/Score	R1 Mean	R2 Mean
Element Total	197,509	195,472	50,998	0.0	7.4	85.2	7.4	0.0	0.0	0.0	0.70	0.71

Exhibit 9: Sample Cumulative Score Point Distribution by Item report

Cumulative Score Distribution by Item

Project:

Grade: 11

Print Date: 5/17/2023

Site: ALL

Subject: Science - Grade 11

Report Time: 10:32 AM

Element: Holistic

Sub-Subject: All

Page Layout: Portrait

Page: 2

Copy

Excel

Filter Column By Range

Reset Table

OFF

Always Show Element Total

Search:

Item	Total Read	Total Read Scorable	% 0	% 1	% 2	% B	% N	% L	% T	% NR	Mean	Std Dev
20544	24	21	58.3	29.2	0.0	12.5	0.0	0.0	0.0	0.0	0.33	0.47
20706	24	22	16.7	37.5	37.5	8.3	0.0	0.0	0.0	0.0	1.23	0.73
20824	24	22	70.8	20.8	0.0	8.3	0.0	0.0	0.0	0.0	0.23	0.42
21132	62365	61631	45.5	24.0	29.3	0.1	0.0	0.0	1.1	0.0	0.84	0.85
21173	64058	64055	21.8	44.0	34.2	0.0	0.0	0.0	0.0	0.0	1.12	0.74
Item	Total Read	Total Read Scorable	% 0	% 1	% 2	% B	% N	% L	% T	% NR	Mean	Std Dev
Element Total	126,495	125,751	33.5	34.1	31.8	0.0	0.0	0.0	0.5	0.0	0.98	0.81

Show 10 entries

Previous

1

Next

Showing 1 to 5 of 5 entries

Customized quality management reports

MI will provide Cognia with customized quality management reports. Table 23 shows the customized reports that MI will provide to Cognia, and the cadence for delivery of these reports during the scoring window.

Table 23: Customized scoring quality management reports

Report name	Description	Delivery cadence
MCAS scoring report	Reports cumulative scoring metrics, including IRR, and is organized by item	Daily
Rater report	Reports exact match, adjacent match, and non-adjacent percentages for each rater, along with the total number of scores voided	Daily
Condition code report	Reports the number and percentage of responses assigned to each condition code, organized by item	Weekly
Low confidence report	Reports the responses, and associated scores, for which PEG identified as being the lowest ten percent	Weekly
Resolution report	Reports the responses, and associated scores, for responses that received three scores (both automated and human)	Weekly
Qualification results	Reports the qualification results for each rater that attempted to qualify, including number of attempts organized by item	Weekly

Reports may, as needed, be accompanied by a **narrative summary** identifying issues observed in the data and describing mitigation strategies being considered or implemented. The summary may include, as appropriate, progress metrics (percentage complete) and an assessment of whether the scoring project is anticipated to remain on schedule.

Companion documents

The following documents are intended to accompany these scoring specifications.

- **MCAS Scoring Quality Management Plan:** It describes the processes that will be used to ensure quality during MCAS human and automated scoring.
- **MCAS Training and Scoring Plan:** The training and scoring plan describes the process by which MI conducts rater training and scoring for scoring operational, equating, and field-test items.
- **MCAS Custom Reports Data Dictionary:** This Microsoft Excel file explains what each data field represents in the customized reports that MI will provide for the MCAS project.

APPENDIX G
INTERRATER CONSISTENCY

Table G-1. Item-Level Interrater Consistency Statistics by Grade—ELA*

Grade	Item	Number of Score Categories	Trait	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	LW Kappa
10	EL309540902	4	CONV	133,898	78.47	18.91	0.89	0.80
10	EL309540902	6	DEV	133,898	65.68	31.10	0.89	0.76
10	EL310944009	4	CONV	133,476	79.09	17.74	0.88	0.79
10	EL310944009	6	DEV	133,476	62.49	33.70	0.88	0.73

*Caution should be used when interpreting the sums of exact and adjacent percentages for ELA items. This is because resolutions are done by item in ELA, and it is entirely possible that only one trait (either idea development or conventions) on a writing item has a non-adjacent score. For instance, if the idea development score for an item were non-adjacent, the item would also receive a third score for conventions, even if it initially received an exact or adjacent score for conventions.

Table G-2. Item-Level Interrater Consistency Statistics by Grade—ELA*—CR

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	LW Kappa
3	EL305885122	4	14,790	61.23	35.67	0.67	0.54
4	EL307375298	4	14,292	57.14	36.94	0.62	0.48

*Caution should be used when interpreting the sums of exact and adjacent percentages for ELA items. This is because resolutions are done by item in ELA, and it is entirely possible that only one trait (either idea development or conventions) on a writing item has a non-adjacent score. For instance, if the idea development score for an item were non-adjacent, the item would also receive a third score for conventions, even if it initially received an exact or adjacent score for conventions.

Table G-3. Item-Level Interrater Consistency Statistics by Grade—Mathematics

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	LW Kappa
3	MA134930940	4	14,914	88.72	10.82	0.94	0.90
3	MA260584A	4	14,790	87.96	11.68	0.93	0.89
3	MA261857A	4	15,026	86.76	12.72	0.94	0.89
3	MA735951978	4	14,972	81.30	17.73	0.91	0.84
4	MA231875780	5	14,640	85.05	14.36	0.94	0.89
4	MA303335	5	14,642	70.56	26.44	0.88	0.77
4	MA800780887	5	14,638	77.85	21.01	0.92	0.84
4	MA803957909	5	14,574	70.39	27.58	0.85	0.74
5	MA232642946	5	14,896	84.61	14.23	0.96	0.90
5	MA715102462	5	14,886	77.03	20.57	0.92	0.83
5	MA802371654	5	14,930	82.09	16.17	0.93	0.87
5	MA903746975	5	14,896	70.88	25.16	0.89	0.79
6	MA233752432	5	15,012	92.94	6.70	0.98	0.95
6	MA287883	5	14,928	80.21	18.09	0.95	0.87
6	MA800259417	5	14,888	83.54	14.29	0.94	0.88
6	MA900378821	5	14,946	86.66	11.78	0.94	0.89

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	LW Kappa
7	MA235900389	5	14,970	88.87	10.74	0.95	0.91
7	MA235905181	5	14,832	88.55	10.65	0.95	0.91
7	MA717248260	5	14,840	86.35	12.74	0.94	0.89
7	MA802907874	5	14,672	87.01	12.17	0.96	0.90
8	MA203085405	5	15,118	72.25	25.00	0.85	0.74
8	MA236558384	5	14,870	81.60	15.72	0.94	0.87
8	MA311433	5	14,744	72.92	24.89	0.89	0.79
8	MA800473031	5	14,922	84.53	13.97	0.94	0.89
10	MA135658812	5	127,360	88.15	11.06	0.96	0.92
10	MA315148	5	131,264	83.33	15.93	0.91	0.85
10	MA315764	5	125,770	79.89	18.67	0.94	0.86
10	MA713533558	5	122,532	83.78	15.64	0.95	0.89

Table G-4. Item-Level Interrater Consistency Statistics—STE

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	LW Kappa
5	SC803732869	3	11,434	95.29	3.71	0.90	0.90
5	SC630073628	3	12,630	79.29	19.97	0.74	0.69
5	SC630756792	4	12,618	71.04	25.25	0.83	0.73
5	SC802761427	4	12,648	72.90	25.66	0.80	0.70
5	SC317084	4	12,686	70.91	26.68	0.80	0.70
5	SC903955996	4	12,654	86.45	12.14	0.93	0.88
8	SC631441791	3	12,554	90.62	8.57	0.89	0.85
8	SC816343670	3	12,528	92.96	6.88	0.85	0.85
8	SC005157586	4	12,752	71.47	25.97	0.73	0.63
8	SC809178849	4	12,848	73.97	23.49	0.73	0.63
8	SC809268358	4	12,610	82.24	15.51	0.73	0.69
8	SC290232	4	12,836	81.08	16.94	0.71	0.64

Table G-5. Item-Level Interrater Consistency Statistics—Biology

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	LW Kappa
10	SC215151206	4	101,800	69.07	27.22	0.77	0.66
10	SC807830473	4	103,604	66.96	28.91	0.79	0.68
10	SC304044565	5	90,852	86.40	12.52	0.68	0.68
10	SC313503	5	105,516	81.39	17.17	0.94	0.87
10	SC316277	5	102,152	69.91	27.16	0.87	0.75

Table G-6. Item-Level Interrater Consistency Statistics—Introductory Physics

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	LW Kappa
10	SC128528990	4	25,822	78.48	19.85	0.86	0.76
10	SC735661218	4	25,376	87.74	10.82	0.90	0.87
10	SC279735	5	26,070	76.93	21.00	0.92	0.83
10	SC304762	5	25,830	69.71	26.62	0.87	0.75
10	SC313762	5	25,410	77.28	20.70	0.91	0.82

Table G-7. Item-Level Interrater Consistency Statistics—Civics

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	LW Kappa
8	HI302448411	2	12,598	88.08	11.30	0.71	0.71
8	HI302459561	2	12,580	78.09	21.13	0.51	0.51
8	HI302638616	2	12,398	70.91	28.10	0.40	0.40
8	HI302641557	5	12,386	69.42	24.17	0.77	0.68

Table G-8. Item-Level Interrater Consistency Statistics—Alt/ELA

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score*
3	comp1	5	320	98.75	1.25	0.89	1.25
3	comp2	5	319	98.12	1.88	0.85	1.88
3	comp3	5	319	96.87	3.13	0.87	5.96
3	ind1	4	279	98.57	1.43	0.98	2.51
3	ind2	4	279	98.21	1.79	0.98	2.87
3	ind3	4	296	98.99	0.68	0.98	3.04
3	sk1	4	279	98.92	1.08	0.97	1.79
3	sk2	4	279	98.92	1.08	0.98	2.87
3	sk3	4	296	95.27	4.73	0.95	5.41
4	comp1	5	598	98.66	1.34	0.82	1.51
4	comp2	5	596	98.83	1.17	0.87	1.51
4	comp3	5	593	97.64	2.36	0.88	9.27
4	ind1	4	551	98.73	1.27	0.98	1.63
4	ind2	4	529	99.24	0.76	0.99	1.70
4	ind3	4	554	98.56	1.44	0.99	6.68
4	sk1	4	551	99.46	0.54	0.98	1.45
4	sk2	4	529	99.05	0.95	0.97	1.89
4	sk3	4	554	94.40	4.69	0.94	7.76
5	comp1	5	267	99.63	0.37	0.96	0.75
5	comp2	5	268	99.63	0.37	0.96	0.37
5	comp3	5	267	96.63	3.37	0.81	8.99
5	ind1	4	220	99.09	0.91	0.99	1.82
5	ind2	4	222	99.10	0.90	0.99	1.35
5	ind3	4	237	97.89	1.69	0.97	4.64
5	sk1	4	220	98.64	1.36	0.95	1.36

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score*
5	sk2	4	222	99.10	0.90	0.98	0.90
5	sk3	4	237	95.78	4.22	0.97	5.06
6	comp1	5	262	99.24	0.76	0.87	0.76
6	comp2	5	261	100.00	0.00	1.00	0.00
6	comp3	5	261	96.93	3.07	0.78	8.81
6	ind1	4	221	99.10	0.90	0.98	0.90
6	ind2	4	221	99.10	0.90	0.99	1.81
6	ind3	4	230	98.26	1.74	0.98	6.96
6	sk1	4	221	99.55	0.45	0.99	0.45
6	sk2	4	221	98.19	1.81	0.96	1.81
6	sk3	4	230	93.91	4.35	0.93	7.39
7	comp1	5	362	99.72	0.28	0.95	0.28
7	comp2	5	362	99.45	0.55	0.91	0.55
7	comp3	5	361	97.78	2.22	0.85	7.76
7	ind1	4	307	99.67	0.33	0.99	1.30
7	ind2	4	310	99.03	0.97	0.99	0.97
7	ind3	4	329	97.87	1.82	0.98	6.38
7	sk1	4	307	99.02	0.98	0.97	1.30
7	sk2	4	310	99.68	0.32	0.99	0.32
7	sk3	4	329	95.14	4.26	0.95	6.08
8	comp1	5	292	99.32	0.68	0.93	0.68
8	comp2	5	292	99.66	0.34	0.97	0.68
8	comp3	5	292	97.95	2.05	0.89	7.88
8	ind1	4	251	98.01	1.99	0.96	3.19
8	ind2	4	246	99.59	0.41	0.99	0.41
8	ind3	4	265	98.87	1.13	0.99	4.91
8	sk1	4	251	98.80	1.20	0.98	2.79
8	sk2	4	246	100.00	0.00	1.00	0.41
8	sk3	4	265	93.96	4.91	0.94	7.17
HS	comp1	5	425	98.35	1.65	0.87	1.88
HS	comp2	5	428	99.07	0.93	0.92	1.40
HS	comp3	5	422	95.97	4.03	0.80	8.06
HS	ind1	4	353	99.43	0.57	0.99	1.70
HS	ind2	4	368	98.91	1.09	0.98	1.63
HS	ind3	4	390	98.97	1.03	0.99	5.38
HS	sk1	4	353	98.02	1.98	0.95	2.83
HS	sk2	4	368	99.46	0.54	0.99	1.36
HS	sk3	4	390	96.41	3.08	0.97	5.64

**The percentages of exact agreement, adjacent agreement and third score do not necessarily sum to 1 due to the scoring rules. The most prevalent case is when a strand contains a score of “M” (indicating a required component is missing/incomplete) within a rubric area. Any instance of an “M” by scorer 1 or 2 must be confirmed by an expert scorer (scorer 3). Even if scorer 1 and 2 both agree on an “M”, the third scorer would still provide a confirmation or overturning score. The third scorer will also review strands at random to provide oversight on a particular scorer or even portfolios that are of interest.*

Table G-9. Item-Level Interrater Consistency Statistics—Alt/Mathematics

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score*
3	comp1	5	320	97.19	2.81	0.82	2.81
3	comp5	5	319	98.75	1.25	0.90	1.25
3	ind1	4	254	98.03	1.97	0.98	2.76
3	ind5	4	245	97.55	2.45	0.97	2.86
3	sk1	4	254	99.21	0.79	0.98	2.76
3	sk5	4	245	99.18	0.82	0.98	2.45
4	comp1	5	596	98.66	1.34	0.87	1.34
4	comp3	5	598	99.00	1.00	0.92	1.17
4	ind1	4	499	99.00	1.00	0.99	1.40
4	ind3	4	495	98.79	1.21	0.99	1.82
4	sk1	4	499	99.60	0.40	0.99	1.40
4	sk3	4	495	98.79	1.21	0.97	1.62
5	comp2	5	269	99.63	0.37	0.97	0.74
5	comp3	5	270	99.63	0.37	0.97	0.37
5	ind2	4	216	98.61	1.39	0.98	1.85
5	ind3	4	214	97.66	2.34	0.97	2.80
5	sk2	4	216	99.54	0.46	0.99	1.85
5	sk3	4	214	99.53	0.47	0.99	2.34
6	comp2	5	259	98.46	1.54	0.87	1.54
6	comp5	5	259	98.07	1.93	0.81	1.93
6	ind2	4	200	98.50	1.50	0.98	1.50
6	ind5	4	208	98.08	1.92	0.98	2.40
6	sk2	4	200	100.00	0.00	1.00	1.00
6	sk5	4	208	99.52	0.48	0.98	1.44
7	comp1	5	360	99.72	0.28	0.97	0.83
7	comp4	5	360	98.89	1.11	0.83	1.11
7	ind1	4	302	97.02	2.98	0.97	2.98
7	ind4	4	277	98.19	1.81	0.96	2.17
7	sk1	4	302	99.34	0.66	0.98	1.99
7	sk4	4	277	99.64	0.36	0.99	1.44
8	comp2	5	293	98.98	1.02	0.93	1.02
8	comp4	5	291	100.00	0.00	1.00	0.00
8	ind2	4	242	99.59	0.41	0.99	0.41
8	ind4	4	223	99.55	0.45	0.99	0.45
8	sk2	4	242	100.00	0.00	1.00	0.00
8	sk4	4	223	99.55	0.45	0.99	0.90
HS	comp1	5	90	100.00	0.00	1.00	0.00
HS	comp2	5	355	99.15	0.85	0.94	1.41
HS	comp3	5	268	99.63	0.37	0.96	0.75
HS	comp4	5	316	99.05	0.95	0.96	1.90
HS	comp5	5	237	99.58	0.42	0.97	0.84
HS	ind1	4	81	100.00	0.00	1.00	0.00

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score*
HS	ind2	4	287	98.95	1.05	0.98	1.39
HS	ind3	4	226	99.12	0.88	0.98	1.33
HS	ind4	4	272	99.63	0.37	0.99	0.74
HS	ind5	4	183	98.36	1.64	0.98	1.64
HS	sk1	4	81	100.00	0.00	1.00	0.00
HS	sk2	4	287	99.65	0.35	0.99	1.05
HS	sk3	4	226	98.23	1.77	0.96	2.21
HS	sk4	4	272	99.26	0.74	0.99	0.74
HS	sk5	4	183	99.45	0.55	0.98	0.55

**The percentages of exact agreement, adjacent agreement and third score do not necessarily sum to 1 due to the scoring rules. The most prevalent case is when a strand contains a score of “M” (indicating a required component is missing/incomplete) within a rubric area. Any instance of an “M” by scorer 1 or 2 must be confirmed by an expert scorer (scorer 3). Even if scorer 1 and 2 both agree on an “M”, the third scorer would still provide a confirmation or overturning score. The third scorer will also review strands at random to provide oversight on a particular scorer or even portfolios that are of interest.*

Table G-10. Item-Level Interrater Consistency Statistics—Alt/STE

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score*
5	comp1	5	261	97.70	2.30	0.85	2.30
5	comp2	5	262	98.09	1.91	0.85	1.91
5	comp3	5	256	97.27	2.73	0.80	2.73
5	comp4	5	9	N/A	N/A	N/A	N/A
5	ind1	4	235	99.15	0.85	0.99	0.85
5	ind2	4	232	99.57	0.43	1.00	0.43
5	ind3	4	232	99.57	0.43	1.00	0.43
5	ind4	4	7	N/A	N/A	N/A	N/A
5	sk1	4	235	100.00	0.00	1.00	0.00
5	sk2	4	232	99.57	0.00	0.97	0.43
5	sk3	4	232	99.14	0.86	0.98	0.86
5	sk4	4	7	N/A	N/A	N/A	N/A
8	comp1	5	273	97.80	2.20	0.85	2.20
8	comp2	5	274	100.00	0.00	1.00	0.00
8	comp3	5	268	98.88	1.12	0.94	1.12
8	comp4	5	39	100.00	0.00	1.00	0.00
8	ind1	4	247	96.76	2.83	0.97	3.64
8	ind2	4	244	98.36	1.64	0.99	2.05
8	ind3	4	250	99.20	0.80	0.99	1.20
8	ind4	4	36	100.00	0.00	1.00	0.00
8	sk1	4	247	100.00	0.00	1.00	3.24

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score*
8	sk2	4	244	98.77	1.23	0.97	2.87
8	sk3	4	250	99.20	0.80	0.98	1.20
8	sk4	4	36	100.00	0.00	1.00	0.00

**The percentages of exact agreement, adjacent agreement and third score do not necessarily sum to 1 due to the scoring rules. The most prevalent case is when a strand contains a score of “M” (indicating a required component is missing/incomplete) within a rubric area. Any instance of an “M” by scorer 1 or 2 must be confirmed by an expert scorer (scorer 3). Even if scorer 1 and 2 both agree on an “M”, the third scorer would still provide a confirmation or overturning score. The third scorer will also review strands at random to provide oversight on a particular scorer or even portfolios that are of interest.*

Table G-11. Item-Level Interrater Consistency Statistics—Alt/Biology

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score
HS	comp1	5	332	98.19	1.81	0.91	2.41
HS	comp2	5	326	99.08	0.92	0.95	0.92
HS	comp3	5	323	99.38	0.62	0.96	0.62
HS	ind1	4	300	99.00	1.00	0.99	1.00
HS	ind2	4	286	98.95	1.05	0.99	1.40
HS	ind3	4	293	98.63	1.37	0.99	1.37
HS	sk1	4	300	99.67	0.33	0.99	0.67
HS	sk2	4	286	99.30	0.70	0.97	0.70
HS	sk3	4	293	99.32	0.68	0.98	0.68
HS	comp1	5	332	98.19	1.81	0.91	2.41
HS	comp2	5	326	99.08	0.92	0.95	0.92
HS	comp3	5	323	99.38	0.62	0.96	0.62
HS	ind1	4	300	99.00	1.00	0.99	1.00
HS	ind2	4	286	98.95	1.05	0.99	1.40
HS	ind3	4	293	98.63	1.37	0.99	1.37
HS	sk1	4	300	99.67	0.33	0.99	0.67
HS	sk2	4	286	99.30	0.70	0.97	0.70
HS	sk3	4	293	99.32	0.68	0.98	0.68

Table G-12. Item-Level Interrater Consistency Statistics—Alt/Introductory Physics

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score
HS	comp1	5	54	100.00	0.00	1.00	0.00
HS	comp2	5	52	100.00	0.00	1.00	0.00
HS	comp3	5	51	100.00	0.00	1.00	0.00
HS	ind1	4	48	97.92	2.08	0.98	2.08
HS	ind2	4	47	95.74	2.13	0.91	4.26
HS	ind3	4	46	97.83	2.17	0.98	2.17
HS	sk1	4	48	100.00	0.00	1.00	0.00
HS	sk2	4	47	100.00	0.00	1.00	2.13
HS	sk3	4	46	100.00	0.00	1.00	0.00
HS	comp1	5	54	100.00	0.00	1.00	0.00
HS	comp2	5	52	100.00	0.00	1.00	0.00
HS	comp3	5	51	100.00	0.00	1.00	0.00
HS	ind1	4	48	97.92	2.08	0.98	2.08
HS	ind2	4	47	95.74	2.13	0.91	4.26
HS	ind3	4	46	97.83	2.17	0.98	2.17
HS	sk1	4	48	100.00	0.00	1.00	0.00
HS	sk2	4	47	100.00	0.00	1.00	2.13
HS	sk3	4	46	100.00	0.00	1.00	0.00

Table G-13. Item-Level Interrater Consistency Statistics—Alt/Civics

Grade	Item	Number of Score Categories	Number of Responses Scored Twice	Percent Exact	Percent Adjacent	Correlation	% Third Score
8	comp1	5	288	98.61	1.39	0.90	1.39
8	ind1	4	229	97.38	2.18	0.97	3.06
8	sk1	4	229	99.13	0.87	0.98	2.18

Table G-14. Item-level Validity Statistics—ELA Grade 3

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
EL311063921	CONV	4	N	10,289	2,776	2,814	1,466	3,233	N/A	N/A
EL311063921	CONV	4	Percent	0.73	26.98	27.35	14.25	31.42	N/A	N/A
EL311063921	DEV	5	N	9,471	2,847	2,779	1,542	1,598	705	N/A
EL311063921	DEV	5	Percent	0.68	30.06	29.34	16.28	16.87	7.44	N/A

Table G-15. Item-level Validity Statistics—ELA Grade 4

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
EL208631509	CONV	4	N	9,238	1,355	3,574	1,942	2,367	N/A	N/A
EL208631509	CONV	4	Percent	0.71	14.67	38.69	21.02	25.62	N/A	N/A
EL208631509	DEV	5	N	8,942	1,399	3,658	1,998	1,026	861	N/A
EL208631509	DEV	5	Percent	0.68	15.65	40.91	22.34	11.47	9.63	N/A

Table G-16. Item-level Validity Statistics—ELA Grade 5

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
EL307267042	CONV	4	N	5,269	904	1,292	1,340	1,733	N/A	N/A
EL307267042	CONV	4	Percent	0.68	17.16	24.52	25.43	32.89	N/A	N/A
EL307267042	DEV	5	N	5,036	834	1,406	1,437	723	636	N/A
EL307267042	DEV	5	Percent	0.65	16.56	27.92	28.53	14.36	12.63	N/A
EL736478825	CONV	4	N	7,191	1,434	2,488	1,543	1,726	N/A	N/A
EL736478825	CONV	4	Percent	0.80	19.94	34.60	21.46	24.00	N/A	N/A
EL736478825	DEV	5	N	6,267	1,436	2,379	1,427	817	208	N/A
EL736478825	DEV	5	Percent	0.69	22.91	37.96	22.77	13.04	3.32	N/A

Table G-17. Item-level Validity Statistics—ELA Grade 6

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
EL314484549	CONV	4	N	10,587	1,037	1,896	2,449	5,205	N/A	N/A
EL314484549	CONV	4	Percent	0.78	9.80	17.91	23.13	49.16	N/A	N/A
EL314484549	DEV	6	N	9,528	1,354	1,640	2,556	1,775	980	1,223
EL314484549	DEV	6	Percent	0.70	14.21	17.21	26.83	18.63	10.29	12.84
EL315605273	CONV	4	N	6,546	1,037	1,391	1,439	2,679	N/A	N/A
EL315605273	CONV	4	Percent	0.74	15.84	21.25	21.98	40.93	N/A	N/A
EL315605273	DEV	6	N	5,700	1,216	1,336	1,437	787	601	323
EL315605273	DEV	6	Percent	0.64	21.33	23.44	25.21	13.81	10.54	5.67

Table G-18. Item-level Validity Statistics—ELA Grade 7

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
EL306400886	CONV	4	N	4,277	641	980	1,118	1,538	N/A	N/A
EL306400886	CONV	4	Percent	0.83	14.99	22.91	26.14	35.96	N/A	N/A
EL306400886	DEV	6	N	3,671	632	950	1,107	569	413	N/A
EL306400886	DEV	6	Percent	0.71	17.22	25.88	30.16	15.50	11.25	N/A
EL912346409	CONV	4	N	3,502	610	978	841	1,073	N/A	N/A
EL912346409	CONV	4	Percent	0.85	17.42	27.93	24.01	30.64	N/A	N/A
EL912346409	DEV	6	N	3,206	561	1,016	797	468	364	N/A
EL912346409	DEV	6	Percent	0.78	17.50	31.69	24.86	14.60	11.35	N/A

Table G-19. Item-level Validity Statistics—ELA Grade 8

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
EL206813674	CONV	4	N	5,867	784	1,303	1,323	2,457	N/A	N/A
EL206813674	CONV	4	Percent	0.75	13.36	22.21	22.55	41.88	N/A	N/A
EL206813674	DEV	6	N	4,824	805	1,284	1,283	650	479	323
EL206813674	DEV	6	Percent	0.61	16.69	26.62	26.60	13.47	9.93	6.70
EL306640647	CONV	4	N	6,317	1,065	1,337	1,628	2,287	N/A	N/A
EL306640647	CONV	4	Percent	0.75	16.86	21.17	25.77	36.20	N/A	N/A
EL306640647	DEV	6	N	5,437	1,117	1,346	1,518	960	496	N/A
EL306640647	DEV	6	Percent	0.65	20.54	24.76	27.92	17.66	9.12	N/A

Table G-20. Item-level Validity Statistics—ELA Grade 10

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
EL309540902	CONV	4	N	3,274	269	235	305	2,465	N/A	N/A
EL309540902	CONV	4	Percent	0.92	8.22	7.18	9.32	75.29	N/A	N/A
EL309540902	DEV	6	N	2,501	270	238	313	644	556	480
EL309540902	DEV	6	Percent	0.70	10.80	9.52	12.51	25.75	22.23	19.19
EL310944009	CONV	4	N	3,431	478	302	721	1,930	N/A	N/A
EL310944009	CONV	4	Percent	0.88	13.93	8.80	21.01	56.25	N/A	N/A
EL310944009	DEV	6	N	2,901	478	306	715	706	354	342
EL310944009	DEV	6	Percent	0.75	16.48	10.55	24.65	24.34	12.20	11.79

Note: Although the maximum score for Idea Development trait of item EL205357541 was 5, none of the 5-point responses were selected to be in the validity set due to the item's extreme difficulty.

Table G-21. Item-level Validity Statistics—ELA (CR) Grade Levels 3 and 4

Grade	UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3
3	EL305885122	Overall	4	N	6,568	1,749	1,628	2,162	1,029
3	EL305885122	Overall	4	Percent	0.80	26.63	24.79	32.92	15.67
4	EL307375298	Overall	4	N	3,247	0	1,122	1,033	1,092
4	EL307375298	Overall	4	Percent	0.77	0.00	34.55	31.81	33.63

Table G-22. Item-level Validity Statistics—Mathematics Grade 3

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
MA134930940	Overall	4	N	7,170	1,402	1,460	2,225	2,083	N/A
MA134930940	Overall	4	Percent	0.93	19.55	20.36	31.03	29.05	N/A
MA260584A	Overall	4	N	2,984	596	487	875	1,026	N/A
MA260584A	Overall	4	Percent	0.91	19.97	16.32	29.32	34.38	N/A
MA261857A	Overall	4	N	6,446	1,595	1,373	1,047	2,431	N/A
MA261857A	Overall	4	Percent	0.90	24.74	21.30	16.24	37.71	N/A
MA735951978	Overall	4	N	6,519	2,295	0	2,222	2,002	N/A
MA735951978	Overall	4	Percent	0.92	35.20	0.00	34.08	30.71	N/A

Table G-23. Item-level Validity Statistics—Mathematics Grade 4

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
MA231875780	Overall	5	N	6,677	1,096	972	1,093	1,789	1,727
MA231875780	Overall	5	Percent	0.91	16.41	14.56	16.37	26.79	25.86
MA303335	Overall	5	N	3,238	1,646	0	0	808	784
MA303335	Overall	5	Percent	0.81	50.83	0.00	0.00	24.95	24.21
MA800780887	Overall	5	N	2,234	450	462	481	424	417
MA800780887	Overall	5	Percent	0.83	20.14	20.68	21.53	18.98	18.67
MA803957909	Overall	5	N	5,501	1,086	1,030	1,007	1,096	1,282
MA803957909	Overall	5	Percent	0.85	19.74	18.72	18.31	19.92	23.30

Table G-24. Item-level Validity Statistics—Mathematics Grade 5

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
MA232642946	Overall	5	N	5,566	1,155	1,090	896	1,190	1,235
MA232642946	Overall	5	Percent	0.82	20.75	19.58	16.10	21.38	22.19
MA715102462	Overall	5	N	6,006	1,197	1,419	904	1,125	1,361
MA715102462	Overall	5	Percent	0.87	19.93	23.63	15.05	18.73	22.66
MA802371654	Overall	5	N	6,495	1,036	1,211	1,016	1,955	1,277
MA802371654	Overall	5	Percent	0.93	15.95	18.65	15.64	30.10	19.66
MA903746975	Overall	5	N	2,147	464	325	335	479	544
MA903746975	Overall	5	Percent	0.83	21.61	15.14	15.60	22.31	25.34

Table G-25. Item-level Validity Statistics—Mathematics Grade 6

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
MA233752432	Overall	5	N	3,017	606	612	493	592	714
MA233752432	Overall	5	Percent	0.91	20.09	20.29	16.34	19.62	23.67
MA287883	Overall	5	N	5,649	1,250	1,028	783	1,159	1,429
MA287883	Overall	5	Percent	0.82	22.13	18.20	13.86	20.52	25.30
MA800259417	Overall	5	N	6,107	1,143	979	1,263	1,172	1,550
MA800259417	Overall	5	Percent	0.89	18.72	16.03	20.68	19.19	25.38
MA900378821	Overall	5	N	6,306	979	1,460	1,177	1,409	1,281
MA900378821	Overall	5	Percent	0.92	15.52	23.15	18.66	22.34	20.31

Table G-26. Item-level Validity Statistics—Mathematics Grade 7

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
MA235900389	Overall	5	N	7,701	1,481	1,541	1,469	1,545	1,665
MA235900389	Overall	5	Percent	0.94	19.23	20.01	19.08	20.06	21.62
MA235905181	Overall	5	N	3,288	719	697	563	664	645
MA235905181	Overall	5	Percent	0.84	21.87	21.20	17.12	20.19	19.62

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
MA717248260	Overall	5	N	7,332	1,060	1,335	1,538	1,698	1,701
MA717248260	Overall	5	Percent	0.94	14.46	18.21	20.98	23.16	23.20
MA802907874	Overall	5	N	7,229	1,240	1,477	1,530	1,393	1,589
MA802907874	Overall	5	Percent	0.88	17.15	20.43	21.16	19.27	21.98

Table G-27. Item-level Validity Statistics—Mathematics Grade 8

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
MA203085405	Overall	5	N	7,398	1,283	1,399	1,213	1,559	1,944
MA203085405	Overall	5	Percent	0.91	17.34	18.91	16.40	21.07	26.28
MA236558384	Overall	5	N	6,794	1,241	996	974	1,363	2,220
MA236558384	Overall	5	Percent	0.80	18.27	14.66	14.34	20.06	32.68
MA311433	Overall	5	N	5,143	1,221	1,001	810	1,018	1,093
MA311433	Overall	5	Percent	0.79	23.74	19.46	15.75	19.79	21.25
MA800473031	Overall	5	N	7,654	1,474	1,185	1,682	1,514	1,799
MA800473031	Overall	5	Percent	0.87	19.26	15.48	21.98	19.78	23.50

Table G-28. Item-level Validity Statistics—Mathematics Grade 10

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4	Agreement by Score Point 5
MA135658812	Overall	5	N	9,528	1,672	2,614	1,233	1,682	2,327	MA135658812
MA135658812	Overall	5	Percent	0.93	17.55	27.43	12.94	17.65	24.42	MA135658812
MA315148	Overall	5	N	7,892	778	1,493	1,699	1,935	1,987	MA315148
MA315148	Overall	5	Percent	0.93	9.86	18.92	21.53	24.52	25.18	MA315148
MA315764	Overall	5	N	8,769	2,004	1,628	1,515	1,731	1,891	MA315764
MA315764	Overall	5	Percent	0.88	22.85	18.57	17.28	19.74	21.56	MA315764
MA713533558	Overall	5	N	9,754	1,640	2,461	1,610	2,013	2,030	MA713533558
MA713533558	Overall	5	Percent	0.90	16.81	25.23	16.51	20.64	20.81	MA713533558

Table G-29. Item-level Validity Statistics—STE Grades 5 & 8

Grade	UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3
5	SC803732869	Overall	3	N	8,797	3,867	4,930	N/A	N/A
5	SC803732869	Overall	3	Percent	0.99	43.96	56.04	N/A	N/A
5	SC630073628	Overall	3	N	5,233	1,347	2,438	1,448	N/A
5	SC630073628	Overall	3	Percent	0.93	25.74	46.59	27.67	N/A
5	SC317084	Overall	4	N	5,584	1,627	2,109	1,058	790
5	SC317084	Overall	4	Percent	0.87	29.14	37.77	18.95	14.15
5	SC630756792	Overall	4	N	4,714	1,385	1,273	1,070	986
5	SC630756792	Overall	4	Percent	0.88	29.38	27.00	22.70	20.92
5	SC802761427	Overall	4	N	3,963	1,380	934	1,012	637
5	SC802761427	Overall	4	Percent	0.86	34.82	23.57	25.54	16.07
5	SC903955996	Overall	4	N	5,236	1,211	1,139	1,797	1,089
5	SC903955996	Overall	4	Percent	0.94	23.13	21.75	34.32	20.80
8	SC816343670	Overall	3	N	6,368	2,664	3,704	N/A	N/A
8	SC816343670	Overall	3	Percent	0.94	41.83	58.17	N/A	N/A
8	SC631441791	Overall	3	N	6,261	1,804	2,417	2,040	N/A
8	SC631441791	Overall	3	Percent	0.96	28.81	38.60	32.58	N/A
8	SC005157586	Overall	4	N	4,765	863	1,523	844	1,535
8	SC005157586	Overall	4	Percent	0.81	18.11	31.96	17.71	32.21
8	SC290232	Overall	4	N	5,944	2,465	2,006	1,473	N/A
8	SC290232	Overall	4	Percent	0.95	41.47	33.75	24.78	N/A
8	SC809178849	Overall	4	N	5,377	945	1,659	1,138	1,635
8	SC809178849	Overall	4	Percent	0.91	17.57	30.85	21.16	30.41
8	SC809268358	Overall	4	N	5,675	980	2,254	863	1,578
8	SC809268358	Overall	4	Percent	0.88	17.27	39.72	15.21	27.81

Table G-30. Item-level Validity Statistics—Biology Grade 10

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
SC215151206	Overall	4	N	4,605	1,709	1,270	720	906	N/A
SC215151206	Overall	4	Percent	0.87	37.11	27.58	15.64	19.67	N/A
SC807830473	Overall	4	N	4,652	1,302	915	1,373	1,062	N/A
SC807830473	Overall	4	Percent	0.85	27.99	19.67	29.51	22.83	N/A
SC304044565	Overall	5	N	5,374	1,899	3,475	N/A	N/A	N/A
SC304044565	Overall	5	Percent	0.97	35.34	64.66	N/A	N/A	N/A
SC313503	Overall	5	N	5,137	1,244	787	939	866	1,301
SC313503	Overall	5	Percent	0.93	24.22	15.32	18.28	16.86	25.33
SC316277	Overall	5	N	4,407	1,092	1,397	900	472	546
SC316277	Overall	5	Percent	0.91	24.78	31.70	20.42	10.71	12.39

Table G-31. Item-level Validity Statistics—Introductory Physics Grade 10

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
SC128528990	Overall	4	N	1,168	601	187	184	196	N/A
SC128528990	Overall	4	Percent	0.91	51.46	16.01	15.75	16.78	N/A
SC735661218	Overall	4	N	1,275	410	505	360	N/A	N/A
SC735661218	Overall	4	Percent	0.95	32.16	39.61	28.24	N/A	N/A
SC304762	Overall	5	N	976	308	199	99	189	181
SC304762	Overall	5	Percent	0.82	31.56	20.39	10.14	19.36	18.55
SC313762	Overall	5	N	1,217	350	301	199	251	116
SC313762	Overall	5	Percent	0.89	28.76	24.73	16.35	20.62	9.53

Table G-32. Item-level Validity Statistics—Civics Grade 8

UIN	Trait	Ncat	Stat	Overall Exact Agreement	Agreement by Score Point 0	Agreement by Score Point 1	Agreement by Score Point 2	Agreement by Score Point 3	Agreement by Score Point 4
HI302448411	Overall	2	N	4,597	2,168	2,429	N/A	N/A	N/A
HI302448411	Overall	2	Percent	0.93	47.16	52.84	N/A	N/A	N/A
HI302459561	Overall	2	N	4,591	1,133	3,458	N/A	N/A	N/A
HI302459561	Overall	2	Percent	0.85	24.68	75.32	N/A	N/A	N/A
HI302638616	Overall	2	N	4,016	2,412	1,604	N/A	N/A	N/A
HI302638616	Overall	2	Percent	0.79	60.06	39.94	N/A	N/A	N/A
HI302641557	Overall	5	N	3,586	1,207	1,133	913	234	99
HI302641557	Overall	5	Percent	0.71	33.66	31.60	25.46	6.53	2.76

APPENDIX H
ITEM-LEVEL CLASSICAL STATISTICS

Table H-1. Item-Level Classical Test Theory Statistics—ELA Grade 3

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL305848619	MC	65,281	0.78	0.49	0
EL305848846	MC	65,281	0.51	0.43	0
EL305849356	MC	65,281	0.40	0.23	0
EL305855968	MC	65,281	0.70	0.38	0
EL305856828	MC	65,281	0.56	0.35	0
EL305857179	MC	65,281	0.71	0.44	0
EL305857557	MC	65,281	0.50	0.38	0
EL305867369	MC	65,281	0.59	0.55	0
EL305871854	MC	65,281	0.64	0.52	0
EL306536295	MC	65,281	0.75	0.56	0
EL306538230	MC	65,281	0.72	0.53	0
EL306542014	MC	65,281	0.45	0.46	0
EL306542408	MC	65,281	0.66	0.48	0
EL306542695	MC	65,281	0.43	0.49	0
EL306551827	MC	65,281	0.73	0.47	0
EL311051383	MC	65,280	0.70	0.41	0
EL311056839	MC	65,280	0.65	0.49	0
EL311058588	MC	65,280	0.50	0.38	0
EL311059365	MC	65,280	0.70	0.48	0
EL311132236	MC	65,280	0.80	0.47	0
EL311137156	MC	65,280	0.62	0.54	0
EL311155968	MC	65,280	0.69	0.42	0
EL311158115	MC	65,280	0.54	0.38	0
EL311160399	MC	65,280	0.61	0.47	0
EL305868518	OR	65,281	0.41	0.63	0
EL305871312	OR	65,281	0.63	0.44	0
EL305885122	OR	65,281	0.38	0.66	1
EL306539868	OR	65,281	0.39	0.57	0
EL311057786	OR	65,280	0.64	0.49	0
EL311078713	OR	65,280	0.50	0.59	0
EL311063921	WP	65,280	0.24	0.75	1

Table H-2. Item-Level Classical Test Theory Statistics—ELA Grade 4

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL208629059	MC	63,616	0.67	0.58	0
EL208629200	MC	63,616	0.64	0.54	0
EL208629667	MC	63,616	0.62	0.47	0
EL208629781	MC	63,616	0.68	0.47	0
EL208630729	MC	63,616	0.65	0.47	0
EL208631197	MC	63,616	0.64	0.37	0
EL208631698	MC	63,616	0.79	0.49	0
EL208632061	MC	63,616	0.85	0.54	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL208632192	MC	63,616	0.78	0.59	0
EL291009	MC	63,616	0.77	0.55	0
EL291015	MC	63,616	0.60	0.34	0
EL307283777	MC	63,616	0.52	0.44	0
EL307365872	MC	63,616	0.77	0.58	0
EL307370948	MC	63,616	0.63	0.43	0
EL307385093	MC	63,616	0.65	0.53	0
EL307400674	MC	63,616	0.70	0.56	0
EL307470135	MC	63,616	0.58	0.49	0
EL307500095	MC	63,616	0.63	0.44	0
EL307581198	MC	63,616	0.78	0.55	0
EL307583130	MC	63,616	0.58	0.30	0
EL909549145	MC	63,616	0.47	0.46	0
EL909550937	MC	63,616	0.43	0.50	0
EL912955945	MC	63,616	0.47	0.39	0
EL916346163	MC	63,616	0.82	0.51	0
EL208630869	OR	63,616	0.80	0.63	0
EL208631896	OR	63,616	0.77	0.50	0
EL291024	OR	63,616	0.38	0.58	0
EL307375298	OR	63,616	0.40	0.63	0
EL307485646	OR	63,616	0.55	0.67	0
EL307584265	OR	63,616	0.72	0.48	0
EL208631509	WP	63,616	0.35	0.75	1

Table H-3. Item-Level Classical Test Theory Statistics—ELA Grade 5

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL207164820	MC	64,896	0.57	0.47	0
EL207274050	MC	64,896	0.51	0.47	0
EL207278877	MC	64,896	0.90	0.45	0
EL207341702	MC	64,896	0.62	0.30	0
EL207342693	MC	64,896	0.62	0.31	0
EL207360230	MC	64,896	0.76	0.51	0
EL307061151	MC	64,896	0.68	0.49	0
EL307063923	MC	64,896	0.64	0.51	0
EL307077265	MC	64,896	0.62	0.40	0
EL307137436	MC	64,896	0.32	0.28	0
EL307138100	MC	64,896	0.91	0.42	0
EL307153223	MC	64,896	0.74	0.50	0
EL307175118	MC	64,896	0.84	0.54	0
EL307249807	MC	64,896	0.78	0.52	0
EL307253066	MC	64,896	0.84	0.53	0
EL736467737	MC	64,896	0.79	0.35	0
EL736469533	MC	64,896	0.47	0.38	0
EL736469872	MC	64,896	0.75	0.54	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL736470482	MC	64,896	0.49	0.40	0
EL736471910	MC	64,896	0.71	0.41	0
EL736472217	MC	64,896	0.65	0.37	0
EL736473790	MC	64,896	0.51	0.46	0
EL736474369	MC	64,896	0.63	0.36	0
EL827627427	MC	64,896	0.37	0.32	0
EL207277420	OR	64,896	0.40	0.48	0
EL307156922	OR	64,896	0.74	0.57	0
EL307176181	OR	64,896	0.54	0.60	0
EL736475157	OR	64,896	0.36	0.38	0
EL736477190	OR	64,896	0.38	0.52	0
EL307267042	WP	64,896	0.48	0.81	0
EL736478825	WP	64,896	0.39	0.81	0

Table H-4. Item-Level Classical Test Theory Statistics—ELA Grade 6

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL308558989	MC	65,385	0.63	0.42	0
EL308559785	MC	65,385	0.70	0.45	0
EL308576679	MC	65,385	0.57	0.47	0
EL308630437	MC	65,385	0.46	0.30	0
EL308672079	MC	65,385	0.75	0.56	0
EL312142482	MC	65,385	0.61	0.44	0
EL312978480	MC	65,385	0.67	0.52	0
EL312980576	MC	65,385	0.56	0.46	0
EL314063698	MC	65,385	0.56	0.45	0
EL314148707	MC	65,385	0.66	0.40	0
EL314158725	MC	65,385	0.53	0.27	0
EL314164847	MC	65,385	0.65	0.51	0
EL314429542	MC	65,385	0.59	0.37	0
EL314478387	MC	65,385	0.71	0.48	0
EL314482379	MC	65,385	0.40	0.34	0
EL315274742	MC	65,385	0.50	0.33	0
EL315278077	MC	65,385	0.79	0.47	0
EL315281344	MC	65,385	0.74	0.30	0
EL315301385	MC	65,385	0.62	0.49	0
EL315381843	MC	65,385	0.74	0.56	0
EL315462998	MC	65,385	0.63	0.48	0
EL315482249	MC	65,385	0.63	0.42	0
EL315486389	MC	65,385	0.56	0.56	0
EL319246845	MC	65,385	0.41	0.40	0
EL308553441	OR	65,385	0.78	0.63	0
EL314140609	OR	65,385	0.65	0.61	0
EL314379145	OR	65,385	0.48	0.49	0
EL315276310	OR	65,385	0.81	0.61	0
EL315300123	OR	65,385	0.70	0.57	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL314484549	WP	65,385	0.43	0.84	0
EL315605273	WP	65,385	0.46	0.84	0

Table H-5. Item-Level Classical Test Theory Statistics—ELA Grade 7

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL206078126	MC	65,411	0.61	0.50	0
EL206078710	MC	65,411	0.50	0.40	0
EL206079400	MC	65,411	0.56	0.52	0
EL213939721	MC	65,411	0.63	0.51	0
EL305230669	MC	65,411	0.65	0.48	0
EL305244758	MC	65,411	0.60	0.51	0
EL306347661	MC	65,411	0.77	0.47	0
EL306348894	MC	65,411	0.52	0.37	0
EL306443148	MC	65,411	0.78	0.57	0
EL306569606	MC	65,411	0.73	0.43	0
EL306571635	MC	65,411	0.76	0.46	0
EL306633578	MC	65,411	0.76	0.45	0
EL306636364	MC	65,411	0.74	0.50	0
EL306637041	MC	65,411	0.68	0.56	0
EL306637866	MC	65,411	0.63	0.55	0
EL912338456	MC	65,411	0.44	0.31	0
EL912344338	MC	65,411	0.70	0.43	0
EL912500351	MC	65,411	0.66	0.44	0
EL912501540	MC	65,411	0.77	0.56	0
EL912582905	MC	65,411	0.78	0.53	0
EL912620913	MC	65,411	0.54	0.36	0
EL912621697	MC	65,411	0.70	0.55	0
EL912622150	MC	65,411	0.75	0.49	0
EL912623426	MC	65,411	0.47	0.35	0
EL305250618	OR	65,411	0.52	0.57	0
EL306463000	OR	65,411	0.65	0.63	0
EL306568260	OR	65,411	0.40	0.46	0
EL912583971	OR	65,411	0.56	0.39	0
EL917655389	OR	65,411	0.52	0.51	0
EL306400886	WP	65,410	0.45	0.84	0
EL306400886	WP	65,410	0.45	0.84	1
EL912346409	WP	65,408	0.47	0.82	0

Table H-6. Item-Level Classical Test Theory Statistics—ELA Grade 8

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL206801492	MC	66,020	0.81	0.49	0
EL206802113	MC	66,020	0.82	0.44	0
EL206804483	MC	66,020	0.82	0.53	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL206804808	MC	66,020	0.69	0.39	0
EL206805580	MC	66,020	0.67	0.47	0
EL206806025	MC	66,020	0.78	0.39	0
EL206808101	MC	66,020	0.59	0.41	0
EL208447958	MC	66,020	0.55	0.35	0
EL208451039	MC	66,020	0.81	0.55	0
EL209839730	MC	66,020	0.54	0.38	0
EL209877427	MC	66,020	0.57	0.43	0
EL209878098	MC	66,020	0.72	0.52	0
EL209878664	MC	66,020	0.75	0.57	0
EL213257312	MC	66,020	0.58	0.56	0
EL215725121	MC	66,020	0.75	0.51	0
EL306531694	MC	66,020	0.64	0.31	0
EL306532662	MC	66,020	0.69	0.40	0
EL306541779	MC	66,020	0.36	0.35	0
EL306542147	MC	66,020	0.71	0.48	0
EL306543569	MC	66,020	0.59	0.51	0
EL306550178	MC	66,020	0.43	0.36	0
EL306557022	MC	66,020	0.69	0.41	0
EL306619088	MC	66,020	0.57	0.56	0
EL306620254	MC	66,020	0.53	0.55	0
EL206809440	OR	66,020	0.62	0.63	0
EL208451735	OR	66,020	0.73	0.58	0
EL209978403	OR	66,020	0.56	0.53	0
EL306633886	OR	66,020	0.77	0.58	0
EL306634908	OR	66,020	0.63	0.58	0
EL206813674	WP	66,020	0.50	0.83	1
EL306640647	WP	66,017	0.47	0.85	1

Table H-7. Item-Level Classical Test Theory Statistics—ELA Grade 10

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL205544338	MC	66,740	0.61	0.50	0
EL205552113	MC	66,740	0.41	0.42	0
EL217966607	MC	66,740	0.75	0.49	0
EL309353579	MC	66,740	0.74	0.44	0
EL309356890	MC	66,740	0.85	0.42	0
EL309933747	MC	66,740	0.48	0.34	0
EL309934830	MC	66,740	0.75	0.48	0
EL309977834	MC	66,740	0.65	0.50	0
EL310859962	MC	66,740	0.73	0.49	0
EL310873849	MC	66,740	0.74	0.48	0
EL310875497	MC	66,740	0.72	0.54	0
EL310876147	MC	66,740	0.68	0.41	0
EL310877056	MC	66,740	0.63	0.43	0
EL310878365	MC	66,740	0.75	0.50	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
EL313253353	MC	66,740	0.76	0.53	0
EL835262218	MC	66,740	0.82	0.58	0
EL835344655	MC	66,740	0.73	0.50	0
EL835360557	MC	66,740	0.55	0.35	0
EL835363668	MC	66,740	0.70	0.52	0
EL835364678	MC	66,740	0.67	0.51	0
EL903550122	MC	66,740	0.63	0.38	0
EL205447624	OR	66,740	0.56	0.54	0
EL309853912	OR	66,740	0.78	0.45	0
EL309875853	OR	66,740	0.79	0.57	0
EL310860887	OR	66,740	0.59	0.54	0
EL316441593	OR	66,740	0.82	0.56	0
EL835359413	OR	66,740	0.66	0.58	0
EL309540902	WP	66,738	0.59	0.85	2
EL310944009	WP	66,738	0.61	0.86	2

Table H-8. Item-Level Classical Test Theory Statistics—Mathematics Grade 3

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA001034206	MC	66,571	0.76	0.43	0
MA001336857	MC	66,571	0.71	0.46	0
MA134676677	MC	66,571	0.37	0.49	0
MA134830909	MC	66,571	0.27	0.50	0
MA134867959	MC	66,571	0.57	0.50	0
MA231152219	MC	66,571	0.52	0.46	0
MA231157499	MC	66,571	0.48	0.44	0
MA293459	MC	66,571	0.55	0.55	0
MA297412	MC	66,571	0.67	0.46	0
MA310834	MC	66,571	0.59	0.56	0
MA310842	MC	66,571	0.62	0.55	0
MA311274	MC	66,571	0.77	0.48	0
MA735665944	MC	66,571	0.58	0.55	0
MA735732140	MC	66,571	0.80	0.48	0
MA735734501	MC	66,571	0.71	0.44	0
MA735755736	MC	66,571	0.65	0.50	0
MA902374248	MC	66,571	0.57	0.49	0
MA902654429	MC	66,571	0.42	0.35	0
MA001137079	OR	66,571	0.59	0.62	0
MA001330803	OR	66,579	0.52	0.65	0
MA001631751	OR	66,571	0.73	0.56	0
MA002751340	OR	66,571	0.34	0.28	0
MA134872363	OR	66,571	0.53	0.62	0
MA134930940	OR	66,571	0.47	0.76	0
MA134940265	OR	66,571	0.77	0.46	0
MA134942387	OR	66,571	0.60	0.62	0
MA231230636	OR	66,571	0.58	0.55	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA260584A	OR	66,571	0.55	0.73	0
MA261857A	OR	66,571	0.46	0.77	0
MA297504	OR	66,571	0.62	0.47	0
MA310884	OR	66,571	0.54	0.64	0
MA703073138	OR	66,571	0.37	0.60	0
MA735754028	OR	66,571	0.74	0.64	0
MA735848960	OR	66,571	0.36	0.55	0
MA735951978	OR	66,571	0.38	0.75	0
MA736028646	OR	66,571	0.61	0.64	0
MA900371312	OR	66,571	0.64	0.57	0
MA900371363	OR	66,571	0.40	0.41	0
MA900573685	OR	66,571	0.59	0.62	0
MA935137496	OR	66,571	0.45	0.57	1

Table H-9. Item-Level Classical Test Theory Statistics—Mathematics Grade 4

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA136447421	MC	61,925	0.65	0.56	0
MA202029218	MC	61,925	0.64	0.35	0
MA232239522	MC	61,925	0.58	0.37	0
MA233049856	MC	61,925	0.53	0.50	0
MA233051799	MC	61,925	0.81	0.37	0
MA297984	MC	61,925	0.58	0.62	0
MA307075	MC	61,925	0.90	0.40	0
MA307314	MC	61,925	0.70	0.49	0
MA311543	MC	61,925	0.64	0.51	0
MA311554	MC	61,925	0.64	0.48	0
MA800763627	MC	61,925	0.50	0.63	0
MA900750340	MC	61,925	0.69	0.49	0
MA900754381	MC	61,925	0.46	0.58	0
MA000732007	OR	61,925	0.54	0.56	0
MA002162929	OR	61,925	0.43	0.46	0
MA010534486	OR	61,925	0.46	0.53	0
MA136448521	OR	61,925	0.49	0.61	0
MA200344609	OR	61,925	0.69	0.53	0
MA231836735	OR	61,925	0.56	0.65	0
MA231843918	OR	61,925	0.58	0.62	0
MA231875780	OR	61,925	0.56	0.77	0
MA232254177	OR	61,925	0.55	0.55	0
MA232261850	OR	61,925	0.78	0.46	0
MA232725235	OR	61,925	0.70	0.59	0
MA232909389	OR	61,925	0.46	0.57	0
MA232979874	OR	61,925	0.84	0.48	0
MA250533	OR	61,925	0.53	0.53	0
MA258228	OR	61,925	0.74	0.49	0
MA303317	OR	61,925	0.47	0.56	0
MA303335	OR	61,925	0.48	0.72	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA713677363	OR	61,925	0.72	0.58	0
MA800652951	OR	61,925	0.29	0.51	0
MA800750938	OR	61,925	0.50	0.75	0
MA800780887	OR	61,925	0.52	0.81	0
MA803957909	OR	61,925	0.40	0.72	0
MA900740880	OR	61,925	0.44	0.58	0
MA900741771	OR	61,925	0.55	0.60	0
MA900750085	OR	61,925	0.51	0.61	0
MA900751271	OR	61,925	0.62	0.46	0
MA900776517	OR	61,925	0.43	0.49	0

Table H-10. Item-Level Classical Test Theory Statistics—Mathematics Grade 5

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA000859040	MC	63,346	0.71	0.38	0
MA000952312	MC	63,346	0.54	0.42	0
MA000963503	MC	63,346	0.67	0.37	0
MA201552031	MC	63,346	0.62	0.34	0
MA202000453	MC	63,346	0.82	0.46	0
MA233233270	MC	63,346	0.50	0.39	0
MA282124	MC	63,346	0.56	0.32	0
MA298013	MC	63,346	0.80	0.52	0
MA298014	MC	63,346	0.81	0.50	0
MA306430	MC	63,346	0.51	0.60	0
MA311279	MC	63,346	0.64	0.55	0
MA704359445A	MC	63,346	0.48	0.39	0
MA801230425	MC	63,346	0.36	0.41	0
MA801654509	MC	63,346	0.53	0.54	0
MA900660071	MC	63,346	0.46	0.55	0
MA900662425	MC	63,346	0.65	0.43	0
MA900980248	MC	63,346	0.62	0.46	0
MA901137741	MC	63,346	0.53	0.43	0
MA904353319	MC	63,346	0.84	0.39	0
MA000846693	OR	63,346	0.49	0.60	0
MA000965213	OR	63,346	0.44	0.57	0
MA001060832	OR	63,346	0.52	0.54	0
MA001145679	OR	63,346	0.29	0.49	0
MA232642946	OR	63,346	0.39	0.81	0
MA233369406	OR	63,346	0.53	0.62	0
MA233458877	OR	63,346	0.36	0.56	0
MA311283	OR	63,346	0.69	0.53	0
MA704359624	OR	63,346	0.74	0.33	0
MA715102228	OR	63,346	0.41	0.62	0
MA715102462	OR	63,346	0.50	0.77	0
MA800662477	OR	63,346	0.29	0.47	0
MA801673695	OR	63,346	0.26	0.46	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA802302084	OR	63,346	0.45	0.57	0
MA802306160	OR	63,346	0.62	0.58	0
MA802371654	OR	63,346	0.51	0.77	0
MA900835182	OR	63,346	0.46	0.43	0
MA901364051	OR	63,346	0.32	0.49	0
MA903746975	OR	63,346	0.54	0.77	0
MA904453014	OR	63,346	0.59	0.54	0
MA935150419	OR	63,346	0.53	0.60	0

Table H-11. Item-Level Classical Test Theory Statistics—Mathematics Grade 6

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA135360248	MC	66,572	0.85	0.39	0
MA272290	MC	66,572	0.59	0.48	0
MA282127	MC	66,572	0.52	0.54	0
MA296377	MC	66,572	0.74	0.43	0
MA296382	MC	66,572	0.52	0.38	0
MA303705	MC	66,572	0.43	0.42	0
MA307250	MC	66,572	0.39	0.51	0
MA307363	MC	66,572	0.80	0.34	0
MA311652	MC	66,572	0.47	0.55	0
MA736452061	MC	66,572	0.39	0.53	0
MA736453104	MC	66,572	0.61	0.40	0
MA736454897	MC	66,572	0.48	0.31	0
MA805104566	MC	66,572	0.48	0.50	0
MA805111429	MC	66,572	0.58	0.40	0
MA900281418	MC	66,572	0.67	0.50	0
MA908142878	MC	66,572	0.40	0.35	0
MA001554177	OR	66,572	0.54	0.51	0
MA001556929	OR	66,572	0.77	0.55	0
MA001577731	OR	66,572	0.56	0.58	0
MA001603294	OR	66,572	0.77	0.57	0
MA002526793	OR	66,572	0.59	0.39	0
MA003477341	OR	66,572	0.54	0.64	0
MA233752432	OR	66,572	0.47	0.80	0
MA233849848	OR	66,572	0.43	0.66	0
MA287883	OR	66,572	0.38	0.79	0
MA307362	OR	66,572	0.68	0.62	0
MA703149512	OR	66,572	0.62	0.49	0
MA713677108	OR	66,572	0.39	0.58	0
MA736449649	OR	66,572	0.29	0.63	0
MA800203270	OR	66,572	0.36	0.75	0
MA800259417	OR	66,572	0.55	0.78	1
MA805109765	OR	66,572	0.48	0.47	0
MA805280133	OR	66,572	0.31	0.45	0
MA805280170	OR	66,572	0.60	0.56	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA805301630	OR	66,572	0.55	0.48	0
MA900378821	OR	66,572	0.47	0.78	0
MA900432715	OR	66,572	0.30	0.55	0
MA901737396	OR	66,572	0.43	0.56	0
MA902348152	OR	66,572	0.47	0.54	0
MA902761648	OR	66,572	0.37	0.41	0

Table H-12. Item-Level Classical Test Theory Statistics—Mathematics Grade 7

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA000971342	MC	66,545	0.48	0.56	0
MA001684984	MC	66,545	0.34	0.45	0
MA005200422	MC	66,545	0.53	0.32	0
MA005204778	MC	66,545	0.49	0.58	0
MA200144334	MC	66,545	0.71	0.44	0
MA200256305	MC	66,545	0.67	0.53	0
MA201106705	MC	66,545	0.49	0.48	0
MA234550897	MC	66,545	0.50	0.54	0
MA272764	MC	66,545	0.56	0.34	0
MA281422	MC	66,545	0.44	0.62	0
MA298180	MC	66,545	0.77	0.38	0
MA301838	MC	66,545	0.42	0.52	0
MA306595	MC	66,545	0.74	0.50	0
MA306624	MC	66,545	0.27	0.22	0
MA311074	MC	66,545	0.44	0.41	0
MA900552355	MC	66,545	0.57	0.49	0
MA900556478	MC	66,545	0.35	0.46	0
MA900566128	MC	66,545	0.28	0.42	0
MA900665080	MC	66,545	0.36	0.51	0
MA903153837	MC	66,545	0.41	0.36	0
MA904159889	MC	66,545	0.60	0.50	0
MA001178265	OR	66,545	0.28	0.60	0
MA001678587	OR	66,545	0.38	0.68	0
MA005077768	OR	66,545	0.52	0.63	0
MA201203484	OR	66,545	0.33	0.73	0
MA234551702	OR	66,545	0.31	0.53	0
MA234553959	OR	66,545	0.78	0.50	0
MA234555649	OR	66,545	0.57	0.59	0
MA234561626	OR	66,545	0.31	0.65	0
MA235900389	OR	66,545	0.40	0.77	0
MA235905181	OR	66,545	0.44	0.84	0
MA236233939	OR	66,545	0.72	0.53	0
MA703876323	OR	66,545	0.18	0.72	0
MA717248260	OR	66,545	0.38	0.79	1
MA801105441	OR	66,545	0.28	0.54	0
MA802907874	OR	66,545	0.32	0.82	1

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA900567252	OR	66,545	0.39	0.62	0
MA900739359	OR	66,545	0.49	0.64	0
MA900765087	OR	66,545	0.57	0.68	0
MA904001752	OR	66,545	0.31	0.30	0

Table H-13. Item-Level Classical Test Theory Statistics—Mathematics Grade 8

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA001736920	MC	67,102	0.58	0.46	0
MA002159196	MC	67,102	0.40	0.57	0
MA002178533	MC	67,102	0.51	0.53	0
MA002181298	MC	67,102	0.64	0.53	0
MA203023828	MC	67,102	0.84	0.43	0
MA228311	MC	67,102	0.77	0.52	0
MA235755845	MC	67,102	0.45	0.43	0
MA236476077	MC	67,102	0.83	0.50	0
MA264730	MC	67,102	0.61	0.52	0
MA301682	MC	67,102	0.59	0.42	0
MA301698	MC	67,102	0.63	0.55	0
MA306554	MC	67,102	0.64	0.56	0
MA307586	MC	67,102	0.53	0.49	0
MA307600	MC	67,102	0.52	0.32	0
MA311391	MC	67,102	0.62	0.27	0
MA800750287	MC	67,102	0.57	0.67	0
MA901143033	MC	67,102	0.55	0.46	0
MA001737758	OR	67,102	0.52	0.59	0
MA002170014	OR	67,102	0.58	0.63	0
MA003128642	OR	67,102	0.48	0.53	0
MA202726454	OR	67,102	0.54	0.57	0
MA202828823	OR	67,102	0.50	0.69	0
MA203016132	OR	67,102	0.61	0.60	0
MA203085405	OR	67,102	0.68	0.67	0
MA235753974	OR	67,102	0.38	0.60	0
MA236473688	OR	67,102	0.44	0.49	0
MA236558384	OR	67,102	0.45	0.85	1
MA301481	OR	67,102	0.31	0.70	1
MA311433	OR	67,102	0.39	0.81	1
MA704839576	OR	67,102	0.21	0.61	0
MA715919560	OR	67,102	0.24	0.59	0
MA715919661	OR	67,102	0.68	0.35	0
MA715919788	OR	67,102	0.39	0.64	0
MA800473031	OR	67,102	0.33	0.81	1
MA800659905	OR	67,102	0.30	0.47	0
MA800756470	OR	67,102	0.35	0.59	0
MA800880893	OR	67,102	0.57	0.60	0
MA804043870	OR	67,102	0.40	0.66	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA901253257	OR	67,102	0.41	0.45	0
MA902265010	OR	67,102	0.34	0.55	0

Table H-14. Item-Level Classical Test Theory Statistics—Mathematics Grade 10

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA234034252	MC	64,735	0.56	0.38	0
MA235955140	MC	64,735	0.60	0.51	0
MA287709	MC	64,735	0.60	0.49	0
MA287716	MC	64,735	0.54	0.45	0
MA299953	MC	64,735	0.41	0.43	0
MA302047	MC	64,735	0.63	0.50	0
MA303265	MC	64,735	0.54	0.48	0
MA303300	MC	64,735	0.49	0.42	0
MA311197	MC	64,735	0.78	0.31	0
MA311228	MC	64,735	0.51	0.66	0
MA311230	MC	64,735	0.35	0.51	0
MA315028	MC	64,735	0.37	0.38	0
MA315400	MC	64,735	0.62	0.48	0
MA315753	MC	64,735	0.57	0.38	0
MA717140290	MC	64,735	0.47	0.58	0
MA801034855	MC	64,735	0.64	0.44	0
MA801042840	MC	64,735	0.68	0.47	0
MA801334938	MC	64,735	0.49	0.40	0
MA805574374	MC	64,735	0.66	0.46	0
MA901763517	MC	64,735	0.70	0.52	0
MA000770030	OR	64,735	0.30	0.67	1
MA005265206	OR	64,735	0.25	0.50	1
MA135658812	OR	64,735	0.47	0.83	1
MA203003132	OR	64,735	0.78	0.47	0
MA234017413	OR	64,735	0.62	0.54	0
MA236067799	OR	64,735	0.42	0.65	0
MA236166660	OR	64,735	0.43	0.46	0
MA236479602	OR	64,735	0.67	0.59	0
MA300267574	OR	64,735	0.54	0.66	0
MA315148	OR	64,735	0.59	0.65	0
MA315764	OR	64,735	0.40	0.83	3
MA713342551	OR	64,735	0.49	0.70	0
MA713347617	OR	64,735	0.72	0.61	0
MA713533558	OR	64,735	0.48	0.82	1
MA713582599	OR	64,735	0.30	0.67	0
MA717138427	OR	64,735	0.41	0.52	0
MA718040994	OR	64,735	0.45	0.67	0
MA801361692	OR	64,735	0.45	0.68	0
MA804365582	OR	64,735	0.34	0.66	1
MA804365844	OR	64,735	0.40	0.39	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
MA805370994	OR	64,735	0.39	0.54	0
MA900685378	OR	64,735	0.34	0.45	0

Table H-15. Item-Level Classical Test Theory Statistics—STE Grade 5

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
SC000764661	MC	63,267	0.63	0.44	0
SC203074300	MC	63,267	0.66	0.47	0
SC235369264	MC	63,267	0.68	0.50	0
SC294532	MC	63,267	0.71	0.49	0
SC316044	MC	63,267	0.79	0.50	0
SC626948259	MC	63,267	0.36	0.33	0
SC630759730	MC	63,267	0.68	0.45	0
SC736164845	MC	63,267	0.63	0.47	0
SC803852672	MC	63,267	0.79	0.37	0
SC903951987	MC	63,267	0.50	0.31	0
SC903953756	MC	63,267	0.67	0.52	0
SC904133849	MC	63,267	0.77	0.35	0
SC000640828	OR	63,267	0.70	0.49	0
SC000876847	OR	63,267	0.69	0.49	0
SC136454529	OR	63,267	0.55	0.44	0
SC630073628	OR	63,267	0.35	0.59	0
SC630756792	OR	63,267	0.46	0.69	1
SC803837124	OR	63,267	0.53	0.52	0
SC803868033	OR	63,267	0.65	0.48	0
SC903955996	OR	63,267	0.32	0.63	0
SC904464623	OR	63,267	0.49	0.48	0

Table H-16. Item-Level Classical Test Theory Statistics—STE Grade 8

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
SC005158817	MC	65,045	0.74	0.44	0
SC005234987	MC	65,045	0.73	0.40	0
SC235851162	MC	65,045	0.38	0.32	0
SC236056450	MC	65,045	0.64	0.48	0
SC310225	MC	65,045	0.82	0.40	0
SC310259	MC	65,045	0.62	0.38	0
SC313164	MC	65,045	0.47	0.49	0
SC632364984	MC	65,045	0.68	0.52	0
SC735652274	MC	65,045	0.53	0.40	0
SC803663810	MC	65,045	0.64	0.40	0
SC807536360	MC	65,045	0.63	0.47	0
SC809260455	MC	65,045	0.80	0.29	0
SC005157586	OR	65,045	0.27	0.60	1
SC028742325	OR	65,045	0.38	0.40	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
SC234722341	OR	65,045	0.70	0.51	0
SC290232	OR	65,045	0.33	0.61	0
SC629172772	OR	65,045	0.54	0.39	1
SC631441791	OR	65,045	0.22	0.57	1
SC632262834	OR	65,045	0.56	0.51	0
SC735555129	OR	65,045	0.57	0.59	0
SC803856089	OR	65,045	0.66	0.45	0

Table H-17. Item-Level Classical Test Theory Statistics—HS Biology

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
SC273277	MC	53,961	0.49	0.52	0
SC283165	MC	53,961	0.55	0.48	0
SC285871	MC	53,961	0.43	0.39	0
SC299751	MC	53,961	0.44	0.38	0
SC301339	MC	53,961	0.71	0.57	0
SC301417	MC	53,961	0.62	0.41	0
SC304453	MC	53,961	0.52	0.48	0
SC310183	MC	53,961	0.65	0.56	0
SC313462	MC	53,961	0.52	0.37	0
SC313647864	MC	53,961	0.60	0.53	0
SC313775965	MC	53,961	0.45	0.29	0
SC316070	MC	53,961	0.48	0.25	0
SC316127	MC	53,961	0.48	0.28	0
SC316186	MC	53,961	0.74	0.56	0
SC705539594	MC	53,961	0.54	0.34	0
SC803676783	MC	53,961	0.45	0.49	0
SC809631595	MC	53,961	0.58	0.56	0
SC809632043	MC	53,961	0.57	0.55	0
SC809632443	MC	53,961	0.64	0.36	0
SC813555411	MC	53,961	0.45	0.36	0
SC022536444	OR	53,961	0.56	0.65	0
SC022537094	OR	53,961	0.43	0.40	0
SC022956393	OR	53,961	0.44	0.26	0
SC032851950	OR	53,961	0.58	0.54	0
SC132462129	OR	53,961	0.35	0.60	0
SC202747842	OR	53,961	0.44	0.50	0
SC204117869	OR	53,961	0.33	0.67	0
SC205249394	OR	53,961	0.50	0.59	0
SC205249709	OR	53,961	0.27	0.63	0
SC215151206	OR	53,961	0.32	0.76	2
SC301637585	OR	53,961	0.51	0.52	0
SC302444993	OR	53,961	0.58	0.71	0
SC304044565	OR	53,961	0.69	0.68	1
SC305137299	OR	53,961	0.53	0.48	0
SC305337032	OR	53,961	0.42	0.54	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
SC313503	OR	53,961	0.49	0.84	1
SC316277	OR	53,961	0.41	0.80	2
SC800243081	OR	53,961	0.47	0.51	0
SC802253753	OR	53,961	0.61	0.43	0
SC807830473	OR	53,961	0.40	0.74	2
SC813953505	OR	53,961	0.45	0.31	0
SC933144505	OR	53,961	0.56	0.31	1

Table H-18. Item-Level Classical Test Theory Statistics—HS Introductory Physics

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
SC029344173	MC	13,561	0.61	0.47	0
SC127360103	MC	13,561	0.66	0.47	0
SC130749907	MC	13,561	0.61	0.42	0
SC273135	MC	13,561	0.83	0.47	0
SC295885	MC	13,561	0.64	0.53	0
SC302131904	MC	13,561	0.68	0.37	0
SC303343428	MC	13,561	0.61	0.52	0
SC305163500	MC	13,561	0.71	0.46	0
SC305461730	MC	13,561	0.68	0.55	0
SC305501	MC	13,561	0.75	0.35	0
SC305504	MC	13,561	0.69	0.52	0
SC310434	MC	13,561	0.55	0.46	0
SC313672	MC	13,561	0.82	0.51	0
SC316289	MC	13,561	0.61	0.44	0
SC628513718	MC	13,561	0.78	0.43	0
SC629681083	MC	13,561	0.59	0.66	0
SC630653346	MC	13,561	0.68	0.57	0
SC736327508	MC	13,561	0.55	0.45	0
SC810272597	MC	13,561	0.79	0.53	0
SC814180537	MC	13,561	0.73	0.35	0
SC820044690	MC	13,561	0.58	0.53	0
SC820050431	MC	13,561	0.63	0.58	0
SC906053804	MC	13,561	0.50	0.21	0
SC907058376	MC	13,561	0.64	0.48	0
SC933947035	MC	13,561	0.75	0.54	0
SC025253398	OR	13,561	0.45	0.40	0
SC128528990	OR	13,561	0.26	0.74	2
SC131241174	OR	13,561	0.43	0.44	0
SC131333379	OR	13,561	0.39	0.48	0
SC279735	OR	13,561	0.41	0.83	2
SC302132452	OR	13,561	0.48	0.40	0
SC304762	OR	13,561	0.31	0.81	2
SC311054718	OR	13,561	0.62	0.64	0
SC313762	OR	13,561	0.32	0.84	3
SC735655999	OR	13,561	0.58	0.53	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
SC735658699	OR	13,561	0.48	0.41	0
SC735659465	OR	13,561	0.49	0.49	0
SC735661218	OR	13,561	0.47	0.81	1
SC811054307	OR	13,561	0.45	0.36	0
SC815577681	OR	13,561	0.55	0.59	0
SC903731091	OR	13,561	0.65	0.52	0
SC931324297	OR	13,561	0.64	0.54	0
SC934340508	OR	13,561	0.59	0.61	0

Table H-19. Item-Level Classical Test Theory Statistics—Civics Grade 8

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
HI001342958	MC	66,713	0.67	0.51	0
HI004220689	MC	66,713	0.51	0.36	0
HI010638002	MC	66,713	0.62	0.65	0
HI011538533	MC	66,713	0.56	0.40	0
HI107834918	MC	66,713	0.61	0.56	0
HI118025781	MC	66,713	0.85	0.34	0
HI126448659	MC	66,713	0.58	0.50	0
HI207359139	MC	66,713	0.73	0.43	0
HI207377455	MC	66,713	0.50	0.44	0
HI216063209	MC	66,713	0.35	0.52	0
HI216662888	MC	66,713	0.66	0.52	0
HI216668760	MC	66,713	0.66	0.52	0
HI218474160	MC	66,713	0.38	0.48	0
HI218481146	MC	66,713	0.69	0.57	0
HI218880528	MC	66,713	0.38	0.38	0
HI302458864	MC	66,713	0.32	0.47	0
HI302637592	MC	66,713	0.79	0.45	0
HI302639066	MC	66,713	0.38	0.28	0
HI327749858	MC	66,713	0.37	0.47	0
HI001342134	OR	66,713	0.48	0.32	0
HI011534622	OR	66,713	0.46	0.32	0
HI108137736	OR	66,713	0.52	0.54	0
HI117433319	OR	66,713	0.38	0.53	0
HI117545966	OR	66,713	0.85	0.51	0
HI124225526	OR	66,713	0.40	0.65	0
HI124425859	OR	66,713	0.55	0.65	0
HI126741025	OR	66,713	0.45	0.59	0
HI206840441	OR	66,713	0.53	0.70	0
HI207359724	OR	66,713	0.67	0.26	0
HI211861158	OR	66,713	0.68	0.48	0
HI216136172	OR	66,713	0.64	0.30	0
HI218454161	OR	66,713	0.68	0.48	0
HI218857629	OR	66,713	0.56	0.54	0
HI218882775	OR	66,713	0.29	0.42	0

Item Number	Item Type	N	Difficulty	Discrimination	Percent Omitted (%)
HI302439531	OR	66,713	0.77	0.47	0
HI302442143	OR	66,713	0.80	0.45	0
HI302446675	OR	66,713	0.72	0.44	0
HI302448411	OR	66,713	0.26	0.48	1
HI302457297	OR	66,713	0.44	0.44	0
HI302459561	OR	66,713	0.65	0.52	1
HI302638616	OR	66,713	0.38	0.48	1
HI302641557	OR	66,713	0.33	0.69	2
HI311158165	OR	66,713	0.87	0.45	0

Table H-20. Item-Level Classical Test Theory Statistics—Alt/ELA

Grade	Item Number	Item Type	N	Difficulty	Discrimination
3	comp1	OR	884	0.59	0.35
3	comp2	OR	884	0.59	0.37
3	comp3	OR	884	0.58	0.45
3	ind1	OR	842	0.94	0.48
3	ind2	OR	835	0.92	0.50
3	ind3	OR	858	0.84	0.42
3	sk1	OR	842	0.96	0.37
3	sk2	OR	835	0.95	0.39
3	sk3	OR	858	0.40	0.45
4	comp1	OR	828	0.59	0.28
4	comp2	OR	828	0.59	0.23
4	comp3	OR	828	0.58	0.36
4	ind1	OR	804	0.93	0.55
4	ind2	OR	794	0.92	0.53
4	ind3	OR	802	0.84	0.51
4	sk1	OR	804	0.97	0.28
4	sk2	OR	794	0.96	0.37
4	sk3	OR	802	0.44	0.49
5	comp1	OR	732	0.59	0.37
5	comp2	OR	732	0.59	0.35
5	comp3	OR	732	0.58	0.42
5	ind1	OR	696	0.94	0.50
5	ind2	OR	699	0.92	0.53
5	ind3	OR	710	0.85	0.47
5	sk1	OR	696	0.96	0.36
5	sk2	OR	699	0.95	0.33
5	sk3	OR	710	0.46	0.50
6	comp1	OR	801	0.59	0.32
6	comp2	OR	801	0.59	0.30

Grade	Item Number	Item Type	N	Difficulty	Discrimination
6	comp3	OR	801	0.59	0.34
6	ind1	OR	768	0.94	0.49
6	ind2	OR	759	0.93	0.48
6	ind3	OR	769	0.85	0.45
6	sk1	OR	768	0.96	0.35
6	sk2	OR	759	0.95	0.35
6	sk3	OR	769	0.47	0.47
7	comp1	OR	720	0.59	0.29
7	comp2	OR	720	0.59	0.31
7	comp3	OR	720	0.59	0.36
7	ind1	OR	686	0.94	0.48
7	ind2	OR	687	0.92	0.53
7	ind3	OR	698	0.85	0.47
7	sk1	OR	686	0.96	0.37
7	sk2	OR	687	0.95	0.33
7	sk3	OR	698	0.48	0.38
8	comp1	OR	640	0.59	0.34
8	comp2	OR	640	0.59	0.35
8	comp3	OR	640	0.58	0.41
8	ind1	OR	611	0.94	0.49
8	ind2	OR	604	0.93	0.45
8	ind3	OR	609	0.86	0.43
8	sk1	OR	611	0.96	0.30
8	sk2	OR	604	0.95	0.33
8	sk3	OR	609	0.49	0.42
HS	comp1	OR	677	0.59	0.27
HS	comp2	OR	677	0.59	0.26
HS	comp3	OR	677	0.58	0.30
HS	ind1	OR	652	0.94	0.45
HS	ind2	OR	650	0.94	0.46
HS	ind3	OR	655	0.86	0.49
HS	sk1	OR	652	0.95	0.36
HS	sk2	OR	650	0.94	0.37
HS	sk3	OR	655	0.51	0.52

Table H-21. Item-Level Classical Test Theory Statistics—Alt/Mathematics

Grade	Item Number	Item Type	N	Difficulty	Discrimination
3	comp1	OR	769	0.59	0.44
3	comp5	OR	769	0.59	0.45
3	ind1	OR	769	0.91	0.73
3	ind5	OR	769	0.92	0.73

Grade	Item Number	Item Type	N	Difficulty	Discrimination
3	sk1	OR	769	0.96	0.49
3	sk5	OR	769	0.95	0.52
4	comp1	OR	708	0.59	0.40
4	comp3	OR	708	0.59	0.43
4	ind1	OR	708	0.90	0.78
4	ind3	OR	708	0.92	0.76
4	sk1	OR	708	0.97	0.46
4	sk3	OR	708	0.96	0.50
5	comp2	OR	630	0.59	0.49
5	comp3	OR	630	0.59	0.57
5	ind2	OR	630	0.92	0.72
5	ind3	OR	630	0.92	0.74
5	sk2	OR	630	0.96	0.53
5	sk3	OR	630	0.96	0.51
6	comp2	OR	728	0.59	0.54
6	comp5	OR	728	0.59	0.50
6	ind2	OR	728	0.92	0.72
6	ind5	OR	728	0.92	0.73
6	sk2	OR	728	0.96	0.51
6	sk5	OR	728	0.96	0.53
7	comp1	OR	635	0.59	0.51
7	comp4	OR	635	0.59	0.51
7	ind1	OR	635	0.93	0.74
7	ind4	OR	635	0.94	0.72
7	sk1	OR	635	0.96	0.54
7	sk4	OR	635	0.96	0.56
8	comp2	OR	549	0.59	0.47
8	comp4	OR	549	0.59	0.49
8	ind2	OR	549	0.91	0.73
8	ind4	OR	549	0.93	0.70
8	sk2	OR	549	0.96	0.52
8	sk4	OR	549	0.95	0.54
HS	comp1	OR	160	0.59	0.26
HS	comp2	OR	540	0.59	0.24
HS	comp3	OR	427	0.59	0.16
HS	comp4	OR	499	0.58	0.26
HS	comp5	OR	354	0.59	0.23
HS	ind1	OR	155	0.92	0.57
HS	ind2	OR	516	0.94	0.51
HS	ind3	OR	407	0.94	0.53
HS	ind4	OR	477	0.92	0.48
HS	ind5	OR	323	0.93	0.48
HS	sk1	OR	155	0.96	0.51
HS	sk2	OR	516	0.96	0.42
HS	sk3	OR	407	0.96	0.38
HS	sk4	OR	477	0.95	0.42
HS	sk5	OR	323	0.96	0.37

Table H-22. Item-Level Classical Test Theory Statistics—Alt/STE

Grade	Item Number	Item Type	N	Difficulty	Discrimination
5	comp1	OR	699	0.59	0.39
5	comp2	OR	703	0.59	0.36
5	comp3	OR	696	0.59	0.34
5	comp4	OR	34	0.56	0.64
5	ind1	OR	683	0.83	0.66
5	ind2	OR	679	0.84	0.70
5	ind3	OR	681	0.83	0.67
5	ind4	OR	33	0.86	0.80
5	sk1	OR	683	0.97	0.28
5	sk2	OR	679	0.96	0.30
5	sk3	OR	681	0.96	0.26
5	sk4	OR	33	1.00	N/A
8	comp1	OR	599	0.59	0.28
8	comp2	OR	606	0.59	0.27
8	comp3	OR	579	0.58	0.29
8	comp4	OR	82	0.58	0.32
8	ind1	OR	586	0.84	0.61
8	ind2	OR	569	0.85	0.65
8	ind3	OR	564	0.86	0.60
8	ind4	OR	81	0.86	0.47
8	sk1	OR	586	0.96	0.33
8	sk2	OR	569	0.96	0.31
8	sk3	OR	564	0.96	0.26
8	sk4	OR	81	0.96	0.39

Table H-23. Item-Level Classical Test Theory Statistics—Alt/Biology

Grade	Item Number	Item Type	N	Difficulty	Discrimination
HS	comp1	OR	555	0.59	0.34
HS	comp2	OR	555	0.59	0.37
HS	comp3	OR	555	0.59	0.35
HS	ind1	OR	545	0.85	0.68
HS	ind2	OR	541	0.87	0.68
HS	ind3	OR	539	0.87	0.68
HS	sk1	OR	545	0.96	0.29
HS	sk2	OR	541	0.97	0.25
HS	sk3	OR	539	0.97	0.32

Table H-24. Item-Level Classical Test Theory Statistics—Alt/Introductory Physics

Grade	Item Number	Item Type	N	Difficulty	Discrimination
HS	comp1	OR	88	0.59	0.28
HS	comp2	OR	88	0.59	0.28
HS	comp3	OR	88	0.59	0.28
HS	ind1	OR	87	0.82	0.74
HS	ind2	OR	87	0.81	0.72
HS	ind3	OR	87	0.81	0.73
HS	sk1	OR	87	0.97	0.41
HS	sk2	OR	87	0.95	0.27
HS	sk3	OR	87	0.96	0.36

Difficulty and discrimination statistics cannot be reported for Alt/Introductory Physics because the sample size of students was too small in 2021.

Table H-25. Item-Level Classical Test Theory Statistics—Alt/Civics

Grade	Item Number	Item Type	N	Difficulty	Discrimination
8	comp1	OR	643	0.59	0.33
8	ind1	OR	643	0.85	0.85
8	sk1	OR	643	0.96	0.44

APPENDIX I
ITEM-LEVEL SCORE DISTRIBUTIONS

Table I-1. Item-Level Score Distributions for Polytomous Items—ELA

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
3	EL305868518	65,281	2	52	15	34	N/A	N/A	N/A
3	EL305871312	65,281	2	26	22	52	N/A	N/A	N/A
3	EL305885122	65,281	3	22	45	27	5	N/A	N/A
3	EL306539868	65,281	2	51	19	29	N/A	N/A	N/A
3	EL311057786	65,280	2	23	25	52	N/A	N/A	N/A
3	EL311063921#SCORE_TRAIT_Conv	65,280	3	40	37	17	5	N/A	N/A
3	EL311063921#SCORE_TRAIT_Ideadev	65,280	4	43	34	16	5	1	N/A
3	EL311078713	65,280	2	29	41	30	N/A	N/A	N/A
4	EL208630869	63,616	2	6	27	66	N/A	N/A	N/A
4	EL208631509#SCORE_TRAIT_Conv	63,616	3	24	40	25	10	N/A	N/A
4	EL208631509#SCORE_TRAIT_Ideadev	63,616	4	21	45	22	8	3	N/A
4	EL208631896	63,616	2	9	28	63	N/A	N/A	N/A
4	EL291024	63,616	2	54	16	30	N/A	N/A	N/A
4	EL307375298	63,616	3	20	45	27	8	N/A	N/A
4	EL307485646	63,616	2	30	29	40	N/A	N/A	N/A
4	EL307584265	63,616	2	21	15	64	N/A	N/A	N/A
5	EL207277420	64,896	2	54	11	35	N/A	N/A	N/A
5	EL307156922	64,896	2	10	32	57	N/A	N/A	N/A
5	EL307176181	64,896	2	43	6	51	N/A	N/A	N/A
5	EL307267042#SCORE_TRAIT_Conv	64,896	3	16	29	31	25	N/A	N/A
5	EL307267042#SCORE_TRAIT_Ideadev	64,896	4	11	34	30	19	5	N/A
5	EL736475157	64,896	2	48	32	20	N/A	N/A	N/A
5	EL736477190	64,896	2	52	21	27	N/A	N/A	N/A
5	EL736478825#SCORE_TRAIT_Conv	64,896	3	19	40	30	11	N/A	N/A
5	EL736478825#SCORE_TRAIT_Ideadev	64,896	4	24	31	30	11	4	N/A
6	EL308553441	65,385	2	14	17	69	N/A	N/A	N/A
6	EL314140609	65,385	2	24	22	54	N/A	N/A	N/A
6	EL314379145	65,385	2	30	43	27	N/A	N/A	N/A
6	EL314484549#SCORE_TRAIT_Conv	65,385	3	17	27	28	28	N/A	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
6	EL314484549#SCORE_TRAIT_Ideadev	65,385	5	17	27	27	18	9	1
6	EL315276310	65,385	2	16	6	78	N/A	N/A	N/A
6	EL315300123	65,385	2	15	31	54	N/A	N/A	N/A
6	EL315605273#SCORE_TRAIT_Conv	65,385	3	16	25	27	33	N/A	N/A
6	EL315605273#SCORE_TRAIT_Ideadev	65,385	5	16	25	25	20	12	2
7	EL305250618	65,411	2	21	52	26	N/A	N/A	N/A
7	EL306400886#SCORE_TRAIT_Conv	65,410	3	12	23	29	35	N/A	N/A
7	EL306400886#SCORE_TRAIT_Ideadev	65,410	5	13	28	32	23	4	0
7	EL306463000	65,411	2	25	20	55	N/A	N/A	N/A
7	EL306568260	65,411	2	41	40	20	N/A	N/A	N/A
7	EL912346409#SCORE_TRAIT_Conv	65,408	3	10	27	32	30	N/A	N/A
7	EL912346409#SCORE_TRAIT_Ideadev	65,408	5	8	29	27	26	9	0
7	EL912583971	65,411	2	15	59	26	N/A	N/A	N/A
7	EL917655389	65,411	2	46	4	50	N/A	N/A	N/A
8	EL206809440	66,020	2	35	7	58	N/A	N/A	N/A
8	EL206813674#SCORE_TRAIT_Conv	66,020	3	13	24	24	39	N/A	N/A
8	EL206813674#SCORE_TRAIT_Ideadev	66,020	5	12	23	23	22	18	1
8	EL208451735	66,020	2	12	31	57	N/A	N/A	N/A
8	EL209978403	66,020	2	35	18	47	N/A	N/A	N/A
8	EL306633886	66,020	2	15	15	70	N/A	N/A	N/A
8	EL306634908	66,020	2	22	30	48	N/A	N/A	N/A
8	EL306640647#SCORE_TRAIT_Conv	66,017	3	16	19	30	35	N/A	N/A
8	EL306640647#SCORE_TRAIT_Ideadev	66,017	5	16	20	28	24	12	0
10	EL205447624	66,740	2	22	43	35	N/A	N/A	N/A
10	EL309540902#SCORE_TRAIT_Conv	66,738	3	9	13	24	52	N/A	N/A
10	EL309540902#SCORE_TRAIT_Ideadev	66,738	5	9	13	24	24	21	7
10	EL309853912	66,740	2	8	28	64	N/A	N/A	N/A
10	EL309875853	66,740	2	6	31	63	N/A	N/A	N/A
10	EL310860887	66,740	2	33	15	51	N/A	N/A	N/A
10	EL310944009#SCORE_TRAIT_Conv	66,738	3	8	13	20	58	N/A	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
10	EL310944009#SCORE_TRAIT_Ideadev	66,738	5	8	14	20	24	26	7
10	EL316441593	66,740	2	5	26	69	N/A	N/A	N/A
10	EL835359413	66,740	2	27	14	59	N/A	N/A	N/A

Table I-2. Item-Level Score Distributions for Polytomous Items—Mathematics

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
3	MA134930940	66,571	3	26	24	34	16	N/A	N/A
3	MA260584A	66,571	3	16	25	36	23	N/A	N/A
3	MA261857A	66,571	3	27	26	24	22	N/A	N/A
3	MA735951978	66,571	3	39	23	20	17	N/A	N/A
4	MA231875780	61,925	4	9	20	26	27	17	N/A
4	MA303335	61,925	4	14	28	23	20	14	N/A
4	MA713677363	61,925	2	14	29	57	N/A	N/A	N/A
4	MA800750938	61,925	2	36	28	36	N/A	N/A	N/A
4	MA800780887	61,925	4	13	24	23	22	18	N/A
4	MA803957909	61,925	4	15	36	25	16	7	N/A
5	MA000965213	63,346	2	33	45	21	N/A	N/A	N/A
5	MA232642946	63,346	4	35	22	13	12	18	N/A
5	MA715102462	63,346	4	19	15	30	15	20	N/A
5	MA802306160	63,346	2	12	51	37	N/A	N/A	N/A
5	MA802371654	63,346	4	16	18	28	20	17	N/A
5	MA903746975	63,346	4	14	23	21	21	22	N/A
6	MA233752432	66,572	4	22	21	20	22	15	N/A
6	MA287883	66,572	4	41	14	12	15	18	N/A
6	MA800203270	66,572	2	50	26	23	N/A	N/A	N/A
6	MA800259417	66,572	4	16	15	20	28	20	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
6	MA805301630	66,572	2	37	16	47	N/A	N/A	N/A
6	MA900378821	66,572	4	11	38	19	17	15	N/A
7	MA235900389	66,545	4	20	30	26	16	8	N/A
7	MA235905181	66,545	4	13	41	19	13	14	N/A
7	MA703876323	66,545	2	76	11	13	N/A	N/A	N/A
7	MA717248260	66,545	4	21	34	20	17	7	N/A
7	MA802907874	66,545	4	40	19	21	8	10	N/A
7	MA900765087	66,545	2	15	54	30	N/A	N/A	N/A
8	MA203016132	67,102	2	22	34	44	N/A	N/A	N/A
8	MA203085405	67,102	4	4	11	20	35	30	N/A
8	MA236558384	67,102	4	25	27	12	13	23	N/A
8	MA311433	67,102	4	24	29	21	15	10	N/A
8	MA800473031	67,102	4	42	15	19	14	9	N/A
8	MA800880893	67,102	2	32	23	45	N/A	N/A	N/A
10	MA135658812	64,735	4	19	27	18	13	22	N/A
10	MA236067799	64,735	2	37	41	22	N/A	N/A	N/A
10	MA300267574	64,735	2	33	26	42	N/A	N/A	N/A
10	MA315148	64,735	4	5	14	33	34	13	N/A
10	MA315764	64,735	4	29	23	18	13	15	N/A
10	MA713347617	64,735	2	13	30	57	N/A	N/A	N/A
10	MA713533558	64,735	4	19	27	11	24	18	N/A
10	MA718040994	64,735	2	36	36	27	N/A	N/A	N/A
10	MA801361692	64,735	2	35	40	25	N/A	N/A	N/A
10	MA804365844	64,735	2	39	42	19	N/A	N/A	N/A

Table I-3. Item-Level Score Distributions for Polytomous Items—STE

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
5	SC136454529	63,267	2	26	38	37	N/A	N/A	N/A
5	SC317084	63,267	3	32	36	23	8	N/A	N/A
5	SC630073628	63,267	2	40	49	11	N/A	N/A	N/A
5	SC630756792	63,267	3	27	25	30	17	N/A	N/A
5	SC736074942	63,267	2	24	38	38	N/A	N/A	N/A
5	SC802761427	63,267	3	38	36	21	4	N/A	N/A
5	SC803732869	63,267	2	35	49	16	N/A	N/A	N/A
5	SC803844809	63,267	2	22	33	45	N/A	N/A	N/A
5	SC903955996	63,267	3	49	12	31	7	N/A	N/A
8	SC005157586	65,045	3	41	40	14	4	N/A	N/A
8	SC204136839	65,045	2	23	38	38	N/A	N/A	N/A
8	SC290232	65,045	3	36	37	17	10	N/A	N/A
8	SC631441791	65,045	2	63	27	9	N/A	N/A	N/A
8	SC632262834	65,045	2	23	42	35	N/A	N/A	N/A
8	SC804132888	65,045	2	19	25	56	N/A	N/A	N/A
8	SC809178849	65,045	3	25	57	11	6	N/A	N/A
8	SC809268358	65,045	3	25	63	8	3	N/A	N/A
8	SC816343670	65,045	2	19	38	42	N/A	N/A	N/A

Table I-4. Item-Level Score Distributions for Polytomous Items—Biology

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
10	SC032851950	53,961	2	20	43	37	N/A	N/A	N/A
10	SC204117869	53,961	2	52	30	18	N/A	N/A	N/A
10	SC215151206	53,961	3	37	34	19	8	N/A	N/A
10	SC302444993	53,961	2	23	39	39	N/A	N/A	N/A
10	SC304044565	53,961	2	17	27	56	N/A	N/A	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
10	SC305137299	53,961	2	25	43	31	N/A	N/A	N/A
10	SC313503	53,961	4	23	17	17	26	17	N/A
10	SC316277	53,961	4	20	27	26	16	9	N/A
10	SC802253753	53,961	2	13	53	34	N/A	N/A	N/A
10	SC807830473	53,961	3	32	27	27	13	N/A	N/A

Table I-5. Item-Level Score Distributions for Polytomous Items—Introductory Physics

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
10	SC128528990	13,561	3	49	25	17	6	N/A	N/A
10	SC131241174	13,561	2	34	47	19	N/A	N/A	N/A
10	SC279735	13,561	4	19	36	14	16	12	N/A
10	SC302132452	13,561	2	16	73	11	N/A	N/A	N/A
10	SC304762	13,561	4	38	22	18	14	6	N/A
10	SC313762	13,561	4	33	28	16	14	6	N/A
10	SC735661218	13,561	3	27	21	30	20	N/A	N/A
10	SC811054307	13,561	2	28	53	19	N/A	N/A	N/A
10	SC815577681	13,561	2	26	37	37	N/A	N/A	N/A

Table I-6. Item-Level Score Distributions for Polytomous Items—Civics

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
8	HI117433319	66,713	2	42	41	17	N/A	N/A	N/A
8	HI124225526	66,713	2	43	34	23	N/A	N/A	N/A
8	HI124425859	66,713	2	23	45	32	N/A	N/A	N/A
8	HI206840441	66,713	2	31	31	37	N/A	N/A	N/A
8	HI302641557	66,713	4	28	29	26	11	5	N/A

Table I-7. Item-Level Score Distributions—Alt/ELA

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
3	comp1	884	5	0.00	0.00	3.73	96.27	0.00	0.00
3	comp2	884	5	0.00	0.00	5.77	94.23	0.00	0.00
3	comp3	884	5	0.00	0.00	11.65	88.35	0.00	0.00
3	gp1	884	2	0.00	36.20	63.80	N/A	N/A	N/A
3	gp2	884	2	0.00	53.73	46.27	N/A	N/A	N/A
3	gp3	884	2	0.00	0.11	99.89	N/A	N/A	N/A
3	ind1	884	4	4.75	0.68	3.73	15.16	75.68	N/A
3	ind2	884	4	5.54	2.26	3.73	14.82	73.64	N/A
3	ind3	884	4	2.94	3.62	10.52	28.51	54.41	N/A
3	se1	884	2	1.13	1.13	97.74	N/A	N/A	N/A
3	se2	884	2	0.90	1.02	98.08	N/A	N/A	N/A
3	se3	884	2	1.47	0.34	98.19	N/A	N/A	N/A
3	sk1	884	4	4.75	0.11	1.58	12.67	80.88	N/A
3	sk2	884	4	5.54	0.45	1.58	14.48	77.94	N/A
3	sk3	884	4	2.94	52.38	31.56	12.33	0.79	N/A
4	comp1	828	5	0.00	0.00	3.38	96.62	0.00	0.00
4	comp2	828	5	0.00	0.00	4.23	95.77	0.00	0.00
4	comp3	828	5	0.00	0.00	10.39	89.61	0.00	0.00
4	gp1	828	2	0.00	24.88	75.12	N/A	N/A	N/A
4	gp2	828	2	0.00	38.29	61.71	N/A	N/A	N/A
4	gp3	828	2	0.00	0.00	100.00	N/A	N/A	N/A
4	ind1	828	4	2.90	1.21	4.71	12.92	78.26	N/A
4	ind2	828	4	4.11	2.17	3.99	15.58	74.15	N/A
4	ind3	828	4	3.14	3.74	11.59	27.78	53.74	N/A
4	se1	828	2	0.60	0.00	99.40	N/A	N/A	N/A
4	se2	828	2	0.60	0.24	99.15	N/A	N/A	N/A
4	se3	828	2	0.48	0.48	99.03	N/A	N/A	N/A
4	sk1	828	4	2.90	0.12	0.72	8.94	87.32	N/A
4	sk2	828	4	4.11	0.00	2.17	11.35	82.37	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
4	sk3	828	4	3.14	44.69	33.45	17.15	1.57	N/A
5	comp1	732	5	0.00	0.00	3.42	96.58	0.00	0.00
5	comp2	732	5	0.00	0.00	3.96	96.04	0.00	0.00
5	comp3	732	5	0.00	0.00	9.15	90.85	0.00	0.00
5	gp1	732	2	0.00	28.28	71.72	N/A	N/A	N/A
5	gp2	732	2	0.00	41.80	58.20	N/A	N/A	N/A
5	gp3	732	2	0.00	0.27	99.73	N/A	N/A	N/A
5	ind1	732	4	4.92	1.37	2.87	14.21	76.64	N/A
5	ind2	732	4	4.51	0.82	6.15	15.16	73.36	N/A
5	ind3	732	4	3.01	3.96	9.84	27.60	55.60	N/A
5	se1	732	2	1.78	2.73	95.49	N/A	N/A	N/A
5	se2	732	2	1.37	2.87	95.77	N/A	N/A	N/A
5	se3	732	2	1.23	0.82	97.95	N/A	N/A	N/A
5	sk1	732	4	4.92	0.14	1.50	11.75	81.69	N/A
5	sk2	732	4	4.51	0.00	3.01	12.30	80.19	N/A
5	sk3	732	4	3.01	40.16	33.61	20.90	2.32	N/A
6	comp1	801	5	0.00	0.00	3.75	96.25	0.00	0.00
6	comp2	801	5	0.00	0.00	3.75	96.25	0.00	0.00
6	comp3	801	5	0.00	0.00	6.87	93.13	0.00	0.00
6	gp1	801	2	0.00	28.71	71.29	N/A	N/A	N/A
6	gp2	801	2	0.00	47.19	52.81	N/A	N/A	N/A
6	gp3	801	2	0.00	0.25	99.75	N/A	N/A	N/A
6	ind1	801	4	4.12	0.50	4.12	12.48	78.78	N/A
6	ind2	801	4	5.24	1.62	4.49	12.86	75.78	N/A
6	ind3	801	4	4.00	3.12	10.11	26.84	55.93	N/A
6	se1	801	2	1.00	2.62	96.38	N/A	N/A	N/A
6	se2	801	2	1.25	2.25	96.50	N/A	N/A	N/A
6	se3	801	2	1.12	0.50	98.38	N/A	N/A	N/A
6	sk1	801	4	4.12	0.37	2.00	10.11	83.40	N/A
6	sk2	801	4	5.24	0.50	2.75	10.36	81.15	N/A
6	sk3	801	4	4.00	38.08	30.84	26.09	1.00	N/A
7	comp1	720	5	0.00	0.00	2.78	97.22	0.00	0.00

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
7	comp2	720	5	0.00	0.00	3.19	96.81	0.00	0.00
7	comp3	720	5	0.00	0.00	7.08	92.92	0.00	0.00
7	gp1	720	2	0.00	33.47	66.53	N/A	N/A	N/A
7	gp2	720	2	0.00	45.69	54.31	N/A	N/A	N/A
7	gp3	720	2	0.00	0.14	99.86	N/A	N/A	N/A
7	ind1	720	4	4.72	0.83	2.78	16.39	75.28	N/A
7	ind2	720	4	4.58	1.11	4.44	17.78	72.08	N/A
7	ind3	720	4	3.06	3.33	9.17	29.03	55.42	N/A
7	se1	720	2	0.97	3.47	95.56	N/A	N/A	N/A
7	se2	720	2	0.83	3.33	95.83	N/A	N/A	N/A
7	se3	720	2	0.83	0.69	98.47	N/A	N/A	N/A
7	sk1	720	4	4.72	0.14	1.25	12.08	81.81	N/A
7	sk2	720	4	4.58	0.14	1.67	14.31	79.31	N/A
7	sk3	720	4	3.06	35.14	35.83	24.03	1.94	N/A
8	comp1	640	5	0.00	0.00	4.22	95.78	0.00	0.00
8	comp2	640	5	0.00	0.00	5.31	94.69	0.00	0.00
8	comp3	640	5	0.00	0.00	8.44	91.56	0.00	0.00
8	gp1	640	2	0.00	33.13	66.88	N/A	N/A	N/A
8	gp2	640	2	0.00	49.69	50.31	N/A	N/A	N/A
8	gp3	640	2	0.00	0.00	100.00	N/A	N/A	N/A
8	ind1	640	4	4.53	0.94	3.28	14.69	76.56	N/A
8	ind2	640	4	5.63	1.25	3.91	13.91	75.31	N/A
8	ind3	640	4	4.84	2.03	10.63	26.09	56.41	N/A
8	se1	640	2	1.56	0.63	97.81	N/A	N/A	N/A
8	se2	640	2	0.94	0.78	98.28	N/A	N/A	N/A
8	se3	640	2	1.25	0.31	98.44	N/A	N/A	N/A
8	sk1	640	4	4.53	0.63	1.88	9.38	83.59	N/A
8	sk2	640	4	5.63	0.31	1.88	13.13	79.06	N/A
8	sk3	640	4	4.84	33.28	35.78	23.91	2.19	N/A
HS	comp1	677	5	0.00	0.00	4.73	95.27	0.00	0.00
HS	comp2	677	5	0.00	0.00	4.43	95.57	0.00	0.00
HS	comp3	677	5	0.00	0.00	8.71	91.29	0.00	0.00

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
HS	gp1	677	2	0.00	28.06	71.94	N/A	N/A	N/A
HS	gp2	677	2	0.00	36.93	63.07	N/A	N/A	N/A
HS	gp3	677	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	ind1	677	4	3.69	0.74	2.81	14.92	77.84	N/A
HS	ind2	677	4	3.99	1.18	2.81	15.51	76.51	N/A
HS	ind3	677	4	3.25	2.81	9.45	27.33	57.16	N/A
HS	se1	677	2	1.03	0.30	98.67	N/A	N/A	N/A
HS	se2	677	2	0.44	0.30	99.26	N/A	N/A	N/A
HS	se3	677	2	1.18	0.15	98.67	N/A	N/A	N/A
HS	sk1	677	4	3.69	0.30	2.36	13.74	79.91	N/A
HS	sk2	677	4	3.99	0.59	1.62	16.25	77.55	N/A
HS	sk3	677	4	3.25	32.94	32.05	27.03	4.73	N/A

Table I-8. Item-Level Score Distributions—Alt/Mathematics

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
3	comp1	769	5	0.00	0.00	5.33	94.67	0.00	0.00
3	comp5	769	5	0.00	0.00	4.29	95.71	0.00	0.00
3	gp1	769	2	0.00	40.70	59.30	N/A	N/A	N/A
3	gp5	769	2	0.00	41.22	58.78	N/A	N/A	N/A
3	ind1	769	4	0.00	1.82	4.42	21.33	72.43	N/A
3	ind5	769	4	0.00	1.82	4.94	15.99	77.24	N/A
3	se1	769	2	1.04	0.78	98.18	N/A	N/A	N/A
3	se5	769	2	0.78	0.52	98.70	N/A	N/A	N/A
3	sk1	769	4	0.00	0.13	1.69	12.61	85.57	N/A
3	sk5	769	4	0.00	0.39	2.47	12.74	84.40	N/A
4	comp1	708	5	0.00	0.00	5.23	94.77	0.00	0.00
4	comp3	708	5	0.00	0.00	5.65	94.35	0.00	0.00
4	gp1	708	2	0.00	27.40	72.60	N/A	N/A	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
4	gp3	708	2	0.00	25.28	74.72	N/A	N/A	N/A
4	ind1	708	4	0.00	2.68	6.36	17.37	73.59	N/A
4	ind3	708	4	0.00	2.12	5.23	14.55	78.11	N/A
4	se1	708	2	0.42	0.56	99.01	N/A	N/A	N/A
4	se3	708	2	0.14	0.14	99.72	N/A	N/A	N/A
4	sk1	708	4	0.00	0.14	1.13	9.75	88.98	N/A
4	sk3	708	4	0.00	0.00	2.12	10.73	87.15	N/A
5	comp2	630	5	0.00	0.00	5.56	94.44	0.00	0.00
5	comp3	630	5	0.00	0.00	5.71	94.29	0.00	0.00
5	gp2	630	2	0.00	32.70	67.30	N/A	N/A	N/A
5	gp3	630	2	0.00	29.37	70.63	N/A	N/A	N/A
5	ind2	630	4	0.00	1.27	5.24	16.67	76.83	N/A
5	ind3	630	4	0.00	1.27	4.92	18.57	75.24	N/A
5	se2	630	2	1.11	3.49	95.40	N/A	N/A	N/A
5	se3	630	2	0.95	3.17	95.87	N/A	N/A	N/A
5	sk2	630	4	0.00	0.32	2.22	10.00	87.46	N/A
5	sk3	630	4	0.00	0.16	1.75	12.38	85.71	N/A
6	comp2	728	5	0.00	0.00	5.49	94.51	0.00	0.00
6	comp5	728	5	0.00	0.00	4.95	95.05	0.00	0.00
6	gp2	728	2	0.00	34.75	65.25	N/A	N/A	N/A
6	gp5	728	2	0.00	34.62	65.38	N/A	N/A	N/A
6	ind2	728	4	0.00	1.51	4.95	17.45	76.10	N/A
6	ind5	728	4	0.00	1.51	6.32	16.48	75.69	N/A
6	se2	728	2	0.69	3.16	96.15	N/A	N/A	N/A
6	se5	728	2	0.69	2.34	96.98	N/A	N/A	N/A
6	sk2	728	4	0.00	0.27	2.47	10.16	87.09	N/A
6	sk5	728	4	0.00	0.14	2.75	9.34	87.77	N/A
7	comp1	635	5	0.00	0.00	5.35	94.65	0.00	0.00
7	comp4	635	5	0.00	0.00	3.46	96.54	0.00	0.00
7	gp1	635	2	0.00	37.48	62.52	N/A	N/A	N/A
7	gp4	635	2	0.00	34.96	65.04	N/A	N/A	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
7	ind1	635	4	0.00	1.89	3.62	16.85	77.64	N/A
7	ind4	635	4	0.00	0.47	3.31	15.12	81.10	N/A
7	se1	635	2	0.79	3.62	95.59	N/A	N/A	N/A
7	se4	635	2	0.94	3.78	95.28	N/A	N/A	N/A
7	sk1	635	4	0.00	0.00	1.10	12.91	85.98	N/A
7	sk4	635	4	0.00	0.16	1.42	12.60	85.83	N/A
8	comp2	549	5	0.00	0.00	6.74	93.26	0.00	0.00
8	comp4	549	5	0.00	0.00	5.10	94.90	0.00	0.00
8	gp2	549	2	0.00	38.25	61.75	N/A	N/A	N/A
8	gp4	549	2	0.00	35.34	64.66	N/A	N/A	N/A
8	ind2	549	4	0.00	2.55	5.10	17.30	75.05	N/A
8	ind4	549	4	0.00	2.00	3.28	17.30	77.41	N/A
8	se2	549	2	0.91	0.91	98.18	N/A	N/A	N/A
8	se4	549	2	1.46	0.55	98.00	N/A	N/A	N/A
8	sk2	549	4	0.00	0.18	1.46	12.39	85.97	N/A
8	sk4	549	4	0.00	0.36	2.37	12.57	84.70	N/A
HS	comp1	160	5	0.00	0.00	6.25	93.75	0.00	0.00
HS	comp2	540	5	0.00	0.00	5.93	94.07	0.00	0.00
HS	comp3	427	5	0.00	0.00	3.98	96.02	0.00	0.00
HS	comp4	499	5	0.00	0.00	9.82	90.18	0.00	0.00
HS	comp5	354	5	0.00	0.00	6.21	93.79	0.00	0.00
HS	gp1	160	2	0.00	38.75	61.25	N/A	N/A	N/A
HS	gp2	540	2	0.00	28.52	71.48	N/A	N/A	N/A
HS	gp3	427	2	0.00	30.44	69.56	N/A	N/A	N/A
HS	gp4	499	2	0.00	30.86	69.14	N/A	N/A	N/A
HS	gp5	354	2	0.00	29.66	70.34	N/A	N/A	N/A
HS	ind1	160	4	3.13	1.25	6.88	13.13	75.63	N/A
HS	ind2	540	4	4.44	1.11	2.78	14.07	77.59	N/A
HS	ind3	427	4	4.68	0.47	3.51	13.58	77.75	N/A
HS	ind4	499	4	4.41	1.20	5.21	15.83	73.35	N/A
HS	ind5	354	4	8.76	1.98	3.95	12.43	72.88	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
HS	se1	160	2	1.25	0.00	98.75	N/A	N/A	N/A
HS	se2	540	2	0.56	0.00	99.44	N/A	N/A	N/A
HS	se3	427	2	0.94	0.47	98.59	N/A	N/A	N/A
HS	se4	499	2	0.40	0.60	99.00	N/A	N/A	N/A
HS	se5	354	2	0.56	0.56	98.87	N/A	N/A	N/A
HS	sk1	160	4	3.13	0.00	2.50	11.88	82.50	N/A
HS	sk2	540	4	4.44	0.00	2.78	11.30	81.48	N/A
HS	sk3	427	4	4.68	0.47	2.11	9.37	83.37	N/A
HS	sk4	499	4	4.41	0.40	3.01	10.82	81.36	N/A
HS	sk5	354	4	8.76	0.28	1.41	11.30	78.25	N/A

Table I-9. Item-Level Score Distributions—Alt/STE

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
5	comp1	699	5	0.00	0.00	6.72	93.28	0.00	0.00
5	comp2	703	5	0.00	0.00	6.54	93.46	0.00	0.00
5	comp3	696	5	0.00	0.00	6.61	93.39	0.00	0.00
5	comp4	34	5	0.00	0.00	20.59	79.41	0.00	0.00
5	gp1	699	2	0.00	0.00	100.00	N/A	N/A	N/A
5	gp2	703	2	0.00	0.00	100.00	N/A	N/A	N/A
5	gp3	696	2	0.00	0.00	100.00	N/A	N/A	N/A
5	gp4	34	2	0.00	0.00	100.00	N/A	N/A	N/A
5	ind1	699	4	2.29	5.58	13.73	23.75	54.65	N/A
5	ind2	703	4	3.41	4.98	11.81	23.04	56.76	N/A
5	ind3	696	4	2.16	6.47	12.36	23.71	55.32	N/A
5	ind4	34	4	2.94	2.94	14.71	17.65	61.76	N/A
5	se1	699	2	1.00	3.58	95.42	N/A	N/A	N/A
5	se2	703	2	1.56	2.99	95.45	N/A	N/A	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
5	se3	696	2	1.58	3.02	95.40	N/A	N/A	N/A
5	se4	34	2	0.00	2.94	97.06	N/A	N/A	N/A
5	sk1	699	4	2.29	0.14	2.29	8.15	87.12	N/A
5	sk2	703	4	3.41	0.57	2.42	7.11	86.49	N/A
5	sk3	696	4	2.16	0.00	1.87	11.35	84.63	N/A
5	sk4	34	4	2.94	0.00	0.00	0.00	97.06	N/A
8	comp1	599	5	0.00	0.00	7.01	92.99	0.00	0.00
8	comp2	606	5	0.00	0.00	6.11	93.89	0.00	0.00
8	comp3	579	5	0.00	0.00	8.29	91.71	0.00	0.00
8	comp4	82	5	0.00	0.00	10.98	89.02	0.00	0.00
8	gp1	599	2	0.00	0.00	100.00	N/A	N/A	N/A
8	gp2	606	2	0.00	0.00	100.00	N/A	N/A	N/A
8	gp3	579	2	0.00	0.00	100.00	N/A	N/A	N/A
8	gp4	82	2	0.00	0.00	100.00	N/A	N/A	N/A
8	ind1	599	4	2.17	4.34	11.35	25.38	56.76	N/A
8	ind2	606	4	6.11	4.95	7.92	24.42	56.60	N/A
8	ind3	579	4	2.59	3.63	10.02	23.32	60.45	N/A
8	ind4	82	4	1.22	2.44	8.54	29.27	58.54	N/A
8	se1	599	2	1.50	0.17	98.33	N/A	N/A	N/A
8	se2	606	2	1.82	0.50	97.69	N/A	N/A	N/A
8	se3	579	2	1.04	0.35	98.62	N/A	N/A	N/A
8	se4	82	2	4.88	1.22	93.90	N/A	N/A	N/A
8	sk1	599	4	2.17	0.33	2.17	11.02	84.31	N/A
8	sk2	606	4	6.11	0.17	1.98	10.40	81.35	N/A
8	sk3	579	4	2.59	0.17	2.07	9.84	85.32	N/A
8	sk4	82	4	1.22	1.22	1.22	10.98	85.37	N/A

Table I-10. Item-Level Score Distributions—Alt/Biology

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
HS	comp1	555	5	0.00	0.00	7.39	92.61	0.00	0.00
HS	comp2	555	5	0.00	0.00	6.67	93.33	0.00	0.00
HS	comp3	555	5	0.00	0.00	6.49	93.51	0.00	0.00
HS	gp1	555	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	gp2	555	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	gp3	555	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	ind1	555	4	1.80	5.23	8.65	25.59	58.74	N/A
HS	ind2	555	4	2.52	4.68	8.47	21.62	62.70	N/A
HS	ind3	555	4	2.88	4.50	7.03	21.98	63.60	N/A
HS	se1	555	2	0.18	1.26	98.56	N/A	N/A	N/A
HS	se2	555	2	0.36	1.26	98.38	N/A	N/A	N/A
HS	se3	555	2	0.54	1.44	98.02	N/A	N/A	N/A
HS	sk1	555	4	1.80	0.00	1.98	10.27	85.95	N/A
HS	sk2	555	4	2.52	0.00	1.26	10.09	86.13	N/A
HS	sk3	555	4	2.88	0.36	1.98	7.57	87.21	N/A

Table I-11. Item-Level Score Distributions—Alt/Introductory Physics

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
HS	comp1	88	5	0.00	0.00	4.55	95.45	0.00	0.00
HS	comp2	88	5	0.00	0.00	4.55	95.45	0.00	0.00
HS	comp3	88	5	0.00	0.00	4.55	95.45	0.00	0.00
HS	gp1	88	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	gp2	88	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	gp3	88	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	ind1	88	4	1.14	4.55	17.05	25.00	52.27	N/A
HS	ind2	88	4	1.14	5.68	11.36	35.23	46.59	N/A

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
HS	ind3	88	4	1.14	5.68	17.05	23.86	52.27	N/A
HS	se1	88	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	se2	88	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	se3	88	2	0.00	0.00	100.00	N/A	N/A	N/A
HS	sk1	88	4	1.14	0.00	2.27	7.95	88.64	N/A
HS	sk2	88	4	1.14	0.00	1.14	19.32	78.41	N/A
HS	sk3	88	4	1.14	0.00	4.55	6.82	87.50	N/A

Table I-12. Item-Level Score Distributions—Alt/Civics

Grade	Item Number	N	Total Possible Points	Percent of Students at Score Point 0	Percent of Students at Score Point 1	Percent of Students at Score Point 2	Percent of Students at Score Point 3	Percent of Students at Score Point 4	Percent of Students at Score Point 5
8	comp1	643	5	0.00	0.00	7.31	92.69	0.00	0.00
8	gp1	643	2	0.00	0.00	100.00	N/A	N/A	N/A
8	ind1	643	4	0.00	4.04	9.02	27.84	59.10	N/A
8	se1	643	2	1.24	0.78	97.98	N/A	N/A	N/A
8	sk1	643	4	0.00	0.00	2.64	10.58	86.78	N/A

APPENDIX J
DIFFERENTIAL ITEM FUNCTIONING RESULTS

Table J-1. Number of Items Classified as “Low” or “High” DIF, Overall and by Group Favored—ELA

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
3	Male	Female	MC	24	0	0	0	0	0	0
3	Male	Female	OR	6	0	0	0	0	0	0
3	Male	Female	WP	1	0	0	0	0	0	0
3	Not Low Income	Low Income	MC	24	0	0	0	0	0	0
3	Not Low Income	Low Income	OR	6	0	0	0	0	0	0
3	Not Low Income	Low Income	WP	1	0	0	0	0	0	0
3	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	24	0	0	0	0	0	0
3	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	6	0	0	0	0	0	0
3	Not English Learner/Formal English Learner	English Learner/Formal English Learner	WP	1	0	0	0	0	0	0
3	Students without Disabilities	Students with Disabilities	MC	24	1	0	1	0	0	0
3	Students without Disabilities	Students with Disabilities	OR	6	0	0	0	0	0	0
3	Students without Disabilities	Students with Disabilities	WP	1	0	0	0	0	0	0
3	White	Black or African American	MC	24	0	0	0	0	0	0
3	White	Black or African American	OR	6	0	0	0	0	0	0
3	White	Black or African American	WP	1	0	0	0	0	0	0
3	White	Hispanic or Latino	MC	24	1	0	1	0	0	0
3	White	Hispanic or Latino	OR	6	0	0	0	0	0	0
3	White	Hispanic or Latino	WP	1	0	0	0	0	0	0
4	Male	Female	MC	24	1	1	0	0	0	0
4	Male	Female	OR	6	1	1	0	0	0	0
4	Male	Female	WP	1	0	0	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
4	Not Low Income	Low Income	MC	24	0	0	0	0	0	0
4	Not Low Income	Low Income	OR	6	0	0	0	0	0	0
4	Not Low Income	Low Income	WP	1	0	0	0	0	0	0
4	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	24	0	0	0	1	1	0
4	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	6	0	0	0	0	0	0
4	Not English Learner/Formal English Learner	English Learner/Formal English Learner	WP	1	0	0	0	0	0	0
4	Students without Disabilities	Students with Disabilities	MC	24	2	0	2	0	0	0
4	Students without Disabilities	Students with Disabilities	OR	6	0	0	0	0	0	0
4	Students without Disabilities	Students with Disabilities	WP	1	0	0	0	0	0	0
4	White	Black or African American	MC	24	0	0	0	0	0	0
4	White	Black or African American	OR	6	1	1	0	0	0	0
4	White	Black or African American	WP	1	0	0	0	0	0	0
4	White	Hispanic or Latino	MC	24	1	1	0	0	0	0
4	White	Hispanic or Latino	OR	6	0	0	0	0	0	0
4	White	Hispanic or Latino	WP	1	0	0	0	0	0	0
5	Male	Female	MC	24	2	2	0	1	1	0
5	Male	Female	OR	5	0	0	0	0	0	0
5	Male	Female	WP	2	1	0	1	0	0	0
5	Not Low Income	Low Income	MC	24	0	0	0	0	0	0
5	Not Low Income	Low Income	OR	5	0	0	0	0	0	0
5	Not Low Income	Low Income	WP	2	0	0	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
5	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	24	3	3	0	0	0	0
5	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	5	1	1	0	0	0	0
5	Not English Learner/Formal English Learner	English Learner/Formal English Learner	WP	2	0	0	0	0	0	0
5	Students without Disabilities	Students with Disabilities	MC	24	1	0	1	0	0	0
5	Students without Disabilities	Students with Disabilities	OR	5	0	0	0	0	0	0
5	Students without Disabilities	Students with Disabilities	WP	2	0	0	0	0	0	0
5	White	Black or African American	MC	24	2	2	0	0	0	0
5	White	Black or African American	OR	5	0	0	0	0	0	0
5	White	Black or African American	WP	2	0	0	0	0	0	0
5	White	Hispanic or Latino	MC	24	0	0	0	0	0	0
5	White	Hispanic or Latino	OR	5	0	0	0	0	0	0
5	White	Hispanic or Latino	WP	2	0	0	0	0	0	0
6	Male	Female	MC	24	3	3	0	1	1	0
6	Male	Female	OR	5	0	0	0	0	0	0
6	Male	Female	WP	2	0	0	0	0	0	0
6	Not Low Income	Low Income	MC	24	0	0	0	0	0	0
6	Not Low Income	Low Income	OR	5	0	0	0	0	0	0
6	Not Low Income	Low Income	WP	2	0	0	0	0	0	0
6	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	24	2	2	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
6	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	5	0	0	0	0	0	0
6	Not English Learner/Formal English Learner	English Learner/Formal English Learner	WP	2	0	0	0	0	0	0
6	Students without Disabilities	Students with Disabilities	MC	24	1	0	1	0	0	0
6	Students without Disabilities	Students with Disabilities	OR	5	0	0	0	0	0	0
6	Students without Disabilities	Students with Disabilities	WP	2	0	0	0	0	0	0
6	White	Black or African American	MC	24	0	0	0	0	0	0
6	White	Black or African American	OR	5	0	0	0	0	0	0
6	White	Black or African American	WP	2	0	0	0	0	0	0
6	White	Hispanic or Latino	MC	24	0	0	0	0	0	0
6	White	Hispanic or Latino	OR	5	0	0	0	0	0	0
6	White	Hispanic or Latino	WP	2	0	0	0	0	0	0
7	Male	Female	MC	24	2	2	0	0	0	0
7	Male	Female	OR	5	1	1	0	0	0	0
7	Male	Female	WP	2	0	0	0	0	0	0
7	Not Low Income	Low Income	MC	24	0	0	0	0	0	0
7	Not Low Income	Low Income	OR	5	0	0	0	0	0	0
7	Not Low Income	Low Income	WP	2	0	0	0	0	0	0
7	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	24	2	2	0	0	0	0
7	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	5	0	0	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
7	Not English Learner/Formal English Learner	English Learner/Formal English Learner	WP	2	0	0	0	0	0	0
7	Students without Disabilities	Students with Disabilities	MC	24	0	0	0	0	0	0
7	Students without Disabilities	Students with Disabilities	OR	5	0	0	0	0	0	0
7	Students without Disabilities	Students with Disabilities	WP	2	0	0	0	0	0	0
7	White	Black or African American	MC	24	3	2	1	0	0	0
7	White	Black or African American	OR	5	0	0	0	0	0	0
7	White	Black or African American	WP	2	0	0	0	0	0	0
7	White	Hispanic or Latino	MC	24	1	1	0	0	0	0
7	White	Hispanic or Latino	OR	5	0	0	0	0	0	0
7	White	Hispanic or Latino	WP	2	0	0	0	0	0	0
8	Male	Female	MC	24	3	3	0	0	0	0
8	Male	Female	OR	5	0	0	0	0	0	0
8	Male	Female	WP	2	0	0	0	0	0	0
8	Not Low Income	Low Income	MC	24	1	1	0	0	0	0
8	Not Low Income	Low Income	OR	5	0	0	0	0	0	0
8	Not Low Income	Low Income	WP	2	0	0	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	24	6	6	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	5	0	0	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	WP	2	0	0	0	0	0	0
8	Students without Disabilities	Students with Disabilities	MC	24	1	0	1	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
8	Students without Disabilities	Students with Disabilities	OR	5	0	0	0	0	0	0
8	Students without Disabilities	Students with Disabilities	WP	2	0	0	0	0	0	0
8	White	Black or African American	MC	24	2	2	0	0	0	0
8	White	Black or African American	OR	5	0	0	0	0	0	0
8	White	Black or African American	WP	2	0	0	0	0	0	0
8	White	Hispanic or Latino	MC	24	1	1	0	1	1	0
8	White	Hispanic or Latino	OR	5	0	0	0	0	0	0
8	White	Hispanic or Latino	WP	2	0	0	0	0	0	0
10	Male	Female	MC	21	3	3	0	0	0	0
10	Male	Female	OR	6	0	0	0	0	0	0
10	Male	Female	WP	2	0	0	0	0	0	0
10	Not Low Income	Low Income	MC	21	0	0	0	0	0	0
10	Not Low Income	Low Income	OR	6	0	0	0	0	0	0
10	Not Low Income	Low Income	WP	2	0	0	0	0	0	0
10	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	21	3	3	0	0	0	0
10	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	6	0	0	0	0	0	0
10	Not English Learner/Formal English Learner	English Learner/Formal English Learner	WP	2	0	0	0	0	0	0
10	Students without Disabilities	Students with Disabilities	MC	21	0	0	0	0	0	0
10	Students without Disabilities	Students with Disabilities	OR	6	0	0	0	0	0	0
10	Students without Disabilities	Students with Disabilities	WP	2	0	0	0	0	0	0
10	White	Black or African American	MC	21	1	1	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
10	White	Black or African American	OR	6	0	0	0	0	0	0
10	White	Black or African American	WP	2	0	0	0	0	0	0
10	White	Hispanic or Latino	MC	21	2	2	0	0	0	0
10	White	Hispanic or Latino	OR	6	0	0	0	0	0	0
10	White	Hispanic or Latino	WP	2	0	0	0	0	0	0

Table J-2. Number of Items Classified as “Low” or “High” DIF, Overall and by Group Favored—Mathematics

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
3	Male	Female	MC	18	2	0	2	0	0	0
3	Male	Female	OR	22	3	3	0	0	0	0
3	Not Low Income	Low Income	MC	18	0	0	0	0	0	0
3	Not Low Income	Low Income	OR	22	0	0	0	0	0	0
3	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	18	0	0	0	0	0	0
3	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	22	0	0	0	0	0	0
3	Students without Disabilities	Students with Disabilities	MC	18	0	0	0	0	0	0
3	Students without Disabilities	Students with Disabilities	OR	22	0	0	0	0	0	0
3	White	Black or African American	MC	18	3	1	2	1	1	0
3	White	Black or African American	OR	22	5	3	2	0	0	0
3	White	Hispanic or Latino	MC	18	2	2	0	0	0	0
3	White	Hispanic or Latino	OR	22	1	1	0	0	0	0
4	Male	Female	MC	13	1	1	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
4	Male	Female	OR	27	3	3	0	0	0	0
4	Not Low Income	Low Income	MC	13	0	0	0	0	0	0
4	Not Low Income	Low Income	OR	27	0	0	0	0	0	0
4	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	13	0	0	0	0	0	0
4	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	27	1	1	0	0	0	0
4	Students without Disabilities	Students with Disabilities	MC	13	0	0	0	0	0	0
4	Students without Disabilities	Students with Disabilities	OR	27	0	0	0	0	0	0
4	White	Black or African American	MC	13	0	0	0	0	0	0
4	White	Black or African American	OR	27	3	2	1	0	0	0
4	White	Hispanic or Latino	MC	13	0	0	0	0	0	0
4	White	Hispanic or Latino	OR	27	0	0	0	0	0	0
5	Male	Female	MC	19	3	2	1	0	0	0
5	Male	Female	OR	21	0	0	0	0	0	0
5	Not Low Income	Low Income	MC	19	0	0	0	0	0	0
5	Not Low Income	Low Income	OR	21	0	0	0	0	0	0
5	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	19	0	0	0	0	0	0
5	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	21	0	0	0	0	0	0
5	Students without Disabilities	Students with Disabilities	MC	19	0	0	0	0	0	0
5	Students without Disabilities	Students with Disabilities	OR	21	0	0	0	0	0	0
5	White	Black or African American	MC	19	0	0	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
5	White	Black or African American	OR	21	0	0	0	0	0	0
5	White	Hispanic or Latino	MC	19	0	0	0	0	0	0
5	White	Hispanic or Latino	OR	21	0	0	0	0	0	0
6	Male	Female	MC	16	2	2	0	0	0	0
6	Male	Female	OR	24	2	1	1	0	0	0
6	Not Low Income	Low Income	MC	16	0	0	0	0	0	0
6	Not Low Income	Low Income	OR	24	0	0	0	0	0	0
6	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	16	0	0	0	0	0	0
6	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	24	0	0	0	0	0	0
6	Students without Disabilities	Students with Disabilities	MC	16	0	0	0	0	0	0
6	Students without Disabilities	Students with Disabilities	OR	24	0	0	0	0	0	0
6	White	Black or African American	MC	16	1	0	1	0	0	0
6	White	Black or African American	OR	24	2	2	0	0	0	0
6	White	Hispanic or Latino	MC	16	0	0	0	0	0	0
6	White	Hispanic or Latino	OR	24	0	0	0	0	0	0
7	Male	Female	MC	21	4	3	1	0	0	0
7	Male	Female	OR	19	0	0	0	0	0	0
7	Not Low Income	Low Income	MC	21	0	0	0	0	0	0
7	Not Low Income	Low Income	OR	19	0	0	0	0	0	0
7	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	21	1	1	0	0	0	0
7	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	19	0	0	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
7	Students without Disabilities	Students with Disabilities	MC	21	0	0	0	0	0	0
7	Students without Disabilities	Students with Disabilities	OR	19	1	1	0	0	0	0
7	White	Black or African American	MC	21	4	3	1	0	0	0
7	White	Black or African American	OR	19	1	0	1	0	0	0
7	White	Hispanic or Latino	MC	21	2	2	0	0	0	0
7	White	Hispanic or Latino	OR	19	0	0	0	0	0	0
8	Male	Female	MC	17	1	1	0	0	0	0
8	Male	Female	OR	23	0	0	0	0	0	0
8	Not Low Income	Low Income	MC	17	0	0	0	0	0	0
8	Not Low Income	Low Income	OR	23	0	0	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	17	0	0	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	23	0	0	0	0	0	0
8	Students without Disabilities	Students with Disabilities	MC	17	0	0	0	0	0	0
8	Students without Disabilities	Students with Disabilities	OR	23	0	0	0	0	0	0
8	White	Black or African American	MC	17	0	0	0	0	0	0
8	White	Black or African American	OR	23	1	1	0	0	0	0
8	White	Hispanic or Latino	MC	17	0	0	0	0	0	0
8	White	Hispanic or Latino	OR	23	0	0	0	0	0	0
10	Male	Female	MC	20	0	0	0	2	2	0
10	Male	Female	OR	22	0	0	0	0	0	0
10	Not Low Income	Low Income	MC	20	0	0	0	0	0	0
10	Not Low Income	Low Income	OR	22	0	0	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
10	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	20	1	1	0	0	0	0
10	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	22	1	1	0	0	0	0
10	Students without Disabilities	Students with Disabilities	MC	20	0	0	0	0	0	0
10	Students without Disabilities	Students with Disabilities	OR	22	0	0	0	0	0	0
10	White	Black or African American	MC	20	1	1	0	0	0	0
10	White	Black or African American	OR	22	0	0	0	0	0	0
10	White	Hispanic or Latino	MC	20	0	0	0	0	0	0
10	White	Hispanic or Latino	OR	22	0	0	0	0	0	0

Table J-3. Number of Items Classified as “Low” or “High” DIF, Overall and by Group Favored—STE

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
5	Male	Female	MC	12	2	1	1	0	0	0
5	Male	Female	OR	9	4	3	1	0	0	0
5	Not Low Income	Low Income	MC	12	0	0	0	0	0	0
5	Not Low Income	Low Income	OR	9	0	0	0	0	0	0
5	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	12	0	0	0	0	0	0
5	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	9	0	0	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
5	Students without Disabilities	Students with Disabilities	MC	12	0	0	0	0	0	0
5	Students without Disabilities	Students with Disabilities	OR	9	0	0	0	0	0	0
5	White	Black or African American	MC	12	0	0	0	0	0	0
5	White	Black or African American	OR	9	0	0	0	0	0	0
5	White	Hispanic or Latino	MC	12	0	0	0	0	0	0
5	White	Hispanic or Latino	OR	9	0	0	0	0	0	0
8	Male	Female	MC	12	1	1	0	2	1	1
8	Male	Female	OR	9	0	0	0	0	0	0
8	Not Low Income	Low Income	MC	12	0	0	0	0	0	0
8	Not Low Income	Low Income	OR	9	0	0	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	12	0	0	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	9	0	0	0	0	0	0
8	Students without Disabilities	Students with Disabilities	MC	12	0	0	0	0	0	0
8	Students without Disabilities	Students with Disabilities	OR	9	0	0	0	0	0	0
8	White	Black or African American	MC	12	0	0	0	0	0	0
8	White	Black or African American	OR	9	0	0	0	0	0	0
8	White	Hispanic or Latino	MC	12	0	0	0	0	0	0
8	White	Hispanic or Latino	OR	9	0	0	0	0	0	0

Table J-4. Number of Items Classified as “Low” or “High” DIF, Overall and by Group Favored—Biology

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
10	Male	Female	MC	20	2	1	1	0	0	0
10	Male	Female	OR	22	3	2	1	0	0	0
10	Not Low Income	Low Income	MC	20	0	0	0	0	0	0
10	Not Low Income	Low Income	OR	22	0	0	0	0	0	0
10	Not English Learner/Former English Learner	English Learner/Former English Learner	MC	20	0	0	0	0	0	0
10	Not English Learner/Former English Learner	English Learner/Former English Learner	OR	22	0	0	0	0	0	0
10	Students without Disabilities	Students with Disabilities	MC	20	0	0	0	0	0	0
10	Students without Disabilities	Students with Disabilities	OR	22	0	0	0	0	0	0
10	White	Black or African American	MC	20	0	0	0	0	0	0
10	White	Black or African American	OR	22	0	0	0	0	0	0
10	White	Hispanic or Latino	MC	20	0	0	0	0	0	0
10	White	Hispanic or Latino	OR	22	0	0	0	0	0	0

Table J-5. Number of Items Classified as “Low” or “High” DIF, Overall and by Group Favored—Introductory Physics

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
10	Male	Female	MC	25	2	1	1	0	0	0
10	Male	Female	OR	18	4	2	2	0	0	0
10	Not Low Income	Low Income	MC	25	0	0	0	0	0	0
10	Not Low Income	Low Income	OR	18	0	0	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
10	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	25	1	1	0	0	0	0
10	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	18	0	0	0	0	0	0
10	Students without Disabilities	Students with Disabilities	MC	25	0	0	0	0	0	0
10	Students without Disabilities	Students with Disabilities	OR	18	0	0	0	0	0	0
10	White	Black or African American	MC	25	2	1	1	0	0	0
10	White	Black or African American	OR	18	0	0	0	0	0	0
10	White	Hispanic or Latino	MC	25	0	0	0	0	0	0
10	White	Hispanic or Latino	OR	18	0	0	0	0	0	0

Table J-6. Number of Items Classified as “Low” or “High” DIF, Overall and by Group Favored—Civics

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
8	Male	Female	MC	19	1	1	0	0	0	0
8	Male	Female	OR	24	3	1	2	0	0	0
8	Not Low Income	Low Income	MC	19	1	0	1	0	0	0
8	Not Low Income	Low Income	OR	24	1	1	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	MC	19	0	0	0	0	0	0
8	Not English Learner/Formal English Learner	English Learner/Formal English Learner	OR	24	1	1	0	0	0	0

Grade	Group Reference	Group Focal	Item Type	Number of Items	Number “Low” Favoring Total	Number “Low” Favoring Reference	Number “Low” Favoring Focal	Number “High” Favoring Total	Number “High” Favoring Reference	Number “High” Favoring Focal
8	Students without Disabilities	Students with Disabilities	MC	19	0	0	0	0	0	0
8	Students without Disabilities	Students with Disabilities	OR	24	0	0	0	0	0	0
8	White	Black or African American	MC	19	1	0	1	0	0	0
8	White	Black or African American	OR	24	1	1	0	0	0	0
8	White	Hispanic or Latino	MC	19	1	0	1	0	0	0
8	White	Hispanic or Latino	OR	24	2	2	0	0	0	0

APPENDIX K
2024–25 MCAS EQUATING REPORT



Massachusetts Comprehensive Assessment System

2024 - 2025: EQUATING REPORT

2024 - 2025 Massachusetts Comprehensive Assessment System

Equating Report

The purpose of this document is to summarize the psychometric calibration and equating results obtained from Cognia for Next-Gen MCAS. Presented in this report are various program summary statistics and specific results related to the study.

The results of this report are organized as follows:

1. Aggregate Results
 1. Percentage of Students by Achievement Levels Categories
 2. Raw Scores Associated with Cutpoints
 3. Calibration Report
 4. Equating Item Summary Statistics
2. Grade Subject Results
 1. A/A, B/B, Delta, Test Characteristic Curve, Test Information Function, and Cumulative Scale Score Distribution Plots
 2. Lookup Tables
 3. Cumulative Scale Score Distribution Tables
 4. Tabled Delta Analysis Results
 5. Tabled B/B Analysis Results
 6. Tabled Beta Analysis Results
 7. Final Item Parameters
 8. Decision Accuracy and Consistency (DAC)
 9. Fit Plots and Beta Plots of Watchlist Items

The final results of this equating will be included as part of the 2024 - 2025 Next-Gen MCAS Technical Manual. If requested, Cognia will distribute and/or present this report at the next MCAS TAC.

Section 1.1

Percentage of Students by Achievement Levels Categories*

**Note:* 2025 is the first year that students with text-to-speech accommodations were included in the equating sample. Due to this change in the business rule, results in this section should be interpreted with caution.



Table 1.1.1
Percentage of Students by Achievement Levels Categories
Biology*

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS	SD SS
10	2025	51050	21	40	31	9	40	-10.4	493.0	26.7
10	2024	47824	13	37	39	11	50	-2.2	499.1	24.6
10	2023	49403	12	36	41	12	52	4.3	500.8	24.8
10	2022	50827	12	40	37	11	48	N/A	498.9	25.5

*Note: MCAS can no longer be used as the sole basis to satisfy the Competency Determination (CD) requirement for high school graduation.

Table 1.1.2
Percentage of Students by Achievement Levels Categories
English Language Arts

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS	SD SS
3	2025	63649	17	39	38	6	44	-0.5	494.2	23.8
3	2024	59965	15	41	38	7	44	-1.8	495.7	22.9
3	2023	60542	14	40	39	7	46	0.3	496.0	23.4
3	2022	61648	13	41	39	7	46	-6.9	497.1	22.8
3	2021	50011	8	39	43	10	53	-5.7	500.1	22.4
3	2019	63602	6	36	48	11	58	5.8	504.8	21.8
3	2018	43046	6	41	43	10	53	1.0	501.8	20.6
3	2017	26459	7	41	43	8	52	N/A	500.1	21.1
4	2025	62216	17	41	37	5	42	3.0	493.5	23.7
4	2024	61103	16	46	34	5	39	-3.2	493.5	22.2
4	2023	61836	14	44	36	6	42	1.7	494.7	22.2
4	2022	62100	14	46	36	4	40	-11.2	493.8	21.1
4	2021	50867	11	38	45	6	51	-2.7	498.9	22.8
4	2019	65450	7	39	44	10	54	-0.5	502.6	21.1
4	2018	69078	7	38	44	10	55	3.5	502.2	21.6
4	2017	63918	8	41	43	8	51	N/A	500.1	21.2
5	2025	63664	13	47	34	5	39	-0.6	494.7	22.1
5	2024	62601	13	47	34	6	40	-6.0	494.6	21.9
5	2023	62316	13	41	41	5	46	3.8	496.0	21.8
5	2022	63620	11	47	37	5	42	-7.1	495.6	20.4
5	2021	51362	10	41	41	8	49	-5.0	497.9	22.1
5	2019	67933	6	39	47	8	54	-1.5	501.9	21.0
5	2018	69390	6	38	49	7	56	4.4	502.3	20.0
5	2017	28547	7	42	46	5	51	N/A	499.9	19.8
6	2025	64470	20	37	33	10	43	1.3	494.1	28.9
6	2024	62688	22	36	30	11	42	-2.5	494.6	28.9
6	2023	63574	21	35	36	8	44	1.3	494.0	28.1
6	2022	63887	20	37	35	8	43	-7.2	494.0	26.0
6	2021	51319	19	31	37	13	50	-5.7	498.4	28.3
6	2019	67612	11	33	42	13	56	3.4	502.5	25.6
6	2018	53988	10	38	42	11	52	-0.7	501.3	23.5
6	2017	29369	8	39	47	6	53	N/A	500.3	20.7
7	2025	64737	21	37	35	7	42	4.6	493.0	26.6
7	2024	63626	19	43	31	7	38	-4.4	492.6	25.6
7	2023	63711	17	41	34	8	42	-0.3	494.2	25.1
7	2022	65584	17	40	37	6	42	-3.2	493.7	23.6
7	2021	51120	17	37	39	7	46	-4.8	495.6	24.8
7	2019	67462	11	39	42	9	50	3.6	499.8	23.0
7	2018	66410	13	40	39	8	47	-6.5	497.4	23.4
7	2017	30209	8	38	48	6	53	N/A	500.2	20.8

Table 1.1.2 (continued)
Percentage of Students by Achievement Levels Categories
English Language Arts

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS	SD SS
8	2025	65482	21	34	34	11	45	0.5	494.5	28.7
8	2024	64139	21	34	33	12	44	-0.9	494.9	28.5
8	2023	65553	20	35	35	10	45	2.2	495.4	28.5
8	2022	67919	16	40	36	7	43	-0.3	494.8	24.8
8	2021	50822	15	41	37	7	44	-10.0	496.2	25.5
8	2019	67350	11	35	42	12	54	1.1	500.6	24.5
8	2018	69486	13	34	42	10	52	1.1	499.6	24.9
8	2017	65314	9	40	43	8	51	N/A	499.5	21.8
10*	2025	66070	13	35	42	10	52	-7.7	499.4	26.0
10*	2024	66194	10	31	45	15	59	-0.5	505.1	25.8
10*	2023	68104	10	30	44	16	60	0.2	504.2	25.6
10*	2022	65193	7	34	51	9	60	-6.4	502.9	21.4
10*	2021	67110	8	26	46	20	66	2.3	508.1	24.7
10*	2019	67067	6	31	50	14	64	N/A	507.3	23.0

*Note: MCAS can no longer be used as the sole basis to satisfy the Competency Determination (CD) requirement for high school graduation.

Table 1.1.3
Percentage of Students by Achievement Levels Categories
Mathematics

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS	SD SS
3	2025	63570	19	36	35	10	45	-8.3	496.3	26.8
3	2024	50046	12	35	41	12	53	4.6	500.6	24.5
3	2023	51707	12	39	39	10	49	1.2	499.1	24.3
3	2022	53433	13	39	40	8	48	9.8	497.5	24.7
3	2021	45242	20	42	32	6	38	-18.0	491.2	25.7
3	2019	56176	7	37	45	11	56	7.2	503.0	22.4
3	2018	43501	11	40	40	9	49	-3.2	499.1	23.2
3	2017	26659	11	37	44	8	52	N/A	499.2	22.7
4	2025	61946	15	40	36	8	44	-10.9	496.0	25.1
4	2024	50882	8	37	45	10	55	1.5	502.5	23.0
4	2023	52554	10	37	43	10	54	4.0	501.1	22.9
4	2022	53577	10	40	43	7	50	10.9	498.8	23.0
4	2021	45553	17	44	34	4	39	-17.8	491.7	23.9
4	2019	57629	6	37	47	10	57	7.7	503.0	21.2
4	2018	69779	11	40	42	7	49	-1.9	498.0	22.6
4	2017	64473	10	39	44	6	51	N/A	498.7	22.0
5	2025	63371	15	44	35	7	41	-6.5	494.9	23.2
5	2024	53399	7	45	41	7	48	-0.3	499.6	20.2
5	2023	54159	7	45	42	6	48	5.7	499.3	20.6
5	2022	55635	10	48	38	5	42	3.1	496.5	20.6
5	2021	46011	13	47	35	5	39	-15.5	493.5	21.3
5	2019	60444	5	40	48	6	55	8.0	501.7	19.8
5	2018	70083	9	45	42	5	47	-2.7	497.7	19.7
5	2017	29285	8	42	42	8	49	N/A	499.4	20.7
6	2025	64578	15	43	35	7	42	-4.9	495.7	24.1
6	2024	54954	10	43	39	9	47	-0.1	499.4	22.5
6	2023	56389	11	42	40	8	47	-0.3	498.1	21.9

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS	SD SS
6	2022	56939	9	43	42	6	48	8.9	498.2	21.2
6	2021	46699	16	45	34	5	39	-18.9	493.4	22.7
6	2019	61719	6	37	46	12	58	9.6	504.0	22.0
6	2018	54582	9	43	42	6	48	-4.2	498.4	21.9
6	2017	29704	9	39	46	6	52	N/A	499.7	21.2
7	2025	64726	19	41	31	9	40	-3.6	493.3	25.9
7	2024	56448	12	45	34	9	43	-0.1	497.0	24.2
7	2023	57234	16	41	35	9	44	1.7	496.1	24.5
7	2022	59311	13	45	34	8	42	2.7	495.5	23.5
7	2021	46839	13	48	32	7	39	-13.4	494.9	23.5
7	2019	62495	9	39	41	12	53	5.3	501.0	23.7
7	2018	66925	12	40	40	8	47	-0.9	497.7	23.4
7	2017	30144	9	43	40	8	48	N/A	498.9	22.0

Table 1.1.3 (continued)
Percentage of Students by Achievement Levels Categories
Mathematics

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS	SD SS
8	2025	65585	20	41	31	8	39	-4.9	493.6	25.4
8	2024	57441	13	43	35	9	44	1.3	497.4	23.6
8	2023	59572	14	43	34	9	43	2.3	496.4	23.8
8	2022	62311	12	48	32	8	40	4.4	495.8	22.7
8	2021	47150	16	48	32	4	36	-15.1	492.0	22.9
8	2019	62817	8	41	40	11	51	0.4	501.5	22.5
8	2018	70044	11	39	42	8	51	1.1	498.9	22.7
8	2017	66077	9	42	40	9	49	N/A	500.3	21.6
10*	2025	64719	14	40	34	12	46	-7.9	498.2	25.7
10*	2024	61397	8	38	40	14	54	-0.1	503.3	24.0
10*	2023	63574	5	41	43	11	54	0.3	502.7	22.3
10*	2022	61296	7	39	41	12	54	-1.4	503.0	22.9
10*	2021	57770	9	36	43	12	55	-7.4	502.2	23.8
10*	2019	64481	6	32	48	14	63	N/A	506.9	22.6

*Note: MCAS can no longer be used as the sole basis to satisfy the Competency Determination (CD) requirement for high school graduation.

Table 1.1.4
Percentage of Students by Achievement Levels Categories
Introductory Physics

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS	SD SS
10*	2025	12949	16	39	32	13	45	-10.8	498.2	26.4
10*	2024	12899	10	35	40	16	56	0.5	503.8	25.2
10*	2023	12822	9	36	38	17	55	3.5	504.4	25.8
10*	2022	12837	8	40	39	13	52	N/A	502.0	23.9

*Note: MCAS can no longer be used as the sole basis to satisfy the Competency Determination (CD) requirement for high school graduation.

Table 1.1.5
Percentage of Students by Achievement Levels Categories
Science

Grade	Year	Count	NM	PM	ME	EE	ME+EE	Delta	Ave. SS	SD SS
5	2025	63271	18	35	38	9	47	-5.3	495.6	25.9
5	2024	53906	12	36	44	9	53	3.8	500.0	23.7
5	2023	54162	11	40	39	10	49	0.3	499.1	23.6
5	2022	56846	12	39	40	8	48	-0.1	498.5	23.9
5	2021	45455	12	39	41	8	49	-6.8	498.2	23.5
5	2019	60476	7	38	45	10	55	N/A	502.5	21.5
8	2025	65054	18	44	32	6	38	-7.0	492.4	23.9
8	2024	57509	13	42	38	6	45	-1.0	496.2	23.2
8	2023	59527	13	41	39	7	46	0.2	496.7	23.0
8	2022	62926	13	41	39	6	46	0.6	496.3	22.5
8	2021	46950	11	44	36	9	45	-5.3	497.6	22.5
8	2019	62933	8	41	41	9	50	N/A	500.5	21.9

Section 1.2

Raw Scores Associated with Cutpoints

Table 1.2.1
Raw Scores Associated with Cutpoints

Subject	Grade	Cut Point	2024 Actual	2025 Actual	2025 Pred
Biology	10	NM-PM	18	17	17
Biology	10	PM-ME	35	34	34
Biology	10	ME-EE	51	49	49
Biology	10	Max*	60	58	58
English Language Arts	3	NM-PM	14	13	12
English Language Arts	3	PM-ME	27	26	25
English Language Arts	3	ME-EE	37	37	36
English Language Arts	4	NM-PM	15	16	14
English Language Arts	4	PM-ME	29	30	29
English Language Arts	4	ME-EE	39	40	39
English Language Arts	5	NM-PM	16	15	15
English Language Arts	5	PM-ME	34	31	30
English Language Arts	5	ME-EE	44	42	41
English Language Arts	6	NM-PM	19	19	17
English Language Arts	6	PM-ME	32	33	30
English Language Arts	6	ME-EE	42	43	41
English Language Arts	7	NM-PM	19	19	17
English Language Arts	7	PM-ME	34	33	31
English Language Arts	7	ME-EE	44	43	42
English Language Arts	8	NM-PM	20	20	20
English Language Arts	8	PM-ME	33	34	33
English Language Arts	8	ME-EE	43	44	43
English Language Arts	10	NM-PM	20	19	19
English Language Arts	10	PM-ME	35	35	34
English Language Arts	10	ME-EE	45	45	43
English Language Arts	10	Max**	51	49	49
Mathematics	3	NM-PM	14	14	14
Mathematics	3	PM-ME	29	30	31
Mathematics	3	ME-EE	42	43	44
Mathematics	4	NM-PM	16	15	15
Mathematics	4	PM-ME	34	34	34
Mathematics	4	ME-EE	49	49	49
Mathematics	5	NM-PM	13	14	13
Mathematics	5	PM-ME	32	32	32
Mathematics	5	ME-EE	49	49	49
Mathematics	6	NM-PM	12	13	13
Mathematics	6	PM-ME	30	31	30
Mathematics	6	ME-EE	48	49	48
Mathematics	7	NM-PM	11	12	12
Mathematics	7	PM-ME	28	26	26
Mathematics	7	ME-EE	47	46	46
Mathematics	8	NM-PM	14	14	13
Mathematics	8	PM-ME	32	32	31
Mathematics	8	ME-EE	49	49	49

*Note: In Spring 2025, one 4-point item (SC304044565) in Biology was scored as a 2-point item due to technical issues, resulting in the max raw score to be 58 points.

**Note: In Spring 2025, one 2-point item (EL903436123) in ELA10 was flawed due to technical issues, resulting in the max raw score to be 49 points.

Table 1.2.1 (continued)
Raw Scores Associated with Cutpoints

Subject	Grade	Cut Point	2024 Actual	2025 Actual	2025 Pred
Mathematics	10	NM–PM	15	14	13
Mathematics	10	PM–ME	32	31	32
Mathematics	10	ME–EE	52	51	52
Introductory Physics	10	NM–PM	17	17	17
Introductory Physics	10	PM–ME	33	35	34
Introductory Physics	10	ME–EE	49	50	50
Science	5	NM–PM	18	18	18
Science	5	PM–ME	32	33	33
Science	5	ME–EE	45	45	45
Science	8	NM–PM	17	16	16
Science	8	PM–ME	32	33	33
Science	8	ME–EE	45	45	45

Section 1.3

Calibration Report

Calibration Report—Executive Summary

FlexMIRT 3.03 was used for the IRT calibration at Cognia. All command files were set up in a way following general settings. The calibration convergence criterion was set to 0.001.

A 3PLM was used for standard four-option multiple choice (MC) items, a 2PLM was used for dichotomously-scored short response items, multi-select items, and technology-enhanced items, and a Graded Response Model (GRM) was specified for the polytomously-scored multi-part items and open response items. The logistic version of the IRT models was used. The prior distribution for the guessing parameter was set to be $\text{beta}(5,17)$, and $\text{logNormal}(0, 0.25)$ was used as the prior for the item discrimination parameter. No prior was supplied for the item difficulty parameter.

The calibration went smoothly and was converged in all subjects/grades. In particular, the largest change in parameter values (from one iteration to the next) was decreasing and tended to flatten out towards the end of the calibration process. The IRT model fit was evaluated for each of the items. The resulting parameters demonstrated good model fit for most of the items.

In ELA, a two-stage process was used to bring the item parameters onto the operational scale. First all items except the essays were freely calibrated. Next the items were placed onto scale using the Stocking and Lord procedure. These first two steps are referred to as Stage 1. Next, the essays were brought onto scale with a Fixed Common Item Parameter calibration using FlexMIRT while holding the parameters from Stage 1 fixed. This two-stage process is used to assure that the essay parameter estimation process does not unduly influence the dimensional structure of the initial parameter estimation in Stage 1, providing for greater scale stability.

The first table in this section shows the number of cycles to achieve convergence in Stage 1 of the ELA procedure:

Table 1.3.1.a
Number of Cycles to Convergence for ELA Calibration with no Essays

Subject	Grade	Initial Cycles
English Language Arts	Grade 3	34
English Language Arts	Grade 4	45
English Language Arts	Grade 5	49
English Language Arts	Grade 6	31
English Language Arts	Grade 7	53
English Language Arts	Grade 8	43
English Language Arts	Grade 10	54

The Stocking and Lord procedure was used to transform non-essay parameter estimates onto the operational scale. These transformation constants were found using the STUIRT

program which can be found at the CASMA website:

<http://www.education.uiowa.edu/casma/>. The Stocking & Lord transformation constants that were calculated in the second step of Stage 1 are listed in the following table:

Table 1.3.1.b
Stocking and Lord Constants for ELA Equating with no Essays

Subject	Grade	Slope	Intercept	Num Eq Items	Num Eq Items Rem
English Language Arts	3	1.15	-0.26	18	1
English Language Arts	4	1.16	-0.33	18	0
English Language Arts	5	1.17	-0.27	16	0
English Language Arts	6	1.50	-0.35	16	0
English Language Arts	7	1.34	-0.38	16	0
English Language Arts	8	1.42	-0.26	16	0
English Language Arts	10	1.20	-0.35	16	0

The third table shows the number of cycles to achieve convergence in the equating (FCIP) calibration runs for ELA Stage 2:

Table 1.3.1.c
Number of Cycles to Convergence

Subject	Grade	Initial Cycles	Equating Cycles
English Language Arts	Grade 3	119	7
English Language Arts	Grade 4	44	7
English Language Arts	Grade 5	26	11
English Language Arts	Grade 6	35	11
English Language Arts	Grade 7	52	10
English Language Arts	Grade 8	48	10

The Math and Science tests were equated using a single stage procedure of freely calibrating all items and placing them on the operational scale using the Stocking and Lord procedure. The next table in this section lists the number of cycles to achieve convergence, followed by a table of the Stocking and Lord transformation constants.

Table 1.3.1.d
Number of Cycles to Convergence for Math and Science

Subject	Grade	Initial Cycles
Biology	Grade 10	66
Mathematics	Grade 3	38
Mathematics	Grade 4	63
Mathematics	Grade 5	58
Mathematics	Grade 6	54
Mathematics	Grade 7	105
Mathematics	Grade 8	50
Mathematics	Grade 10	81
Introductory Physics	Grade 10	32
Science	Grade 5	20
Science	Grade 8	28

Table 1.3.1.e
Stocking and Lord Constants for Math and Science

Subject	Grade	Slope	Intercept	Num Eq Items	Num Eq Items Rem
Biology	10	0.92	-0.02	22	0
Mathematics	3	1.22	-0.16	20	0
Mathematics	4	1.15	-0.15	20	1
Mathematics	5	1.14	-0.24	20	0
Mathematics	6	1.16	-0.22	20	0
Mathematics	7	1.21	-0.28	20	1
Mathematics	8	1.14	-0.22	20	0
Mathematics	10	1.15	-0.39	21	1
Introductory Physics	10	0.95	0.05	22	0
Science	5	1.25	-0.35	20	0
Science	8	1.11	-0.38	20	0

Three methods were used to evaluate the suitability of the equating items: delta analysis, b/b analysis, and beta analysis. Although all four analyses were conducted, only the beta analysis was used to flag outliers. As a result of the beta analysis, flagged items were reviewed by content personnel, and one item each from grade 3 ELA, grade 4 math, grade 7 math, and grade 10 math was removed from the equating analysis. Results from these analyses are included in Section II of this report.

Items flagged by the beta analysis were compiled and placed in our item watch list, which includes the final actions taken on these items. The final watch list is presented in the following table:

Table 1.3.2
Final Items Watch List

Subject	Grade	ItemID	Reason	Action
English Language Arts	3	IA00280 (EL308824)	beta analysis	retained for equating
English Language Arts	3	IA00445 (EL626043435)	beta analysis	removed from equating
English Language Arts	4	IA00408 (EL624647580)	beta analysis	retained for equating
English Language Arts	6	IA00175 (EL303504)	beta analysis	retained for equating
Mathematics	4	IA01055 (MA311572)	beta analysis	retained for equating
Mathematics	4	IA01093 (MA623879088)	beta analysis	retained for equating
Mathematics	4	IA02819 (MA713583365)	beta analysis	removed from equating
Mathematics	4	IA04965 (MA800867144)	beta analysis	retained for equating
Mathematics	5	IA02552 (MA311324)	beta analysis	retained for equating
Mathematics	5	IA05002 (MA801652356)	beta analysis	retained for equating
Mathematics	7	IA10268 (MA005205470)	beta analysis	removed from equating
Mathematics	8	IA04665 (MA307399)	beta analysis	retained for equating
Mathematics	8	IA04957 (MA800770988)	beta analysis	retained for equating
Mathematics	10	IA04819 (MA735579095)	beta analysis	retained for equating
Mathematics	10	IA04991 (MA801426792)	beta analysis	removed from equating
Introductory Physics	10	IA10657 (SC630578145)	beta analysis	retained for equating
Introductory Physics	10	IA10704 (SC800964236)	beta analysis	retained for equating
Introductory Physics	10	IA10905 (SC905872783)	beta analysis	retained for equating
Science	5	IA05631 (SC802758561)	beta analysis	retained for equating

Section 1.4

Equating Item Summary Statistics

Table 1.4.1
Equating Item Summary Statistics
(2025 a and b values are derived from unscaled parameters before equating)

Subject	Grade	Year	P-Value Mean	P-Value Std Dev	Point Biserial Mean	Point Biserial Std Dev	a Mean	a Std Dev	b Mean	b Std Dev
Biology	10	2025	0.52	0.13	0.48	0.13	1.02	0.29	0.12	0.72
Biology	10	Previous	0.58	0.15	0.46	0.12	1.13	0.36	0.09	0.63
English Language Arts	03	2025	0.55	0.13	0.47	0.10	1.07	0.37	0.21	0.68
English Language Arts	03	Previous	0.57	0.12	0.47	0.09	0.94	0.28	-0.20	0.55
English Language Arts	04	2025	0.62	0.15	0.44	0.09	0.86	0.20	-0.27	0.74
English Language Arts	04	Previous	0.63	0.16	0.42	0.09	0.78	0.19	-0.66	0.85
English Language Arts	05	2025	0.66	0.14	0.41	0.07	0.90	0.32	-0.43	0.62
English Language Arts	05	Previous	0.67	0.14	0.41	0.08	0.74	0.24	-0.83	0.74
English Language Arts	06	2025	0.67	0.10	0.42	0.09	0.92	0.25	-0.41	0.68
English Language Arts	06	Previous	0.68	0.11	0.41	0.09	0.60	0.16	-0.97	1.03
English Language Arts	07	2025	0.69	0.10	0.45	0.09	0.98	0.28	-0.54	0.60
English Language Arts	07	Previous	0.69	0.11	0.43	0.09	0.71	0.19	-1.12	0.83
English Language Arts	08	2025	0.63	0.13	0.42	0.08	0.89	0.30	-0.26	0.60
English Language Arts	08	Previous	0.63	0.13	0.41	0.07	0.59	0.18	-0.68	0.81
English Language Arts	10	2025	0.67	0.11	0.45	0.06	0.95	0.26	-0.52	0.63
English Language Arts	10	Previous	0.71	0.11	0.44	0.07	0.77	0.22	-0.99	0.75
Mathematics	03	2025	0.60	0.14	0.50	0.14	1.06	0.32	-0.19	0.65
Mathematics	03	Previous	0.63	0.15	0.48	0.12	0.87	0.24	-0.35	0.79
Mathematics	04	2025	0.58	0.12	0.52	0.14	1.11	0.36	-0.08	0.55
Mathematics	04	Previous	0.64	0.12	0.50	0.13	1.01	0.28	-0.18	0.55
Mathematics	05	2025	0.55	0.18	0.51	0.12	1.12	0.32	-0.08	0.78
Mathematics	05	Previous	0.59	0.19	0.49	0.11	1.00	0.26	-0.28	0.85
Mathematics	06	2025	0.52	0.14	0.52	0.11	1.12	0.35	0.08	0.64
Mathematics	06	Previous	0.56	0.16	0.50	0.10	0.94	0.29	-0.19	0.77
Mathematics	07	2025	0.51	0.18	0.52	0.13	1.32	0.38	0.19	0.70
Mathematics	07	Previous	0.54	0.18	0.50	0.13	1.09	0.33	-0.04	0.86
Mathematics	08	2025	0.52	0.13	0.52	0.13	1.28	0.41	0.15	0.52
Mathematics	08	Previous	0.55	0.14	0.51	0.12	1.10	0.35	-0.08	0.62

Table 1.4.1 (continued)
Equating Item Summary Statistics

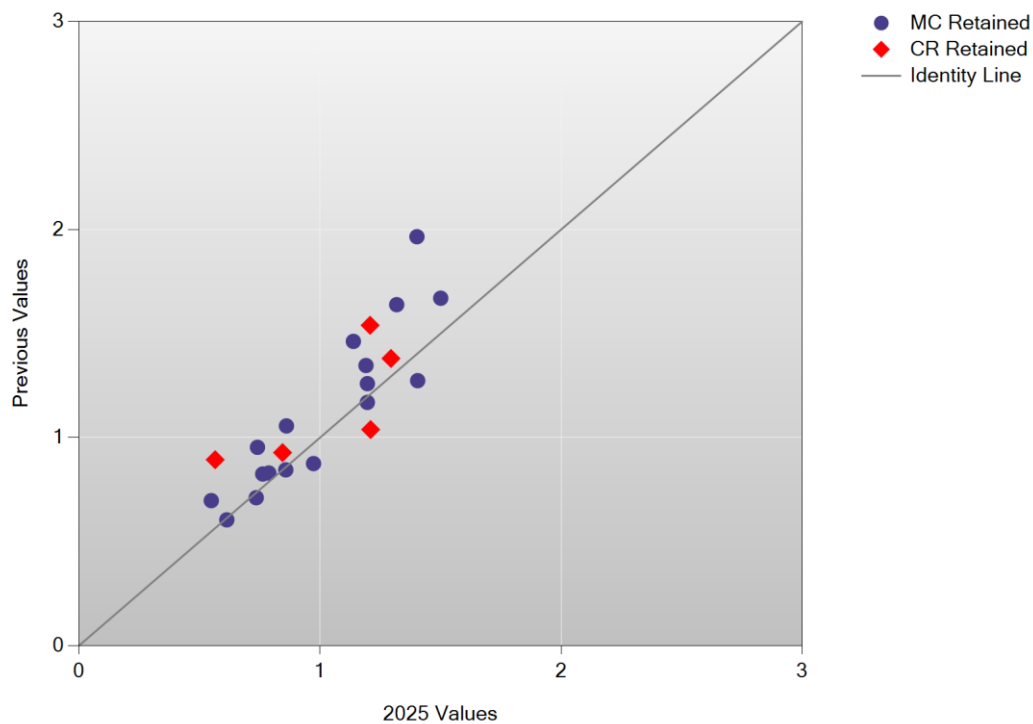
Subject	Grade	Year	P-Value Mean	P-Value Std Dev	Point Biserial Mean	Point Biserial Std Dev	a Mean	a Std Dev	b Mean	b Std Dev
Mathematics	10	2025	0.46	0.14	0.52	0.15	1.32	0.46	0.42	0.64
Mathematics	10	Previous	0.50	0.16	0.51	0.13	1.13	0.34	0.07	0.75
Introductory Physics	10	2025	0.53	0.13	0.51	0.12	1.05	0.42	0.04	0.56
Introductory Physics	10	Previous	0.57	0.14	0.50	0.13	1.09	0.36	0.15	0.58
Science	05	2025	0.60	0.16	0.51	0.11	0.93	0.27	-0.25	0.76
Science	05	Previous	0.64	0.16	0.44	0.11	0.74	0.20	-0.64	0.92
Science	08	2025	0.54	0.13	0.54	0.09	0.92	0.24	-0.10	0.74
Science	08	Previous	0.59	0.13	0.48	0.09	0.80	0.19	-0.52	0.81

Section 2.1

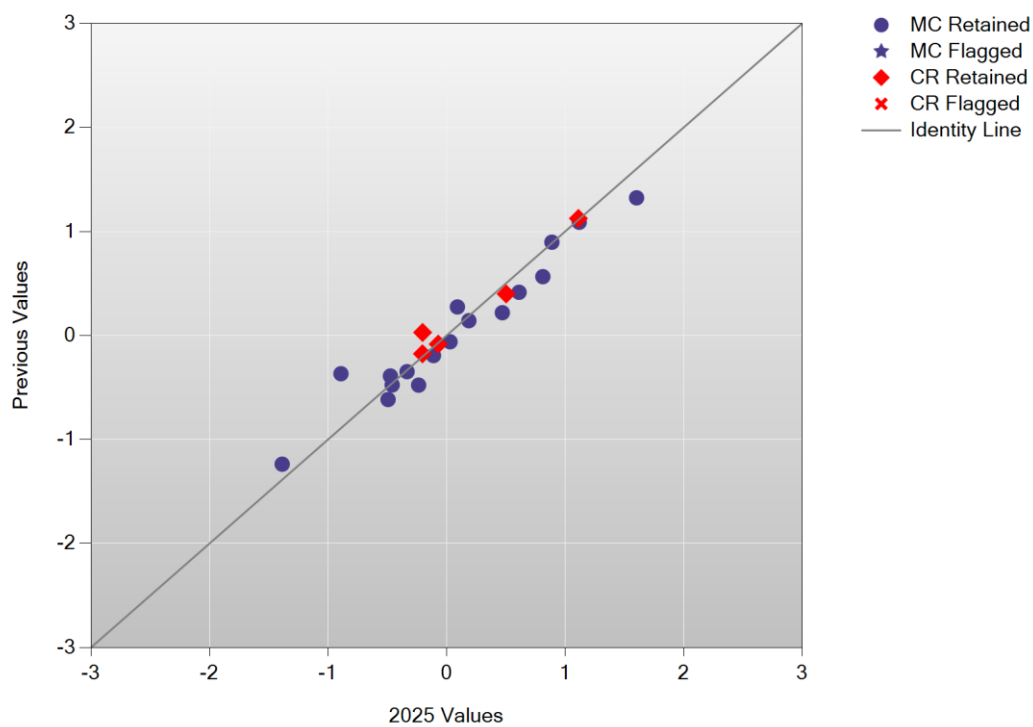
A/A, B/B, Delta, Test Characteristic Curve, Test Information Function, and Cumulative Scale Score Distribution Plots

Note: “CR” in this section refers to all non-MC items in the equating set, different from typical use of CR in the MCAS context.

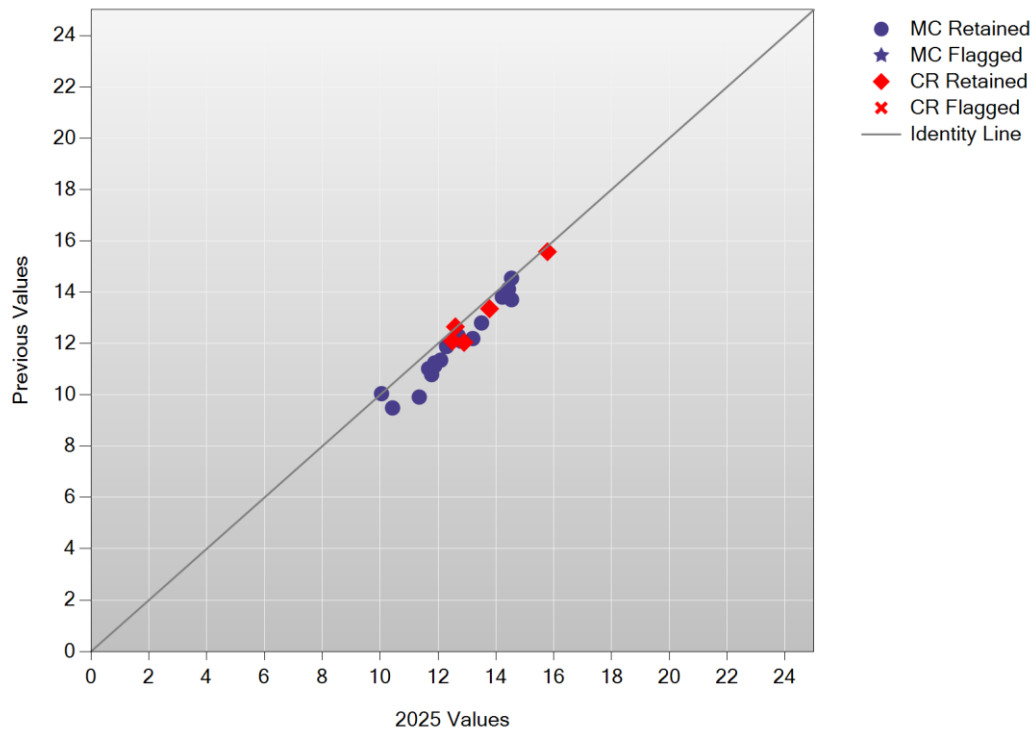
A/A Plot: Biology Grade 10



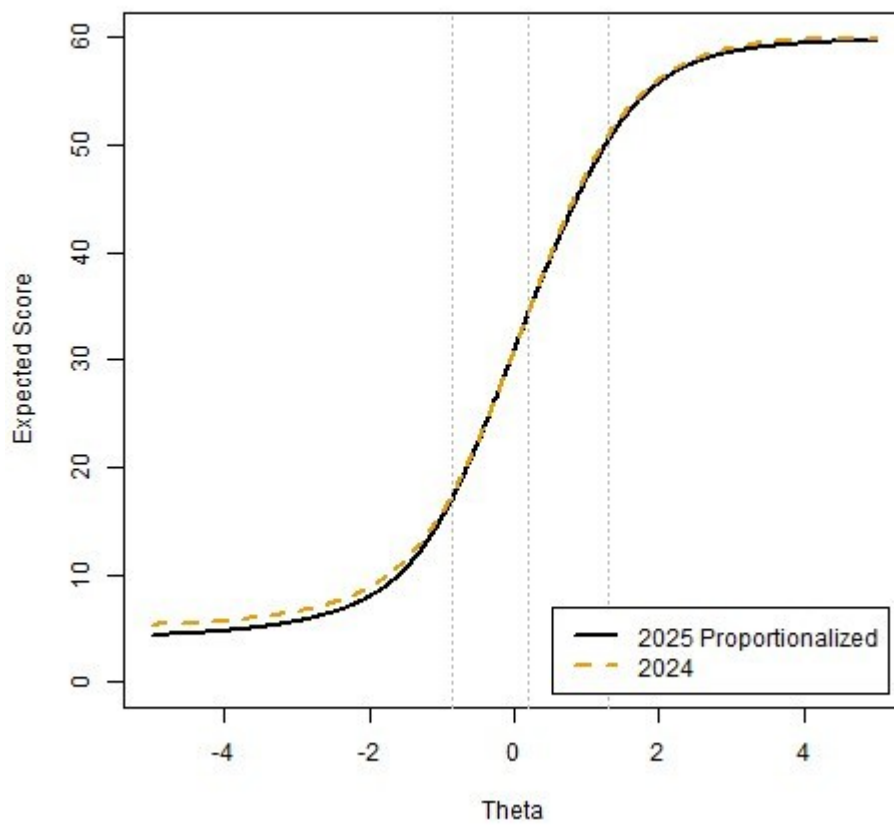
B/B Plot: Biology Grade 10



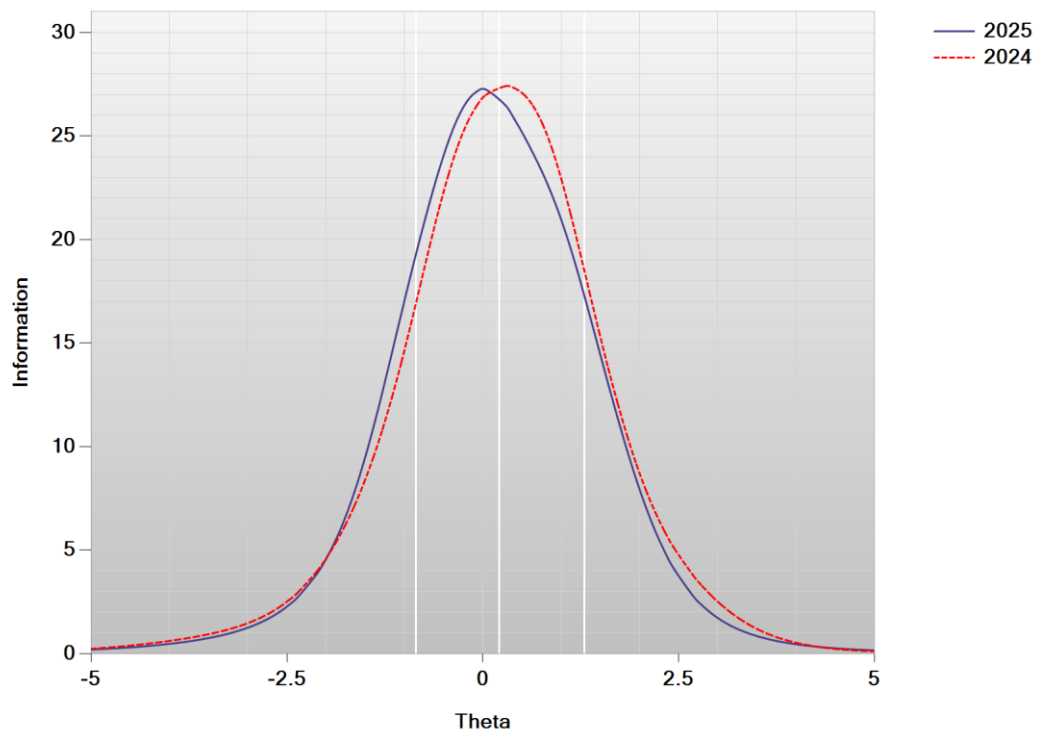
Delta Plot: Biology Grade 10



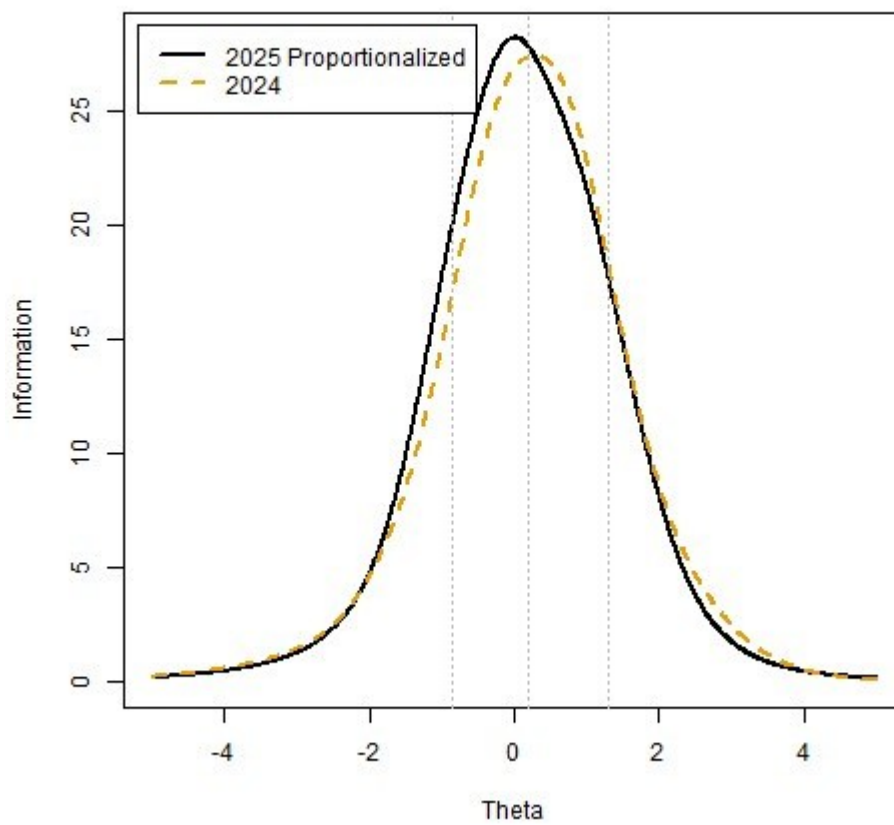
Test Characteristic Curve: bio10



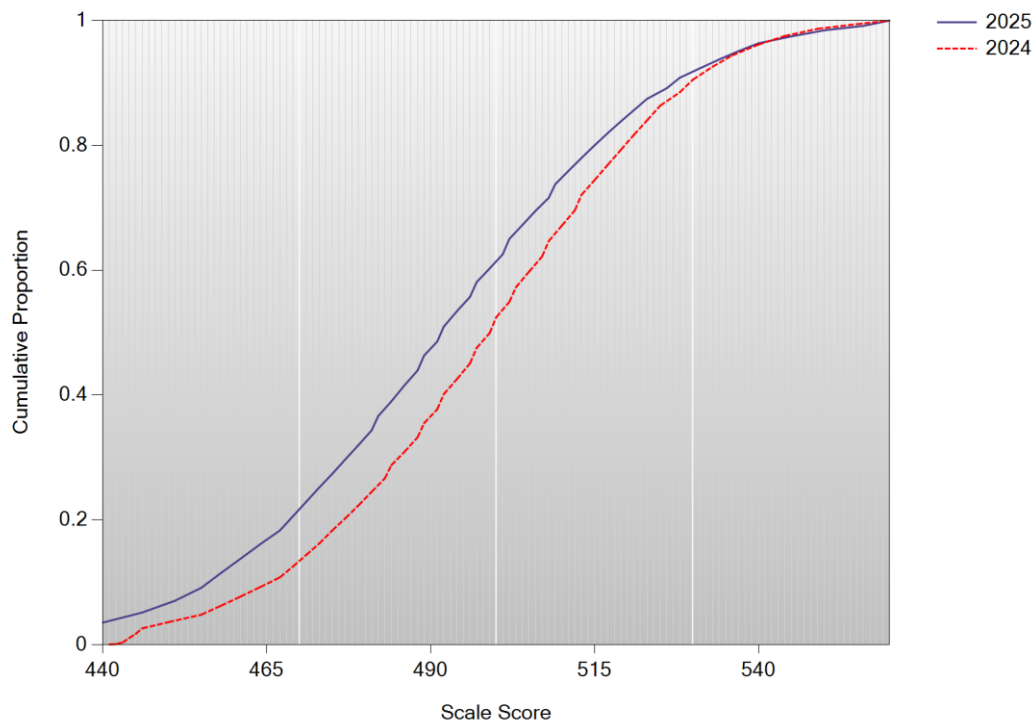
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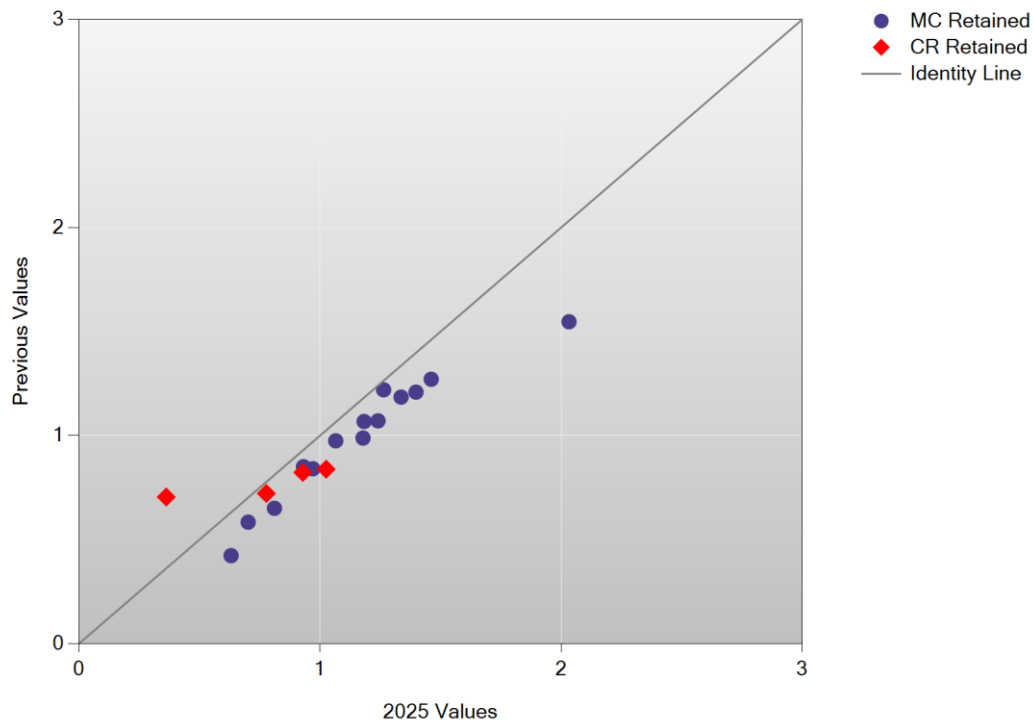
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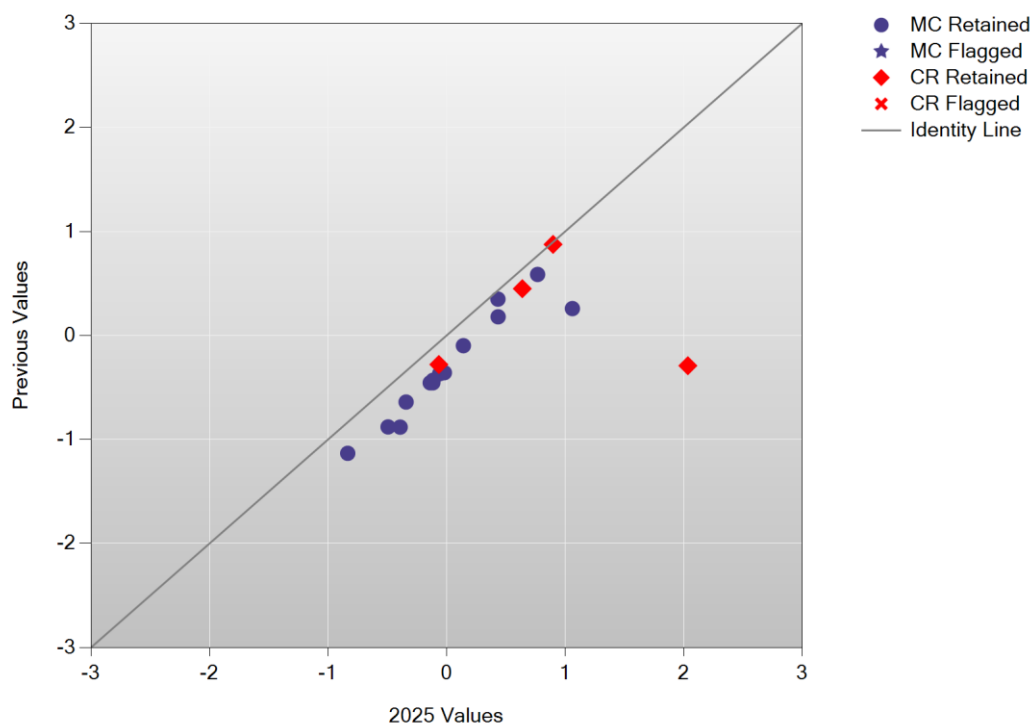
Cumulative Scale Score Distributions: Biology Grade 10



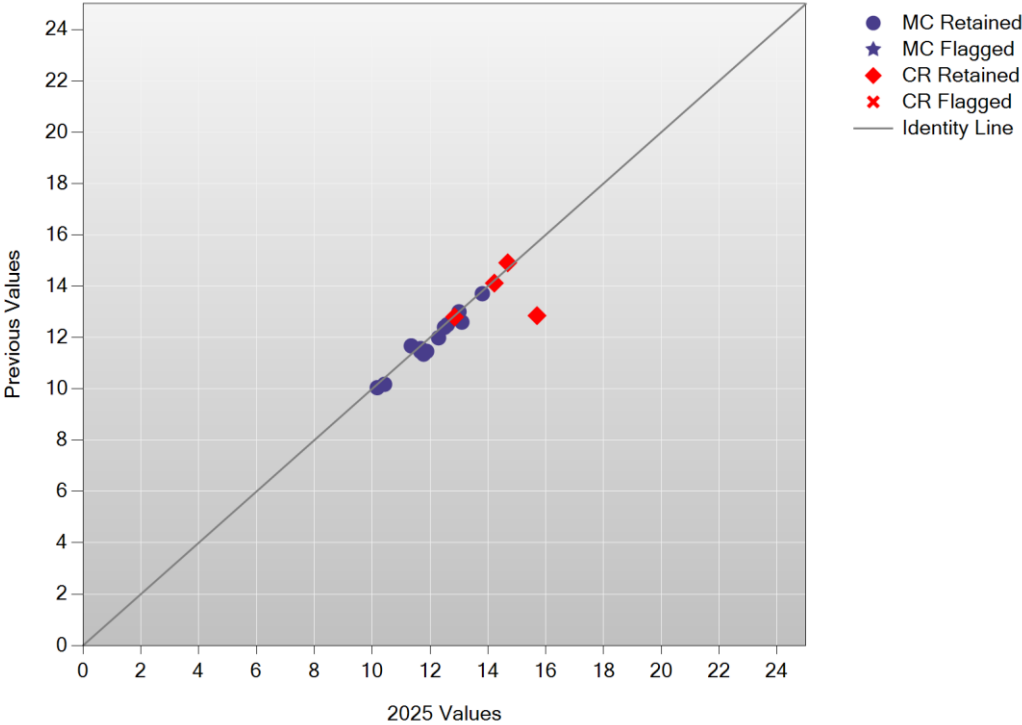
A/A Plot: English Language Arts Grade 3



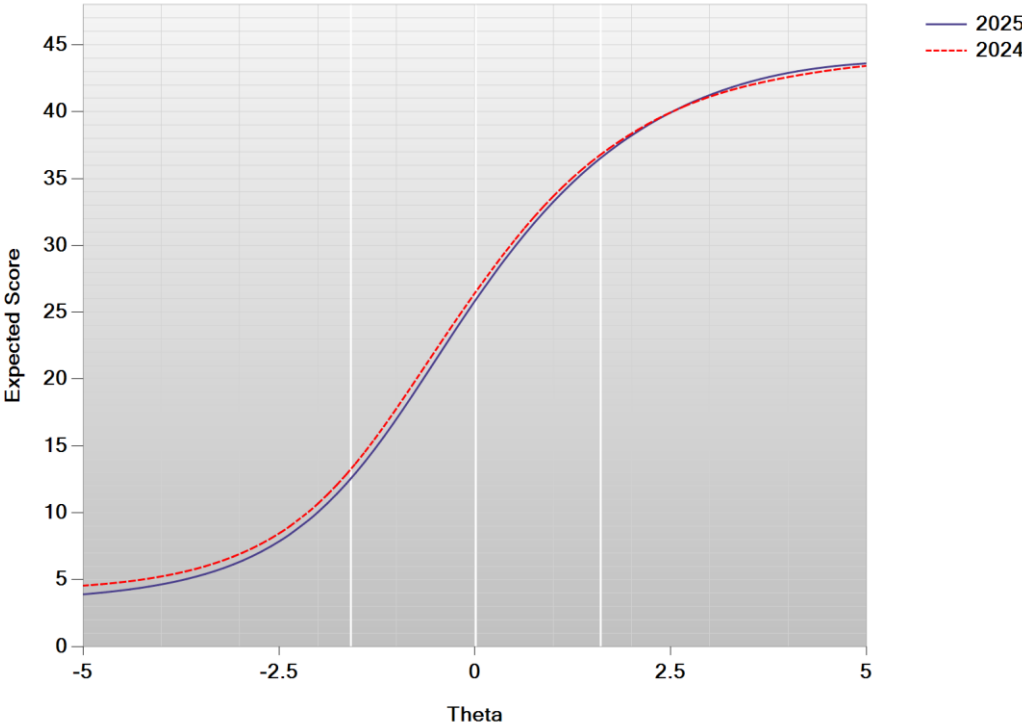
B/B Plot: English Language Arts Grade 3



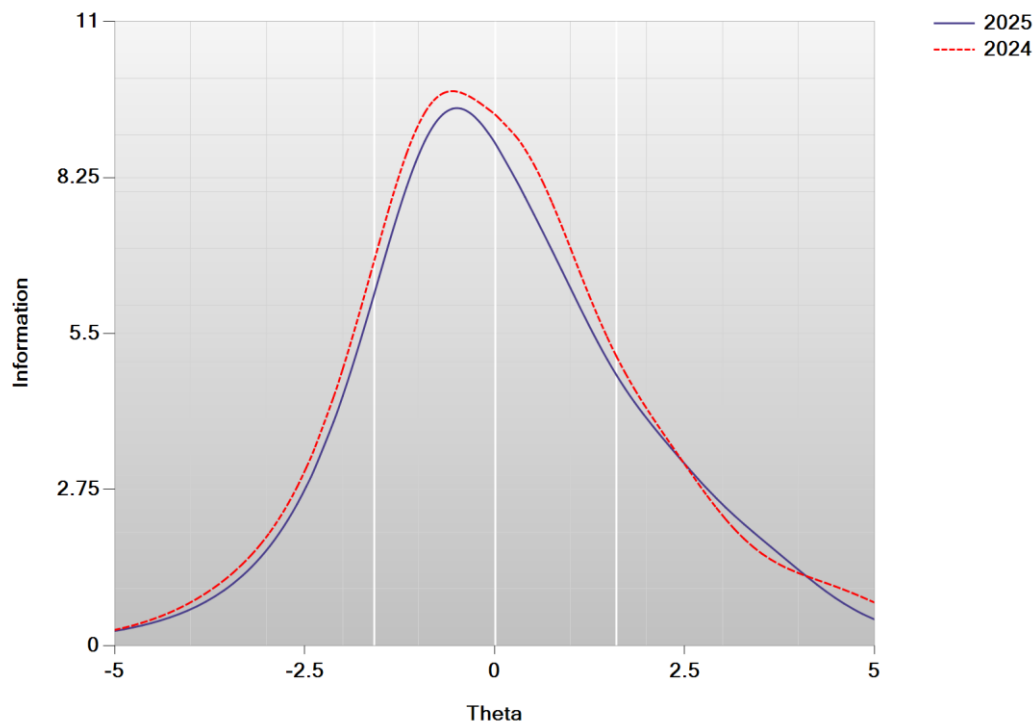
Delta Plot: English Language Arts Grade 3



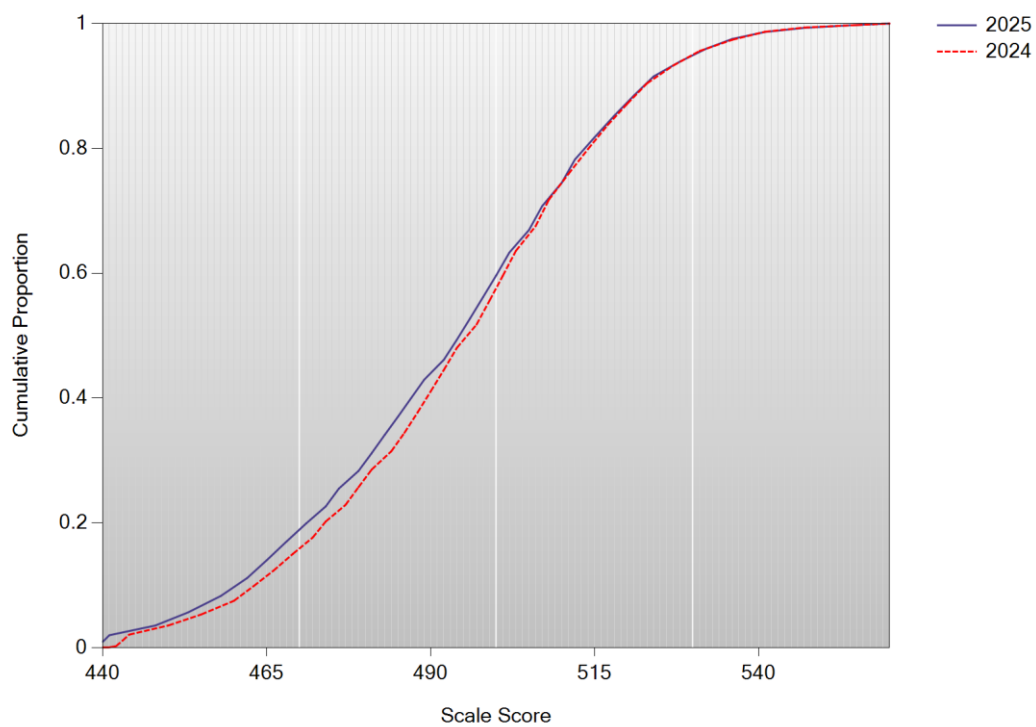
Test Characteristic Curve:English Language Arts Grade 3



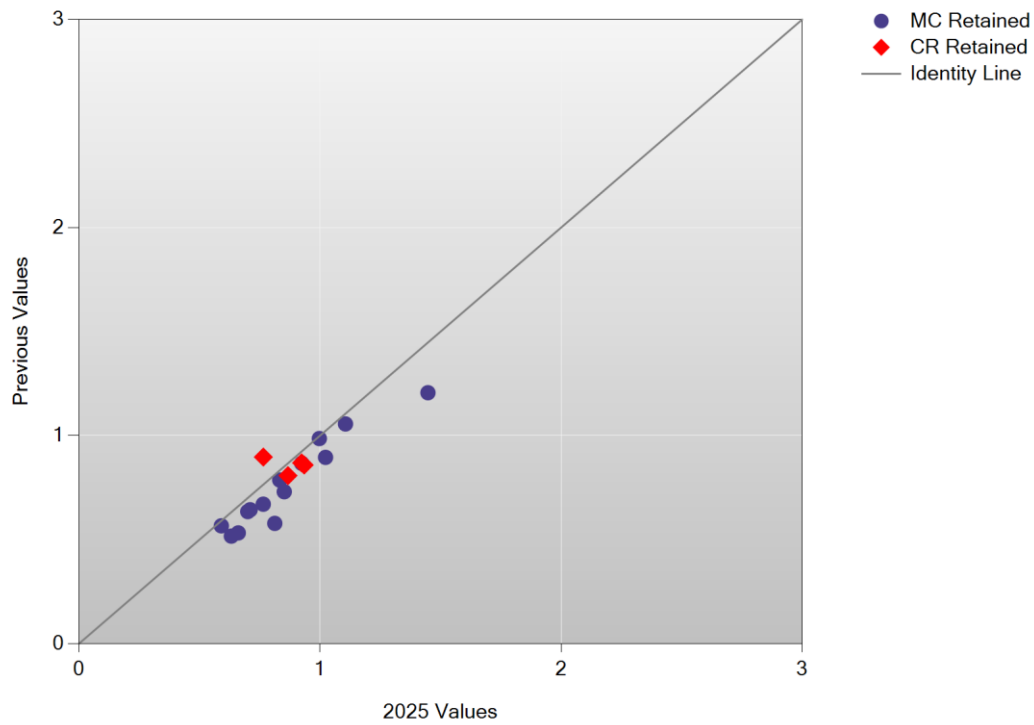
Test Information Function: English Language Arts Grade 3



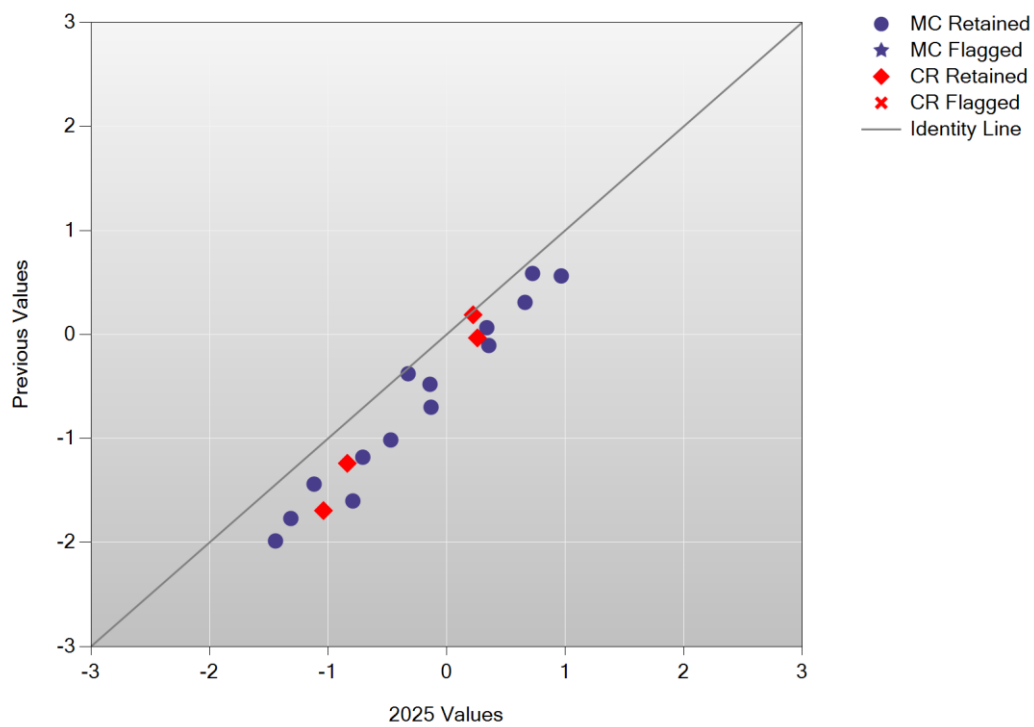
Cumulative Scale Score Distributions: English Language Arts Grade 3



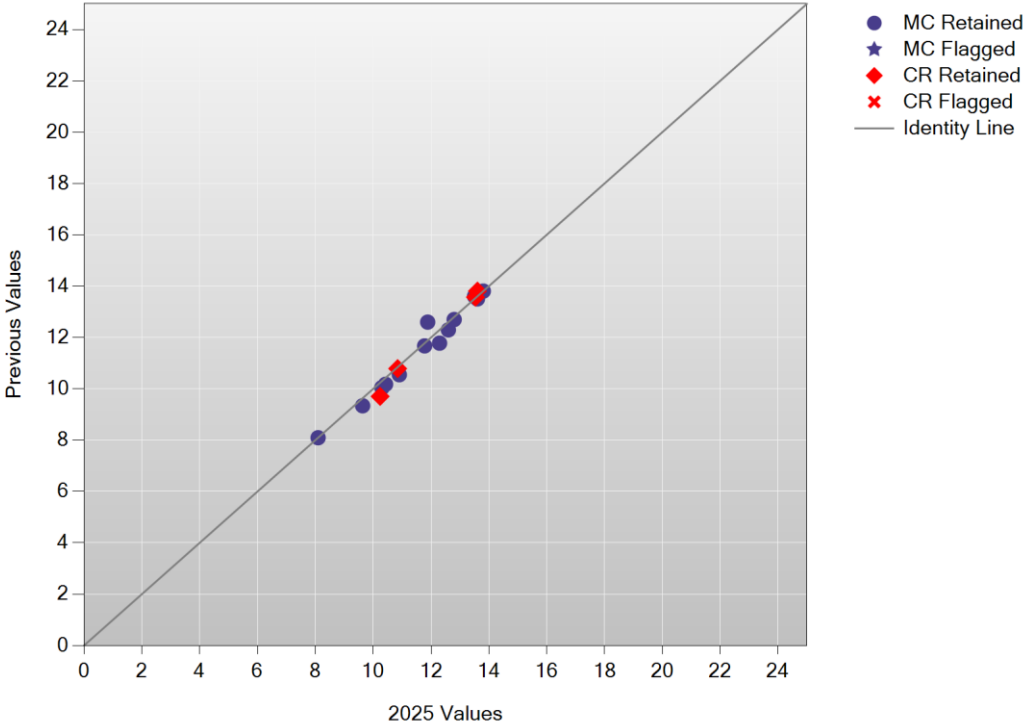
A/A Plot: English Language Arts Grade 4



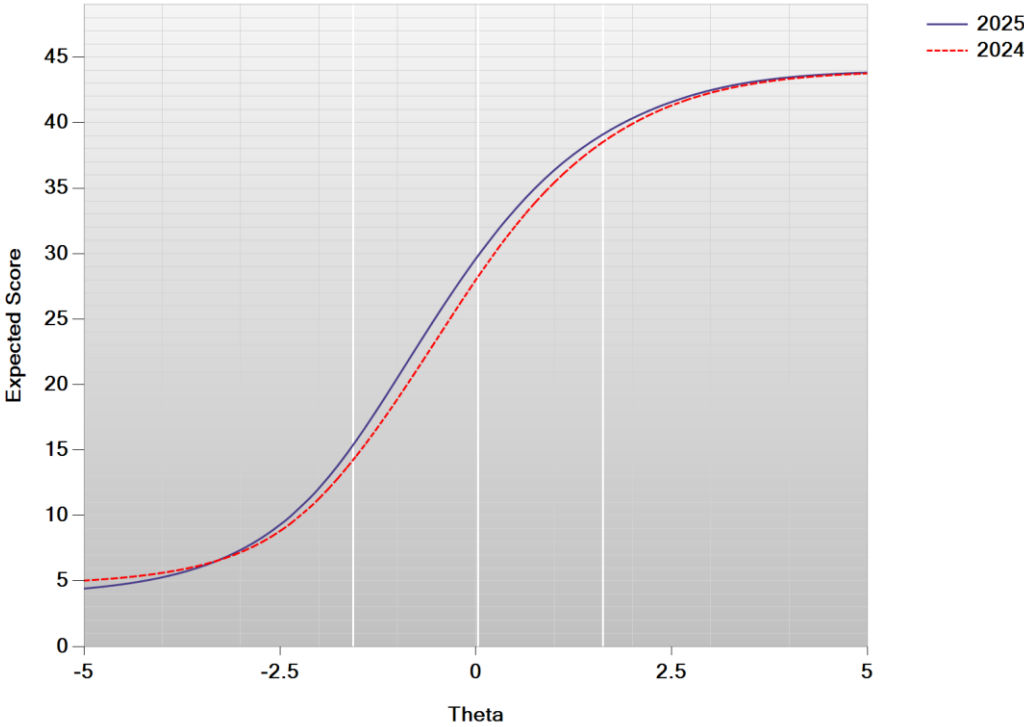
B/B Plot: English Language Arts Grade 4



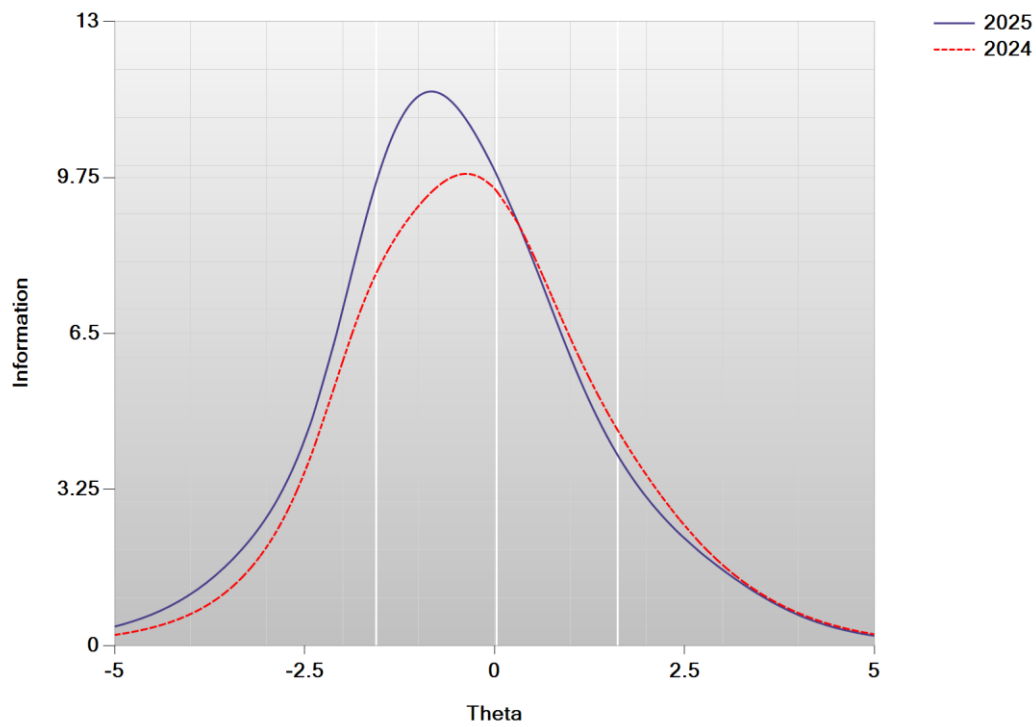
Delta Plot: English Language Arts Grade 4



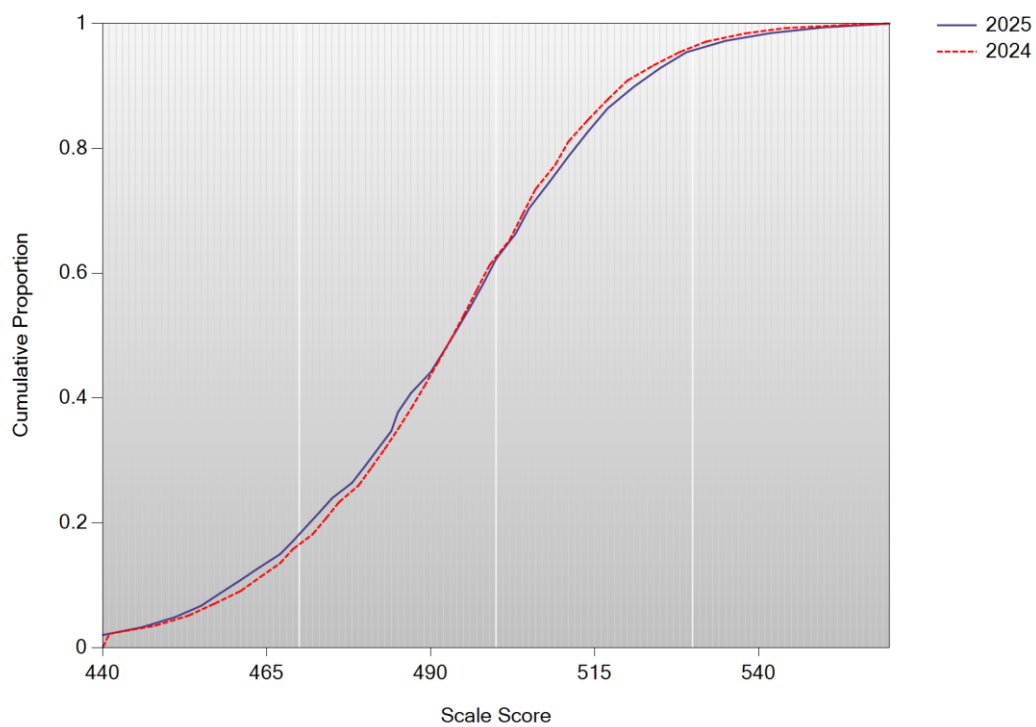
Test Characteristic Curve:English Language Arts Grade 4



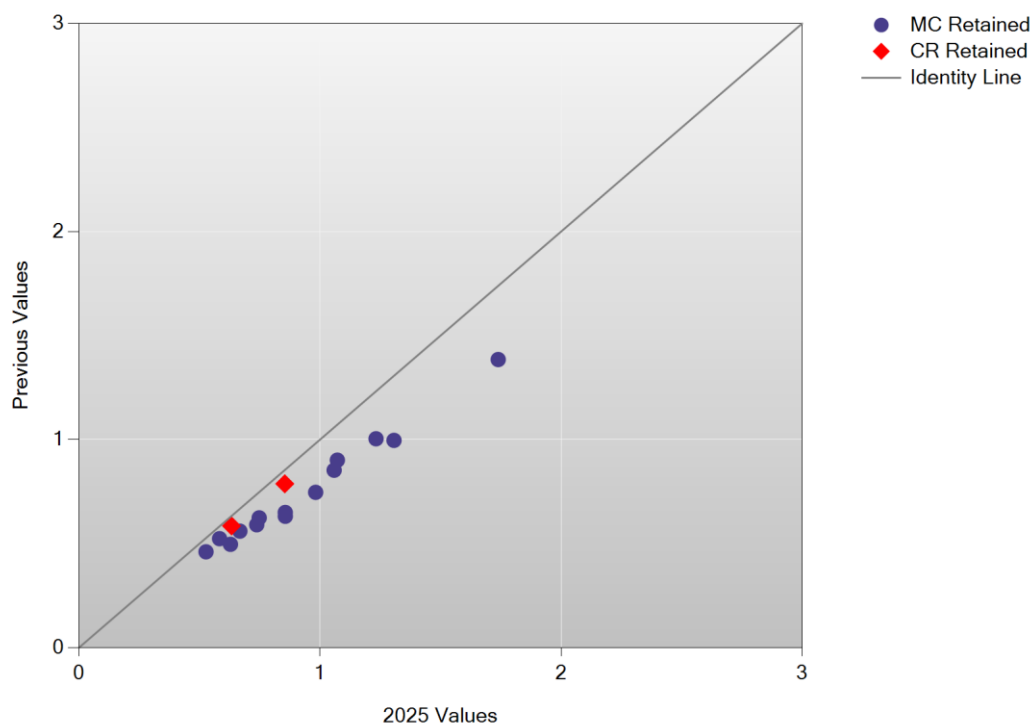
Test Information Function: English Language Arts Grade 4



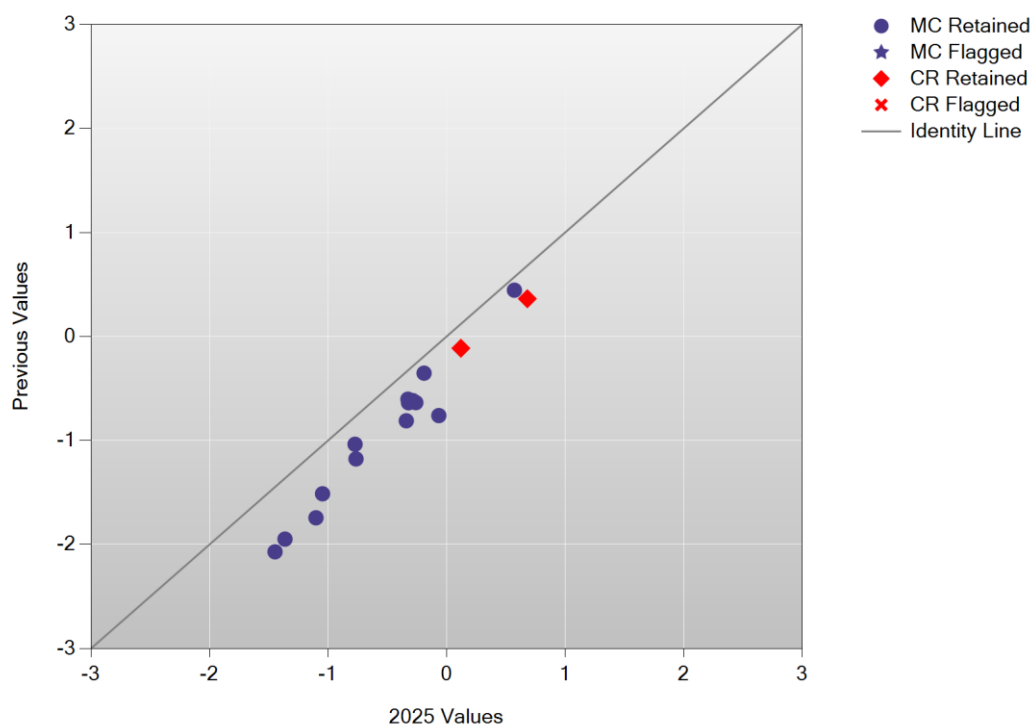
Cumulative Scale Score Distributions: English Language Arts Grade 4



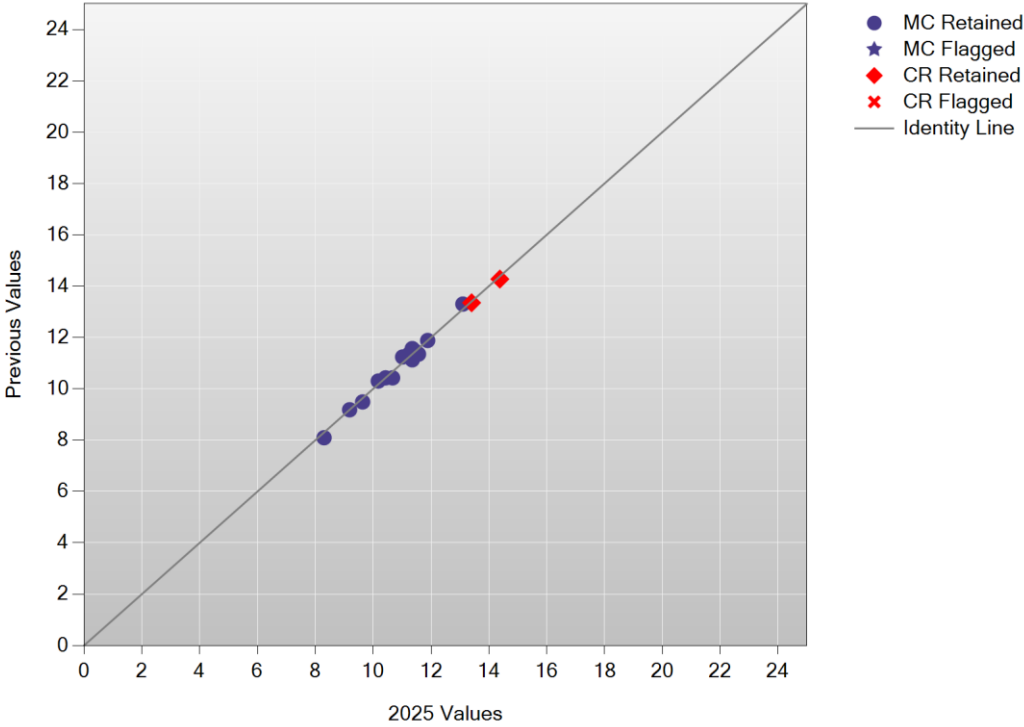
A/A Plot: English Language Arts Grade 5



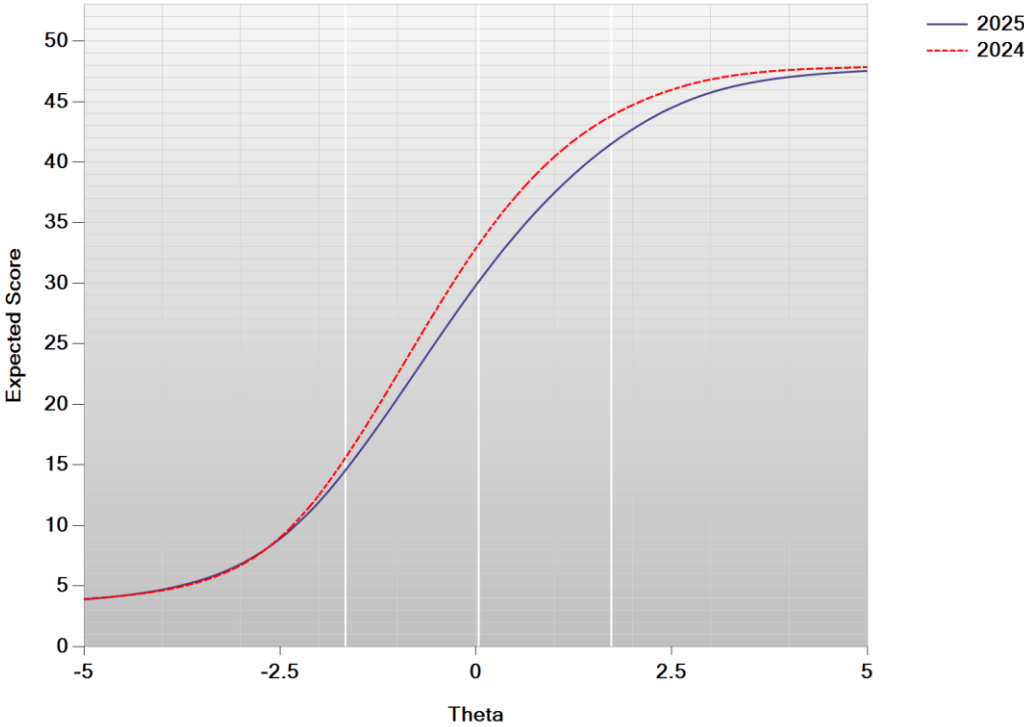
B/B Plot: English Language Arts Grade 5



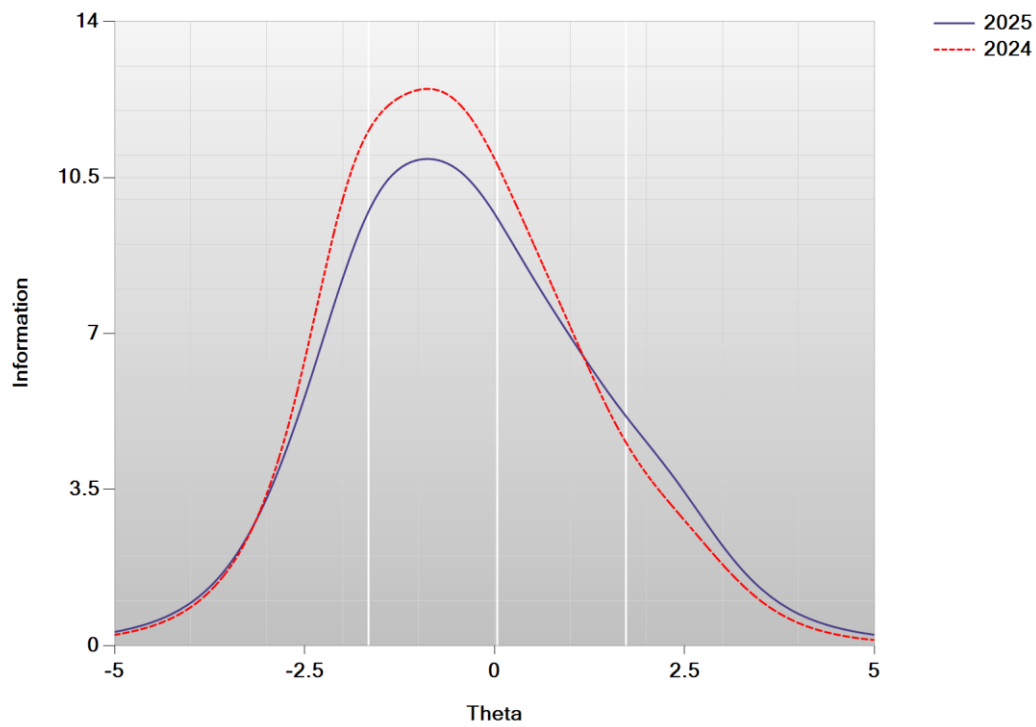
Delta Plot: English Language Arts Grade 5



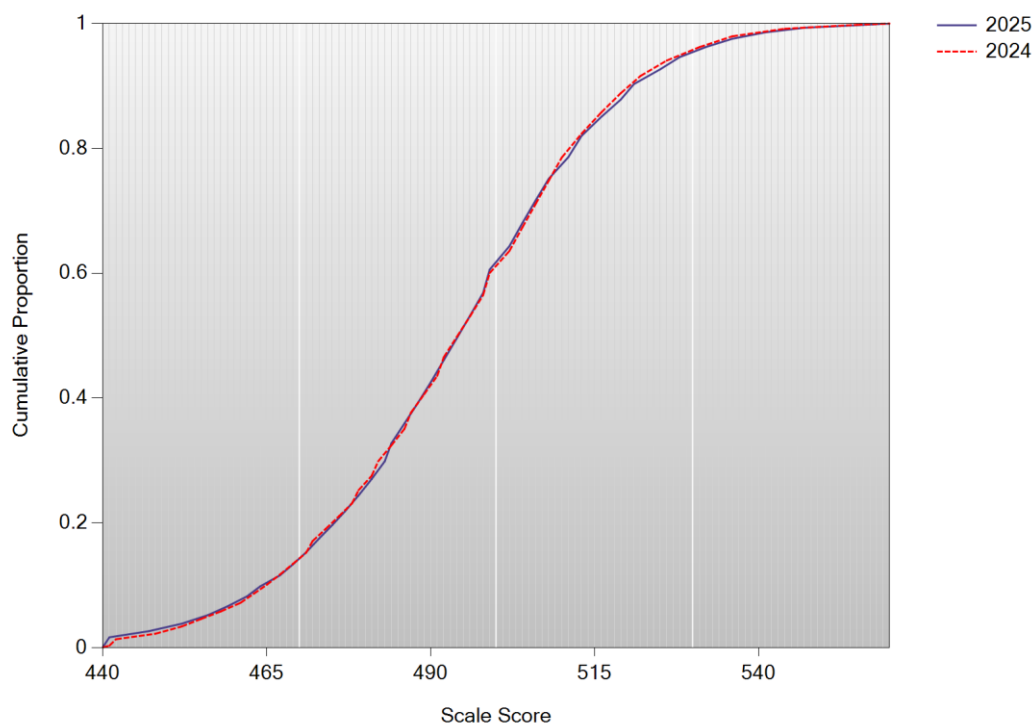
Test Characteristic Curve:English Language Arts Grade 5



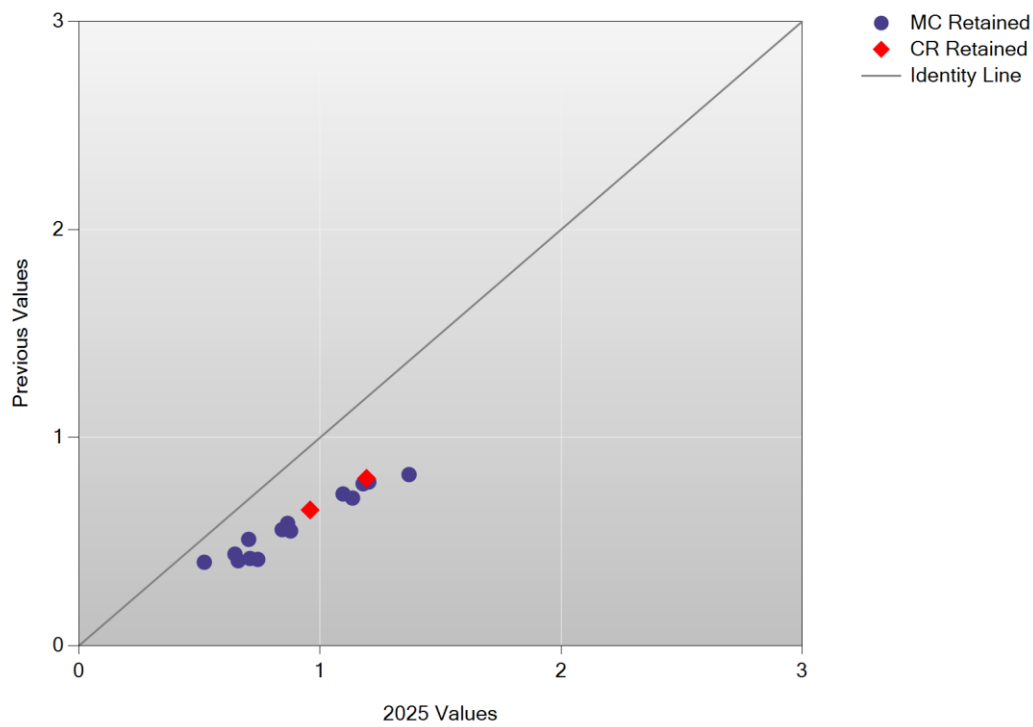
Test Information Function: English Language Arts Grade 5



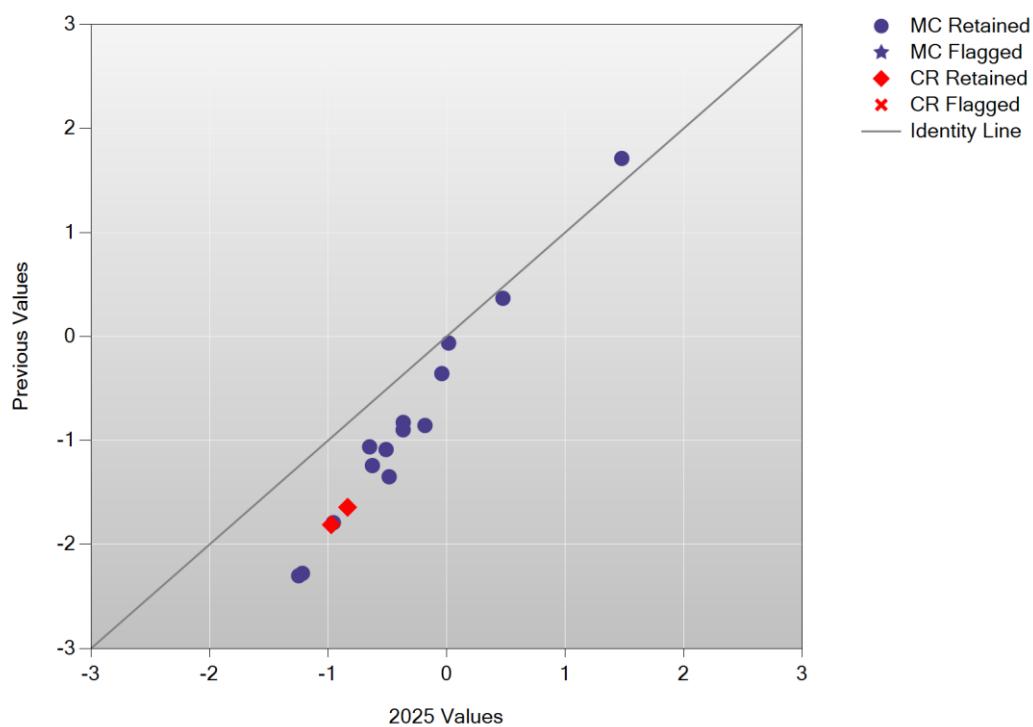
Cumulative Scale Score Distributions: English Language Arts Grade 5



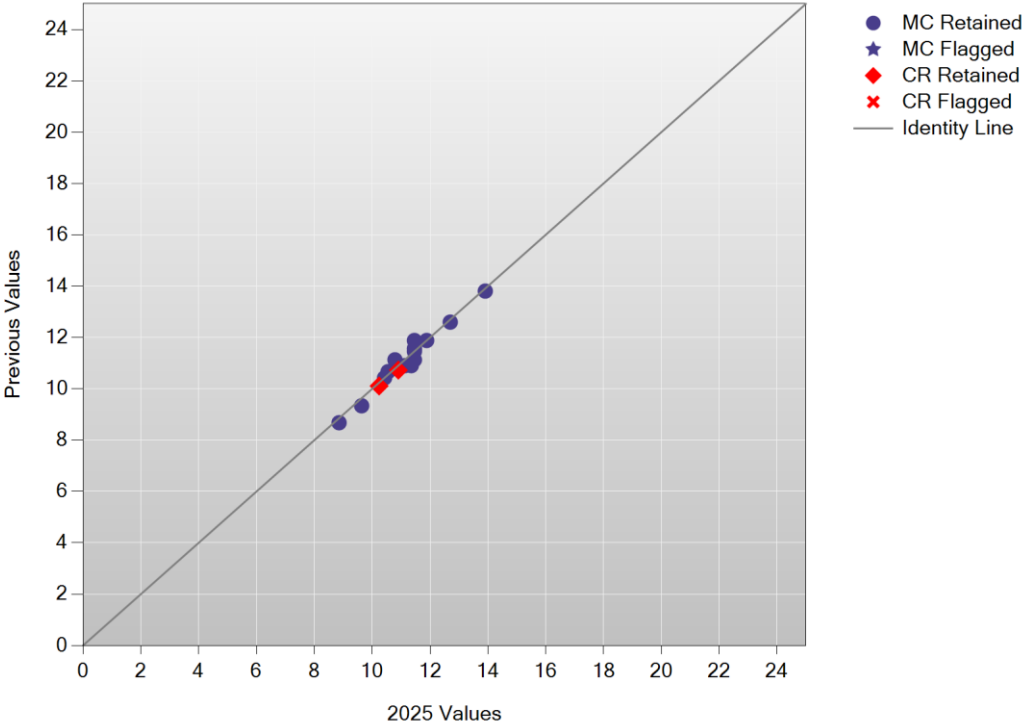
A/A Plot: English Language Arts Grade 6



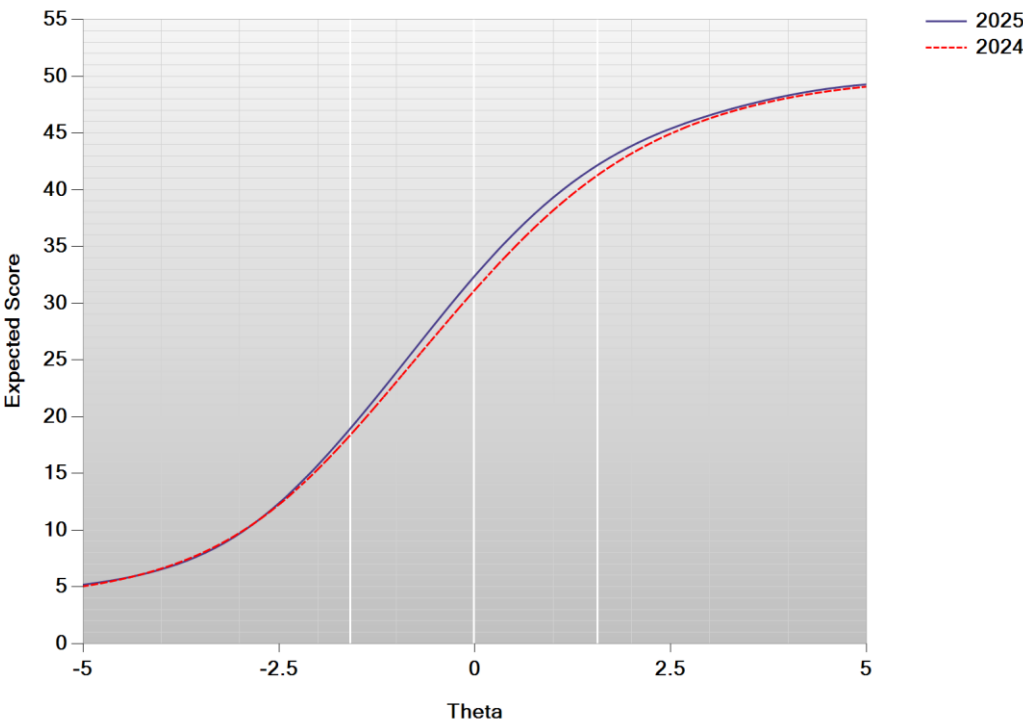
B/B Plot: English Language Arts Grade 6



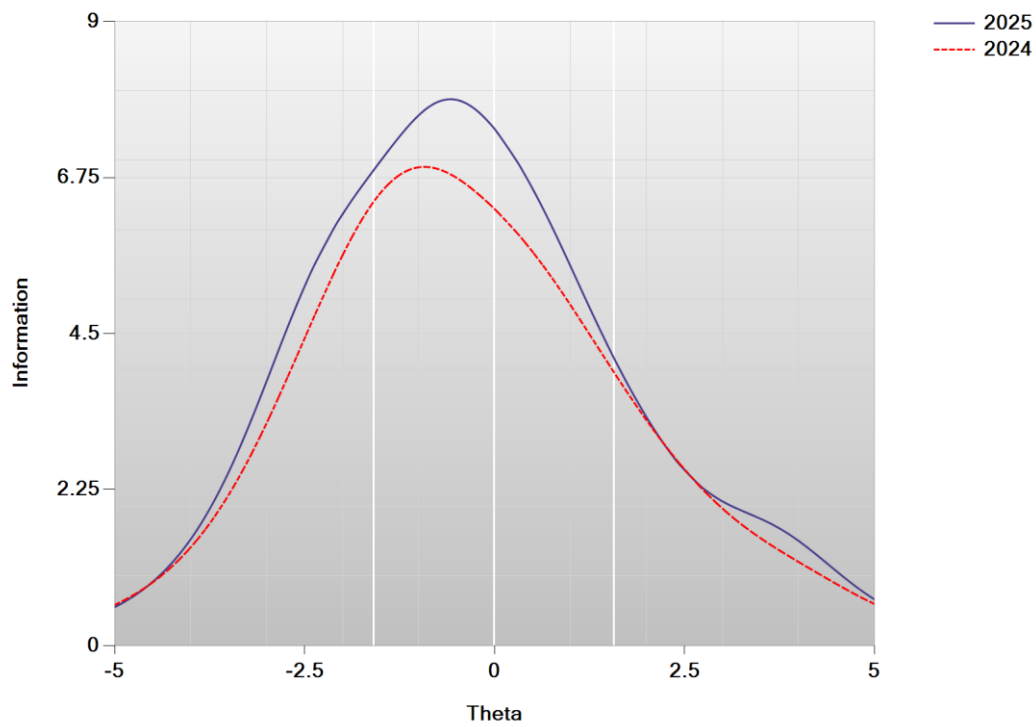
Delta Plot: English Language Arts Grade 6



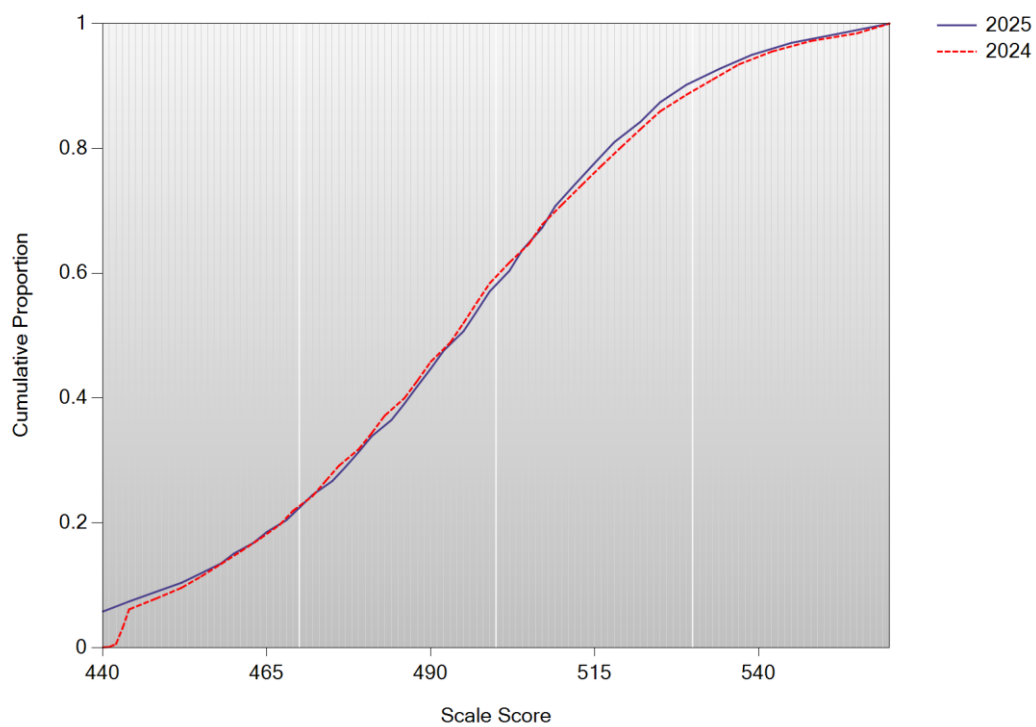
Test Characteristic Curve:English Language Arts Grade 6



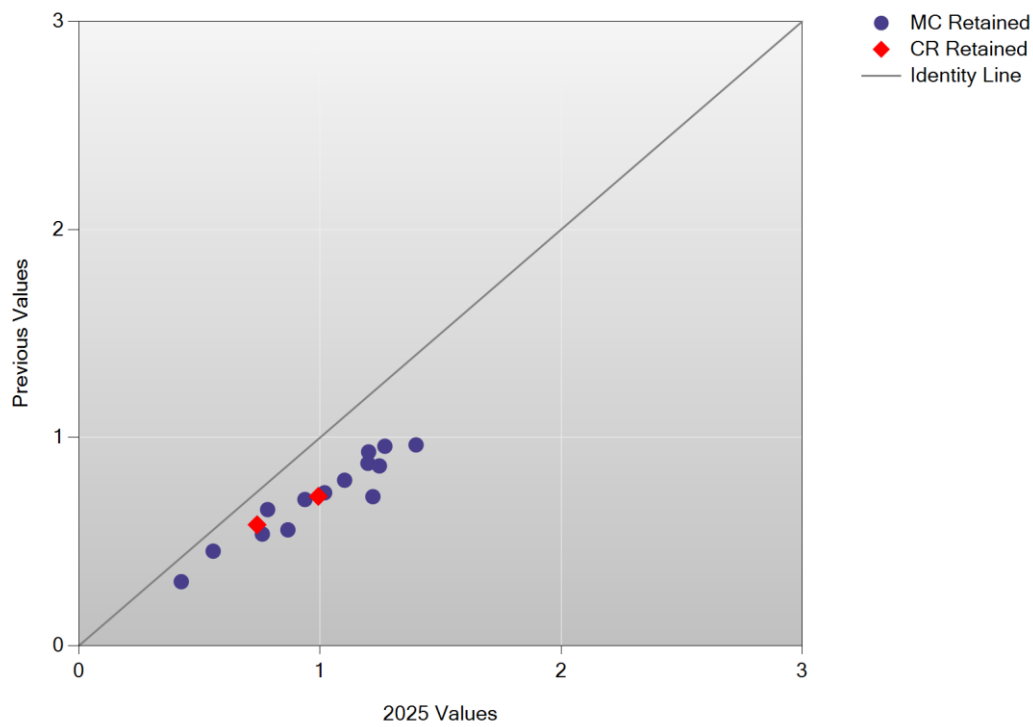
Test Information Function: English Language Arts Grade 6



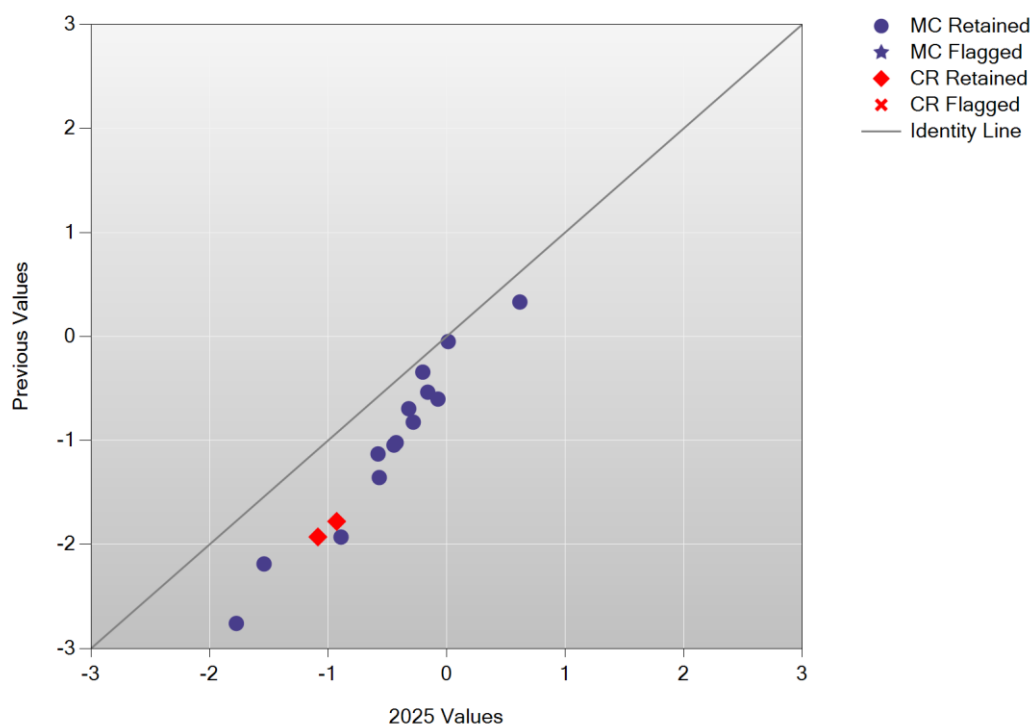
Cumulative Scale Score Distributions: English Language Arts Grade 6



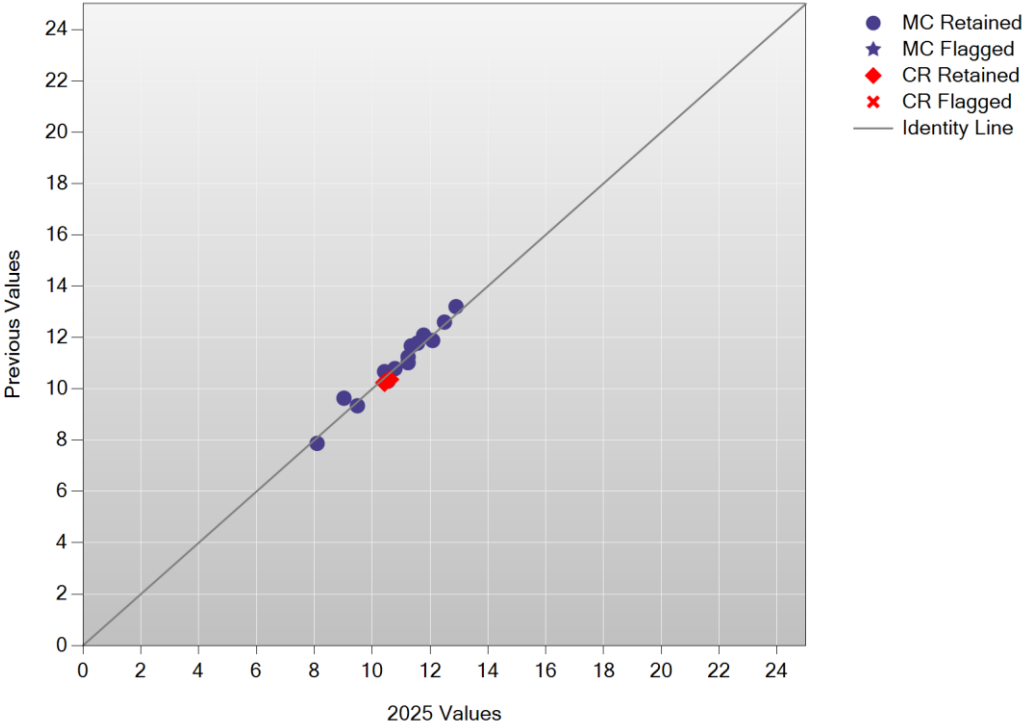
A/A Plot: English Language Arts Grade 7



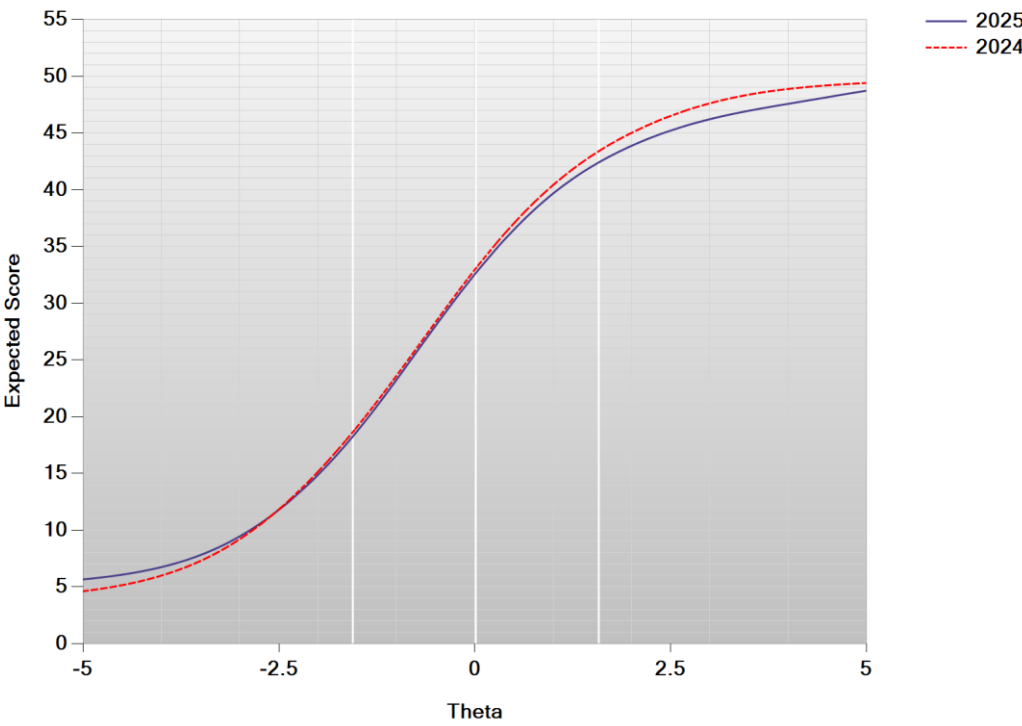
B/B Plot: English Language Arts Grade 7



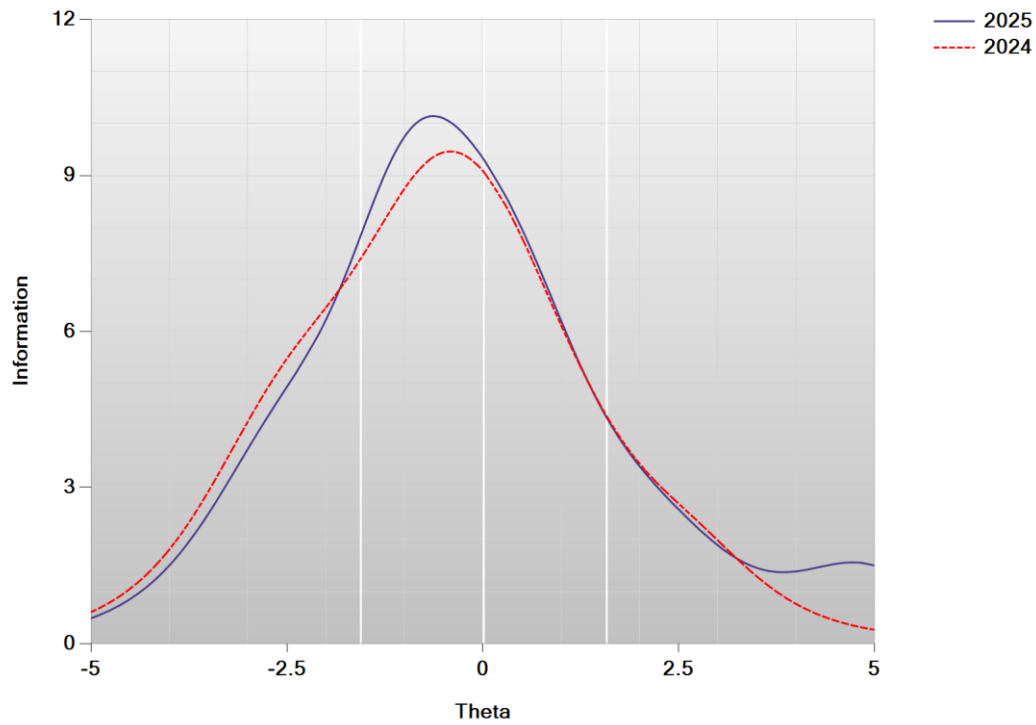
Delta Plot: English Language Arts Grade 7



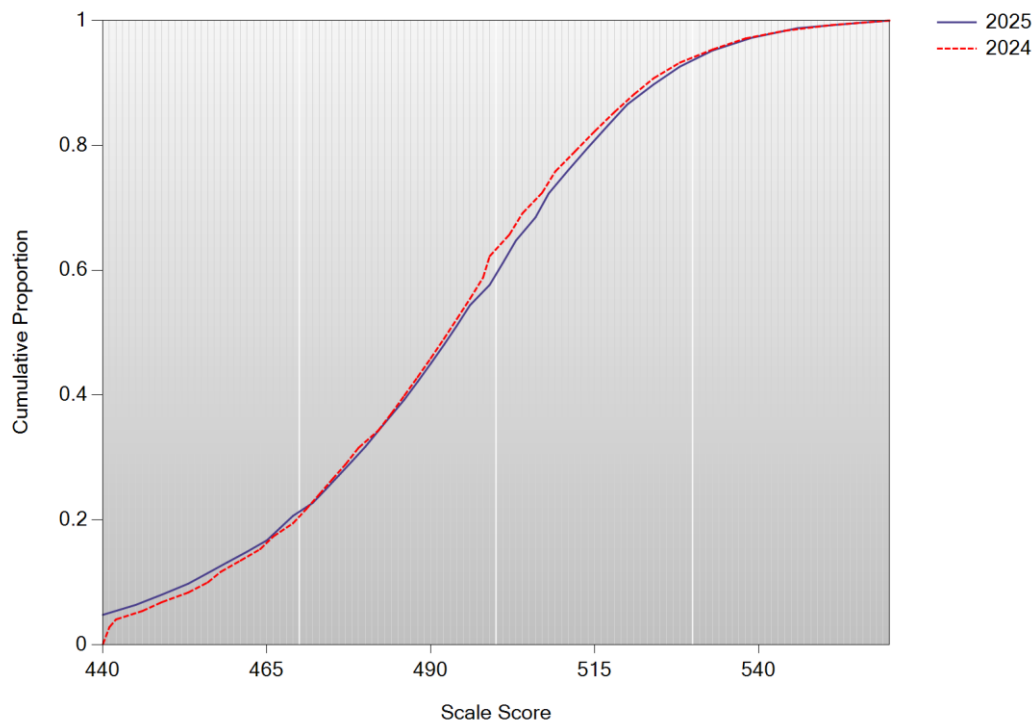
Test Characteristic Curve:English Language Arts Grade 7



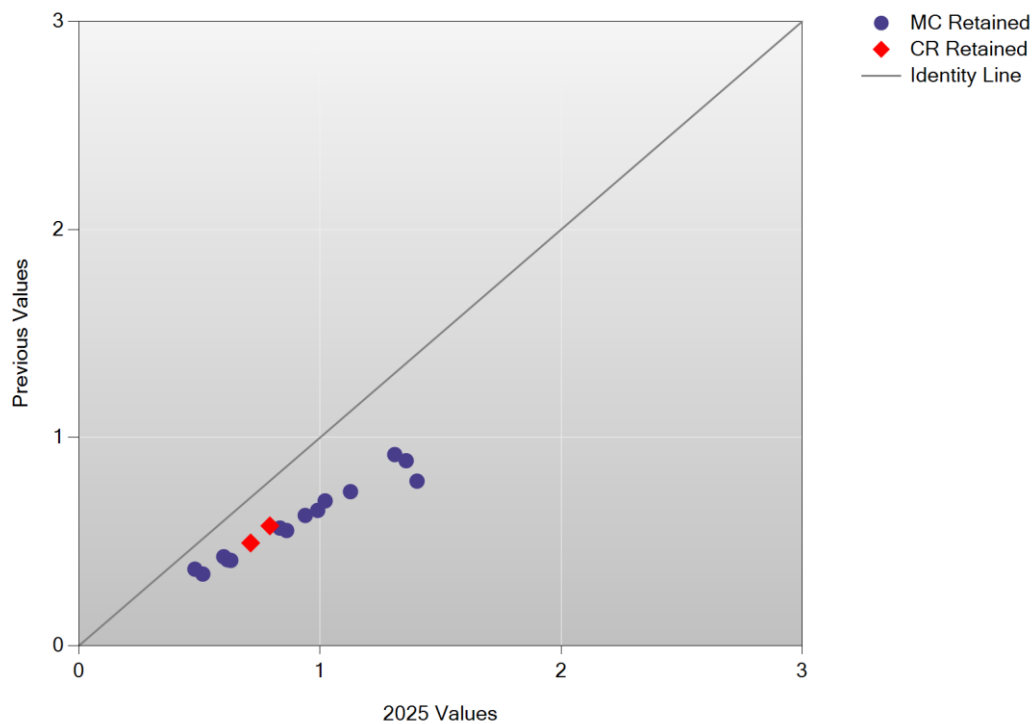
Test Information Function: English Language Arts Grade 7



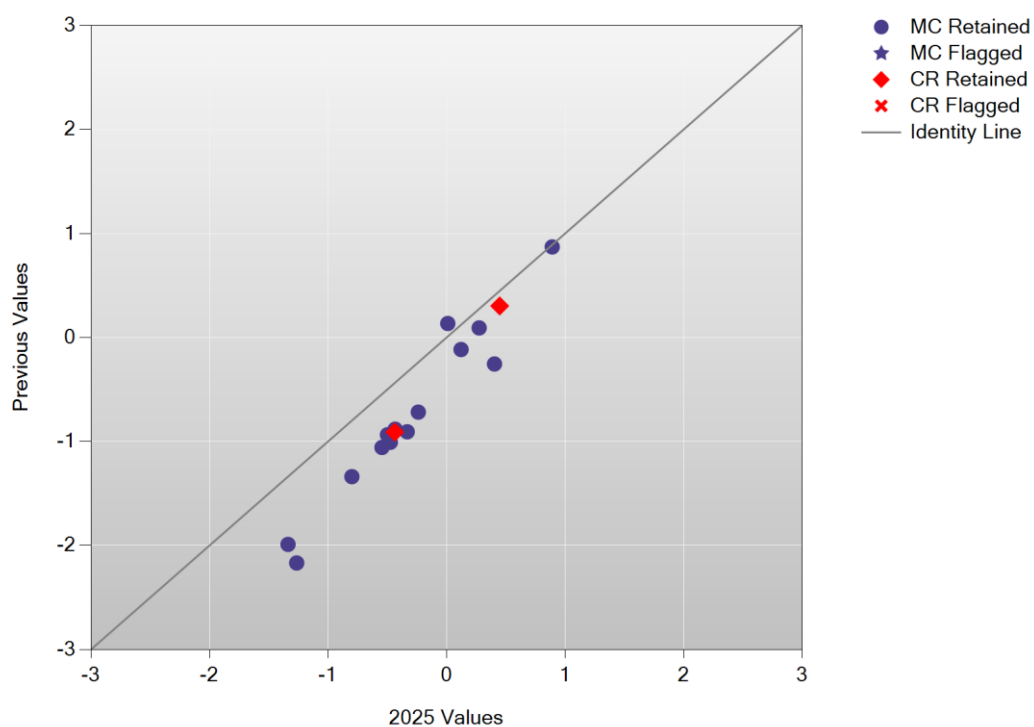
Cumulative Scale Score Distributions: English Language Arts Grade 7



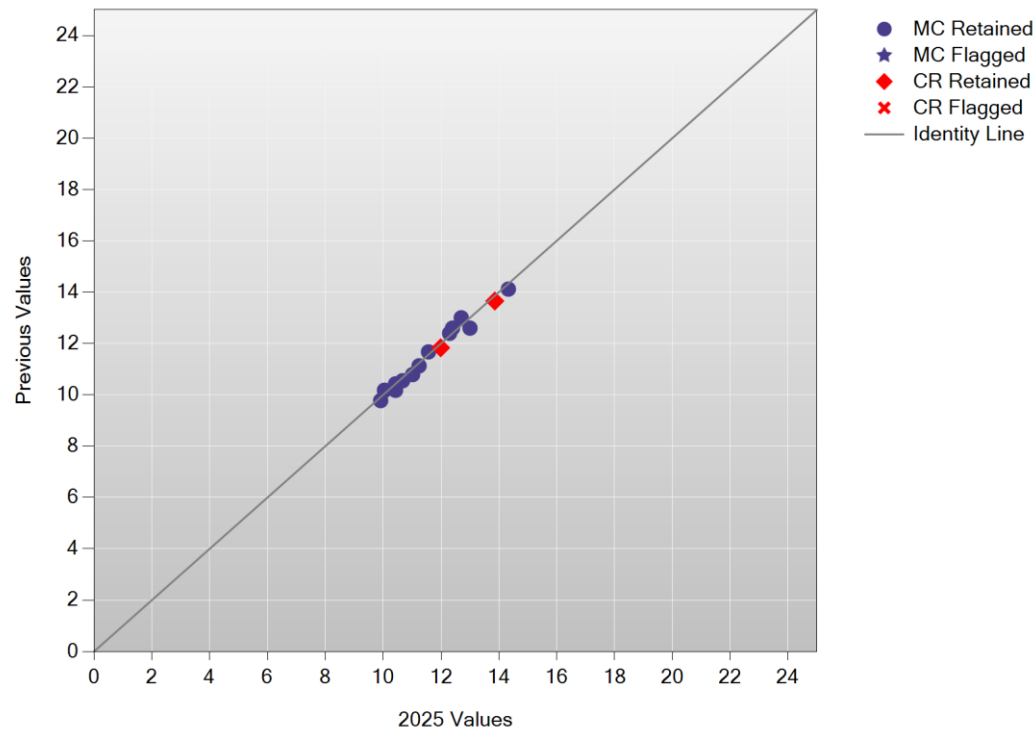
A/A Plot: English Language Arts Grade 8



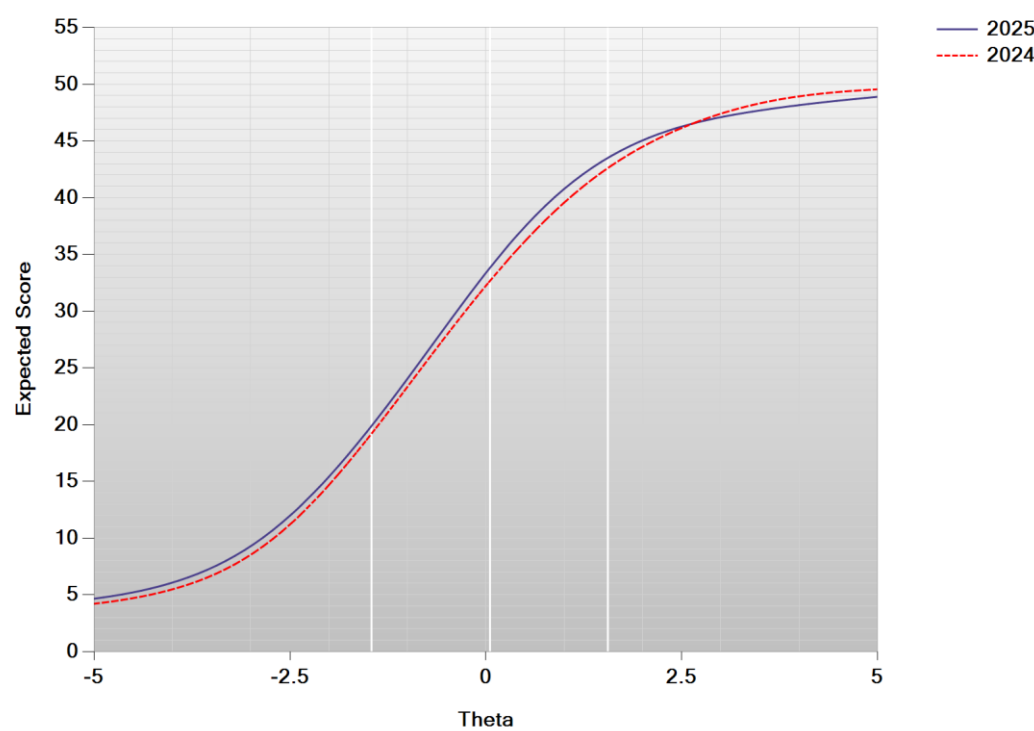
B/B Plot: English Language Arts Grade 8



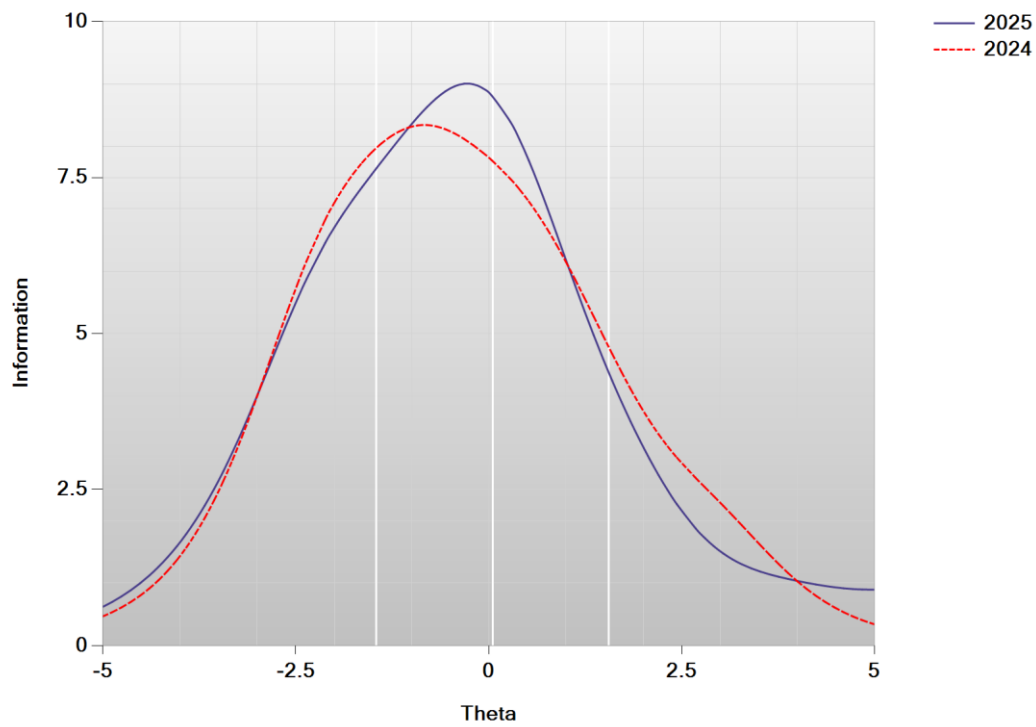
Delta Plot: English Language Arts Grade 8



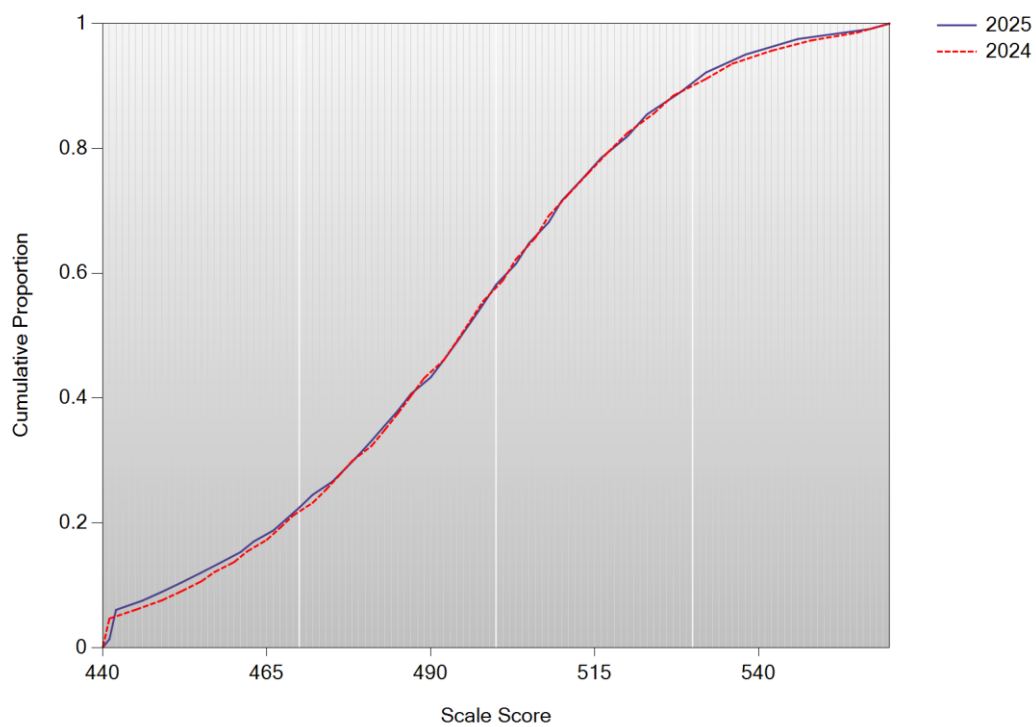
Test Characteristic Curve:English Language Arts Grade 8



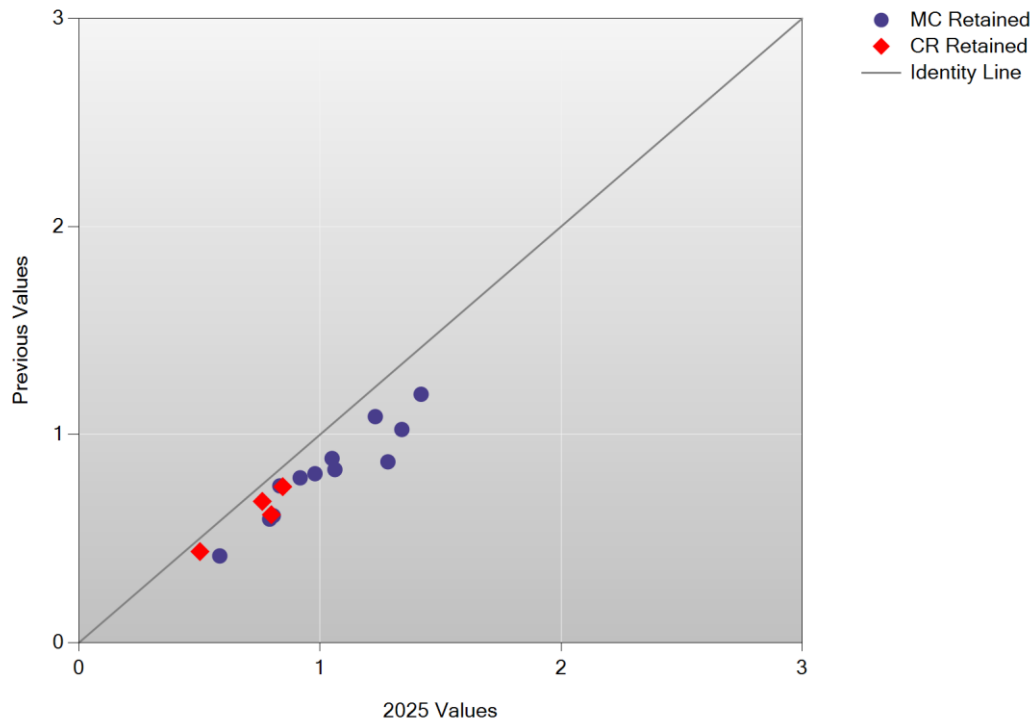
Test Information Function: English Language Arts Grade 8



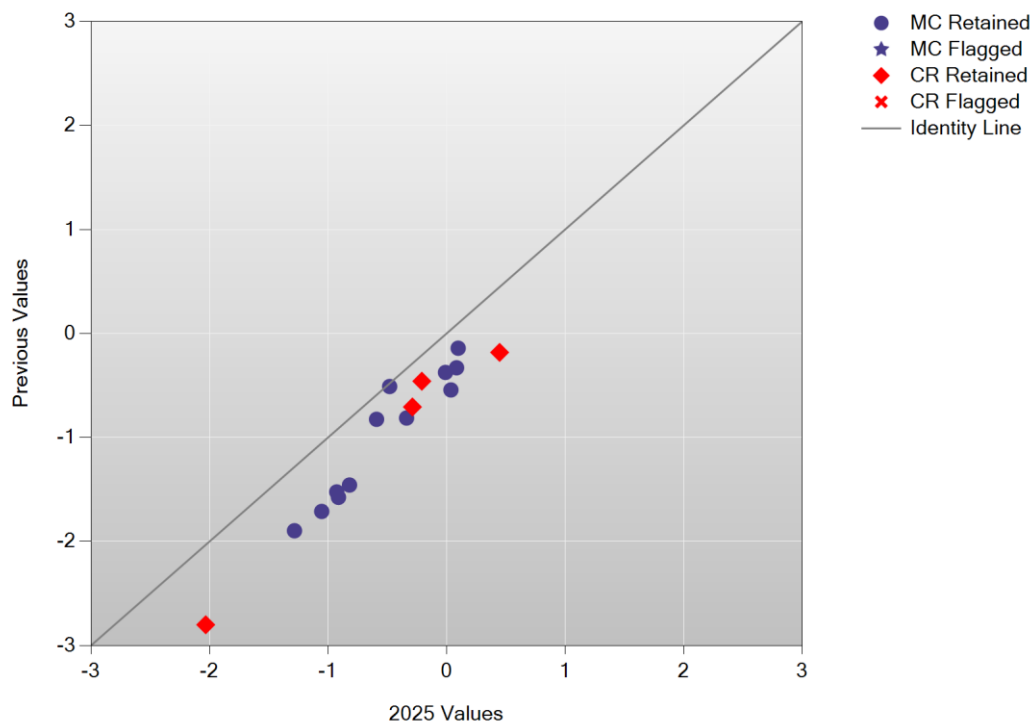
Cumulative Scale Score Distributions: English Language Arts Grade 8



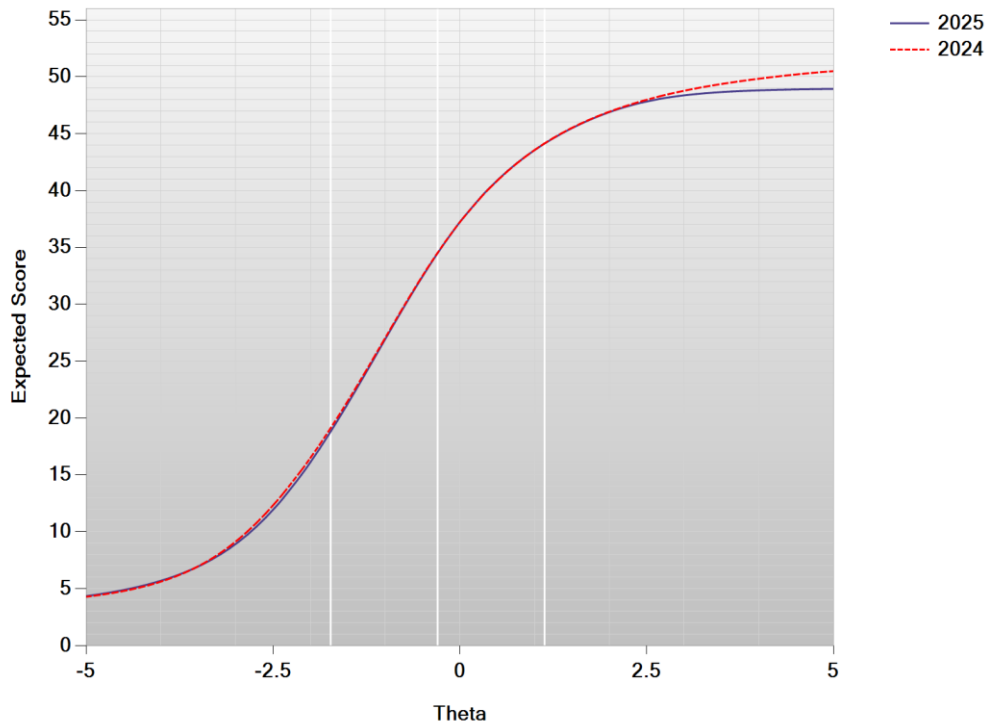
A/A Plot: English Language Arts Grade 10



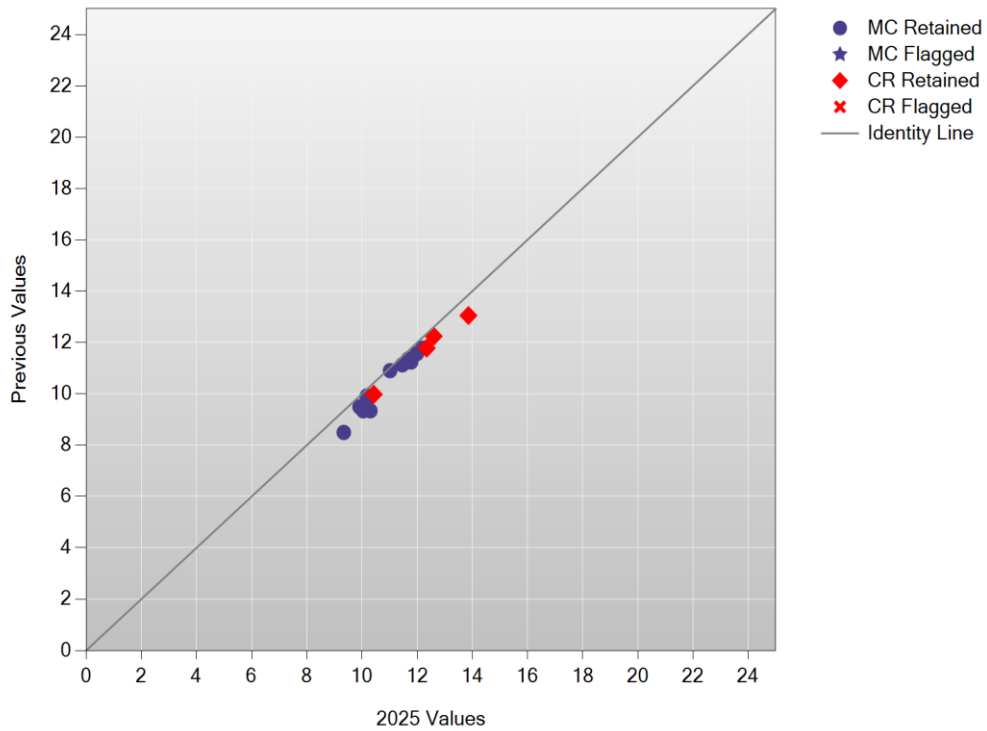
B/B Plot: English Language Arts Grade 10



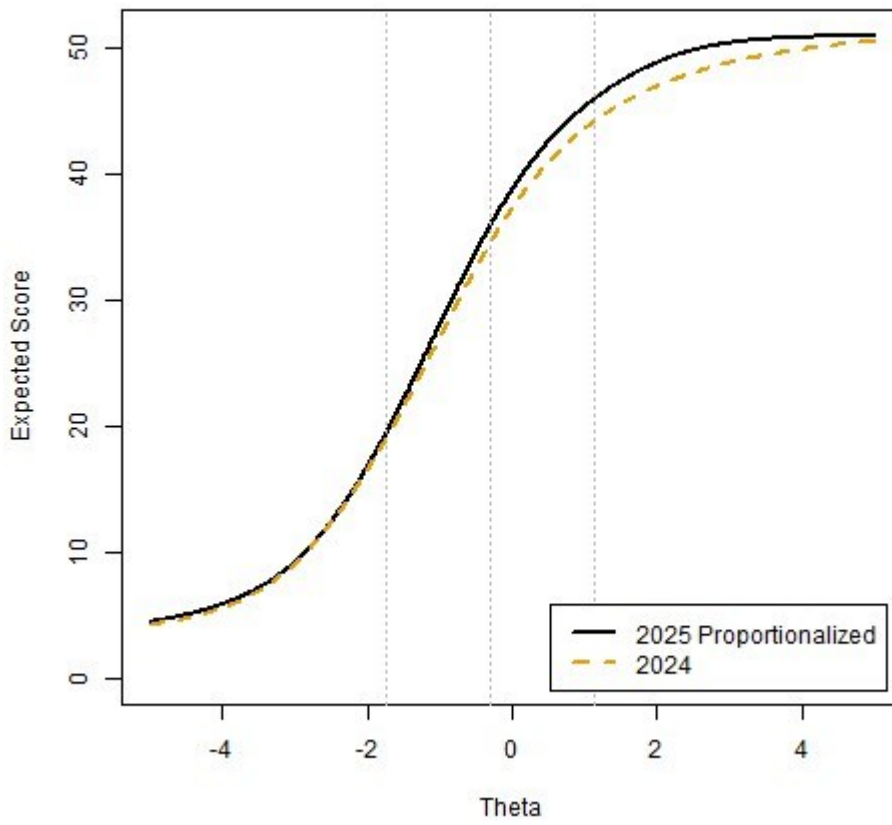
Test Characteristic Curve:English Language Arts Grade 10



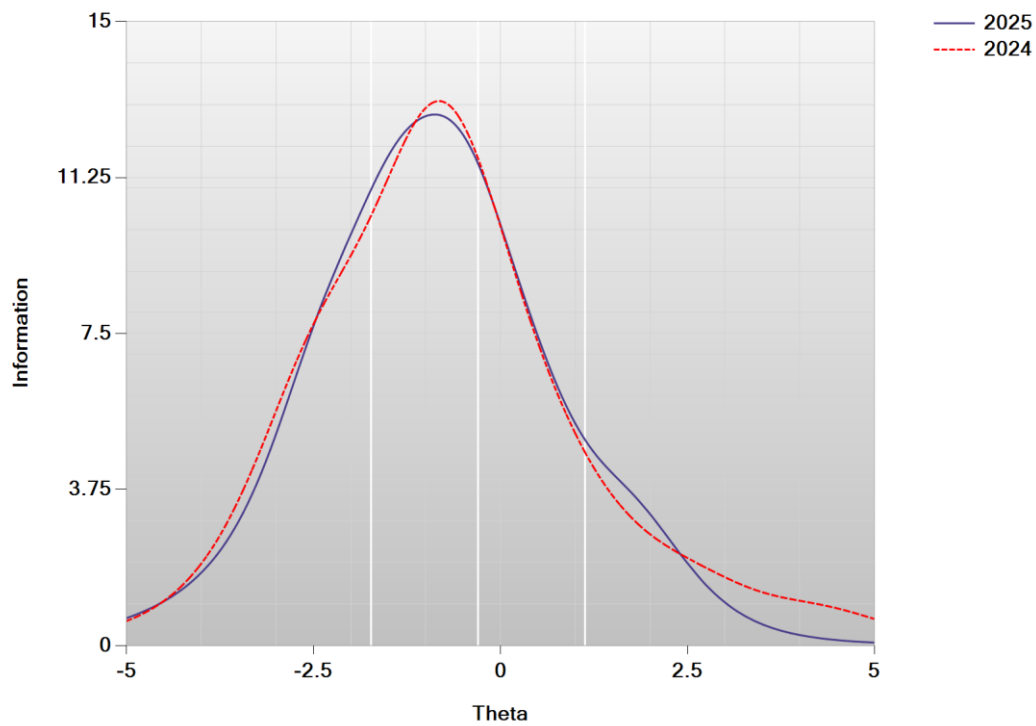
Delta Plot: English Language Arts Grade 10



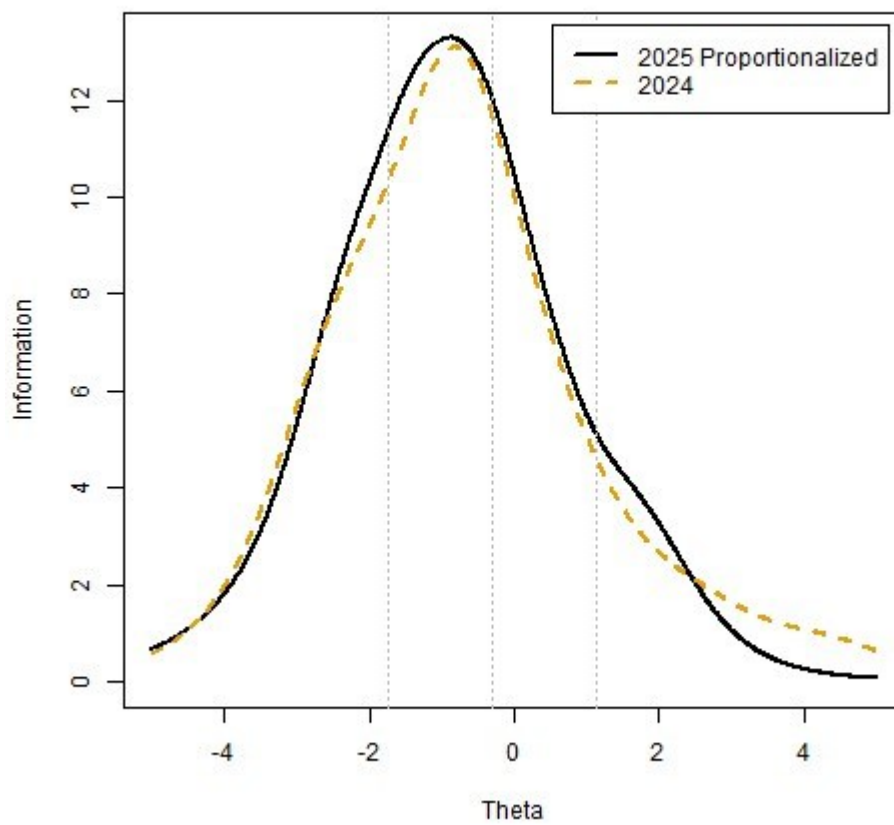
Test Characteristic Curve: ela10



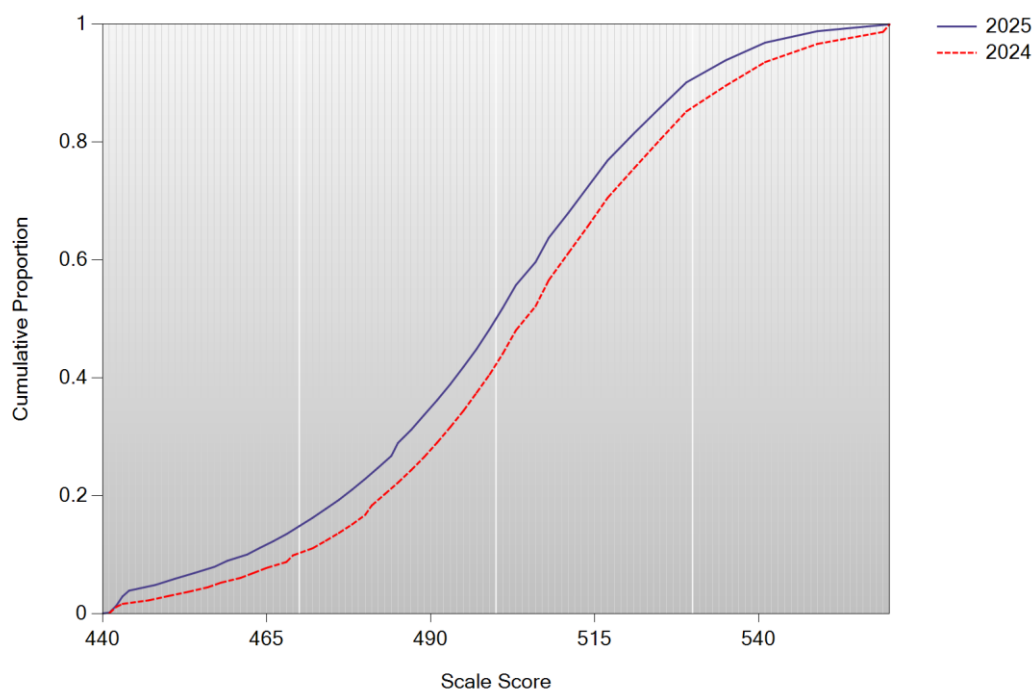
Test Information Function: English Language Arts Grade 10



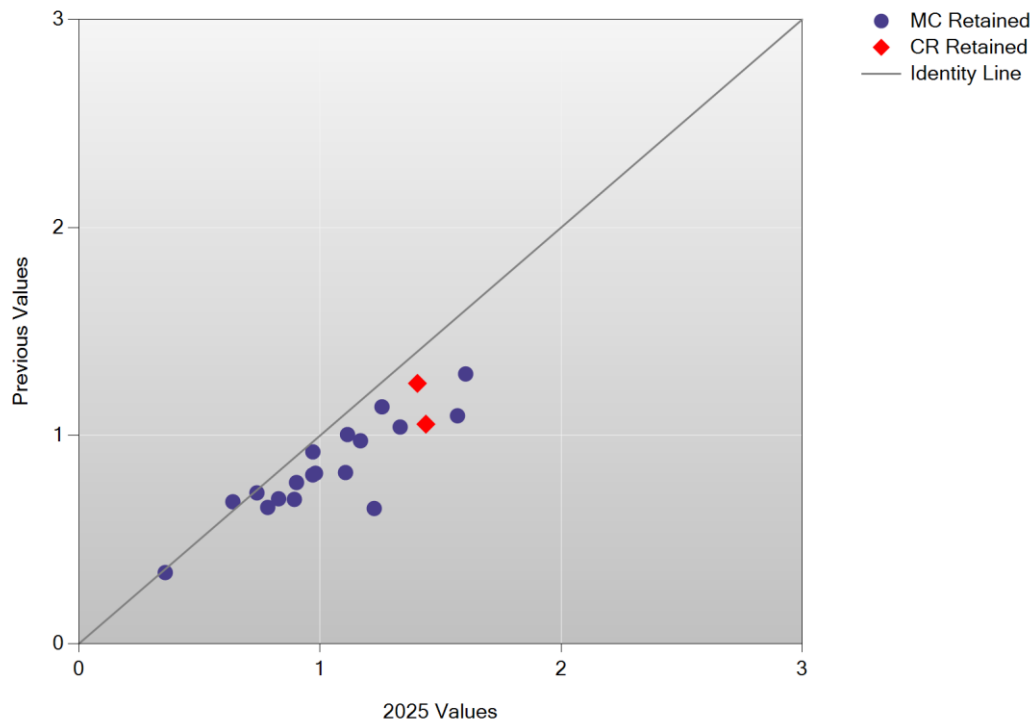
Test Information Function: ela10



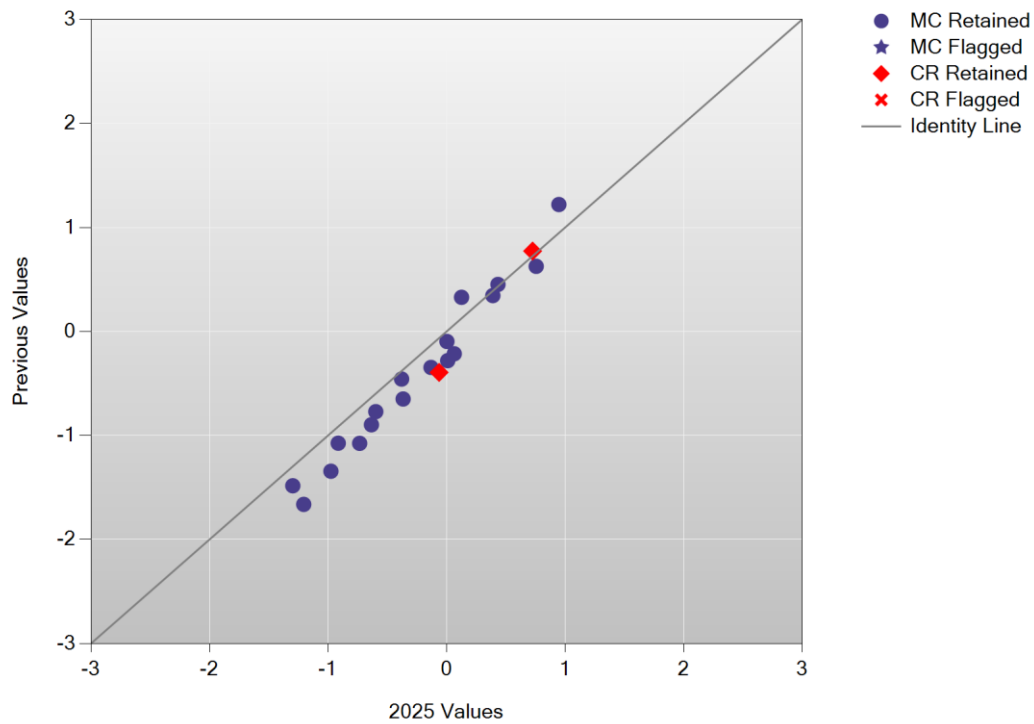
Cumulative Scale Score Distributions: English Language Arts Grade 10



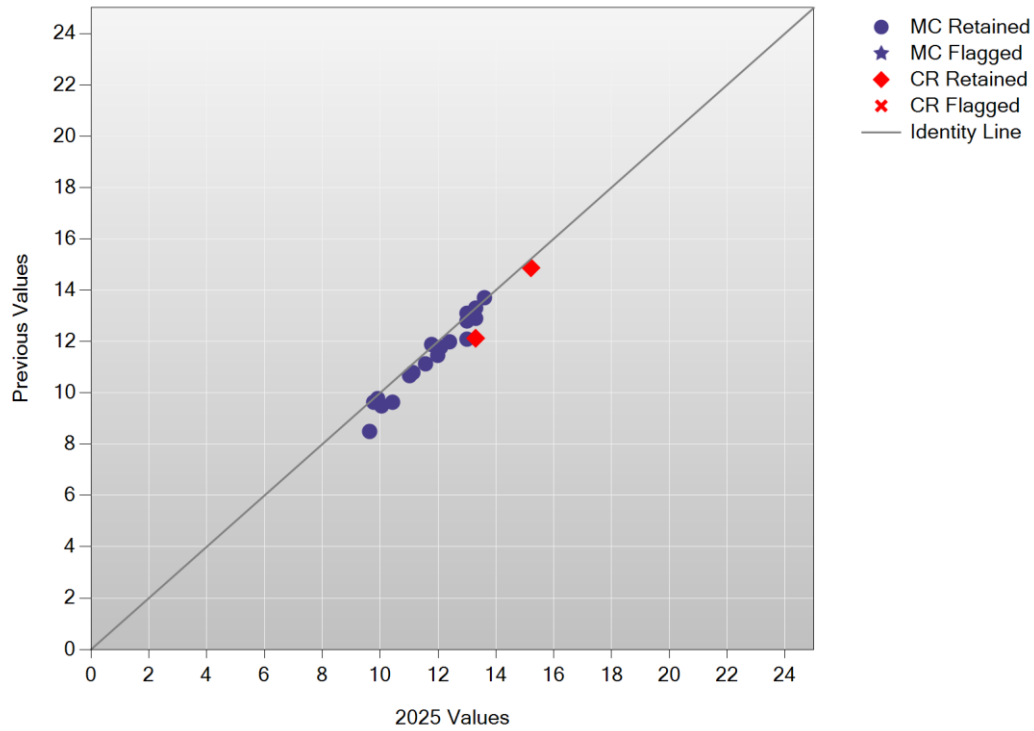
A/A Plot: Mathematics Grade 3



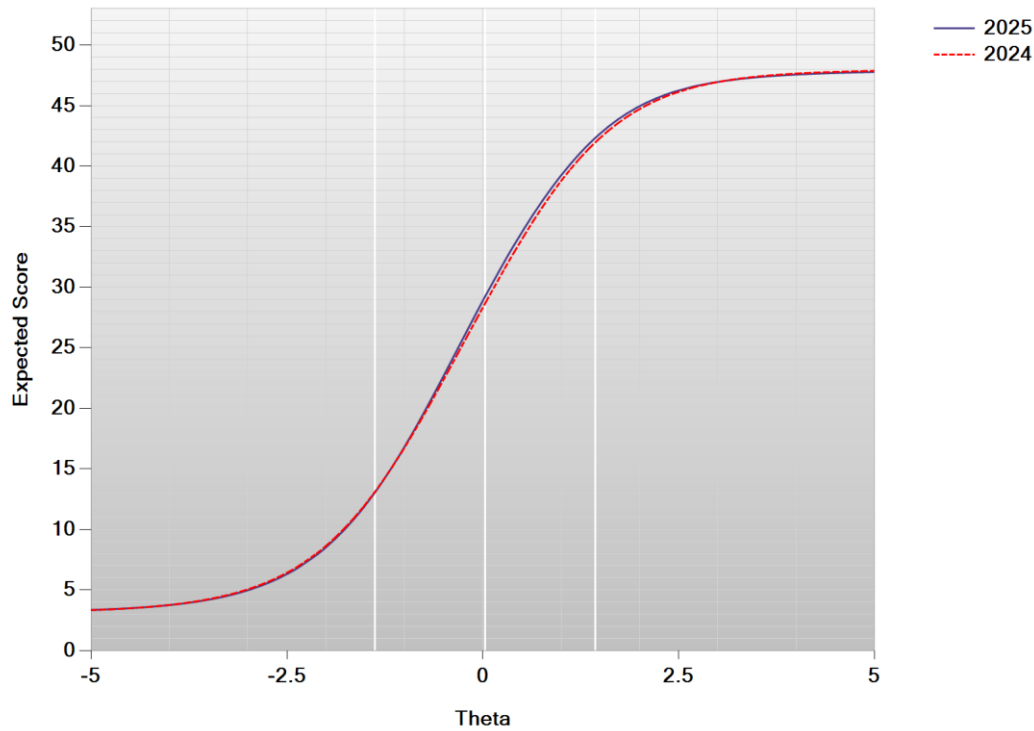
B/B Plot: Mathematics Grade 3



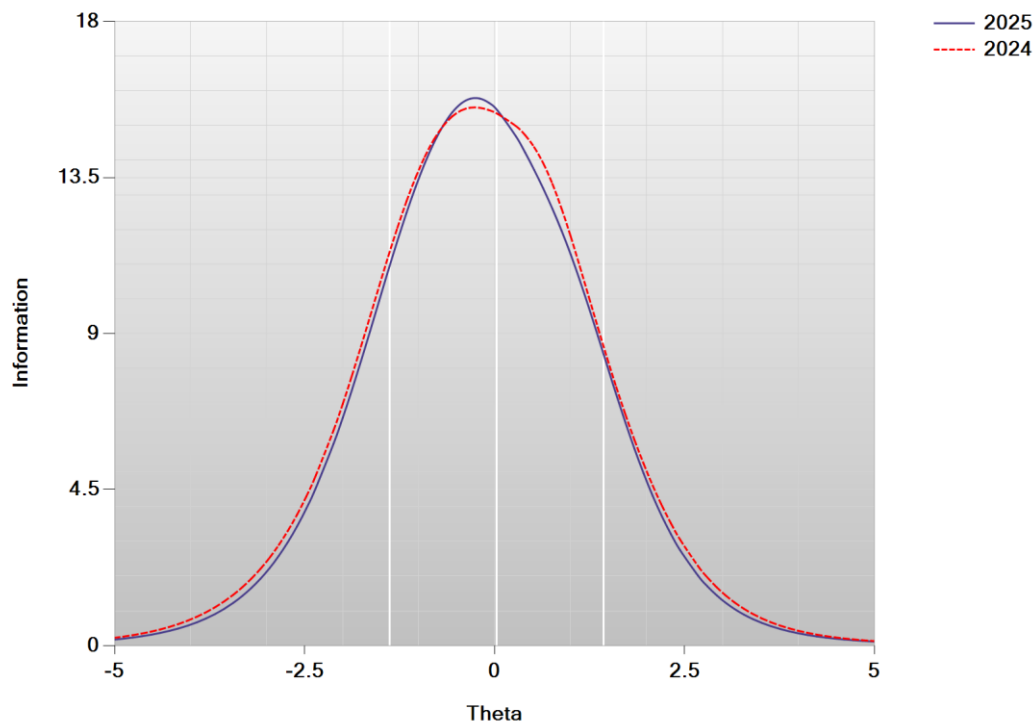
Delta Plot: Mathematics Grade 3



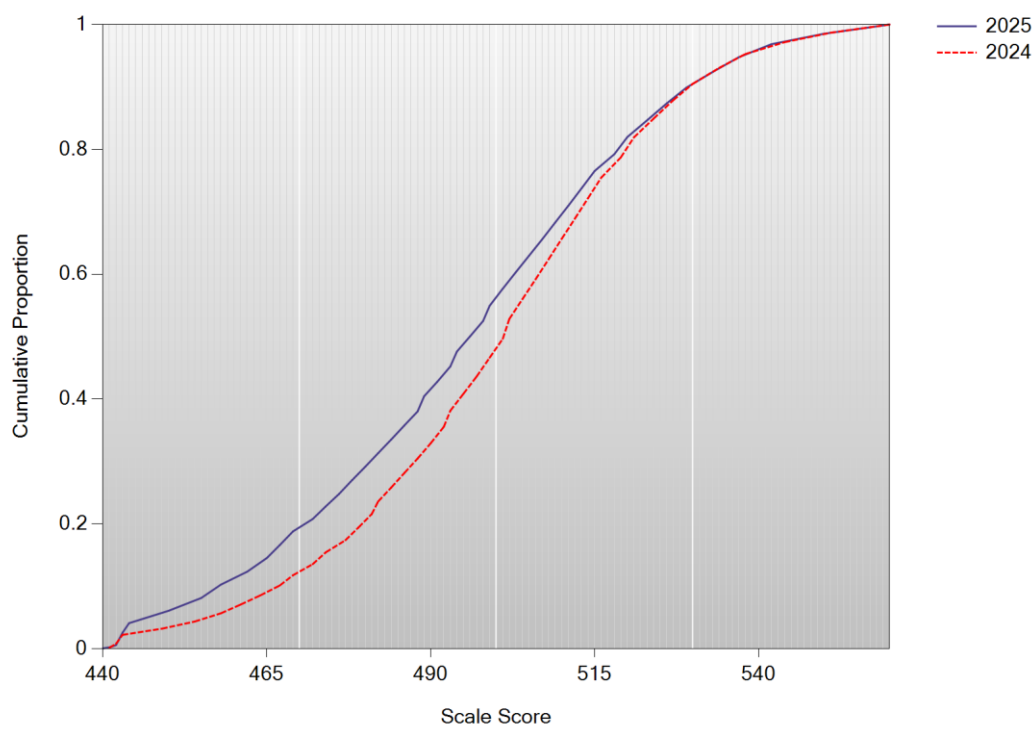
Test Characteristic Curve: Mathematics Grade 3



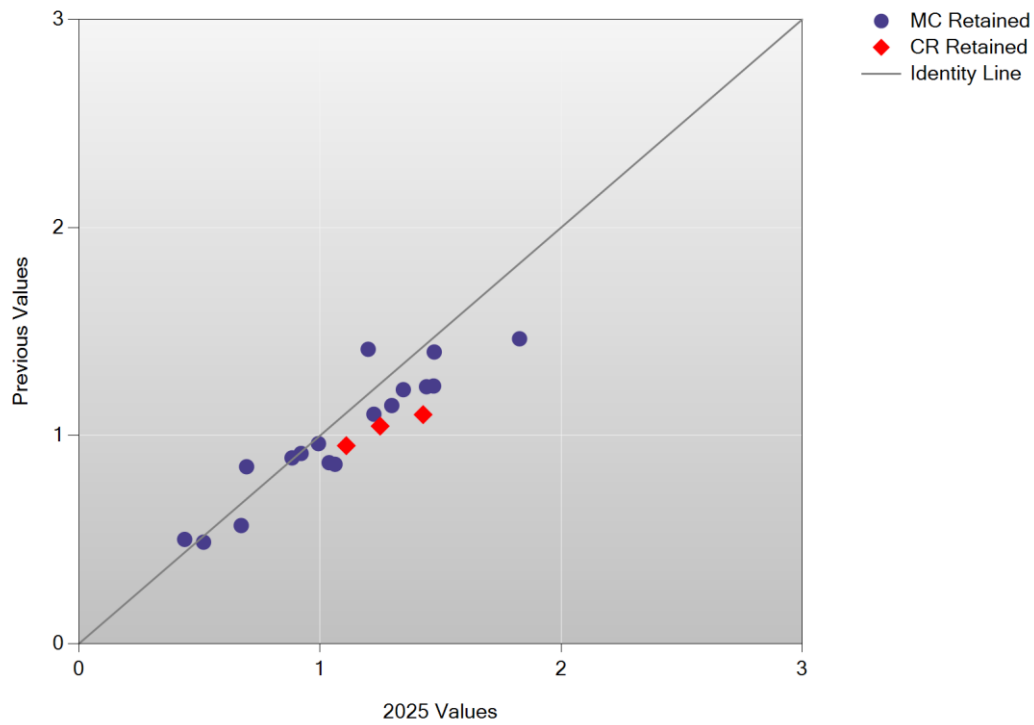
Test Information Function: Mathematics Grade 3



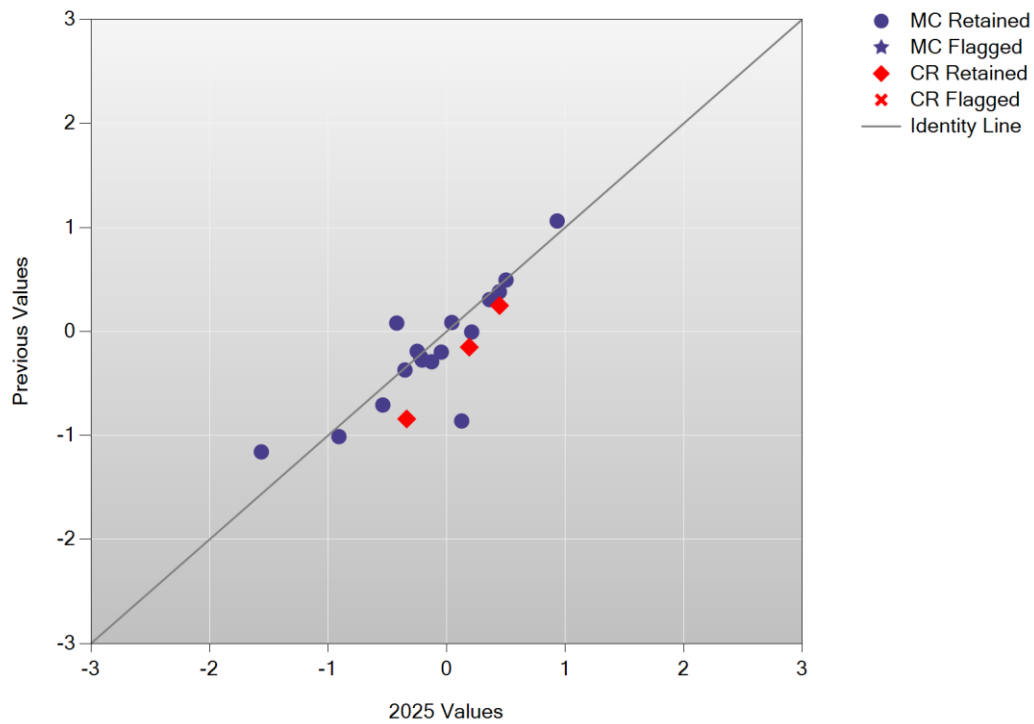
Cumulative Scale Score Distributions: Mathematics Grade 3



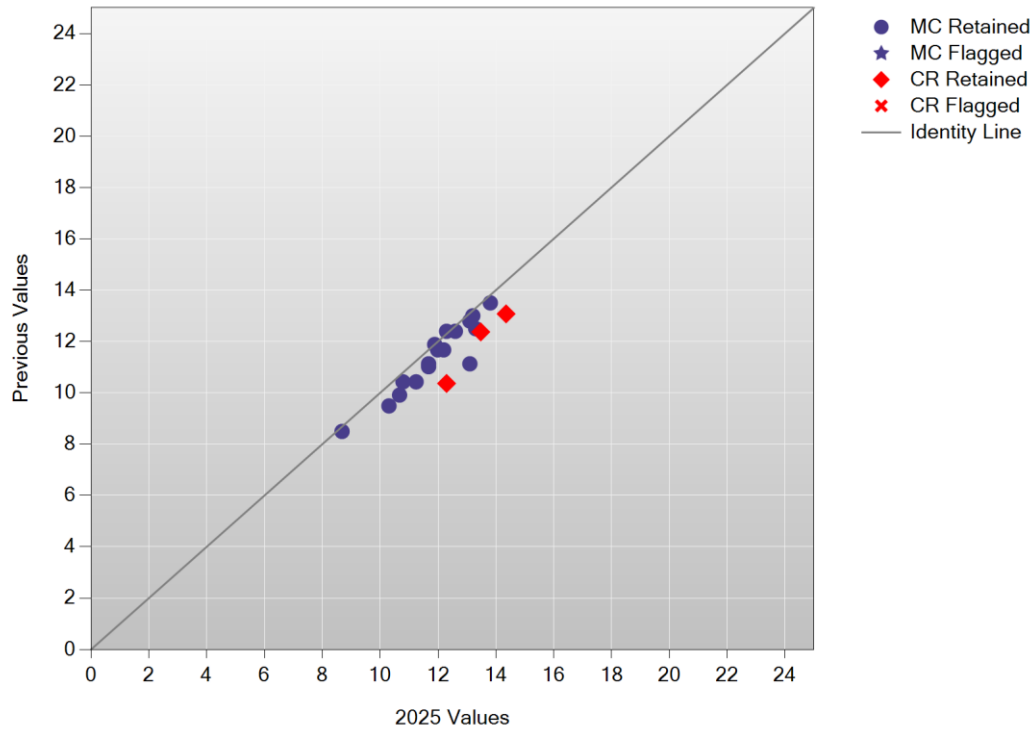
A/A Plot: Mathematics Grade 4



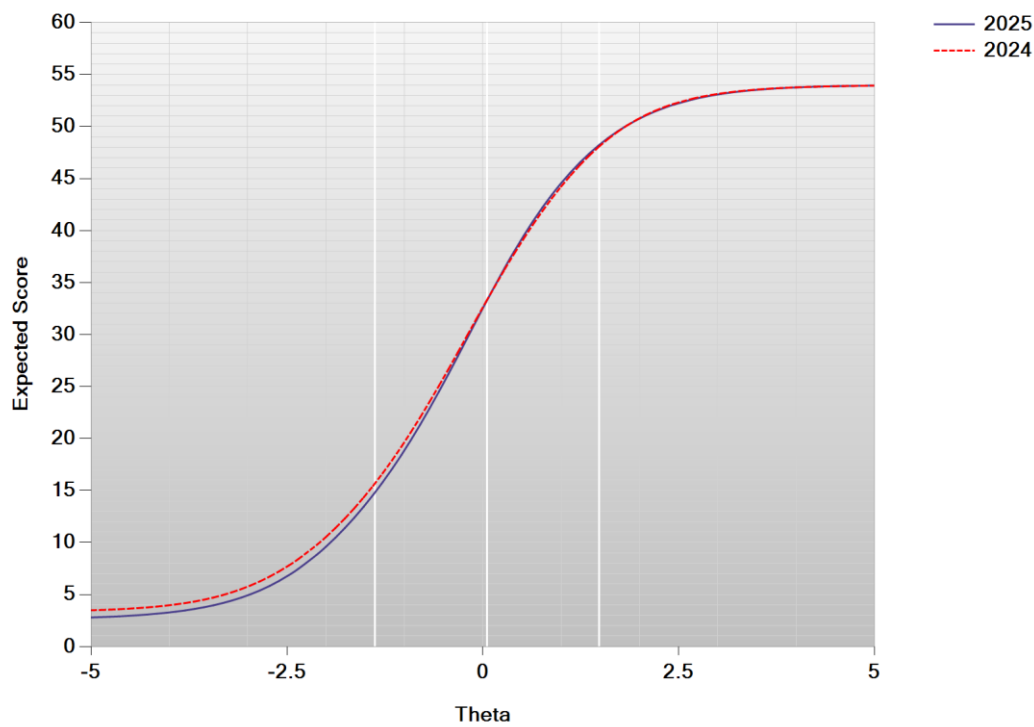
B/B Plot: Mathematics Grade 4



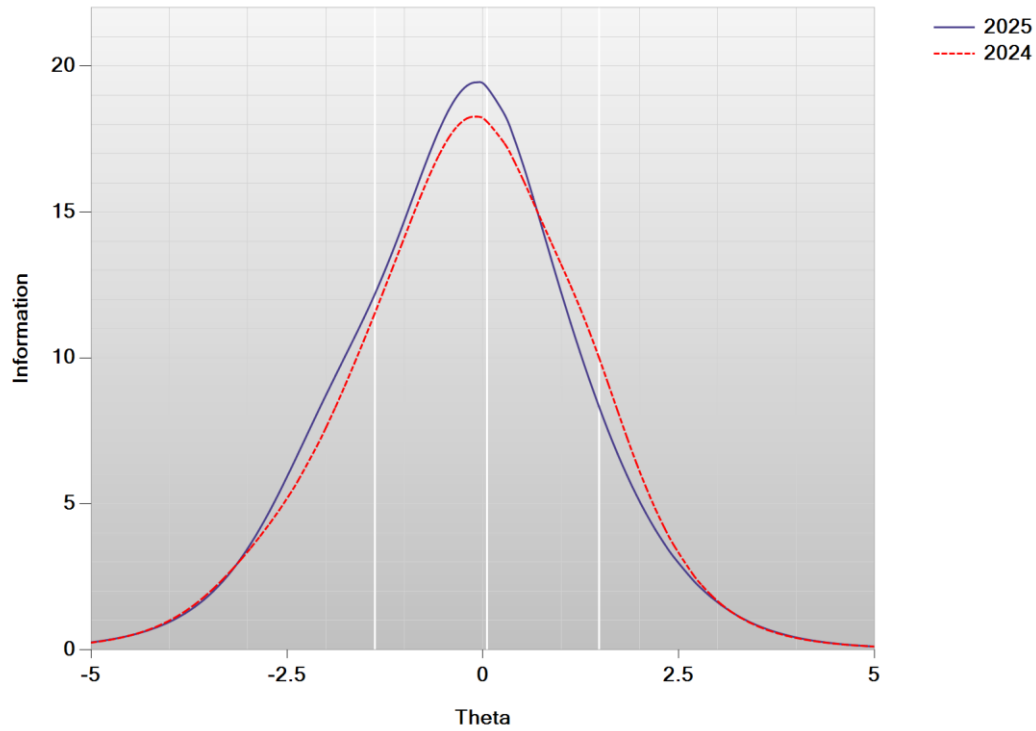
Delta Plot: Mathematics Grade 4



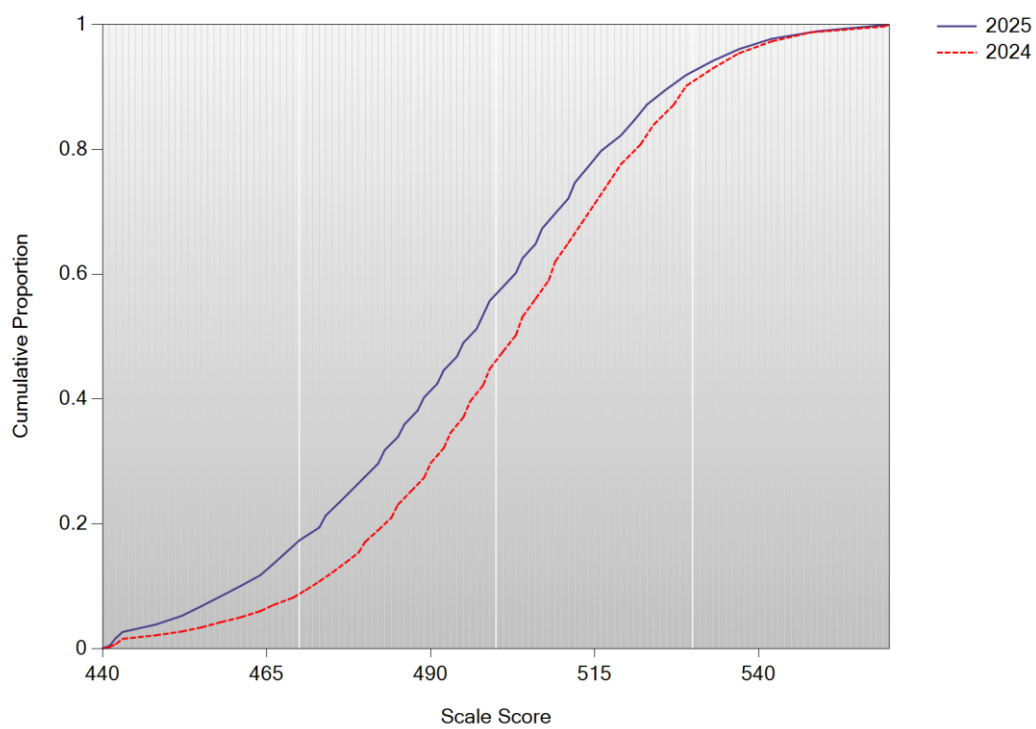
Test Characteristic Curve: Mathematics Grade 4



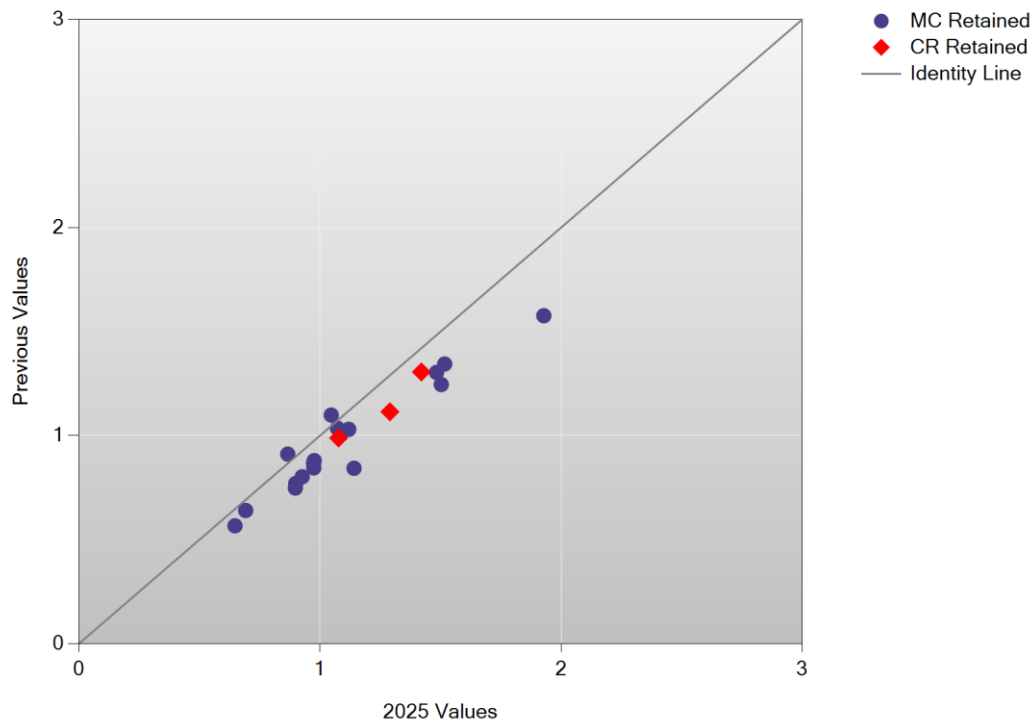
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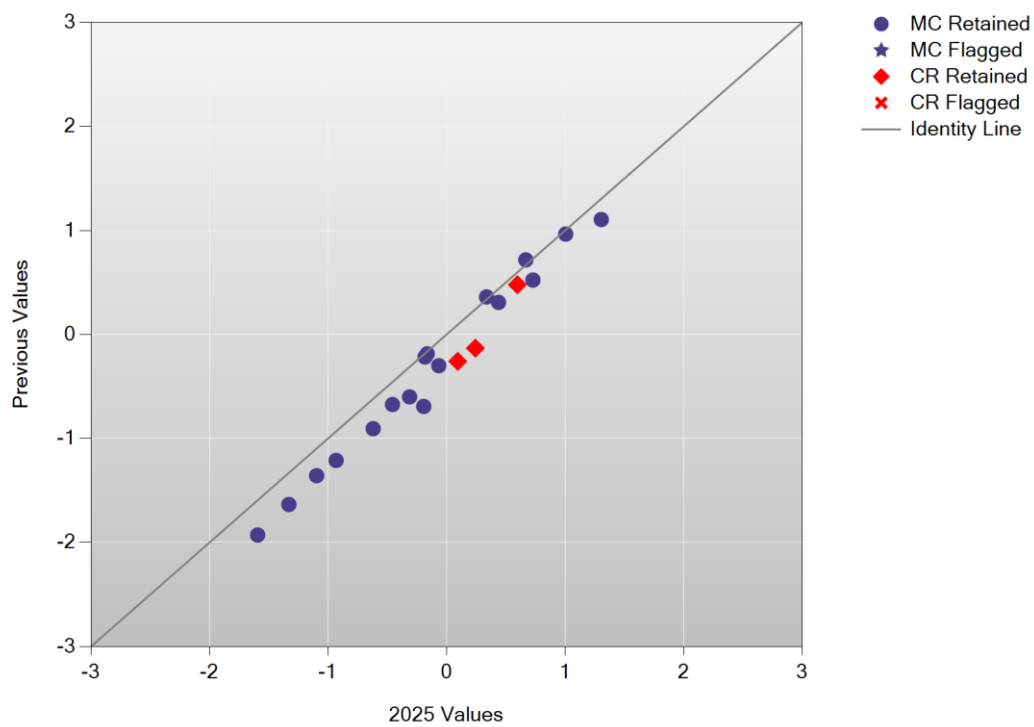
Cumulative Scale Score Distributions: Mathematics Grade 4



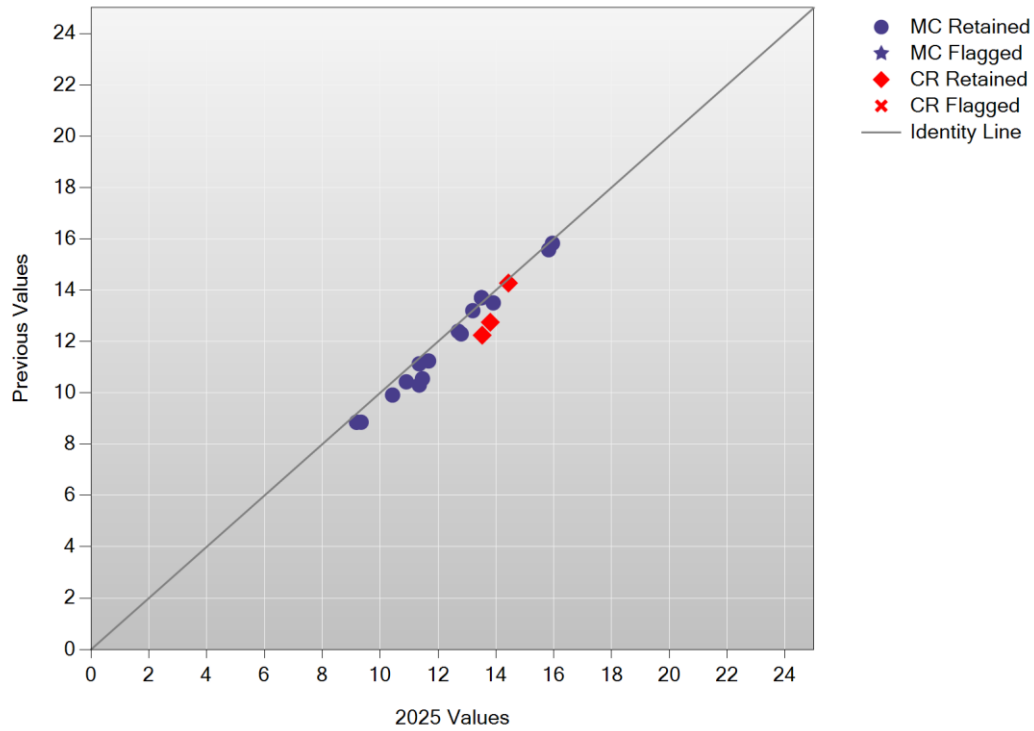
A/A Plot: Mathematics Grade 5



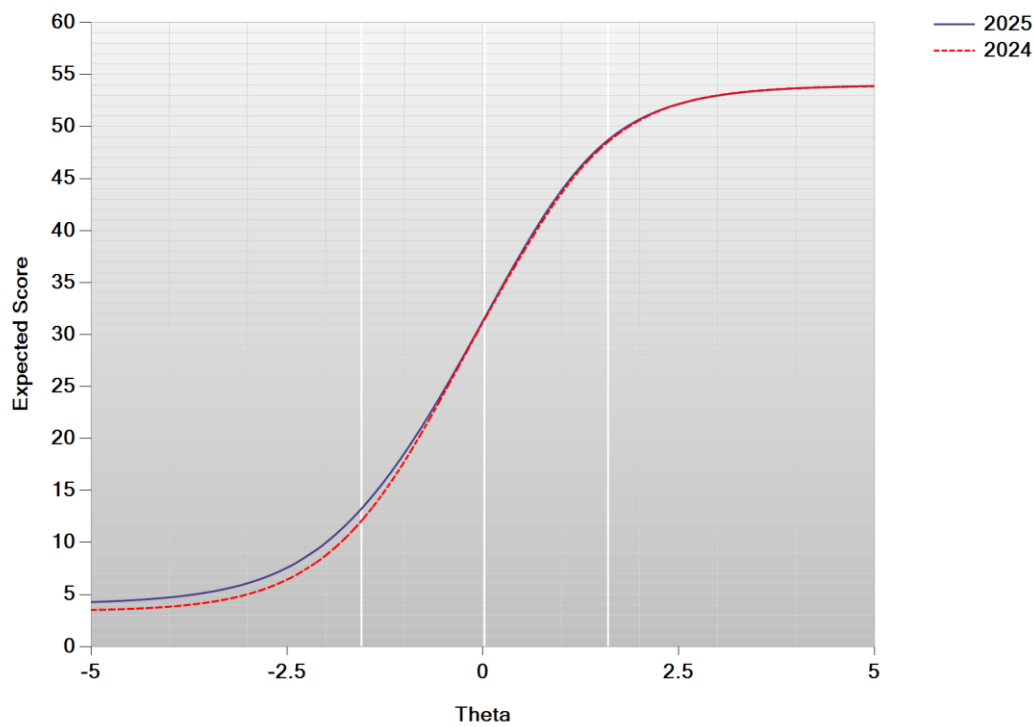
B/B Plot: Mathematics Grade 5



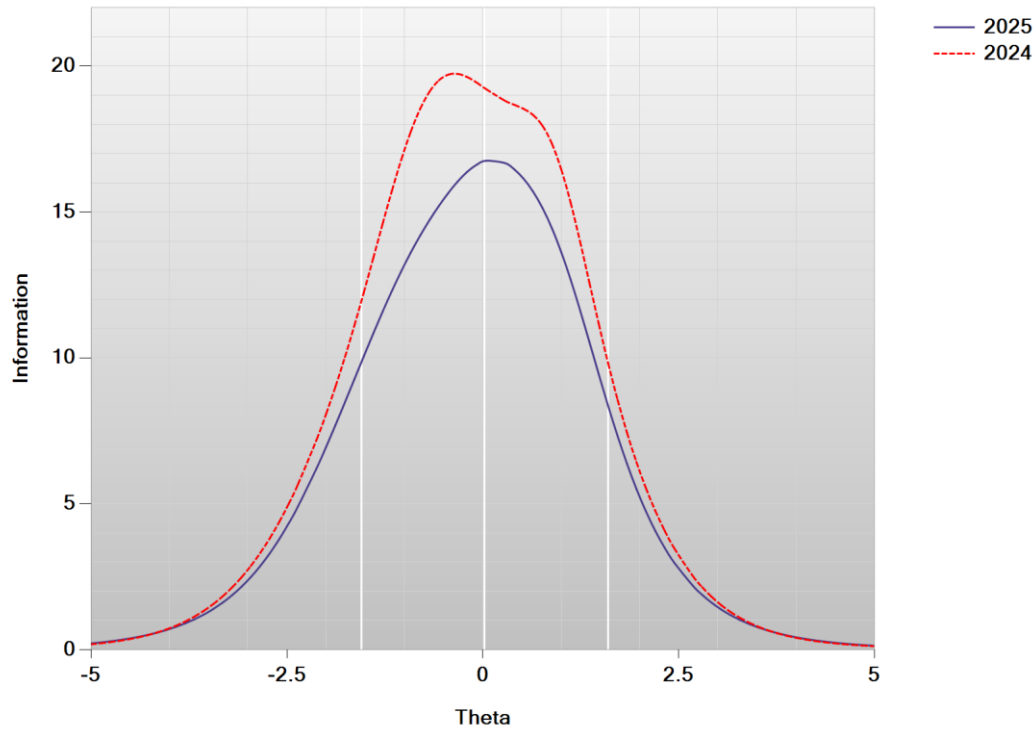
Delta Plot: Mathematics Grade 5



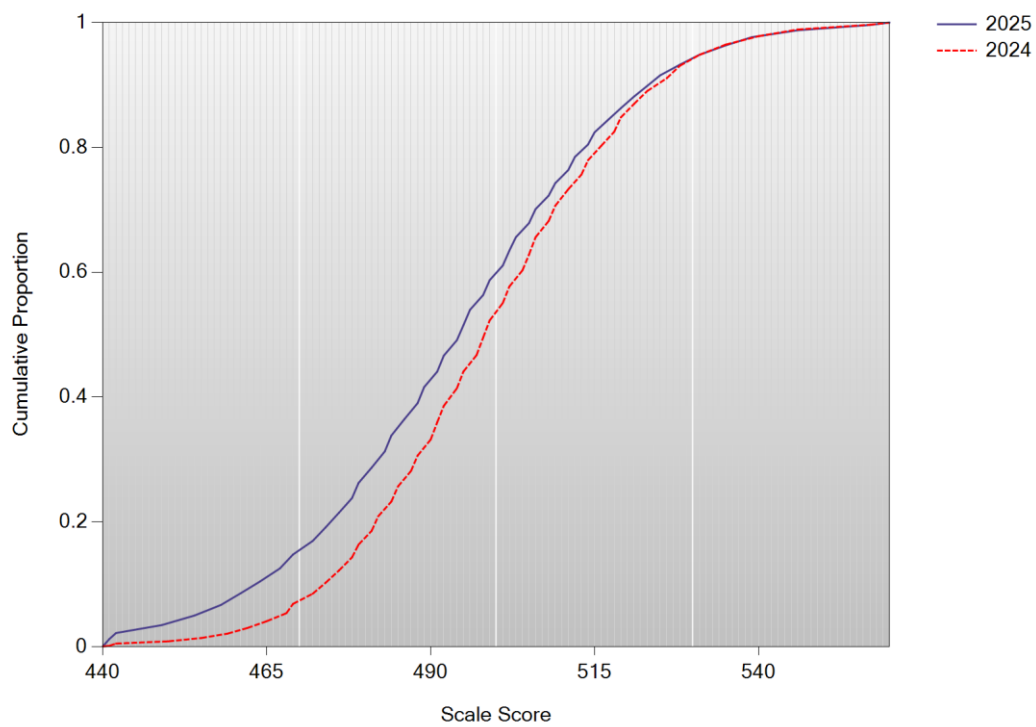
Test Characteristic Curve: Mathematics Grade 5



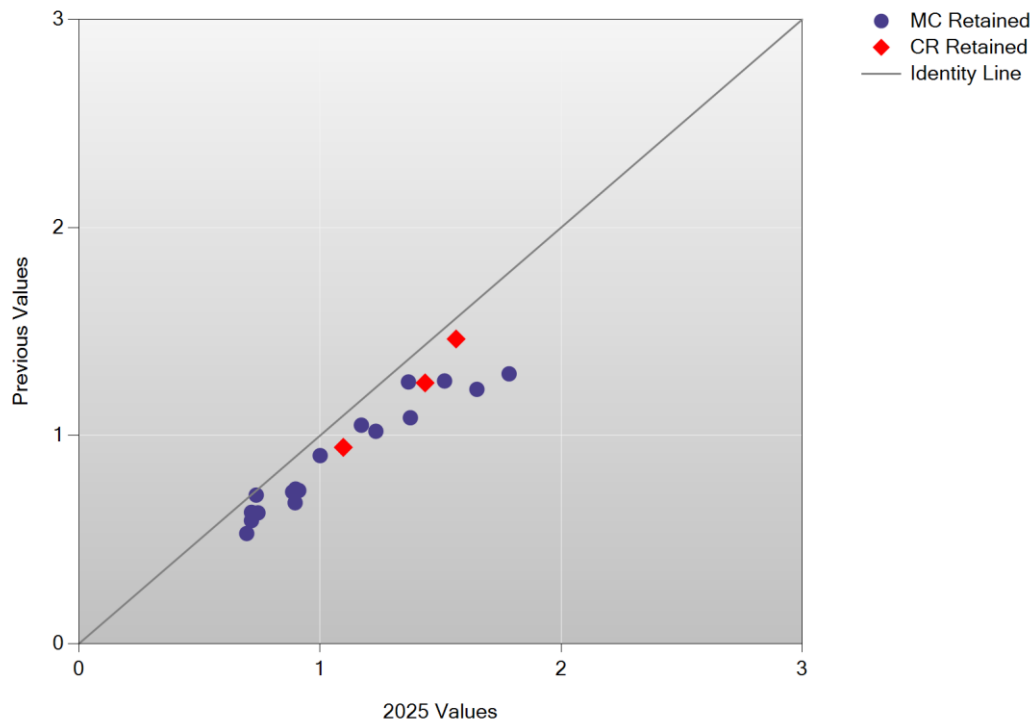
Test Information Function: Mathematics Grade 5



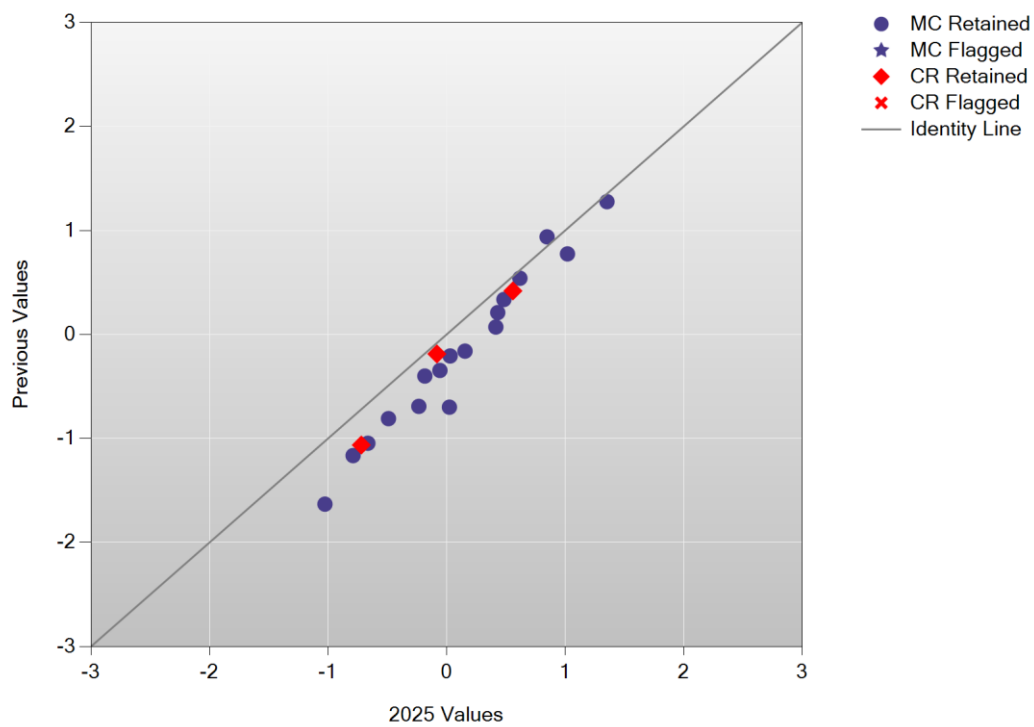
Cumulative Scale Score Distributions: Mathematics Grade 5



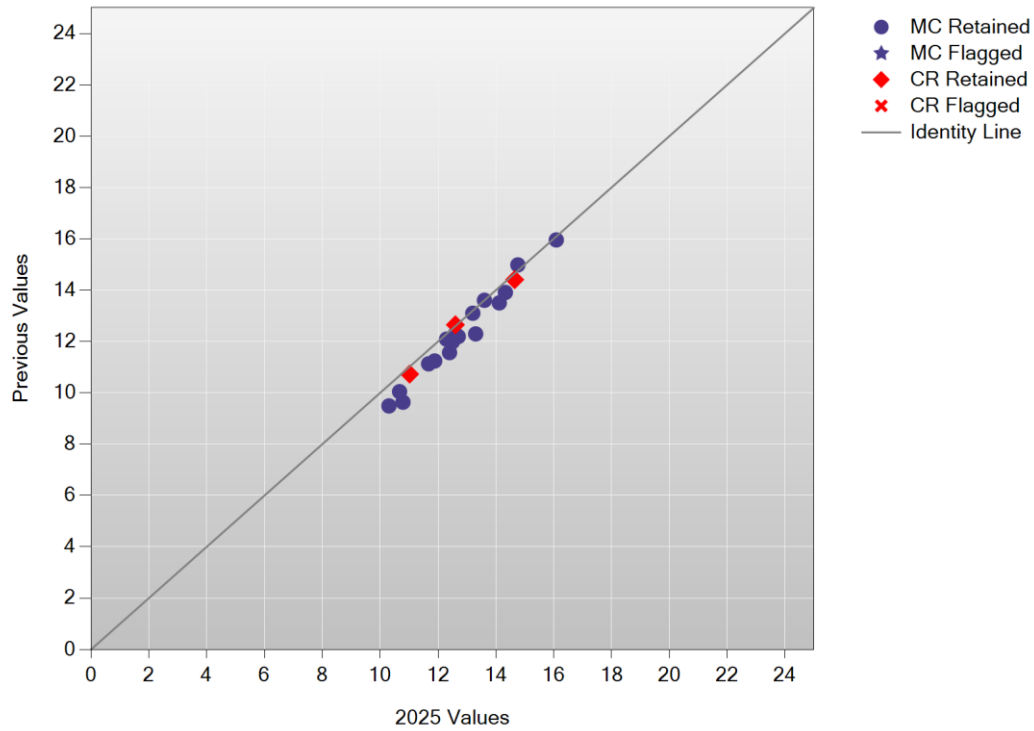
A/A Plot: Mathematics Grade 6



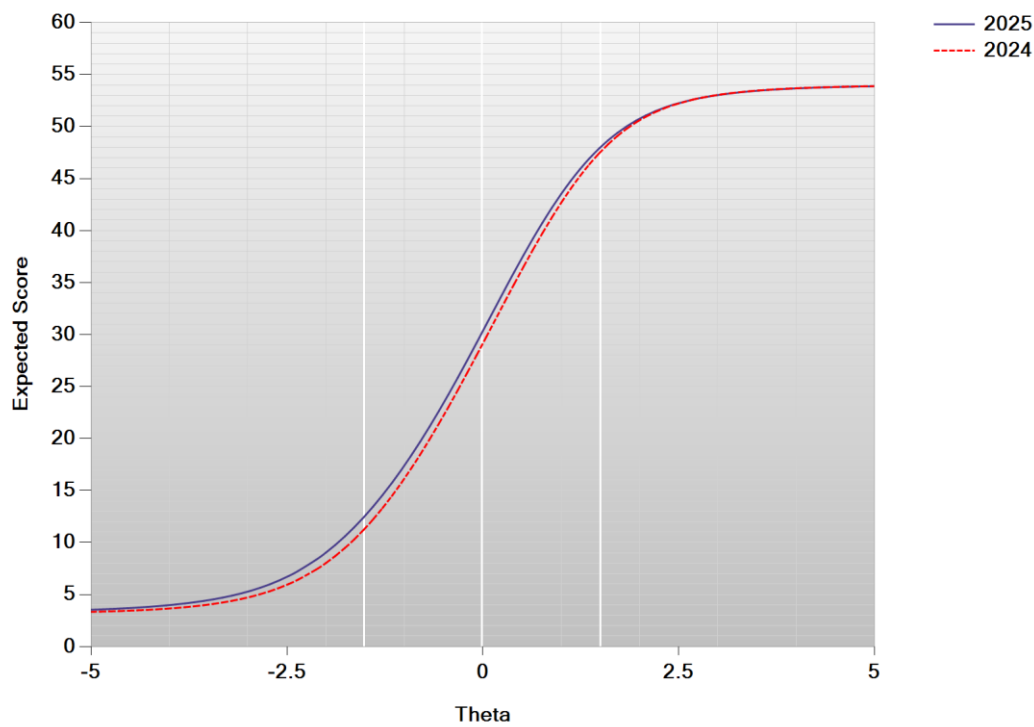
B/B Plot: Mathematics Grade 6



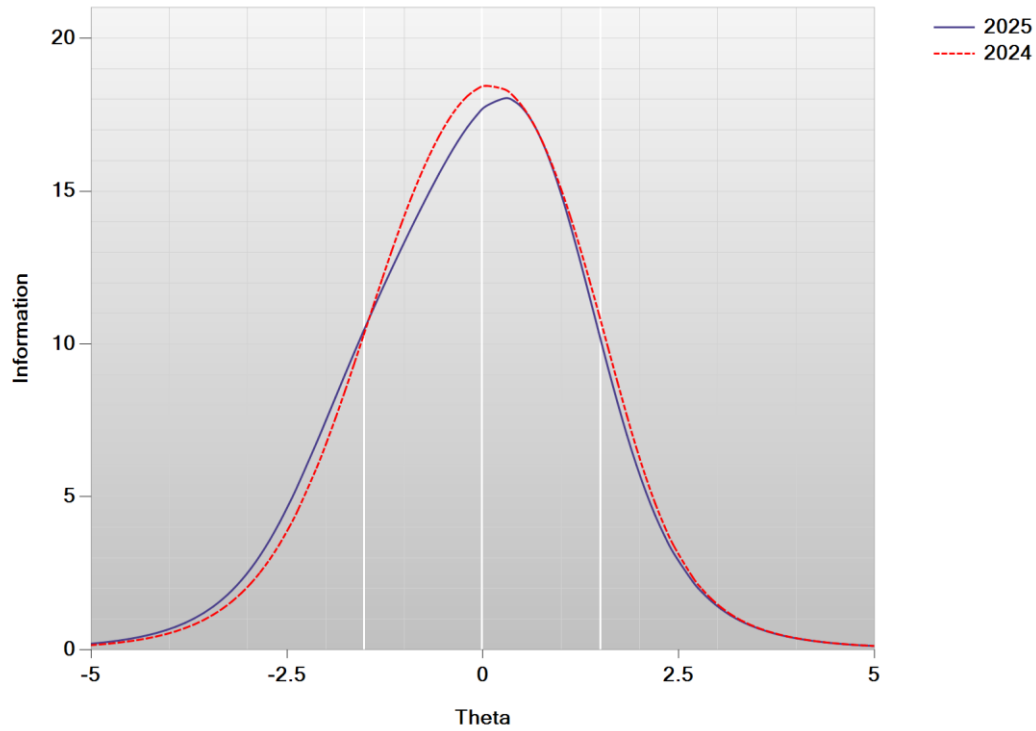
Delta Plot: Mathematics Grade 6



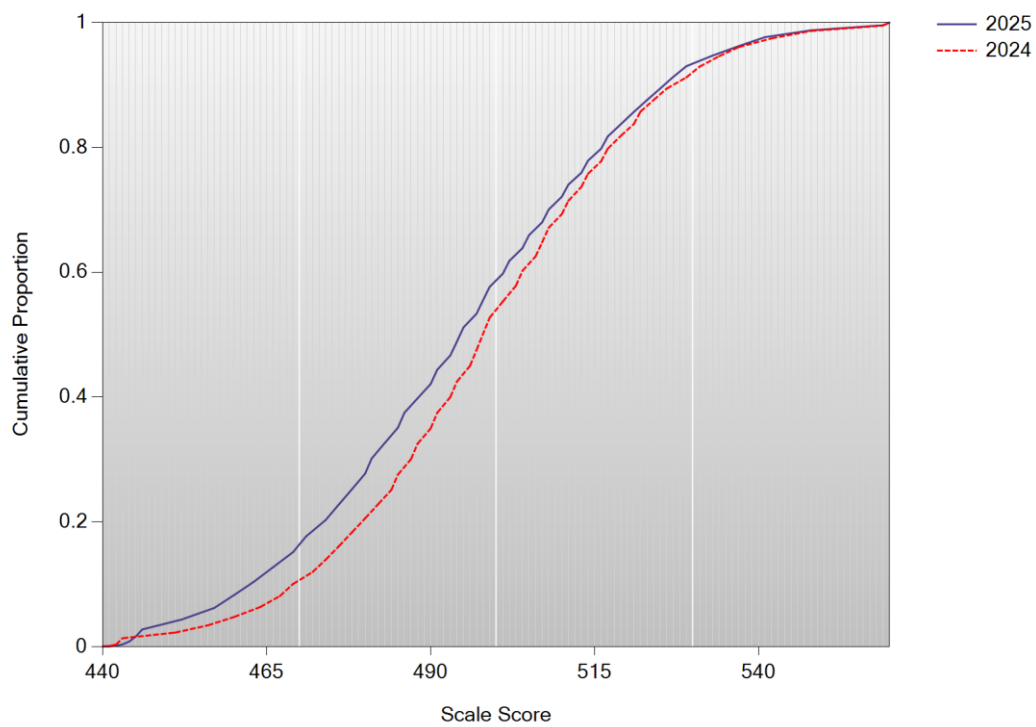
Test Characteristic Curve: Mathematics Grade 6



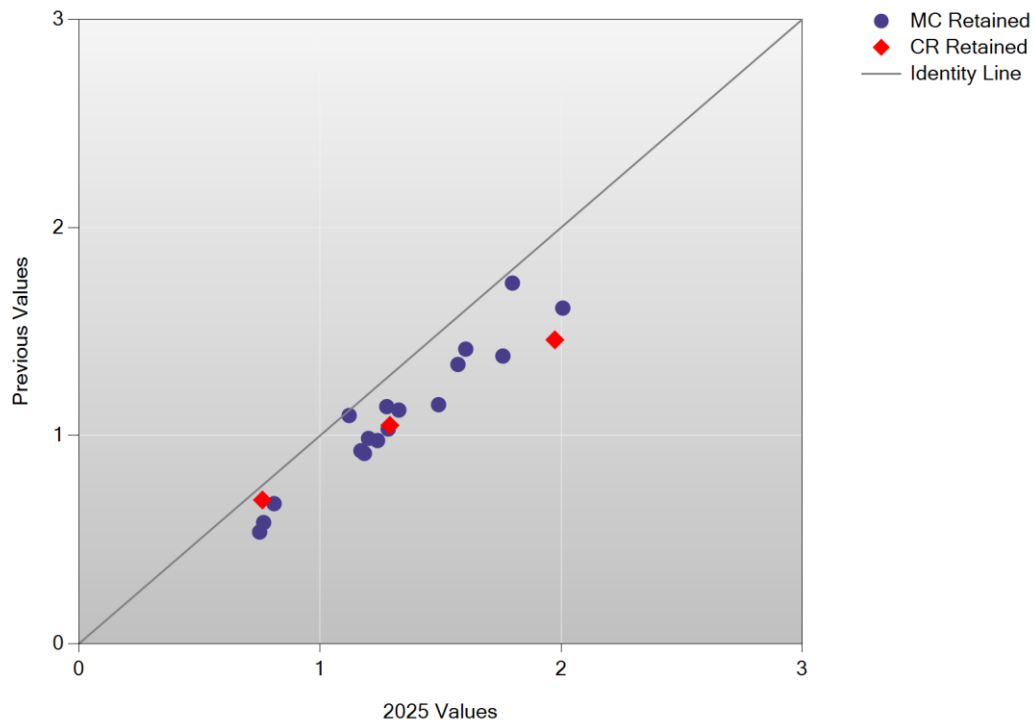
Test Information Function: Mathematics Grade 6



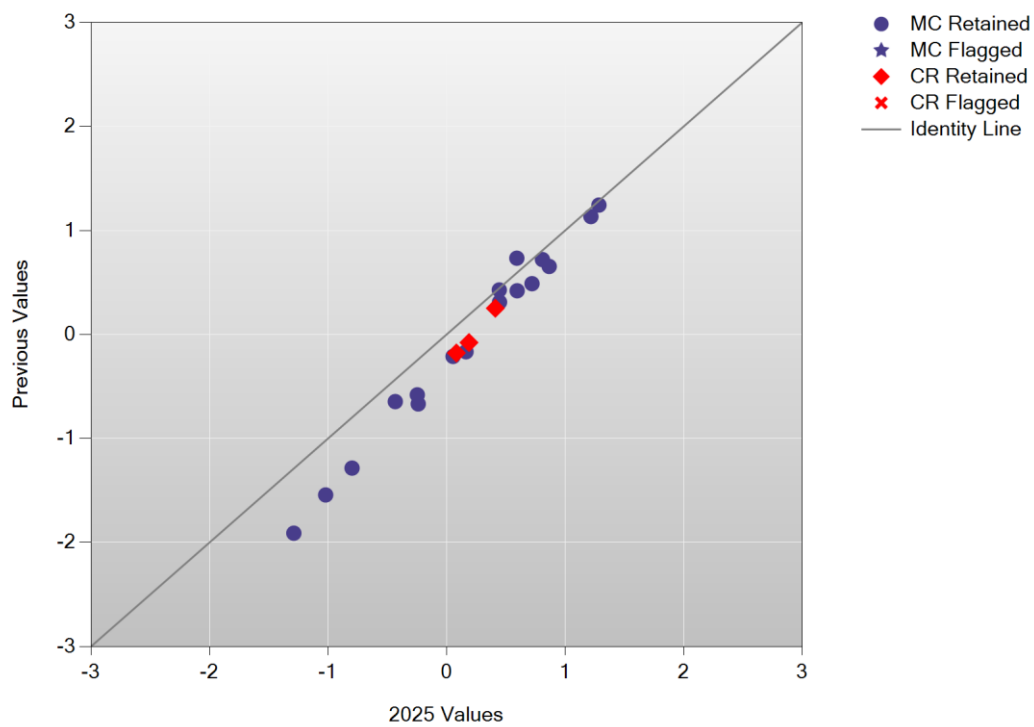
Cumulative Scale Score Distributions: Mathematics Grade 6



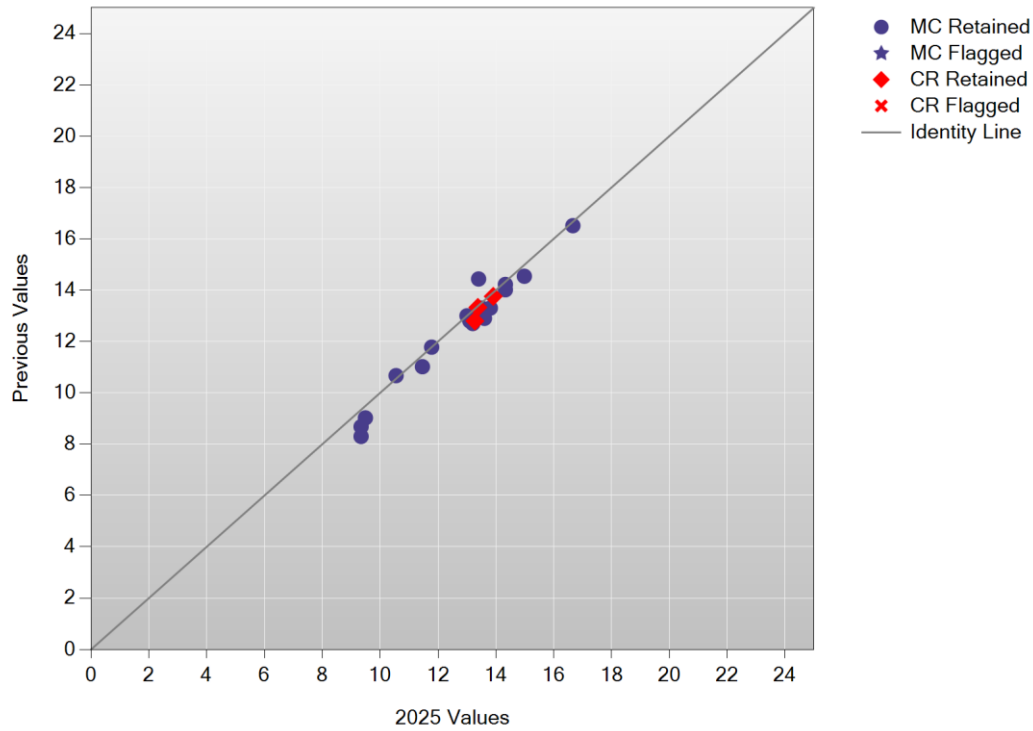
A/A Plot: Mathematics Grade 7



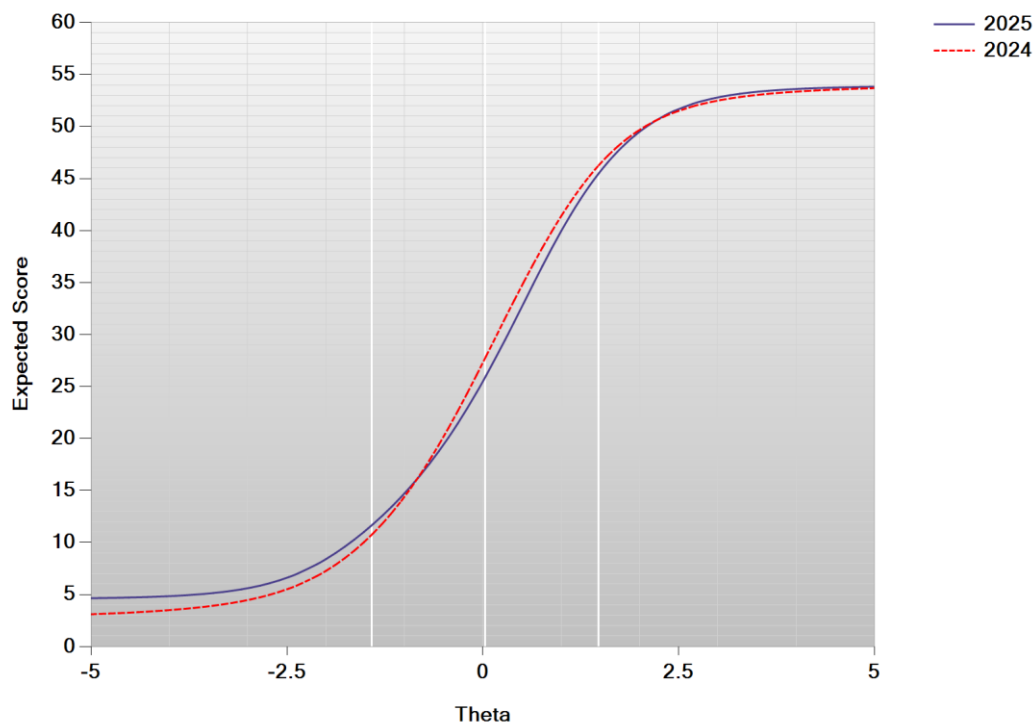
B/B Plot: Mathematics Grade 7



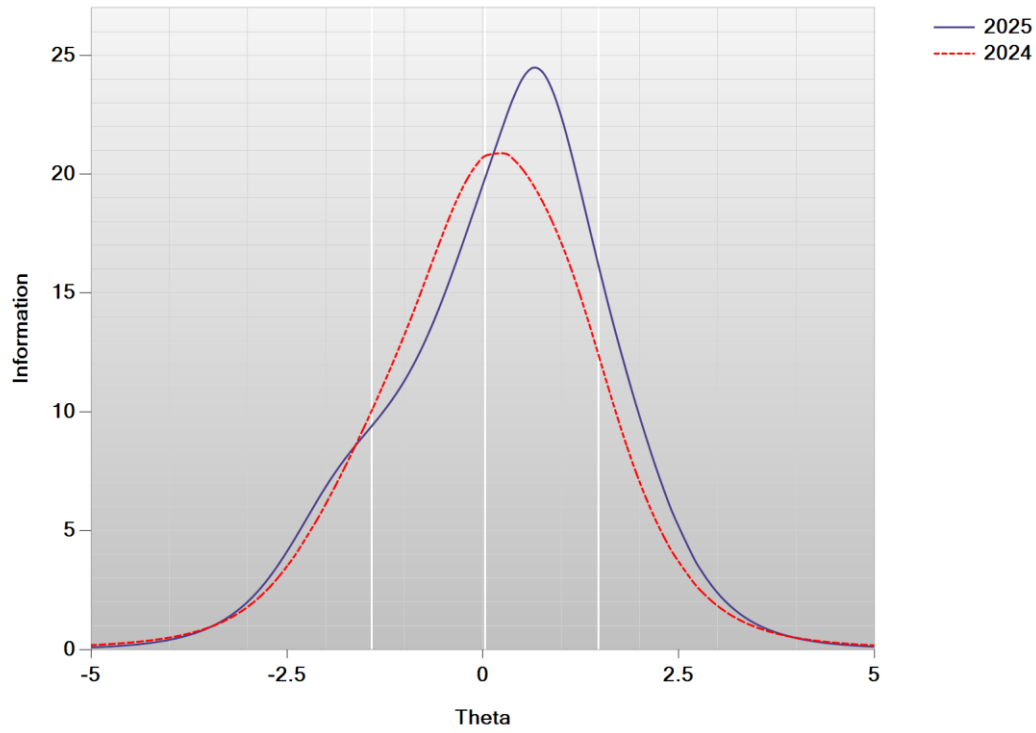
Delta Plot: Mathematics Grade 7



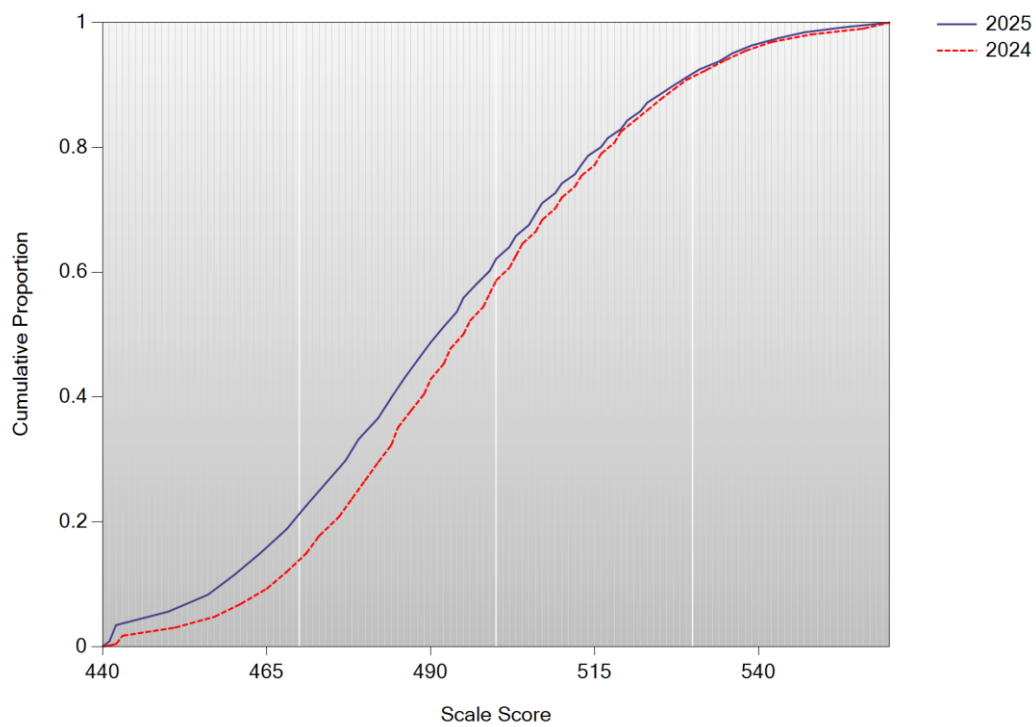
Test Characteristic Curve: Mathematics Grade 7



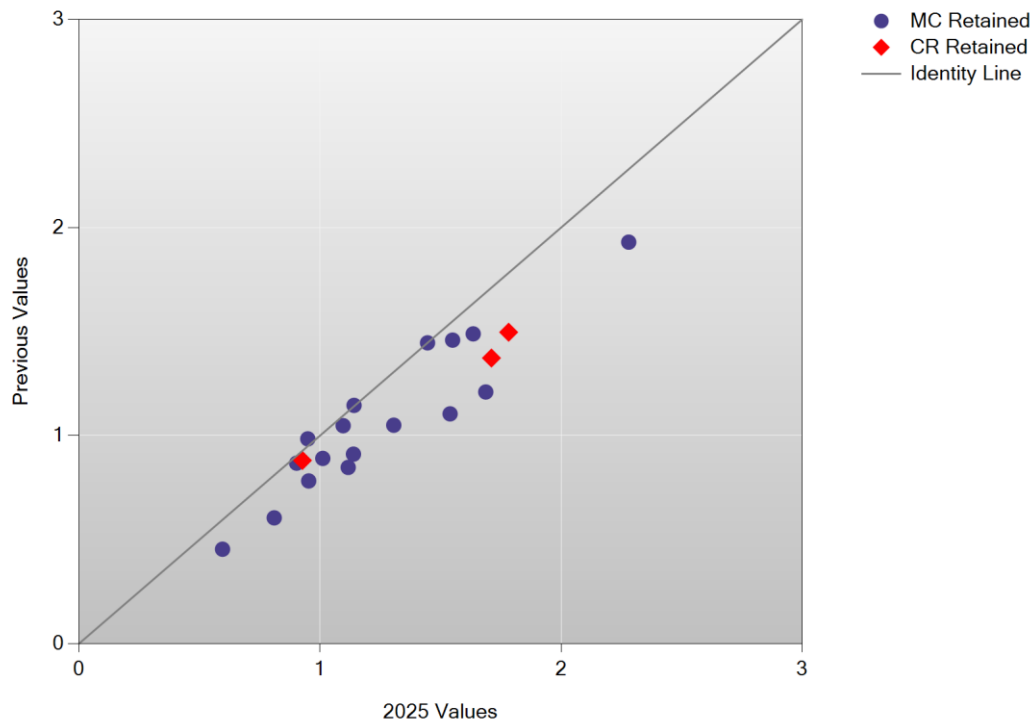
Test Information Function: Mathematics Grade 7



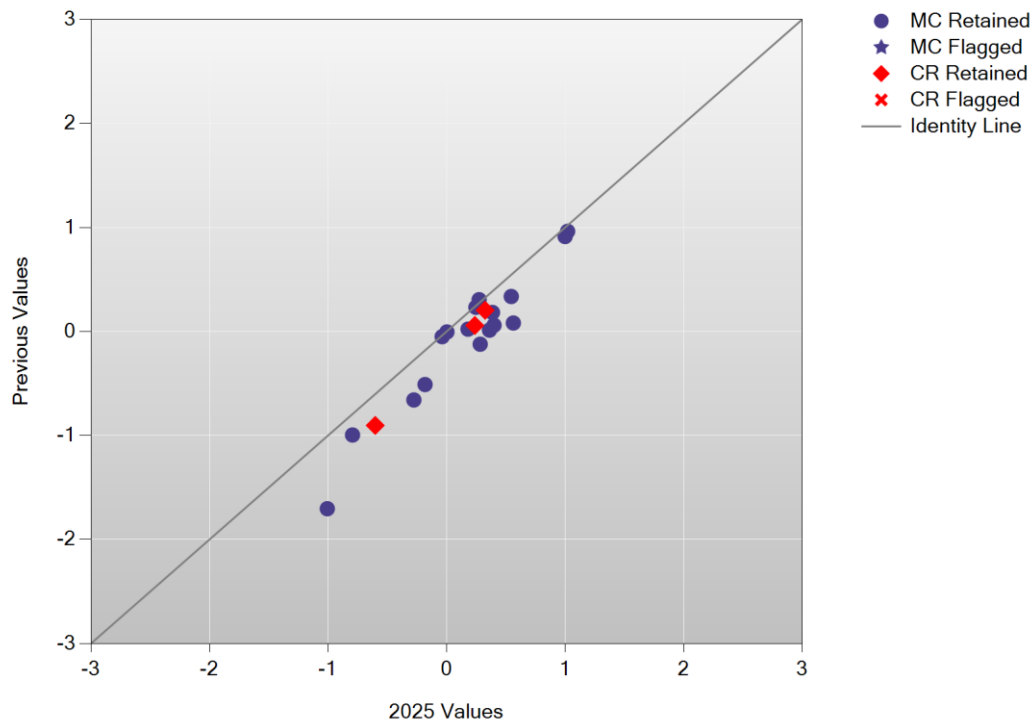
Cumulative Scale Score Distributions: Mathematics Grade 7



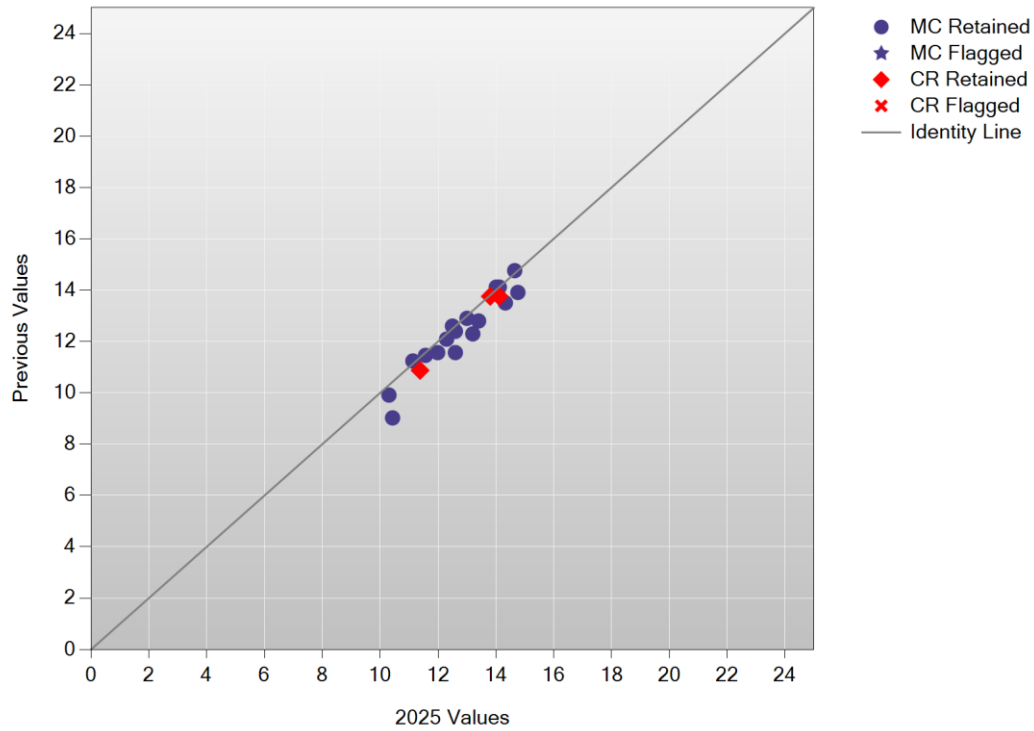
A/A Plot: Mathematics Grade 8



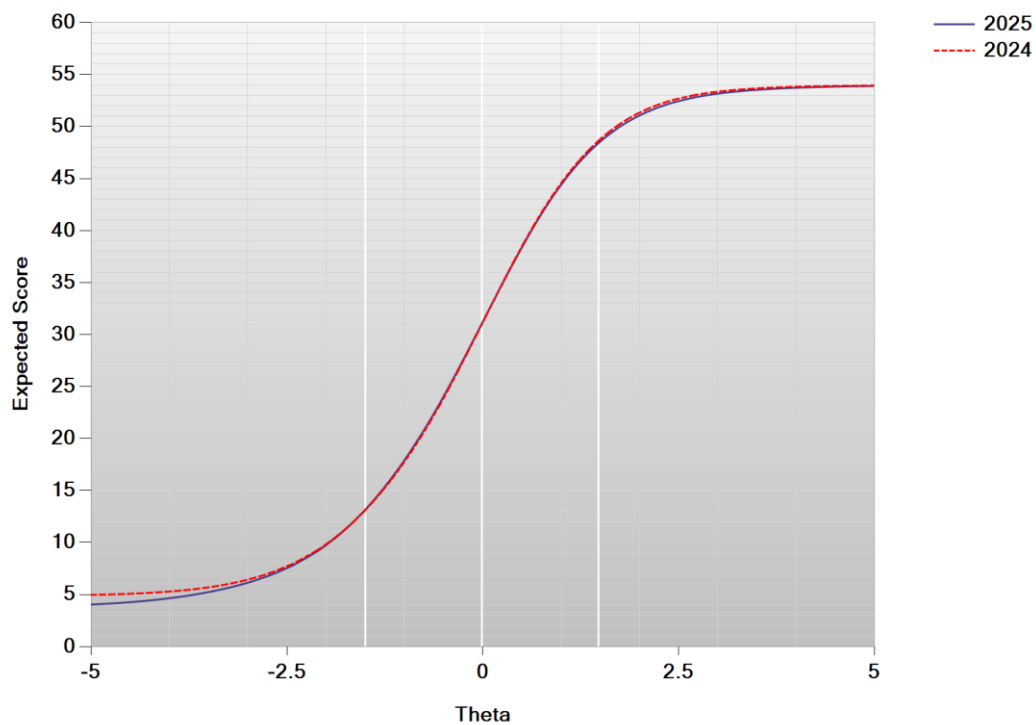
B/B Plot: Mathematics Grade 8



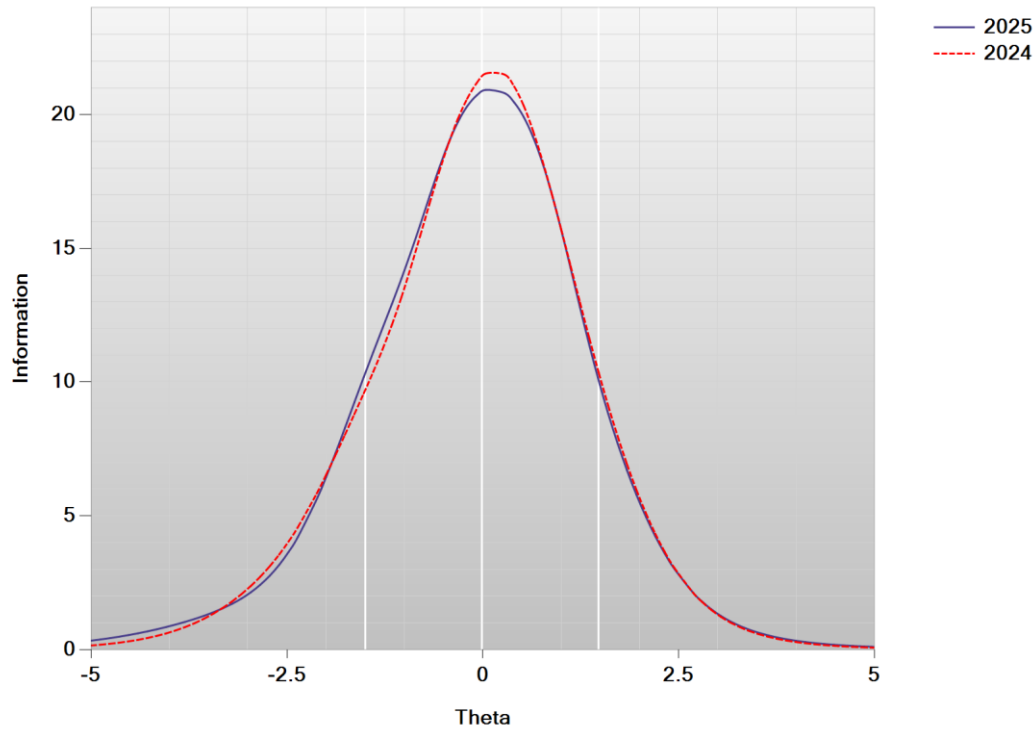
Delta Plot: Mathematics Grade 8



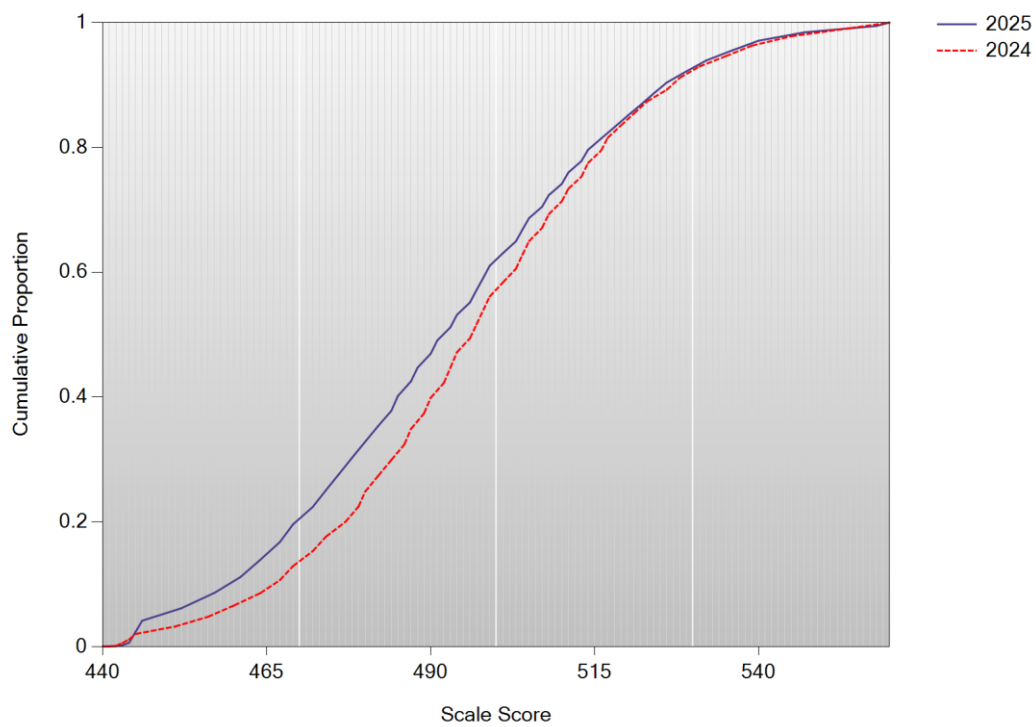
Test Characteristic Curve: Mathematics Grade 8



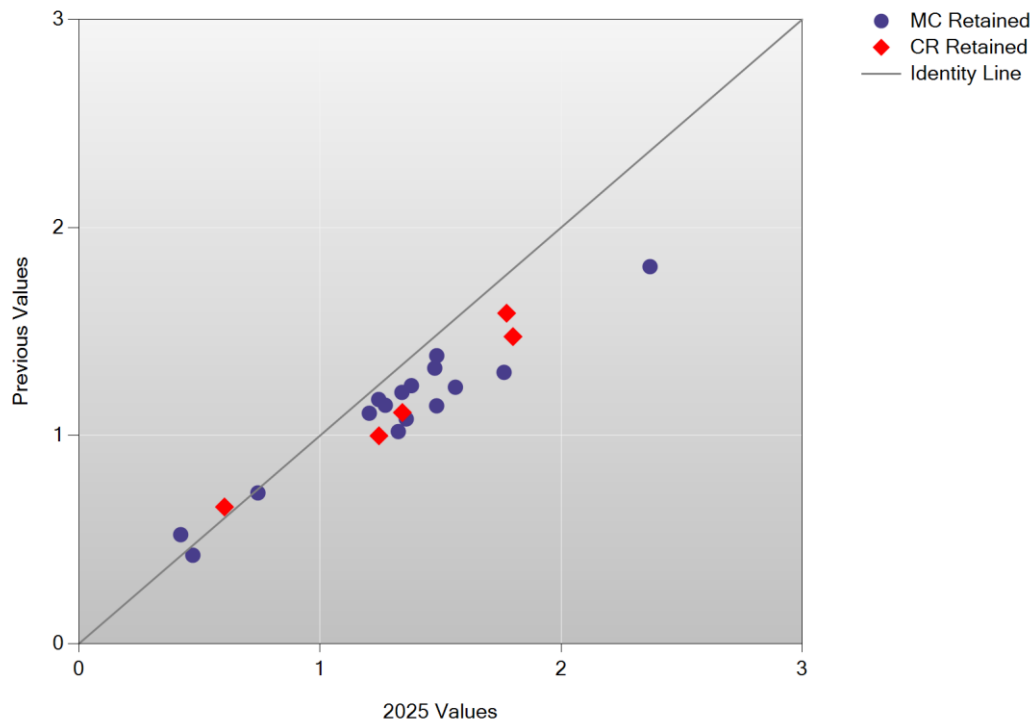
Test Information Function: Mathematics Grade 8



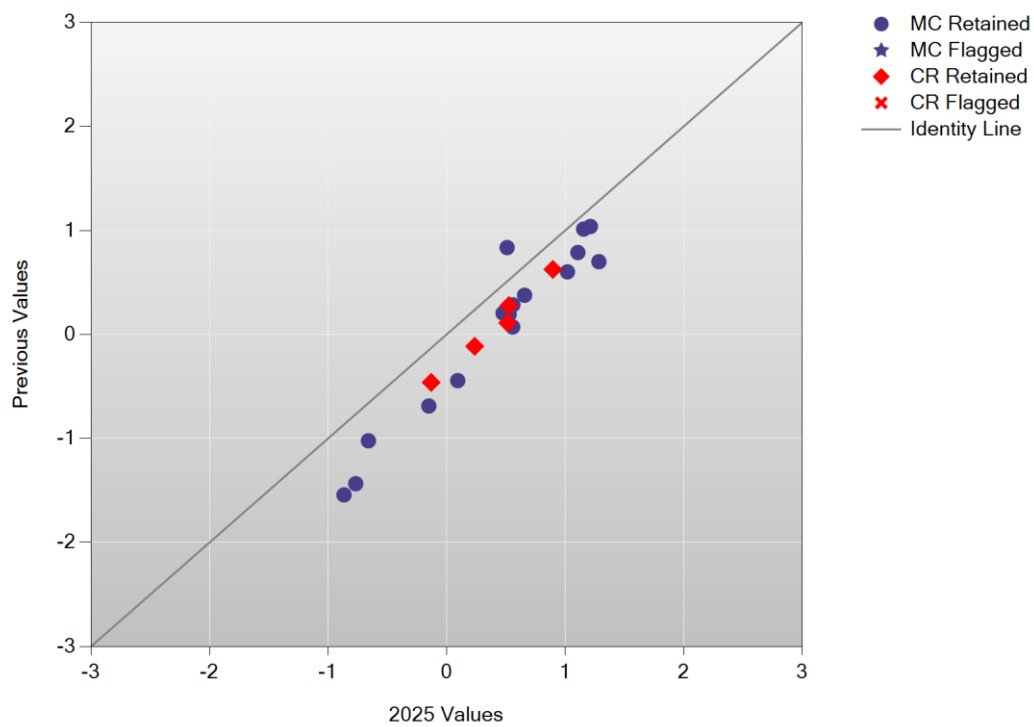
Cumulative Scale Score Distributions: Mathematics Grade 8



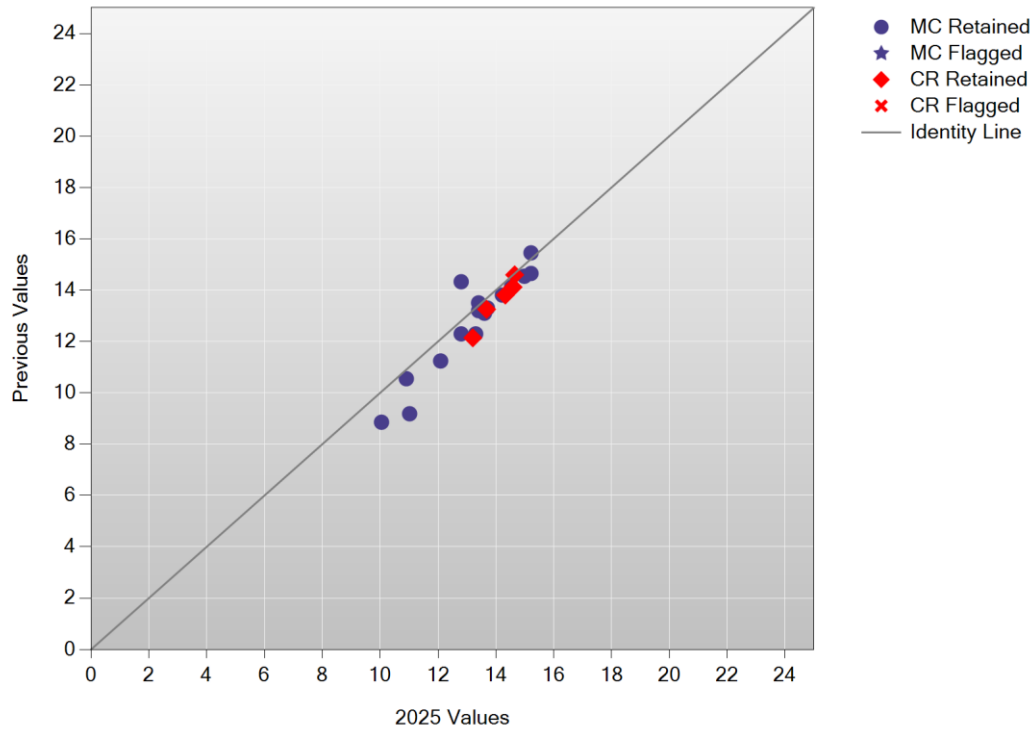
A/A Plot: Mathematics Grade 10



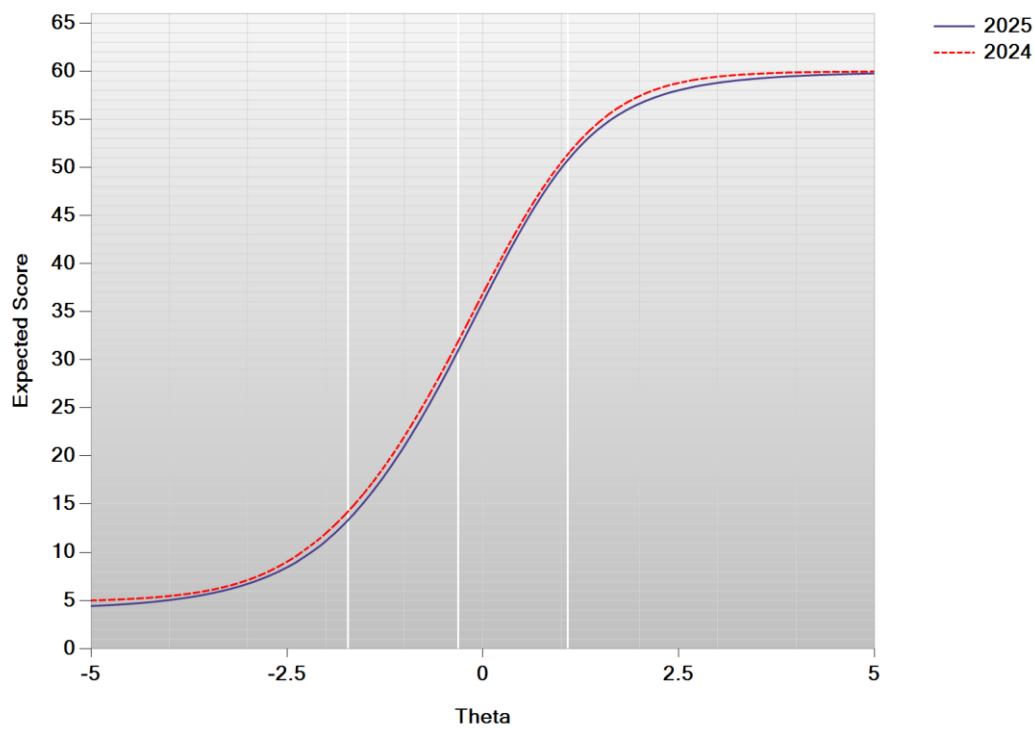
B/B Plot: Mathematics Grade 10



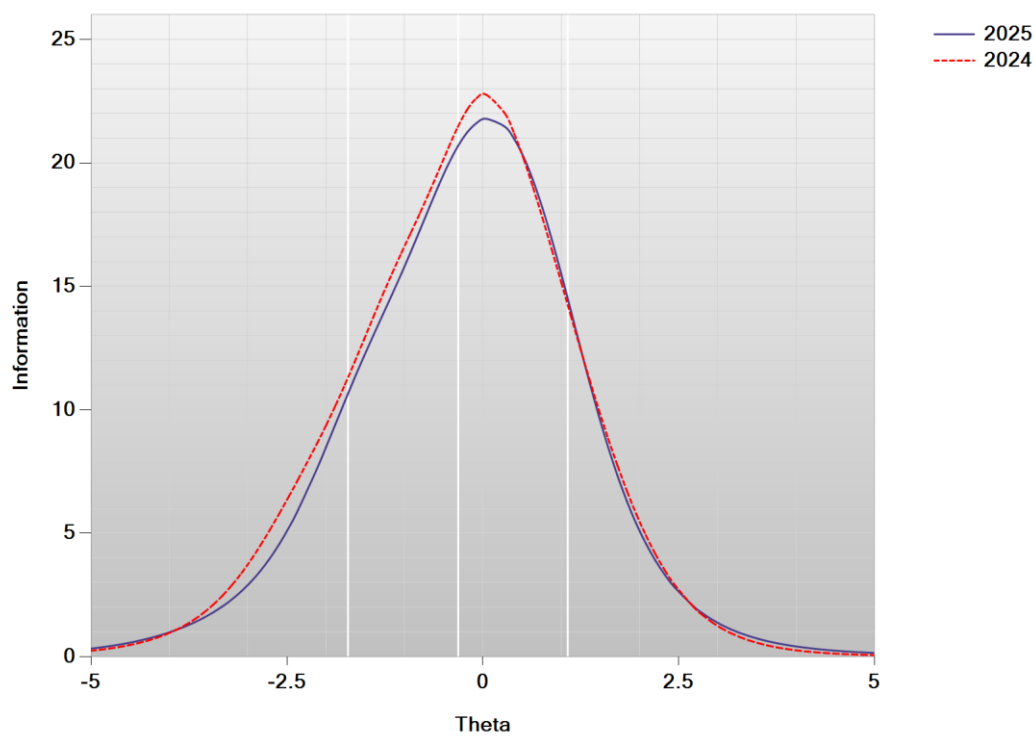
Delta Plot: Mathematics Grade 10



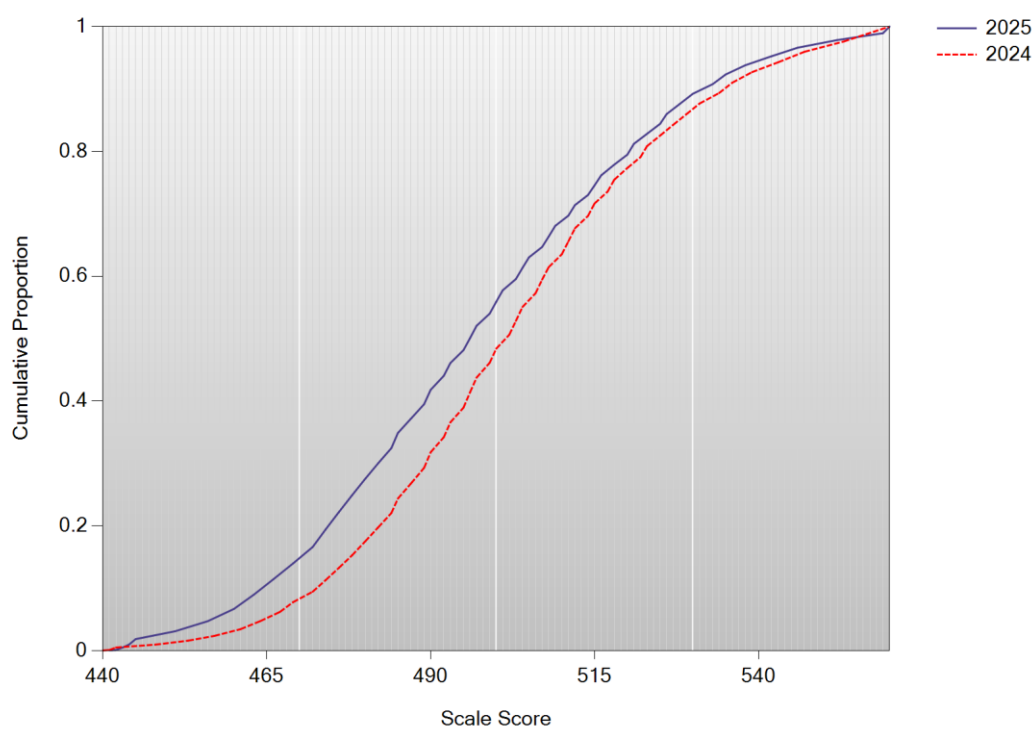
Test Characteristic Curve: Mathematics Grade 10



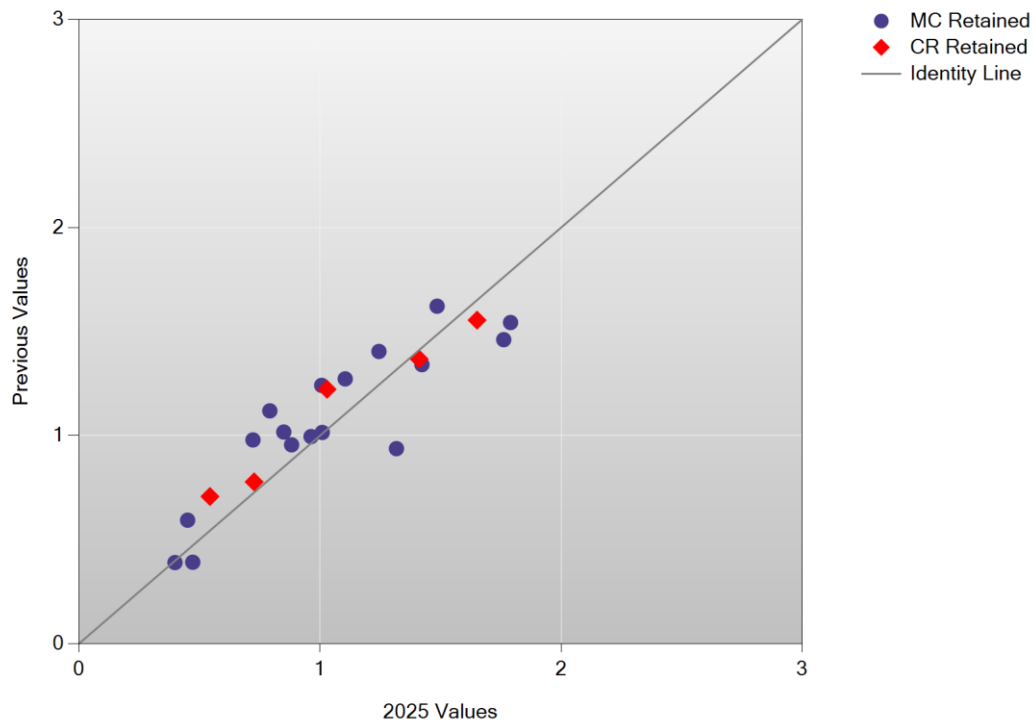
Test Information Function: Mathematics Grade 10



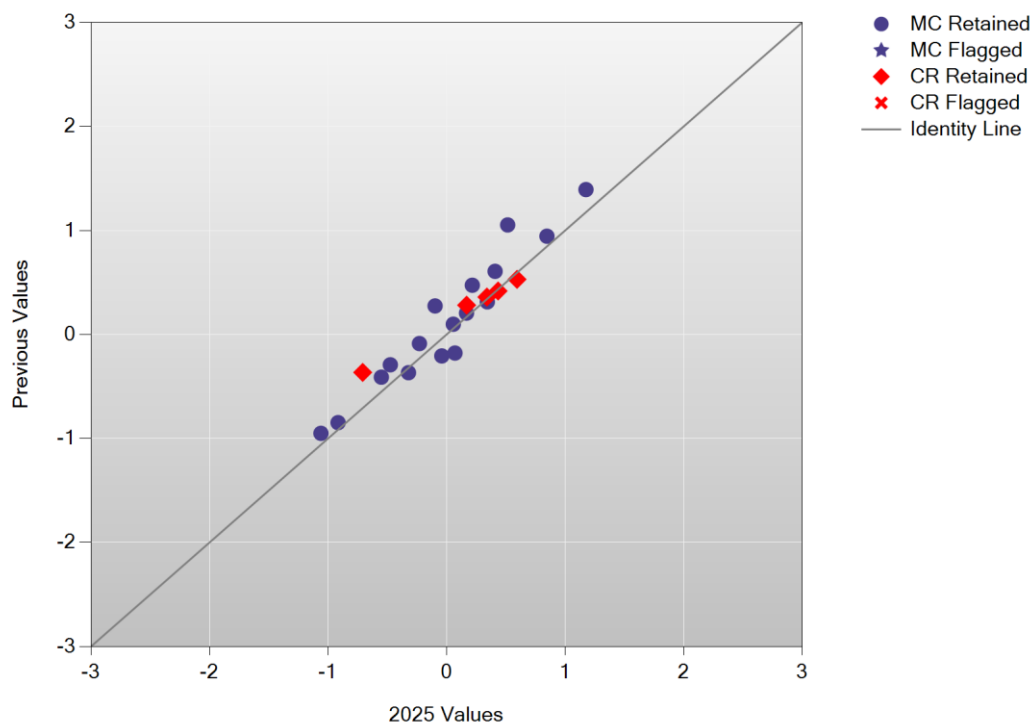
Cumulative Scale Score Distributions: Mathematics Grade 10



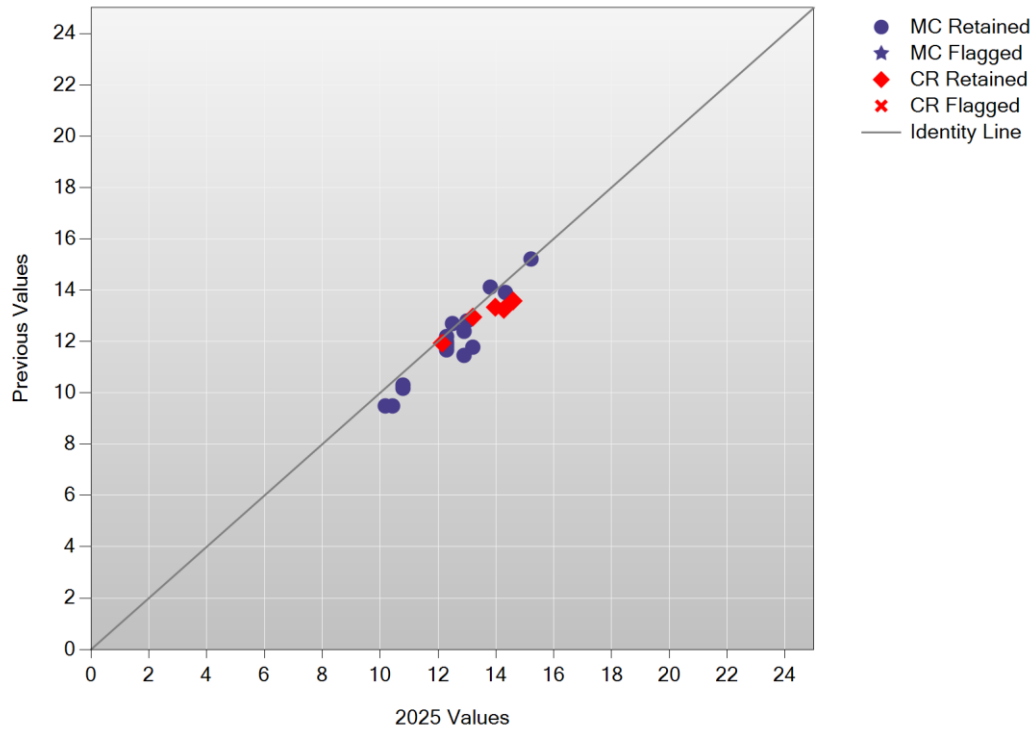
A/A Plot: Introductory Physics Grade 10



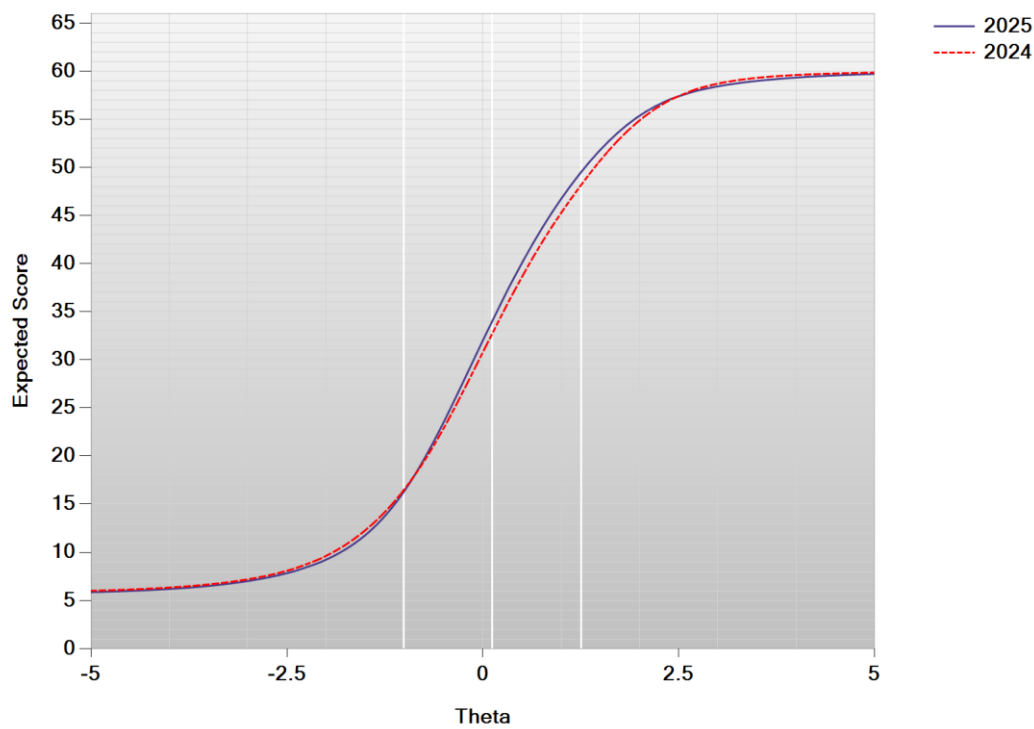
B/B Plot: Introductory Physics Grade 10



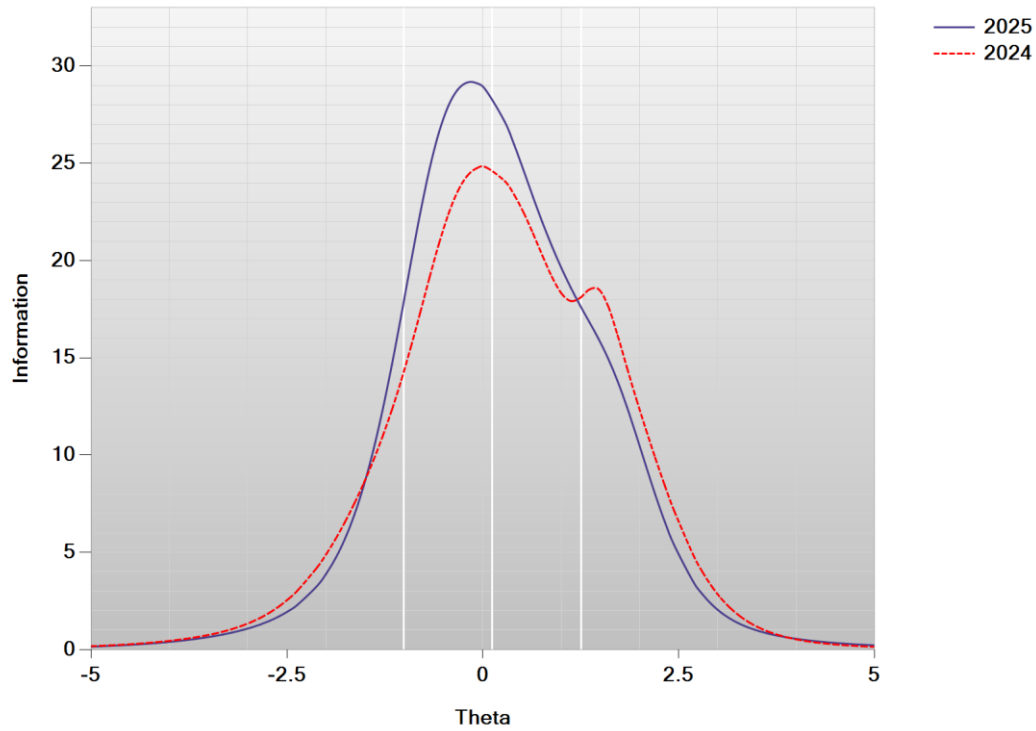
Delta Plot: Introductory Physics Grade 10



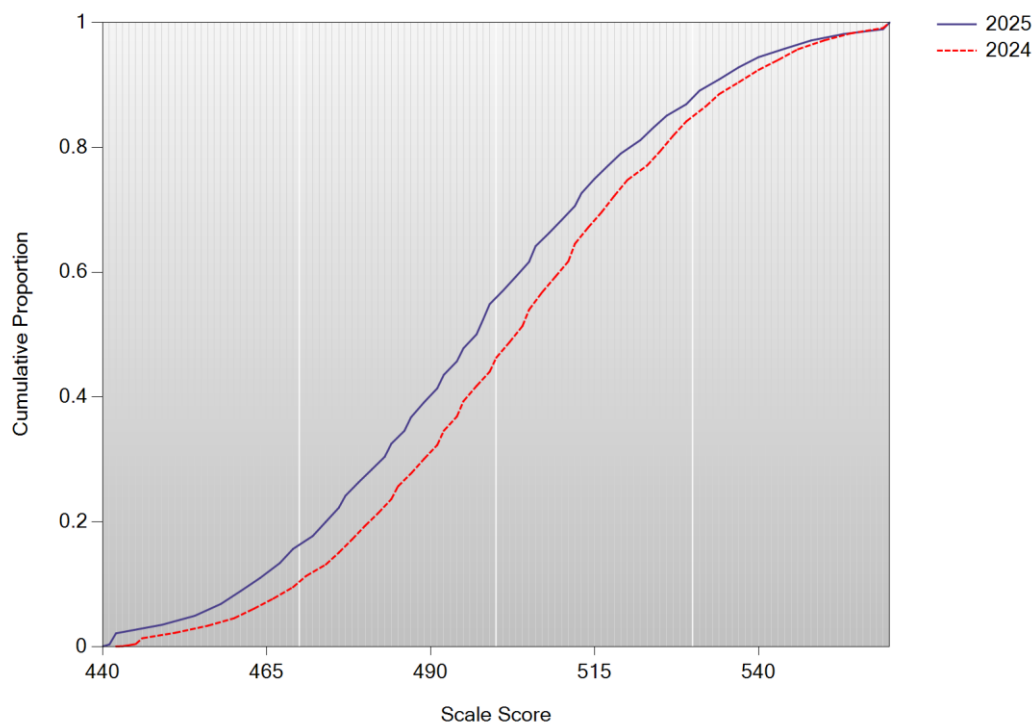
Test Characteristic Curve: Introductory Physics Grade 10



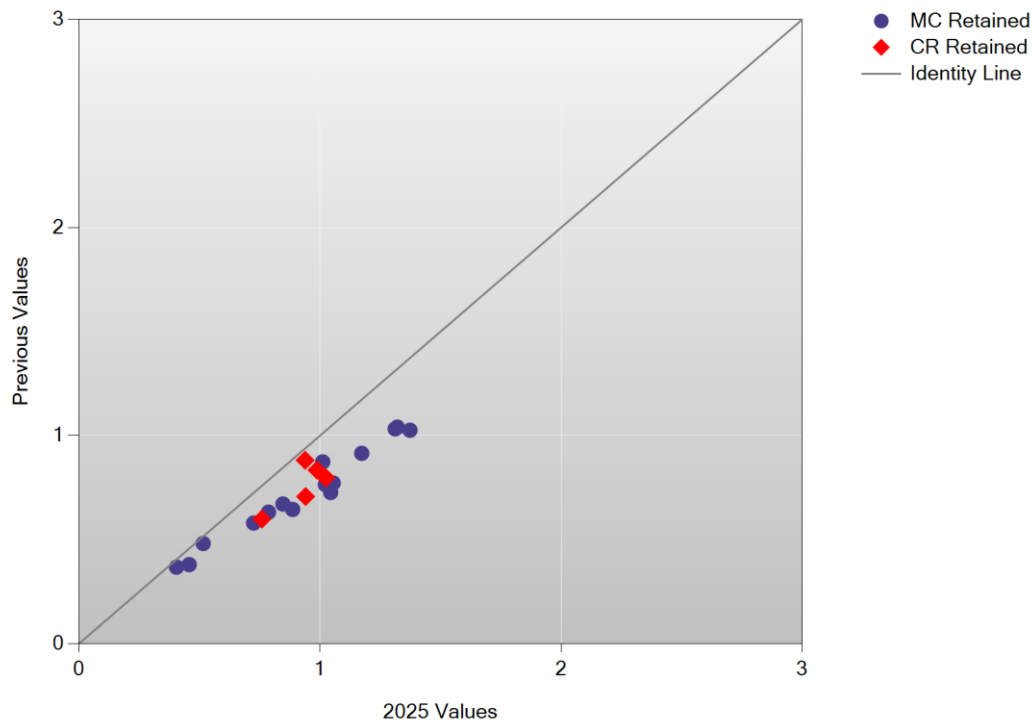
Test Information Function: Introductory Physics Grade 10



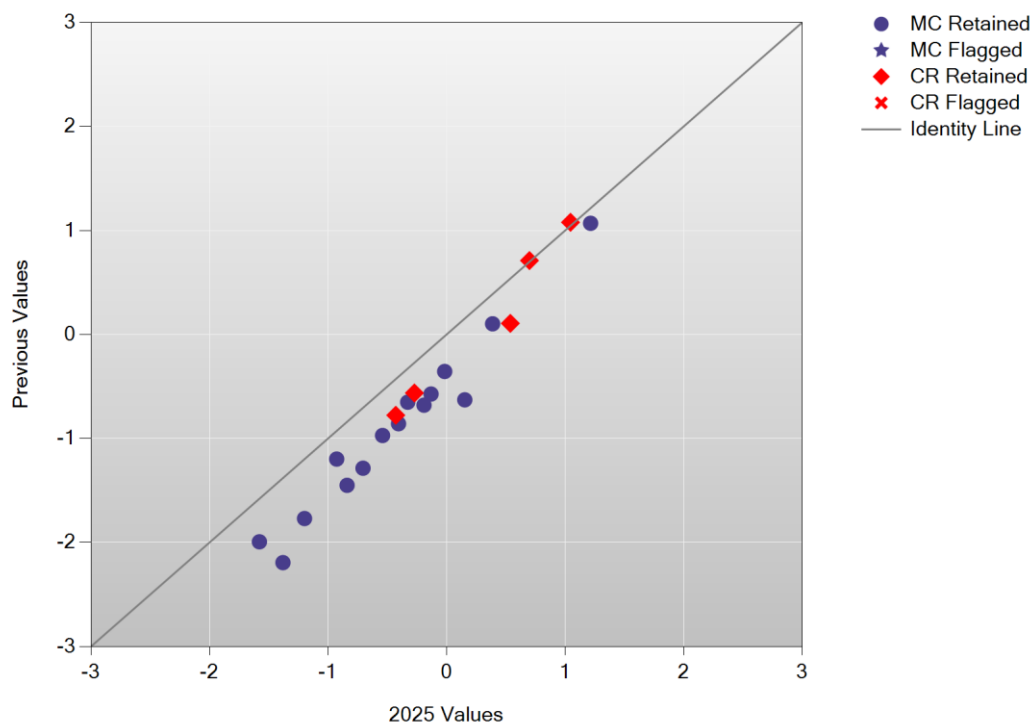
Cumulative Scale Score Distributions: Introductory Physics Grade 10



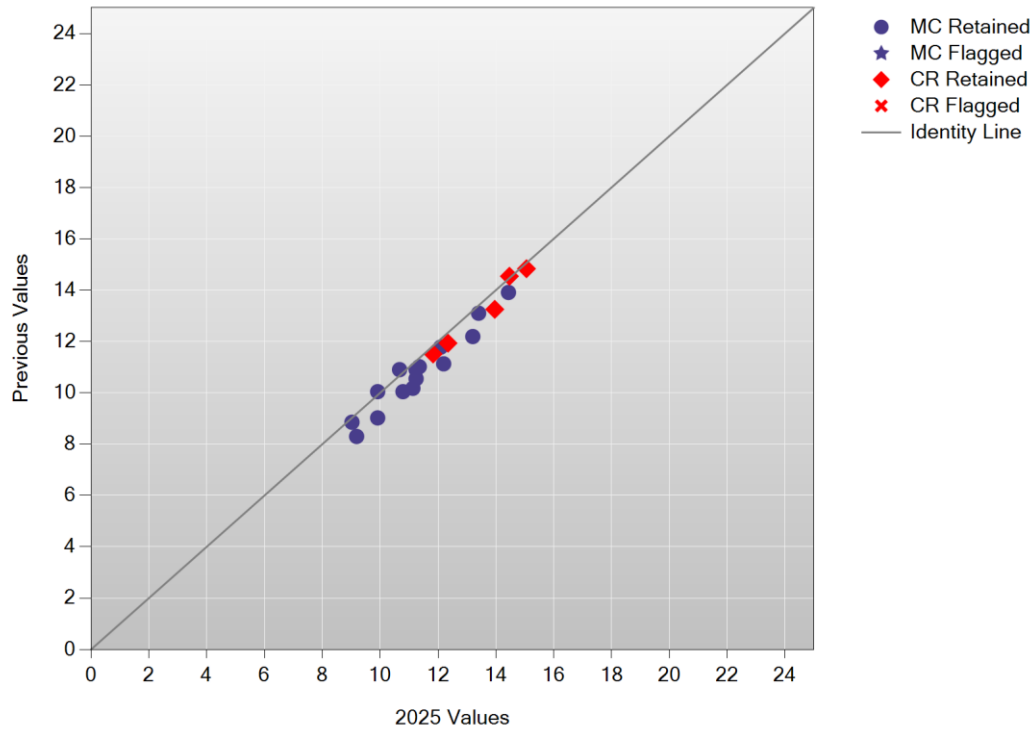
A/A Plot: Science Grade 5



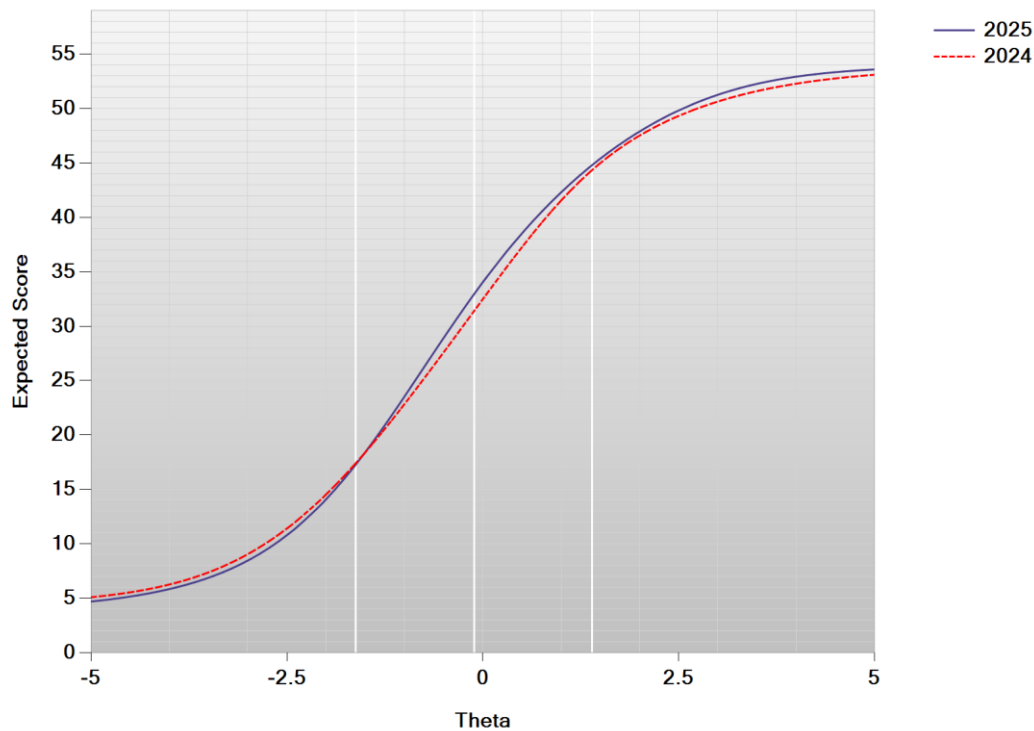
B/B Plot: Science Grade 5



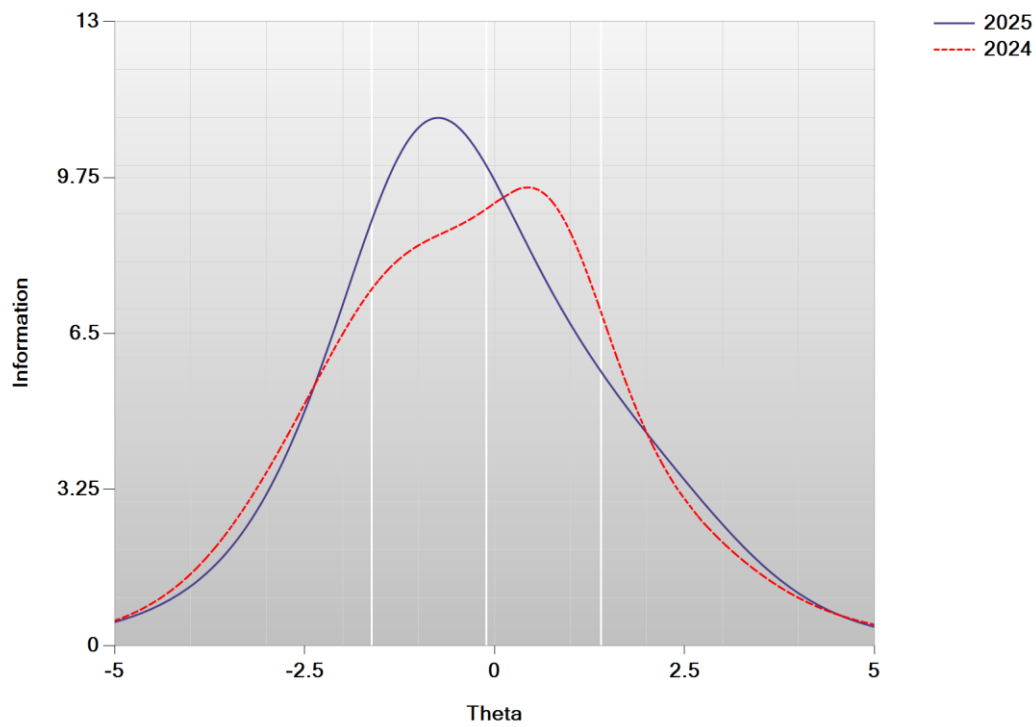
Delta Plot: Science Grade 5



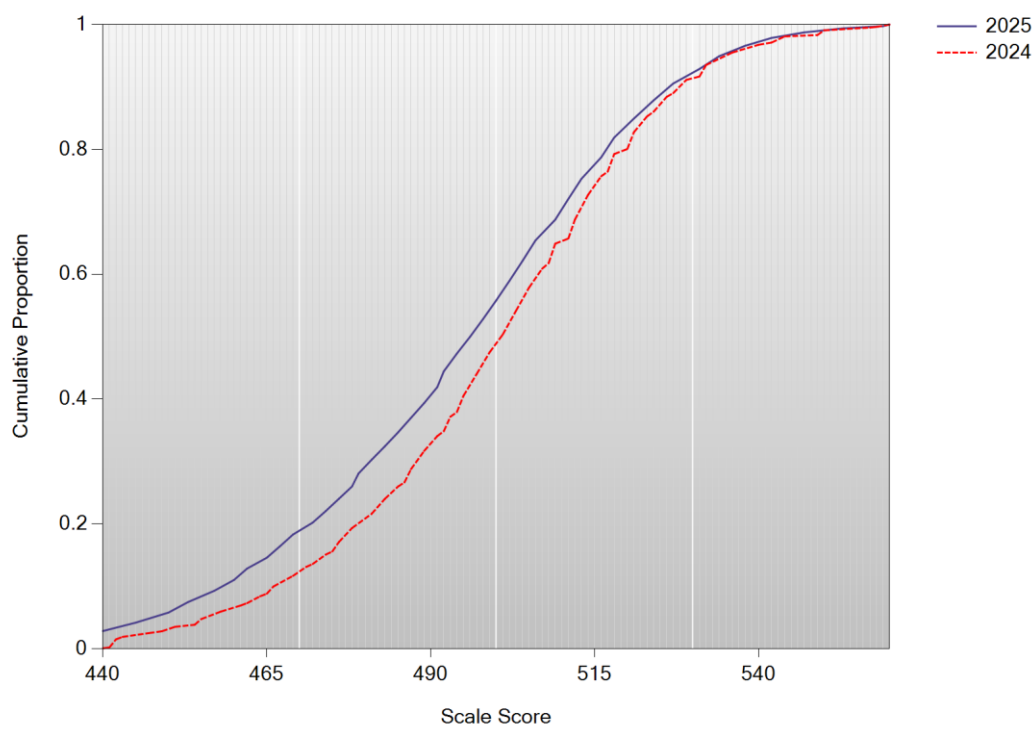
Test Characteristic Curve: Science Grade 5



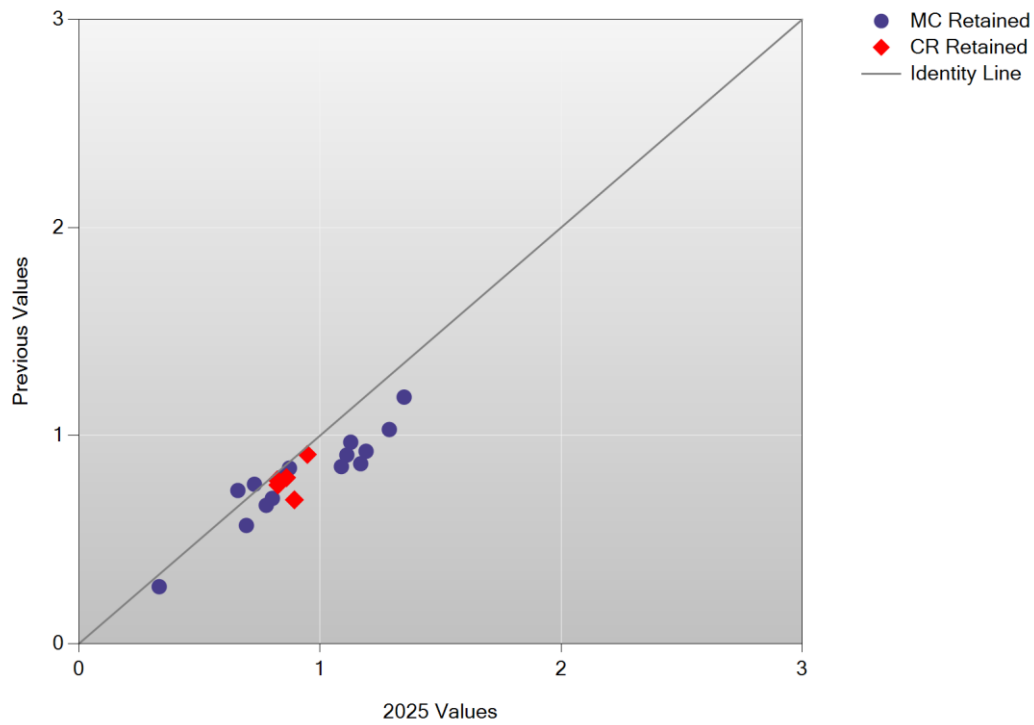
Test Information Function: Science Grade 5



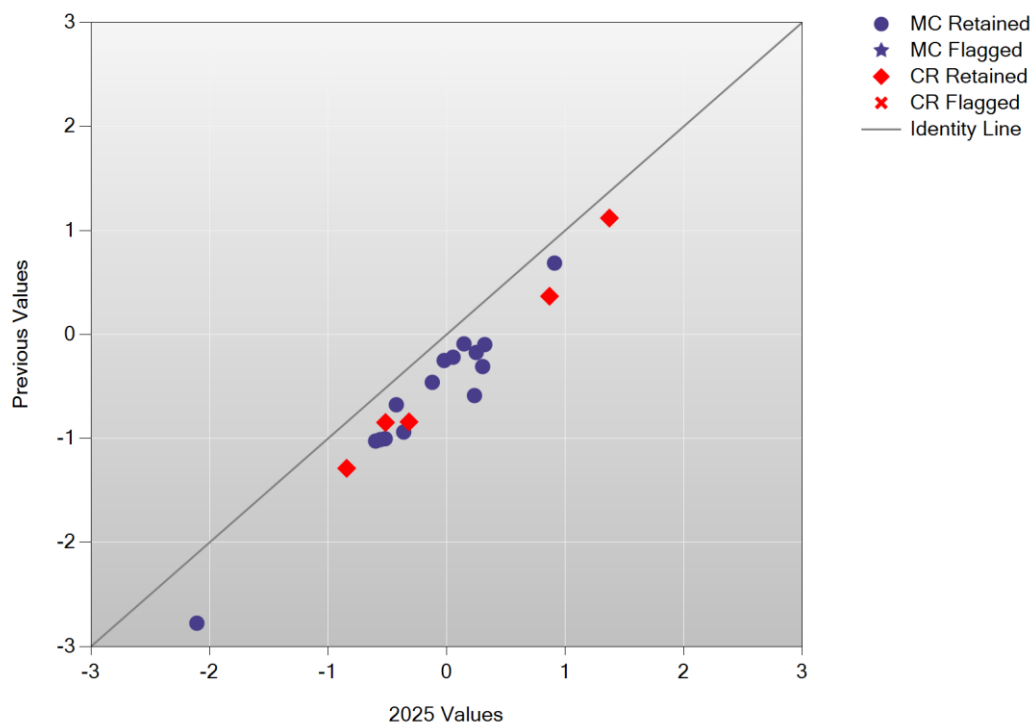
Cumulative Scale Score Distributions: Science Grade 5



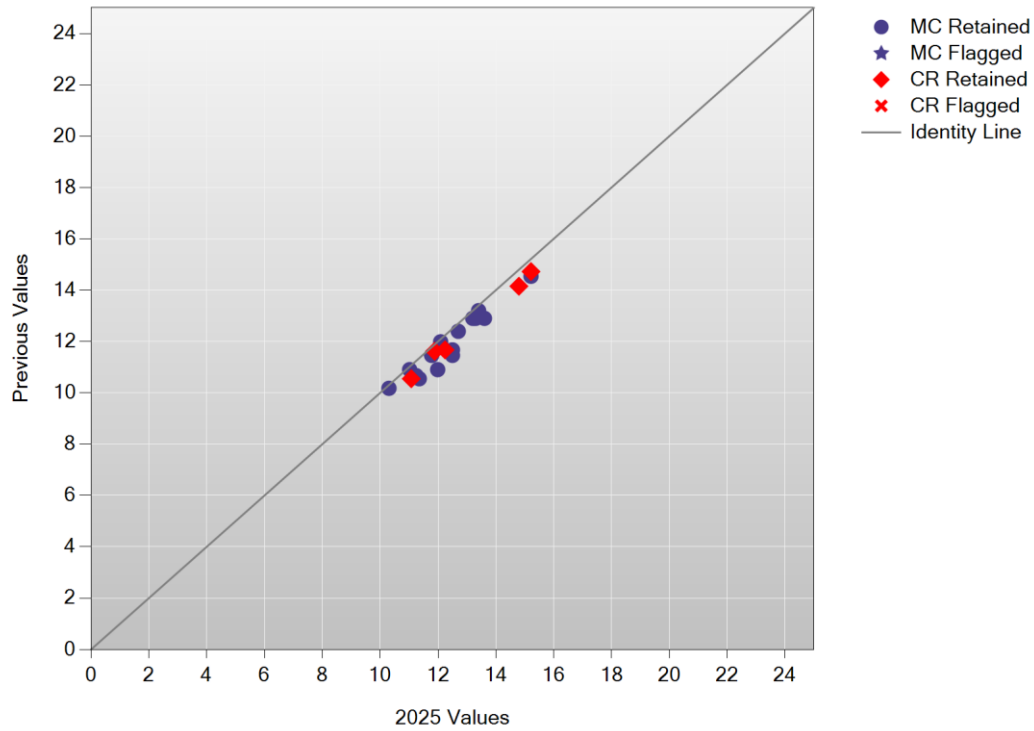
A/A Plot: Science Grade 8



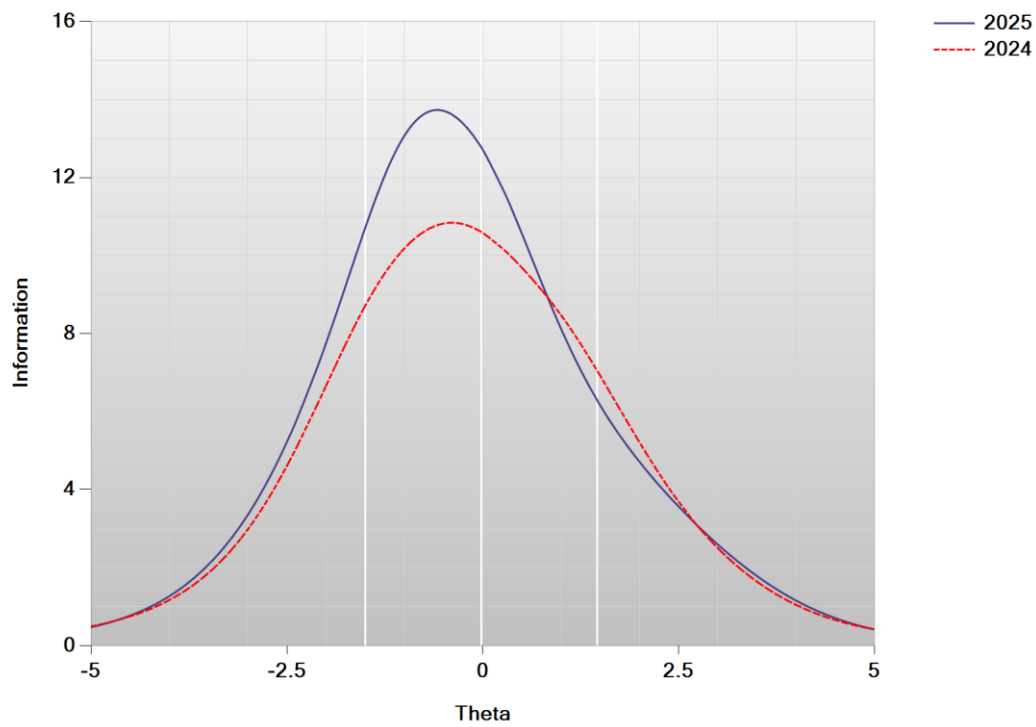
B/B Plot: Science Grade 8



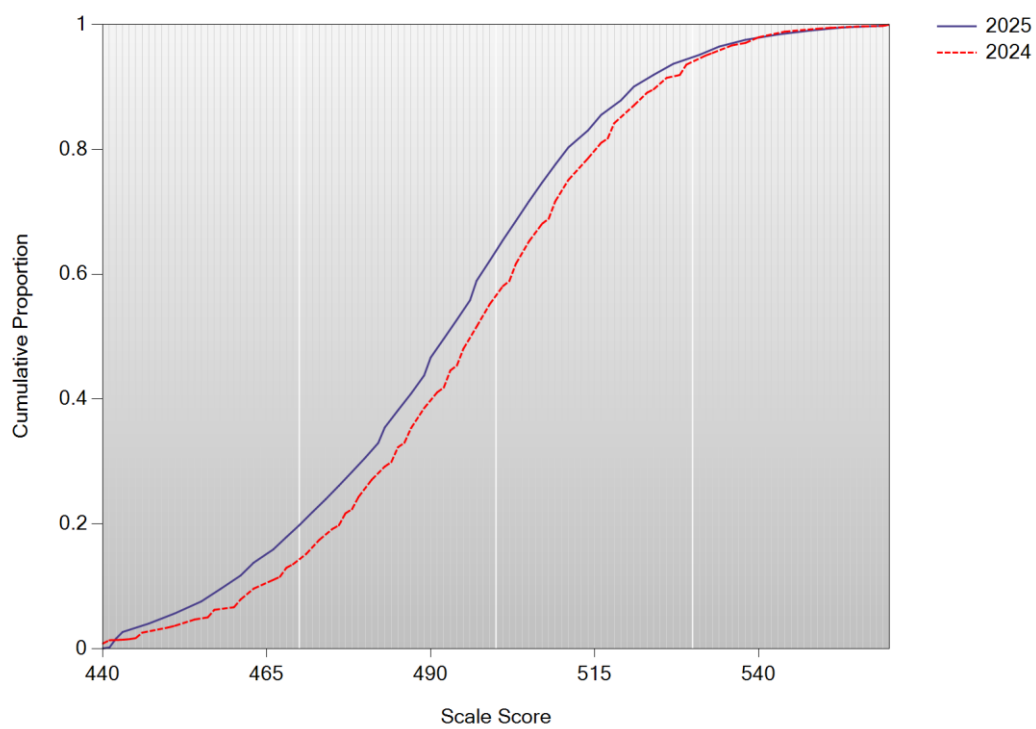
Delta Plot: Science Grade 8



Test Information Function: Science Grade 8



Cumulative Scale Score Distributions: Science Grade 8



Section 2.2

Lookup Tables

Table 2.2.1
Raw Score to Scale Score Lookup Table
Biology Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-1.925	5.11	10.0	440	1	440	1
1	-1.925	5.11	10.0	440	1	441	1
2	-1.924	5.12	10.0	440	1	441	1
3	-1.924	5.12	10.0	440	1	442	1
4	-1.923	5.12	10.0	440	1	442	1
5	-1.923	5.13	10.0	440	1	443	1
6	-1.922	5.13	10.0	440	1	443	1
7	-1.922	5.13	10.0	440	1	444	1
8	-1.921	5.14	10.0	440	1	444	1
9	-1.705	7.08	10.0	446	1	445	1
10	-1.534	9.05	9.3	451	1	446	1
11	-1.392	10.98	8.4	455	1	450	1
12	-1.270	12.80	7.8	458	1	455	1
13	-1.162	14.49	7.3	461	1	458	1
14	-1.064	16.04	7.0	464	1	461	1
15	-0.974	17.45	6.7	467	1	464	1
16	-0.891	18.73	6.4	469	1	467	1
17	-0.812	19.89	6.3	471	2	469	1
18	-0.738	20.97	6.1	473	2	471	2
19	-0.666	21.96	6.0	475	2	473	2
20	-0.598	22.86	5.8	477	2	475	2
21	-0.532	23.69	5.7	479	2	477	2
22	-0.467	24.44	5.6	481	2	479	2
23	-0.404	25.10	5.6	482	2	481	2
24	-0.343	25.67	5.5	484	2	483	2
25	-0.282	26.16	5.5	486	2	484	2
26	-0.223	26.55	5.4	488	2	486	2
27	-0.163	26.86	5.4	489	2	488	2
28	-0.105	27.07	5.4	491	2	489	2
29	-0.046	27.20	5.4	492	2	491	2
30	0.012	27.25	5.3	494	2	492	2
31	0.071	27.21	5.3	496	2	494	2
32	0.129	27.10	5.4	497	2	496	2
33	0.189	26.92	5.4	499	2	497	2
34	0.248	26.67	5.4	501	3	499	2
35	0.308	26.37	5.4	502	3	500	3
36	0.369	26.02	5.5	504	3	502	3
37	0.431	25.64	5.5	506	3	503	3

Table 2.2.1 (continued)
Raw Score to Scale Score Lookup Table
Biology Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.494	25.22	5.6	508	3	505	3
39	0.558	24.77	5.6	509	3	507	3
40	0.624	24.30	5.7	511	3	508	3
41	0.691	23.79	5.7	513	3	510	3
42	0.759	23.24	5.8	515	3	512	3
43	0.830	22.63	5.9	517	3	513	3
44	0.903	21.96	6.0	519	3	515	3
45	0.979	21.19	6.1	521	3	517	3
46	1.059	20.31	6.2	523	3	519	3
47	1.142	19.30	6.4	526	3	521	3
48	1.231	18.16	6.5	528	3	523	3
49	1.326	16.87	6.8	531	4	525	3
50	1.430	15.42	7.1	534	4	528	3
51	1.544	13.81	7.5	537	4	530	4
52	1.672	12.03	8.0	540	4	533	4
53	1.822	10.06	8.8	545	4	536	4
54	2.004	7.89	9.9	550	4	540	4
55	2.241	5.57	10.0	556	4	544	4
56	2.375	4.53	10.0	560	4	549	4
57	2.375	4.53	10.0	560	4	555	4
58	2.375	4.53	10.0	560	4	560	4
59	N/A	N/A	N/A	N/A	N/A	560	4
60	N/A	N/A	N/A	N/A	N/A	560	4

Table 2.2.2
Raw Score to Scale Score Lookup Table
English Language Arts Grade 3

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.173	1.42	10.0	440	1	440	1
1	-3.168	1.43	10.0	440	1	441	1
2	-3.163	1.43	10.0	440	1	441	1
3	-3.158	1.44	10.0	440	1	442	1
4	-3.153	1.45	10.0	440	1	442	1
5	-3.148	1.45	10.0	440	1	443	1
6	-3.143	1.46	10.0	441	1	443	1
7	-2.756	2.14	10.0	448	1	444	1
8	-2.460	2.85	10.0	453	1	450	1
9	-2.218	3.60	9.9	458	1	455	1
10	-2.012	4.35	9.0	462	1	460	1
11	-1.830	5.10	8.3	465	1	463	1
12	-1.667	5.82	7.8	468	1	466	1
13	-1.518	6.51	7.4	471	2	469	1
14	-1.378	7.15	7.0	474	2	472	2
15	-1.247	7.72	6.8	476	2	474	2
16	-1.123	8.22	6.6	479	2	477	2
17	-1.002	8.64	6.4	481	2	479	2
18	-0.886	8.98	6.3	483	2	481	2
19	-0.772	9.23	6.2	485	2	484	2
20	-0.659	9.39	6.1	487	2	486	2
21	-0.548	9.47	6.1	489	2	488	2
22	-0.436	9.46	6.1	492	2	490	2
23	-0.325	9.39	6.1	494	2	492	2
24	-0.212	9.25	6.2	496	2	494	2
25	-0.097	9.06	6.3	498	2	497	2
26	0.020	8.82	6.3	500	3	499	2
27	0.139	8.55	6.4	502	3	501	3
28	0.263	8.25	6.6	505	3	503	3
29	0.390	7.93	6.7	507	3	506	3
30	0.522	7.59	6.8	510	3	508	3
31	0.661	7.22	7.0	512	3	511	3
32	0.806	6.83	7.2	515	3	514	3
33	0.960	6.40	7.4	518	3	517	3
34	1.124	5.96	7.7	521	3	520	3
35	1.301	5.49	8.0	524	3	523	3
36	1.494	5.01	8.4	528	3	527	3
37	1.706	4.55	8.8	532	4	531	4

Table 2.2.2 (continued)
Raw Score to Scale Score Lookup Table
English Language Arts Grade 3

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	1.942	4.11	9.3	536	4	536	4
39	2.209	3.66	9.8	541	4	541	4
40	2.518	3.18	10.0	547	4	547	4
41	2.891	2.63	10.0	554	4	555	4
42	3.196	2.24	10.0	560	4	560	4
43	3.196	2.24	10.0	560	4	560	4
44	3.196	2.24	10.0	560	4	560	4

Table 2.2.3
Raw Score to Scale Score Lookup Table
English Language Arts Grade 4

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.153	2.34	10.0	440	1	440	1
1	-3.149	2.34	10.0	440	1	440	1
2	-3.146	2.35	10.0	440	1	440	1
3	-3.142	2.36	10.0	440	1	441	1
4	-3.138	2.37	10.0	440	1	441	1
5	-3.135	2.37	10.0	440	1	441	1
6	-3.131	2.38	10.0	440	1	441	1
7	-3.127	2.39	10.0	440	1	441	1
8	-2.814	3.17	10.0	446	1	448	1
9	-2.564	4.03	9.4	451	1	453	1
10	-2.355	4.97	8.5	455	1	457	1
11	-2.175	5.94	7.7	458	1	461	1
12	-2.015	6.91	7.2	461	1	464	1
13	-1.871	7.82	6.7	464	1	467	1
14	-1.737	8.65	6.4	467	1	469	1
15	-1.612	9.37	6.2	469	1	472	2
16	-1.494	9.98	6.0	471	2	474	2
17	-1.380	10.48	5.8	473	2	476	2
18	-1.269	10.87	5.7	475	2	479	2
19	-1.161	11.17	5.6	478	2	481	2
20	-1.055	11.37	5.6	480	2	483	2
21	-0.950	11.50	5.6	482	2	485	2
22	-0.844	11.54	5.5	484	2	487	2
23	-0.739	11.52	5.6	485	2	489	2
24	-0.633	11.42	5.6	487	2	491	2
25	-0.525	11.26	5.6	490	2	493	2
26	-0.416	11.05	5.7	492	2	495	2
27	-0.305	10.79	5.7	494	2	497	2
28	-0.190	10.48	5.8	496	2	499	2
29	-0.073	10.12	5.9	498	2	502	3
30	0.049	9.73	6.0	500	3	504	3
31	0.175	9.29	6.2	503	3	506	3
32	0.308	8.80	6.4	505	3	509	3
33	0.448	8.26	6.6	508	3	511	3
34	0.596	7.65	6.8	511	3	514	3
35	0.756	6.99	7.1	514	3	517	3
36	0.931	6.28	7.5	517	3	520	3
37	1.125	5.53	8.0	521	3	524	3

Table 2.2.3 (continued)
Raw Score to Scale Score Lookup Table
English Language Arts Grade 4

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	1.343	4.78	8.6	525	3	528	3
39	1.593	4.03	9.4	529	3	532	4
40	1.887	3.32	10.0	535	4	538	4
41	2.246	2.63	10.0	542	4	544	4
42	2.710	1.94	10.0	550	4	553	4
43	3.215	1.33	10.0	560	4	560	4
44	3.215	1.33	10.0	560	4	560	4

Table 2.2.4
Raw Score to Scale Score Lookup Table
English Language Arts Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.360	2.14	10.0	440	1	440	1
1	-3.347	2.18	10.0	440	1	440	1
2	-3.333	2.22	10.0	440	1	441	1
3	-3.320	2.25	10.0	441	1	441	1
4	-3.307	2.29	10.0	441	1	441	1
5	-3.294	2.33	10.0	441	1	442	1
6	-3.281	2.36	10.0	441	1	442	1
7	-2.944	3.52	9.4	447	1	448	1
8	-2.689	4.64	8.2	452	1	452	1
9	-2.479	5.69	7.4	456	1	455	1
10	-2.299	6.65	6.9	459	1	458	1
11	-2.139	7.51	6.5	462	1	461	1
12	-1.993	8.27	6.1	464	1	463	1
13	-1.858	8.93	5.8	467	1	465	1
14	-1.730	9.47	5.7	469	1	467	1
15	-1.609	9.91	5.6	471	2	469	1
16	-1.492	10.25	5.5	473	2	471	2
17	-1.379	10.50	5.5	475	2	472	2
18	-1.269	10.68	5.4	477	2	474	2
19	-1.160	10.80	5.4	479	2	476	2
20	-1.053	10.88	5.4	481	2	478	2
21	-0.947	10.91	5.4	483	2	479	2
22	-0.841	10.91	5.4	484	2	481	2
23	-0.736	10.89	5.4	486	2	482	2
24	-0.631	10.82	5.4	488	2	484	2
25	-0.526	10.72	5.4	490	2	486	2
26	-0.419	10.58	5.4	492	2	487	2
27	-0.312	10.40	5.5	494	2	489	2
28	-0.203	10.18	5.5	496	2	491	2
29	-0.093	9.92	5.6	498	2	492	2
30	0.021	9.63	5.7	499	2	494	2
31	0.137	9.31	5.8	502	3	496	2
32	0.256	8.96	5.9	504	3	498	2
33	0.380	8.61	6.0	506	3	499	2
34	0.509	8.24	6.2	508	3	502	3
35	0.642	7.87	6.3	511	3	504	3
36	0.782	7.49	6.5	513	3	506	3
37	0.930	7.10	6.6	516	3	508	3

Table 2.2.4 (continued)
Raw Score to Scale Score Lookup Table
English Language Arts Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	1.085	6.70	6.8	519	3	510	3
39	1.251	6.27	7.1	521	3	513	3
40	1.429	5.83	7.3	525	3	516	3
41	1.622	5.38	7.6	528	3	519	3
42	1.834	4.91	8.0	532	4	522	3
43	2.071	4.41	8.4	536	4	526	3
44	2.343	3.81	9.1	541	4	531	4
45	2.675	3.01	10.0	547	4	536	4
46	3.131	1.95	10.0	555	4	544	4
47	3.430	1.39	10.0	560	4	555	4
48	3.430	1.39	10.0	560	4	560	4

Table 2.2.5
Raw Score to Scale Score Lookup Table
English Language Arts Grade 6

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.171	3.34	10.0	440	1	440	1
1	-3.170	3.34	10.0	440	1	440	1
2	-3.169	3.34	10.0	440	1	441	1
3	-3.169	3.35	10.0	440	1	441	1
4	-3.168	3.35	10.0	440	1	442	1
5	-3.167	3.35	10.0	440	1	442	1
6	-3.166	3.35	10.0	440	1	443	1
7	-3.165	3.36	10.0	440	1	443	1
8	-3.164	3.36	10.0	440	1	443	1
9	-3.163	3.36	10.0	440	1	444	1
10	-2.935	4.00	9.5	444	1	444	1
11	-2.737	4.56	8.9	448	1	448	1
12	-2.560	5.03	8.5	452	1	452	1
13	-2.398	5.43	8.1	455	1	455	1
14	-2.247	5.76	7.9	458	1	458	1
15	-2.104	6.04	7.7	460	1	461	1
16	-1.967	6.28	7.6	463	1	464	1
17	-1.835	6.49	7.5	465	1	467	1
18	-1.707	6.69	7.3	468	1	469	1
19	-1.583	6.87	7.2	470	2	472	2
20	-1.461	7.05	7.2	472	2	474	2
21	-1.341	7.22	7.1	475	2	476	2
22	-1.223	7.38	7.0	477	2	479	2
23	-1.106	7.53	6.9	479	2	481	2
24	-0.990	7.66	6.9	481	2	483	2
25	-0.875	7.76	6.8	484	2	486	2
26	-0.760	7.84	6.8	486	2	488	2
27	-0.645	7.87	6.8	488	2	490	2
28	-0.529	7.88	6.8	490	2	493	2
29	-0.413	7.84	6.8	492	2	495	2
30	-0.294	7.77	6.8	495	2	497	2
31	-0.174	7.66	6.9	497	2	499	2
32	-0.051	7.51	6.9	499	2	502	3
33	0.075	7.34	7.0	502	3	505	3
34	0.205	7.14	7.1	504	3	507	3
35	0.340	6.90	7.2	507	3	510	3
36	0.480	6.63	7.4	509	3	513	3
37	0.627	6.32	7.5	512	3	516	3

Table 2.2.5 (continued)
Raw Score to Scale Score Lookup Table
English Language Arts Grade 6

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.782	5.98	7.8	515	3	519	3
39	0.946	5.59	8.0	518	3	522	3
40	1.124	5.17	8.3	522	3	525	3
41	1.317	4.72	8.7	525	3	529	3
42	1.529	4.23	9.2	529	3	533	4
43	1.768	3.73	9.8	534	4	537	4
44	2.041	3.22	10.0	539	4	542	4
45	2.361	2.71	10.0	545	4	548	4
46	2.746	2.27	10.0	552	4	555	4
47	3.150	1.99	10.0	560	4	560	4
48	3.150	1.99	10.0	560	4	560	4
49	3.150	1.99	10.0	560	4	560	4
50	3.150	1.99	10.0	560	4	560	4

Table 2.2.6
Raw Score to Scale Score Lookup Table
English Language Arts Grade 7

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.131	3.41	10.0	440	1	440	1
1	-3.129	3.41	10.0	440	1	440	1
2	-3.128	3.42	10.0	440	1	440	1
3	-3.126	3.42	10.0	440	1	441	1
4	-3.124	3.42	10.0	440	1	441	1
5	-3.123	3.43	10.0	440	1	441	1
6	-3.121	3.43	10.0	440	1	441	1
7	-3.120	3.44	10.0	440	1	441	1
8	-3.118	3.44	10.0	440	1	441	1
9	-3.116	3.44	10.0	440	1	442	1
10	-2.866	4.07	9.5	445	1	446	1
11	-2.651	4.59	8.9	449	1	449	1
12	-2.461	5.03	8.5	453	1	453	1
13	-2.288	5.44	8.2	456	1	456	1
14	-2.130	5.85	7.9	459	1	458	1
15	-1.982	6.29	7.6	462	1	461	1
16	-1.843	6.76	7.3	465	1	464	1
17	-1.712	7.24	7.1	467	1	466	1
18	-1.587	7.73	6.9	469	1	469	1
19	-1.468	8.21	6.7	472	2	471	2
20	-1.353	8.66	6.5	474	2	473	2
21	-1.241	9.06	6.3	476	2	475	2
22	-1.132	9.41	6.2	478	2	477	2
23	-1.026	9.69	6.1	480	2	479	2
24	-0.920	9.90	6.1	482	2	482	2
25	-0.816	10.05	6.0	484	2	484	2
26	-0.711	10.13	6.0	486	2	486	2
27	-0.607	10.14	6.0	488	2	488	2
28	-0.502	10.10	6.0	490	2	490	2
29	-0.395	10.01	6.0	492	2	492	2
30	-0.287	9.87	6.1	494	2	494	2
31	-0.177	9.69	6.1	496	2	496	2
32	-0.063	9.47	6.2	499	2	498	2
33	0.053	9.21	6.3	501	3	499	2
34	0.174	8.92	6.4	503	3	502	3
35	0.300	8.58	6.5	506	3	504	3
36	0.432	8.18	6.7	508	3	507	3
37	0.572	7.73	6.9	511	3	509	3

Table 2.2.6 (continued)
Raw Score to Scale Score Lookup Table
English Language Arts Grade 7

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.722	7.21	7.1	514	3	512	3
39	0.883	6.63	7.4	517	3	515	3
40	1.060	5.99	7.8	520	3	518	3
41	1.258	5.31	8.3	524	3	521	3
42	1.481	4.62	8.9	528	3	524	3
43	1.739	3.95	9.6	533	4	528	3
44	2.042	3.33	10.0	539	4	533	4
45	2.409	2.72	10.0	546	4	538	4
46	2.878	2.04	10.0	555	4	544	4
47	3.153	1.72	10.0	560	4	551	4
48	3.153	1.72	10.0	560	4	560	4
49	3.153	1.72	10.0	560	4	560	4
50	3.153	1.72	10.0	560	4	560	4

Table 2.2.7
Raw Score to Scale Score Lookup Table
English Language Arts Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-2.964	4.11	9.8	440	1	440	1
1	-2.953	4.15	9.8	440	1	440	1
2	-2.941	4.18	9.7	440	1	440	1
3	-2.930	4.22	9.7	441	1	440	1
4	-2.919	4.25	9.7	441	1	441	1
5	-2.908	4.28	9.6	441	1	441	1
6	-2.896	4.32	9.6	441	1	441	1
7	-2.885	4.35	9.5	442	1	441	1
8	-2.874	4.39	9.5	442	1	441	1
9	-2.863	4.42	9.5	442	1	441	1
10	-2.851	4.45	9.4	442	1	445	1
11	-2.664	5.02	8.9	446	1	449	1
12	-2.495	5.51	8.5	449	1	452	1
13	-2.339	5.93	8.2	452	1	455	1
14	-2.194	6.28	7.9	455	1	457	1
15	-2.057	6.59	7.8	458	1	460	1
16	-1.926	6.85	7.6	461	1	462	1
17	-1.800	7.08	7.5	463	1	465	1
18	-1.678	7.28	7.4	466	1	467	1
19	-1.560	7.48	7.3	468	1	469	1
20	-1.445	7.66	7.2	470	2	472	2
21	-1.332	7.84	7.1	472	2	474	2
22	-1.222	8.02	7.0	475	2	476	2
23	-1.113	8.19	7.0	477	2	478	2
24	-1.005	8.35	6.9	479	2	481	2
25	-0.898	8.50	6.8	481	2	483	2
26	-0.792	8.64	6.8	483	2	485	2
27	-0.687	8.76	6.7	485	2	487	2
28	-0.581	8.87	6.7	487	2	489	2
29	-0.475	8.94	6.7	490	2	492	2
30	-0.369	8.99	6.6	492	2	494	2
31	-0.261	9.01	6.6	494	2	496	2
32	-0.152	8.98	6.6	496	2	498	2
33	-0.041	8.90	6.7	498	2	501	3
34	0.073	8.77	6.7	500	3	503	3
35	0.191	8.58	6.8	503	3	506	3
36	0.313	8.32	6.9	505	3	508	3
37	0.440	8.00	7.0	508	3	511	3

Table 2.2.7 (continued)
Raw Score to Scale Score Lookup Table
English Language Arts Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.574	7.61	7.2	510	3	514	3
39	0.717	7.15	7.4	513	3	517	3
40	0.871	6.63	7.7	516	3	520	3
41	1.039	6.05	8.1	520	3	524	3
42	1.225	5.41	8.6	523	3	527	3
43	1.437	4.73	9.1	528	3	532	4
44	1.683	4.01	9.9	532	4	536	4
45	1.982	3.23	10.0	538	4	542	4
46	2.370	2.39	10.0	546	4	548	4
47	2.929	1.58	10.0	557	4	555	4
48	3.066	1.45	10.0	560	4	560	4
49	3.066	1.45	10.0	560	4	560	4
50	3.066	1.45	10.0	560	4	560	4

Table 2.2.8
Raw Score to Scale Score Lookup Table
English Language Arts Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.157	4.34	10.0	440	1	440	1
1	-3.137	4.43	10.0	440	1	440	1
2	-3.118	4.52	9.9	441	1	441	1
3	-3.099	4.61	9.8	441	1	441	1
4	-3.079	4.70	9.7	442	1	441	1
5	-3.060	4.79	9.6	442	1	442	1
6	-3.041	4.89	9.5	442	1	442	1
7	-3.022	4.98	9.4	443	1	442	1
8	-3.002	5.08	9.3	443	1	442	1
9	-2.983	5.18	9.2	444	1	443	1
10	-2.797	6.15	8.5	448	1	447	1
11	-2.635	7.00	7.9	451	1	450	1
12	-2.490	7.73	7.5	454	1	453	1
13	-2.358	8.36	7.3	457	1	456	1
14	-2.236	8.91	7.0	459	1	458	1
15	-2.121	9.40	6.8	462	1	461	1
16	-2.012	9.84	6.7	464	1	463	1
17	-1.907	10.27	6.6	466	1	465	1
18	-1.807	10.67	6.4	468	1	468	1
19	-1.710	11.04	6.3	470	2	469	1
20	-1.616	11.39	6.2	472	2	472	2
21	-1.523	11.70	6.1	474	2	474	2
22	-1.433	11.97	6.1	476	2	476	2
23	-1.344	12.21	6.0	478	2	478	2
24	-1.256	12.40	6.0	480	2	480	2
25	-1.168	12.55	5.9	482	2	481	2
26	-1.080	12.66	5.9	484	2	483	2
27	-0.993	12.73	5.9	485	2	485	2
28	-0.905	12.76	5.9	487	2	487	2
29	-0.816	12.75	5.9	489	2	489	2
30	-0.727	12.69	5.9	491	2	491	2
31	-0.636	12.57	5.9	493	2	493	2
32	-0.542	12.38	6.0	495	2	495	2
33	-0.447	12.12	6.0	497	2	497	2
34	-0.348	11.77	6.1	499	2	499	2
35	-0.246	11.34	6.2	501	3	501	3
36	-0.138	10.83	6.4	503	3	503	3
37	-0.025	10.25	6.6	506	3	506	3

Table 2.2.8 (continued)
Raw Score to Scale Score Lookup Table
English Language Arts Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.095	9.59	6.8	508	3	508	3
39	0.224	8.88	7.0	511	3	511	3
40	0.364	8.13	7.4	514	3	514	3
41	0.517	7.34	7.7	517	3	517	3
42	0.688	6.54	8.2	521	3	521	3
43	0.881	5.75	8.8	525	3	525	3
44	1.102	5.02	9.4	529	3	529	3
45	1.359	4.40	10.0	535	4	535	4
46	1.665	3.83	10.0	541	4	541	4
47	2.047	3.05	10.0	549	4	549	4
48	2.559	1.84	10.0	560	4	559	4
49	2.559	1.84	10.0	560	4	560	4
50	N/A	N/A	N/A	N/A	N/A	560	4
51	N/A	N/A	N/A	N/A	N/A	560	4

Table 2.2.9
Raw Score to Scale Score Lookup Table
Mathematics Grade 3

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-2.782	2.78	10.0	440	1	440	1
1	-2.751	2.88	10.0	441	1	441	1
2	-2.719	2.99	10.0	441	1	441	1
3	-2.688	3.10	10.0	442	1	442	1
4	-2.657	3.22	10.0	443	1	442	1
5	-2.626	3.34	10.0	443	1	443	1
6	-2.595	3.46	10.0	444	1	443	1
7	-2.318	4.72	9.8	450	1	449	1
8	-2.100	5.94	8.8	455	1	454	1
9	-1.920	7.09	8.0	458	1	458	1
10	-1.763	8.17	7.5	462	1	461	1
11	-1.625	9.17	7.1	465	1	464	1
12	-1.499	10.10	6.7	467	1	467	1
13	-1.383	10.94	6.5	469	1	469	1
14	-1.275	11.71	6.2	472	2	472	2
15	-1.173	12.40	6.1	474	2	474	2
16	-1.076	13.01	5.9	476	2	477	2
17	-0.983	13.56	5.8	478	2	479	2
18	-0.893	14.05	5.7	480	2	481	2
19	-0.806	14.47	5.6	482	2	482	2
20	-0.721	14.83	5.5	484	2	484	2
21	-0.638	15.14	5.5	486	2	486	2
22	-0.556	15.38	5.4	488	2	488	2
23	-0.475	15.57	5.4	489	2	490	2
24	-0.395	15.71	5.4	491	2	492	2
25	-0.314	15.78	5.4	493	2	493	2
26	-0.234	15.79	5.4	494	2	495	2
27	-0.154	15.75	5.4	496	2	497	2
28	-0.072	15.65	5.4	498	2	499	2
29	0.010	15.50	5.4	499	2	501	3
30	0.093	15.29	5.5	501	3	502	3
31	0.178	15.04	5.5	503	3	504	3
32	0.265	14.74	5.6	505	3	506	3
33	0.355	14.41	5.6	507	3	508	3
34	0.447	14.03	5.7	509	3	510	3
35	0.542	13.62	5.8	511	3	512	3
36	0.642	13.17	5.9	513	3	514	3
37	0.745	12.67	6.0	515	3	516	3

Table 2.2.9 (continued)
Raw Score to Scale Score Lookup Table
Mathematics Grade 3

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.855	12.11	6.1	518	3	519	3
39	0.970	11.46	6.3	520	3	521	3
40	1.095	10.70	6.5	523	3	524	3
41	1.230	9.81	6.8	526	3	527	3
42	1.380	8.78	7.2	529	3	530	4
43	1.552	7.58	7.8	533	4	534	4
44	1.755	6.21	8.6	537	4	538	4
45	2.013	4.67	9.9	542	4	544	4
46	2.376	2.99	10.0	550	4	551	4
47	2.837	1.62	10.0	560	4	560	4
48	2.837	1.62	10.0	560	4	560	4

Table 2.2.10
Raw Score to Scale Score Lookup Table
Mathematics Grade 4

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-2.812	4.30	10.0	440	1	440	1
1	-2.789	4.41	10.0	440	1	440	1
2	-2.766	4.52	9.8	441	1	441	1
3	-2.743	4.63	9.7	441	1	441	1
4	-2.721	4.75	9.6	442	1	442	1
5	-2.698	4.86	9.5	442	1	442	1
6	-2.675	4.98	9.4	443	1	443	1
7	-2.447	6.21	8.4	448	1	443	1
8	-2.257	7.29	7.8	452	1	448	1
9	-2.092	8.22	7.3	455	1	452	1
10	-1.945	9.04	7.0	458	1	455	1
11	-1.810	9.77	6.7	461	1	458	1
12	-1.686	10.44	6.5	464	1	461	1
13	-1.570	11.08	6.3	466	1	464	1
14	-1.460	11.70	6.1	468	1	466	1
15	-1.357	12.31	6.0	470	2	469	1
16	-1.259	12.93	5.8	473	2	471	2
17	-1.165	13.56	5.7	474	2	473	2
18	-1.075	14.18	5.6	476	2	475	2
19	-0.989	14.79	5.4	478	2	477	2
20	-0.906	15.40	5.3	480	2	479	2
21	-0.825	15.98	5.2	482	2	480	2
22	-0.747	16.54	5.1	483	2	482	2
23	-0.671	17.07	5.1	485	2	484	2
24	-0.597	17.56	5.0	486	2	485	2
25	-0.525	18.01	4.9	488	2	487	2
26	-0.453	18.40	4.9	489	2	489	2
27	-0.383	18.74	4.8	491	2	490	2
28	-0.313	19.02	4.8	492	2	492	2
29	-0.244	19.23	4.8	494	2	493	2
30	-0.175	19.38	4.8	495	2	495	2
31	-0.106	19.44	4.7	497	2	496	2
32	-0.036	19.43	4.8	498	2	498	2
33	0.033	19.33	4.8	499	2	499	2
34	0.104	19.14	4.8	501	3	501	3
35	0.176	18.87	4.8	503	3	503	3
36	0.249	18.51	4.9	504	3	504	3
37	0.324	18.06	4.9	506	3	506	3

Table 2.2.10 (continued)
Raw Score to Scale Score Lookup Table
Mathematics Grade 4

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	Scale Score	2024 Achievement Levels
38	0.401	17.52	5.0	507	3	508	3
39	0.480	16.90	5.1	509	3	509	3
40	0.563	16.20	5.2	511	3	511	3
41	0.650	15.43	5.3	512	3	513	3
42	0.741	14.60	5.5	514	3	515	3
43	0.837	13.72	5.7	516	3	517	3
44	0.939	12.79	5.9	519	3	519	3
45	1.050	11.81	6.1	521	3	522	3
46	1.169	10.78	6.4	523	3	524	3
47	1.301	9.71	6.7	526	3	527	3
48	1.449	8.58	7.1	529	3	529	3
49	1.617	7.38	7.7	533	4	533	4
50	1.816	6.11	8.5	537	4	537	4
51	2.062	4.77	9.6	542	4	542	4
52	2.394	3.33	10.0	549	4	548	4
53	2.920	1.78	10.0	560	4	559	4
54	2.920	1.78	10.0	560	4	560	4

Table 2.2.11
Raw Score to Scale Score Lookup Table
Mathematics Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.126	2.03	10.0	440	1	440	1
1	-3.112	2.07	10.0	440	1	440	1
2	-3.097	2.11	10.0	441	1	441	1
3	-3.082	2.14	10.0	441	1	441	1
4	-3.068	2.18	10.0	441	1	442	1
5	-3.053	2.22	10.0	441	1	442	1
6	-3.038	2.26	10.0	442	1	450	1
7	-2.662	3.52	10.0	449	1	455	1
8	-2.393	4.73	8.8	454	1	459	1
9	-2.179	5.88	7.9	458	1	462	1
10	-2.001	6.94	7.2	461	1	465	1
11	-1.845	7.93	6.8	464	1	468	1
12	-1.705	8.83	6.4	467	1	469	1
13	-1.578	9.66	6.1	469	1	472	2
14	-1.461	10.43	5.9	472	2	474	2
15	-1.351	11.13	5.7	474	2	476	2
16	-1.247	11.78	5.5	476	2	478	2
17	-1.148	12.36	5.4	478	2	479	2
18	-1.054	12.90	5.3	479	2	481	2
19	-0.963	13.39	5.2	481	2	482	2
20	-0.875	13.83	5.1	483	2	484	2
21	-0.790	14.24	5.0	484	2	485	2
22	-0.707	14.61	5.0	486	2	487	2
23	-0.626	14.95	4.9	488	2	488	2
24	-0.546	15.26	4.9	489	2	490	2
25	-0.468	15.55	4.8	491	2	491	2
26	-0.392	15.82	4.8	492	2	492	2
27	-0.316	16.06	4.8	494	2	494	2
28	-0.241	16.27	4.7	495	2	495	2
29	-0.167	16.45	4.7	496	2	497	2
30	-0.094	16.59	4.7	498	2	498	2
31	-0.020	16.70	4.7	499	2	499	2
32	0.053	16.76	4.7	501	3	501	3
33	0.126	16.78	4.6	502	3	502	3
34	0.200	16.76	4.7	503	3	504	3
35	0.274	16.69	4.7	505	3	505	3
36	0.348	16.57	4.7	506	3	506	3
37	0.424	16.41	4.7	508	3	508	3

Table 2.2.11 (continued)
Raw Score to Scale Score Lookup Table
Mathematics Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.501	16.20	4.7	509	3	509	3
39	0.580	15.94	4.8	511	3	511	3
40	0.661	15.62	4.8	512	3	513	3
41	0.745	15.22	4.9	514	3	514	3
42	0.831	14.75	5.0	515	3	516	3
43	0.922	14.18	5.1	517	3	518	3
44	1.018	13.50	5.2	519	3	519	3
45	1.120	12.68	5.3	521	3	521	3
46	1.231	11.72	5.6	523	3	523	3
47	1.353	10.61	5.8	525	3	526	3
48	1.490	9.35	6.2	528	3	528	3
49	1.648	7.93	6.8	531	4	531	4
50	1.838	6.38	7.5	535	4	535	4
51	2.081	4.74	8.7	539	4	540	4
52	2.424	3.05	10.0	546	4	546	4
53	3.017	1.42	10.0	557	4	557	4
54	3.176	1.16	10.0	560	4	560	4

Table 2.2.12
Raw Score to Scale Score Lookup Table
Mathematics Grade 6

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.028	2.43	10.0	440	1	440	1
1	-2.975	2.60	10.0	441	1	441	1
2	-2.923	2.78	10.0	442	1	441	1
3	-2.870	2.97	10.0	443	1	442	1
4	-2.817	3.18	10.0	444	1	443	1
5	-2.764	3.39	10.0	445	1	443	1
6	-2.712	3.62	10.0	446	1	451	1
7	-2.420	5.05	8.8	452	1	456	1
8	-2.195	6.33	7.9	457	1	460	1
9	-2.008	7.46	7.3	460	1	464	1
10	-1.846	8.46	6.8	463	1	467	1
11	-1.703	9.34	6.5	466	1	469	1
12	-1.572	10.13	6.2	469	1	472	2
13	-1.452	10.83	6.0	471	2	474	2
14	-1.340	11.48	5.9	474	2	476	2
15	-1.234	12.07	5.7	476	2	478	2
16	-1.134	12.62	5.6	478	2	480	2
17	-1.038	13.13	5.5	480	2	482	2
18	-0.947	13.62	5.4	481	2	484	2
19	-0.859	14.08	5.3	483	2	485	2
20	-0.774	14.51	5.2	485	2	487	2
21	-0.691	14.93	5.1	486	2	488	2
22	-0.611	15.32	5.1	488	2	490	2
23	-0.533	15.69	5.0	490	2	491	2
24	-0.457	16.04	5.0	491	2	493	2
25	-0.382	16.37	4.9	493	2	494	2
26	-0.308	16.67	4.9	494	2	496	2
27	-0.236	16.95	4.8	495	2	497	2
28	-0.164	17.21	4.8	497	2	499	2
29	-0.094	17.44	4.8	498	2	499	2
30	-0.023	17.63	4.7	499	2	501	3
31	0.047	17.80	4.7	501	3	503	3
32	0.117	17.92	4.7	502	3	504	3
33	0.187	18.00	4.7	504	3	506	3
34	0.257	18.04	4.7	505	3	507	3
35	0.328	18.02	4.7	507	3	508	3
36	0.400	17.94	4.7	508	3	510	3
37	0.473	17.80	4.7	510	3	511	3

Table 2.2.12 (continued)
Raw Score to Scale Score Lookup Table
Mathematics Grade 6

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.547	17.59	4.7	511	3	513	3
39	0.623	17.30	4.8	513	3	514	3
40	0.701	16.94	4.8	514	3	516	3
41	0.781	16.48	4.9	516	3	517	3
42	0.865	15.93	5.0	517	3	519	3
43	0.953	15.28	5.1	519	3	521	3
44	1.046	14.52	5.2	521	3	522	3
45	1.145	13.64	5.4	523	3	524	3
46	1.252	12.63	5.6	525	3	526	3
47	1.369	11.48	5.9	527	3	529	3
48	1.500	10.18	6.2	529	3	531	4
49	1.651	8.71	6.7	533	4	534	4
50	1.832	7.08	7.5	537	4	537	4
51	2.063	5.28	8.6	541	4	542	4
52	2.390	3.36	10.0	548	4	548	4
53	2.974	1.46	10.0	559	4	559	4
54	3.011	1.38	10.0	560	4	560	4

Table 2.2.13
Raw Score to Scale Score Lookup Table
Mathematics Grade 7

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-2.859	2.49	10.0	440	1	440	1
1	-2.843	2.56	10.0	440	1	441	1
2	-2.827	2.62	10.0	441	1	441	1
3	-2.811	2.68	10.0	441	1	442	1
4	-2.795	2.74	10.0	441	1	443	1
5	-2.779	2.81	10.0	442	1	443	1
6	-2.762	2.88	10.0	442	1	451	1
7	-2.367	4.84	9.4	450	1	457	1
8	-2.095	6.36	8.2	456	1	461	1
9	-1.877	7.48	7.6	460	1	465	1
10	-1.688	8.32	7.2	464	1	468	1
11	-1.520	9.00	6.9	468	1	471	2
12	-1.366	9.61	6.7	471	2	473	2
13	-1.223	10.21	6.5	474	2	476	2
14	-1.090	10.83	6.3	477	2	478	2
15	-0.966	11.50	6.1	479	2	480	2
16	-0.850	12.20	5.9	482	2	482	2
17	-0.741	12.95	5.8	484	2	484	2
18	-0.637	13.72	5.6	486	2	485	2
19	-0.540	14.52	5.4	488	2	487	2
20	-0.447	15.33	5.3	490	2	489	2
21	-0.358	16.13	5.2	492	2	490	2
22	-0.273	16.93	5.0	494	2	492	2
23	-0.191	17.71	4.9	495	2	493	2
24	-0.112	18.47	4.8	497	2	495	2
25	-0.036	19.20	4.7	499	2	496	2
26	0.038	19.92	4.7	500	3	498	2
27	0.111	20.62	4.6	502	3	499	2
28	0.181	21.30	4.5	503	3	500	3
29	0.251	21.97	4.4	505	3	502	3
30	0.319	22.60	4.4	506	3	503	3
31	0.387	23.18	4.3	507	3	504	3
32	0.454	23.69	4.3	509	3	506	3
33	0.520	24.10	4.2	510	3	507	3
34	0.587	24.37	4.2	512	3	509	3
35	0.654	24.49	4.2	513	3	510	3
36	0.721	24.42	4.2	514	3	512	3
37	0.789	24.18	4.2	516	3	513	3

Table 2.2.13 (continued)
Raw Score to Scale Score Lookup Table
Mathematics Grade 7

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.859	23.75	4.3	517	3	515	3
39	0.931	23.15	4.3	519	3	516	3
40	1.004	22.39	4.4	520	3	518	3
41	1.081	21.50	4.5	522	3	519	3
42	1.161	20.47	4.6	523	3	521	3
43	1.245	19.34	4.7	525	3	523	3
44	1.334	18.11	4.9	527	3	525	3
45	1.430	16.79	5.1	529	3	527	3
46	1.533	15.40	5.3	531	4	529	3
47	1.647	13.94	5.6	534	4	532	4
48	1.774	12.39	5.9	536	4	535	4
49	1.919	10.71	6.3	539	4	538	4
50	2.091	8.85	7.0	543	4	542	4
51	2.307	6.75	8.0	547	4	548	4
52	2.608	4.39	9.9	553	4	556	4
53	2.922	2.68	10.0	560	4	560	4
54	2.922	2.68	10.0	560	4	560	4

Table 2.2.14
Raw Score to Scale Score Lookup Table
Mathematics Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-2.983	2.09	10.0	440	1	440	1
1	-2.938	2.19	10.0	441	1	441	1
2	-2.892	2.29	10.0	442	1	441	1
3	-2.847	2.40	10.0	443	1	442	1
4	-2.802	2.52	10.0	444	1	443	1
5	-2.756	2.65	10.0	445	1	443	1
6	-2.711	2.78	10.0	445	1	444	1
7	-2.666	2.93	10.0	446	1	445	1
8	-2.374	4.14	9.9	452	1	451	1
9	-2.145	5.46	8.6	457	1	456	1
10	-1.955	6.78	7.7	461	1	460	1
11	-1.792	8.03	7.1	464	1	464	1
12	-1.648	9.17	6.7	467	1	467	1
13	-1.518	10.20	6.3	469	1	469	1
14	-1.399	11.12	6.1	472	2	472	2
15	-1.288	11.96	5.8	474	2	474	2
16	-1.184	12.74	5.7	476	2	477	2
17	-1.086	13.50	5.5	478	2	479	2
18	-0.992	14.25	5.3	480	2	480	2
19	-0.903	14.99	5.2	482	2	482	2
20	-0.817	15.73	5.1	484	2	484	2
21	-0.735	16.46	5.0	485	2	486	2
22	-0.656	17.16	4.9	487	2	487	2
23	-0.579	17.83	4.8	488	2	489	2
24	-0.504	18.44	4.7	490	2	490	2
25	-0.431	18.99	4.6	491	2	492	2
26	-0.359	19.48	4.6	493	2	493	2
27	-0.289	19.89	4.5	494	2	494	2
28	-0.220	20.23	4.5	496	2	496	2
29	-0.151	20.50	4.5	497	2	497	2
30	-0.083	20.71	4.4	498	2	499	2
31	-0.015	20.86	4.4	499	2	499	2
32	0.053	20.94	4.4	501	3	501	3
33	0.121	20.97	4.4	503	3	503	3
34	0.189	20.94	4.4	504	3	504	3
35	0.258	20.85	4.4	505	3	505	3
36	0.328	20.69	4.4	507	3	507	3
37	0.398	20.47	4.5	508	3	508	3

Table 2.2.14 (continued)
Raw Score to Scale Score Lookup Table
Mathematics Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.471	20.17	4.5	510	3	510	3
39	0.545	19.79	4.5	511	3	511	3
40	0.621	19.31	4.6	513	3	513	3
41	0.700	18.72	4.7	514	3	514	3
42	0.782	18.01	4.8	516	3	516	3
43	0.869	17.16	4.9	518	3	517	3
44	0.960	16.16	5.0	520	3	519	3
45	1.059	15.01	5.2	522	3	521	3
46	1.166	13.70	5.4	524	3	523	3
47	1.284	12.27	5.8	526	3	526	3
48	1.416	10.74	6.2	529	3	528	3
49	1.569	9.12	6.7	532	4	531	4
50	1.752	7.43	7.4	536	4	535	4
51	1.981	5.64	8.5	540	4	539	4
52	2.298	3.71	10.0	547	4	545	4
53	2.850	1.66	10.0	558	4	554	4
54	2.966	1.40	10.0	560	4	560	4

Table 2.2.15
Raw Score to Scale Score Lookup Table
Mathematics Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.124	2.52	10.0	440	1	440	1
1	-3.092	2.61	10.0	441	1	440	1
2	-3.060	2.71	10.0	441	1	441	1
3	-3.028	2.81	10.0	442	1	441	1
4	-2.996	2.91	10.0	443	1	441	1
5	-2.963	3.01	10.0	443	1	441	1
6	-2.931	3.13	10.0	444	1	442	1
7	-2.899	3.24	10.0	445	1	442	1
8	-2.604	4.52	10.0	451	1	448	1
9	-2.375	5.83	8.9	456	1	453	1
10	-2.188	7.09	8.0	460	1	457	1
11	-2.028	8.28	7.4	463	1	461	1
12	-1.887	9.37	7.0	466	1	464	1
13	-1.760	10.35	6.6	469	1	467	1
14	-1.645	11.22	6.4	472	2	469	1
15	-1.537	12.01	6.2	474	2	472	2
16	-1.437	12.73	6.0	476	2	474	2
17	-1.342	13.40	5.8	478	2	476	2
18	-1.252	14.02	5.7	480	2	478	2
19	-1.166	14.62	5.6	482	2	480	2
20	-1.083	15.20	5.5	484	2	482	2
21	-1.004	15.77	5.4	485	2	484	2
22	-0.927	16.34	5.3	487	2	485	2
23	-0.852	16.90	5.2	489	2	487	2
24	-0.780	17.45	5.1	490	2	489	2
25	-0.709	17.99	5.0	492	2	490	2
26	-0.640	18.52	5.0	493	2	492	2
27	-0.573	19.02	4.9	495	2	493	2
28	-0.506	19.50	4.8	496	2	495	2
29	-0.441	19.94	4.8	497	2	496	2
30	-0.377	20.34	4.7	499	2	497	2
31	-0.313	20.70	4.7	500	3	499	2
32	-0.250	21.02	4.7	501	3	500	3
33	-0.187	21.28	4.6	503	3	502	3
34	-0.125	21.49	4.6	504	3	503	3
35	-0.063	21.65	4.6	505	3	504	3
36	0.000	21.75	4.6	507	3	506	3
37	0.062	21.79	4.6	508	3	507	3

Table 2.2.15 (continued)
Raw Score to Scale Score Lookup Table
Mathematics Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.125	21.78	4.6	509	3	508	3
39	0.189	21.70	4.6	511	3	510	3
40	0.253	21.55	4.6	512	3	511	3
41	0.319	21.33	4.6	514	3	512	3
42	0.386	21.04	4.7	515	3	514	3
43	0.454	20.67	4.7	516	3	515	3
44	0.524	20.22	4.8	518	3	517	3
45	0.596	19.67	4.8	520	3	518	3
46	0.670	19.04	4.9	521	3	520	3
47	0.748	18.30	5.0	523	3	522	3
48	0.830	17.45	5.1	525	3	523	3
49	0.917	16.49	5.3	526	3	525	3
50	1.009	15.41	5.4	528	3	527	3
51	1.109	14.20	5.7	530	4	529	3
52	1.218	12.85	6.0	533	4	531	4
53	1.340	11.38	6.3	535	4	534	4
54	1.479	9.77	6.8	538	4	536	4
55	1.642	8.06	7.5	542	4	539	4
56	1.843	6.26	8.5	546	4	543	4
57	2.105	4.43	10.0	552	4	547	4
58	2.489	2.65	10.0	559	4	553	4
59	2.490	2.65	10.0	560	4	560	4
60	2.490	2.65	10.0	560	4	560	4

Table 2.2.16
Raw Score to Scale Score Lookup Table
Introductory Physics Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-2.145	3.13	10.0	440	1	440	1
1	-2.136	3.17	10.0	440	1	441	1
2	-2.127	3.21	10.0	440	1	441	1
3	-2.119	3.25	10.0	441	1	442	1
4	-2.110	3.30	10.0	441	1	442	1
5	-2.101	3.34	10.0	441	1	443	1
6	-2.092	3.38	10.0	441	1	444	1
7	-2.084	3.43	10.0	442	1	444	1
8	-2.075	3.47	10.0	442	1	445	1
9	-2.066	3.52	10.0	442	1	446	1
10	-1.815	5.20	10.0	449	1	446	1
11	-1.623	7.11	9.9	454	1	451	1
12	-1.468	9.15	8.7	458	1	456	1
13	-1.338	11.25	7.9	461	1	460	1
14	-1.225	13.35	7.2	464	1	463	1
15	-1.124	15.40	6.7	467	1	466	1
16	-1.033	17.36	6.3	469	1	469	1
17	-0.949	19.20	6.0	472	2	471	2
18	-0.871	20.91	5.8	474	2	474	2
19	-0.798	22.46	5.6	476	2	476	2
20	-0.728	23.85	5.4	477	2	478	2
21	-0.660	25.05	5.3	479	2	480	2
22	-0.595	26.09	5.2	481	2	482	2
23	-0.532	26.96	5.1	483	2	484	2
24	-0.471	27.66	5.0	484	2	485	2
25	-0.410	28.21	5.0	486	2	487	2
26	-0.351	28.63	4.9	487	2	489	2
27	-0.292	28.92	4.9	489	2	491	2
28	-0.233	29.10	4.9	491	2	492	2
29	-0.175	29.18	4.9	492	2	494	2
30	-0.117	29.17	4.9	494	2	495	2
31	-0.058	29.08	4.9	495	2	497	2
32	0.000	28.92	4.9	497	2	499	2
33	0.059	28.67	4.9	498	2	500	3
34	0.118	28.35	5.0	499	2	502	3
35	0.178	27.96	5.0	501	3	504	3
36	0.239	27.49	5.0	503	3	505	3
37	0.301	26.95	5.1	505	3	507	3

Table 2.2.16 (continued)
Raw Score to Scale Score Lookup Table
Introductory Physics Grade 10

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.364	26.33	5.2	506	3	509	3
39	0.429	25.65	5.2	508	3	511	3
40	0.495	24.92	5.3	510	3	512	3
41	0.563	24.15	5.4	512	3	514	3
42	0.633	23.36	5.5	513	3	516	3
43	0.705	22.56	5.6	515	3	518	3
44	0.780	21.76	5.7	517	3	520	3
45	0.858	20.97	5.8	519	3	523	3
46	0.939	20.20	5.9	522	3	525	3
47	1.023	19.44	6.0	524	3	527	3
48	1.111	18.70	6.1	526	3	529	3
49	1.204	17.97	6.2	529	3	532	4
50	1.303	17.25	6.4	531	4	534	4
51	1.407	16.50	6.5	534	4	537	4
52	1.520	15.64	6.7	537	4	540	4
53	1.642	14.57	6.9	540	4	543	4
54	1.778	13.17	7.3	544	4	546	4
55	1.934	11.32	7.9	548	4	550	4
56	2.122	8.93	8.8	553	4	554	4
57	2.370	6.07	10.0	559	4	559	4
58	2.395	5.82	10.0	560	4	560	4
59	2.395	5.82	10.0	560	4	560	4
60	2.395	5.82	10.0	560	4	560	4

Table 2.2.17
Raw Score to Scale Score Lookup Table
Science Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-3.130	2.81	10.0	440	1	440	1
1	-3.129	2.81	10.0	440	1	440	1
2	-3.129	2.81	10.0	440	1	441	1
3	-3.128	2.81	10.0	440	1	441	1
4	-3.127	2.82	10.0	440	1	441	1
5	-3.126	2.82	10.0	440	1	441	1
6	-3.125	2.82	10.0	440	1	442	1
7	-3.124	2.82	10.0	440	1	442	1
8	-3.123	2.83	10.0	440	1	442	1
9	-2.864	3.58	10.0	445	1	442	1
10	-2.648	4.32	9.6	450	1	447	1
11	-2.462	5.04	8.9	453	1	451	1
12	-2.297	5.74	8.3	457	1	455	1
13	-2.148	6.41	7.9	460	1	458	1
14	-2.012	7.04	7.5	462	1	461	1
15	-1.885	7.64	7.2	465	1	464	1
16	-1.765	8.20	6.9	467	1	466	1
17	-1.652	8.71	6.7	469	1	469	1
18	-1.544	9.17	6.6	472	2	471	2
19	-1.440	9.58	6.4	474	2	474	2
20	-1.339	9.94	6.3	476	2	476	2
21	-1.241	10.25	6.2	478	2	478	2
22	-1.144	10.51	6.1	479	2	481	2
23	-1.050	10.71	6.1	481	2	483	2
24	-0.956	10.86	6.0	483	2	485	2
25	-0.864	10.95	6.0	485	2	487	2
26	-0.771	10.99	6.0	487	2	489	2
27	-0.679	10.98	6.0	489	2	491	2
28	-0.586	10.92	6.0	491	2	493	2
29	-0.493	10.82	6.0	492	2	495	2
30	-0.398	10.67	6.1	494	2	497	2
31	-0.303	10.48	6.1	496	2	499	2
32	-0.205	10.25	6.2	498	2	501	3
33	-0.106	9.99	6.3	500	3	503	3
34	-0.004	9.70	6.4	502	3	505	3
35	0.100	9.38	6.5	504	3	507	3
36	0.208	9.04	6.6	506	3	509	3
37	0.320	8.69	6.7	509	3	512	3

Table 2.2.17 (continued)
Raw Score to Scale Score Lookup Table
Science Grade 5

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.436	8.33	6.9	511	3	514	3
39	0.557	7.95	7.0	513	3	516	3
40	0.683	7.57	7.2	516	3	518	3
41	0.815	7.19	7.4	518	3	521	3
42	0.955	6.81	7.6	521	3	523	3
43	1.102	6.42	7.8	524	3	526	3
44	1.259	6.04	8.1	527	3	529	3
45	1.427	5.64	8.4	531	4	532	4
46	1.609	5.24	8.7	534	4	536	4
47	1.806	4.82	9.0	538	4	540	4
48	2.023	4.38	9.5	542	4	544	4
49	2.267	3.90	10.0	547	4	550	4
50	2.549	3.35	10.0	553	4	557	4
51	2.889	2.72	10.0	559	4	560	4
52	2.907	2.69	10.0	560	4	560	4
53	2.907	2.69	10.0	560	4	560	4
54	2.907	2.69	10.0	560	4	560	4

Table 2.2.18
Raw Score to Scale Score Lookup Table
Science Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
0	-2.978	3.42	10.0	440	1	440	1
1	-2.958	3.48	10.0	440	1	440	1
2	-2.938	3.54	10.0	441	1	440	1
3	-2.919	3.61	10.0	441	1	440	1
4	-2.899	3.67	10.0	442	1	440	1
5	-2.879	3.74	10.0	442	1	440	1
6	-2.860	3.81	10.0	442	1	440	1
7	-2.840	3.88	10.0	443	1	440	1
8	-2.612	4.74	9.3	447	1	441	1
9	-2.418	5.59	8.6	451	1	446	1
10	-2.247	6.42	8.0	455	1	450	1
11	-2.095	7.23	7.5	458	1	454	1
12	-1.956	8.01	7.2	461	1	457	1
13	-1.828	8.76	6.9	463	1	461	1
14	-1.708	9.48	6.6	466	1	463	1
15	-1.596	10.15	6.4	468	1	466	1
16	-1.490	10.78	6.2	470	2	468	1
17	-1.388	11.35	6.0	472	2	471	2
18	-1.290	11.86	5.9	474	2	473	2
19	-1.195	12.32	5.8	476	2	475	2
20	-1.103	12.71	5.7	478	2	477	2
21	-1.014	13.03	5.6	480	2	479	2
22	-0.925	13.29	5.6	482	2	481	2
23	-0.838	13.49	5.5	483	2	483	2
24	-0.752	13.63	5.5	485	2	485	2
25	-0.666	13.71	5.5	487	2	487	2
26	-0.581	13.73	5.5	489	2	489	2
27	-0.495	13.71	5.5	490	2	491	2
28	-0.409	13.64	5.5	492	2	493	2
29	-0.323	13.52	5.5	494	2	495	2
30	-0.235	13.35	5.6	496	2	497	2
31	-0.146	13.14	5.6	497	2	499	2
32	-0.055	12.88	5.7	499	2	501	3
33	0.037	12.58	5.7	501	3	503	3
34	0.132	12.22	5.8	503	3	505	3
35	0.230	11.82	5.9	505	3	507	3
36	0.330	11.37	6.0	507	3	509	3
37	0.435	10.87	6.2	509	3	511	3

Table 2.2.18 (continued)
Raw Score to Scale Score Lookup Table
Science Grade 8

Raw Score	Theta	Information	SE (Scale Score)	2025 Scale Score	2025 Achievement Levels	2024 Scale Score	2024 Achievement Levels
38	0.544	10.34	6.3	511	3	514	3
39	0.658	9.77	6.5	514	3	516	3
40	0.778	9.17	6.7	516	3	518	3
41	0.904	8.56	6.9	519	3	521	3
42	1.039	7.94	7.2	521	3	523	3
43	1.181	7.33	7.5	524	3	526	3
44	1.334	6.74	7.8	527	3	529	3
45	1.498	6.16	8.2	531	4	532	4
46	1.676	5.60	8.6	534	4	536	4
47	1.869	5.05	9.0	538	4	540	4
48	2.083	4.50	9.6	543	4	544	4
49	2.324	3.94	10.0	548	4	549	4
50	2.602	3.35	10.0	553	4	556	4
51	2.937	2.70	10.0	559	4	560	4
52	2.937	2.70	10.0	560	4	560	4
53	2.937	2.70	10.0	560	4	560	4
54	2.937	2.70	10.0	560	4	560	4

Section 2.3

Cumulative Scale Score Distribution Tables

Table 2.3.1
Cumulative Scale Score Distribution
Biology Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	1789	0.03504	0.03504
446	NM	824	0.01614	0.05119
451	NM	963	0.01886	0.07005
455	NM	1056	0.02069	0.09073
458	NM	1209	0.02368	0.11442
461	NM	1174	0.02300	0.13741
464	NM	1188	0.02327	0.16069
467	NM	1123	0.02200	0.18268
469	NM	1170	0.02292	0.20560
471	PM	1167	0.02286	0.22846
473	PM	1178	0.02308	0.25154
475	PM	1126	0.02206	0.27359
477	PM	1188	0.02327	0.29687
479	PM	1169	0.02290	0.31976
481	PM	1197	0.02345	0.34321
482	PM	1166	0.02284	0.36605
484	PM	1204	0.02358	0.38964
486	PM	1309	0.02564	0.41528
488	PM	1219	0.02388	0.43916
489	PM	1224	0.02398	0.46313
491	PM	1138	0.02229	0.48543
492	PM	1229	0.02407	0.50950
494	PM	1255	0.02458	0.53408
496	PM	1175	0.02302	0.55710
497	PM	1196	0.02343	0.58053
499	PM	1133	0.02219	0.60272
501	ME	1161	0.02274	0.62547
502	ME	1254	0.02456	0.65003
504	ME	1139	0.02231	0.67234
506	ME	1161	0.02274	0.69508
508	ME	1052	0.02061	0.71569
509	ME	1119	0.02192	0.73761
511	ME	1083	0.02121	0.75882
513	ME	1065	0.02086	0.77969
515	ME	1035	0.02027	0.79996
517	ME	999	0.01957	0.81953
519	ME	958	0.01877	0.83830
521	ME	920	0.01802	0.85632
523	ME	924	0.01810	0.87442
526	ME	868	0.01700	0.89142

Table 2.3.1 (continued)
Cumulative Scale Score Distribution
Biology Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
528	ME	863	0.01690	0.90833
531	EE	755	0.01479	0.92311
534	EE	738	0.01446	0.93757
537	EE	696	0.01363	0.95120
540	EE	632	0.01238	0.96358
545	EE	561	0.01099	0.97457
550	EE	495	0.00970	0.98427
556	EE	367	0.00719	0.99146
560	EE	436	0.00854	1.00000

Table 2.3.2
Cumulative Scale Score Distribution
English Language Arts Grade 3

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	594	0.00933	0.00933
441	NM	659	0.01035	0.01969
448	NM	984	0.01546	0.03515
453	NM	1342	0.02108	0.05623
458	NM	1679	0.02638	0.08261
462	NM	1820	0.02859	0.11120
465	NM	1827	0.02870	0.13991
468	NM	1896	0.02979	0.16970
471	PM	1846	0.02900	0.19870
474	PM	1747	0.02745	0.22615
476	PM	1817	0.02855	0.25469
479	PM	1801	0.02830	0.28299
481	PM	1810	0.02844	0.31143
483	PM	1871	0.02940	0.34082
485	PM	1842	0.02894	0.36976
487	PM	1881	0.02955	0.39931
489	PM	1891	0.02971	0.42902
492	PM	2036	0.03199	0.46101
494	PM	2059	0.03235	0.49336
496	PM	2156	0.03387	0.52724
498	PM	2194	0.03447	0.56171
500	ME	2212	0.03475	0.59646
502	ME	2321	0.03647	0.63292
505	ME	2303	0.03618	0.66911
507	ME	2429	0.03816	0.70727
510	ME	2394	0.03761	0.74488
512	ME	2367	0.03719	0.78207
515	ME	2267	0.03562	0.81769
518	ME	2198	0.03453	0.85222
521	ME	2061	0.03238	0.88460
524	ME	1948	0.03061	0.91521
528	ME	1509	0.02371	0.93891
532	EE	1311	0.02060	0.95951
536	EE	1008	0.01584	0.97535
541	EE	709	0.01114	0.98649
547	EE	418	0.00657	0.99306
554	EE	265	0.00416	0.99722
560	EE	177	0.00278	1.00000

Table 2.3.3
Cumulative Scale Score Distribution
English Language Arts Grade 4

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	1242	0.01996	0.01996
446	NM	778	0.01250	0.03247
451	NM	1001	0.01609	0.04856
455	NM	1143	0.01837	0.06693
458	NM	1288	0.02070	0.08763
461	NM	1265	0.02033	0.10796
464	NM	1315	0.02114	0.12910
467	NM	1254	0.02016	0.14925
469	NM	1328	0.02134	0.17060
471	PM	1425	0.02290	0.19350
473	PM	1416	0.02276	0.21626
475	PM	1451	0.02332	0.23958
478	PM	1511	0.02429	0.26387
480	PM	1679	0.02699	0.29086
482	PM	1749	0.02811	0.31897
484	PM	1743	0.02802	0.34698
485	PM	1867	0.03001	0.37699
487	PM	1916	0.03080	0.40779
490	PM	2079	0.03342	0.44120
492	PM	2090	0.03359	0.47480
494	PM	2149	0.03454	0.50934
496	PM	2218	0.03565	0.54499
498	PM	2343	0.03766	0.58265
500	ME	2511	0.04036	0.62301
503	ME	2544	0.04089	0.66390
505	ME	2475	0.03978	0.70368
508	ME	2541	0.04084	0.74452
511	ME	2634	0.04234	0.78686
514	ME	2486	0.03996	0.82681
517	ME	2319	0.03727	0.86409
521	ME	2157	0.03467	0.89876
525	ME	1854	0.02980	0.92856
529	ME	1580	0.02540	0.95395
535	EE	1145	0.01840	0.97235
542	EE	783	0.01259	0.98494
550	EE	559	0.00898	0.99392
560	EE	378	0.00608	1.00000

Table 2.3.4
Cumulative Scale Score Distribution
English Language Arts Grade 5

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	33	0.00052	0.00052
441	NM	1008	0.01583	0.01635
447	NM	621	0.00975	0.02611
452	NM	759	0.01192	0.03803
456	NM	879	0.01381	0.05183
459	NM	896	0.01407	0.06591
462	NM	1027	0.01613	0.08204
464	NM	1014	0.01593	0.09797
467	NM	1118	0.01756	0.11553
469	NM	1131	0.01777	0.13329
471	PM	1222	0.01919	0.15249
473	PM	1422	0.02234	0.17482
475	PM	1363	0.02141	0.19623
477	PM	1450	0.02278	0.21901
479	PM	1565	0.02458	0.24359
481	PM	1679	0.02637	0.26996
483	PM	1809	0.02841	0.29838
484	PM	1831	0.02876	0.32714
486	PM	2034	0.03195	0.35909
488	PM	2043	0.03209	0.39118
490	PM	2143	0.03366	0.42484
492	PM	2268	0.03562	0.46046
494	PM	2252	0.03537	0.49584
496	PM	2287	0.03592	0.53176
498	PM	2320	0.03644	0.56820
499	PM	2386	0.03748	0.60568
502	ME	2375	0.03731	0.64299
504	ME	2386	0.03748	0.68046
506	ME	2286	0.03591	0.71637
508	ME	2210	0.03471	0.75108
511	ME	2214	0.03478	0.78586
513	ME	2156	0.03387	0.81973
516	ME	1938	0.03044	0.85017
519	ME	1784	0.02802	0.87819
521	ME	1574	0.02472	0.90291
525	ME	1508	0.02369	0.92660
528	ME	1252	0.01967	0.94626
532	EE	1030	0.01618	0.96244
536	EE	832	0.01307	0.97551
541	EE	656	0.01030	0.98582
547	EE	474	0.00745	0.99326
555	EE	257	0.00404	0.99730
560	EE	172	0.00270	1.00000

Table 2.3.5
Cumulative Scale Score Distribution
English Language Arts Grade 6

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	3713	0.05759	0.05759
444	NM	1039	0.01612	0.07371
448	NM	974	0.01511	0.08882
452	NM	963	0.01494	0.10375
455	NM	982	0.01523	0.11899
458	NM	1001	0.01553	0.13451
460	NM	1040	0.01613	0.15064
463	NM	1108	0.01719	0.16783
465	NM	1107	0.01717	0.18500
468	NM	1232	0.01911	0.20411
470	PM	1301	0.02018	0.22429
472	PM	1319	0.02046	0.24475
475	PM	1416	0.02196	0.26671
477	PM	1452	0.02252	0.28924
479	PM	1537	0.02384	0.31308
481	PM	1638	0.02541	0.33848
484	PM	1668	0.02587	0.36436
486	PM	1704	0.02643	0.39079
488	PM	1833	0.02843	0.41922
490	PM	1771	0.02747	0.44669
492	PM	1886	0.02925	0.47594
495	PM	1981	0.03073	0.50667
497	PM	2037	0.03160	0.53827
499	PM	2085	0.03234	0.57061
502	ME	2121	0.03290	0.60351
504	ME	2182	0.03385	0.63735
507	ME	2267	0.03516	0.67251
509	ME	2243	0.03479	0.70731
512	ME	2248	0.03487	0.74217
515	ME	2201	0.03414	0.77631
518	ME	2157	0.03346	0.80977
522	ME	2113	0.03277	0.84255
525	ME	2015	0.03125	0.87380
529	ME	1805	0.02800	0.90180
534	EE	1632	0.02531	0.92711
539	EE	1467	0.02275	0.94987
545	EE	1230	0.01908	0.96895
552	EE	919	0.01425	0.98320
560	EE	1083	0.01680	1.00000

Table 2.3.6
Cumulative Scale Score Distribution
English Language Arts Grade 7

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	3076	0.04752	0.04752
445	NM	1026	0.01585	0.06336
449	NM	1066	0.01647	0.07983
453	NM	1133	0.01750	0.09733
456	NM	1107	0.01710	0.11443
459	NM	1119	0.01729	0.13172
462	NM	1101	0.01701	0.14872
465	NM	1169	0.01806	0.16678
467	NM	1270	0.01962	0.18640
469	NM	1277	0.01973	0.20613
472	PM	1335	0.02062	0.22675
474	PM	1414	0.02184	0.24859
476	PM	1451	0.02241	0.27100
478	PM	1467	0.02266	0.29367
480	PM	1480	0.02286	0.31653
482	PM	1663	0.02569	0.34222
484	PM	1634	0.02524	0.36746
486	PM	1627	0.02513	0.39259
488	PM	1833	0.02831	0.42090
490	PM	1882	0.02907	0.44997
492	PM	1936	0.02991	0.47988
494	PM	2017	0.03116	0.51104
496	PM	2121	0.03276	0.54380
499	PM	2105	0.03252	0.57632
501	ME	2265	0.03499	0.61130
503	ME	2330	0.03599	0.64730
506	ME	2416	0.03732	0.68462
508	ME	2475	0.03823	0.72285
511	ME	2426	0.03747	0.76032
514	ME	2339	0.03613	0.79645
517	ME	2261	0.03493	0.83138
520	ME	2215	0.03422	0.86559
524	ME	2066	0.03191	0.89751
528	ME	1851	0.02859	0.92610
533	EE	1677	0.02590	0.95201
539	EE	1323	0.02044	0.97244
546	EE	996	0.01539	0.98783
555	EE	529	0.00817	0.99600
560	EE	259	0.00400	1.00000

Table 2.3.7
Cumulative Scale Score Distribution
English Language Arts Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	19	0.00029	0.00029
441	NM	846	0.01292	0.01321
442	NM	3079	0.04702	0.06023
446	NM	962	0.01469	0.07492
449	NM	928	0.01417	0.08909
452	NM	986	0.01506	0.10415
455	NM	1037	0.01584	0.11999
458	NM	1060	0.01619	0.13617
461	NM	1093	0.01669	0.15287
463	NM	1109	0.01694	0.16980
466	NM	1158	0.01768	0.18749
468	NM	1208	0.01845	0.20593
470	PM	1218	0.01860	0.22453
472	PM	1324	0.02022	0.24475
475	PM	1373	0.02097	0.26572
477	PM	1375	0.02100	0.28672
479	PM	1427	0.02179	0.30851
481	PM	1506	0.02300	0.33151
483	PM	1585	0.02421	0.35572
485	PM	1557	0.02378	0.37949
487	PM	1767	0.02698	0.40648
490	PM	1726	0.02636	0.43284
492	PM	1821	0.02781	0.46065
494	PM	1895	0.02894	0.48958
496	PM	1959	0.02992	0.51950
498	PM	1985	0.03031	0.54982
500	ME	2089	0.03190	0.58172
503	ME	2161	0.03300	0.61472
505	ME	2178	0.03326	0.64798
508	ME	2187	0.03340	0.68138
510	ME	2272	0.03470	0.71607
513	ME	2191	0.03346	0.74953
516	ME	2289	0.03496	0.78449
520	ME	2266	0.03460	0.81910
523	ME	2316	0.03537	0.85446
528	ME	2273	0.03471	0.88918
532	EE	2120	0.03238	0.92155
538	EE	1875	0.02863	0.95018
546	EE	1637	0.02500	0.97518
557	EE	1047	0.01599	0.99117
560	EE	578	0.00883	1.00000

Table 2.3.8
Cumulative Scale Score Distribution
English Language Arts Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	7	0.00011	0.00011
441	NM	86	0.00130	0.00141
442	NM	737	0.01115	0.01256
443	NM	1084	0.01641	0.02897
444	NM	645	0.00976	0.03873
448	NM	638	0.00966	0.04839
451	NM	697	0.01055	0.05894
454	NM	654	0.00990	0.06884
457	NM	675	0.01022	0.07905
459	NM	690	0.01044	0.08950
462	NM	697	0.01055	0.10005
464	NM	765	0.01158	0.11162
466	NM	728	0.01102	0.12264
468	NM	796	0.01205	0.13469
470	PM	914	0.01383	0.14852
472	PM	919	0.01391	0.16243
474	PM	999	0.01512	0.17755
476	PM	1010	0.01529	0.19284
478	PM	1140	0.01725	0.21010
480	PM	1206	0.01825	0.22835
482	PM	1272	0.01925	0.24760
484	PM	1309	0.01981	0.26741
485	PM	1450	0.02195	0.28936
487	PM	1459	0.02208	0.31144
489	PM	1683	0.02547	0.33692
491	PM	1674	0.02534	0.36225
493	PM	1782	0.02697	0.38922
495	PM	1936	0.02930	0.41853
497	PM	2000	0.03027	0.44880
499	PM	2248	0.03402	0.48282
501	ME	2383	0.03607	0.51889
503	ME	2544	0.03850	0.55739
506	ME	2584	0.03911	0.59650
508	ME	2711	0.04103	0.63754
511	ME	2805	0.04245	0.67999
514	ME	2950	0.04465	0.72464
517	ME	2939	0.04448	0.76912
521	ME	3021	0.04572	0.81485
525	ME	2889	0.04373	0.85857
529	ME	2834	0.04289	0.90147
535	EE	2477	0.03749	0.93896
541	EE	1978	0.02994	0.96890
549	EE	1289	0.01951	0.98841
560	EE	766	0.01159	1.00000

Table 2.3.9
Cumulative Scale Score Distribution
Mathematics Grade 3

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	7	0.00011	0.00011
441	NM	112	0.00176	0.00187
442	NM	225	0.00354	0.00541
443	NM	1261	0.01984	0.02525
444	NM	975	0.01534	0.04059
450	NM	1255	0.01974	0.06033
455	NM	1306	0.02054	0.08087
458	NM	1363	0.02144	0.10231
462	NM	1314	0.02067	0.12298
465	NM	1394	0.02193	0.14491
467	NM	1333	0.02097	0.16588
469	NM	1382	0.02174	0.18762
472	PM	1259	0.01980	0.20742
474	PM	1293	0.02034	0.22776
476	PM	1250	0.01966	0.24743
478	PM	1409	0.02216	0.26959
480	PM	1363	0.02144	0.29103
482	PM	1406	0.02212	0.31315
484	PM	1395	0.02194	0.33510
486	PM	1431	0.02251	0.35761
488	PM	1411	0.02220	0.37980
489	PM	1551	0.02440	0.40420
491	PM	1474	0.02319	0.42739
493	PM	1565	0.02462	0.45201
494	PM	1514	0.02382	0.47582
496	PM	1549	0.02437	0.50019
498	PM	1570	0.02470	0.52489
499	PM	1553	0.02443	0.54932
501	ME	1740	0.02737	0.57669
503	ME	1688	0.02655	0.60324
505	ME	1664	0.02618	0.62942
507	ME	1668	0.02624	0.65566
509	ME	1722	0.02709	0.68274
511	ME	1710	0.02690	0.70964
513	ME	1757	0.02764	0.73728
515	ME	1774	0.02791	0.76519
518	ME	1708	0.02687	0.79206
520	ME	1756	0.02762	0.81968
523	ME	1699	0.02673	0.84641
526	ME	1726	0.02715	0.87356
529	ME	1604	0.02523	0.89879
533	EE	1597	0.02512	0.92391
537	EE	1509	0.02374	0.94765
542	EE	1331	0.02094	0.96859
550	EE	1060	0.01667	0.98526
560	EE	937	0.01474	1.00000

Table 2.3.10
Cumulative Scale Score Distribution
Mathematics Grade 4

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	28	0.00045	0.00045
441	NM	231	0.00373	0.00418
442	NM	788	0.01272	0.01690
443	NM	585	0.00944	0.02635
448	NM	734	0.01185	0.03819
452	NM	861	0.01390	0.05209
455	NM	962	0.01553	0.06762
458	NM	1001	0.01616	0.08378
461	NM	1010	0.01630	0.10009
464	NM	1065	0.01719	0.11728
466	NM	1135	0.01832	0.13560
468	NM	1171	0.01890	0.15451
470	PM	1177	0.01900	0.17351
473	PM	1250	0.02018	0.19368
474	PM	1206	0.01947	0.21315
476	PM	1256	0.02028	0.23343
478	PM	1288	0.02079	0.25422
480	PM	1314	0.02121	0.27543
482	PM	1304	0.02105	0.29648
483	PM	1338	0.02160	0.31808
485	PM	1291	0.02084	0.33892
486	PM	1256	0.02028	0.35920
488	PM	1360	0.02195	0.38115
489	PM	1328	0.02144	0.40259
491	PM	1344	0.02170	0.42429
492	PM	1342	0.02166	0.44595
494	PM	1345	0.02171	0.46767
495	PM	1386	0.02237	0.49004
497	PM	1368	0.02208	0.51212
498	PM	1390	0.02244	0.53456
499	PM	1402	0.02263	0.55719
501	ME	1376	0.02221	0.57941
503	ME	1387	0.02239	0.60180
504	ME	1453	0.02346	0.62525
506	ME	1432	0.02312	0.64837
507	ME	1530	0.02470	0.67307
509	ME	1496	0.02415	0.69722
511	ME	1480	0.02389	0.72111
512	ME	1580	0.02551	0.74662
514	ME	1555	0.02510	0.77172

Table 2.3.10 (continued)
Cumulative Scale Score Distribution
Mathematics Grade 4

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
516	ME	1594	0.02573	0.79745
519	ME	1529	0.02468	0.82214
521	ME	1471	0.02375	0.84588
523	ME	1603	0.02588	0.87176
526	ME	1537	0.02481	0.89657
529	ME	1405	0.02268	0.91925
533	EE	1382	0.02231	0.94156
537	EE	1170	0.01889	0.96045
542	EE	1033	0.01668	0.97713
549	EE	749	0.01209	0.98922
560	EE	668	0.01078	1.00000

Table 2.3.11
Cumulative Scale Score Distribution
Mathematics Grade 5

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	12	0.00019	0.00019
441	NM	753	0.01188	0.01207
442	NM	599	0.00945	0.02152
449	NM	807	0.01273	0.03426
454	NM	979	0.01545	0.04971
458	NM	1062	0.01676	0.06647
461	NM	1185	0.01870	0.08517
464	NM	1218	0.01922	0.10439
467	NM	1310	0.02067	0.12506
469	NM	1415	0.02233	0.14739
472	PM	1376	0.02171	0.16910
474	PM	1397	0.02204	0.19114
476	PM	1464	0.02310	0.21425
478	PM	1490	0.02351	0.23776
479	PM	1538	0.02427	0.26203
481	PM	1565	0.02470	0.28672
483	PM	1635	0.02580	0.31252
484	PM	1616	0.02550	0.33803
486	PM	1672	0.02638	0.36441
488	PM	1613	0.02545	0.38986
489	PM	1635	0.02580	0.41566
491	PM	1572	0.02481	0.44047
492	PM	1625	0.02564	0.46611
494	PM	1567	0.02473	0.49084
495	PM	1527	0.02410	0.51494
496	PM	1566	0.02471	0.53965
498	PM	1491	0.02353	0.56318
499	PM	1518	0.02395	0.58713
501	ME	1480	0.02335	0.61048
502	ME	1508	0.02380	0.63428
503	ME	1375	0.02170	0.65598
505	ME	1429	0.02255	0.67853
506	ME	1422	0.02244	0.70097
508	ME	1372	0.02165	0.72262
509	ME	1255	0.01980	0.74242
511	ME	1347	0.02126	0.76368
512	ME	1326	0.02092	0.78460
514	ME	1259	0.01987	0.80447
515	ME	1243	0.01961	0.82408
517	ME	1225	0.01933	0.84341

Table 2.3.11 (continued)
Cumulative Scale Score Distribution
Mathematics Grade 5

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
519	ME	1219	0.01924	0.86265
521	ME	1175	0.01854	0.88119
523	ME	1076	0.01698	0.89817
525	ME	1090	0.01720	0.91537
528	ME	1076	0.01698	0.93235
531	EE	1013	0.01599	0.94834
535	EE	954	0.01505	0.96339
539	EE	836	0.01319	0.97658
546	EE	698	0.01101	0.98760
557	EE	537	0.00847	0.99607
560	EE	249	0.00393	1.00000

Table 2.3.12
Cumulative Scale Score Distribution
Mathematics Grade 6

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	3	0.00005	0.00005
441	NM	10	0.00015	0.00020
442	NM	62	0.00096	0.00116
443	NM	139	0.00215	0.00331
444	NM	293	0.00454	0.00785
445	NM	508	0.00787	0.01572
446	NM	744	0.01152	0.02724
452	NM	1024	0.01586	0.04310
457	NM	1207	0.01869	0.06179
460	NM	1326	0.02053	0.08232
463	NM	1367	0.02117	0.10349
466	NM	1540	0.02385	0.12733
469	NM	1541	0.02386	0.15120
471	PM	1630	0.02524	0.17644
474	PM	1704	0.02639	0.20282
476	PM	1604	0.02484	0.22766
478	PM	1580	0.02447	0.25213
480	PM	1602	0.02481	0.27694
481	PM	1572	0.02434	0.30128
483	PM	1606	0.02487	0.32615
485	PM	1580	0.02447	0.35061
486	PM	1552	0.02403	0.37465
488	PM	1491	0.02309	0.39774
490	PM	1482	0.02295	0.42069
491	PM	1474	0.02283	0.44351
493	PM	1487	0.02303	0.46654
494	PM	1421	0.02200	0.48854
495	PM	1466	0.02270	0.51124
497	PM	1430	0.02214	0.53339
498	PM	1406	0.02177	0.55516
499	PM	1376	0.02131	0.57647
501	ME	1348	0.02087	0.59734
502	ME	1331	0.02061	0.61795
504	ME	1324	0.02050	0.63845
505	ME	1342	0.02078	0.65923
507	ME	1328	0.02056	0.67980
508	ME	1319	0.02042	0.70022
510	ME	1328	0.02056	0.72079
511	ME	1252	0.01939	0.74017
513	ME	1240	0.01920	0.75938

Table 2.3.12 (continued)
Cumulative Scale Score Distribution
Mathematics Grade 6

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
514	ME	1241	0.01922	0.77859
516	ME	1241	0.01922	0.79781
517	ME	1255	0.01943	0.81724
519	ME	1279	0.01981	0.83705
521	ME	1279	0.01981	0.85686
523	ME	1222	0.01892	0.87578
525	ME	1186	0.01837	0.89414
527	ME	1209	0.01872	0.91287
529	ME	1106	0.01713	0.92999
533	EE	1100	0.01703	0.94703
537	EE	985	0.01525	0.96228
541	EE	926	0.01434	0.97662
548	EE	702	0.01087	0.98749
559	EE	528	0.00818	0.99566
560	EE	280	0.00434	1.00000

Table 2.3.13
Cumulative Scale Score Distribution
Mathematics Grade 7

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	12	0.00019	0.00019
441	NM	518	0.00800	0.00819
442	NM	1683	0.02600	0.03419
450	NM	1405	0.02171	0.05590
456	NM	1743	0.02693	0.08283
460	NM	2036	0.03146	0.11428
464	NM	2276	0.03516	0.14945
468	NM	2475	0.03824	0.18768
471	PM	2449	0.03784	0.22552
474	PM	2339	0.03614	0.26166
477	PM	2338	0.03612	0.29778
479	PM	2220	0.03430	0.33208
482	PM	2202	0.03402	0.36610
484	PM	2123	0.03280	0.39890
486	PM	2022	0.03124	0.43014
488	PM	1867	0.02884	0.45898
490	PM	1835	0.02835	0.48733
492	PM	1638	0.02531	0.51264
494	PM	1542	0.02382	0.53646
495	PM	1439	0.02223	0.55869
497	PM	1443	0.02229	0.58099
499	PM	1356	0.02095	0.60194
500	ME	1265	0.01954	0.62148
502	ME	1199	0.01852	0.64001
503	ME	1168	0.01805	0.65805
505	ME	1139	0.01760	0.67565
506	ME	1149	0.01775	0.69340
507	ME	1103	0.01704	0.71044
509	ME	1047	0.01618	0.72662
510	ME	1005	0.01553	0.74214
512	ME	950	0.01468	0.75682
513	ME	989	0.01528	0.77210
514	ME	927	0.01432	0.78642
516	ME	913	0.01411	0.80053
517	ME	917	0.01417	0.81470
519	ME	928	0.01434	0.82903
520	ME	917	0.01417	0.84320
522	ME	945	0.01460	0.85780
523	ME	878	0.01356	0.87137
525	ME	876	0.01353	0.88490

Table 2.3.13 (continued)
Cumulative Scale Score Distribution
Mathematics Grade 7

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
527	ME	897	0.01386	0.89876
529	ME	859	0.01327	0.91203
531	EE	831	0.01284	0.92487
534	EE	833	0.01287	0.93774
536	EE	834	0.01289	0.95062
539	EE	826	0.01276	0.96338
543	EE	739	0.01142	0.97480
547	EE	613	0.00947	0.98427
553	EE	520	0.00803	0.99231
560	EE	498	0.00769	1.00000

Table 2.3.14
Cumulative Scale Score Distribution
Mathematics Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	3	0.00005	0.00005
441	NM	4	0.00006	0.00011
442	NM	22	0.00034	0.00044
443	NM	106	0.00162	0.00206
444	NM	245	0.00374	0.00579
445	NM	1174	0.01790	0.02369
446	NM	1154	0.01760	0.04129
452	NM	1319	0.02011	0.06140
457	NM	1602	0.02443	0.08583
461	NM	1676	0.02555	0.11138
464	NM	1801	0.02746	0.13884
467	NM	1873	0.02856	0.16740
469	NM	1850	0.02821	0.19561
472	PM	1830	0.02790	0.22351
474	PM	1747	0.02664	0.25015
476	PM	1706	0.02601	0.27616
478	PM	1718	0.02620	0.30236
480	PM	1685	0.02569	0.32805
482	PM	1668	0.02543	0.35348
484	PM	1587	0.02420	0.37768
485	PM	1560	0.02379	0.40146
487	PM	1545	0.02356	0.42502
488	PM	1431	0.02182	0.44684
490	PM	1466	0.02235	0.46919
491	PM	1384	0.02110	0.49030
493	PM	1384	0.02110	0.51140
494	PM	1317	0.02008	0.53148
496	PM	1312	0.02000	0.55148
497	PM	1306	0.01991	0.57140
498	PM	1244	0.01897	0.59036
499	PM	1294	0.01973	0.61009
501	ME	1316	0.02007	0.63016
503	ME	1257	0.01917	0.64933
504	ME	1236	0.01885	0.66817
505	ME	1200	0.01830	0.68647
507	ME	1202	0.01833	0.70480
508	ME	1206	0.01839	0.72318
510	ME	1193	0.01819	0.74137
511	ME	1196	0.01824	0.75961
513	ME	1211	0.01846	0.77807

Table 2.3.14 (continued)
Cumulative Scale Score Distribution
Mathematics Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
514	ME	1176	0.01793	0.79601
516	ME	1185	0.01807	0.81407
518	ME	1177	0.01795	0.83202
520	ME	1195	0.01822	0.85024
522	ME	1147	0.01749	0.86773
524	ME	1208	0.01842	0.88615
526	ME	1152	0.01756	0.90371
529	ME	1182	0.01802	0.92174
532	EE	1134	0.01729	0.93903
536	EE	1071	0.01633	0.95536
540	EE	1014	0.01546	0.97082
547	EE	886	0.01351	0.98433
558	EE	668	0.01019	0.99451
560	EE	360	0.00549	1.00000

Table 2.3.15
Cumulative Scale Score Distribution
Mathematics Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
441	NM	14	0.00022	0.00022
442	NM	32	0.00049	0.00071
443	NM	254	0.00392	0.00464
444	NM	317	0.00490	0.00953
445	NM	563	0.00870	0.01823
451	NM	808	0.01248	0.03072
456	NM	1051	0.01624	0.04696
460	NM	1272	0.01965	0.06661
463	NM	1465	0.02264	0.08925
466	NM	1606	0.02481	0.11406
469	NM	1642	0.02537	0.13943
472	PM	1708	0.02639	0.16582
474	PM	1844	0.02849	0.19432
476	PM	1781	0.02752	0.22184
478	PM	1735	0.02681	0.24864
480	PM	1699	0.02625	0.27490
482	PM	1634	0.02525	0.30014
484	PM	1561	0.02412	0.32426
485	PM	1574	0.02432	0.34858
487	PM	1491	0.02304	0.37162
489	PM	1499	0.02316	0.39478
490	PM	1488	0.02299	0.41778
492	PM	1453	0.02245	0.44023
493	PM	1322	0.02043	0.46065
495	PM	1333	0.02060	0.48125
496	PM	1249	0.01930	0.50055
497	PM	1281	0.01979	0.52034
499	PM	1261	0.01948	0.53983
500	ME	1238	0.01913	0.55895
501	ME	1190	0.01839	0.57734
503	ME	1163	0.01797	0.59531
504	ME	1150	0.01777	0.61308
505	ME	1105	0.01707	0.63015
507	ME	1069	0.01652	0.64667
508	ME	1080	0.01669	0.66336
509	ME	1110	0.01715	0.68051
511	ME	1058	0.01635	0.69686
512	ME	1094	0.01690	0.71376
514	ME	1051	0.01624	0.73000
515	ME	1003	0.01550	0.74550

Table 2.3.15 (continued)
Cumulative Scale Score Distribution
Mathematics Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
516	ME	1030	0.01591	0.76141
518	ME	1114	0.01721	0.77863
520	ME	1038	0.01604	0.79467
521	ME	1122	0.01734	0.81200
523	ME	1040	0.01607	0.82807
525	ME	1034	0.01598	0.84405
526	ME	1019	0.01574	0.85979
528	ME	1049	0.01621	0.87600
530	EE	1053	0.01627	0.89227
533	EE	990	0.01530	0.90757
535	EE	1012	0.01564	0.92321
538	EE	954	0.01474	0.93795
542	EE	937	0.01448	0.95243
546	EE	889	0.01374	0.96616
552	EE	783	0.01210	0.97826
559	EE	718	0.01109	0.98935
560	EE	689	0.01065	1.00000

Table 2.3.16
Cumulative Scale Score Distribution
Introductory Physics Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	2	0.00015	0.00015
441	NM	40	0.00309	0.00324
442	NM	231	0.01784	0.02108
449	NM	176	0.01359	0.03467
454	NM	187	0.01444	0.04912
458	NM	247	0.01907	0.06819
461	NM	266	0.02054	0.08873
464	NM	274	0.02116	0.10989
467	NM	309	0.02386	0.13376
469	NM	292	0.02255	0.15631
472	PM	267	0.02062	0.17692
474	PM	295	0.02278	0.19971
476	PM	295	0.02278	0.22249
477	PM	247	0.01907	0.24156
479	PM	279	0.02155	0.26311
481	PM	264	0.02039	0.28350
483	PM	267	0.02062	0.30412
484	PM	270	0.02085	0.32497
486	PM	269	0.02077	0.34574
487	PM	279	0.02155	0.36729
489	PM	313	0.02417	0.39146
491	PM	287	0.02216	0.41362
492	PM	281	0.02170	0.43532
494	PM	281	0.02170	0.45702
495	PM	270	0.02085	0.47787
497	PM	290	0.02240	0.50027
498	PM	307	0.02371	0.52398
499	PM	320	0.02471	0.54869
501	ME	275	0.02124	0.56993
503	ME	297	0.02294	0.59286
505	ME	303	0.02340	0.61626
506	ME	327	0.02525	0.64152
508	ME	266	0.02054	0.66206
510	ME	281	0.02170	0.68376
512	ME	287	0.02216	0.70592
513	ME	265	0.02046	0.72639
515	ME	301	0.02325	0.74963
517	ME	264	0.02039	0.77002
519	ME	259	0.02000	0.79002
522	ME	280	0.02162	0.81165

Table 2.3.16 (continued)
Cumulative Scale Score Distribution
Introductory Physics Grade 10

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
524	ME	262	0.02023	0.83188
526	ME	244	0.01884	0.85072
529	ME	239	0.01846	0.86918
531	EE	279	0.02155	0.89073
534	EE	235	0.01815	0.90887
537	EE	252	0.01946	0.92833
540	EE	209	0.01614	0.94447
544	EE	176	0.01359	0.95807
548	EE	170	0.01313	0.97119
553	EE	135	0.01043	0.98162
559	EE	99	0.00765	0.98927
560	EE	139	0.01073	1.00000

Table 2.3.17
Cumulative Scale Score Distribution
Science Grade 5

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	1765	0.02790	0.02790
445	NM	852	0.01347	0.04136
450	NM	1021	0.01614	0.05750
453	NM	1068	0.01688	0.07438
457	NM	1149	0.01816	0.09254
460	NM	1092	0.01726	0.10980
462	NM	1157	0.01829	0.12808
465	NM	1095	0.01731	0.14539
467	NM	1157	0.01829	0.16368
469	NM	1199	0.01895	0.18263
472	PM	1208	0.01909	0.20172
474	PM	1176	0.01859	0.22031
476	PM	1238	0.01957	0.23987
478	PM	1248	0.01972	0.25960
479	PM	1321	0.02088	0.28048
481	PM	1396	0.02206	0.30254
483	PM	1350	0.02134	0.32388
485	PM	1403	0.02217	0.34605
487	PM	1493	0.02360	0.36965
489	PM	1492	0.02358	0.39323
491	PM	1610	0.02545	0.41868
492	PM	1613	0.02549	0.44417
494	PM	1804	0.02851	0.47268
496	PM	1696	0.02681	0.49949
498	PM	1810	0.02861	0.52809
500	ME	1887	0.02982	0.55792
502	ME	1963	0.03103	0.58894
504	ME	2030	0.03208	0.62103
506	ME	2097	0.03314	0.65417
509	ME	2091	0.03305	0.68722
511	ME	2103	0.03324	0.72046
513	ME	2044	0.03231	0.75276
516	ME	2165	0.03422	0.78698
518	ME	2023	0.03197	0.81895
521	ME	1921	0.03036	0.84931
524	ME	1839	0.02907	0.87838
527	ME	1715	0.02711	0.90549
531	EE	1477	0.02334	0.92883
534	EE	1290	0.02039	0.94922
538	EE	1066	0.01685	0.96607
542	EE	788	0.01245	0.97852
547	EE	563	0.00890	0.98742
553	EE	414	0.00654	0.99396
559	EE	221	0.00349	0.99746
560	EE	161	0.00254	1.00000

Table 2.3.18
Cumulative Scale Score Distribution
Science Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
440	NM	5	0.00008	0.00008
441	NM	95	0.00146	0.00154
442	NM	930	0.01430	0.01583
443	NM	684	0.01051	0.02635
447	NM	881	0.01354	0.03989
451	NM	1070	0.01645	0.05634
455	NM	1234	0.01897	0.07531
458	NM	1335	0.02052	0.09583
461	NM	1365	0.02098	0.11681
463	NM	1349	0.02074	0.13755
466	NM	1382	0.02124	0.15879
468	NM	1290	0.01983	0.17862
470	PM	1259	0.01935	0.19797
472	PM	1362	0.02094	0.21891
474	PM	1327	0.02040	0.23931
476	PM	1405	0.02160	0.26091
478	PM	1441	0.02215	0.28306
480	PM	1462	0.02247	0.30553
482	PM	1547	0.02378	0.32931
483	PM	1620	0.02490	0.35421
485	PM	1779	0.02735	0.38156
487	PM	1743	0.02679	0.40835
489	PM	1902	0.02924	0.43759
490	PM	1864	0.02865	0.46624
492	PM	1962	0.03016	0.49640
494	PM	1981	0.03045	0.52685
496	PM	2031	0.03122	0.55807
497	PM	2026	0.03114	0.58922
499	PM	2090	0.03213	0.62135
501	ME	2135	0.03282	0.65416
503	ME	2025	0.03113	0.68529
505	ME	2046	0.03145	0.71674
507	ME	1957	0.03008	0.74683
509	ME	1861	0.02861	0.77543
511	ME	1795	0.02759	0.80303
514	ME	1776	0.02730	0.83033
516	ME	1614	0.02481	0.85514
519	ME	1510	0.02321	0.87835
521	ME	1442	0.02217	0.90051
524	ME	1226	0.01885	0.91936

Table 2.3.18 (continued)
Cumulative Scale Score Distribution
Science Grade 8

Scale Score	Achievement Levels	N	Proportion	Cumulative Proportion
527	ME	1147	0.01763	0.93699
531	EE	941	0.01446	0.95146
534	EE	862	0.01325	0.96471
538	EE	700	0.01076	0.97547
543	EE	564	0.00867	0.98414
548	EE	416	0.00639	0.99053
553	EE	322	0.00495	0.99548
559	EE	171	0.00263	0.99811
560	EE	123	0.00189	1.00000

Section 2.4

Rescore Analysis Results

This section shows the results of rescore analyses. Rescore analyses are conducted on human-scored items to ensure consistency in scoring across years. To detect rater drift, 200 student responses from a previous administration are *rescored* using raters during the current administration. Then, the resulting scores from the current year are compared to the previous scores (on the same set of 200 student responses). Effect sizes (i.e., Cohen's *d*) are calculated using the means and standard deviations of the two sets of scores. The threshold for flagging an item is 0.5.

Table 2.4.1
Rescore Analysis
Biology Grade 10

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA10635	4	1.83000	1.64500	1.04718	1.00700	-0.17667	False
IA10998	3	0.71000	0.67500	0.96985	0.94543	-0.03609	False

Table 2.4.2
Rescore Analysis
English Language Arts Grade 3

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA00287	3	1.15500	1.27000	0.86296	0.91173	0.13326	False
IA00288	3	0.90000	0.95500	0.82059	0.85241	0.06703	False

Table 2.4.3
Rescore Analysis
English Language Arts Grade 4

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA00225	3	1.31000	1.30000	0.73935	0.87970	-0.01353	False
IA00226	3	1.27500	1.45500	0.76308	0.82546	0.23589	False

Table 2.4.4
Rescore Analysis
Mathematics Grade 3

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA10020	3	1.84000	1.86000	0.89913	0.87993	0.02224	False
IA01081	3	0.86500	0.86500	0.94936	0.95989	0.00000	False

Table 2.4.5
Rescore Analysis
Mathematics Grade 4

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA01057	4	2.14500	2.25000	1.15788	1.17661	0.09068	False
IA12525	4	1.81500	1.80000	1.17374	1.14742	-0.01278	False

Table 2.4.6
Rescore Analysis
Mathematics Grade 5

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA01159	4	2.21500	2.28000	1.32194	1.31539	0.04917	False
IA02736	4	2.14000	2.23000	1.41436	1.42028	0.06363	False

Table 2.4.7
Rescore Analysis
Mathematics Grade 6

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA02078	4	1.48000	1.55500	1.40337	1.38802	0.05344	False
IA00972	4	2.83000	2.82000	1.12133	1.11976	-0.00892	False

Table 2.4.8
Rescore Analysis
Mathematics Grade 7

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA01069	4	2.12000	2.14000	1.20117	1.16498	0.01665	False
IA02722	4	1.83000	1.77500	1.61684	1.57696	-0.03402	False

Table 2.4.9
Rescore Analysis
Mathematics Grade 8

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA12109	4	1.68500	1.76000	1.63067	1.62035	0.04599	False
IA00864	4	2.85500	2.81500	1.49168	1.53707	-0.02682	False

Table 2.4.10
Rescore Analysis
Mathematics Grade 10

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA05165	4	1.92000	1.85500	1.26555	1.27361	-0.05136	False
IA05170	4	1.60500	1.62000	1.16437	1.16291	0.01288	False

Table 2.4.11
Rescore Analysis
Introductory Physics Grade 10

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA10802	4	1.82000	1.54000	1.32149	1.27929	-0.21188	False
IA10923	3	1.33500	1.23500	0.88128	0.88526	-0.11347	False

Table 2.4.12
Rescore Analysis
Science Grade 5

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA05634	3	1.005	0.99	0.871073	0.879641	-0.01722	False
IA05657	2	0.38	0.37	0.486604	0.484016	-0.02055	False
IA10648	3	1.06	1.14	0.818382	0.820834	0.097754	False

Table 2.4.13
Rescore Analysis
Science Grade 8

Item Id	Max	Old Mean	New Mean	Old StDev	New StDev	Effect Size	Discard
IA05732	3	0.885	0.905	0.602987	0.598134	0.033168	False
IA05729	3	1.205	1.22	0.810096	0.827662	0.018516	False
IA05777	2	0.67	0.66	0.471393	0.474898	-0.02121	False

Section 2.5

Tabled Delta Analysis Results

Table 2.5.1
Delta Analysis
Biology Grade 10

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA03593 (SC316906)	0.71000	0.62000	10.78646	11.77808	1	False	0.18625
IA10582 (SC129438142)	0.53500	0.54000	12.64862	12.59827	2	False	1.63544
IA10635 (SC313409)	0.46500	0.42250	13.35138	13.78201	4	False	-0.87845
IA10656 (SC630544518)	0.58000	0.48000	12.19243	13.20061	1	False	0.89891
IA10684 (SC723337422)	0.81000	0.74000	9.48841	10.42662	1	False	-0.64566
IA10696 (SC800163004)	0.78000	0.66000	9.91123	11.35015	1	False	1.83146
IA10747 (SC804071827)	0.59500	0.51000	12.03830	12.89972	2	False	0.15918
IA10808 (SC815940509)	0.42000	0.38000	13.80757	14.22192	1	False	-1.01083
IA10809 (SC815948686)	0.57000	0.53000	12.29450	12.69892	1	False	-0.27996
IA10810 (SC815948962)	0.39000	0.36000	14.11728	14.43384	1	False	-0.70478
IA10926 (SC906349045)	0.59000	0.55000	12.08982	12.49735	2	False	-0.20145
IA10927 (SC906351730)	0.77000	0.77000	10.04461	10.04461	1	False	2.58540
IA10930 (SC906544336)	0.67000	0.61000	11.24035	11.88272	1	False	-0.88853
IA10989 (SC910635381)	0.69000	0.63000	11.01660	11.67259	1	False	-0.84929
IA10994 (SC910746953)	0.68000	0.61000	11.12920	11.88272	1	False	-0.74527
IA10995 (SC910749140)	0.43000	0.35000	13.70550	14.54128	1	False	0.79750
IA10998 (SC910752674)	0.26000	0.24333	15.57338	15.78248	3	False	-0.87400
IA11005 (SC911354147)	0.52000	0.45000	12.79939	13.50265	1	False	-0.21796
IA11031 (SC914149827)	0.61000	0.57000	11.88272	12.29450	1	False	-0.12700
IA11033 (SC914353987)	0.35000	0.35000	14.54128	14.54128	1	False	0.54807
IA11042 (SC915956318)	0.66000	0.59000	11.35015	12.08982	1	False	-0.70837
IA11054 (SC921067241)	0.59000	0.52000	12.08982	12.79939	1	False	-0.51067

Table 2.5.2
Delta Analysis
English Language Arts Grade 3

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00279 (EL308822)	0.77000	0.76000	10.04461	10.17479	1	False	-0.46571
IA00280 (EL308824)	0.63000	0.66000	11.67259	11.35015	1	False	0.23942
IA00281 (EL308826)	0.55000	0.54000	12.49735	12.59827	1	False	-0.30358
IA00282 (EL308827)	0.60000	0.57000	11.98661	12.29450	1	False	-0.66799
IA00283 (EL308835)	0.56000	0.55000	12.39612	12.49735	1	False	-0.33145
IA00284 (EL308837)	0.64000	0.63000	11.56616	11.67259	1	False	-0.56459
IA00285 (EL308838)	0.76000	0.74000	10.17479	10.42662	1	False	-0.28088
IA00286 (EL308842)	0.43000	0.42000	13.70550	13.80757	1	False	0.02002
IA00287 (EL308855)	0.39000	0.38000	14.11728	14.22192	3	False	0.12639
IA00288 (EL308857)	0.31667	0.33667	14.90816	14.68631	3	False	0.92988
IA00443 (EL626042844)	0.66000	0.62000	11.35015	11.77808	1	False	-0.27939
IA00444 (EL626043062)	0.65000	0.63000	11.45872	11.67259	1	False	-0.69565
IA00445 (EL626043435)	0.51500	0.25000	12.84957	15.69796	2	False	3.69225
IA00446 (EL626049849)	0.50000	0.50000	13.00000	13.00000	1	False	0.01436
IA00450 (EL626050679)	0.65000	0.62000	11.45872	11.77808	1	False	-0.50494
IA00451 (EL626050927)	0.54000	0.49000	12.59827	13.10028	1	False	-0.48195
IA00452 (EL626051097)	0.52000	0.51500	12.79939	12.84957	2	False	-0.13044
IA00453 (EL626051328)	0.65000	0.61000	11.45872	11.88272	1	False	-0.31575

Table 2.5.3
Delta Analysis
English Language Arts Grade 4

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00218 (EL307705)	0.82000	0.80000	9.33854	9.63352	1	False	-0.67306
IA00219 (EL307709)	0.77000	0.75000	10.04461	10.30204	1	False	-0.63280
IA00220 (EL307710)	0.45000	0.44000	13.50265	13.60388	1	False	-0.29112
IA00221 (EL307713)	0.53000	0.52000	12.69892	12.79939	1	False	-0.56401
IA00222 (EL307714)	0.77000	0.75000	10.04461	10.30204	1	False	-0.63280
IA00223 (EL307719)	0.57000	0.54000	12.29450	12.59827	1	False	0.36174
IA00224 (EL307724)	0.73000	0.70000	10.54875	10.90240	1	False	0.03806
IA00225 (EL307728)	0.44333	0.44667	13.57009	13.53635	3	False	-0.75933
IA00226 (EL307729)	0.42000	0.44000	13.80757	13.60388	3	False	0.04825
IA00289 (EL309792)	0.62000	0.57000	11.77808	12.29450	1	False	1.29892
IA00407 (EL624647403)	0.42000	0.42000	13.80757	13.80757	1	False	-0.71746
IA00408 (EL624647580)	0.54000	0.61000	12.59827	11.88272	1	False	3.12427
IA00411 (EL624652450)	0.76000	0.74000	10.17479	10.42662	1	False	-0.61848
IA00412 (EL624652621)	0.89000	0.89000	8.09389	8.09389	1	False	0.89666
IA00414 (EL624652989)	0.44000	0.45000	13.60388	13.50265	1	False	-0.41840
IA00415 (EL624653348)	0.63000	0.62000	11.67259	11.77808	1	False	-0.85120
IA00416 (EL624653492)	0.71000	0.70500	10.78646	10.84466	2	False	-0.30789
IA00419 (EL624654711)	0.79500	0.75500	9.70443	10.23876	2	False	0.69865

Table 2.5.4
Delta Analysis
English Language Arts Grade 5

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00495 (EL626304658)	0.75000	0.76000	10.30204	10.17479	1	False	0.45633
IA00497 (EL626304969)	0.67000	0.69000	11.24035	11.01660	1	False	1.43816
IA00500 (EL626332335)	0.64000	0.66000	11.56616	11.35015	1	False	1.24258
IA00501 (EL626332592)	0.83000	0.83000	9.18334	9.18334	1	False	-0.87300
IA00502 (EL626333002)	0.81000	0.80000	9.48841	9.63352	1	False	-0.56102
IA00505 (EL626355215)	0.61000	0.61000	11.88272	11.88272	1	False	-1.66004
IA00506 (EL626355557)	0.65000	0.65000	11.45872	11.45872	1	False	-1.53642
IA00508 (EL626356291)	0.37500	0.36500	14.27456	14.38050	2	False	0.32504
IA00638 (EL627351056)	0.66000	0.67000	11.35015	11.24035	1	False	-0.07629
IA01669 (EL711809263)	0.74000	0.74000	10.42662	10.42662	1	False	-1.23549
IA01670 (EL711809592)	0.74000	0.72000	10.42662	10.66863	1	False	0.97337
IA01671 (EL711827203)	0.89000	0.88000	8.09389	8.30005	1	False	-0.17317
IA01672 (EL711827807)	0.68000	0.66000	11.12920	11.35015	1	False	0.90406
IA01679 (EL711868011)	0.46500	0.46000	13.35138	13.40173	2	False	-0.66733
IA01680 (EL711900602)	0.66000	0.64000	11.35015	11.56616	1	False	0.90440
IA01691 (EL712167015)	0.47000	0.49000	13.30108	13.10028	1	False	0.53882

Table 2.5.5
Delta Analysis
English Language Arts Grade 6

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00173 (EL303496)	0.74000	0.74000	10.42662	10.42662	1	False	-0.63502
IA00174 (EL303500)	0.64000	0.65000	11.56616	11.45872	1	False	-0.14429
IA00175 (EL303504)	0.61000	0.65000	11.88272	11.45872	1	False	2.07964
IA00176 (EL303508)	0.72000	0.73000	10.66863	10.54875	1	False	0.17596
IA00177 (EL303510)	0.86000	0.85000	8.67872	8.85427	1	False	-1.03467
IA00178 (EL303513)	0.68000	0.71000	11.12920	10.78646	1	False	1.68078
IA00179 (EL303514)	0.61000	0.61000	11.88272	11.88272	1	False	-1.00765
IA00180 (EL303518)	0.54000	0.53000	12.59827	12.69892	1	False	-0.57692
IA00515 (EL626864414)	0.82000	0.80000	9.33854	9.63352	1	False	0.00379
IA00517 (EL626864724)	0.70000	0.66000	10.90240	11.35015	1	False	1.51637
IA00518 (EL626865003)	0.68000	0.65000	11.12920	11.45872	1	False	0.71351
IA00520 (EL626865416)	0.42000	0.41000	13.80757	13.91018	1	False	-0.25324
IA00522 (EL626865773)	0.70000	0.68000	10.90240	11.12920	1	False	-0.09236
IA00523 (EL626865942)	0.65000	0.65000	11.45872	11.45872	1	False	-0.89914
IA00528 (EL626867605)	0.76500	0.75500	10.11008	10.23876	2	False	-1.00960
IA00530 (EL626868748)	0.71500	0.70000	10.72779	10.90240	2	False	-0.51715

Table 2.5.6
Delta Analysis
English Language Arts Grade 7

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00065 (EL292160)	0.71000	0.71000	10.78646	10.78646	1	False	-1.12203
IA00066 (EL292163)	0.59000	0.62000	12.08982	11.77808	1	False	0.08470
IA00067 (EL292168)	0.48000	0.51000	13.20061	12.89972	1	False	-0.39729
IA00068 (EL292170)	0.69000	0.67000	11.01660	11.24035	1	False	0.48186
IA00069 (EL292172)	0.62000	0.64000	11.77808	11.56616	1	False	-0.47859
IA00070 (EL292176)	0.61000	0.59000	11.88272	12.08982	1	False	0.68715
IA00081 (EL293802)	0.67000	0.67000	11.24035	11.24035	1	False	-0.95519
IA00082 (EL293804)	0.54000	0.55000	12.59827	12.49735	1	False	-1.14126
IA00257 (EL308358)	0.82000	0.81000	9.33854	9.48841	1	False	-0.63656
IA00258 (EL308360)	0.74500	0.72500	10.36465	10.60896	2	False	0.38184
IA00262 (EL308382)	0.63000	0.66000	11.67259	11.35015	1	False	0.31069
IA00265 (EL308389)	0.90000	0.89000	7.87379	8.09389	1	False	-0.69816
IA00269 (EL308397)	0.80000	0.84000	9.63352	9.02217	1	False	3.02192
IA00655 (EL628647210)	0.72000	0.74000	10.66863	10.42662	1	False	0.13362
IA00657 (EL628647689)	0.75000	0.73000	10.30204	10.54875	1	False	0.37510
IA00658 (EL628653398)	0.75500	0.74000	10.23876	10.42662	2	False	-0.04778

Table 2.5.7
Delta Analysis
English Language Arts Grade 8

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00056 (EL290795)	0.76000	0.77000	10.17479	10.04461	1	False	-0.03231
IA00057 (EL290798)	0.79000	0.78000	9.77432	9.91123	1	False	-0.62456
IA00058 (EL290799)	0.74000	0.74000	10.42662	10.42662	1	False	-1.38588
IA00059 (EL290800)	0.68000	0.67000	11.12920	11.24035	1	False	-1.10065
IA00060 (EL290801)	0.76000	0.74000	10.17479	10.42662	1	False	0.54394
IA00061 (EL290805)	0.56000	0.57000	12.39612	12.29450	1	False	-0.00831
IA00062 (EL290808)	0.54000	0.56000	12.59827	12.39612	1	False	1.09568
IA00063 (EL290814)	0.39000	0.37000	14.11728	14.32741	1	False	-0.48565
IA00368 (EL623873883)	0.73000	0.72000	10.54875	10.66863	1	False	-0.92122
IA00371 (EL623951471)	0.61500	0.60000	11.83050	11.98661	2	False	-0.72408
IA00373 (EL623952377)	0.43500	0.41500	13.65463	13.85881	2	False	-0.48084
IA00374 (EL623952612)	0.71000	0.69000	10.78646	11.01660	1	False	0.22155
IA00378 (EL623955555)	0.50000	0.53000	13.00000	12.69892	1	False	2.21231
IA00379 (EL623955757)	0.54000	0.50000	12.59827	13.00000	1	False	1.78655
IA00383 (EL623959265)	0.63000	0.64000	11.67259	11.56616	1	False	-0.06420
IA00699 (EL632808123)	0.76000	0.77000	10.17479	10.04461	1	False	-0.03231

Table 2.5.8
Delta Analysis
English Language Arts Grade 10

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA04110 (EL807953958)	0.57500	0.54000	12.24353	12.59827	2	False	-0.66396
IA04111 (EL807957225)	0.79000	0.76000	9.77432	10.17479	1	False	-0.44074
IA04132 (EL808046697)	0.87000	0.82000	8.49444	9.33854	1	False	0.82186
IA04412 (EL813438114)	0.70000	0.69000	10.90240	11.01660	1	False	1.54794
IA06629 (EL811608986)	0.77500	0.74000	9.97834	10.42662	2	False	-0.86555
IA06631 (EL811610832)	0.62000	0.56500	11.77808	12.34537	2	False	-0.58290
IA06633 (EL811612272)	0.62000	0.58000	11.77808	12.19243	1	False	-1.02358
IA06635 (EL811612951)	0.78000	0.76000	9.91123	10.17479	1	False	0.60550
IA06636 (EL811614524)	0.81000	0.78000	9.48841	9.91123	1	False	-0.54915
IA06638 (EL811616340)	0.64000	0.60000	11.56616	11.98661	1	False	-1.02153
IA06641 (EL811617473)	0.82000	0.75000	9.33854	10.30204	1	False	1.96195
IA06642 (EL811618006)	0.82000	0.77000	9.33854	10.04461	1	False	-0.06607
IA09700 (EL108371827)	0.49500	0.41500	13.05013	13.85881	2	False	1.61934
IA09702 (EL108531390)	0.67000	0.62000	11.24035	11.77808	1	False	-0.94285
IA09703 (EL108534513)	0.66000	0.63000	11.35015	11.67259	1	False	-0.19838
IA09706 (EL108543427)	0.68000	0.65000	11.12920	11.45872	1	False	-0.20189

Table 2.5.9
Delta Analysis
Mathematics Grade 3

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00834 (MA293457)	0.80000	0.74000	9.63352	10.42662	1	False	-0.01129
IA00838 (MA293524)	0.79000	0.78000	9.77432	9.91123	1	False	0.55036
IA00850 (MA297405)	0.71000	0.68000	10.78646	11.12920	1	False	-0.72480
IA00852 (MA297438)	0.65000	0.60000	11.45872	11.98661	1	False	-0.63709
IA00924 (MA306310)	0.49000	0.50000	13.10028	13.00000	1	False	0.55950
IA00930 (MA306359)	0.68000	0.64000	11.12920	11.56616	1	False	-1.16220
IA00932 (MA306375)	0.51000	0.47000	12.89972	13.30108	1	False	-0.75033
IA01019 (MA311277)	0.81000	0.77000	9.48841	10.04461	1	False	-1.14745
IA01081 (MA623656013)	0.32000	0.29000	14.87080	15.21354	3	False	-0.37904
IA02323 (MA301611A)	0.87000	0.80000	8.49444	9.63352	1	False	1.20879
IA04659 (MA307303)	0.43000	0.44000	13.70550	13.60388	1	False	0.36895
IA04760 (MA713752330)	0.80000	0.79000	9.63352	9.77432	1	False	0.57826
IA04813 (MA735572247)	0.72000	0.69000	10.66863	11.01660	1	False	-0.71050
IA04828 (MA735653938)	0.59000	0.50000	12.08982	13.00000	1	False	1.32533
IA04844 (MA735735757)	0.62000	0.59000	11.77808	12.08982	1	False	-0.90464
IA07855 (MA900579464)	0.47000	0.47000	13.30108	13.30108	1	False	0.03329
IA10020 (MA001639117)	0.58667	0.47000	12.12409	13.30108	3	False	2.56294
IA12584 (MA900373094)	0.60000	0.56000	11.98661	12.39612	1	False	-1.00966
IA14263 (MA231151939)	0.52000	0.50000	12.79939	13.00000	1	False	-0.72580
IA14291 (MA231376908)	0.61000	0.62000	11.88272	11.77808	1	False	0.97538

Table 2.5.10
Delta Analysis
Mathematics Grade 4

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00828 (MA287237)	0.81000	0.75000	9.48841	10.30204	1	False	-0.65533
IA00841 (MA293718)	0.74000	0.67000	10.42662	11.24035	1	False	-0.69909
IA00861 (MA297629)	0.87000	0.86000	8.49444	8.67872	1	False	-0.06084
IA00906 (MA301811)	0.74000	0.71000	10.42662	10.78646	1	False	-0.45816
IA00958 (MA307055)	0.50000	0.48000	13.00000	13.20061	1	False	0.10529
IA00961 (MA307081)	0.56000	0.54000	12.39612	12.59827	1	False	0.07269
IA00963 (MA307085)	0.69000	0.63000	11.01660	11.67259	1	False	-1.16528
IA01049 (MA311537)	0.68000	0.63000	11.12920	11.67259	1	False	-0.93539
IA01055 (MA311572)	0.61000	0.61000	11.88272	11.88272	1	False	0.61052
IA01057 (MA311581)	0.56250	0.45250	12.37076	13.47739	4	False	0.02388
IA01093 (MA623879088)	0.74500	0.57000	10.36465	12.29450	2	False	2.40650
IA02175 (MA286769)	0.78000	0.72000	9.91123	10.66863	1	False	-0.83146
IA02819 (MA713583365)	0.68000	0.49000	11.12920	13.10028	1	False	2.48518
IA02841 (MA713774890)	0.55000	0.47000	12.49735	13.30108	1	False	-0.82411
IA02902 (MA714251321)	0.45000	0.42000	13.50265	13.80757	1	False	-0.16110
IA04945 (MA800744502)	0.63000	0.60000	11.67259	11.98661	1	False	-0.27230
IA04965 (MA800867144)	0.63000	0.58000	11.67259	12.19243	1	False	-0.84443
IA12273 (MA200267672)	0.56000	0.57000	12.39612	12.29450	1	False	0.91711
IA12278 (MA200334941)	0.52000	0.49000	12.79939	13.10028	1	False	-0.18288
IA12525 (MA713956124)	0.49250	0.36750	13.07520	14.35393	4	False	0.46920

Table 2.5.11
Delta Analysis
Mathematics Grade 5

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00771 (MA204911)	0.78000	0.74000	9.91123	10.42662	1	False	-1.01130
IA00776 (MA221207)	0.67000	0.63000	11.24035	11.67259	1	False	-0.95737
IA00803 (MA262207)	0.73000	0.65000	10.54875	11.45872	1	False	0.57503
IA00806 (MA272292)	0.48000	0.48000	13.20061	13.20061	1	False	0.35540
IA00880 (MA298106)	0.24000	0.23000	15.82521	15.95539	1	False	-0.71067
IA00885 (MA299556)	0.75000	0.66000	10.30204	11.35015	1	False	1.07379
IA00943 (MA306466)	0.68000	0.66000	11.12920	11.35015	1	False	-0.09253
IA00989 (MA307638)	0.85000	0.83000	8.85427	9.18334	1	False	-0.04865
IA01020 (MA311280)	0.45000	0.41000	13.50265	13.91018	1	False	-0.81006
IA01029 (MA311337)	0.85000	0.82000	8.85427	9.33854	1	False	-0.66685
IA01149 (MA624347774)	0.43000	0.45000	13.70550	13.50265	1	False	1.05808
IA01155 (MA624357395)	0.37500	0.36000	14.27456	14.43384	2	False	-0.50309
IA01159 (MA624377498)	0.57500	0.44750	12.24353	13.52792	4	False	2.42001
IA02552 (MA311324)	0.43000	0.45000	13.70550	13.50265	1	False	1.05808
IA02725 (MA704359215)	0.57000	0.52000	12.29450	12.79939	1	False	-0.67434
IA02736 (MA704359678)	0.52500	0.42000	12.74917	13.80757	4	False	1.62531
IA02917 (MA715102107)	0.85000	0.83000	8.85427	9.18334	1	False	-0.04865
IA04970 (MA800974344)	0.74000	0.70000	10.42662	10.90240	1	False	-0.96104
IA05002 (MA801652356)	0.56000	0.53000	12.39612	12.69892	1	False	-0.68288
IA05015 (MA801763240)	0.26000	0.24000	15.57338	15.82521	1	False	-0.99828

Table 2.5.12
Delta Analysis
Mathematics Grade 6

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00778 (MA221669)	0.81000	0.75000	9.48841	10.30204	1	False	-1.26049
IA00804 (MA264305)	0.77000	0.72000	10.04461	10.66863	1	False	-0.76720
IA00817 (MA280989)	0.49000	0.48000	13.10028	13.20061	1	False	0.13545
IA00818 (MA282268)	0.41000	0.37000	13.91018	14.32741	1	False	-0.22350
IA00819 (MA282277)	0.45000	0.39000	13.50265	14.11728	1	False	0.72387
IA00827 (MA287186)	0.58000	0.53000	12.19243	12.69892	1	False	-1.04601
IA00845 (MA296349)	0.57000	0.54000	12.29450	12.59827	1	False	-0.52613
IA00972 (MA307339)	0.71500	0.69000	10.72779	11.01660	4	False	0.84885
IA01058 (MA311658)	0.44000	0.44000	13.60388	13.60388	1	False	0.37518
IA02037 (MA217493)	0.68000	0.63000	11.12920	11.67259	1	False	-1.12911
IA02078 (MA251350)	0.36250	0.34000	14.40714	14.64985	4	False	-0.94959
IA02597 (MA311693)	0.80000	0.71000	9.63352	10.78646	1	False	1.05781
IA02698 (MA703179529)	0.23000	0.22000	15.95539	16.08877	1	False	-0.39546
IA02906 (MA714281467)	0.64000	0.56000	11.56616	12.39612	1	False	0.54028
IA04745 (MA703231515)	0.53500	0.54000	12.64862	12.59827	2	False	1.48089
IA04884 (MA736365836)	0.67000	0.61000	11.24035	11.88272	1	False	-0.94167
IA04899 (MA736511626)	0.60000	0.55000	11.98661	12.49735	1	False	-1.18635
IA05126 (MA805103779)	0.57000	0.47000	12.29450	13.30108	1	False	2.27948
IA05134 (MA805167086)	0.31000	0.33000	14.98340	14.75965	1	False	0.70051
IA05135 (MA805171807)	0.59000	0.57000	12.08982	12.29450	1	False	0.28320

Table 2.5.13
Delta Analysis
Mathematics Grade 7

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00831 (MA288414)	0.72000	0.73000	10.66863	10.54875	1	False	1.05131
IA00847 (MA296358)	0.53000	0.48000	12.69892	13.20061	1	False	-0.03849
IA00909 (MA301846)	0.88000	0.82000	8.30005	9.33854	1	False	0.73690
IA00948 (MA306600)	0.84000	0.81000	9.02217	9.48841	1	False	-0.70620
IA00949 (MA306605)	0.51000	0.44000	12.89972	13.60388	1	False	0.79063
IA01006 (MA311093)	0.86000	0.82000	8.67872	9.33854	1	False	-0.59620
IA01011 (MA311109)	0.47000	0.45000	13.30108	13.50265	1	False	-0.93269
IA01018 (MA311140)	0.38000	0.37000	14.22192	14.32741	1	False	-0.83244
IA01069 (MA316886)	0.52000	0.47250	12.79939	13.27595	4	False	-0.10522
IA01097 (MA623950280)	0.35000	0.31000	14.54128	14.98340	1	False	0.26620
IA02722 (MA703943185)	0.46750	0.46250	13.32622	13.37655	4	False	-0.36387
IA04486 (MA227988)	0.69000	0.65000	11.01660	11.45872	1	False	-0.75083
IA04538 (MA282218)	0.62000	0.62000	11.77808	11.77808	1	False	0.27453
IA04591 (MA298183)	0.52000	0.49000	12.79939	13.10028	1	False	-0.77436
IA04593 (MA298192)	0.19000	0.18000	16.51159	16.66146	1	False	-0.27844
IA04629 (MA303730)	0.50000	0.50000	13.00000	13.00000	1	False	-0.07805
IA07614 (MA306636)	0.47000	0.42000	13.30108	13.80757	1	False	0.15355
IA08208 (MA904265644)	0.42500	0.41000	13.75647	13.91018	2	False	-0.88180
IA10259 (MA005177715)	0.40000	0.37000	14.01339	14.32741	1	False	-0.37404
IA10268 (MA005205470)	0.36000	0.46000	14.43384	13.40173	1	False	3.43953

Table 2.5.14
Delta Analysis
Mathematics Grade 8

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA00849 (MA296757)	0.64000	0.54000	11.56616	12.59827	1	False	1.18946
IA00858 (MA297513)	0.78000	0.75000	9.91123	10.30204	1	False	-0.54732
IA00864 (MA297652)	0.70250	0.65750	10.87358	11.37740	4	False	-1.54549
IA00865 (MA297656)	0.56000	0.54000	12.39612	12.59827	1	False	-0.76119
IA00905 (MA301702)	0.52000	0.46000	12.79939	13.40173	1	False	-0.35784
IA00979 (MA307472)	0.65000	0.64000	11.45872	11.56616	1	False	0.13545
IA00985 (MA307570)	0.54000	0.55000	12.59827	12.49735	1	False	0.63671
IA01033 (MA311384)	0.59000	0.57000	12.08982	12.29450	1	False	-0.63292
IA01037 (MA311414)	0.41000	0.33000	13.91018	14.75965	1	False	1.36833
IA01042 (MA311448)	0.51000	0.50000	12.89972	13.00000	1	False	-0.49153
IA01125 (MA624247061)	0.42500	0.42000	13.75647	13.80757	2	False	-0.64336
IA02495 (MA309741)	0.45000	0.37000	13.50265	14.32741	1	False	1.05950
IA04665 (MA307399)	0.57000	0.48000	12.29450	13.20061	1	False	0.90441
IA04678 (MA309738)	0.39000	0.39000	14.11728	14.11728	1	False	-0.55780
IA04957 (MA800770988)	0.39000	0.40000	14.11728	14.01339	1	False	-0.04675
IA05059 (MA803856627)	0.67000	0.68000	11.24035	11.12920	1	False	1.31111
IA05070 (MA804042487)	0.33000	0.34000	14.75965	14.64985	1	False	-0.31289
IA10142 (MA002243189)	0.84000	0.74000	9.02217	10.42662	1	False	1.85199
IA12109 (MA002234564)	0.42500	0.39000	13.75647	14.11728	4	False	-1.10622
IA14628 (MA311461)	0.64000	0.60000	11.56616	11.98661	1	False	-1.45366

Table 2.5.15
Delta Analysis
Mathematics Grade 10

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA04800 (MA717740737)	0.42000	0.38000	13.80757	14.22192	1	False	-0.48979
IA04810 (MA735534256)	0.34500	0.34000	14.59542	14.64985	2	False	-0.68839
IA04819 (MA735579095)	0.57000	0.47000	12.29450	13.30108	1	False	0.29610
IA04824 (MA735632759)	0.45000	0.46000	13.50265	13.40173	1	False	0.33492
IA04842 (MA735734830)	0.39000	0.35000	14.11728	14.54128	1	False	-0.29356
IA04846 (MA735743236)	0.83000	0.69000	9.18334	11.01660	1	False	0.84507
IA04847 (MA735745569)	0.47000	0.43000	13.30108	13.70550	1	False	-0.79474
IA04871 (MA736059227)	0.49000	0.44000	13.10028	13.60388	1	False	-0.63426
IA04991 (MA801426792)	0.37000	0.52000	14.32741	12.79939	1	False	3.77640
IA04997 (MA801564574)	0.39000	0.34500	14.11728	14.59542	2	False	-0.14584
IA05048 (MA803762212)	0.48000	0.46000	13.20061	13.40173	1	False	-0.32350
IA05096 (MA804566054)	0.58500	0.48000	12.14119	13.20061	2	False	0.35619
IA05117 (MA804678931)	0.34000	0.29000	14.64985	15.21354	1	False	0.37971
IA05155 (MA806051920)	0.27000	0.29000	15.45125	15.21354	1	False	-0.36074
IA05165 (MA806383722)	0.47500	0.43250	13.25083	13.68005	4	False	-0.75462
IA05170 (MA806408603)	0.42000	0.37000	13.80757	14.32741	4	False	-0.20196
IA07559 (MA294305)	0.57000	0.52000	12.29450	12.79939	1	False	-0.65527
IA07655 (MA311248)	0.67000	0.59000	11.24035	12.08982	1	False	-0.71082
IA08162 (MA903674078)	0.73000	0.70000	10.54875	10.90240	1	False	0.71502
IA12388 (MA203209565)	0.35000	0.31000	14.54128	14.98340	1	False	-0.01154
IA12537 (MA717452568)	0.85000	0.77000	8.85427	10.04461	1	False	-0.63840

Table 2.5.16
Delta Analysis
Introductory Physics Grade 10

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA03500 (SC717283221)	0.60500	0.58500	11.93476	12.14119	2	False	0.03655
IA05503 (SC701073429)	0.61000	0.57000	11.88272	12.29450	1	False	-0.68941
IA05859 (SC800552298)	0.60000	0.57000	11.98661	12.29450	1	False	-0.34376
IA10657 (SC630578145)	0.65000	0.51000	11.45872	12.89972	1	False	1.99371
IA10702 (SC800954781)	0.58000	0.57000	12.19243	12.29450	1	False	0.34103
IA10704 (SC800964236)	0.39000	0.42000	14.11728	13.80757	1	False	1.28925
IA10788 (SC814181163)	0.53000	0.55000	12.69892	12.49735	1	False	1.29476
IA10789 (SC814344725)	0.50500	0.48000	12.94987	13.20061	2	False	-0.40626
IA10802 (SC815652038)	0.44250	0.34500	13.57854	14.59542	4	False	1.05535
IA10905 (SC905872783)	0.62000	0.48000	11.77808	13.20061	1	False	2.01616
IA10919 (SC906339928)	0.41000	0.37000	13.91018	14.32741	1	False	-1.01454
IA10921 (SC906340140)	0.76000	0.71000	10.17479	10.78646	1	False	-0.93404
IA10922 (SC906340259)	0.81000	0.74000	9.48841	10.42662	1	False	-0.36873
IA10923 (SC906340744)	0.46667	0.40333	13.33461	13.97891	3	False	-0.35618
IA10931 (SC906631611)	0.56000	0.51000	12.39612	12.89972	1	False	-1.12523
IA10936 (SC906662706)	0.81000	0.76000	9.48841	10.17479	1	False	-1.01206
IA10941 (SC906953250)	0.29000	0.29000	15.21354	15.21354	1	False	-0.13318
IA10943 (SC906965456)	0.75000	0.71000	10.30204	10.78646	1	False	-0.51065
IA10980 (SC910170718)	0.62000	0.57000	11.77808	12.29450	1	False	-1.03760
IA10983 (SC910436447)	0.52000	0.50000	12.79939	13.00000	1	False	-0.18352
IA11025 (SC913743446)	0.63000	0.57000	11.67259	12.29450	1	False	-0.90031
IA12842 (SC129545463)	0.47500	0.37500	13.25083	14.27456	2	False	0.98866

Table 2.5.17
Delta Analysis
Science Grade 5

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA05278 (SC299440)	0.68000	0.58000	11.12920	12.19243	1	False	1.36822
IA05523 (SC718127878)	0.69000	0.66000	11.01660	11.35015	1	False	-0.78768
IA05526 (SC735264282)	0.88000	0.83000	8.30005	9.18334	1	False	-0.00345
IA05530 (SC735267831)	0.84000	0.78000	9.02217	9.91123	1	False	0.14603
IA05545 (SC735535118)	0.49000	0.46000	13.10028	13.40173	1	False	-0.97547
IA05560 (SC736074266)	0.77000	0.71000	10.04461	10.78646	1	False	-0.41865
IA05562 (SC736074942)	0.60500	0.56500	11.93476	12.34537	2	False	-1.32609
IA05628 (SC802729980)	0.62000	0.59000	11.77808	12.08982	1	False	-0.80595
IA05630 (SC802758131)	0.73000	0.67000	10.54875	11.24035	1	False	-0.58549
IA05631 (SC802758561)	0.58000	0.48000	12.19243	13.20061	1	False	1.27089
IA05634 (SC802761427)	0.32333	0.30333	14.83359	15.05935	3	False	-0.88683
IA05657 (SC803732869)	0.47500	0.40500	13.25083	13.96170	2	False	-0.03773
IA05662 (SC803844809)	0.64500	0.61500	11.51258	11.83050	2	False	-0.79248
IA05664 (SC803847645)	0.76000	0.68000	10.17479	11.12920	1	False	0.66514
IA05681 (SC804060300)	0.41000	0.36000	13.91018	14.43384	1	False	-0.86299
IA05688 (SC804141602)	0.85000	0.84000	8.85427	9.02217	1	False	0.40120
IA08420 (SC304689)	0.77000	0.78000	10.04461	9.91123	1	False	1.70765
IA08491 (SC630232218)	0.70000	0.72000	10.90240	10.66863	1	False	2.06585
IA10648 (SC317084)	0.35000	0.35667	14.54128	14.46953	3	False	0.64844
IA12971 (SC315988)	0.70000	0.67000	10.90240	11.24035	1	False	-0.79059

Table 2.5.18
Delta Analysis
Science Grade 8

Item Id	Old P	New P	Old Delta	New Delta	Max	Discard	Std Dist
IA03287 (SC712841848)	0.35000	0.29000	14.54128	15.21354	1	False	-0.78363
IA05353 (SC310244)	0.65000	0.55000	11.45872	12.49735	1	False	1.92661
IA05522 (SC717662167)	0.51000	0.48000	12.89972	13.20061	1	False	-0.15953
IA05534 (SC735347597)	0.60000	0.59000	11.98661	12.08982	1	False	0.97949
IA05674 (SC803980484)	0.63000	0.55000	11.67259	12.49735	1	False	0.54352
IA05675 (SC803981496)	0.70000	0.60000	10.90240	11.98661	1	False	2.28546
IA05685 (SC804130460)	0.73000	0.66000	10.54875	11.35015	1	False	0.53636
IA05687 (SC804132888)	0.73000	0.68500	10.54875	11.07309	2	False	-1.22060
IA05690 (SC804367702)	0.51000	0.47000	12.89972	13.30108	1	False	-0.79663
IA05718 (SC807245653)	0.72000	0.67000	10.66863	11.24035	1	False	-0.93525
IA05720 (SC807247887)	0.56000	0.53000	12.39612	12.69892	1	False	-0.23482
IA05727 (SC809171062)	0.48000	0.46000	13.20061	13.40173	1	False	0.51092
IA05729 (SC809178849)	0.38667	0.32667	14.15207	14.79655	3	False	-0.91096
IA05732 (SC809268358)	0.33333	0.29000	14.72291	15.21354	3	False	-1.13398
IA05777 (SC816343670)	0.63500	0.61000	11.61950	11.88272	2	False	-0.08134
IA08548 (SC814241790)	0.65000	0.62000	11.45872	11.77808	1	False	-0.45748
IA10534 (SC002325536)	0.51000	0.44000	12.89972	13.60388	1	False	-0.37536
IA10633 (SC313185)	0.70000	0.69000	10.90240	11.01660	1	False	0.77372
IA12887 (SC204136839)	0.63000	0.57500	11.67259	12.24353	2	False	-1.06614
IA13122 (SC932538678)	0.76000	0.75000	10.17479	10.30204	1	False	0.59966

Section 2.6

Tabled B/B Analysis Results

Table 2.6.1
b/b Analysis
Biology Grade 10

Item Id	Old b	New b	Std Dist	Flag
IA03593 (SC316906)	-0.47740	-0.23620	1.40606	False
IA10582 (SC129438142)	0.02947	-0.20275	0.99504	False
IA10635 (SC313409)	0.39974	0.50250	-0.80946	False
IA10656 (SC630544518)	0.21926	0.47030	0.68979	False
IA10684 (SC723337422)	-1.23722	-1.38730	-1.12724	False
IA10696 (SC800163004)	-0.47521	-0.45930	-0.55870	False
IA10747 (SC804071827)	-0.08297	-0.07035	-1.03889	False
IA10808 (SC815940509)	1.32392	1.60300	-0.33764	False
IA10809 (SC815948686)	0.27475	0.09140	0.85175	False
IA10810 (SC815948962)	0.89720	0.88850	0.04712	False
IA10926 (SC906349045)	-0.17611	-0.20340	-1.02652	False
IA10927 (SC906351730)	-0.36740	-0.89150	3.08039	False
IA10930 (SC906544336)	-0.61536	-0.49380	0.52283	False
IA10989 (SC910635381)	-0.38930	-0.47430	-0.76930	False
IA10994 (SC910746953)	-0.19274	-0.11090	-0.30963	False
IA10995 (SC910749140)	0.41557	0.61150	-0.01619	False
IA10998 (SC910752674)	1.12543	1.11200	0.35105	False
IA11005 (SC911354147)	0.14246	0.18790	-1.01254	False
IA11031 (SC914149827)	0.56575	0.81210	0.25007	False
IA11033 (SC914353987)	1.08883	1.11900	-0.07083	False
IA11042 (SC915956318)	-0.34768	-0.33380	-0.72319	False
IA11054 (SC921067241)	-0.06053	0.02910	-0.39398	False

Table 2.6.2
b/b Analysis
English Language Arts Grade 3

Item Id	Old b	New b	Std Dist	Flag
IA00279 (EL308822)	-1.13290	-0.83870	-0.22240	False
IA00280 (EL308824)	-0.63980	-0.34500	-0.62366	False
IA00281 (EL308826)	0.34970	0.42860	0.42261	False
IA00282 (EL308827)	-0.35740	-0.02300	-0.71217	False
IA00283 (EL308835)	-0.09790	0.13640	-0.28189	False
IA00284 (EL308837)	-0.43050	-0.11830	-0.72341	False
IA00285 (EL308838)	-0.87910	-0.49830	-0.24065	False
IA00286 (EL308842)	0.58720	0.76220	0.40682	False
IA00287 (EL308855)	0.45036	0.63330	0.27778	False
IA00288 (EL308857)	0.87636	0.89317	0.98807	False
IA00443 (EL626042844)	-0.88090	-0.39500	-0.00985	False
IA00444 (EL626043062)	-0.45480	-0.14290	-0.73739	False
IA00445 (EL626043435)	-0.29030	2.03130	3.51336	False
IA00446 (EL626049849)	0.18010	0.42980	-0.08853	False
IA00450 (EL626050679)	-0.36670	-0.06120	-0.65670	False
IA00451 (EL626050927)	0.25900	1.05760	-0.25820	False
IA00452 (EL626051097)	-0.27885	-0.07070	-0.37257	False
IA00453 (EL626051328)	-0.45490	-0.11730	-0.68123	False

Table 2.6.3
b/b Analysis
English Language Arts Grade 4

Item Id	Old b	New b	Std Dist	Flag
IA00218 (EL307705)	-1.76920	-1.31430	-0.35817	False
IA00219 (EL307709)	-1.60100	-0.79100	1.85036	False
IA00220 (EL307710)	0.30890	0.66170	-0.37199	False
IA00221 (EL307713)	0.06570	0.33910	-1.05180	False
IA00222 (EL307714)	-1.43870	-1.11800	0.63092	False
IA00223 (EL307719)	-0.10560	0.35620	0.21760	False
IA00224 (EL307724)	-1.01420	-0.47130	-0.22216	False
IA00225 (EL307728)	-0.03253	0.25973	-1.11505	False
IA00226 (EL307729)	0.18940	0.22353	1.39305	False
IA00289 (EL309792)	-0.69930	-0.13140	0.51309	False
IA00407 (EL624647403)	0.56330	0.96740	0.56336	False
IA00408 (EL624647580)	-0.37720	-0.32470	2.02076	False
IA00411 (EL624652450)	-1.17980	-0.70680	-1.23167	False
IA00412 (EL624652621)	-1.98540	-1.44380	-0.99326	False
IA00414 (EL624652989)	0.58700	0.72510	-0.32988	False
IA00415 (EL624653348)	-0.47880	-0.14000	-0.97262	False
IA00416 (EL624653492)	-1.23880	-0.83720	-0.54951	False
IA00419 (EL624654711)	-1.69335	-1.03900	0.00698	False

Table 2.6.4
b/b Analysis
English Language Arts Grade 5

Item Id	Old b	New b	Std Dist	Flag
IA00495 (EL626304658)	-1.51250	-1.04690	-0.53049	False
IA00497 (EL626304969)	-0.35250	-0.19000	0.92830	False
IA00500 (EL626332335)	-0.60290	-0.32620	-0.01680	False
IA00501 (EL626332592)	-2.07030	-1.44780	-0.73458	False
IA00502 (EL626333002)	-1.74360	-1.10210	0.20310	False
IA00505 (EL626355215)	-0.61680	-0.28540	-0.69415	False
IA00506 (EL626355557)	-0.63560	-0.25970	-0.88131	False
IA00508 (EL626356291)	0.36345	0.68125	0.48464	False
IA00638 (EL627351056)	-0.63730	-0.32110	-0.45431	False
IA01669 (EL711809263)	-1.17720	-0.76440	-0.55864	False
IA01670 (EL711809592)	-0.81030	-0.34000	-0.03166	False
IA01671 (EL711827203)	-1.94850	-1.36350	-0.96108	False
IA01672 (EL711827807)	-1.03620	-0.77250	1.06921	False
IA01679 (EL711868011)	-0.11275	0.12080	-0.49772	False
IA01680 (EL711900602)	-0.76040	-0.06550	2.97620	False
IA01691 (EL712167015)	0.44530	0.57210	-0.30070	False

Table 2.6.5
b/b Analysis
English Language Arts Grade 6

Item Id	Old b	New b	Std Dist	Flag
IA00173 (EL303496)	-1.24100	-0.62630	-0.42978	False
IA00174 (EL303500)	-1.06110	-0.64960	1.71487	False
IA00175 (EL303504)	-0.06260	0.01700	1.64768	False
IA00176 (EL303508)	-1.79060	-0.95550	-0.96001	False
IA00177 (EL303510)	-2.30090	-1.24810	-0.40034	False
IA00178 (EL303513)	-0.89730	-0.36690	-0.90329	False
IA00179 (EL303514)	-0.35670	-0.04010	-0.42672	False
IA00180 (EL303518)	0.36760	0.47530	-0.95458	False
IA00515 (EL626864414)	-2.27770	-1.21670	-0.15947	False
IA00517 (EL626864724)	-1.34900	-0.48480	1.58598	False
IA00518 (EL626865003)	-1.08720	-0.51070	-0.63449	False
IA00520 (EL626865416)	1.71230	1.47800	0.57482	False
IA00522 (EL626865773)	-0.85560	-0.18250	1.21168	False
IA00523 (EL626865942)	-0.82610	-0.36590	-0.20822	False
IA00528 (EL626867605)	-1.81020	-0.97285	-0.89455	False
IA00530 (EL626868748)	-1.64220	-0.83545	-0.76358	False

Table 2.6.6
b/b Analysis
English Language Arts Grade 7

Item Id	Old b	New b	Std Dist	Flag
IA00065 (EL292160)	-1.04420	-0.44410	-0.82624	False
IA00066 (EL292163)	-0.34240	-0.20090	1.38851	False
IA00067 (EL292168)	0.33170	0.61810	0.25078	False
IA00068 (EL292170)	-1.02080	-0.42550	-0.80083	False
IA00069 (EL292172)	-0.69460	-0.31940	-0.36825	False
IA00070 (EL292176)	-0.53550	-0.15890	-0.99195	False
IA00081 (EL293802)	-0.82360	-0.28150	-0.75563	False
IA00082 (EL293804)	-0.04860	0.01360	1.32169	False
IA00257 (EL308358)	-1.92860	-0.89080	1.60913	False
IA00258 (EL308360)	-1.77805	-0.92765	-0.30118	False
IA00262 (EL308382)	-0.60150	-0.07300	-0.09105	False
IA00265 (EL308389)	-2.75910	-1.77420	-0.59390	False
IA00269 (EL308397)	-2.18720	-1.54030	1.70912	False
IA00655 (EL628647210)	-1.12960	-0.57860	-1.04294	False
IA00657 (EL628647689)	-1.35630	-0.56820	0.47755	False
IA00658 (EL628653398)	-1.92730	-1.08565	-0.98480	False

Table 2.6.7
b/b Analysis
English Language Arts Grade 8

Item Id	Old b	New b	Std Dist	Flag
IA00056 (EL290795)	-1.98940	-1.33810	0.28013	False
IA00057 (EL290798)	-2.16830	-1.26490	0.13886	False
IA00058 (EL290799)	-0.90680	-0.33230	0.16809	False
IA00059 (EL290800)	-0.93510	-0.49910	-0.30099	False
IA00060 (EL290801)	-0.88170	-0.43390	-0.54257	False
IA00061 (EL290805)	-0.11560	0.12190	-0.46164	False
IA00062 (EL290808)	0.09220	0.27480	-0.45970	False
IA00063 (EL290814)	0.87100	0.89110	-0.63999	False
IA00368 (EL623873883)	-1.00760	-0.47480	-0.46945	False
IA00371 (EL623951471)	-0.90930	-0.43625	-0.71063	False
IA00373 (EL623952377)	0.30370	0.44835	-0.62525	False
IA00374 (EL623952612)	-1.05740	-0.54510	-0.71315	False
IA00378 (EL623955555)	0.13500	0.00990	2.31015	False
IA00379 (EL623955757)	-0.25470	0.40410	2.55949	False
IA00383 (EL623959265)	-0.71780	-0.23890	-0.26038	False
IA00699 (EL632808123)	-1.33820	-0.79910	-0.27299	False

Table 2.6.8
b/b Analysis
English Language Arts Grade 10

Item Id	Old b	New b	Std Dist	Flag
IA04110 (EL807953958)	-0.45880	-0.20885	0.29518	False
IA04111 (EL807957225)	-1.89680	-1.28350	-0.89019	False
IA04132 (EL808046697)	-1.71090	-1.05390	-0.35570	False
IA04412 (EL813438114)	-0.50950	-0.48060	2.42542	False
IA06629 (EL811608986)	-2.80070	-2.03235	-0.95409	False
IA06631 (EL811610832)	-0.70640	-0.28855	-0.88726	False
IA06633 (EL811612272)	-0.37440	-0.00930	-0.90279	False
IA06635 (EL811612951)	-0.82500	-0.59110	1.00178	False
IA06636 (EL811614524)	-1.45740	-0.81920	-0.14436	False
IA06638 (EL811616340)	-0.14150	0.09770	-0.08805	False
IA06641 (EL811617473)	-1.57540	-0.91240	-0.09368	False
IA06642 (EL811618006)	-1.52330	-0.92710	-0.63478	False
IA09700 (EL108371827)	-0.18190	0.44755	1.71628	False
IA09702 (EL108531390)	-0.54280	0.03640	0.70012	False
IA09703 (EL108534513)	-0.32980	0.08400	-0.51178	False
IA09706 (EL108543427)	-0.81290	-0.33760	-0.67610	False

Table 2.6.9
b/b Analysis
Mathematics Grade 3

Item Id	Old b	New b	Std Dist	Flag
IA00834 (MA293457)	-1.07532	-0.73350	-0.52335	False
IA00838 (MA293524)	-1.07391	-0.91440	0.54837	False
IA00850 (MA297405)	-0.77079	-0.59740	-0.46090	False
IA00852 (MA297438)	-0.34564	-0.13160	-0.48831	False
IA00924 (MA306310)	1.22125	0.94720	0.90811	False
IA00930 (MA306359)	-0.64887	-0.36670	-0.27961	False
IA00932 (MA306375)	0.62678	0.75600	0.82801	False
IA01019 (MA311277)	-1.34368	-0.97610	-0.85167	False
IA01081 (MA623656013)	0.77344	0.72563	-1.26629	False
IA02323 (MA301611A)	-1.66238	-1.20540	-0.36800	False
IA04659 (MA307303)	0.45256	0.43330	-0.84022	False
IA04760 (MA713752330)	-1.48337	-1.29760	1.24309	False
IA04813 (MA735572247)	-0.89674	-0.63420	-1.22792	False
IA04828 (MA735653938)	-0.28038	0.00930	0.80821	False
IA04844 (MA735735757)	-0.21413	0.06450	0.81959	False
IA07855 (MA900579464)	0.32890	0.12600	2.21535	False
IA10020 (MA001639117)	-0.39311	-0.06270	1.11459	False
IA12584 (MA900373094)	-0.09591	0.00280	-1.13955	False
IA14263 (MA231151939)	0.34550	0.39030	-1.17126	False
IA14291 (MA231376908)	-0.45740	-0.37980	0.13176	False

Table 2.6.10
b/b Analysis
Mathematics Grade 4

Item Id	Old b	New b	Std Dist	Flag
IA00828 (MA287237)	-1.01067	-0.90860	-0.84020	False
IA00841 (MA293718)	-0.19829	-0.04490	-0.60209	False
IA00861 (MA297629)	-1.15739	-1.56340	1.35096	False
IA00906 (MA301811)	0.08108	-0.42080	1.74166	False
IA00958 (MA307055)	0.38174	0.44520	-0.71155	False
IA00961 (MA307081)	0.30650	0.36230	-0.67692	False
IA00963 (MA307085)	-0.29072	-0.12640	-0.55659	False
IA01049 (MA311537)	-0.24776	-0.21810	-0.55288	False
IA01055 (MA311572)	-0.19054	-0.24840	-0.17513	False
IA01057 (MA311581)	-0.15074	0.19180	0.21766	False
IA01093 (MA623879088)	-0.84106	-0.33675	0.90440	False
IA02175 (MA286769)	-0.70687	-0.53810	-0.54549	False
IA02819 (MA713583365)	-0.86050	0.12690	2.99528	False
IA02841 (MA713774890)	-0.00494	0.21150	-0.32535	False
IA02902 (MA714251321)	0.49503	0.50130	-0.46621	False
IA04945 (MA800744502)	-0.27406	-0.20610	-0.71816	False
IA04965 (MA800867144)	-0.37026	-0.35130	-0.50415	False
IA12273 (MA200267672)	1.06302	0.93300	0.11263	False
IA12278 (MA200334941)	0.08674	0.04400	-0.24603	False
IA12525 (MA713956124)	0.24926	0.44688	-0.40185	False

Table 2.6.11
b/b Analysis
Mathematics Grade 5

Item Id	Old b	New b	Std Dist	Flag
IA00771 (MA204911)	-1.21101	-0.93240	-1.02442	False
IA00776 (MA221207)	-0.67351	-0.45660	-0.85872	False
IA00803 (MA262207)	-0.59990	-0.31220	-0.46718	False
IA00806 (MA272292)	0.30894	0.43820	-0.88844	False
IA00880 (MA298106)	1.10548	1.30510	0.43247	False
IA00885 (MA299556)	-0.69172	-0.19310	2.21357	False
IA00943 (MA306466)	-0.21607	-0.18190	1.00617	False
IA00989 (MA307638)	-1.35755	-1.09670	-0.61184	False
IA01020 (MA311280)	0.52346	0.72820	-0.20471	False
IA01029 (MA311337)	-1.63471	-1.33110	-0.84216	False
IA01149 (MA624347774)	0.36148	0.33670	1.08696	False
IA01155 (MA624357395)	0.47839	0.59760	-0.96065	False
IA01159 (MA624377498)	-0.25810	0.09415	0.80126	False
IA02552 (MA311324)	0.71760	0.66820	0.98152	False
IA02725 (MA704359215)	-0.29968	-0.06580	-0.81598	False
IA02736 (MA704359678)	-0.13145	0.24328	1.25216	False
IA02917 (MA715102107)	-1.92789	-1.59440	-0.88258	False
IA04970 (MA800974344)	-0.90575	-0.61970	-0.85947	False
IA05002 (MA801652356)	-0.18540	-0.16350	1.13144	False
IA05015 (MA801763240)	0.96557	1.00460	-0.48938	False

Table 2.6.12
b/b Analysis
Mathematics Grade 6

Item Id	Old b	New b	Std Dist	Flag
IA00778 (MA221669)	-1.04570	-0.66440	-0.59495	False
IA00804 (MA264305)	-1.63124	-1.02650	-0.14095	False
IA00817 (MA280989)	0.33658	0.48330	-0.66670	False
IA00818 (MA282268)	0.77507	1.01980	0.60534	False
IA00819 (MA282277)	0.21070	0.43140	-0.96359	False
IA00827 (MA287186)	-0.20649	0.02970	-0.60392	False
IA00845 (MA296349)	0.07174	0.41560	0.30887	False
IA00972 (MA307339)	-1.06280	-0.71965	-0.06650	False
IA01058 (MA311658)	0.54087	0.61850	-0.23496	False
IA02037 (MA217493)	-0.69872	0.02380	3.45478	False
IA02078 (MA251350)	0.41917	0.55955	-0.76963	False
IA02597 (MA311693)	-1.16455	-0.78920	-0.25312	False
IA02698 (MA703179529)	1.27740	1.35310	-0.44527	False
IA02906 (MA714281467)	-0.69116	-0.23450	0.05507	False
IA04745 (MA703231515)	-0.18692	-0.08215	1.04127	False
IA04884 (MA736365836)	-0.80895	-0.49040	-0.31716	False
IA04899 (MA736511626)	-0.16000	0.15540	-0.57430	False
IA05126 (MA805103779)	-0.34567	-0.05640	-0.97529	False
IA05134 (MA805167086)	0.93914	0.84770	1.04852	False
IA05135 (MA805171807)	-0.39930	-0.18380	0.09248	False

Table 2.6.13
b/b Analysis
Mathematics Grade 7

Item Id	Old b	New b	Std Dist	Flag
IA00831 (MA288414)	-0.66739	-0.23950	0.30658	False
IA00847 (MA296358)	-0.21084	0.05440	-0.91710	False
IA00909 (MA301846)	-1.54287	-1.02030	-0.85178	False
IA00948 (MA306600)	-1.28457	-0.79780	-0.64217	False
IA00949 (MA306605)	-0.16589	0.16380	0.23151	False
IA01006 (MA311093)	-1.91073	-1.28900	-0.34094	False
IA01011 (MA311109)	0.42841	0.44470	1.25810	False
IA01018 (MA311140)	0.31130	0.44650	-0.37191	False
IA01069 (MA316886)	-0.17776	0.08295	-0.94486	False
IA01097 (MA623950280)	0.42086	0.59520	-0.53602	False
IA02722 (MA703943185)	-0.07728	0.18883	-0.55851	False
IA04486 (MA227988)	-0.57992	-0.24720	-0.89187	False
IA04538 (MA282218)	-0.64530	-0.43300	1.33652	False
IA04591 (MA298183)	0.65452	0.86580	0.81827	False
IA04593 (MA298192)	1.24472	1.28520	-0.19799	False
IA04629 (MA303730)	0.72024	0.80870	-0.87073	False
IA07614 (MA306636)	0.48891	0.72070	0.64283	False
IA08208 (MA904265644)	0.25219	0.41160	-0.59304	False
IA10259 (MA005177715)	1.13439	1.21760	0.17345	False
IA10268 (MA005205470)	0.73389	0.59240	2.94964	False

Table 2.6.14
b/b Analysis
Mathematics Grade 8

Item Id	Old b	New b	Std Dist	Flag
IA00849 (MA296757)	-0.65826	-0.27640	-0.65842	False
IA00858 (MA297513)	-0.99524	-0.79380	0.78589	False
IA00864 (MA297652)	-0.90338	-0.60175	-0.61746	False
IA00865 (MA297656)	0.23254	0.24710	0.54521	False
IA00905 (MA301702)	0.01325	0.36170	0.30802	False
IA00979 (MA307472)	-0.00438	0.00290	1.11755	False
IA00985 (MA307570)	0.33655	0.54550	-0.72417	False
IA01033 (MA311384)	0.02285	0.18070	-0.76507	False
IA01037 (MA311414)	0.18301	0.38720	-1.09559	False
IA01042 (MA311448)	-0.04950	-0.03750	1.15245	False
IA01125 (MA624247061)	0.20402	0.32530	-0.69145	False
IA02495 (MA309741)	0.06002	0.40020	0.30322	False
IA04665 (MA307399)	0.08175	0.56300	2.05933	False
IA04678 (MA309738)	0.91355	0.99980	-1.03423	False
IA04957 (MA800770988)	0.30600	0.27420	0.95766	False
IA05059 (MA803856627)	-0.51002	-0.18220	-1.01129	False
IA05070 (MA804042487)	0.96363	1.02110	-1.28113	False
IA10142 (MA002243189)	-1.70405	-1.00660	1.03443	False
IA12109 (MA002234564)	0.05829	0.23858	-1.10969	False
IA14628 (MA311461)	-0.12220	0.28340	0.72476	False

Table 2.6.15
b/b Analysis
Mathematics Grade 10

Item Id	Old b	New b	Std Dist	Flag
IA04800 (MA717740737)	0.19265	0.52750	-0.79956	False
IA04810 (MA735534256)	0.62606	0.89675	-0.75943	False
IA04819 (MA735579095)	-0.44337	0.09410	0.00532	False
IA04824 (MA735632759)	0.28508	0.55940	-0.51551	False
IA04842 (MA735734830)	1.03837	1.21330	-0.68180	False
IA04846 (MA735743236)	-1.43494	-0.76660	-0.21325	False
IA04847 (MA735745569)	0.60245	1.01960	0.37687	False
IA04871 (MA736059227)	0.20501	0.47660	-0.39196	False
IA04991 (MA801426792)	0.83592	0.51040	3.56091	False
IA04997 (MA801564574)	0.27905	0.52620	-0.29148	False
IA05048 (MA803762212)	0.37772	0.65810	-0.68156	False
IA05096 (MA804566054)	-0.46064	-0.13005	-0.01546	False
IA05117 (MA804678931)	0.70032	1.28490	1.83463	False
IA05155 (MA806051920)	1.01396	1.15620	-0.39044	False
IA05165 (MA806383722)	-0.11352	0.23715	-0.61671	False
IA05170 (MA806408603)	0.11184	0.51560	-0.35355	False
IA07559 (MA294305)	0.07250	0.55780	0.24577	False
IA07655 (MA311248)	-0.68740	-0.14980	-0.30392	False
IA08162 (MA903674078)	-1.02204	-0.65950	0.44390	False
IA12388 (MA203209565)	0.78869	1.10750	-0.16946	False
IA12537 (MA717452568)	-1.54240	-0.86570	-0.28331	False

Table 2.6.16
b/b Analysis
Introductory Physics Grade 10

Item Id	Old b	New b	Std Dist	Flag
IA03500 (SC717283221)	-0.36423	-0.70770	1.22152	False
IA05503 (SC701073429)	0.09913	0.05650	-0.67347	False
IA05859 (SC800552298)	-0.08701	-0.22940	-0.78413	False
IA10657 (SC630578145)	-0.20590	-0.04040	1.14025	False
IA10702 (SC800954781)	0.20557	0.16790	-0.57988	False
IA10704 (SC800964236)	1.05351	0.51520	2.41785	False
IA10788 (SC814181163)	0.47370	0.21680	0.03970	False
IA10789 (SC814344725)	0.28183	0.16900	-1.22432	False
IA10802 (SC815652038)	0.53053	0.59460	0.51674	False
IA10905 (SC905872783)	-0.17826	0.07080	1.93492	False
IA10919 (SC906339928)	0.94516	0.84640	-0.82425	False
IA10921 (SC906340140)	-0.36714	-0.32160	-0.05445	False
IA10922 (SC906340259)	-0.84733	-0.91580	-1.13946	False
IA10923 (SC906340744)	0.41847	0.43483	0.02039	False
IA10931 (SC906631611)	0.31400	0.34360	0.09805	False
IA10936 (SC906662706)	-0.95013	-1.06030	-0.70345	False
IA10941 (SC906953250)	1.39372	1.17600	-0.73475	False
IA10943 (SC906965456)	-0.41040	-0.55070	-0.66043	False
IA10980 (SC910170718)	0.27474	-0.09720	1.20503	False
IA10983 (SC910436447)	0.60759	0.40900	-0.56561	False
IA11025 (SC913743446)	-0.29134	-0.47480	-0.30904	False
IA12842 (SC129545463)	0.36004	0.34055	-0.34121	False

Table 2.6.17
b/b Analysis
Science Grade 5

Item Id	Old b	New b	Std Dist	Flag
IA05278 (SC299440)	-0.35550	-0.01610	-1.01285	False
IA05523 (SC718127878)	-0.57254	-0.13150	-0.54097	False
IA05526 (SC735264282)	-2.19381	-1.38100	0.49307	False
IA05530 (SC735267831)	-1.99363	-1.57930	1.15306	False
IA05545 (SC735535118)	0.10270	0.38810	-0.98019	False
IA05560 (SC736074266)	-0.97112	-0.54040	-0.87327	False
IA05562 (SC736074942)	-0.56224	-0.27135	-0.12058	False
IA05628 (SC802729980)	-0.65114	-0.32820	-0.30182	False
IA05630 (SC802758131)	-0.67964	-0.19050	-0.22131	False
IA05631 (SC802758561)	-0.62810	0.15350	2.99466	False
IA05634 (SC802761427)	1.07904	1.04583	0.36821	False
IA05657 (SC803732869)	0.10721	0.53785	0.57873	False
IA05662 (SC803844809)	-0.77645	-0.42880	-0.33877	False
IA05664 (SC803847645)	-1.28564	-0.70520	-0.34368	False
IA05681 (SC804060300)	1.06943	1.21510	-0.72179	False
IA05688 (SC804141602)	-1.76973	-1.19880	-0.92437	False
IA08420 (SC304689)	-1.45022	-0.83970	-0.32050	False
IA08491 (SC630232218)	-0.85795	-0.40570	-0.93803	False
IA10648 (SC317084)	0.71103	0.69957	0.80236	False
IA12971 (SC315988)	-1.19790	-0.92740	1.24804	False

Table 2.6.18
b/b Analysis
Science Grade 8

Item Id	Old b	New b	Std Dist	Flag
IA03287 (SC712841848)	0.68690	0.91080	-0.12134	False
IA05353 (SC310244)	-0.30800	0.30420	1.10933	False
IA05522 (SC717662167)	-0.21853	0.05490	0.20464	False
IA05534 (SC735347597)	-0.24985	-0.02060	0.72529	False
IA05674 (SC803980484)	-0.58719	0.23510	3.17108	False
IA05675 (SC803981496)	-0.93778	-0.36210	0.09489	False
IA05685 (SC804130460)	-1.00230	-0.51860	-0.98840	False
IA05687 (SC804132888)	-1.28641	-0.84325	-0.64635	False
IA05690 (SC804367702)	-0.09713	0.32180	-0.83181	False
IA05718 (SC807245653)	-1.02463	-0.59870	-0.70830	False
IA05720 (SC807247887)	-0.45995	-0.12090	-0.29017	False
IA05727 (SC809171062)	-0.09022	0.14660	0.48688	False
IA05729 (SC809178849)	0.36780	0.86893	0.53023	False
IA05732 (SC809268358)	1.11996	1.37400	-0.87471	False
IA05777 (SC816343670)	-0.84641	-0.51495	0.16784	False
IA08548 (SC814241790)	-0.67580	-0.42420	0.88920	False
IA10534 (SC002325536)	-0.17280	0.24970	-0.86538	False
IA10633 (SC313185)	-1.01031	-0.55820	-1.01272	False
IA12887 (SC204136839)	-0.84030	-0.31715	-0.39386	False
IA13122 (SC932538678)	-2.77620	-2.10710	-0.64633	False

Section 2.7

Tabled Beta Analysis Results

Table 2.7.1
Beta Analysis
Biology Grade 10

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA03593 (SC316906)	2	0.71000	0.62000	ON13	0312	-0.02568	False
IA10582 (SC129438142)	3	1.07000	1.08000	ON10	0410	0.04435	False
IA10635 (SC313409)	5	1.86000	1.69000	1308	ON13	-0.00756	False
IA10656 (SC630544518)	2	0.58000	0.48000	ON06	0602	-0.03956	False
IA10684 (SC723337422)	2	0.81000	0.74000	ON11	0411	-0.01226	False
IA10696 (SC800163004)	2	0.78000	0.66000	ON03	0302	-0.01096	False
IA10747 (SC804071827)	3	1.19000	1.02000	ON03	0104	-0.00005	False
IA10808 (SC815940509)	2	0.42000	0.38000	ON07	1110	-0.02815	False
IA10809 (SC815948686)	2	0.57000	0.53000	ON04	0107	0.03930	False
IA10810 (SC815948962)	2	0.39000	0.36000	0809	0602	0.01187	False
IA10926 (SC906349045)	3	1.18000	1.10000	ON07	0903	0.00757	False
IA10927 (SC906351730)	2	0.77000	0.77000	1105	0903	0.03701	False
IA10930 (SC906544336)	2	0.67000	0.61000	ON04	0806	-0.02137	False
IA10989 (SC910635381)	2	0.69000	0.63000	1105	0107	0.00537	False
IA10994 (SC910746953)	2	0.68000	0.61000	ON10	0410	-0.01422	False
IA10995 (SC910749140)	2	0.43000	0.35000	ON10	0410	-0.03713	False
IA10998 (SC910752674)	4	0.78000	0.73000	ON10	0410	0.01327	False
IA11005 (SC911354147)	2	0.52000	0.45000	1002	0405	-0.00269	False
IA11031 (SC914149827)	2	0.61000	0.57000	0508	0104	0.00643	False
IA11033 (SC914353987)	2	0.35000	0.35000	ON12	0806	0.02402	False
IA11042 (SC915956318)	2	0.66000	0.59000	ON13	ON13	-0.01251	False
IA11054 (SC921067241)	2	0.59000	0.52000	ON10	0410	-0.02560	False

Table 2.7.2
Beta Analysis
English Language Arts Grade 3

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00279 (EL308822)	2	0.77000	0.76000	ON03	ON03	0.01634	False
IA00280 (EL308824)	2	0.63000	0.66000	ON03	ON03	0.05297	True
IA00281 (EL308826)	2	0.55000	0.54000	ON03	ON03	0.01716	False
IA00282 (EL308827)	2	0.60000	0.57000	ON03	ON03	0.00201	False
IA00283 (EL308835)	2	0.56000	0.55000	ON03	ON03	0.02700	False
IA00284 (EL308837)	2	0.64000	0.63000	ON03	ON03	0.02227	False
IA00285 (EL308838)	2	0.76000	0.74000	ON03	ON03	0.01464	False
IA00286 (EL308842)	2	0.43000	0.42000	ON03	ON03	0.01527	False
IA00287 (EL308855)	4	1.17000	1.14000	ON03	ON03	0.02159	False
IA00288 (EL308857)	4	0.95000	1.01000	ON03	ON03	0.04763	False
IA00443 (EL626042844)	2	0.66000	0.62000	ON04	ON04	-0.00425	False
IA00444 (EL626043062)	2	0.65000	0.63000	ON04	ON04	0.01934	False
IA00445 (EL626043435)	3	1.03000	0.50000	ON04	ON04	-0.26062	True
IA00446 (EL626049849)	2	0.50000	0.50000	ON04	ON04	0.03783	False
IA00450 (EL626050679)	2	0.65000	0.62000	ON04	ON04	0.01211	False
IA00451 (EL626050927)	2	0.54000	0.49000	ON04	ON04	-0.02607	False
IA00452 (EL626051097)	3	1.04000	1.03000	ON04	ON04	0.03325	False
IA00453 (EL626051328)	2	0.65000	0.61000	ON04	ON04	0.00265	False

Table 2.7.3
Beta Analysis
English Language Arts Grade 4

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00218 (EL307705)	2	0.82000	0.80000	ON03	ON03	-0.00360	False
IA00219 (EL307709)	2	0.77000	0.75000	ON03	ON03	-0.01569	False
IA00220 (EL307710)	2	0.45000	0.44000	ON03	ON03	-0.01246	False
IA00221 (EL307713)	2	0.53000	0.52000	ON03	ON03	-0.00057	False
IA00222 (EL307714)	2	0.77000	0.75000	ON03	ON03	0.00085	False
IA00223 (EL307719)	2	0.57000	0.54000	ON03	ON03	-0.02669	False
IA00224 (EL307724)	2	0.73000	0.70000	ON03	ON03	-0.01806	False
IA00225 (EL307728)	4	1.33000	1.34000	ON03	ON03	0.01038	False
IA00226 (EL307729)	4	1.26000	1.32000	ON03	ON03	0.03814	False
IA00289 (EL309792)	2	0.62000	0.57000	ON03	ON03	-0.04151	False
IA00407 (EL624647403)	2	0.42000	0.42000	ON04	ON04	-0.01350	False
IA00408 (EL624647580)	2	0.54000	0.61000	ON04	ON04	0.07508	True
IA00411 (EL624652450)	2	0.76000	0.74000	ON04	ON04	-0.01330	False
IA00412 (EL624652621)	2	0.89000	0.89000	ON04	ON04	0.00221	False
IA00414 (EL624652989)	2	0.44000	0.45000	ON04	ON04	0.00334	False
IA00415 (EL624653348)	2	0.63000	0.62000	ON04	ON04	-0.01768	False
IA00416 (EL624653492)	3	1.42000	1.41000	ON04	ON04	-0.00061	False
IA00419 (EL624654711)	3	1.59000	1.51000	ON04	ON04	-0.02973	False

Table 2.7.4
Beta Analysis
English Language Arts Grade 5

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00495 (EL626304658)	2	0.75000	0.76000	ON03	ON03	0.00139	False
IA00497 (EL626304969)	2	0.67000	0.69000	ON03	ON03	0.01860	False
IA00500 (EL626332335)	2	0.64000	0.66000	ON03	ON03	0.01981	False
IA00501 (EL626332592)	2	0.83000	0.83000	ON03	ON03	0.00137	False
IA00502 (EL626333002)	2	0.81000	0.80000	ON03	ON03	-0.00915	False
IA00505 (EL626355215)	2	0.61000	0.61000	ON03	ON03	-0.00055	False
IA00506 (EL626355557)	2	0.65000	0.65000	ON03	ON03	-0.00321	False
IA00508 (EL626356291)	3	0.75000	0.73000	ON03	ON03	-0.02072	False
IA00638 (EL627351056)	2	0.66000	0.67000	ON03	ON03	0.01103	False
IA01669 (EL711809263)	2	0.74000	0.74000	ON04	ON04	0.00789	False
IA01670 (EL711809592)	2	0.74000	0.72000	ON04	ON04	-0.01363	False
IA01671 (EL711827203)	2	0.89000	0.88000	ON04	ON04	-0.00290	False
IA01672 (EL711827807)	2	0.68000	0.66000	ON04	ON04	-0.00867	False
IA01679 (EL711868011)	3	0.93000	0.92000	ON04	ON04	0.00149	False
IA01680 (EL711900602)	2	0.66000	0.64000	ON04	ON04	-0.01717	False
IA01691 (EL712167015)	2	0.47000	0.49000	ON04	ON04	0.02929	False

Table 2.7.5
Beta Analysis
English Language Arts Grade 6

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00173 (EL303496)	2	0.74000	0.74000	ON04	ON04	0.00344	False
IA00174 (EL303500)	2	0.64000	0.65000	ON04	ON04	0.00825	False
IA00175 (EL303504)	2	0.61000	0.65000	ON04	ON04	0.05249	True
IA00176 (EL303508)	2	0.72000	0.73000	ON04	ON04	0.01759	False
IA00177 (EL303510)	2	0.86000	0.85000	ON04	ON04	-0.00176	False
IA00178 (EL303513)	2	0.68000	0.71000	ON04	ON04	0.02383	False
IA00179 (EL303514)	2	0.61000	0.61000	ON04	ON04	0.01075	False
IA00180 (EL303518)	2	0.54000	0.53000	ON04	ON04	0.00072	False
IA00515 (EL626864414)	2	0.82000	0.80000	ON03	ON03	-0.01390	False
IA00517 (EL626864724)	2	0.70000	0.66000	ON03	ON03	-0.03596	False
IA00518 (EL626865003)	2	0.68000	0.65000	ON03	ON03	-0.02008	False
IA00520 (EL626865416)	2	0.42000	0.41000	ON03	ON03	-0.00877	False
IA00522 (EL626865773)	2	0.70000	0.68000	ON03	ON03	-0.01581	False
IA00523 (EL626865942)	2	0.65000	0.65000	ON03	ON03	0.00681	False
IA00528 (EL626867605)	3	1.53000	1.51000	ON03	ON03	-0.00240	False
IA00530 (EL626868748)	3	1.43000	1.40000	ON03	ON03	-0.00942	False

Table 2.7.6
Beta Analysis
English Language Arts Grade 7

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00065 (EL292160)	2	0.71000	0.71000	ON04	ON04	0.00047	False
IA00066 (EL292163)	2	0.59000	0.62000	ON04	ON04	0.02439	False
IA00067 (EL292168)	2	0.48000	0.51000	ON04	ON04	0.01915	False
IA00068 (EL292170)	2	0.69000	0.67000	ON04	ON04	-0.01960	False
IA00069 (EL292172)	2	0.62000	0.64000	ON04	ON04	0.01708	False
IA00070 (EL292176)	2	0.61000	0.59000	ON04	ON04	-0.02299	False
IA00081 (EL293802)	2	0.67000	0.67000	ON04	ON04	0.00248	False
IA00082 (EL293804)	2	0.54000	0.55000	ON04	ON04	0.01836	False
IA00257 (EL308358)	2	0.82000	0.81000	ON03	ON03	0.00410	False
IA00258 (EL308360)	3	1.49000	1.45000	ON03	ON03	-0.02245	False
IA00262 (EL308382)	2	0.63000	0.66000	ON03	ON03	0.02148	False
IA00265 (EL308389)	2	0.90000	0.89000	ON03	ON03	-0.00095	False
IA00269 (EL308397)	2	0.80000	0.84000	ON03	ON03	0.02983	False
IA00655 (EL628647210)	2	0.72000	0.74000	ON03	ON03	0.01670	False
IA00657 (EL628647689)	2	0.75000	0.73000	ON03	ON03	-0.02025	False
IA00658 (EL628653398)	3	1.51000	1.48000	ON03	ON03	-0.01867	False

Table 2.7.7
Beta Analysis
English Language Arts Grade 8

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00056 (EL290795)	2	0.76000	0.77000	ON04	ON04	0.02191	False
IA00057 (EL290798)	2	0.79000	0.78000	ON04	ON04	0.00140	False
IA00058 (EL290799)	2	0.74000	0.74000	ON04	ON04	0.00093	False
IA00059 (EL290800)	2	0.68000	0.67000	ON04	ON04	0.00495	False
IA00060 (EL290801)	2	0.76000	0.74000	ON04	ON04	-0.00320	False
IA00061 (EL290805)	2	0.56000	0.57000	ON04	ON04	0.01463	False
IA00062 (EL290808)	2	0.54000	0.56000	ON04	ON04	0.02092	False
IA00063 (EL290814)	2	0.39000	0.37000	ON04	ON04	-0.02239	False
IA00368 (EL623873883)	2	0.73000	0.72000	ON03	ON03	-0.00809	False
IA00371 (EL623951471)	3	1.23000	1.20000	ON03	ON03	-0.00987	False
IA00373 (EL623952377)	3	0.87000	0.83000	ON03	ON03	-0.01229	False
IA00374 (EL623952612)	2	0.71000	0.69000	ON03	ON03	-0.00806	False
IA00378 (EL623955555)	2	0.50000	0.53000	ON03	ON03	0.04093	False
IA00379 (EL623955757)	2	0.54000	0.50000	ON03	ON03	-0.04550	False
IA00383 (EL623959265)	2	0.63000	0.64000	ON03	ON03	0.01068	False
IA00699 (EL632808123)	2	0.76000	0.77000	ON03	ON03	0.01724	False

Table 2.7.8
Beta Analysis
English Language Arts Grade 10

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA04110 (EL807953958)	3	1.15000	1.08000	ON03	ON03	0.02715	False
IA04111 (EL807957225)	2	0.79000	0.76000	ON03	ON03	0.01222	False
IA04132 (EL808046697)	2	0.87000	0.82000	ON03	ON03	-0.00252	False
IA04412 (EL813438114)	2	0.70000	0.69000	ON03	ON03	0.05045	True
IA06629 (EL811608986)	3	1.55000	1.48000	ON03	ON03	-0.00904	False
IA06631 (EL811610832)	3	1.24000	1.13000	ON03	ON03	0.00475	False
IA06633 (EL811612272)	2	0.62000	0.58000	ON03	ON03	0.01565	False
IA06635 (EL811612951)	2	0.78000	0.76000	ON03	ON03	0.02964	False
IA06636 (EL811614524)	2	0.81000	0.78000	ON03	ON03	0.00377	False
IA06638 (EL811616340)	2	0.64000	0.60000	ON03	ON03	0.01771	False
IA06641 (EL811617473)	2	0.82000	0.75000	ON03	ON03	-0.02087	False
IA06642 (EL811618006)	2	0.82000	0.77000	ON03	ON03	-0.00654	False
IA09700 (EL108371827)	3	0.99000	0.83000	ON05	ON04	-0.06574	True
IA09702 (EL108531390)	2	0.67000	0.62000	ON05	ON04	-0.02588	False
IA09703 (EL108534513)	2	0.66000	0.63000	ON05	ON04	-0.00292	False
IA09706 (EL108543427)	2	0.68000	0.65000	ON06	ON04	0.00288	False

Table 2.7.9
Beta Analysis
Mathematics Grade 3

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00834 (MA293457)	2	0.80000	0.74000	ON09	ON09	0.00476	False
IA00838 (MA293524)	2	0.79000	0.78000	ON14	ON14	0.01841	False
IA00850 (MA297405)	2	0.71000	0.68000	ON17	ON06	0.01955	False
IA00852 (MA297438)	2	0.65000	0.60000	ON13	ON13	-0.00981	False
IA00924 (MA306310)	2	0.49000	0.50000	ON05	ON05	0.01717	False
IA00930 (MA306359)	2	0.68000	0.64000	ON03	ON03	-0.01184	False
IA00932 (MA306375)	2	0.51000	0.47000	ON12	ON12	-0.01668	False
IA01019 (MA311277)	2	0.81000	0.77000	ON14	ON14	-0.02712	False
IA01081 (MA623656013)	4	0.96000	0.87000	ON02	ON02	0.01107	False
IA02323 (MA301611A)	2	0.87000	0.80000	ON12	ON12	-0.01610	False
IA04659 (MA307303)	2	0.43000	0.44000	ON03	ON05	0.02724	False
IA04760 (MA713752330)	2	0.80000	0.79000	ON07	ON07	0.03403	False
IA04813 (MA735572247)	2	0.72000	0.69000	ON10	ON10	0.00576	False
IA04828 (MA735653938)	2	0.59000	0.50000	ON06	ON06	-0.04038	False
IA04844 (MA735735757)	2	0.62000	0.59000	ON15	ON15	-0.00853	False
IA07855 (MA900579464)	2	0.47000	0.47000	ON04	ON04	0.04494	False
IA10020 (MA001639117)	4	1.76000	1.41000	ON11	ON11	-0.03055	False
IA12584 (MA900373094)	2	0.60000	0.56000	ON10	ON10	-0.00554	False
IA14263 (MA231151939)	2	0.52000	0.50000	ON05	ON08	-0.01097	False
IA14291 (MA231376908)	2	0.61000	0.62000	ON15	ON08	0.04092	False

Table 2.7.10
Beta Analysis
Mathematics Grade 4

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00828 (MA287237)	2	0.81000	0.75000	ON11	ON06	0.01953	False
IA00841 (MA293718)	2	0.74000	0.67000	ON09	ON09	0.01688	False
IA00861 (MA297629)	2	0.87000	0.86000	ON04	ON09	0.04299	False
IA00906 (MA301811)	2	0.74000	0.71000	ON08	ON08	0.01130	False
IA00958 (MA307055)	2	0.50000	0.48000	ON05	ON05	0.02085	False
IA00961 (MA307081)	2	0.56000	0.54000	ON09	ON08	0.03716	False
IA00963 (MA307085)	2	0.69000	0.63000	ON12	ON12	0.02720	False
IA01049 (MA311537)	2	0.68000	0.63000	ON13	ON13	0.00650	False
IA01055 (MA311572)	2	0.61000	0.61000	ON14	ON14	0.07800	True
IA01057 (MA311581)	5	2.25000	1.81000	ON02	ON02	-0.03925	False
IA01093 (MA623879088)	3	1.49000	1.14000	ON03	ON03	-0.05288	True
IA02175 (MA286769)	2	0.78000	0.72000	ON06	ON06	0.03092	False
IA02819 (MA713583365)	2	0.68000	0.49000	ON06	ON11	-0.14572	True
IA02841 (MA713774890)	2	0.55000	0.47000	ON17	ON13	-0.02310	False
IA02902 (MA714251321)	2	0.45000	0.42000	ON16	ON12	0.03098	False
IA04945 (MA800744502)	2	0.63000	0.60000	ON04	ON04	0.04173	False
IA04965 (MA800867144)	2	0.63000	0.58000	ON15	ON15	0.05701	True
IA12273 (MA200267672)	2	0.56000	0.57000	ON05	ON05	0.02528	False
IA12278 (MA200334941)	2	0.52000	0.49000	ON07	ON07	0.04297	False
IA12525 (MA713956124)	5	1.97000	1.47000	ON10	ON10	-0.02098	False

Table 2.7.11
Beta Analysis
Mathematics Grade 5

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00771 (MA204911)	2	0.78000	0.74000	ON05	ON05	0.01838	False
IA00776 (MA221207)	2	0.67000	0.63000	ON05	ON05	0.02124	False
IA00803 (MA262207)	2	0.73000	0.65000	ON06	ON06	-0.02608	False
IA00806 (MA272292)	2	0.48000	0.48000	ON09	ON09	0.02845	False
IA00880 (MA298106)	2	0.24000	0.23000	ON14	ON14	-0.00817	False
IA00885 (MA299556)	2	0.75000	0.66000	ON04	ON04	-0.03956	False
IA00943 (MA306466)	2	0.68000	0.66000	ON06	ON06	0.02394	False
IA00989 (MA307638)	2	0.85000	0.83000	ON07	ON07	0.01947	False
IA01020 (MA311280)	2	0.45000	0.41000	ON17	ON14	-0.02538	False
IA01029 (MA311337)	2	0.85000	0.82000	ON07	ON07	0.01338	False
IA01149 (MA624347774)	2	0.43000	0.45000	ON08	ON08	0.04331	False
IA01155 (MA624357395)	3	0.75000	0.72000	ON03	ON03	0.00966	False
IA01159 (MA624377498)	5	2.30000	1.79000	ON02	ON02	-0.02757	False
IA02552 (MA311324)	2	0.43000	0.45000	ON13	ON13	0.07321	True
IA02725 (MA704359215)	2	0.57000	0.52000	ON12	ON12	0.00484	False
IA02736 (MA704359678)	5	2.10000	1.68000	ON10	ON10	-0.04230	False
IA02917 (MA715102107)	2	0.85000	0.83000	ON15	ON15	0.00643	False
IA04970 (MA800974344)	2	0.74000	0.70000	ON08	ON04	0.00451	False
IA05002 (MA801652356)	2	0.56000	0.53000	ON11	ON11	0.07395	True
IA05015 (MA801763240)	2	0.26000	0.24000	ON16	ON13	0.03280	False

Table 2.7.12
Beta Analysis
Mathematics Grade 6

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00778 (MA221669)	2	0.81000	0.75000	ON11	ON11	0.00347	False
IA00804 (MA264305)	2	0.77000	0.72000	ON17	ON13	-0.01227	False
IA00817 (MA280989)	2	0.49000	0.48000	ON14	ON14	0.00271	False
IA00818 (MA282268)	2	0.41000	0.37000	ON05	ON05	-0.02352	False
IA00819 (MA282277)	2	0.45000	0.39000	ON11	ON11	-0.01643	False
IA00827 (MA287186)	2	0.58000	0.53000	ON09	ON09	-0.01033	False
IA00845 (MA296349)	2	0.57000	0.54000	ON16	ON09	-0.01833	False
IA00972 (MA307339)	5	2.86000	2.76000	ON02	ON02	0.00747	False
IA01058 (MA311658)	2	0.44000	0.44000	ON13	ON13	0.02044	False
IA02037 (MA217493)	2	0.68000	0.63000	ON14	ON14	-0.03023	False
IA02078 (MA251350)	5	1.45000	1.36000	ON03	ON03	0.00208	False
IA02597 (MA311693)	2	0.80000	0.71000	ON04	ON04	-0.00340	False
IA02698 (MA703179529)	2	0.23000	0.22000	ON15	ON15	0.00481	False
IA02906 (MA714281467)	2	0.64000	0.56000	ON10	ON10	-0.03986	False
IA04745 (MA703231515)	3	1.07000	1.08000	ON08	ON08	0.02766	False
IA04884 (MA736365836)	2	0.67000	0.61000	ON12	ON12	0.00006	False
IA04899 (MA736511626)	2	0.60000	0.55000	ON10	ON10	-0.00649	False
IA05126 (MA805103779)	2	0.57000	0.47000	ON07	ON07	-0.00854	False
IA05134 (MA805167086)	2	0.31000	0.33000	ON06	ON06	0.03579	False
IA05135 (MA805171807)	2	0.59000	0.57000	ON08	ON08	0.00547	False

Table 2.7.13
Beta Analysis
Mathematics Grade 7

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00831 (MA288414)	2	0.72000	0.73000	ON07	ON07	0.02060	False
IA00847 (MA296358)	2	0.53000	0.48000	ON09	ON09	-0.00883	False
IA00909 (MA301846)	2	0.88000	0.82000	ON13	ON12	-0.01391	False
IA00948 (MA306600)	2	0.84000	0.81000	ON11	ON11	-0.01140	False
IA00949 (MA306605)	2	0.51000	0.44000	ON05	ON05	-0.02918	False
IA01006 (MA311093)	2	0.86000	0.82000	ON05	ON05	-0.00753	False
IA01011 (MA311109)	2	0.47000	0.45000	ON12	ON12	0.02320	False
IA01018 (MA311140)	2	0.38000	0.37000	ON10	ON10	0.00691	False
IA01069 (MA316886)	5	2.08000	1.89000	ON03	ON03	-0.00286	False
IA01097 (MA623950280)	2	0.35000	0.31000	ON06	ON06	-0.01010	False
IA02722 (MA703943185)	5	1.87000	1.85000	ON02	ON02	-0.01191	False
IA04486 (MA227988)	2	0.69000	0.65000	ON09	ON09	-0.00297	False
IA04538 (MA282218)	2	0.62000	0.62000	ON08	ON08	0.03888	False
IA04591 (MA298183)	2	0.52000	0.49000	ON03	ON03	0.00082	False
IA04593 (MA298192)	2	0.19000	0.18000	ON10	ON10	-0.01431	False
IA04629 (MA303730)	2	0.50000	0.50000	ON07	ON07	-0.00126	False
IA07614 (MA306636)	2	0.47000	0.42000	ON08	ON08	-0.02985	False
IA08208 (MA904265644)	3	0.85000	0.82000	ON05	ON05	0.00628	False
IA10259 (MA005177715)	2	0.40000	0.37000	ON04	ON04	-0.01907	False
IA10268 (MA005205470)	2	0.36000	0.46000	ON14	ON02	0.10510	True

Table 2.7.14
Beta Analysis
Mathematics Grade 8

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA00849 (MA296757)	2	0.64000	0.54000	ON06	ON06	-0.04246	False
IA00858 (MA297513)	2	0.78000	0.75000	ON04	ON04	0.01167	False
IA00864 (MA297652)	5	2.81000	2.63000	ON03	ON03	0.00412	False
IA00865 (MA297656)	2	0.56000	0.54000	ON13	ON09	0.00960	False
IA00905 (MA301702)	2	0.52000	0.46000	ON07	ON07	-0.04014	False
IA00979 (MA307472)	2	0.65000	0.64000	ON10	ON10	0.03342	False
IA00985 (MA307570)	2	0.54000	0.55000	ON05	ON05	0.02812	False
IA01033 (MA311384)	2	0.59000	0.57000	ON08	ON08	0.00808	False
IA01037 (MA311414)	2	0.41000	0.33000	ON10	ON10	-0.01412	False
IA01042 (MA311448)	2	0.51000	0.50000	ON13	ON02	0.03387	False
IA01125 (MA624247061)	3	0.85000	0.84000	ON14	ON05	0.01039	False
IA02495 (MA309741)	2	0.45000	0.37000	ON08	ON08	-0.04428	False
IA04665 (MA307399)	2	0.57000	0.48000	ON06	ON06	-0.07028	True
IA04678 (MA309738)	2	0.39000	0.39000	ON04	ON04	0.01294	False
IA04957 (MA800770988)	2	0.39000	0.40000	ON11	ON11	0.05090	True
IA05059 (MA803856627)	2	0.67000	0.68000	ON09	ON09	0.02792	False
IA05070 (MA804042487)	2	0.33000	0.34000	ON07	ON07	0.01931	False
IA10142 (MA002243189)	2	0.84000	0.74000	ON12	ON12	-0.03395	False
IA12109 (MA002234564)	5	1.70000	1.56000	ON02	ON02	0.00102	False
IA14628 (MA311461)	2	0.64000	0.60000	ON10	ON03	-0.01942	False

Table 2.7.15
Beta Analysis
Mathematics Grade 10

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA04800 (MA717740737)	2	0.42000	0.38000	ON11	ON11	-0.00766	False
IA04810 (MA735534256)	3	0.69000	0.68000	ON02	ON02	0.01472	False
IA04819 (MA735579095)	2	0.57000	0.47000	ON18	ON18	-0.05707	True
IA04824 (MA735632759)	2	0.45000	0.46000	ON17	ON17	0.04079	False
IA04842 (MA735734830)	2	0.39000	0.35000	ON09	ON09	-0.02331	False
IA04846 (MA735743236)	2	0.83000	0.69000	ON20	ON20	-0.03928	False
IA04847 (MA735745569)	2	0.47000	0.43000	ON06	ON03	-0.03616	False
IA04871 (MA736059227)	2	0.49000	0.44000	ON03	ON06	-0.01987	False
IA04991 (MA801426792)	2	0.37000	0.52000	ON07	ON07	0.18186	True
IA04997 (MA801564574)	3	0.78000	0.69000	ON15	ON15	0.00647	False
IA05048 (MA803762212)	2	0.48000	0.46000	ON16	ON16	0.00370	False
IA05096 (MA804566054)	3	1.17000	0.96000	ON05	ON05	0.01904	False
IA05117 (MA804678931)	2	0.34000	0.29000	ON19	ON19	-0.02410	False
IA05155 (MA806051920)	2	0.27000	0.29000	ON04	ON04	0.03096	False
IA05165 (MA806383722)	5	1.90000	1.73000	ON14	ON14	-0.00329	False
IA05170 (MA806408603)	5	1.68000	1.48000	ON17	ON17	-0.01719	False
IA07559 (MA294305)	2	0.57000	0.52000	ON13	ON13	-0.03011	False
IA07655 (MA311248)	2	0.67000	0.59000	ON08	ON08	-0.01799	False
IA08162 (MA903674078)	2	0.73000	0.70000	ON07	ON07	0.01823	False
IA12388 (MA203209565)	2	0.35000	0.31000	ON10	ON10	-0.01452	False
IA12537 (MA717452568)	2	0.85000	0.77000	ON12	ON12	-0.01390	False

Table 2.7.16
Beta Analysis
Introductory Physics Grade 10

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA03500 (SC717283221)	3	1.21000	1.17000	ON02	ON08	0.02868	False
IA05503 (SC701073429)	2	0.61000	0.57000	ON05	1008	0.00677	False
IA05859 (SC800552298)	2	0.60000	0.57000	ON12	ES04	0.02331	False
IA10657 (SC630578145)	2	0.65000	0.51000	ON08	ON07	-0.06432	True
IA10702 (SC800954781)	2	0.58000	0.57000	ON02	ES11	0.03773	False
IA10704 (SC800964236)	2	0.39000	0.42000	ON12	ON10	0.06805	True
IA10788 (SC814181163)	2	0.53000	0.55000	ON04	ES02	0.04170	False
IA10789 (SC814344725)	3	1.01000	0.96000	ON03	ES05	0.01272	False
IA10802 (SC815652038)	5	1.77000	1.38000	ON07	1208	-0.02766	False
IA10905 (SC905872783)	2	0.62000	0.48000	ON04	ON05	-0.07868	True
IA10919 (SC906339928)	2	0.41000	0.37000	ON13	ES13	-0.01262	False
IA10921 (SC906340140)	2	0.76000	0.71000	ON13	ES13	-0.00523	False
IA10922 (SC906340259)	2	0.81000	0.74000	ON13	ES13	-0.01921	False
IA10923 (SC906340744)	4	1.40000	1.21000	ON13	ES13	-0.02155	False
IA10931 (SC906631611)	2	0.56000	0.51000	ON06	ON09	-0.00784	False
IA10936 (SC906662706)	2	0.81000	0.76000	ON10	ON04	-0.00200	False
IA10941 (SC906953250)	2	0.29000	0.29000	ON03	ES12	0.04874	False
IA10943 (SC906965456)	2	0.75000	0.71000	ON09	ON03	0.02366	False
IA10980 (SC910170718)	2	0.62000	0.57000	ON06	1008	0.03684	False
IA10983 (SC910436447)	2	0.52000	0.50000	ON04	1208	0.02634	False
IA11025 (SC913743446)	2	0.63000	0.57000	ON11	ON06	0.00960	False
IA12842 (SC129545463)	3	0.95000	0.75000	ON10	1008	-0.00042	False

Table 2.7.17
Beta Analysis
Science Grade 5

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA05278 (SC299440)	2	0.68000	0.58000	19	ES00	-0.03152	False
IA05523 (SC718127878)	2	0.69000	0.66000	ON02	ES00	0.01634	False
IA05526 (SC735264282)	2	0.88000	0.83000	ON02	ES00	-0.00340	False
IA05530 (SC735267831)	2	0.84000	0.78000	ON06	ES00	-0.01977	False
IA05545 (SC735535118)	2	0.49000	0.46000	ON05	ES00	0.00449	False
IA05560 (SC736074266)	2	0.77000	0.71000	ON06	ES00	0.00751	False
IA05562 (SC736074942)	3	1.21000	1.13000	ON05	ES00	0.00979	False
IA05628 (SC802729980)	2	0.62000	0.59000	ON04	ES00	0.02261	False
IA05630 (SC802758131)	2	0.73000	0.67000	ON04	ES00	-0.01263	False
IA05631 (SC802758561)	2	0.58000	0.48000	ON04	ES00	-0.06954	True
IA05634 (SC802761427)	4	0.97000	0.91000	ON04	ES00	0.01079	False
IA05657 (SC803732869)	3	0.95000	0.81000	ON06	ES00	-0.03283	False
IA05662 (SC803844809)	3	1.29000	1.23000	ON03	ES00	0.02387	False
IA05664 (SC803847645)	2	0.76000	0.68000	ON07	ES00	-0.02601	False
IA05681 (SC804060300)	2	0.41000	0.36000	ON03	ES00	-0.02775	False
IA05688 (SC804141602)	2	0.85000	0.84000	ON03	ES00	0.03285	False
IA08420 (SC304689)	2	0.77000	0.78000	ON03	ES00	-0.00605	False
IA08491 (SC630232218)	2	0.70000	0.72000	ON05	ES00	0.00373	False
IA10648 (SC317084)	4	1.05000	1.07000	ON05	ES00	0.02966	False
IA12971 (SC315988)	2	0.70000	0.67000	ON12	ES00	-0.01632	False

Table 2.7.18
Beta Analysis
Science Grade 8

Item Id	NumScoreCats	Old Mean	New Mean	Old Form	Form	Beta	Flag Beta
IA03287 (SC712841848)	2	0.35000	0.29000	19	ES00	0.02473	False
IA05353 (SC310244)	2	0.65000	0.55000	ON11	ES00	-0.02149	False
IA05522 (SC717662167)	2	0.51000	0.48000	ON02	ES00	0.03315	False
IA05534 (SC735347597)	2	0.60000	0.59000	ON02	ES00	0.03071	False
IA05674 (SC803980484)	2	0.63000	0.55000	ON07	ES00	-0.04641	False
IA05675 (SC803981496)	2	0.70000	0.60000	ON02	ES00	-0.04556	False
IA05685 (SC804130460)	2	0.73000	0.66000	ON02	ES00	-0.00894	False
IA05687 (SC804132888)	3	1.46000	1.37000	ON05	ES00	-0.00024	False
IA05690 (SC804367702)	2	0.51000	0.47000	ON06	ES00	0.00043	False
IA05718 (SC807245653)	2	0.72000	0.67000	ON04	ES00	0.00883	False
IA05720 (SC807247887)	2	0.56000	0.53000	ON04	ES00	0.01666	False
IA05727 (SC809171062)	2	0.48000	0.46000	ON04	ES00	0.02902	False
IA05729 (SC809178849)	4	1.16000	0.98000	ON04	ES00	-0.03121	False
IA05732 (SC809268358)	4	1.00000	0.87000	ON14	ES00	-0.00252	False
IA05777 (SC816343670)	3	1.27000	1.22000	ON07	ES00	0.01116	False
IA08548 (SC814241790)	2	0.65000	0.62000	ON02	ES00	0.04988	False
IA10534 (SC002325536)	2	0.51000	0.44000	ON15	ES00	-0.02080	False
IA10633 (SC313185)	2	0.70000	0.69000	ON07	ES00	0.01325	False
IA12887 (SC204136839)	3	1.26000	1.15000	ON12	ES00	-0.00055	False
IA13122 (SC932538678)	2	0.76000	0.75000	ON11	ES00	0.01336	False

Section 2.8

Final Item Parameters

Table 2.8.1
IRT Parameters for Dichotomous Items
Biology Grade 10

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA03573 (SC310183)	1.71421	0.03030	-0.18997	0.01209	0.25720	0.00630
IA03582 (SC316070)	1.04847	0.04044	1.21370	0.01996	0.38070	0.00490
IA03608 (SC705539594)	0.68308	0.02664	0.46319	0.04011	0.27500	0.01350
IA03653 (SC316186)	1.64726	0.03094	-0.63524	0.01594	0.20680	0.01030
IA05656 (SC803676783)	0.85627	0.01733	0.24138	0.01804	0.06800	0.00790
IA05740 (SC813555411)	0.79953	0.02478	0.76019	0.02253	0.22700	0.00810
IA05978 (SC809631595)	1.26435	0.02234	-0.11231	0.01429	0.14720	0.00730
IA05979 (SC809632043)	1.13744	0.01990	-0.14647	0.01557	0.11070	0.00790
IA05980 (SC809632443)	0.50520	0.01066	-0.82380	0.05550	0.01130	0.02140
IA15010 (SC313647864)	1.44075	0.02818	-0.00937	0.01355	0.24960	0.00650
IA15013 (SC313775965)	1.66555	0.05200	1.05829	0.01291	0.34490	0.00340
IA16374 (SC273277)	1.16735	0.02285	0.24074	0.01365	0.15550	0.00610
IA16377 (SC283165)	1.17993	0.02516	0.19156	0.01566	0.22870	0.00680
IA16378 (SC285871)	1.34138	0.03421	0.81441	0.01273	0.26420	0.00430
IA16386 (SC299751)	0.84664	0.02504	0.73821	0.02015	0.20270	0.00760
IA16387 (SC301339)	1.43760	0.02625	-0.62974	0.01731	0.13840	0.01120
IA16388 (SC301417)	0.60740	0.01335	-0.65373	0.05083	0.02160	0.02230
IA16409 (SC304453)	0.88343	0.02009	0.10007	0.02207	0.12030	0.01000
IA16450 (SC313462)	0.68577	0.02176	0.38251	0.03599	0.22000	0.01260
IA16467 (SC316127)	0.66151	0.02722	0.94244	0.03187	0.27450	0.01030
IA05853 (SC800243081)	0.79933	0.00931	0.02965	0.00888	0.00000	0.00000
IA06015 (SC813953505)	0.39774	0.00687	0.23854	0.01520	0.00000	0.00000
IA12792 (SC022536444)	1.36706	0.01419	-0.27688	0.00687	0.00000	0.00000
IA12793 (SC022537094)	0.55168	0.00764	0.26913	0.01181	0.00000	0.00000
IA12800 (SC022956393)	0.30967	0.00648	0.40018	0.01996	0.00000	0.00000
IA12865 (SC132462129)	1.16549	0.01188	0.39872	0.00769	0.00000	0.00000
IA12879 (SC202747842)	0.79875	0.00912	0.17453	0.00888	0.00000	0.00000
IA12894 (SC205249394)	1.04429	0.01104	-0.10159	0.00769	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA12896 (SC205249709)	1.53113	0.01682	0.63353	0.00760	0.00000	0.00000
IA13130 (SC933144505)	0.39408	0.00680	-0.46517	0.01594	0.00000	0.00000
IA14888 (SC301637585)	0.82482	0.00937	-0.15214	0.00870	0.00000	0.00000
IA14936 (SC305337032)	0.86834	0.00969	0.20209	0.00861	0.00000	0.00000

Table 2.8.2
IRT Parameters for Polytomous Items
Biology Grade 10

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA03645 (SC313503)	1.83958	0.01425	-0.05104	0.00354	0.87872	0.00838	0.32740	0.00724	-0.17547	0.00708
IA03656 (SC316277)	1.52382	0.01162	0.26780	0.00422	1.27339	0.00951	0.38570	0.00768	-0.43845	0.00854
IA05879 (SC802253753)	0.55200	0.00687	-0.84766	0.01608	1.59274	0.03302	-1.59274	0.02145	0.00000	0.00000
IA05958 (SC807830473)	1.24079	0.01046	0.31831	0.00522	0.96307	0.00953	0.05541	0.00885	-1.01848	0.01258
IA12886 (SC204117869)	1.13782	0.01021	0.52483	0.00621	0.56845	0.00947	-0.56845	0.01191	0.00000	0.00000
IA12897 (SC215151206)	1.42656	0.01162	0.57846	0.00522	1.04198	0.00885	-0.04756	0.00907	-0.99442	0.01292
IA14802 (SC032851950)	0.74586	0.00777	-0.48967	0.00925	0.95469	0.01811	-0.95469	0.01361	0.00000	0.00000
IA14897 (SC302444993)	1.31776	0.01143	-0.38238	0.00574	0.64455	0.01073	-0.64455	0.00909	0.00000	0.00000
IA14906 (SC304044565)	1.35005	0.01213	-0.77911	0.00606	0.49903	0.01168	-0.49903	0.00916	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA14930 (SC305137299)	0.59969	0.00693	-0.25691	0.01081	1.07727	0.02002	-1.07727	0.01734	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA03645 (SC313503)	-1.03066	0.00880	0.00000	0.00000
IA03656 (SC316277)	-1.22064	0.01160	0.00000	0.00000
IA05958 (SC807830473)	0.00000	0.00000	n/a	n/a
IA12897 (SC215151206)	0.00000	0.00000	n/a	n/a

Table 2.8.3
IRT Parameters for Dichotomous Items
English Language Arts Grade 3

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA13367 (EL305848619)	0.98654	0.01964	-1.15910	0.03238	0.26140	0.01420
IA13368 (EL305848846)	0.65420	0.01689	0.20530	0.02812	0.18570	0.00890
IA13369 (EL305849356)	0.38413	0.02444	1.79290	0.04886	0.22360	0.01300
IA13373 (EL305855968)	0.40065	0.00582	-1.92260	0.03929	0.00250	0.01110
IA13374 (EL305856828)	0.49489	0.01709	0.00510	0.05935	0.20010	0.01630
IA13375 (EL305857179)	0.57078	0.01148	-1.40280	0.05935	0.03130	0.02430
IA13376 (EL305857557)	0.62922	0.01811	0.39020	0.02962	0.22460	0.00890
IA13380 (EL305867369)	0.93327	0.01592	-0.41980	0.01832	0.12080	0.00730
IA13385 (EL305871854)	0.76872	0.01398	-0.75470	0.02869	0.08360	0.01190
IA13432 (EL306536295)	1.05985	0.01709	-1.22080	0.02339	0.08750	0.01250
IA13433 (EL306538230)	1.14056	0.02173	-0.77250	0.02132	0.26640	0.00890

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA13439 (EL306542014)	0.84838	0.01740	0.34860	0.01590	0.15100	0.00530
IA13441 (EL306542408)	0.70752	0.01423	-0.76810	0.03653	0.14390	0.01390
IA13443 (EL306542695)	0.61252	0.01194	0.12060	0.02143	0.01980	0.00740
IA13453 (EL306551827)	0.70035	0.01479	-1.22260	0.04886	0.11740	0.02070
IA13745 (EL311051383)	0.56837	0.01464	-1.13990	0.07121	0.14040	0.02530
IA13763 (EL311056839)	0.81146	0.01648	-0.58170	0.02846	0.18960	0.01070
IA13767 (EL311058588)	0.38907	0.00883	-0.34090	0.05462	0.00690	0.01520
IA13769 (EL311059365)	0.83798	0.01877	-0.76600	0.03365	0.24120	0.01270
IA13777 (EL311132236)	0.79500	0.01418	-1.73120	0.04598	0.04440	0.02550
IA13779 (EL311137156)	0.92698	0.01719	-0.47360	0.02097	0.16850	0.00830
IA13782 (EL311155968)	0.51434	0.00990	-1.36180	0.05935	0.01760	0.02250
IA13784 (EL311158115)	0.67084	0.01816	0.26200	0.02869	0.24620	0.00860
IA13787 (EL311160399)	0.65632	0.01449	-0.59330	0.03826	0.12730	0.01380

Table 2.8.4
IRT Parameters for Polytomous Items
English Language Arts Grade 3

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA13383 (EL305868518)	0.81093	0.00740	0.09185	0.00641	0.32575	0.01067	-0.32575	0.01151	0.00000	0.00000
IA13384 (EL305871312)	0.41481	0.00505	-1.21335	0.01311	0.76245	0.02622	-0.76245	0.01856	0.00000	0.00000
IA13389 (EL305885122)	0.75344	0.00643	0.51093	0.00983	2.15533	0.01559	-0.03667	0.01438	-2.11867	0.02666
IA13436 (EL306539868)	0.65467	0.00607	0.24170	0.00763	0.49740	0.01215	-0.49740	0.01421	0.00000	0.00000
IA13765 (EL311057786)	0.49489	0.00561	-1.29090	0.01274	0.78620	0.02573	-0.78620	0.01765	0.00000	0.00000
IA13771A (EL311063921#SCORE_TRAIT_CONV)	0.97848	0.01035	0.86343	0.00915	1.50473	0.01319	-0.05717	0.01462	-1.44757	0.02485
IA13771D (EL311063921#SCORE_TRAIT_IDEADEV)	1.00223	0.01070	1.52340	0.01377	2.03640	0.01651	0.60800	0.01782	-0.57410	0.02478
IA13774 (EL311078713)	0.66790	0.00612	-0.31010	0.00835	1.01540	0.01461	-1.01540	0.01433	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)	Parameters and Measures of Standard Error d5	Parameters and Measures of Standard Error SE(d5)
IA13389 (EL305885122)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13771A (EL311063921#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13771D (EL311063921#SCORE_TRAIT_IDEADEV)	-2.07030	0.05090	0.00000	0.00000	n/a	n/a

Table 2.8.5
IRT Parameters for Dichotomous Items
English Language Arts Grade 4

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA06357 (EL291009)	1.24650	0.02399	-1.07040	0.02094	0.24610	0.00990
IA06359 (EL291015)	0.36138	0.01093	-0.99650	0.11013	0.03360	0.02980
IA06908 (EL909549145)	0.90882	0.01865	0.23130	0.01550	0.16850	0.00530
IA06909 (EL909550937)	1.16226	0.02094	0.29610	0.01122	0.14760	0.00370
IA07261 (EL912955945)	0.83128	0.02104	0.54600	0.01805	0.23850	0.00550
IA07361 (EL916346163)	1.00106	0.01855	-1.60070	0.03471	0.15760	0.01910
IA11771 (EL208629059)	1.33110	0.02246	-0.61860	0.01400	0.20570	0.00610
IA11772 (EL208629200)	0.88560	0.01591	-0.67740	0.02267	0.14470	0.00930
IA11775 (EL208629667)	0.86073	0.01779	-0.33620	0.02337	0.24170	0.00820
IA11776 (EL208629781)	0.59600	0.00976	-1.27480	0.04037	0.01140	0.01650
IA11778 (EL208630729)	0.62252	0.01311	-0.96110	0.04465	0.07350	0.01720
IA11780 (EL208631197)	0.38777	0.00772	-1.32280	0.06918	0.01050	0.02050
IA11784 (EL208631698)	0.86567	0.01768	-1.47150	0.04118	0.16460	0.01990
IA11786 (EL208632061)	1.34644	0.02505	-1.68410	0.02522	0.13530	0.01660
IA11787 (EL208632192)	1.17596	0.01982	-1.39950	0.02186	0.07800	0.01260
IA13548 (EL307283777)	0.71899	0.01682	0.04770	0.02453	0.18020	0.00820
IA13551 (EL307365872)	1.16549	0.02002	-1.27920	0.02210	0.14400	0.01180
IA13553 (EL307370948)	0.50764	0.01194	-0.95580	0.06154	0.05060	0.02120
IA13556 (EL307385093)	1.09189	0.02043	-0.47680	0.01758	0.23610	0.00690
IA13557 (EL307400674)	1.14621	0.02048	-0.78960	0.01874	0.22620	0.00810
IA13558 (EL307470135)	1.07948	0.02145	-0.09530	0.01596	0.26060	0.00560
IA13563 (EL307500095)	0.56449	0.01301	-0.83140	0.05160	0.09630	0.01800
IA13574 (EL307581198)	1.08571	0.01865	-1.31740	0.02476	0.14540	0.01300
IA13578 (EL307583130)	1.00500	0.03283	0.63840	0.01932	0.42960	0.00480

Table 2.8.6
IRT Parameters for Polytomous Items
English Language Arts Grade 4

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA06362 (EL291024)	0.72657	0.00681	0.18255	0.00694	0.37365	0.01129	-0.37365	0.01271	0.00000	0.00000
IA11779 (EL208630869)	0.95926	0.00910	-1.91175	0.01069	0.88095	0.02218	-0.88095	0.01391	0.00000	0.00000
IA11782A (EL208631509#SCORE_TRAIT_CONV)	0.89700	0.00929	0.19080	0.00823	1.65790	0.01522	-0.10700	0.01280	-1.55090	0.02043
IA11782D (EL208631509#SCORE_TRAIT_IDEADEV)	0.88618	0.00917	0.78530	0.00997	2.44750	0.01735	0.39420	0.01419	-0.85500	0.02031
IA11785 (EL208631896)	0.59430	0.00650	-2.12660	0.01632	1.06080	0.03452	-1.06080	0.02014	0.00000	0.00000
IA13554 (EL307375298)	0.66455	0.00574	0.31653	0.00994	2.23363	0.01736	-0.12627	0.01473	-2.10737	0.02582
IA13562 (EL307485646)	0.90388	0.00757	-0.55390	0.00635	0.61810	0.01142	-0.61810	0.01057	0.00000	0.00000
IA13579 (EL307584265)	0.51775	0.00584	-1.69415	0.01256	0.50955	0.02462	-0.50955	0.01847	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)	Parameters and Measures of Standard Error d5	Parameters and Measures of Standard Error SE(d5)
IA11782A (EL208631509#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA11782D (EL208631509#SCORE_TRAIT_IDEADEV)	-1.98670	0.03275	0.00000	0.00000	n/a	n/a
IA13554 (EL307375298)	0.00000	0.00000	n/a	n/a	n/a	n/a

Table 2.8.7
IRT Parameters for Dichotomous Items
English Language Arts Grade 5

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA03728 (EL736467737)	0.48072	0.01082	-2.12400	0.09759	0.04810	0.03750
IA03730 (EL736469533)	0.84068	0.02083	0.52410	0.01788	0.22650	0.00560
IA03731 (EL736469872)	1.27043	0.02264	-0.94630	0.01811	0.23470	0.00850
IA03733 (EL736470482)	0.54780	0.01348	0.03380	0.03436	0.09480	0.01110
IA03734 (EL736471910)	0.59206	0.01469	-1.08390	0.06042	0.17830	0.02080
IA03735 (EL736472217)	0.40312	0.00840	-1.29290	0.07024	0.01260	0.02150
IA03737 (EL736473790)	0.69024	0.01413	-0.03750	0.02302	0.10880	0.00810
IA03738 (EL736474369)	0.39871	0.01263	-1.00050	0.10857	0.07380	0.03070
IA04458 (EL827627427)	0.60024	0.01876	1.15080	0.02326	0.17520	0.00630
IA11592 (EL207164820)	0.68901	0.01293	-0.32880	0.02548	0.11120	0.00920
IA11595 (EL207274050)	0.79830	0.01534	-0.00830	0.01858	0.12360	0.00680
IA11599 (EL207278877)	1.12669	0.01987	-2.20750	0.03565	0.03630	0.02600
IA11600 (EL207341702)	0.30094	0.00775	-1.27290	0.10869	0.01590	0.02580
IA11602 (EL207342693)	0.32816	0.00760	-1.19270	0.08812	0.01230	0.02250
IA11603 (EL207360230)	0.93439	0.01690	-1.22220	0.02828	0.13900	0.01350
IA13509 (EL307061151)	0.80382	0.01504	-0.87810	0.02840	0.12060	0.01190
IA13510 (EL307063923)	1.18195	0.02314	-0.33740	0.01589	0.25360	0.00630
IA13511 (EL307077265)	0.71828	0.01675	-0.26490	0.03085	0.24000	0.01010
IA13512 (EL307137436)	0.57437	0.02249	1.64520	0.02863	0.17820	0.00600
IA13513 (EL307138100)	0.97255	0.01590	-2.39590	0.04126	0.02880	0.02940
IA13526 (EL307153223)	1.14233	0.02274	-0.68240	0.02080	0.32990	0.00810
IA13531 (EL307175118)	1.30547	0.02223	-1.61210	0.02209	0.11660	0.01340
IA13540 (EL307249807)	0.99318	0.01751	-1.32270	0.02723	0.14170	0.01360
IA13543 (EL307253066)	1.28924	0.02259	-1.50810	0.02244	0.17060	0.01290

Table 2.8.8
IRT Parameters for Polytomous Items
English Language Arts Grade 5

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA03740 (EL736475157)	0.34115	0.00458	0.87625	0.01843	1.37505	0.02411	-1.37505	0.03817	0.00000	0.00000
IA03742 (EL736477190)	0.57543	0.00584	0.38045	0.00866	0.57815	0.01336	-0.57815	0.01648	0.00000	0.00000
IA03744A (EL736478825#SCORE_TRAIT_CONV)	1.00106	0.01035	0.01157	0.00759	1.63077	0.01462	-0.04643	0.01200	-1.58433	0.01825
IA03744D (EL736478825#SCORE_TRAIT_IDEADEV)	1.09971	0.01111	0.55545	0.00746	1.89385	0.01329	0.61565	0.01116	-0.72135	0.01533
IA11597 (EL207277420)	0.47378	0.00558	0.26210	0.00913	0.32450	0.01483	-0.32450	0.01673	0.00000	0.00000
IA13529 (EL307156922)	0.70935	0.00659	-1.62985	0.01051	1.01665	0.02155	-1.01665	0.01406	0.00000	0.00000
IA13532 (EL307176181)	0.77648	0.00755	-0.49040	0.00636	0.12090	0.01102	-0.12090	0.01102	0.00000	0.00000
IA13544A (EL307267042#SCORE_TRAIT_CONV)	1.09824	0.01105	-0.50800	0.00633	1.28490	0.01491	-0.05460	0.01052	-1.23030	0.01218
IA13544D (EL307267042#SCORE_TRAIT_IDEADEV)	1.06490	0.01052	0.09178	0.00741	2.23478	0.01727	0.53418	0.01128	-0.66333	0.01285

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)	Parameters and Measures of Standard Error d5	Parameters and Measures of Standard Error SE(d5)
IA03744A (EL736478825#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA03744D (EL736478825#SCORE_TRAIT_IDEADEV)	-1.78815	0.02399	0.00000	0.00000	n/a	n/a
IA13544A (EL307267042#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13544D (EL307267042#SCORE_TRAIT_IDEADEV)	-2.10563	0.02255	0.00000	0.00000	n/a	n/a

Table 2.8.9
IRT Parameters for Dichotomous Items
English Language Arts Grade 6

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA13606 (EL308558989)	0.38771	0.00719	-1.26270	0.06123	0.01080	0.01660
IA13607 (EL308559785)	0.41634	0.00554	-1.77530	0.03548	0.00200	0.00950
IA13610 (EL308576679)	0.69259	0.01366	-0.15360	0.02455	0.20340	0.00690
IA13613 (EL308630437)	0.38107	0.01437	1.09430	0.04926	0.21090	0.01070
IA13616 (EL308672079)	0.76132	0.01198	-1.66140	0.03099	0.05180	0.01260
IA13858 (EL312142482)	0.47360	0.01052	-0.79090	0.05255	0.10130	0.01450
IA13875 (EL312978480)	0.93145	0.01798	-0.58880	0.02156	0.27050	0.00670
IA13876 (EL312980576)	0.58789	0.01205	-0.23730	0.03039	0.15380	0.00850
IA13895 (EL314063698)	0.70852	0.01433	-0.05500	0.02351	0.21530	0.00650
IA13898 (EL314148707)	0.42634	0.01131	-1.06540	0.08085	0.15440	0.02040
IA13899 (EL314158725)	0.20417	0.01115	-0.16660	0.26530	0.08530	0.03940
IA13900 (EL314164847)	0.67078	0.01280	-0.76650	0.03144	0.17510	0.00960
IA13913 (EL314429542)	0.49871	0.01366	0.02230	0.04551	0.26910	0.01030
IA13914 (EL314478387)	0.62863	0.01272	-1.11240	0.04252	0.21650	0.01280
IA13918 (EL314482379)	0.40764	0.01209	0.97550	0.03638	0.11810	0.00880
IA13928 (EL315274742)	0.51393	0.01633	0.88080	0.03354	0.27330	0.00750
IA13930 (EL315278077)	0.77102	0.01716	-1.32150	0.04087	0.32590	0.01240
IA13931 (EL315281344)	0.26937	0.00883	-2.57090	0.24209	0.09340	0.05090
IA13933 (EL315301385)	0.58219	0.01096	-0.75420	0.03473	0.10420	0.01060
IA13938 (EL315381843)	0.89730	0.01626	-1.17970	0.02605	0.21380	0.00920
IA13940 (EL315462998)	0.60517	0.01123	-0.69210	0.03309	0.14750	0.00980
IA13942 (EL315482249)	0.55191	0.01323	-0.32590	0.04252	0.27720	0.01020
IA13944 (EL315486389)	0.93616	0.01567	-0.24270	0.01557	0.14560	0.00480
IA13957 (EL319246845)	0.62069	0.01355	0.74250	0.02036	0.15050	0.00510

Table 2.8.10
IRT Parameters for Polytomous Items
English Language Arts Grade 6

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA13601 (EL308553441)	0.75338	0.00691	-1.98520	0.01013	0.61010	0.01959	-0.61010	0.01524	0.00000	0.00000
IA13897 (EL314140609)	0.59412	0.00526	-1.32930	0.00982	0.69590	0.01879	-0.69590	0.01503	0.00000	0.00000
IA13907 (EL314379145)	0.40617	0.00408	-0.22540	0.01382	1.62910	0.02375	-1.62910	0.02411	0.00000	0.00000
IA13921A (EL314484549#SCORE_TRAIT_CONV)	0.91352	0.00899	-0.68270	0.00749	1.49650	0.01758	-0.07780	0.01282	-1.41870	0.01415
IA13921D (EL314484549#SCORE_TRAIT_IDEADEV)	0.90700	0.00841	0.72282	0.00984	2.89092	0.01878	1.33592	0.01453	0.01462	0.01521
IA13929 (EL315276310)	0.84051	0.00844	-2.14750	0.01008	0.22070	0.01830	-0.22070	0.01659	0.00000	0.00000
IA13932 (EL315300123)	0.53028	0.00479	-1.76185	0.01216	1.16555	0.02449	-1.16555	0.01697	0.00000	0.00000
IA13946A (EL315605273#SCORE_TRAIT_CONV)	0.94591	0.00929	-0.84203	0.00741	1.41007	0.01800	-0.08173	0.01277	-1.32833	0.01310
IA13946D (EL315605273#SCORE_TRAIT_IDEADEV)	0.89212	0.00841	0.52648	0.00930	2.83768	0.01946	1.27768	0.01433	0.06578	0.01433

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)	Parameters and Measures of Standard Error d5	Parameters and Measures of Standard Error SE(d5)
IA13921A (EL314484549#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13921D (EL314484549#SCORE_TRAIT_IDEADEV)	-1.22608	0.02025	-3.01538	0.04119	0.00000	0.00000
IA13946A (EL315605273#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13946D (EL315605273#SCORE_TRAIT_IDEADEV)	-1.13232	0.01868	-3.04882	0.03815	0.00000	0.00000

Table 2.8.11
IRT Parameters for Dichotomous Items
English Language Arts Grade 7

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA07202 (EL912338456)	0.59735	0.01868	1.03960	0.02475	0.24390	0.00600
IA07203 (EL912344338)	0.53233	0.01323	-1.16680	0.06474	0.17810	0.01940
IA07230 (EL912500351)	0.85485	0.01885	-0.31640	0.02434	0.33010	0.00700
IA07232 (EL912501540)	1.14691	0.02158	-1.18470	0.02220	0.26320	0.00890
IA07241 (EL912582905)	0.99706	0.01956	-1.25320	0.02782	0.27520	0.01060
IA07246 (EL912620913)	0.41046	0.01310	-0.13420	0.06648	0.13610	0.01650
IA07247 (EL912621697)	0.94286	0.01639	-0.94330	0.02234	0.19270	0.00840
IA07248 (EL912622150)	0.93563	0.01903	-0.98770	0.02796	0.32140	0.00940
IA07249 (EL912623426)	0.74750	0.01951	0.68740	0.01993	0.25710	0.00520
IA13233 (EL206078126)	0.86825	0.01644	-0.35790	0.02047	0.22370	0.00660
IA13234 (EL206078710)	1.06326	0.02426	0.45090	0.01471	0.27010	0.00410
IA13235 (EL206079400)	0.91964	0.01670	-0.19880	0.01685	0.18080	0.00550
IA13269 (EL213939721)	0.63980	0.01156	-0.85380	0.03210	0.09070	0.01090
IA13347 (EL305230669)	0.77795	0.01600	-0.51230	0.02675	0.25020	0.00830
IA13348 (EL305244758)	0.89224	0.01613	-0.33120	0.01899	0.21110	0.00620
IA13398 (EL306347661)	0.79694	0.01705	-1.27820	0.03866	0.26370	0.01350
IA13400 (EL306348894)	0.70035	0.01798	0.42150	0.02341	0.27300	0.00620
IA13417 (EL306443148)	1.12651	0.01978	-1.38990	0.02287	0.19620	0.01000
IA13464 (EL306569606)	0.55420	0.01305	-1.43610	0.06661	0.16460	0.02150
IA13465 (EL306571635)	0.55432	0.01006	-1.94600	0.06086	0.03090	0.02410
IA13472 (EL306633578)	0.54068	0.00782	-1.97300	0.04615	0.00950	0.01790
IA13477 (EL306636364)	0.64397	0.01042	-1.67780	0.04120	0.02320	0.01700
IA13478 (EL306637041)	0.95985	0.01692	-0.80160	0.02060	0.18710	0.00760
IA13479 (EL306637866)	0.99318	0.01767	-0.52020	0.01779	0.19810	0.00620

Table 2.8.12
IRT Parameters for Polytomous Items
English Language Arts Grade 7

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA07205A (EL912346409#SCORE_TRAIT_CONV)	0.89735	0.00905	-1.00630	0.00817	1.63910	0.02050	-0.09190	0.01354	-1.54720	0.01402
IA07205D (EL912346409#SCORE_TRAIT_IDEADEV)	0.93815	0.00899	0.66504	0.01952	3.49014	0.02766	1.53844	0.02212	0.37334	0.02207
IA07242 (EL912583971)	0.32863	0.00426	-1.03270	0.02507	2.77230	0.04686	-2.77230	0.03969	0.00000	0.00000
IA07398 (EL917655389)	0.48536	0.00532	-0.51125	0.00856	0.12935	0.01477	-0.12935	0.01488	0.00000	0.00000
IA13350 (EL305250618)	0.63392	0.00554	-0.53220	0.01004	1.49270	0.01792	-1.49270	0.01683	0.00000	0.00000
IA13411A (EL306400886#SCORE_TRAIT_CONV)	0.98718	0.00982	-1.02027	0.00748	1.38703	0.01885	-0.07607	0.01281	-1.31097	0.01233
IA13411D (EL306400886#SCORE_TRAIT_IDEADEV)	0.99124	0.00941	0.99454	0.02186	3.34994	0.02745	1.72394	0.02404	0.33624	0.02429
IA13428 (EL306463000)	0.67784	0.00607	-1.16820	0.00811	0.56190	0.01519	-0.56190	0.01279	0.00000	0.00000
IA13463 (EL306568260)	0.40323	0.00444	0.51140	0.01595	1.50830	0.02179	-1.50830	0.03242	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)	Parameters and Measures of Standard Error d5	Parameters and Measures of Standard Error SE(d5)
IA07205A (EL912346409#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA07205D (EL912346409#SCORE_TRAIT_IDEADEV)	-1.24006	0.02703	-4.16186	0.09463	0.00000	0.00000
IA13411A (EL306400886#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13411D (EL306400886#SCORE_TRAIT_IDEADEV)	-1.53336	0.03246	-3.87676	0.10657	0.00000	0.00000

Table 2.8.13
IRT Parameters for Dichotomous Items
English Language Arts Grade 8

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA11517 (EL206801492)	0.75350	0.01324	-1.85670	0.04265	0.10910	0.01870
IA11519 (EL206802113)	0.55632	0.00822	-2.33280	0.05356	0.01580	0.02250
IA11523 (EL206804483)	0.84785	0.01456	-1.78530	0.03542	0.11990	0.01610
IA11524 (EL206804808)	0.39641	0.00880	-1.59970	0.08856	0.03000	0.02590
IA11525 (EL206805580)	0.71634	0.01365	-0.66810	0.03032	0.22030	0.00950
IA11526 (EL206806025)	0.42916	0.00722	-2.33680	0.07425	0.01740	0.02530
IA11530 (EL206808101)	0.49906	0.01124	-0.33480	0.04477	0.15280	0.01200
IA11731 (EL208447958)	0.51358	0.01448	0.43360	0.03840	0.25730	0.00910
IA11738 (EL208451039)	0.84450	0.01141	-1.93310	0.02834	0.01260	0.01370
IA11922 (EL209839730)	1.00100	0.02431	0.60320	0.01672	0.32220	0.00430
IA11925 (EL209877427)	0.84392	0.01792	0.26860	0.01984	0.28570	0.00530
IA11927 (EL209878098)	0.99212	0.01896	-0.69230	0.02253	0.30590	0.00740
IA11928 (EL209878664)	0.99976	0.01705	-1.08340	0.02267	0.21050	0.00880
IA11992 (EL213257312)	1.16714	0.01987	-0.12750	0.01360	0.19540	0.00440
IA12014 (EL215725121)	0.69900	0.01195	-1.50170	0.03797	0.08640	0.01510
IA13429 (EL306531694)	0.28219	0.00838	-1.48620	0.15600	0.03960	0.03380
IA13430 (EL306532662)	0.38419	0.00805	-1.61670	0.08629	0.02490	0.02470
IA13438 (EL306541779)	0.62869	0.01581	1.26020	0.01998	0.15470	0.00450
IA13440 (EL306542147)	0.67078	0.01282	-1.09270	0.03840	0.16450	0.01300
IA13445 (EL306543569)	0.92299	0.01714	-0.06530	0.01800	0.23410	0.00550
IA13450 (EL306550178)	0.71493	0.01767	0.94680	0.01927	0.21580	0.00480
IA13456 (EL306557022)	0.41693	0.00929	-1.50080	0.08459	0.04880	0.02500
IA13466 (EL306619088)	0.98583	0.01523	-0.23030	0.01474	0.14770	0.00480
IA13467 (EL306620254)	0.93998	0.01597	-0.00090	0.01516	0.15510	0.00470

Table 2.8.14
IRT Parameters for Polytomous Items
English Language Arts Grade 8

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA11532 (EL206809440)	0.69636	0.00660	-0.90405	0.00777	0.18455	0.01362	-0.18455	0.01328	0.00000	0.00000
IA11535A (EL206813674#SCORE_TRAIT_CONV)	0.89494	0.00876	-0.97013	0.00784	1.39427	0.01954	-0.14023	0.01359	-1.25403	0.01311
IA11535D (EL206813674#SCORE_TRAIT_IDEADEV)	0.87584	0.00817	0.44266	0.01034	2.83866	0.02110	1.30896	0.01539	0.22826	0.01466
IA11743 (EL208451735)	0.61752	0.00548	-1.72980	0.01119	1.13480	0.02265	-1.13480	0.01543	0.00000	0.00000
IA11930 (EL209978403)	0.46902	0.00465	-0.70705	0.00986	0.58945	0.01809	-0.58945	0.01601	0.00000	0.00000
IA13473 (EL306633886)	0.58624	0.00577	-1.96385	0.01165	0.58715	0.02240	-0.58715	0.01770	0.00000	0.00000
IA13475 (EL306634908)	0.55209	0.00510	-1.12895	0.01073	0.96715	0.02107	-0.96715	0.01571	0.00000	0.00000
IA13480A (EL306640647#SCORE_TRAIT_CONV)	0.92081	0.00923	-0.84670	0.00736	1.23450	0.01743	0.06420	0.01340	-1.29870	0.01290
IA13480D (EL306640647#SCORE_TRAIT_IDEADEV)	0.95932	0.00905	1.02860	0.03066	3.02390	0.03413	1.86550	0.03244	0.57880	0.03231

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)	Parameters and Measures of Standard Error d5	Parameters and Measures of Standard Error SE(d5)
IA11535A (EL206813674#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA11535D (EL206813674#SCORE_TRAIT_IDEADEV)	-0.91964	0.01756	-3.45624	0.04471	0.00000	0.00000
IA13480A (EL306640647#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13480D (EL306640647#SCORE_TRAIT_IDEADEV)	-0.77320	0.03458	-4.69500	0.15408	0.00000	0.00000

Table 2.8.15
IRT Parameters for Dichotomous Items
English Language Arts Grade 10

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA06685 (EL835262218)	1.28166	0.02181	-1.47030	0.02000	0.17540	0.01010
IA06704 (EL835344655)	0.85444	0.01581	-1.03180	0.02771	0.20440	0.01070
IA06708 (EL835360557)	0.61146	0.01708	0.15490	0.03145	0.24400	0.00910
IA06709 (EL835363668)	1.23627	0.02337	-0.65440	0.01639	0.27670	0.00650
IA06710 (EL835364678)	1.05597	0.01927	-0.58670	0.01759	0.22210	0.00680
IA06793 (EL903550122)	0.50506	0.01386	-0.64500	0.05784	0.16220	0.01680
IA13220 (EL205544338)	0.77625	0.01386	-0.63330	0.02265	0.10710	0.00850
IA13222 (EL205552113)	0.67889	0.01415	0.35350	0.01711	0.08000	0.00570
IA13271 (EL217966607)	0.71993	0.01332	-1.43150	0.03940	0.11090	0.01620
IA13640 (EL309353579)	0.62481	0.01395	-1.36650	0.05302	0.12930	0.01970
IA13642 (EL309356890)	0.61922	0.01093	-2.42730	0.06229	0.02860	0.02950
IA13677 (EL309933747)	0.68325	0.01869	0.51770	0.02217	0.22970	0.00660
IA13678 (EL309934830)	0.69101	0.01259	-1.54630	0.04061	0.04910	0.01730
IA13679 (EL309977834)	0.65655	0.01156	-0.99080	0.03097	0.03810	0.01180
IA13717 (EL310859962)	0.68007	0.01225	-1.39000	0.03844	0.06240	0.01570
IA13722 (EL310873849)	0.73469	0.01488	-1.25630	0.03868	0.16070	0.01500
IA13724 (EL310875497)	0.85426	0.01400	-1.14920	0.02482	0.10230	0.01050
IA13725 (EL310876147)	0.86008	0.02049	-0.39620	0.02639	0.34910	0.00810
IA13727 (EL310877056)	0.63804	0.01430	-0.55890	0.03506	0.17870	0.01140
IA13730 (EL310878365)	0.98183	0.01874	-0.97270	0.02434	0.26460	0.00950
IA13883 (EL313253353)	0.81846	0.01361	-1.43770	0.02976	0.07460	0.01330

Table 2.8.16
IRT Parameters for Polytomous Items
English Language Arts Grade 10

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA06707 (EL835359413)	0.67925	0.00654	-1.09870	0.00763	0.35870	0.01416	-0.35870	0.01220	0.00000	0.00000
IA13218 (EL205447624)	0.61205	0.00561	-0.72460	0.00940	1.17820	0.01755	-1.17820	0.01491	0.00000	0.00000
IA13648A (EL309540902#SCORE_TRAIT_CONV)	1.24797	0.01299	-1.33997	0.00656	0.90333	0.01637	0.04153	0.01221	-0.94487	0.00996
IA13648D (EL309540902#SCORE_TRAIT_IDEADEV)	1.14932	0.01070	-0.35574	0.00557	1.93896	0.01657	1.05496	0.01224	0.02246	0.00975
IA13672 (EL309853912)	0.39089	0.00493	-2.82845	0.02309	1.56025	0.04893	-1.56025	0.02839	0.00000	0.00000
IA13673 (EL309875853)	0.71540	0.00673	-2.11775	0.01217	1.18265	0.02540	-1.18265	0.01560	0.00000	0.00000
IA13718 (EL310860887)	0.57319	0.00576	-0.85675	0.00822	0.41715	0.01508	-0.41715	0.01332	0.00000	0.00000
IA13738A (EL310944009#SCORE_TRAIT_CONV)	1.25338	0.01323	-1.48143	0.00668	0.88177	0.01660	-0.00273	0.01245	-0.87903	0.01027
IA13738D (EL310944009#SCORE_TRAIT_IDEADEV)	1.18119	0.01093	-0.46612	0.00547	1.93018	0.01616	0.98598	0.01202	0.11668	0.00978
IA13948 (EL316441593)	0.66120	0.00649	-2.43100	0.01370	1.17160	0.02845	-1.17160	0.01777	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)	Parameters and Measures of Standard Error d5	Parameters and Measures of Standard Error SE(d5)
IA13648A (EL309540902#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13648D (EL309540902#SCORE_TRAIT_IDEADEV)	-0.89164	0.01059	-2.12474	0.01732	0.00000	0.00000
IA13738A (EL310944009#SCORE_TRAIT_CONV)	0.00000	0.00000	n/a	n/a	n/a	n/a
IA13738D (EL310944009#SCORE_TRAIT_IDEADEV)	-0.78592	0.01011	-2.24692	0.01719	0.00000	0.00000

Table 2.8.17
IRT Parameters for Dichotomous Items
Mathematics Grade 3

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA00993 (MA310834)	0.95792	0.01478	-0.23370	0.01606	0.15540	0.00600
IA02228 (MA297412)	0.78630	0.01580	-0.37314	0.02884	0.28990	0.00920
IA02509 (MA310842)	0.92159	0.01469	-0.37059	0.01837	0.15980	0.00700
IA02544 (MA311274)	0.69267	0.01145	-1.59269	0.04392	0.03260	0.02080
IA04837 (MA735665944)	0.98063	0.01503	-0.13600	0.01533	0.17670	0.00560
IA04840 (MA735732140)	0.81094	0.01532	-1.53100	0.04259	0.12740	0.02060
IA04850 (MA735755736)	1.11553	0.02198	-0.09280	0.01716	0.32630	0.00580
IA08090 (MA902374248)	0.77041	0.01343	-0.03769	0.02117	0.18580	0.00700
IA09963 (MA001336857)	0.87781	0.01797	-0.45223	0.02701	0.33530	0.00880
IA10457 (MA902654429)	0.91830	0.02295	1.08209	0.01618	0.25730	0.00410
IA12053 (MA001034206)	0.56081	0.01073	-1.68832	0.06473	0.03520	0.02700
IA12163 (MA134676677)	0.77311	0.01305	0.66328	0.01375	0.06950	0.00390
IA12173 (MA134830909)	1.45554	0.02324	0.94666	0.00973	0.07340	0.00190
IA12541 (MA735734501)	0.65503	0.01416	-0.84488	0.04599	0.22740	0.01540
IA14197 (MA134867959)	1.02460	0.01860	0.08022	0.01582	0.24640	0.00540
IA14264 (MA231152219)	0.72866	0.01430	0.19277	0.02166	0.17580	0.00700
IA14267 (MA231157499)	0.63362	0.01324	0.32065	0.02409	0.13880	0.00760
IA14557 (MA293459)	0.83327	0.01309	-0.18613	0.01740	0.09760	0.00640
IA02233 (MA297504)	0.53530	0.00589	-0.89355	0.01253	0.00000	0.00000
IA02516 (MA310884)	0.94874	0.00846	-0.36317	0.00827	0.00000	0.00000
IA04863 (MA736028646)	0.97561	0.00894	-0.66784	0.00864	0.00000	0.00000
IA07798 (MA900371363)	0.44635	0.00531	0.43015	0.01375	0.00000	0.00000
IA09960 (MA001330803)	0.97493	0.00908	-0.25122	0.00827	0.00000	0.00000
IA10016 (MA001631751)	0.83878	0.00807	-1.26636	0.01119	0.00000	0.00000
IA10180 (MA002751340)	0.27835	0.00474	1.34916	0.02932	0.00000	0.00000
IA10391 (MA703073138)	0.92430	0.00817	0.35703	0.00888	0.00000	0.00000
IA10408 (MA735754028)	1.20385	0.01126	-1.18350	0.00913	0.00000	0.00000
IA12189 (MA134940265)	0.62125	0.00686	-1.70560	0.01618	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA12190 (MA134942387)	0.89028	0.00821	-0.64350	0.00900	0.00000	0.00000
IA12651 (MA935137496)	0.75147	0.00715	0.04408	0.00925	0.00000	0.00000
IA14145 (MA001137079)	0.90178	0.00846	-0.59593	0.00876	0.00000	0.00000
IA14198 (MA134872363)	0.88941	0.00826	-0.31304	0.00852	0.00000	0.00000
IA14275 (MA231230636)	0.67870	0.00672	-0.60311	0.00998	0.00000	0.00000
IA14679 (MA735848960)	0.77190	0.00705	0.46288	0.00998	0.00000	0.00000
IA14715 (MA900371312)	0.77693	0.00749	-0.85692	0.01034	0.00000	0.00000
IA14719 (MA900573685)	0.90265	0.00821	-0.59082	0.00888	0.00000	0.00000

Table 2.8.18
IRT Parameters for Polytomous Items
Mathematics Grade 3

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA04859 (MA735951978)	1.01262	0.00773	0.35094	0.00545	0.96135	0.00991	0.01046	0.00991	-0.97182	0.01267
IA07527 (MA261857A)	1.07079	0.00763	-0.03598	0.00515	1.09677	0.01048	-0.01764	0.00934	-1.07913	0.01101
IA12411 (MA260584A)	0.91584	0.00672	-0.44960	0.00611	1.40457	0.01383	0.09742	0.01048	-1.50199	0.01212
IA14199 (MA134930940)	1.04789	0.00759	-0.01607	0.00551	1.20393	0.01097	0.17627	0.00954	-1.38020	0.01237

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA04859 (MA735951978)	0.00000	0.00000	n/a	n/a
IA07527 (MA261857A)	0.00000	0.00000	n/a	n/a
IA12411 (MA260584A)	0.00000	0.00000	n/a	n/a
IA14199 (MA134930940)	0.00000	0.00000	n/a	n/a

Table 2.8.19
IRT Parameters for Dichotomous Items
Mathematics Grade 4

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA00960 (MA307075)	0.94798	0.01810	-2.09506	0.04923	0.10950	0.03220
IA01052 (MA311554)	1.36985	0.02723	0.08005	0.01383	0.35150	0.00480
IA04952 (MA800763627)	1.14792	0.01448	-0.02428	0.00991	0.05440	0.00340
IA07659 (MA311543)	1.01009	0.01800	-0.21370	0.01810	0.24060	0.00690
IA07920 (MA900754381)	1.08377	0.01525	0.21851	0.01084	0.08470	0.00370
IA12240 (MA136447421)	1.12997	0.01922	-0.39770	0.01614	0.18890	0.00690
IA12335 (MA202029218)	0.74726	0.02030	0.32561	0.02963	0.39510	0.00760
IA12439 (MA297984)	1.42523	0.02045	-0.16240	0.01038	0.15080	0.00420
IA14320 (MA232239522)	0.87286	0.02208	0.49669	0.02087	0.34740	0.00600
IA14350 (MA233049856)	1.22395	0.02157	0.31443	0.01234	0.23510	0.00420
IA14351 (MA233051799)	0.54676	0.01158	-1.95960	0.08520	0.06310	0.03650
IA14607 (MA307314)	0.80958	0.01402	-0.71496	0.02790	0.18060	0.01120
IA14728 (MA900750340)	0.80203	0.01474	-0.66182	0.02859	0.17730	0.01130
IA02086 (MA258228)	0.71774	0.00739	-1.30742	0.01268	0.00000	0.00000
IA04618 (MA303317)	0.77082	0.00755	0.01676	0.00899	0.00000	0.00000
IA04934 (MA800652951)	0.78184	0.00750	0.84117	0.01095	0.00000	0.00000
IA07901 (MA900740880)	0.82110	0.00770	0.10576	0.00876	0.00000	0.00000
IA07902 (MA900741771)	0.87964	0.00831	-0.32668	0.00842	0.00000	0.00000
IA07915 (MA900751271)	0.55711	0.00612	-0.76396	0.01211	0.00000	0.00000
IA07945 (MA900776517)	0.61218	0.00648	0.22139	0.01049	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA09849 (MA000732007)	0.75226	0.00719	-0.31838	0.00911	0.00000	0.00000
IA10120 (MA002162929)	0.55155	0.00602	0.26324	0.01141	0.00000	0.00000
IA10289 (MA010534486)	0.69607	0.00668	0.04270	0.00945	0.00000	0.00000
IA12241 (MA136448521)	0.93395	0.00867	-0.09253	0.00807	0.00000	0.00000
IA12281 (MA200344609)	0.76562	0.00785	-1.00606	0.01049	0.00000	0.00000
IA12605 (MA900750085)	0.91498	0.00852	-0.15836	0.00819	0.00000	0.00000
IA14302 (MA231836735)	1.09010	0.01015	-0.35562	0.00772	0.00000	0.00000
IA14307 (MA231843918)	0.96333	0.00887	-0.45073	0.00819	0.00000	0.00000
IA14325 (MA232254177)	0.73554	0.00719	-0.36818	0.00922	0.00000	0.00000
IA14326 (MA232261850)	0.67929	0.00780	-1.60463	0.01476	0.00000	0.00000
IA14338 (MA232725235)	0.95889	0.00913	-0.94231	0.00934	0.00000	0.00000
IA14340 (MA232909389)	0.81917	0.00770	0.04408	0.00865	0.00000	0.00000
IA14349 (MA232979874)	0.90580	0.00989	-1.75577	0.01383	0.00000	0.00000
IA15968 (MA250533)	0.68673	0.00694	-0.29359	0.00957	0.00000	0.00000

Table 2.8.20
IRT Parameters for Polytomous Items
Mathematics Grade 4

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA04621 (MA303335)	0.92396	0.00658	-0.03734	0.00535	1.78622	0.01334	0.37350	0.00968	-0.55479	0.01027
IA04757 (MA713677363)	0.71672	0.00637	-1.28949	0.00934	0.86113	0.01875	-0.86113	0.01313	0.00000	0.00000

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA04948 (MA80075093 8)	1.18107	0.00918	-0.12602	0.00546	0.53303	0.00946	-0.53303	0.00946	0.00000	0.00000
IA14311 (MA23187578 0)	1.06745	0.00745	-0.43364	0.00511	1.71952	0.01410	0.52516	0.00995	-0.53248	0.00917
IA14694 (MA80078088 7)	1.24522	0.00862	-0.25376	0.00449	1.53498	0.01184	0.37774	0.00873	-0.48484	0.00864
IA14707 (MA80395790 9)	0.97245	0.00688	0.35285	0.00583	2.08037	0.01333	0.41552	0.00977	-0.67855	0.01140

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA04621 (MA303335)	-1.60493	0.01398	0.00000	0.00000
IA14311 (MA231875780)	-1.71220	0.01188	0.00000	0.00000
IA14694 (MA800780887)	-1.42788	0.01057	0.00000	0.00000
IA14707 (MA803957909)	-1.81734	0.01662	0.00000	0.00000

Table 2.8.21
IRT Parameters for Dichotomous Items
Mathematics Grade 5

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA02390 (MA306430)	1.37487	0.01926	0.00208	0.00982	0.13810	0.00360
IA02545 (MA311279)	0.97949	0.01602	-0.55170	0.01815	0.14150	0.00790
IA04981 (MA801230425)	1.29344	0.02611	0.88548	0.01153	0.19570	0.00290
IA05004 (MA801654509)	0.90774	0.01499	-0.11685	0.01564	0.11040	0.00610
IA07994 (MA901137741)	1.17553	0.02292	0.41947	0.01381	0.30300	0.00420
IA08212 (MA904353319)	0.69954	0.01267	-2.04651	0.05889	0.04400	0.03200
IA09867 (MA000859040)	0.81147	0.02148	-0.25358	0.03344	0.42360	0.00920
IA10336 (MA298013)	1.13881	0.01674	-1.40565	0.02111	0.06510	0.01240
IA12299 (MA201552031)	0.57139	0.01818	-0.02086	0.04976	0.30310	0.01330
IA12333 (MA202000453)	0.89950	0.01674	-1.55847	0.03858	0.13070	0.02070
IA12423 (MA282124)	1.55526	0.04409	0.80250	0.01358	0.43520	0.00330
IA12613 (MA900980248)	0.78927	0.01736	-0.25392	0.02694	0.23070	0.00950
IA14141 (MA000952312)	0.49423	0.01102	-0.39648	0.04497	0.01830	0.01510
IA14143 (MA000963503)	0.79777	0.02066	-0.01664	0.02979	0.40170	0.00820
IA14362 (MA233233270)	0.73560	0.01849	0.50062	0.02260	0.24610	0.00690
IA14644 (MA704359445A)	0.61862	0.01597	0.41878	0.02773	0.17800	0.00870
IA14720 (MA900660071)	1.12882	0.01736	0.24347	0.01130	0.13610	0.00380
IA14722 (MA900662425)	0.76542	0.01731	-0.33576	0.03036	0.27020	0.01020
IA16002 (MA298014)	1.23920	0.02096	-1.23912	0.02214	0.23410	0.01170
IA02734 (MA704359624)	0.42423	0.00567	-1.86675	0.02271	0.00000	0.00000
IA02921 (MA715102228)	1.02245	0.00994	0.09407	0.00788	0.00000	0.00000
IA04704 (MA311283)	0.81312	0.00804	-1.08630	0.01039	0.00000	0.00000
IA04938 (MA800662477)	0.66354	0.00737	0.77488	0.01221	0.00000	0.00000
IA05010 (MA801673695)	0.65432	0.00670	1.00212	0.01370	0.00000	0.00000
IA05022 (MA802302084)	0.78721	0.00731	-0.02896	0.00879	0.00000	0.00000
IA08025 (MA901364051)	0.66112	0.00701	0.62639	0.01176	0.00000	0.00000
IA08213 (MA904453014)	0.74410	0.00742	-0.65910	0.00936	0.00000	0.00000
IA09863 (MA000846693)	0.91758	0.00855	-0.19069	0.00810	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA09914 (MA001060832)	0.73209	0.00726	-0.31259	0.00902	0.00000	0.00000
IA09928 (MA001145679)	0.70464	0.00762	0.75856	0.01176	0.00000	0.00000
IA10481 (MA935150419)	0.91459	0.00865	-0.35139	0.00822	0.00000	0.00000
IA14371 (MA233369406)	0.99031	0.00896	-0.35641	0.00788	0.00000	0.00000
IA14382 (MA233458877)	0.83516	0.00814	0.35042	0.00913	0.00000	0.00000
IA14732 (MA900835182)	0.50206	0.00603	-0.00808	0.01164	0.00000	0.00000

Table 2.8.22
IRT Parameters for Polytomous Items
Mathematics Grade 5

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA02929 (MA715102462)	1.13551	0.00778	-0.23968	0.00435	1.26047	0.01053	0.54838	0.00880	-0.58040	0.00890
IA05024 (MA802306160)	0.72107	0.00644	-1.01234	0.01017	1.36824	0.02050	-1.36824	0.01413	0.00000	0.00000
IA07728 (MA802371654)	1.09024	0.00752	-0.30779	0.00462	1.42062	0.01168	0.56188	0.00913	-0.52045	0.00893
IA08179 (MA903746975)	1.03471	0.00742	-0.44464	0.00476	1.47838	0.01300	0.35758	0.00940	-0.46042	0.00901
IA09886 (MA000965213)	0.64994	0.00587	0.09584	0.00905	1.17723	0.01448	-1.17723	0.01680	0.00000	0.00000

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA14336 (MA23264294 6)	1.36395	0.00968	0.18549	0.00386	0.95279	0.00826	0.19574	0.00786	-0.29332	0.00846

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA02929 (MA715102462)	-1.22845	0.01053	0.00000	0.00000
IA07728 (MA802371654)	-1.46205	0.01126	0.00000	0.00000
IA08179 (MA903746975)	-1.37554	0.01070	0.00000	0.00000
IA14336 (MA232642946)	-0.85520	0.00981	0.00000	0.00000

Table 2.8.23
IRT Parameters for Dichotomous Items
Mathematics Grade 6

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA02145 (MA282127)	1.05465	0.01658	0.06719	0.01345	0.17610	0.00480
IA02224 (MA296377)	0.78762	0.01719	-0.79089	0.03792	0.31570	0.01310
IA02470 (MA307363)	0.49473	0.01120	-2.09910	0.10181	0.06040	0.04090
IA04627 (MA303705)	0.63222	0.01501	0.45483	0.02435	0.11750	0.00820
IA04657 (MA307250)	1.12989	0.01891	0.55200	0.01125	0.14020	0.00330
IA04722 (MA311652)	1.29664	0.01947	0.26860	0.01044	0.16990	0.00340
IA04894 (MA736452061)	0.96907	0.01491	0.44114	0.01171	0.08820	0.00360
IA04895 (MA736453104)	0.86985	0.01982	0.18813	0.02261	0.36020	0.00650
IA04896 (MA736454897)	0.78275	0.02312	1.00851	0.02087	0.32650	0.00520
IA07740 (MA805104566)	1.30186	0.02292	0.40207	0.01160	0.23320	0.00370
IA07742 (MA805111429)	0.84187	0.01967	0.28379	0.02215	0.33030	0.00640
IA07769 (MA900281418)	0.71081	0.01095	-1.02175	0.02992	0.03120	0.01310
IA08238 (MA908142878)	1.08801	0.02459	1.03054	0.01391	0.25630	0.00330
IA12193 (MA135360248)	0.71223	0.01242	-2.12136	0.05902	0.05070	0.03310
IA12436 (MA296382)	1.16731	0.02616	0.66969	0.01449	0.34690	0.00390
IA15971 (MA272290)	0.87553	0.01607	-0.11220	0.02018	0.23410	0.00700
IA00974 (MA307362)	1.16066	0.01085	-0.96459	0.00835	0.00000	0.00000
IA02691 (MA703149512)	0.62903	0.00644	-0.85165	0.01090	0.00000	0.00000
IA02826 (MA713677108)	0.82833	0.00755	0.23289	0.00904	0.00000	0.00000
IA04893 (MA736449649)	1.17369	0.01095	0.55571	0.00835	0.00000	0.00000
IA05128 (MA805109765)	0.53199	0.00654	-0.17470	0.01276	0.00000	0.00000
IA05140 (MA805280133)	0.55394	0.00598	0.77034	0.01357	0.00000	0.00000
IA05141 (MA805280170)	0.78412	0.00745	-0.74091	0.00939	0.00000	0.00000
IA08050 (MA901737396)	0.75654	0.00700	0.04052	0.00893	0.00000	0.00000
IA10001 (MA001554177)	0.63020	0.00654	-0.47618	0.00997	0.00000	0.00000
IA10004 (MA001556929)	1.06246	0.01055	-1.38898	0.01009	0.00000	0.00000
IA10011 (MA001577731)	0.83766	0.00791	-0.52616	0.00858	0.00000	0.00000
IA10013 (MA001603294)	1.18992	0.01191	-1.34759	0.00951	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA10155 (MA002526793)	0.44393	0.00548	-0.85037	0.01403	0.00000	0.00000
IA10210 (MA003477341)	1.02971	0.00928	-0.43235	0.00788	0.00000	0.00000
IA12626 (MA902348152)	0.68211	0.00679	-0.13098	0.00951	0.00000	0.00000
IA14406 (MA233849848)	1.08188	0.00897	-0.00169	0.00777	0.00000	0.00000
IA14717 (MA900432715)	0.81205	0.00826	0.62621	0.01009	0.00000	0.00000
IA14740 (MA902761648)	0.44398	0.00598	0.54272	0.01797	0.00000	0.00000

Table 2.8.24
IRT Parameters for Polytomous Items
Mathematics Grade 6

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA04560 (MA287883)	1.18150	0.00852	0.20798	0.00403	0.81496	0.00844	0.28621	0.00824	-0.19594	0.00875
IA04912 (MA800203270)	1.25963	0.00948	0.26263	0.00552	0.52395	0.00897	-0.52395	0.01010	0.00000	0.00000
IA05143 (MA805301630)	0.47668	0.00527	-0.62507	0.00931	0.48632	0.01713	-0.48632	0.01505	0.00000	0.00000
IA07810 (MA900378821)	1.17897	0.00801	-0.16928	0.00479	1.91973	0.01308	0.12567	0.00864	-0.61274	0.00913
IA10412 (MA800259417)	1.17004	0.00781	-0.49772	0.00442	1.22023	0.01144	0.50270	0.00924	-0.26922	0.00844

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA14401 (MA23375243 2)	1.15565	0.00796	-0.12402	0.00436	1.30589	0.01046	0.43878	0.00861	-0.35320	0.00861

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA04560 (MA287883)	-0.90524	0.01043	0.00000	0.00000
IA07810 (MA900378821)	-1.43266	0.01138	0.00000	0.00000
IA10412 (MA800259417)	-1.45371	0.01017	0.00000	0.00000
IA14401 (MA233752432)	-1.39147	0.01110	0.00000	0.00000

Table 2.8.25
IRT Parameters for Dichotomous Items
Mathematics Grade 7

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA00883 (MA298180)	0.56061	0.01081	-1.85596	0.07039	0.04200	0.03090
IA00950 (MA306624)	1.62247	0.06101	1.89050	0.01678	0.22050	0.00200
IA02410 (MA306595)	1.12049	0.01923	-0.99634	0.02149	0.23380	0.01000
IA02526 (MA311074)	1.01687	0.02108	0.80439	0.01485	0.26450	0.00370
IA04513 (MA272764)	0.97820	0.02517	0.75899	0.01896	0.41280	0.00430
IA04529 (MA281422)	1.34491	0.01948	0.19662	0.00990	0.12140	0.00310
IA07841 (MA900556478)	1.68743	0.03379	0.93840	0.01038	0.19890	0.00230
IA08110 (MA903153837)	1.45545	0.03730	1.15173	0.01292	0.29500	0.00270
IA08197 (MA904159889)	0.72889	0.01154	-0.66843	0.02511	0.06850	0.01010
IA09888 (MA000971342)	1.04827	0.01768	0.15871	0.01352	0.16000	0.00450
IA10031 (MA001684984)	1.43758	0.02625	0.95530	0.01087	0.17780	0.00240
IA12152 (MA005204778)	1.49645	0.02449	0.17211	0.01050	0.21170	0.00350
IA12259 (MA200144334)	0.75801	0.01514	-0.87416	0.03682	0.23900	0.01370
IA12270 (MA200256305)	1.06624	0.01850	-0.65841	0.01908	0.21080	0.00810
IA12593 (MA900552355)	1.21037	0.02274	0.11078	0.01449	0.30820	0.00460
IA12594 (MA900566128)	0.73113	0.01529	1.22309	0.01618	0.09170	0.00360
IA14186 (MA005200422)	0.78995	0.02323	0.94854	0.02294	0.38720	0.00500
IA14229 (MA201106705)	1.01823	0.01875	0.41044	0.01473	0.24350	0.00430
IA14426 (MA234550897)	1.22771	0.02220	0.19058	0.01244	0.21750	0.00420
IA14723 (MA900665080)	1.74673	0.03384	0.79280	0.01014	0.18730	0.00240
IA16014 (MA301838)	2.20957	0.04358	0.60530	0.00918	0.23500	0.00250
IA07848 (MA900567252)	0.89465	0.00803	0.10945	0.00857	0.00000	0.00000
IA07897 (MA900739359)	0.97022	0.00881	-0.29078	0.00821	0.00000	0.00000
IA09940 (MA001178265)	0.87098	0.00813	0.65625	0.01014	0.00000	0.00000
IA10027 (MA001678587)	1.12190	0.00993	0.14277	0.00785	0.00000	0.00000
IA10416 (MA801105441)	0.70333	0.00701	0.75223	0.01171	0.00000	0.00000
IA12147 (MA005077768)	0.92849	0.00838	-0.42262	0.00833	0.00000	0.00000
IA12294 (MA201203484)	1.42575	0.01334	0.29357	0.00749	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA14427 (MA234551702)	0.65167	0.00614	0.62739	0.01195	0.00000	0.00000
IA14429 (MA234553959)	1.19645	0.01154	-1.49943	0.00990	0.00000	0.00000
IA14432 (MA234555649)	0.88973	0.00842	-0.65732	0.00869	0.00000	0.00000
IA14437 (MA234561626)	0.99179	0.00852	0.46513	0.00930	0.00000	0.00000
IA14497 (MA236233939)	0.98366	0.01013	-1.31073	0.01002	0.00000	0.00000
IA14748 (MA904001752)	0.30706	0.00482	1.33839	0.02801	0.00000	0.00000

Table 2.8.26
IRT Parameters for Polytomous Items
Mathematics Grade 7

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA02711 (MA703876323)	1.50468	0.01363	1.00987	0.00636	0.31451	0.01010	-0.31451	0.01187	0.00000	0.00000
IA07679 (MA717248260)	1.12808	0.00750	0.28994	0.00520	1.82125	0.01118	0.40204	0.00912	-0.48341	0.01034
IA07730 (MA802907874)	1.27562	0.00881	0.48490	0.00445	1.16878	0.00871	0.44970	0.00850	-0.52449	0.01009
IA10445 (MA900765087)	1.00849	0.00789	-0.73393	0.00754	1.22864	0.01444	-1.22864	0.01151	0.00000	0.00000

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA14465 (MA235900389)	1.00849	0.00701	0.21503	0.00552	1.89580	0.01219	0.54976	0.00959	-0.64562	0.01102
IA14466 (MA235905181)	1.43349	0.00984	-0.08568	0.00445	1.86988	0.01163	0.13290	0.00830	-0.64076	0.00892

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA07679 (MA717248260)	-1.73988	0.01505	0.00000	0.00000
IA07730 (MA802907874)	-1.09399	0.01208	0.00000	0.00000
IA14465 (MA235900389)	-1.79994	0.01573	0.00000	0.00000
IA14466 (MA235905181)	-1.36201	0.01064	0.00000	0.00000

Table 2.8.27
IRT Parameters for Dichotomous Items
Mathematics Grade 8

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA00988 (MA307600)	0.48614	0.01696	0.53206	0.04766	0.25440	0.01190
IA02065 (MA228311)	1.18078	0.02073	-1.23191	0.02246	0.19940	0.01190
IA08003 (MA901143033)	1.31333	0.02784	0.30344	0.01311	0.33180	0.00390
IA10039 (MA001736920)	0.82095	0.01645	-0.12529	0.02246	0.24010	0.00750
IA10118 (MA002159196)	1.10535	0.01634	0.31884	0.01072	0.10320	0.00320
IA10134 (MA002181298)	1.05023	0.01923	-0.48550	0.01870	0.24370	0.00730
IA10311 (MA264730)	0.46644	0.00634	-1.50397	0.02771	0.00150	0.00860
IA12106 (MA002178533)	1.54998	0.02511	0.18372	0.01038	0.24770	0.00330
IA12376 (MA203023828)	0.99940	0.01908	-1.54434	0.03740	0.28860	0.01820
IA12480 (MA307586)	0.55476	0.00629	-0.67045	0.01391	0.00020	0.00330
IA14460 (MA235755845)	1.56720	0.03026	0.63047	0.01095	0.27110	0.00290
IA14523 (MA236476077)	1.27874	0.02031	-1.63875	0.02303	0.09660	0.01540
IA14599 (MA306554)	1.26311	0.02124	-0.44365	0.01437	0.24470	0.00580
IA14624 (MA311391)	1.75745	0.05383	0.82910	0.01414	0.52760	0.00280
IA14692 (MA800750287)	1.67315	0.02392	-0.37695	0.00924	0.13100	0.00370
IA16011 (MA301682)	0.71160	0.01660	-0.08983	0.02965	0.26100	0.00910
IA16012 (MA301698)	1.13747	0.01866	-0.44160	0.01574	0.22390	0.00620
IA00897 (MA301481)	1.39768	0.01232	0.37517	0.00775	0.00000	0.00000
IA02753 (MA704839576)	1.27477	0.01170	0.85316	0.00912	0.00000	0.00000
IA02935 (MA715919560)	1.02002	0.01062	0.75909	0.00958	0.00000	0.00000
IA02938 (MA715919661)	0.39426	0.00572	-1.63750	0.02041	0.00000	0.00000
IA02943 (MA715919788)	0.96454	0.00887	0.07836	0.00855	0.00000	0.00000
IA07707 (MA800659905)	0.59147	0.00593	0.71599	0.01311	0.00000	0.00000
IA07733 (MA804043870)	1.04606	0.00964	0.03902	0.00798	0.00000	0.00000
IA08010 (MA901253257)	0.49387	0.00541	0.19569	0.01277	0.00000	0.00000
IA08068 (MA902265010)	0.73305	0.00675	0.39877	0.01015	0.00000	0.00000
IA10041 (MA001737758)	0.81245	0.00758	-0.46361	0.00867	0.00000	0.00000
IA10122 (MA002170014)	0.99568	0.00918	-0.70260	0.00810	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA10201 (MA003128642)	0.65061	0.00639	-0.24593	0.00969	0.00000	0.00000
IA12348 (MA202726454)	0.77125	0.00737	-0.54456	0.00889	0.00000	0.00000
IA12355 (MA202828823)	1.22800	0.01098	-0.36805	0.00764	0.00000	0.00000
IA14459 (MA235753974)	0.86416	0.00789	0.16650	0.00878	0.00000	0.00000
IA14521 (MA236473688)	0.58028	0.00598	-0.04103	0.01060	0.00000	0.00000
IA14693 (MA800756470)	0.85277	0.00784	0.30515	0.00912	0.00000	0.00000

Table 2.8.28
IRT Parameters for Polytomous Items
Mathematics Grade 8

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA04717 (MA311433)	1.23027	0.00820	0.15778	0.00457	1.52138	0.01010	0.36425	0.00852	-0.49253	0.00950
IA04967 (MA800880893)	0.68386	0.00619	-0.73818	0.00761	0.54835	0.01400	-0.54835	0.01233	0.00000	0.00000
IA12383 (MA203085405)	0.82271	0.00598	-1.44206	0.00704	1.86648	0.02213	0.63626	0.01488	-0.48005	0.01152
IA14245 (MA203016132)	0.71475	0.00608	-0.93738	0.00843	0.85131	0.01617	-0.85131	0.01285	0.00000	0.00000

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA14533 (MA23655838 4)	1.45388	0.00995	-0.18119	0.00380	1.13224	0.00915	0.11924	0.00793	-0.33880	0.00803
IA14684 (MA80047303 1)	1.25394	0.00876	0.43651	0.00451	1.06728	0.00868	0.48689	0.00848	-0.32702	0.00967

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA04717 (MA311433)	-1.39311	0.01239	0.00000	0.00000
IA12383 (MA203085405)	-2.02270	0.01217	0.00000	0.00000
IA14533 (MA236558384)	-0.91269	0.00884	0.00000	0.00000
IA14684 (MA800473031)	-1.22714	0.01290	0.00000	0.00000

Table 2.8.29
IRT Parameters for Dichotomous Items
Mathematics Grade 10

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA02293 (MA299953)	1.44733	0.02968	0.64864	0.01111	0.24000	0.00290
IA04700 (MA311230)	1.13861	0.01961	0.56642	0.01111	0.12790	0.00290
IA04976 (MA801042840)	0.98905	0.02028	-0.60565	0.02370	0.29870	0.00890
IA04989 (MA801334938)	1.13579	0.02695	0.56287	0.01443	0.31400	0.00390
IA05153 (MA805574374)	0.74569	0.01489	-0.85332	0.03550	0.16560	0.01430
IA07649 (MA311197)	0.43723	0.00770	-2.32837	0.07981	0.02140	0.03030
IA12510 (MA315400)	0.99876	0.01977	-0.33049	0.01992	0.28290	0.00710
IA14419 (MA234034252)	0.75350	0.02105	0.18432	0.02702	0.31040	0.00790
IA14469 (MA235955140)	0.73414	0.01299	-0.78439	0.02805	0.04430	0.01210
IA14658 (MA717140290)	1.03336	0.01602	-0.07675	0.01271	0.10300	0.00470
IA14699 (MA801034855)	1.13091	0.02629	-0.11328	0.01832	0.38870	0.00570
IA14739 (MA901763517)	0.89012	0.01355	-1.14485	0.02473	0.07680	0.01240
IA15982 (MA287709)	0.83765	0.01545	-0.47774	0.02382	0.18770	0.00910
IA15983 (MA287716)	0.99193	0.02131	0.14963	0.01706	0.28750	0.00540
IA16015 (MA302047)	0.79282	0.01289	-0.79458	0.02622	0.11800	0.01100
IA16018 (MA303265)	1.53882	0.02973	0.18833	0.01168	0.31480	0.00350
IA16019 (MA303300)	0.87564	0.01915	0.36043	0.01809	0.25550	0.00540
IA16048 (MA311228)	1.60023	0.02197	-0.25549	0.00916	0.12010	0.00330
IA16099 (MA315028)	0.66421	0.01705	0.84501	0.02038	0.15480	0.00590
IA16107 (MA315753)	0.56286	0.01540	-0.18725	0.04672	0.20900	0.01380
IA02772 (MA713342551)	1.26902	0.01104	-0.41958	0.00733	0.00000	0.00000
IA02811 (MA713582599)	1.25228	0.01124	0.34016	0.00802	0.00000	0.00000
IA05082 (MA804365582)	1.15627	0.01063	0.17310	0.00790	0.00000	0.00000
IA07882 (MA900685378)	0.55095	0.00590	0.45970	0.01351	0.00000	0.00000
IA09858 (MA000770030)	1.25439	0.01201	0.34978	0.00802	0.00000	0.00000
IA10273 (MA005265206)	0.71638	0.00770	0.79806	0.01237	0.00000	0.00000
IA10429 (MA805370994)	0.70744	0.00667	0.07726	0.00985	0.00000	0.00000
IA14243 (MA203003132)	0.89294	0.00852	-1.65222	0.01179	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA14416 (MA234017413)	0.79929	0.00786	-0.95271	0.00950	0.00000	0.00000
IA14491 (MA236166660)	0.53534	0.00575	-0.02900	0.01145	0.00000	0.00000
IA14525 (MA236479602)	1.09251	0.00975	-1.08141	0.00859	0.00000	0.00000
IA14656 (MA717138427)	0.67833	0.00667	0.00226	0.00996	0.00000	0.00000

Table 2.8.30
IRT Parameters for Polytomous Items
Mathematics Grade 10

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA02775 (MA713347617)	0.94788	0.00806	-1.40706	0.00788	0.71668	0.01564	-0.71668	0.01133	0.00000	0.00000
IA02792 (MA713533558)	1.27436	0.00893	-0.33593	0.00423	1.28835	0.01061	0.22540	0.00846	-0.21670	0.00836
IA05083 (MA804365844)	0.36951	0.00442	0.41608	0.01717	1.65951	0.02453	-1.65951	0.03417	0.00000	0.00000
IA12197 (MA135658812)	1.35173	0.00965	-0.34884	0.00411	1.24796	0.01046	0.25074	0.00830	-0.45496	0.00840

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA12558 (MA80136169 2)	0.91887	0.00734	-0.19956	0.00668	0.87487	0.01134	-0.87487	0.01181	0.00000	0.00000
IA14481 (MA23606779 9)	0.81767	0.00688	0.01428	0.00756	0.95027	0.01188	-0.95027	0.01420	0.00000	0.00000
IA14574 (MA30026757 4)	0.86979	0.00714	-0.62317	0.00641	0.54790	0.01156	-0.54790	0.01062	0.00000	0.00000
IA14638 (MA315148)	0.83071	0.00611	-0.97939	0.00714	2.20856	0.02170	0.86668	0.01418	-0.63310	0.01090
IA14673 (MA71804099 4)	0.84678	0.00693	-0.21038	0.00689	0.80932	0.01164	-0.80932	0.01220	0.00000	0.00000
IA16109 (MA315764)	1.34516	0.00945	0.00040	0.00403	1.14376	0.00897	0.30707	0.00816	-0.40137	0.00856

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA02792 (MA713533558)	-1.29705	0.01019	0.00000	0.00000
IA12197 (MA135658812)	-1.04374	0.00942	0.00000	0.00000
IA14638 (MA315148)	-2.44215	0.01508	0.00000	0.00000
IA16109 (MA315764)	-1.04946	0.01022	0.00000	0.00000

Table 2.8.31
IRT Parameters for Dichotomous Items
Introductory Physics Grade 10

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA05576 (SC736327508)	0.98066	0.04644	0.31763	0.04101	0.24140	0.01620
IA06042 (SC820050431)	1.47888	0.05294	-0.12593	0.02668	0.21370	0.01360
IA11215 (SC295885)	1.07818	0.03901	-0.26435	0.04006	0.15150	0.02020
IA11237 (SC630653346)	1.15069	0.03988	-0.52876	0.04044	0.08650	0.02390
IA12821 (SC029344173)	1.34030	0.06304	0.28611	0.03086	0.33320	0.01230
IA12835 (SC127360103)	1.06388	0.04551	-0.14074	0.04614	0.26720	0.02030
IA13058 (SC820044690)	1.53263	0.05561	0.16317	0.02411	0.25430	0.01070
IA13176 (SC273135)	1.38922	0.06186	-0.91061	0.05649	0.26260	0.03610
IA13180 (SC629681083)	1.62557	0.04867	-0.17682	0.01975	0.07680	0.01030
IA14805 (SC130749907)	0.88164	0.04396	0.19801	0.05516	0.30470	0.01970
IA14891 (SC302131904)	0.49822	0.01653	-1.00593	0.08839	0.02470	0.03320
IA14900 (SC303343428)	1.08233	0.04322	-0.08843	0.03921	0.17980	0.01860
IA14933 (SC305163500)	0.91768	0.04359	-0.42290	0.07026	0.24760	0.03140
IA14947 (SC305461730)	1.02834	0.02960	-0.64336	0.03969	0.02840	0.02300
IA14961 (SC305501)	0.54677	0.02805	-1.11217	0.16909	0.14050	0.06540
IA15012 (SC313672)	1.78490	0.07808	-0.71912	0.03779	0.32530	0.02360
IA15028 (SC628513718)	1.30234	0.07363	-0.28704	0.05260	0.46780	0.02020
IA15067 (SC810272597)	1.79771	0.07183	-0.63092	0.03332	0.29330	0.02060
IA15077 (SC814180537)	0.70739	0.04886	-0.26359	0.12523	0.38240	0.03830
IA15089 (SC906053804)	2.12553	0.18744	1.41686	0.02829	0.43900	0.00580
IA15099 (SC907058376)	1.24531	0.05307	0.05949	0.03484	0.29830	0.01490
IA15124 (SC933947035)	1.21361	0.04081	-0.74845	0.04443	0.11680	0.02850
IA16427 (SC305504)	0.98908	0.03622	-0.60462	0.05269	0.08030	0.02990
IA16435 (SC310434)	0.68888	0.03034	-0.08558	0.06731	0.06140	0.02860
IA16470 (SC316289)	1.23478	0.05852	0.31241	0.03418	0.34940	0.01280
IA05832 (SC735655999)	0.82994	0.01864	-0.29521	0.01813	0.00000	0.00000
IA05834 (SC735658699)	0.56114	0.01492	0.11683	0.02269	0.00000	0.00000
IA05835 (SC735659465)	0.72919	0.01703	0.07212	0.01899	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA12858 (SC131333379)	0.71823	0.01666	0.47951	0.02060	0.00000	0.00000
IA14795 (SC025253398)	0.51717	0.01430	0.23760	0.02411	0.00000	0.00000
IA14994 (SC311054718)	1.29293	0.02595	-0.43392	0.01548	0.00000	0.00000
IA15085 (SC903731091)	0.84480	0.01988	-0.61715	0.02013	0.00000	0.00000
IA15118 (SC931324297)	0.89304	0.02031	-0.56664	0.01908	0.00000	0.00000
IA15128 (SC934340508)	1.13175	0.02328	-0.32863	0.01567	0.00000	0.00000

Table 2.8.32
IRT Parameters for Polytomous Items
Introductory Physics Grade 10

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA05836 (SC735661218)	1.55814	0.02483	0.09493	0.00885	0.82905	0.01791	0.10978	0.01589	-0.93884	0.01916
IA06006 (SC811054307)	0.43729	0.01201	0.37194	0.03793	1.79039	0.06143	-1.79039	0.06971	0.00000	0.00000
IA12836 (SC128528990)	1.45987	0.02477	0.93152	0.01135	0.91399	0.01769	0.04386	0.01965	-0.95786	0.02908
IA12847 (SC131241174)	0.52702	0.01282	0.48302	0.02715	1.34512	0.04096	-1.34512	0.05240	0.00000	0.00000

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA13054 (SC81557768 1)	0.79817	0.01585	-0.25310	0.01572	0.79109	0.02926	-0.79109	0.02502	0.00000	0.00000
IA14894 (SC30213245 2)	0.61259	0.01437	0.22621	0.03485	2.14158	0.05617	-2.14158	0.06429	0.00000	0.00000
IA16375 (SC279735)	1.69053	0.02632	0.30861	0.00797	1.30287	0.01894	0.12200	0.01518	-0.35109	0.01607
IA16411 (SC304762)	1.62762	0.02582	0.74142	0.00895	1.05951	0.01626	0.36436	0.01602	-0.29016	0.01879
IA16455 (SC313762)	1.90335	0.02991	0.66364	0.00827	1.13051	0.01589	0.26825	0.01525	-0.32228	0.01763

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA05836 (SC735661218)	0.00000	0.00000	n/a	n/a
IA12836 (SC128528990)	0.00000	0.00000	n/a	n/a
IA16375 (SC279735)	-1.07378	0.02059	0.00000	0.00000
IA16411 (SC304762)	-1.13371	0.02697	0.00000	0.00000
IA16455 (SC313762)	-1.07648	0.02388	0.00000	0.00000

Table 2.8.33
IRT Parameters for Dichotomous Items
Science Grade 5

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA05278 (SC299440)	0.80859	0.01402	-0.36588	0.01987	0.13550	0.00700
IA05523 (SC718127878)	0.70876	0.01524	-0.51008	0.03211	0.26120	0.00980
IA05530 (SC735267831)	0.41175	0.01040	-2.31924	0.13196	0.07000	0.04320
IA05545 (SC735535118)	0.57914	0.01237	0.13921	0.02512	0.07900	0.00790
IA05560 (SC736074266)	1.04919	0.01694	-1.02104	0.01887	0.12840	0.00820
IA05630 (SC802758131)	1.05638	0.01816	-0.58381	0.01749	0.22330	0.00650
IA05664 (SC803847645)	0.62868	0.01059	-1.22697	0.03649	0.02180	0.01430
IA05681 (SC804060300)	0.84350	0.02291	1.17262	0.01762	0.21150	0.00380
IA05688 (SC804141602)	0.83503	0.01543	-1.84377	0.04386	0.18680	0.02050
IA08420 (SC304689)	1.09840	0.01651	-1.39504	0.02024	0.11040	0.00990
IA08491 (SC630232218)	0.93816	0.01665	-0.85272	0.02324	0.23990	0.00870
IA12971 (SC315988)	0.32312	0.01077	-1.50463	0.16070	0.07080	0.03870
IA05526 (SC735264282)	0.81739	0.00889	-2.07144	0.01437	0.00000	0.00000
IA05628 (SC802729980)	0.67676	0.00659	-0.75587	0.01012	0.00000	0.00000
IA05631 (SC802758561)	0.36518	0.00485	-0.15395	0.01475	0.00000	0.00000
IA03143 (SC626948259)	0.73030	0.01919	1.12751	0.01849	0.18090	0.00430
IA05563 (SC736164845)	0.70424	0.01449	-0.47422	0.02962	0.20290	0.00960
IA08484 (SC316044)	0.74484	0.01186	-1.76330	0.03899	0.05950	0.01840
IA08520 (SC803852672)	0.44699	0.00734	-2.32574	0.06760	0.01430	0.02430
IA08587 (SC903951987)	0.56936	0.01877	0.76425	0.03049	0.28440	0.00770
IA08588 (SC903953756)	0.80106	0.01482	-0.75075	0.02612	0.17450	0.00950
IA08594 (SC904133849)	0.39688	0.00776	-2.37385	0.09634	0.02600	0.03160
IA10606 (SC294532)	0.80299	0.01520	-0.85159	0.02924	0.23710	0.01020
IA10663 (SC630759730)	0.60648	0.01313	-0.91745	0.04524	0.17800	0.01460
IA14762 (SC000764661)	0.63494	0.01383	-0.45035	0.03461	0.20980	0.01050
IA14821 (SC203074300)	0.64369	0.01308	-0.77374	0.03699	0.16160	0.01240
IA14836 (SC235369264)	0.82162	0.01543	-0.71939	0.02612	0.22010	0.00920
IA05661 (SC803837124)	0.61320	0.00616	-0.46385	0.01037	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA08601 (SC904464623)	0.53435	0.00560	-0.28378	0.01125	0.00000	0.00000
IA10491 (SC000640828)	0.59368	0.00616	-1.40579	0.01325	0.00000	0.00000
IA10502 (SC000876847)	0.57665	0.00612	-1.40716	0.01350	0.00000	0.00000
IA10742 (SC803868033)	0.55040	0.00597	-1.18686	0.01287	0.00000	0.00000

Table 2.8.34
IRT Parameters for Polytomous Items
Science Grade 5

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA03195 (SC630756792)	0.76954	0.00612	-0.06414	0.00678	1.35451	0.01292	0.08705	0.01137	-1.44157	0.01600
IA05562 (SC736074942)	0.75030	0.00635	-0.68484	0.00777	0.93863	0.01429	-0.93863	0.01256	0.00000	0.00000
IA05634 (SC802761427)	0.75185	0.00630	0.96110	0.01004	1.82145	0.01408	0.05640	0.01574	-1.87784	0.02763
IA05657 (SC803732869)	0.60671	0.00555	0.32633	0.01124	1.43659	0.01617	-1.43659	0.02229	0.00000	0.00000
IA05662 (SC803844809)	0.81955	0.00668	-0.88158	0.00730	0.81911	0.01362	-0.81911	0.01159	0.00000	0.00000

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA08489 (SC63007362 8)	0.70909	0.00630	0.60693	0.01084	1.41066	0.01475	-1.41066	0.02209	0.00000	0.00000
IA08592 (SC90395599 6)	0.75693	0.00654	0.72077	0.00803	1.07152	0.01215	0.51346	0.01253	-1.58498	0.02166
IA10648 (SC317084)	0.78968	0.00616	0.52841	0.00780	1.64005	0.01278	-0.03053	0.01298	-1.60951	0.01996
IA14819 (SC13645452 9)	0.39773	0.00438	-0.81229	0.01433	1.37249	0.02763	-1.37249	0.02166	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA03195 (SC630756792)	0.00000	0.00000	n/a	n/a
IA05634 (SC802761427)	0.00000	0.00000	n/a	n/a
IA08592 (SC903955996)	0.00000	0.00000	n/a	n/a
IA10648 (SC317084)	0.00000	0.00000	n/a	n/a

Table 2.8.35
IRT Parameters for Dichotomous Items
Science Grade 8

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA05353 (SC310244)	1.06813	0.02036	-0.03794	0.01449	0.24310	0.00520
IA05534 (SC735347597)	0.71931	0.01562	-0.39989	0.02853	0.16790	0.01030
IA05674 (SC803980484)	0.97639	0.01725	-0.11495	0.01538	0.20530	0.00560
IA05675 (SC803981496)	0.75482	0.01240	-0.78045	0.02374	0.03750	0.01000
IA05690 (SC804367702)	0.78283	0.01440	-0.01833	0.01705	0.09770	0.00630
IA10633 (SC313185)	1.15475	0.01688	-0.99898	0.01571	0.08710	0.00780
IA03287 (SC712841848)	0.65252	0.00654	0.63804	0.01226	0.00000	0.00000
IA05522 (SC717662167)	1.04813	0.00955	-0.31576	0.00735	0.00000	0.00000
IA05685 (SC804130460)	1.20993	0.01129	-0.95485	0.00758	0.00000	0.00000
IA05718 (SC807245653)	1.01105	0.00971	-1.04412	0.00836	0.00000	0.00000
IA05720 (SC807247887)	0.62256	0.00654	-0.51166	0.00970	0.00000	0.00000
IA05727 (SC809171062)	0.69647	0.00686	-0.21357	0.00914	0.00000	0.00000
IA08548 (SC814241790)	0.99659	0.00944	-0.84966	0.00802	0.00000	0.00000
IA10534 (SC002325536)	0.59075	0.00644	-0.09868	0.01025	0.00000	0.00000
IA13122 (SC932538678)	0.29785	0.00533	-2.72505	0.04145	0.00000	0.00000
IA03080 (SC310259)	0.45955	0.01261	-0.96533	0.07856	0.07250	0.02480
IA03228 (SC632364984)	0.83395	0.01398	-1.02227	0.02630	0.09590	0.01180
IA08511 (SC803663810)	0.48408	0.01140	-1.13516	0.06664	0.02990	0.02320
IA08536 (SC807536360)	0.98224	0.01894	-0.32289	0.01883	0.28100	0.00670
IA08540 (SC809260455)	0.38374	0.00770	-2.69507	0.10720	0.02970	0.03610
IA10556 (SC005158817)	0.60309	0.00886	-1.64532	0.04056	0.01020	0.01790
IA10558 (SC005234987)	0.53314	0.01076	-1.68344	0.06787	0.03210	0.02740
IA12959 (SC313164)	1.20550	0.02184	0.20154	0.01137	0.19080	0.00390
IA13018 (SC735652274)	0.56907	0.01482	-0.13601	0.03755	0.14300	0.01210
IA14844 (SC235851162)	0.79654	0.02290	0.99097	0.01839	0.22290	0.00470
IA14845 (SC236056450)	0.61370	0.00902	-1.11733	0.02931	0.00450	0.01180
IA16433 (SC310225)	0.66545	0.01451	-1.91088	0.07299	0.14950	0.03340
IA05549 (SC735555129)	0.90195	0.00823	-0.68272	0.00813	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error c	Parameters and Measures of Standard Error SE(c)
IA10570 (SC028742325)	0.48450	0.00575	0.31665	0.01348	0.00000	0.00000
IA10741 (SC803856089)	0.57228	0.00607	-1.23991	0.01248	0.00000	0.00000
IA14828 (SC234722341)	0.73962	0.00770	-1.28772	0.01081	0.00000	0.00000
IA15030 (SC629172772)	0.43887	0.00554	-0.62277	0.01248	0.00000	0.00000

Table 2.8.36
IRT Parameters for Polytomous Items
Science Grade 8

Item ID	Parameters and Measures of Standard Error a	Parameters and Measures of Standard Error SE(a)	Parameters and Measures of Standard Error b	Parameters and Measures of Standard Error SE(b)	Parameters and Measures of Standard Error d0	Parameters and Measures of Standard Error SE(d0)	Parameters and Measures of Standard Error d1	Parameters and Measures of Standard Error SE(d1)	Parameters and Measures of Standard Error d2	Parameters and Measures of Standard Error SE(d2)
IA03203 (SC631441791)	0.86143	0.00781	1.02824	0.00967	0.81846	0.01300	-0.81846	0.01979	0.00000	0.00000
IA03217 (SC632262834)	0.54190	0.00538	-0.78580	0.01061	1.21679	0.02018	-1.21679	0.01638	0.00000	0.00000
IA05687 (SC804132888)	0.77196	0.00691	-1.31664	0.00824	0.62667	0.01618	-0.62667	0.01206	0.00000	0.00000
IA05729 (SC809178849)	0.84977	0.00670	0.59139	0.00801	2.07791	0.01336	-0.52261	0.01418	-1.55530	0.01975
IA05732 (SC809268358)	0.73999	0.00644	1.15422	0.01210	2.64788	0.01660	-0.64868	0.02136	-1.99920	0.03202

Item ID	Parameter s and Measures of Standard Error a	Parameter s and Measures of Standard Error SE(a)	Parameter s and Measures of Standard Error b	Parameter s and Measures of Standard Error SE(b)	Parameter s and Measures of Standard Error d0	Parameter s and Measures of Standard Error SE(d0)	Parameter s and Measures of Standard Error d1	Parameter s and Measures of Standard Error SE(d1)	Parameter s and Measures of Standard Error d2	Parameter s and Measures of Standard Error SE(d2)
IA05777 (SC81634367 0)	0.73725	0.00644	-0.95079	0.00788	0.94316	0.01514	-0.94316	0.01198	0.00000	0.00000
IA08352 (SC290232)	0.70723	0.00586	0.53292	0.00788	1.60044	0.01284	-0.15705	0.01356	-1.44338	0.01990
IA10555 (SC00515758 6)	0.76257	0.00638	1.08543	0.01018	1.82465	0.01353	-0.12084	0.01698	-1.70381	0.02779
IA12887 (SC20413683 9)	0.80124	0.00659	-0.73036	0.00705	0.86437	0.01300	-0.86437	0.01137	0.00000	0.00000

Item ID	Parameters and Measures of Standard Error d3	Parameters and Measures of Standard Error SE(d3)	Parameters and Measures of Standard Error d4	Parameters and Measures of Standard Error SE(d4)
IA05729 (SC809178849)	0.00000	0.00000	n/a	n/a
IA05732 (SC809268358)	0.00000	0.00000	n/a	n/a
IA08352 (SC290232)	0.00000	0.00000	n/a	n/a
IA10555 (SC005157586)	0.00000	0.00000	n/a	n/a

Section 2.9

Decision Accuracy and Consistency (DAC)

Table 2.9.1
DAC Results
Biology Grade 10

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
51050	0.94	0.66	Overall	0.83	0.76	0.09	0.08
51050	0.94	0.66	Cut 1	0.94	0.92	0.03	0.03
51050	0.94	0.66	Cut 2	0.93	0.89	0.04	0.04
51050	0.94	0.66	Cut 3	0.96	0.95	0.02	0.01
51050	0.94	0.66	Cut 4	1.00	1.00	0.00	0.00
51050	0.94	0.66	Perf 1	0.87	0.79	N/A	N/A
51050	0.94	0.66	Perf 2	0.83	0.77	N/A	N/A
51050	0.94	0.66	Perf 3	0.81	0.74	N/A	N/A
51050	0.94	0.66	Perf 4	0.83	0.72	N/A	N/A

Table 2.9.2
DAC Results
English Language Arts Grade 3

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
63649	0.90	0.59	Overall	0.80	0.72	0.10	0.09
63649	0.90	0.59	Cut 1	0.94	0.92	0.02	0.03
63649	0.90	0.59	Cut 2	0.90	0.87	0.05	0.05
63649	0.90	0.59	Cut 3	0.96	0.94	0.03	0.01
63649	0.90	0.59	Cut 4	1.00	1.00	0.00	0.00
63649	0.90	0.59	Perf 1	0.85	0.75	N/A	N/A
63649	0.90	0.59	Perf 2	0.79	0.72	N/A	N/A
63649	0.90	0.59	Perf 3	0.81	0.75	N/A	N/A
63649	0.90	0.59	Perf 4	0.70	0.50	N/A	N/A

Table 2.9.3
DAC Results
English Language Arts Grade 4

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
62216	0.91	0.61	Overall	0.82	0.74	0.09	0.09
62216	0.91	0.61	Cut 1	0.94	0.92	0.02	0.03
62216	0.91	0.61	Cut 2	0.91	0.87	0.05	0.04
62216	0.91	0.61	Cut 3	0.97	0.95	0.02	0.01
62216	0.91	0.61	Cut 4	1.00	1.00	0.00	0.00
62216	0.91	0.61	Perf 1	0.85	0.76	N/A	N/A
62216	0.91	0.61	Perf 2	0.81	0.75	N/A	N/A
62216	0.91	0.61	Perf 3	0.83	0.77	N/A	N/A
62216	0.91	0.61	Perf 4	0.67	0.48	N/A	N/A

Table 2.9.4
DAC Results
English Language Arts Grade 5

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
63664	0.92	0.63	Overall	0.83	0.76	0.08	0.08
63664	0.92	0.63	Cut 1	0.95	0.93	0.02	0.03
63664	0.92	0.63	Cut 2	0.91	0.88	0.04	0.05
63664	0.92	0.63	Cut 3	0.97	0.96	0.02	0.01
63664	0.92	0.63	Cut 4	1.00	1.00	0.00	0.00
63664	0.92	0.63	Perf 1	0.83	0.72	N/A	N/A
63664	0.92	0.63	Perf 2	0.86	0.81	N/A	N/A
63664	0.92	0.63	Perf 3	0.81	0.75	N/A	N/A
63664	0.92	0.63	Perf 4	0.78	0.61	N/A	N/A

Table 2.9.5
DAC Results
English Language Arts Grade 6

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
64470	0.92	0.59	Overall	0.80	0.71	0.10	0.10
64470	0.92	0.59	Cut 1	0.94	0.91	0.03	0.03
64470	0.92	0.59	Cut 2	0.91	0.88	0.04	0.05
64470	0.92	0.59	Cut 3	0.95	0.92	0.03	0.03
64470	0.92	0.59	Cut 4	1.00	1.00	0.00	0.00
64470	0.92	0.59	Perf 1	0.85	0.76	N/A	N/A
64470	0.92	0.59	Perf 2	0.80	0.72	N/A	N/A
64470	0.92	0.59	Perf 3	0.78	0.70	N/A	N/A
64470	0.92	0.59	Perf 4	0.73	0.59	N/A	N/A

Table 2.9.6
DAC Results
English Language Arts Grade 7

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
64737	0.92	0.61	Overall	0.81	0.73	0.10	0.10
64737	0.92	0.61	Cut 1	0.94	0.92	0.03	0.03
64737	0.92	0.61	Cut 2	0.92	0.88	0.04	0.04
64737	0.92	0.61	Cut 3	0.95	0.92	0.03	0.02
64737	0.92	0.61	Cut 4	1.00	1.00	0.00	0.00
64737	0.92	0.61	Perf 1	0.87	0.79	N/A	N/A
64737	0.92	0.61	Perf 2	0.81	0.74	N/A	N/A
64737	0.92	0.61	Perf 3	0.79	0.72	N/A	N/A
64737	0.92	0.61	Perf 4	0.66	0.49	N/A	N/A

Table 2.9.7
DAC Results
English Language Arts Grade 8

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
65482	0.93	0.61	Overall	0.80	0.72	0.10	0.10
65482	0.93	0.61	Cut 1	0.94	0.92	0.03	0.03
65482	0.93	0.61	Cut 2	0.91	0.88	0.04	0.04
65482	0.93	0.61	Cut 3	0.95	0.92	0.03	0.03
65482	0.93	0.61	Cut 4	1.00	1.00	0.00	0.00
65482	0.93	0.61	Perf 1	0.86	0.78	N/A	N/A
65482	0.93	0.61	Perf 2	0.79	0.71	N/A	N/A
65482	0.93	0.61	Perf 3	0.79	0.72	N/A	N/A
65482	0.93	0.61	Perf 4	0.76	0.64	N/A	N/A

Table 2.9.8
DAC Results
English Language Arts Grade 10

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
66070	0.92	0.59	Overall	0.80	0.72	0.09	0.10
66070	0.92	0.59	Cut 1	0.95	0.93	0.02	0.02
66070	0.92	0.59	Cut 2	0.91	0.87	0.04	0.05
66070	0.92	0.59	Cut 3	0.94	0.91	0.03	0.03
66070	0.92	0.59	Cut 4	1.00	1.00	0.00	0.00
66070	0.92	0.59	Perf 1	0.84	0.74	N/A	N/A
66070	0.92	0.59	Perf 2	0.80	0.73	N/A	N/A
66070	0.92	0.59	Perf 3	0.82	0.76	N/A	N/A
66070	0.92	0.59	Perf 4	0.69	0.55	N/A	N/A

Table 2.9.9
DAC Results
Mathematics Grade 3

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
63570	0.94	0.65	Overall	0.83	0.75	0.09	0.09
63570	0.94	0.65	Cut 1	0.95	0.92	0.02	0.03
63570	0.94	0.65	Cut 2	0.92	0.89	0.04	0.04
63570	0.94	0.65	Cut 3	0.96	0.94	0.02	0.02
63570	0.94	0.65	Cut 4	1.00	1.00	0.00	0.00
63570	0.94	0.65	Perf 1	0.87	0.79	N/A	N/A
63570	0.94	0.65	Perf 2	0.81	0.74	N/A	N/A
63570	0.94	0.65	Perf 3	0.83	0.76	N/A	N/A
63570	0.94	0.65	Perf 4	0.80	0.69	N/A	N/A

Table 2.9.10
DAC Results
Mathematics Grade 4

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
61946	0.94	0.67	Overall	0.84	0.78	0.08	0.08
61946	0.94	0.67	Cut 1	0.95	0.93	0.02	0.02
61946	0.94	0.67	Cut 2	0.92	0.89	0.04	0.04
61946	0.94	0.67	Cut 3	0.96	0.95	0.02	0.02
61946	0.94	0.67	Cut 4	1.00	1.00	0.00	0.00
61946	0.94	0.67	Perf 1	0.86	0.77	N/A	N/A
61946	0.94	0.67	Perf 2	0.85	0.79	N/A	N/A
61946	0.94	0.67	Perf 3	0.84	0.79	N/A	N/A
61946	0.94	0.67	Perf 4	0.79	0.67	N/A	N/A

Table 2.9.11
DAC Results
Mathematics Grade 5

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
63371	0.94	0.67	Overall	0.85	0.78	0.08	0.08
63371	0.94	0.67	Cut 1	0.95	0.93	0.02	0.03
63371	0.94	0.67	Cut 2	0.92	0.89	0.04	0.04
63371	0.94	0.67	Cut 3	0.97	0.96	0.02	0.01
63371	0.94	0.67	Cut 4	1.00	1.00	0.00	0.00
63371	0.94	0.67	Perf 1	0.85	0.76	N/A	N/A
63371	0.94	0.67	Perf 2	0.85	0.80	N/A	N/A
63371	0.94	0.67	Perf 3	0.84	0.78	N/A	N/A
63371	0.94	0.67	Perf 4	0.82	0.69	N/A	N/A

Table 2.9.12
DAC Results
Mathematics Grade 6

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
64578	0.94	0.67	Overall	0.85	0.78	0.08	0.08
64578	0.94	0.67	Cut 1	0.95	0.93	0.02	0.03
64578	0.94	0.67	Cut 2	0.92	0.89	0.04	0.04
64578	0.94	0.67	Cut 3	0.97	0.96	0.02	0.01
64578	0.94	0.67	Cut 4	1.00	1.00	0.00	0.00
64578	0.94	0.67	Perf 1	0.85	0.77	N/A	N/A
64578	0.94	0.67	Perf 2	0.85	0.79	N/A	N/A
64578	0.94	0.67	Perf 3	0.85	0.79	N/A	N/A
64578	0.94	0.67	Perf 4	0.81	0.69	N/A	N/A

Table 2.9.13
DAC Results
Mathematics Grade 7

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
64726	0.94	0.68	Overall	0.84	0.78	0.08	0.08
64726	0.94	0.68	Cut 1	0.95	0.92	0.03	0.03
64726	0.94	0.68	Cut 2	0.93	0.90	0.04	0.04
64726	0.94	0.68	Cut 3	0.97	0.96	0.02	0.01
64726	0.94	0.68	Cut 4	1.00	1.00	0.00	0.00
64726	0.94	0.68	Perf 1	0.86	0.79	N/A	N/A
64726	0.94	0.68	Perf 2	0.85	0.79	N/A	N/A
64726	0.94	0.68	Perf 3	0.83	0.76	N/A	N/A
64726	0.94	0.68	Perf 4	0.85	0.74	N/A	N/A

Table 2.9.14
DAC Results
Mathematics Grade 8

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
65585	0.94	0.68	Overall	0.84	0.78	0.08	0.08
65585	0.94	0.68	Cut 1	0.94	0.92	0.03	0.03
65585	0.94	0.68	Cut 2	0.93	0.90	0.04	0.04
65585	0.94	0.68	Cut 3	0.97	0.96	0.02	0.01
65585	0.94	0.68	Cut 4	1.00	1.00	0.00	0.00
65585	0.94	0.68	Perf 1	0.87	0.79	N/A	N/A
65585	0.94	0.68	Perf 2	0.84	0.78	N/A	N/A
65585	0.94	0.68	Perf 3	0.84	0.77	N/A	N/A
65585	0.94	0.68	Perf 4	0.83	0.72	N/A	N/A

Table 2.9.15
DAC Results
Mathematics Grade 10

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
64719	0.94	0.67	Overall	0.84	0.77	0.09	0.07
64719	0.94	0.67	Cut 1	0.95	0.93	0.03	0.02
64719	0.94	0.67	Cut 2	0.93	0.90	0.04	0.03
64719	0.94	0.67	Cut 3	0.96	0.95	0.02	0.02
64719	0.94	0.67	Cut 4	1.00	1.00	0.00	0.00
64719	0.94	0.67	Perf 1	0.80	0.72	N/A	N/A
64719	0.94	0.67	Perf 2	0.84	0.79	N/A	N/A
64719	0.94	0.67	Perf 3	0.84	0.78	N/A	N/A
64719	0.94	0.67	Perf 4	0.87	0.78	N/A	N/A

Table 2.9.16
DAC Results
Introductory Physics Grade 10

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
12949	0.95	0.68	Overall	0.84	0.77	0.08	0.08
12949	0.95	0.68	Cut 1	0.95	0.93	0.02	0.03
12949	0.95	0.68	Cut 2	0.93	0.90	0.03	0.04
12949	0.95	0.68	Cut 3	0.96	0.95	0.02	0.02
12949	0.95	0.68	Cut 4	1.00	1.00	0.00	0.00
12949	0.95	0.68	Perf 1	0.85	0.76	N/A	N/A
12949	0.95	0.68	Perf 2	0.84	0.79	N/A	N/A
12949	0.95	0.68	Perf 3	0.82	0.76	N/A	N/A
12949	0.95	0.68	Perf 4	0.87	0.79	N/A	N/A

Table 2.9.17
DAC Results
Science Grade 5

N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
63271	0.92	0.61	Overall	0.81	0.73	0.10	0.09
63271	0.92	0.61	Cut 1	0.95	0.92	0.02	0.03
63271	0.92	0.61	Cut 2	0.92	0.88	0.04	0.04
63271	0.92	0.61	Cut 3	0.94	0.92	0.03	0.02
63271	0.92	0.61	Cut 4	1.00	1.00	0.00	0.00
63271	0.92	0.61	Perf 1	0.87	0.79	N/A	N/A
63271	0.92	0.61	Perf 2	0.80	0.72	N/A	N/A
63271	0.92	0.61	Perf 3	0.80	0.74	N/A	N/A
63271	0.92	0.61	Perf 4	0.72	0.57	N/A	N/A

Table 2.9.18
DAC Results
Science Grade 8

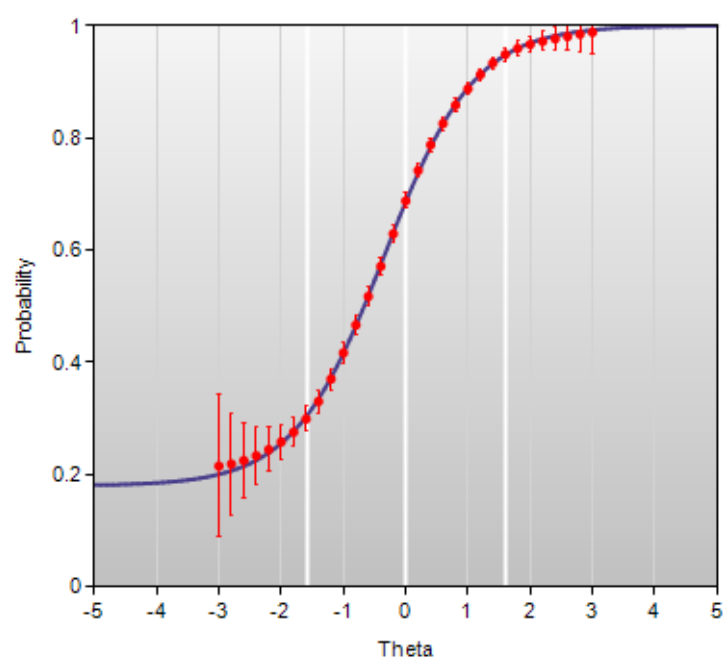
N	Reliability	Kappa	Perf/Cut	Accuracy	Consistency	F Pos	F Neg
65054	0.92	0.63	Overall	0.83	0.75	0.09	0.08
65054	0.92	0.63	Cut 1	0.94	0.92	0.03	0.03
65054	0.92	0.63	Cut 2	0.92	0.88	0.04	0.04
65054	0.92	0.63	Cut 3	0.97	0.95	0.02	0.01
65054	0.92	0.63	Cut 4	1.00	1.00	0.00	0.00
65054	0.92	0.63	Perf 1	0.85	0.76	N/A	N/A
65054	0.92	0.63	Perf 2	0.84	0.78	N/A	N/A
65054	0.92	0.63	Perf 3	0.80	0.74	N/A	N/A
65054	0.92	0.63	Perf 4	0.79	0.63	N/A	N/A

Section 2.10

Fit Plots and Beta Plots of Watchlist Items

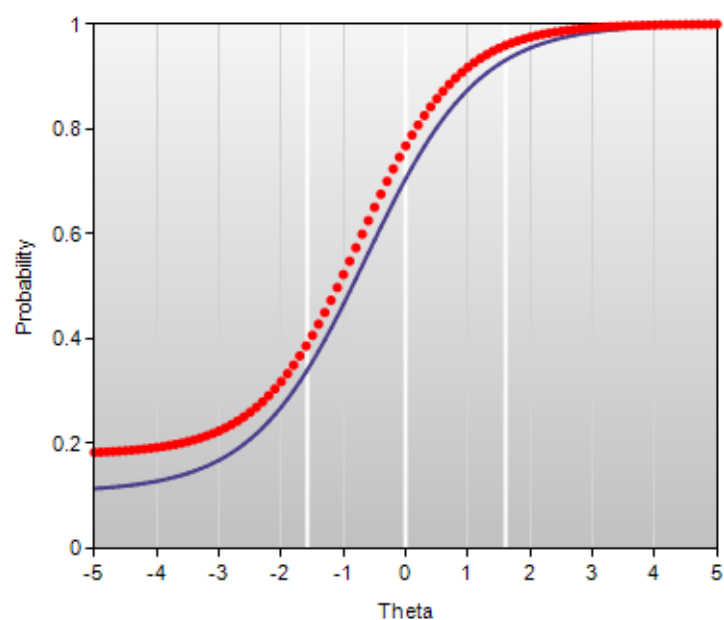
Initial Calibration

English Language Arts Grade 3: IA00280



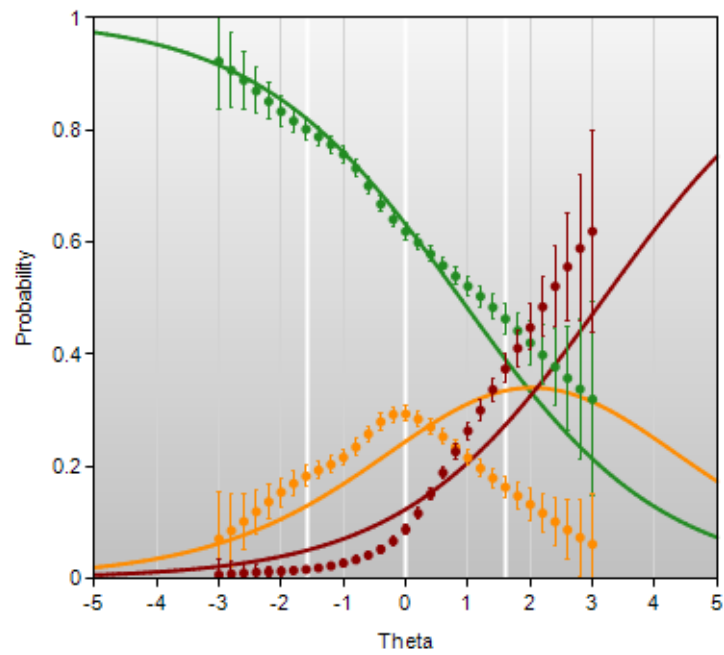
Beta Chart

English Language Arts Grade 3: IA00280
(EL308824)



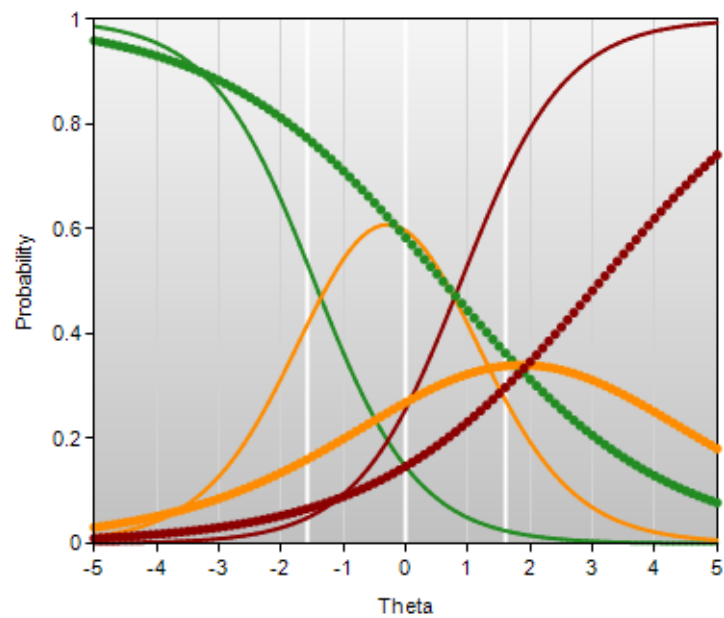
Initial Calibration

English Language Arts Grade 3: IA00445



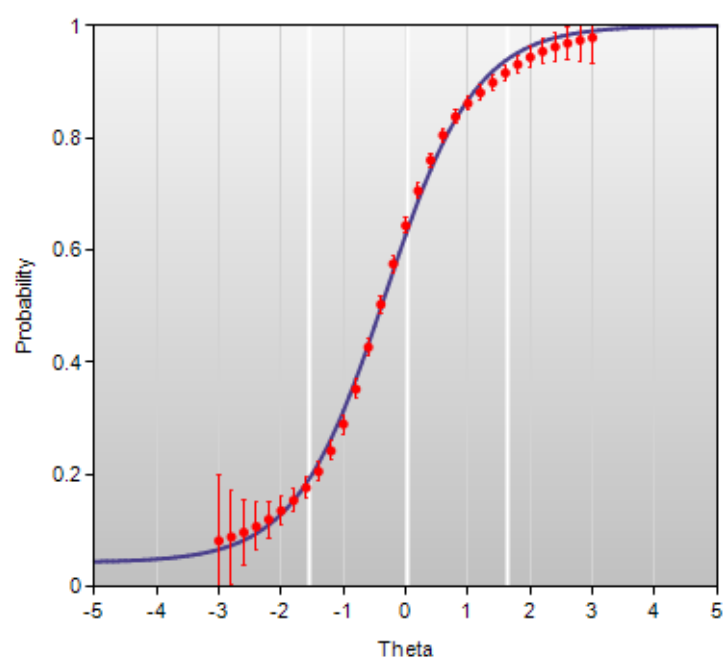
Beta Chart

English Language Arts Grade 3: IA00445
(EL626043435)



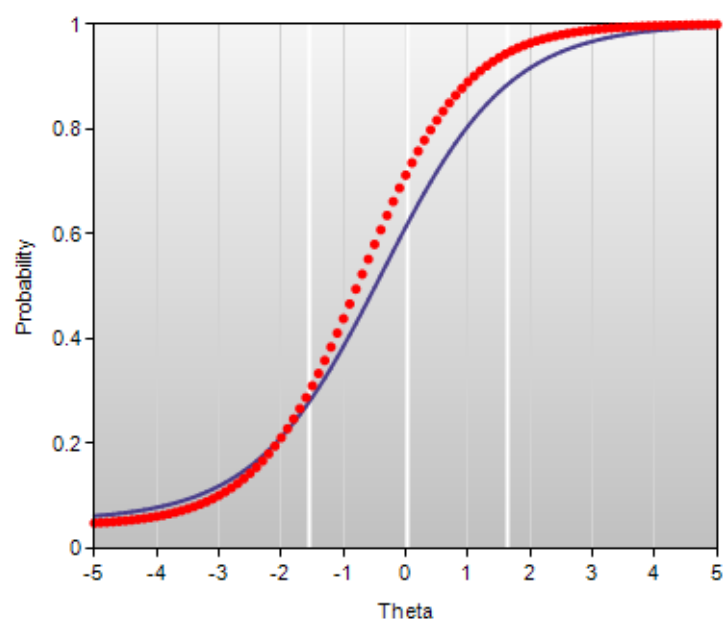
Initial Calibration

English Language Arts Grade 4: IA00408



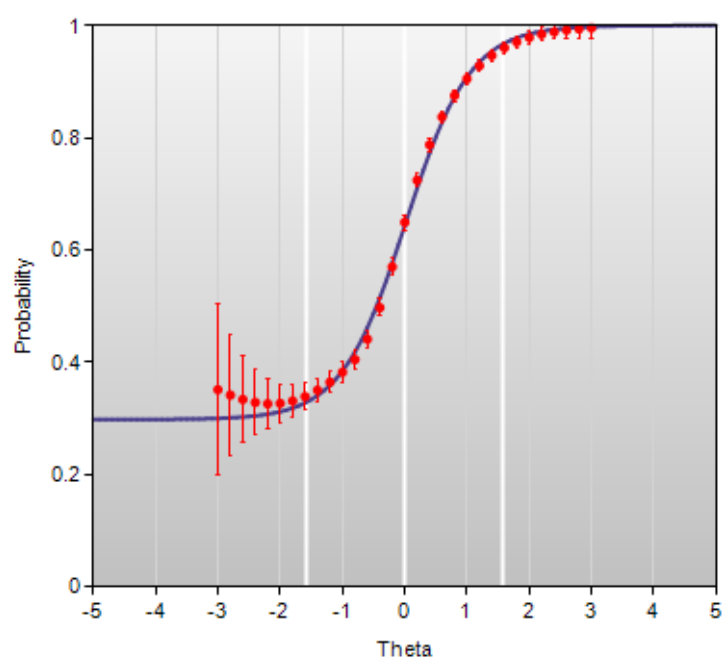
Beta Chart

English Language Arts Grade 4: IA00408
(EL624647580)



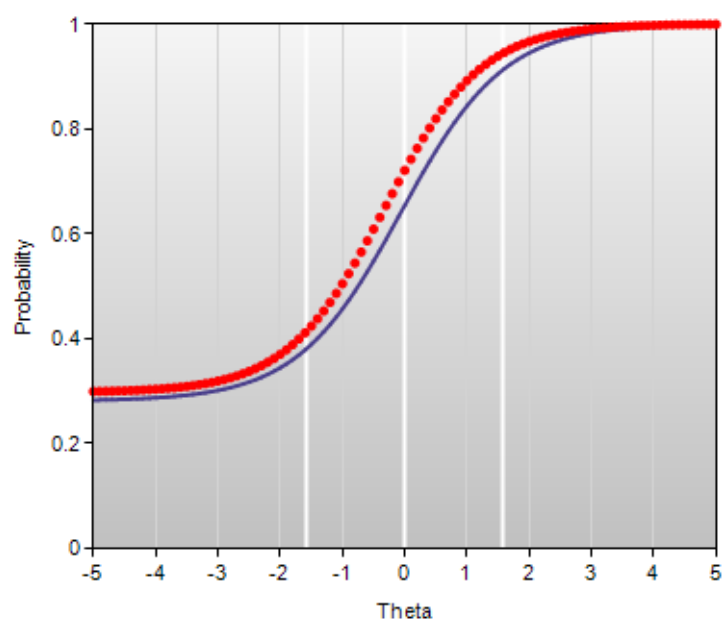
Initial Calibration

English Language Arts Grade 6: IA00175



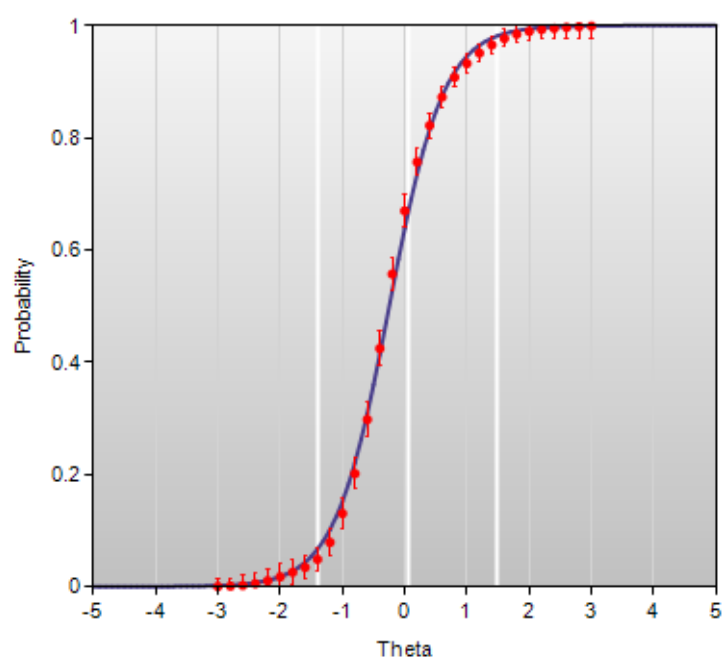
Beta Chart

English Language Arts Grade 6: IA00175
(EL303504)



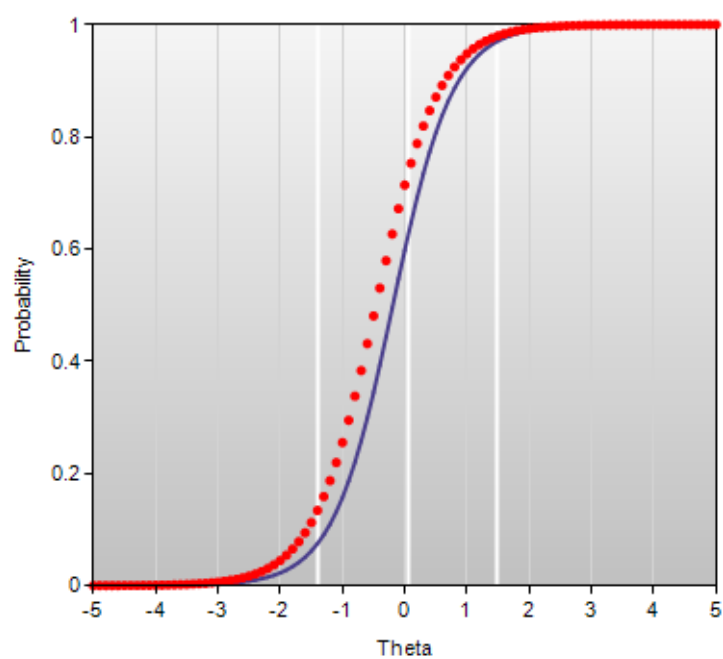
Initial Calibration

Mathematics Grade 4: IA01055



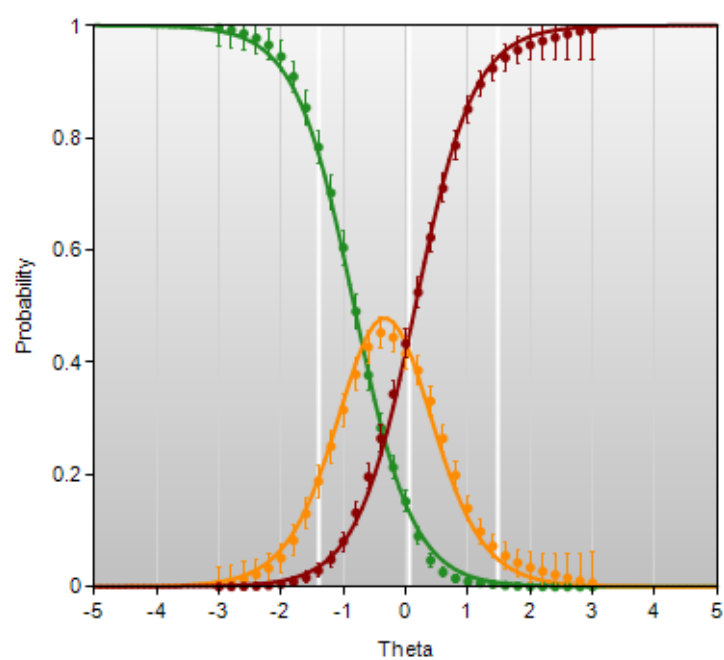
Beta Chart

Mathematics Grade 4: IA01055 (MA311572)



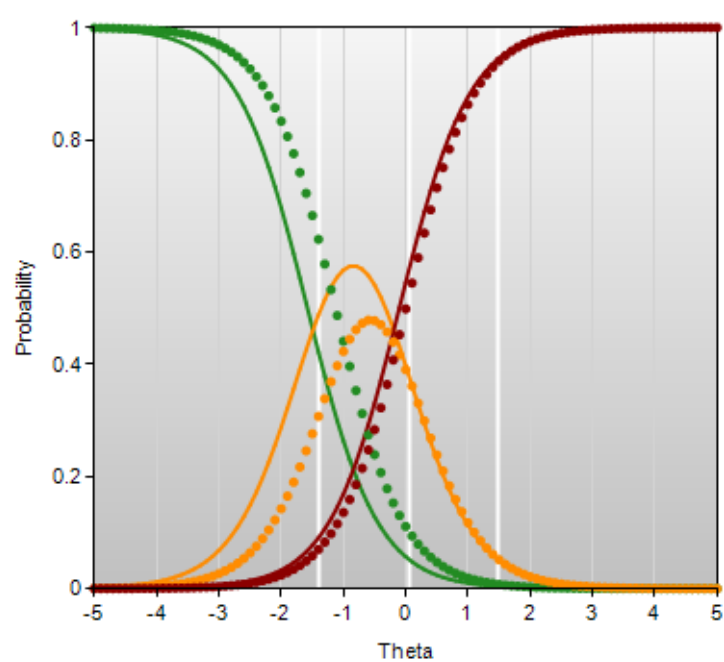
Initial Calibration

Mathematics Grade 4: IA01093



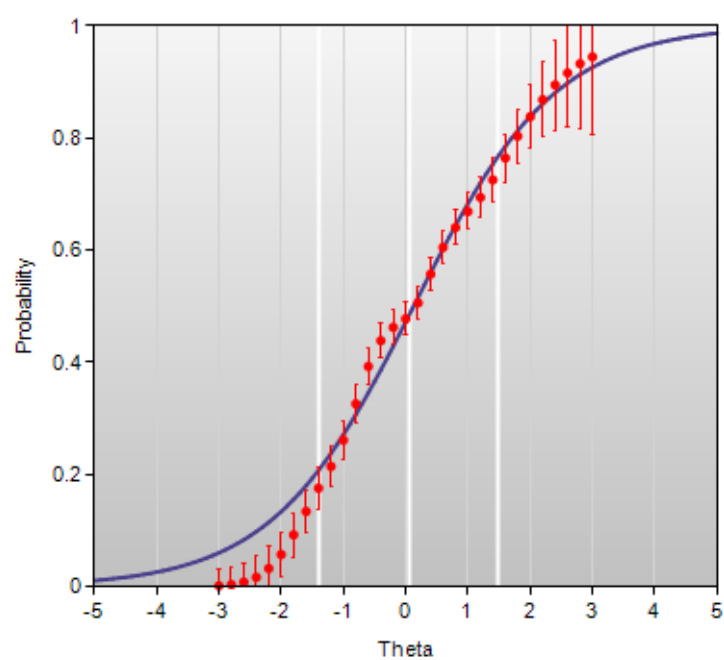
Beta Chart

Mathematics Grade 4: IA01093 (MA623879088)



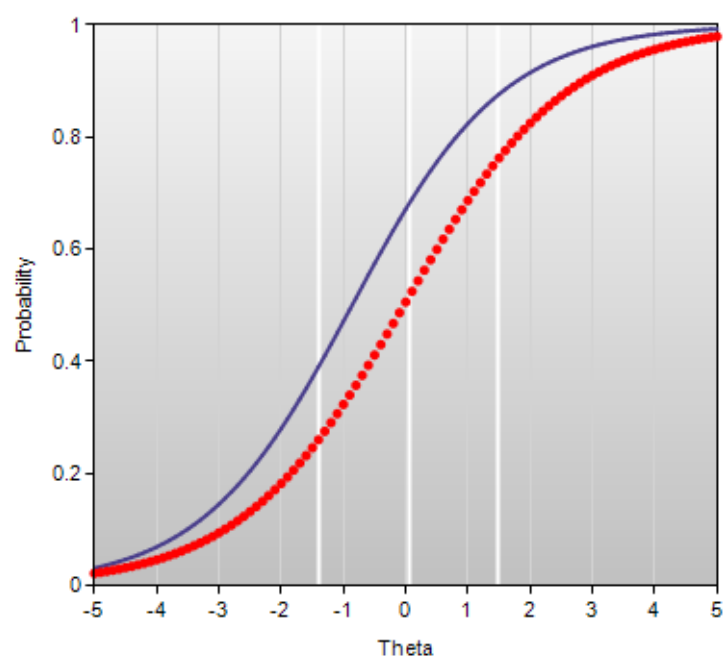
Initial Calibration

Mathematics Grade 4: IA02819



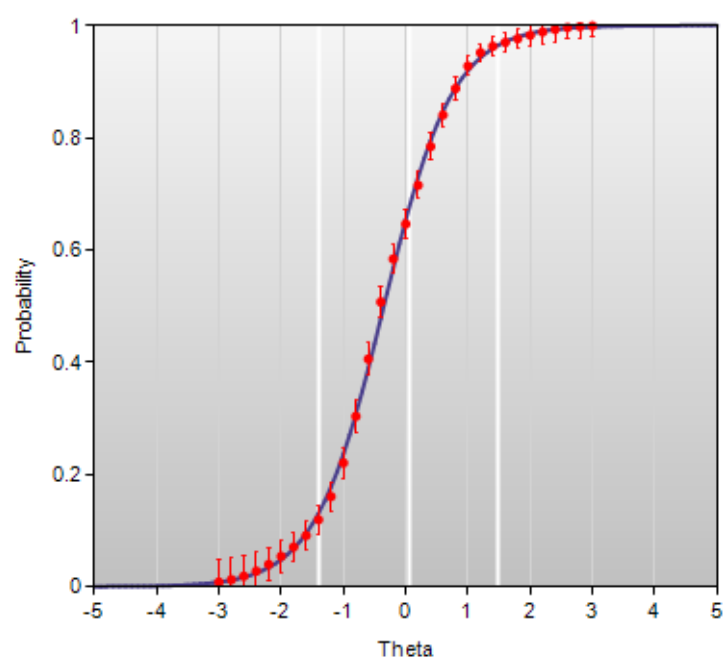
Beta Chart

Mathematics Grade 4: IA02819 (MA713583365)



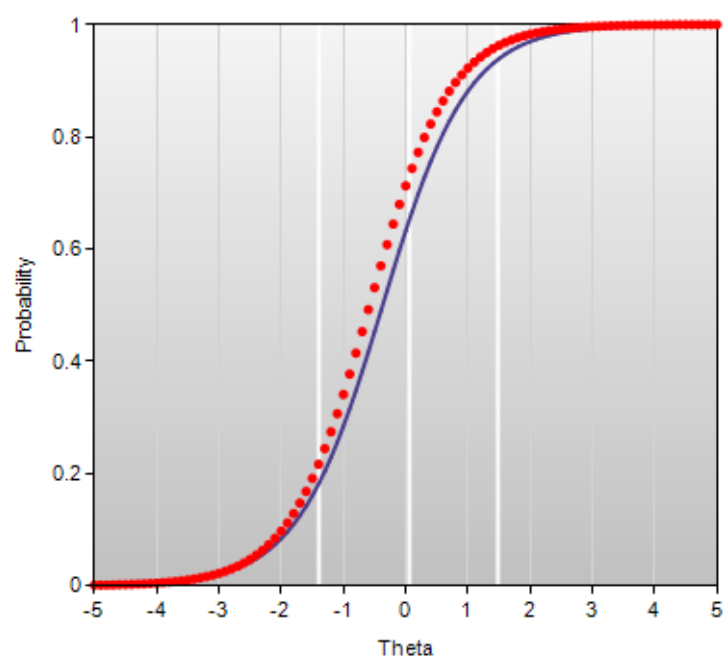
Initial Calibration

Mathematics Grade 4: IA04965



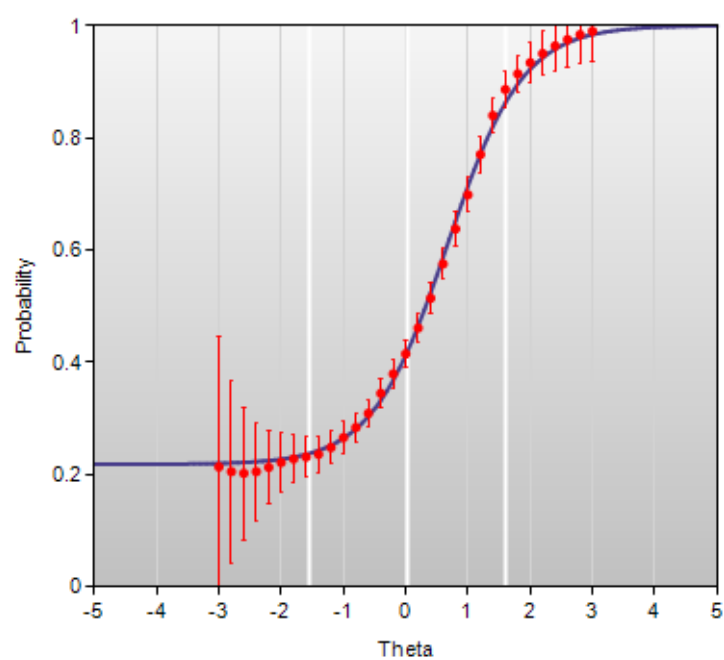
Beta Chart

Mathematics Grade 4: IA04965 (MA800867144)



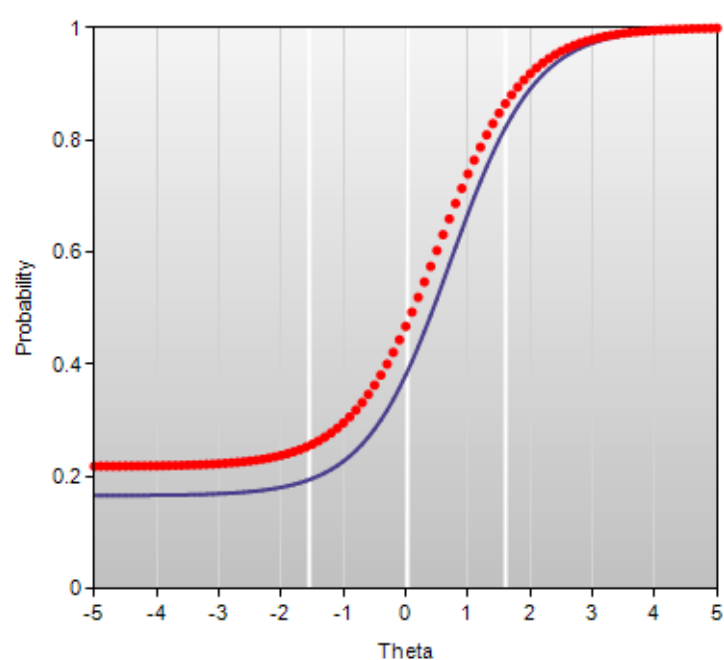
Initial Calibration

Mathematics Grade 5: IA02552



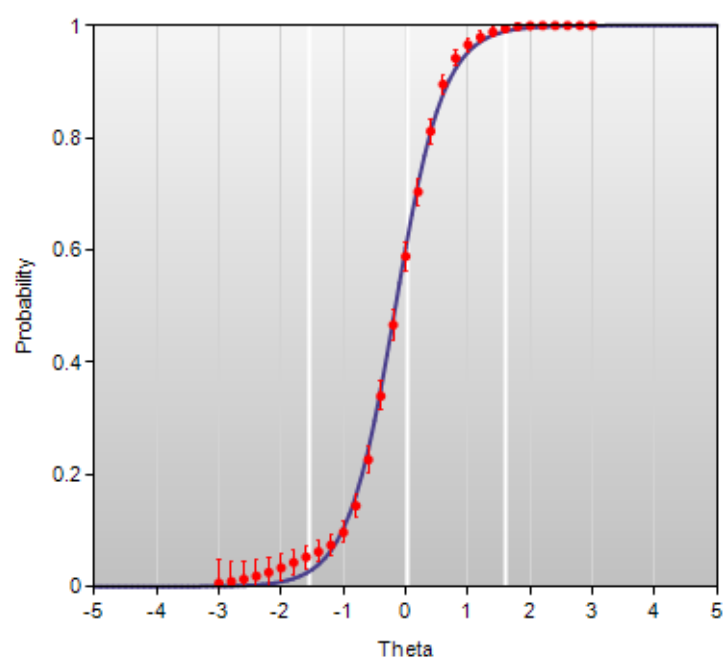
Beta Chart

Mathematics Grade 5: IA02552 (MA311324)



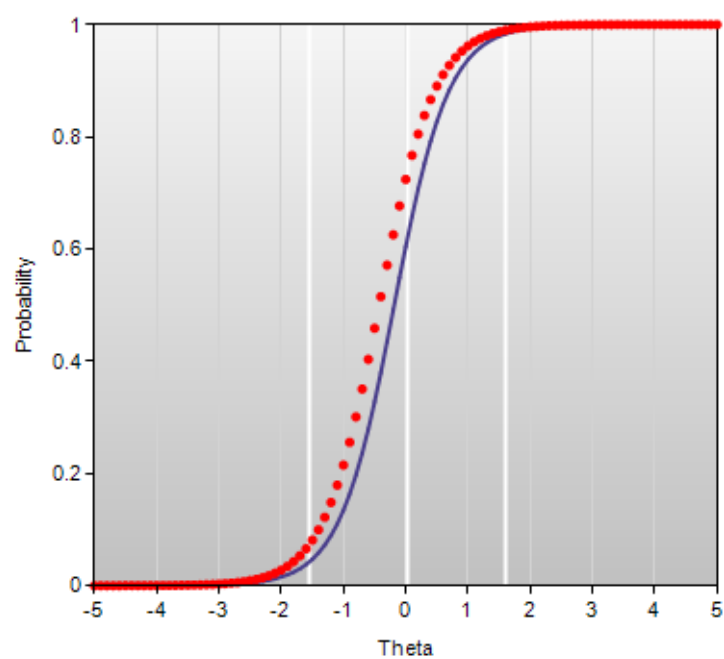
Initial Calibration

Mathematics Grade 5: IA05002



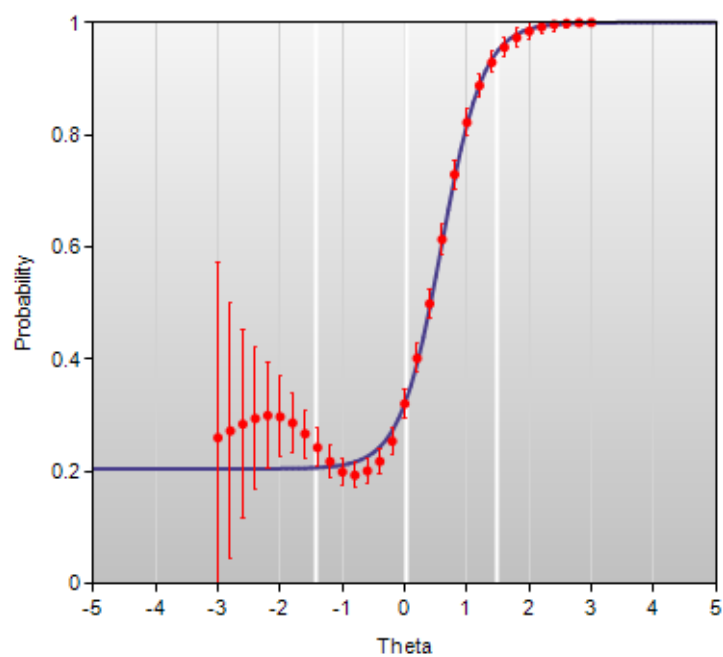
Beta Chart

Mathematics Grade 5: IA05002 (MA801652356)



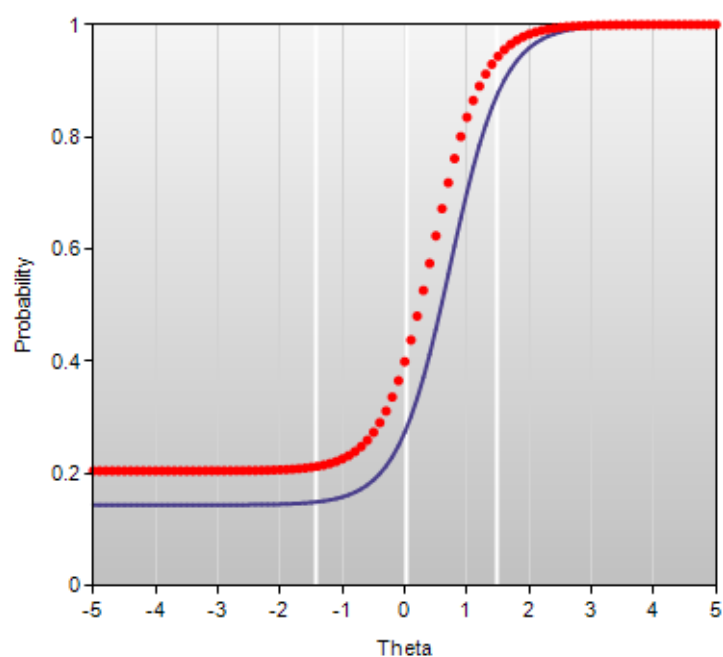
Initial Calibration

Mathematics Grade 7: IA10268



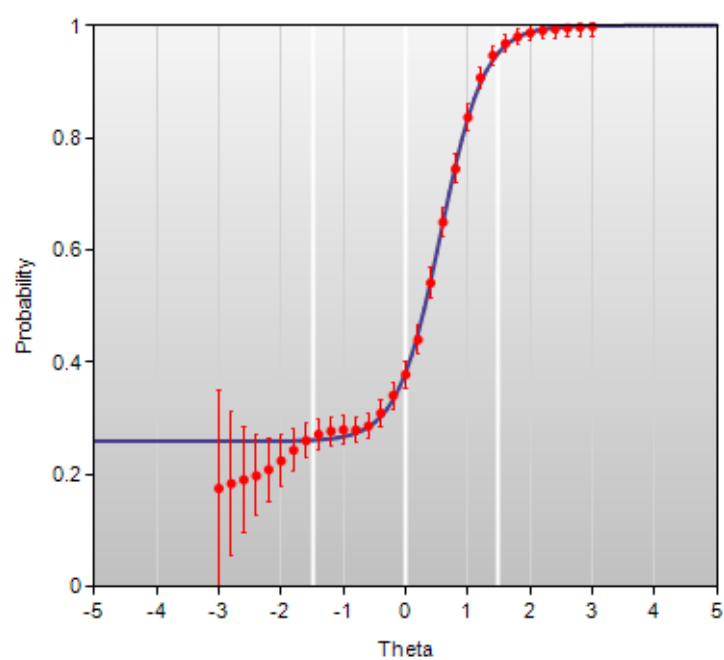
Beta Chart

Mathematics Grade 7: IA10268 (MA005205470)



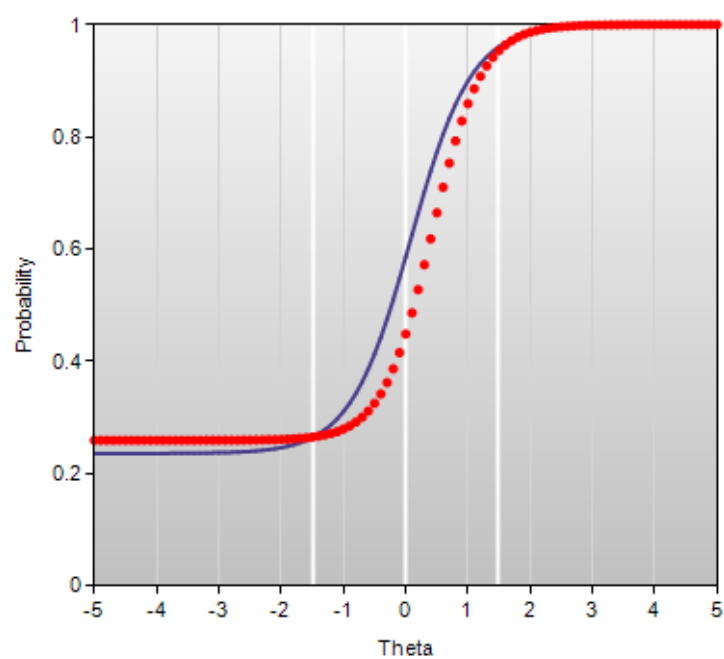
Initial Calibration

Mathematics Grade 8: IA04665



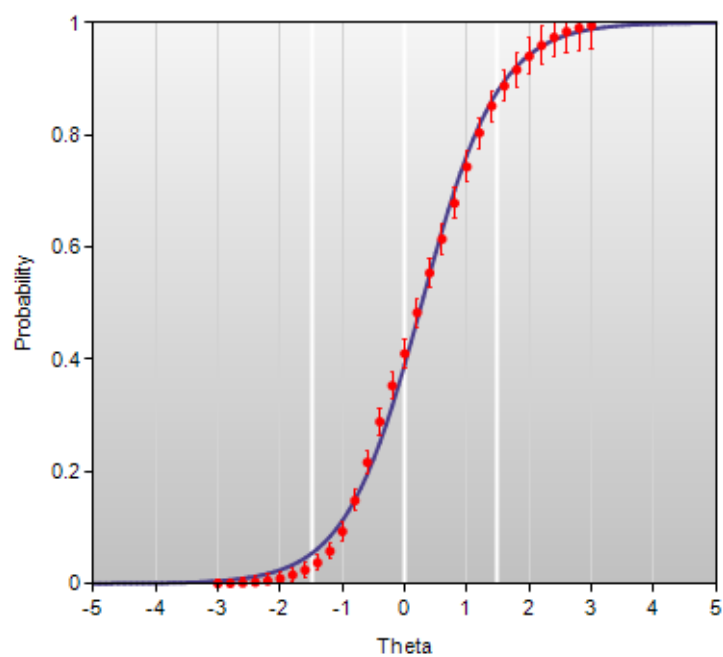
Beta Chart

Mathematics Grade 8: IA04665 (MA307399)



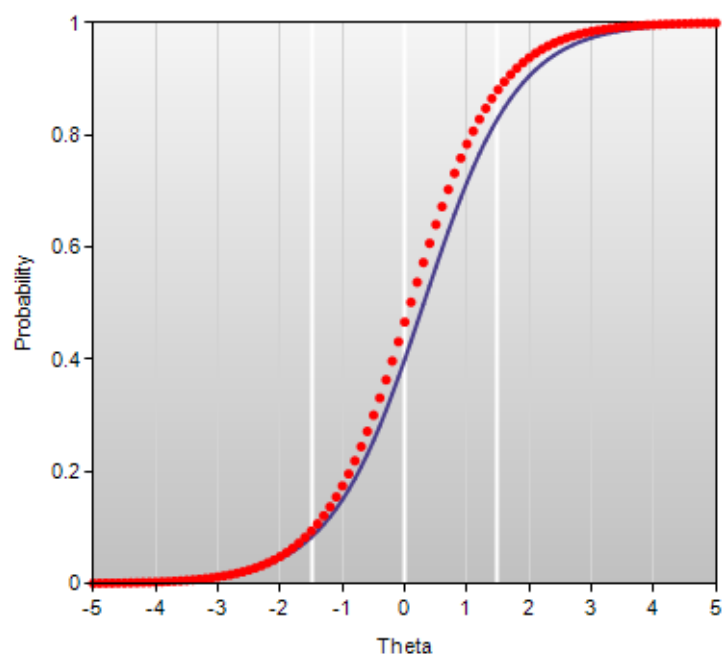
Initial Calibration

Mathematics Grade 8: IA04957



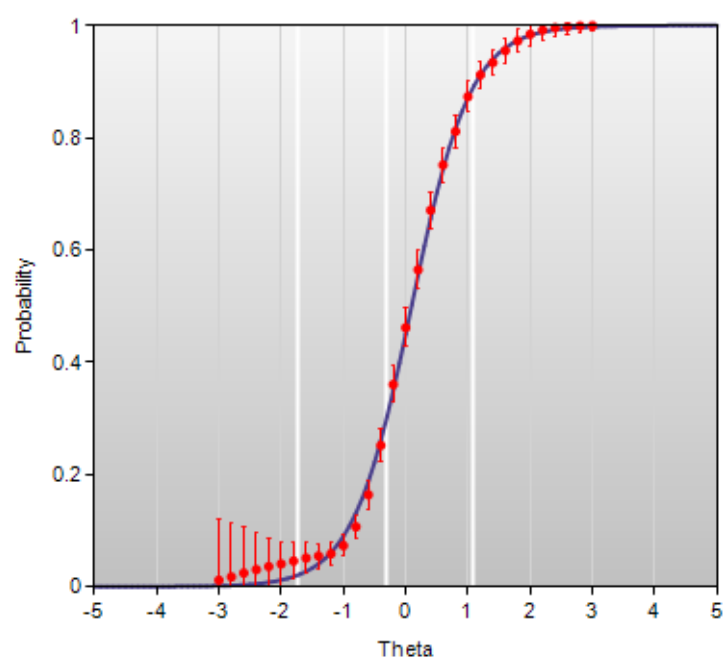
Beta Chart

Mathematics Grade 8: IA04957 (MA800770988)



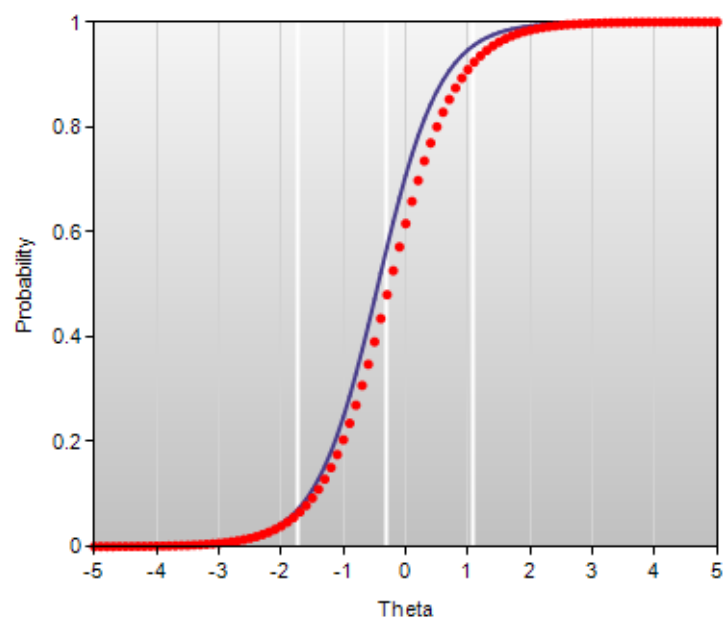
Initial Calibration

Mathematics Grade 10: IA04819



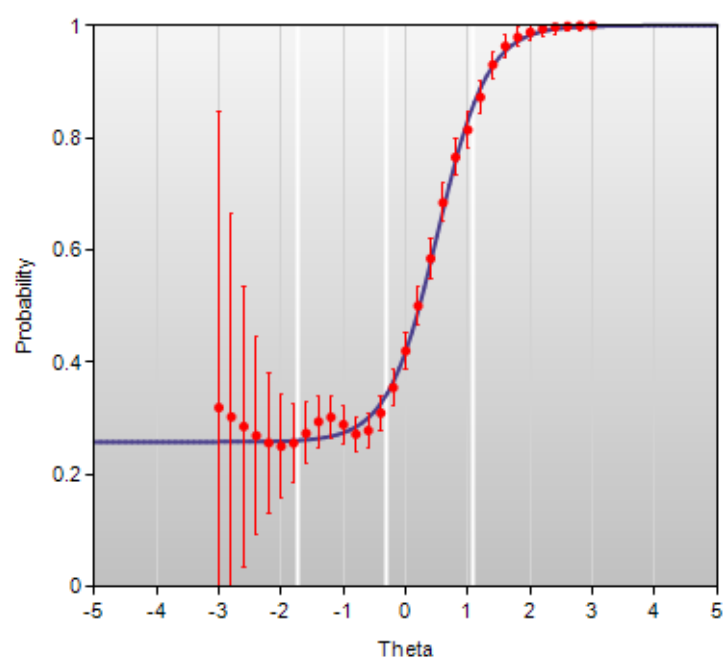
Beta Chart

Mathematics Grade 10: IA04819 (MA735579095)



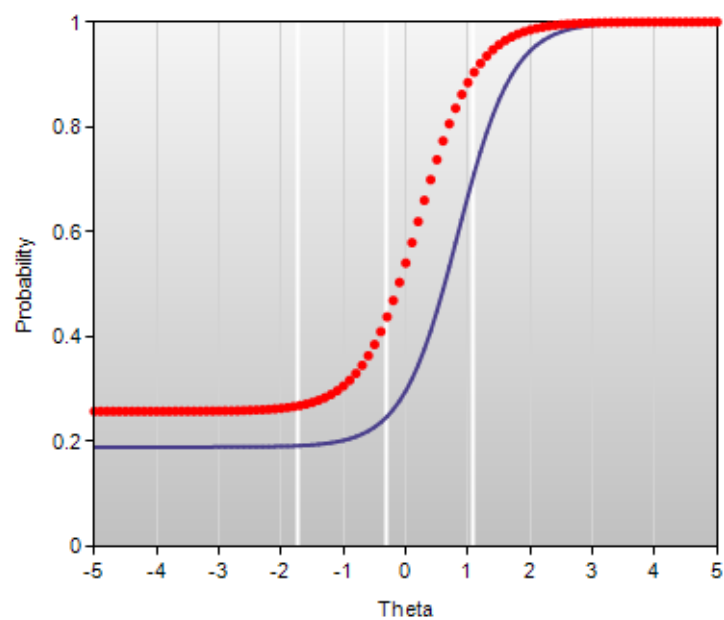
Initial Calibration

Mathematics Grade 10: IA04991



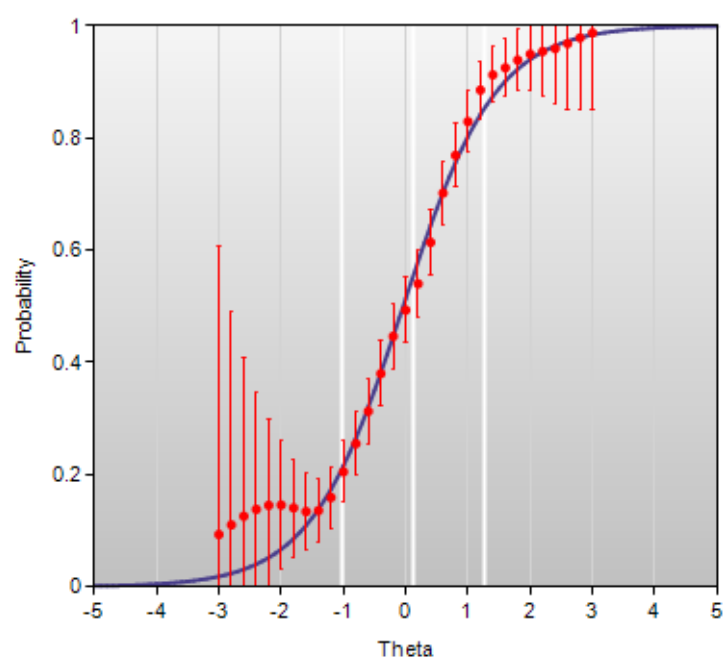
Beta Chart

Mathematics Grade 10: IA04991 (MA801426792)



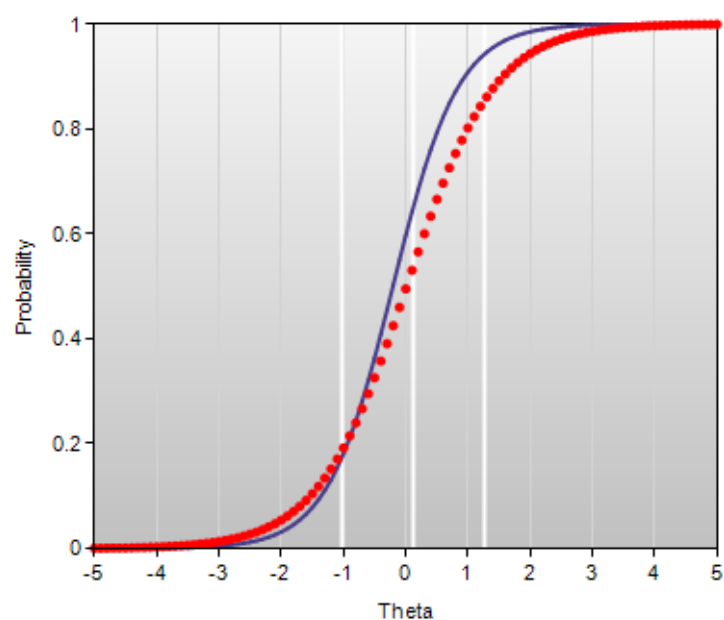
Initial Calibration

Introductory Physics Grade 10: IA10657



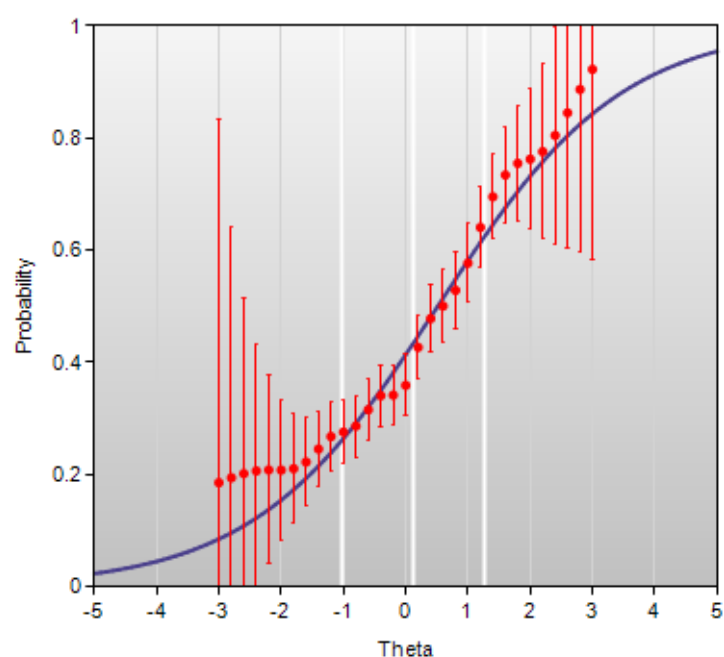
Beta Chart

Introductory Physics Grade 10: IA10657
(SC630578145)



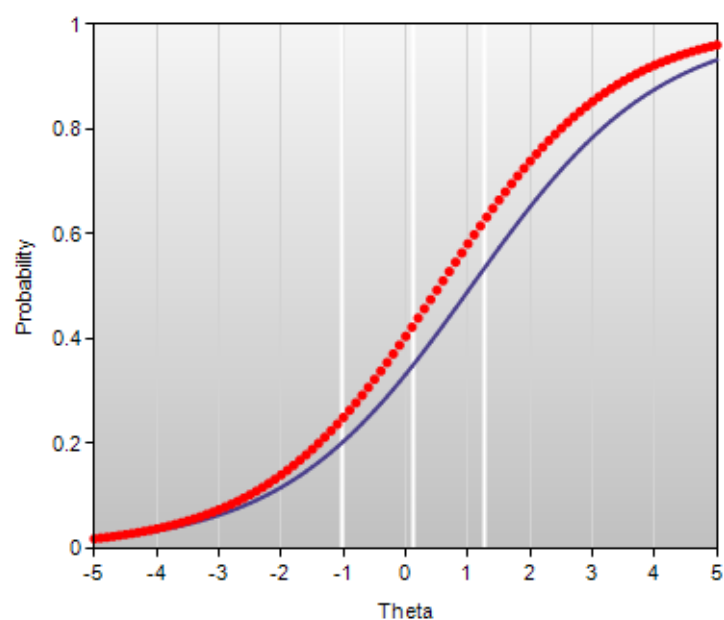
Initial Calibration

Introductory Physics Grade 10: IA10704



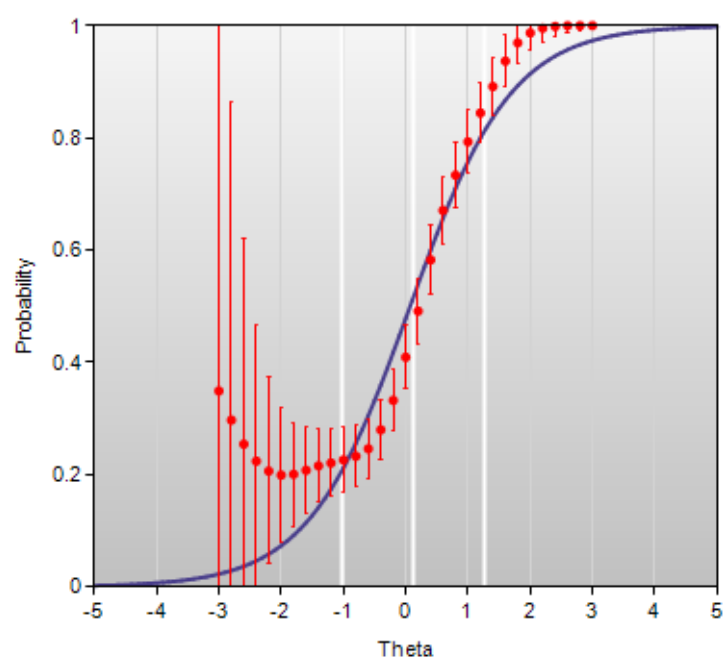
Beta Chart

Introductory Physics Grade 10: IA10704
(SC800964236)



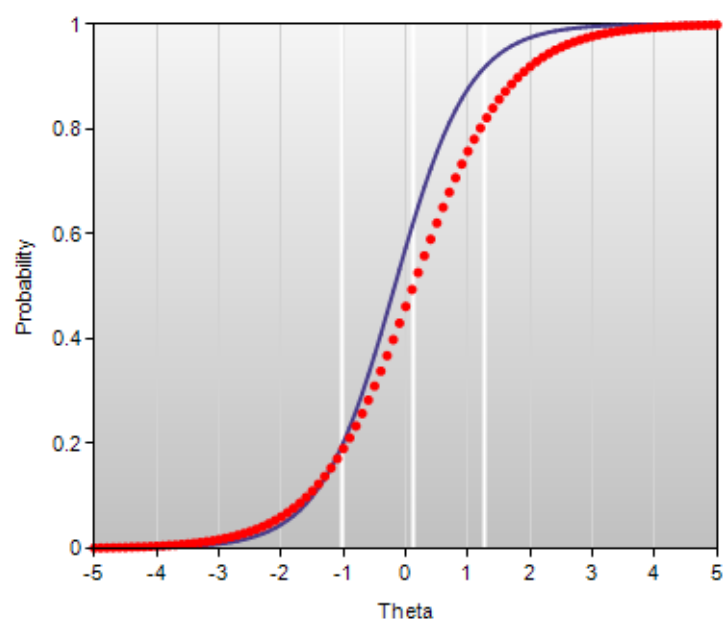
Initial Calibration

Introductory Physics Grade 10: IA10905



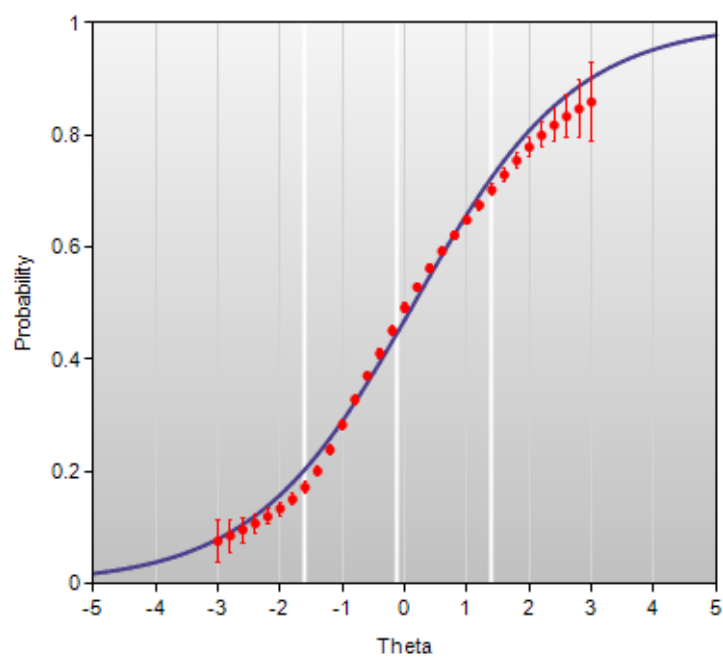
Beta Chart

Introductory Physics Grade 10: IA10905
(SC905872783)



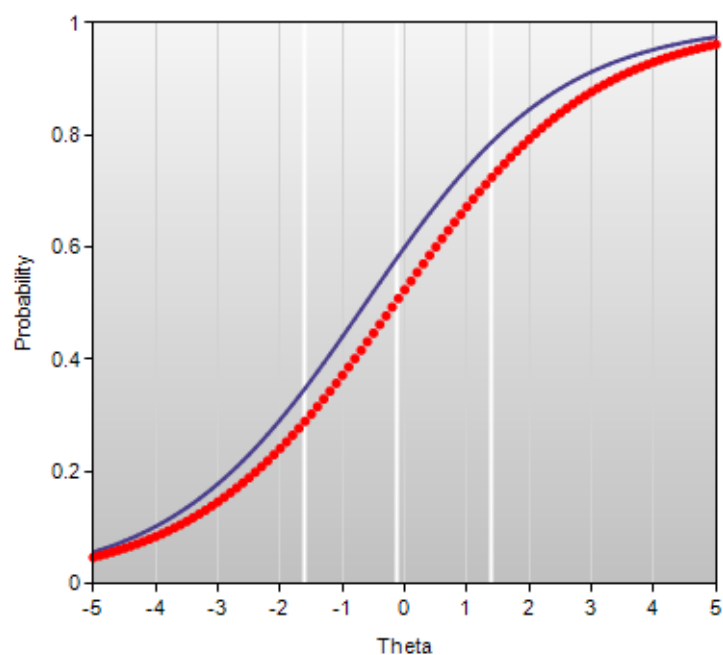
Initial Calibration

Science Grade 5: IA05631



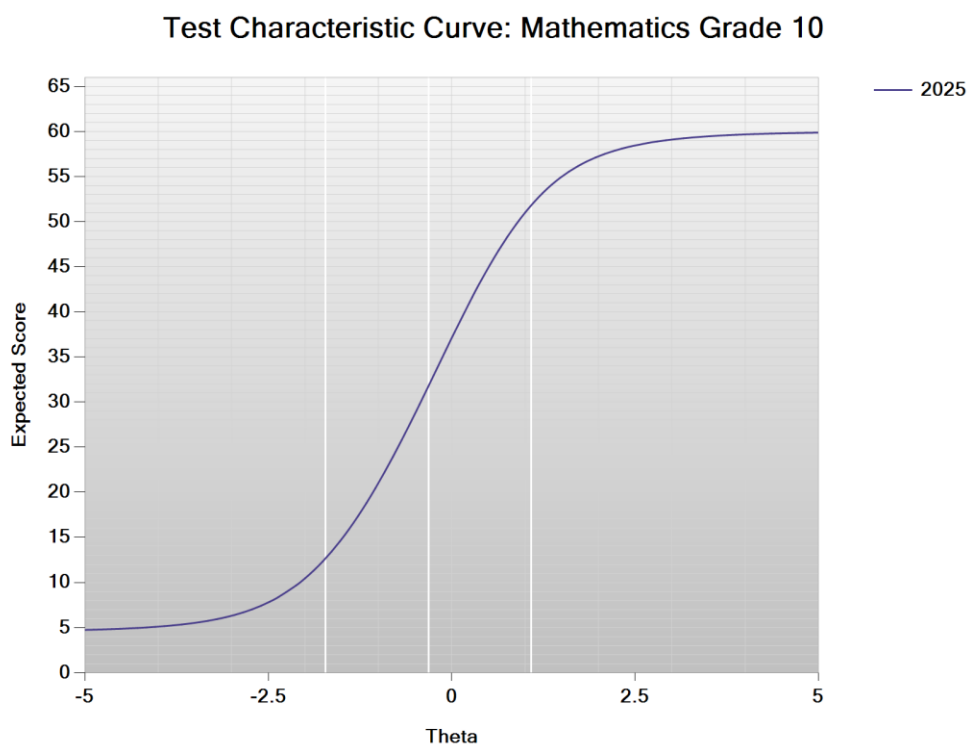
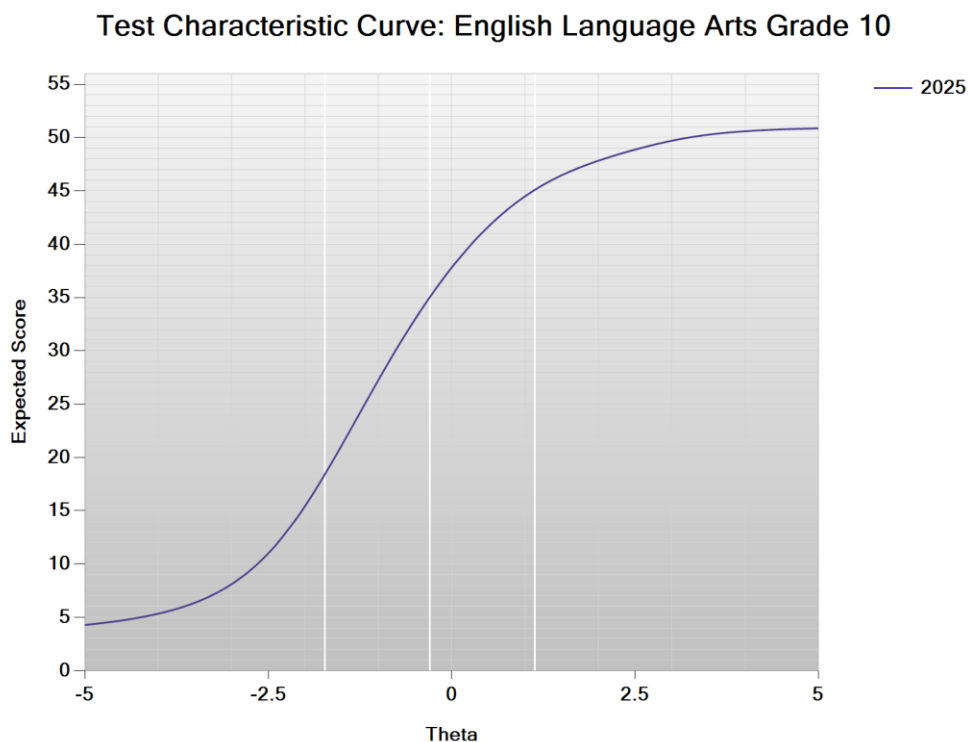
Beta Chart

Science Grade 5: IA05631 (SC802758561)

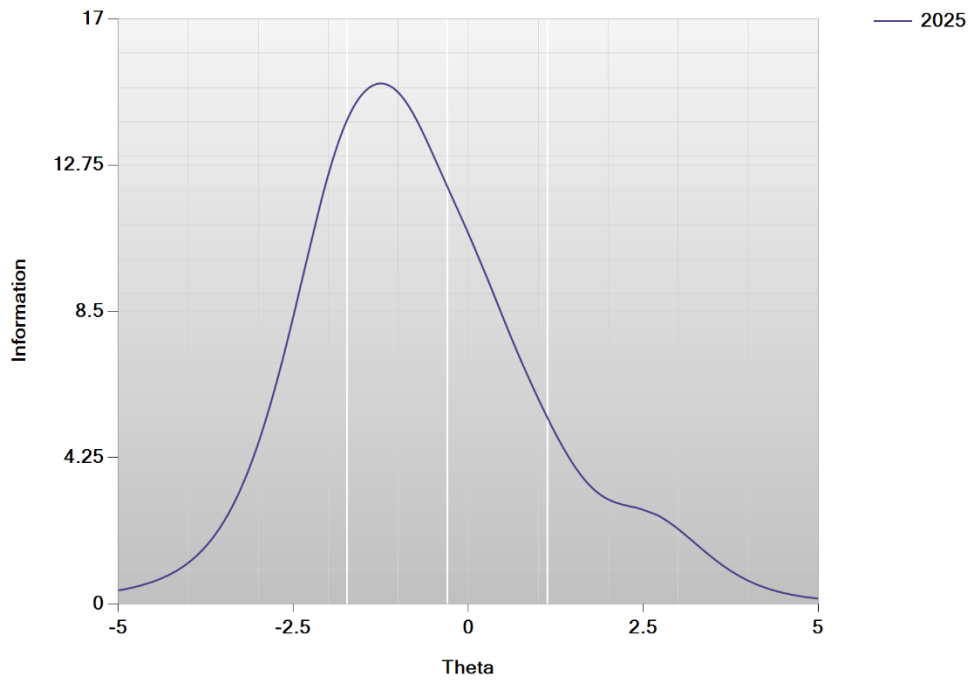


APPENDIX L
PRE-EQUATED FORMS

Figure L-1. Test Characteristic Curve and Test Information Function—November 2024 Retest



Test Information: English Language Arts Grade 10



Test Information: Mathematics Grade 10

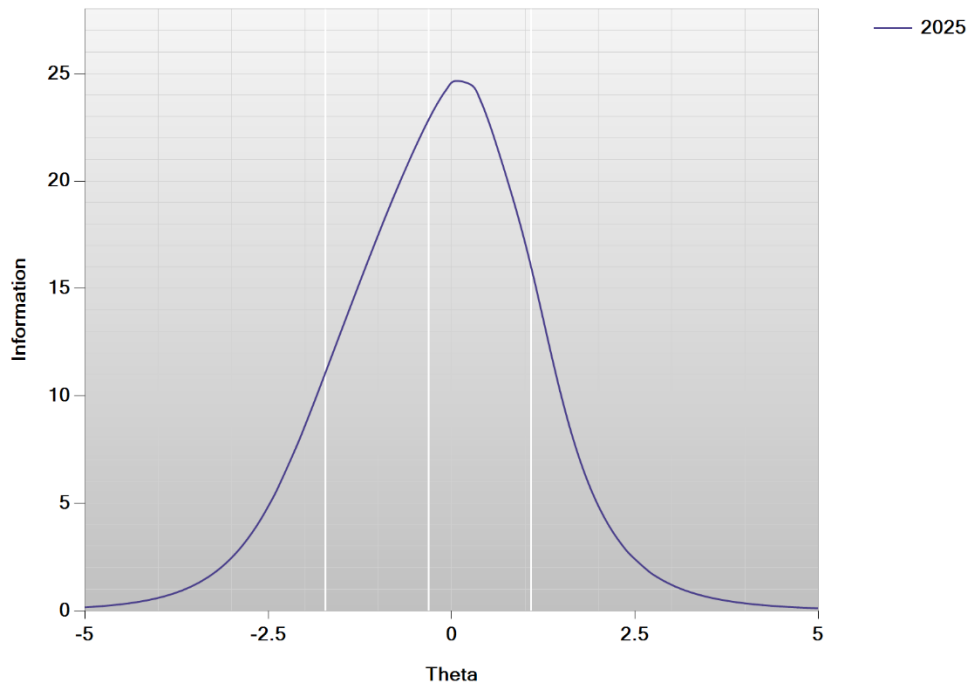


Table L-1. Raw Score to Scale Score Lookup Table—November 2024 Retest ELA

Raw Score	Scaled Score	Standard Error	Performance Level
0	440	10.0	1
1	440	10.0	1
2	441	10.0	1
3	441	10.0	1
4	441	10.0	1
5	442	10.0	1
6	442	10.0	1
7	442	10.0	1
8	443	9.9	1
9	447	8.7	1
10	451	7.9	1
11	454	7.3	1
12	456	6.8	1
13	459	6.5	1
14	461	6.2	1
15	463	6.0	1
16	465	5.9	1
17	467	5.7	1
18	469	5.6	1
19	471	5.6	2
20	473	5.5	2
21	475	5.5	2
22	476	5.4	2
23	478	5.4	2
24	480	5.4	2
25	481	5.4	2
26	483	5.4	2
27	485	5.4	2
28	487	5.5	2
29	488	5.5	2
30	490	5.6	2
31	492	5.6	2
32	494	5.7	2
33	496	5.8	2
34	498	5.9	2
35	499	6.0	2
36	502	6.1	3
37	504	6.3	3
38	507	6.4	3
39	509	6.6	3
40	512	6.8	3
41	515	7.1	3
42	518	7.4	3
43	521	7.8	3
44	525	8.3	3
45	529	9.0	3

Raw Score	Scaled Score	Standard Error	Performance Level
46	535	9.9	4
47	541	10.0	4
48	550	10.0	4
49	560	10.0	4
50	560	10.0	4
51	560	10.0	4

Table L-2. Raw Score to Scale Score Lookup Table—November 2024 Retest Math

Raw Score	Scaled Score	Standard Error	Performance Level
0	440	10.0	1
1	441	10.0	1
2	442	10.0	1
3	444	10.0	1
4	445	10.0	1
5	446	10.0	1
6	447	10.0	1
7	448	10.0	1
8	454	9.4	1
9	459	8.3	1
10	463	7.5	1
11	466	7.0	1
12	468	6.6	1
13	471	6.3	2
14	473	6.1	2
15	475	5.9	2
16	477	5.7	2
17	479	5.6	2
18	481	5.4	2
19	482	5.3	2
20	484	5.2	2
21	485	5.1	2
22	487	5.0	2
23	488	4.9	2
24	490	4.9	2
25	491	4.8	2
26	492	4.7	2
27	494	4.7	2
28	495	4.6	2
29	496	4.6	2
30	498	4.5	2
31	499	4.5	2
32	500	4.5	3
33	502	4.4	3
34	503	4.4	3
35	504	4.4	3
36	505	4.3	3

Raw Score	Scaled Score	Standard Error	Performance Level
37	507	4.3	3
38	508	4.3	3
39	509	4.3	3
40	511	4.3	3
41	512	4.3	3
42	513	4.3	3
43	515	4.4	3
44	516	4.4	3
45	518	4.5	3
46	519	4.6	3
47	521	4.6	3
48	522	4.7	3
49	524	4.9	3
50	526	5.0	3
51	528	5.2	3
52	530	5.4	4
53	533	5.7	4
54	536	6.2	4
55	539	6.8	4
56	543	7.7	4
57	548	9.2	4
58	555	10.0	4
59	560	10.0	4
60	560	10.0	4

Table L-3. IRT Parameters for Dichotomous Items—November 2024 Retest ELA

Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA06284 (EL007202517)	0.80264	0.06025	-1.43850	0.12470	0.08730	0.05570
IA06285 (EL007241231)	0.88077	0.07060	-2.06610	0.15080	0.14000	0.07170
IA06286 (EL007243064)	1.42092	0.13603	-1.70920	0.10060	0.15970	0.06290
IA06292 (EL007286235)	0.67154	0.06396	-0.64190	0.13550	0.10910	0.05050
IA06295 (EL007307209)	1.13033	0.08741	-0.63240	0.07040	0.12210	0.03410
IA06305 (EL009752693)	0.85767	0.07501	-1.55320	0.14810	0.15840	0.06770
IA06837 (EL909166608)	0.66437	0.04085	-1.64050	0.13810	0.09360	0.05820
IA06839 (EL909171887)	0.97131	0.05373	-1.75300	0.09370	0.07740	0.04950
IA06841 (EL909175312)	0.66225	0.05614	-1.20380	0.17750	0.19890	0.06680
IA06844 (EL909178450)	0.38788	0.04044	-1.05540	0.30440	0.17110	0.07490
IA06845 (EL909180957)	1.26972	0.08689	-1.24300	0.07730	0.24800	0.04070
IA06846 (EL909182877)	1.12427	0.07907	-1.25450	0.09710	0.27950	0.04730
IA11309 (EL204672932)	0.49482	0.05285	-0.65760	0.24840	0.25070	0.06530
IA11310 (EL204673946)	0.74902	0.04121	-1.81320	0.12340	0.08350	0.05360
IA11311 (EL204675385)	1.02269	0.10658	0.55710	0.06400	0.28360	0.02160
IA11314 (EL204678764)	0.74409	0.05961	-0.62670	0.11280	0.14920	0.04290
IA11318 (EL204684595)	0.77389	0.05978	-0.38880	0.09680	0.17600	0.03560
IA11321 (EL204727706)	0.86660	0.07136	-0.47400	0.09720	0.23590	0.03710
IA11938 (EL210840987)	0.24820	0.01646	-2.11910	0.34950	0.09910	0.06500
IA11939 (EL210841511)	0.52798	0.02563	-1.28600	0.13400	0.08710	0.04660
IA11940 (EL210842372)	0.41446	0.02269	-1.41850	0.18580	0.08470	0.05410

Table L-4. IRT Parameters for Polytomous Items—November 2024 Retest ELA

Item ID	a	SE(a)	b	SE(b)	d0	SE(d 0)	d1	SE(d 1)	d2	SE(d 2)	d3	SE(d 3)	d4	SE(d 4)	d5	SE(d 5)
IA06287A (EL007255989#SCORE_TRAIT_Conv)	1.364 37	0.083 24	- 0.891 76	0.033 57	0.920 53	0.084 46	0.021 33	0.058 33	- 0.941 86	0.054 71	0.000 00	0.000 00	N/A	N/A	N/A	N/A
IA06287D (EL007255989#SCORE_TRAIT_Ideadev)	1.294 94	0.073 54	0.180 88	0.043 33	2.026 38	0.088 09	0.979 48	0.064 51	0.140 38	0.061 61	- 0.799 82	0.079 12	- 2.346 42	0.185 33	0.000 00	0.000 00
IA06291 (EL007278310)	1.198 64	0.063 25	- 1.673 25	0.034 85	0.185 85	0.063 76	- 0.185 85	0.056 75	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A

Item ID	a	SE(a)	b	SE(b)	d0	SE(d 0)	d1	SE(d 1)	d2	SE(d 2)	d3	SE(d 3)	d4	SE(d 4)	d5	SE(d 5)
IA06303 (EL009745953)	0.994 65	0.046 20	- 1.650 45	0.044 23	0.787 45	0.091 15	- 0.787 45	0.058 57	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
IA07303 (EL915137209)	1.178 01	0.043 44	- 1.292 90	0.022 07	0.317 40	0.041 37	- 0.317 40	0.034 79	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
IA07304 (EL915140124)	0.487 06	0.025 22	- 2.789 85	0.090 20	1.429 55	0.190 41	- 1.429 55	0.112 06	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
IA11320 (EL204700152)	0.525 98	0.024 63	- 0.492 20	0.036 28	0.447 40	0.066 98	- 0.447 40	0.058 43	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
IA11322 (EL204730725)	0.686 06	0.025 92	- 0.624 75	0.032 47	0.899 25	0.063 01	- 0.899 25	0.048 55	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
IA11323A (EL204737494#SCORE_TRAIT _Conv)	1.157 78	0.068 31	- 1.049 26	0.042 42	1.221 43	0.113 06	- 0.036 36	0.071 45	- 1.185 06	0.060 90	0.000 00	0.000 00	N/A	N/A	N/A	N/A
IA11323D (EL204737494#SCORE_TRAIT _Ideadev)	1.073 78	0.058 73	0.149 58	0.044 38	2.384 38	0.105 03	1.199 78	0.070 05	0.115 58	0.064 35	- 0.944 52	0.078 54	- 2.755 22	0.181 21	0.000 00	0.000 00
IA11941 (EL210843315)	0.530 27	0.014 57	- 0.872 20	0.022 32	0.188 10	0.039 59	- 0.188 10	0.037 71	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A

Table L-5. IRT Parameters for Dichotomous Items—November 2024 Retest Math

Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA02492 (MA308769)	0.37342	0.03515	-1.14970	0.29660	0.14370	0.07580
IA04496 (MA250938)	1.24638	0.10587	0.06230	0.06300	0.22550	0.02870
IA04573 (MA294321)	0.67460	0.03621	0.17230	0.04100	0.00000	0.00000
IA04792 (MA717347711)	1.07495	0.07824	-0.75950	0.09390	0.14060	0.05190
IA04804 (MA717936698)	2.05191	0.31640	0.95690	0.04020	0.27460	0.01540
IA04825 (MA735637141)	0.93891	0.04808	-1.32680	0.05630	0.00000	0.00000
IA05047 (MA803761301)	1.17689	0.09529	-0.07530	0.06780	0.21160	0.03190
IA07752 (MA805571027)	1.14656	0.04697	-0.84060	0.02890	0.00000	0.00000

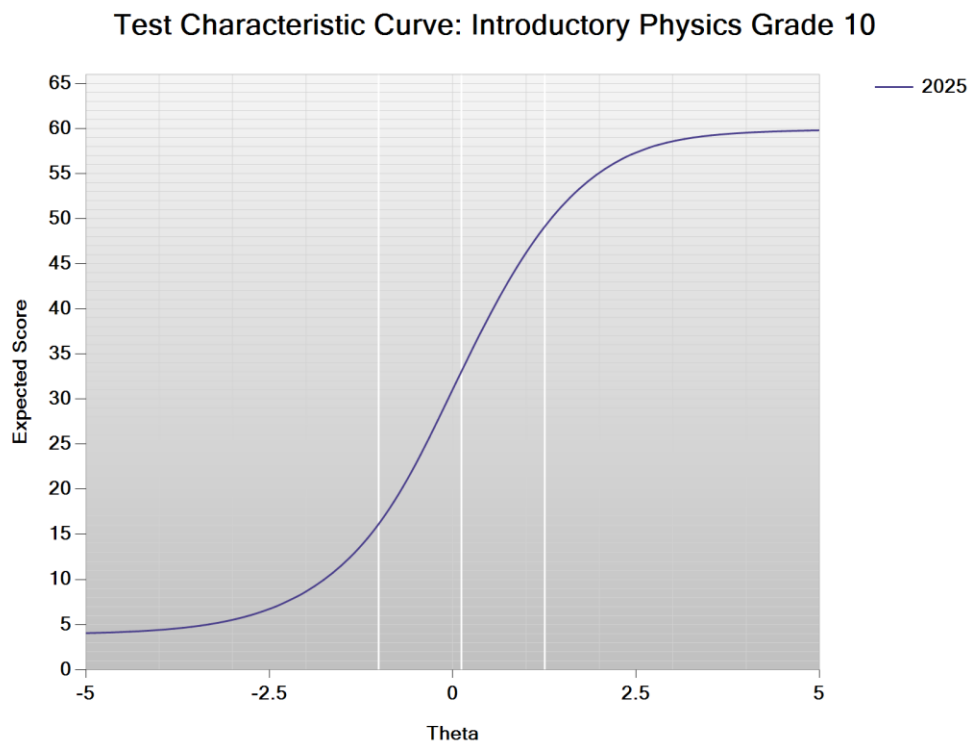
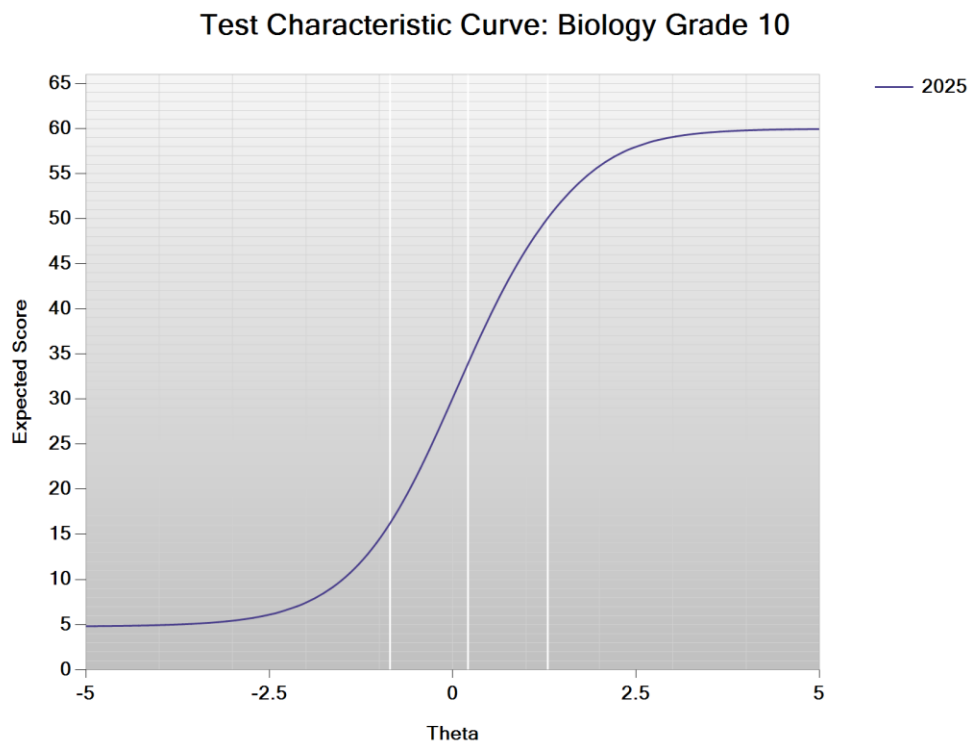
Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA07936 (MA900765017)	1.84861	0.29706	0.96570	0.04620	0.33880	0.01380
IA08122 (MA903431688)	0.71963	0.03262	-0.43180	0.03650	0.00000	0.00000
IA08139 (MA903566770)	0.38553	0.04538	-0.31360	0.28600	0.14410	0.07100
IA08165 (MA903679846)	0.38777	0.02569	-0.51470	0.06110	0.00000	0.00000
IA09860 (MA000775600)	0.93409	0.04132	-0.99150	0.03610	0.00000	0.00000
IA10068 (MA001941646)	1.58641	0.13245	0.62360	0.03550	0.17950	0.01310
IA12155 (MA005569992)	0.62627	0.08018	0.90790	0.10490	0.18300	0.03360
IA12200 (MA135751143)	1.70664	0.10270	0.22470	0.02740	0.09540	0.01200
IA12213 (MA136064474)	0.83133	0.06931	-0.34190	0.10730	0.18140	0.04580
IA12226 (MA136256165)	0.96225	0.03838	-0.06120	0.02720	0.00000	0.00000
IA12233 (MA136350840)	0.74009	0.05020	-0.68330	0.11490	0.10290	0.05090
IA12358 (MA202885126)	0.84720	0.05631	-0.96860	0.11370	0.12040	0.05910
IA12385 (MA203184835)	1.06231	0.09400	-0.46910	0.09420	0.29150	0.04220
IA12410 (MA260236)	1.12310	0.07695	-0.30440	0.06650	0.20280	0.03140
IA12416 (MA273583)	1.16507	0.06707	-0.60640	0.05770	0.08500	0.03210
IA12417 (MA273633)	1.00141	0.03780	-0.22540	0.02640	0.00000	0.00000
IA12426 (MA287922)	1.65902	0.09118	-0.10820	0.02790	0.06540	0.01410
IA12454 (MA301997)	1.43480	0.12798	-0.24330	0.06140	0.35070	0.02780
IA12483 (MA308030)	1.12910	0.07136	-0.57300	0.06740	0.14770	0.03630
IA12484 (MA308051)	0.79947	0.05967	-0.68380	0.12190	0.17050	0.05410
IA12487 (MA308770)	1.26895	0.11358	0.25940	0.05530	0.29000	0.02210
IA12492 (MA311208)	2.13398	0.15061	0.27190	0.02630	0.17330	0.01230
IA12513 (MA315440)	1.59018	0.13592	0.54680	0.03870	0.24890	0.01520
IA12515 (MA315699)	1.06125	0.06995	-1.10380	0.09460	0.13200	0.05750

Table L-6. IRT Parameters for Polytomous Items—November 2024 Retest Math

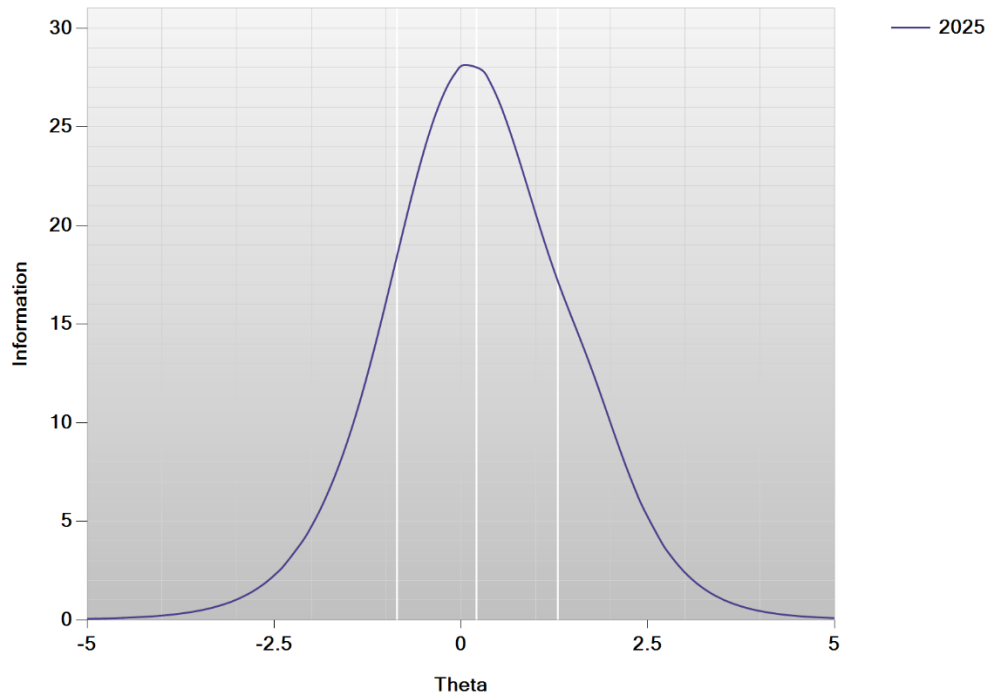
Item ID	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)	d3	SE(d3)	d4	SE(d4)
IA05166 (MA806386152)	1.29559	0.04944	- 0.70372	0.01724	0.67487	0.04374	0.24547	0.03874	- 0.10782	0.03732	- 0.81252	0.03373	0.00000	0.00000
IA05169 (MA806406325)	1.25908	0.04462	- 0.32255	0.02020	1.44935	0.05775	0.34615	0.04006	- 0.32175	0.03600	- 1.47375	0.04392	0.00000	0.00000
IA10131 (MA002180468)	0.65596	0.02686	- 0.01310	0.05276	1.82920	0.08512	- 1.82920	0.09725	0.00000	0.00000	N/A	N/A	N/A	N/A
IA10403 (MA718039043)	1.16231	0.03968	- 0.48155	0.01804	0.43665	0.03206	- 0.43665	0.03042	0.00000	0.00000	N/A	N/A	N/A	N/A

Item ID	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)	d3	SE(d3)	d4	SE(d4)
IA12160 (MA017050819)	1.20493	0.04320	0.32465	0.01855	1.05675	0.03317	0.23225	0.03750	- 0.28105	0.04085	- 1.00795	0.05202	0.00000	0.00000
IA12276 (MA200307502)	1.12821	0.03844	- 0.88755	0.02091	0.53435	0.04060	- 0.53435	0.03123	0.00000	0.00000	N/A	N/A	N/A	N/A
IA12343 (MA202683060)	0.75496	0.02774	0.01630	0.02879	0.88080	0.04633	- 0.88080	0.05316	0.00000	0.00000	N/A	N/A	N/A	N/A
IA12369 (MA202982933)	0.94291	0.03321	- 0.95825	0.02765	0.84165	0.05600	- 0.84165	0.03809	0.00000	0.00000	N/A	N/A	N/A	N/A
IA12407 (MA250910)	0.86208	0.03368	- 0.30585	0.03725	1.54285	0.06851	- 1.54285	0.06029	0.00000	0.00000	N/A	N/A	N/A	N/A
IA12518 (MA315765)	1.07689	0.04044	- 0.31737	0.02100	1.34612	0.05701	0.43662	0.03996	- 0.39367	0.03794	- 1.38907	0.05038	0.00000	0.00000

Figure L-2. Test Characteristic Curve and Test Information Function—February 2025



Test Information: Biology Grade 10



Test Information: Introductory Physics Grade 10

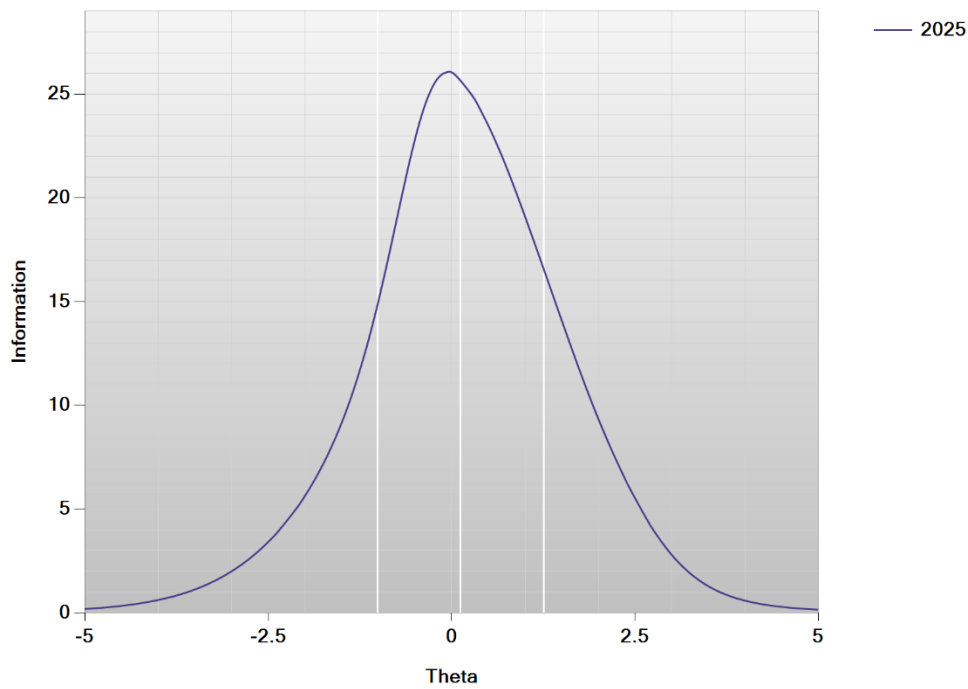


Table L-7. Raw Score to Scale Score Lookup Table—February 2025 Biology

Raw Score	Scaled Score	Standard Error	Performance Level
0	440	10.0	1
1	440	10.0	1
2	440	10.0	1
3	441	10.0	1
4	441	10.0	1
5	441	10.0	1
6	441	10.0	1
7	442	10.0	1
8	442	10.0	1
9	447	10.0	1
10	452	9.2	1
11	456	8.4	1
12	459	7.9	1
13	462	7.4	1
14	465	7.1	1
15	467	6.8	1
16	469	6.5	1
17	472	6.3	2
18	474	6.2	2
19	476	6.0	2
20	477	5.9	2
21	479	5.8	2
22	481	5.7	2
23	483	5.6	2
24	484	5.5	2
25	486	5.5	2
26	487	5.4	2
27	489	5.4	2
28	491	5.3	2
29	492	5.3	2
30	494	5.3	2
31	495	5.3	2
32	497	5.3	2
33	498	5.3	2
34	500	5.3	3
35	501	5.3	3
36	503	5.3	3
37	504	5.3	3
38	506	5.4	3
39	508	5.4	3
40	509	5.5	3
41	511	5.6	3
42	513	5.6	3
43	515	5.7	3
44	516	5.8	3
45	518	5.9	3

Raw Score	Scaled Score	Standard Error	Performance Level
46	520	6.1	3
47	523	6.2	3
48	525	6.4	3
49	527	6.5	3
50	529	6.7	3
51	532	6.9	4
52	535	7.1	4
53	538	7.4	4
54	542	7.8	4
55	546	8.2	4
56	550	9.0	4
57	556	10.0	4
58	560	10.0	4
59	560	10.0	4
60	560	10.0	4

Table L-8. Raw Score to Scale Score Lookup Table—February 2025 Introductory Physics

Raw Score	Scaled Score	Standard Error	Performance Level
0	440	10.0	1
1	441	10.0	1
2	441	10.0	1
3	442	10.0	1
4	442	10.0	1
5	443	10.0	1
6	444	10.0	1
7	444	10.0	1
8	445	10.0	1
9	446	10.0	1
10	450	9.9	1
11	455	9.2	1
12	458	8.6	1
13	461	8.0	1
14	464	7.6	1
15	467	7.2	1
16	469	6.9	1
17	472	6.6	2
18	474	6.4	2
19	476	6.1	2
20	478	5.9	2
21	480	5.8	2
22	482	5.6	2
23	484	5.5	2
24	485	5.4	2
25	487	5.3	2
26	489	5.3	2
27	490	5.2	2

Raw Score	Scaled Score	Standard Error	Performance Level
28	492	5.2	2
29	493	5.2	2
30	495	5.2	2
31	497	5.2	2
32	498	5.2	2
33	499	5.2	2
34	501	5.2	3
35	503	5.3	3
36	505	5.3	3
37	506	5.3	3
38	508	5.4	3
39	510	5.4	3
40	511	5.5	3
41	513	5.6	3
42	515	5.6	3
43	517	5.7	3
44	519	5.8	3
45	521	5.9	3
46	523	6.0	3
47	525	6.2	3
48	527	6.3	3
49	529	6.5	3
50	532	6.7	4
51	535	6.9	4
52	538	7.2	4
53	541	7.5	4
54	545	8.0	4
55	549	8.6	4
56	554	9.4	4
57	560	10.0	4
58	560	10.0	4
59	560	10.0	4
60	560	10.0	4

Table L-9. IRT Parameters for Dichotomous Items—February 2025 Biology

Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA10567 (SC022042849)	0.80828	0.04556	-0.31030	0.08570	0.06580	0.04350
IA10644 (SC316195)	1.50664	0.08506	0.19540	0.03730	0.18950	0.01990
IA10782 (SC813955482)	0.77789	0.05984	-0.07490	0.11350	0.15380	0.05030
IA10783 (SC813955856)	1.39935	0.11146	0.47650	0.04530	0.30410	0.02040
IA10915 (SC906338771)	1.46743	0.09047	-0.24010	0.04650	0.12640	0.03220
IA11004 (SC911351679)	1.37930	0.11434	0.15660	0.06230	0.39700	0.02740
IA11008 (SC911440895)	0.58477	0.02833	-0.37300	0.03970	0.00000	0.00000
IA12669 (SC001380661)	1.26743	0.15514	1.10790	0.05630	0.37950	0.01890
IA12713 (SC002962144)	0.76848	0.03374	-0.36630	0.03500	0.00000	0.00000
IA12720 (SC004443692)	0.99758	0.07654	0.03530	0.08320	0.15840	0.04300
IA12721 (SC004457945)	1.14015	0.04638	-0.39340	0.02710	0.00000	0.00000
IA12723 (SC004461619)	0.56684	0.03186	-0.52550	0.05120	0.00000	0.00000
IA12727 (SC005133127)	0.99300	0.03927	0.38740	0.02430	0.00000	0.00000
IA12759 (SC009854575)	1.19241	0.08753	0.15580	0.06180	0.18460	0.03320
IA12761 (SC009883370)	0.83098	0.03521	-0.28090	0.03210	0.00000	0.00000
IA12771 (SC016860780)	1.52704	0.12786	0.31120	0.04620	0.26730	0.02510
IA12779 (SC019235189)	0.80399	0.10470	1.41390	0.07230	0.20180	0.02410
IA12794 (SC022541674)	1.31987	0.10646	0.02950	0.06740	0.30910	0.03420
IA12799 (SC022956161)	0.94961	0.03709	0.39690	0.02620	0.00000	0.00000
IA12820 (SC028337152)	1.01187	0.04797	-0.90470	0.04000	0.00000	0.00000
IA12898 (SC215746076)	1.08206	0.04279	-0.23430	0.02460	0.00000	0.00000
IA12904 (SC235170)	1.14450	0.11005	0.19070	0.08480	0.36500	0.03580
IA12936 (SC299744)	1.43350	0.09259	0.23680	0.04160	0.14690	0.02360
IA12938 (SC299805)	1.26296	0.08659	-0.62580	0.08380	0.16010	0.05820
IA12961 (SC313449)	0.93133	0.05978	-0.99250	0.12210	0.15830	0.07320
IA12962 (SC313483)	0.87554	0.08259	0.61230	0.08140	0.21160	0.03370
IA13005 (SC705431659)	1.33932	0.05302	-0.56040	0.02580	0.00000	0.00000
IA13008 (SC706252438)	0.51716	0.08177	0.71710	0.22260	0.24570	0.06500
IA13020 (SC736454031)	0.67078	0.04420	-0.44780	0.12510	0.08290	0.05570
IA13066 (SC906546341)	0.86278	0.06319	-0.37990	0.11700	0.14960	0.06020
IA13091 (SC914942856)	0.83944	0.12921	1.07440	0.09570	0.36680	0.03190
IA13129 (SC933086184)	1.18577	0.07025	-0.62510	0.08210	0.14010	0.05430

Table L-10. IRT Parameters for Polytomous Items—February 2025 Biology

Item ID	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)	d3	SE(d3)	d4	SE(d4)
IA11035 (SC914953507)	1.73198	0.06407	0.66195	0.01493	0.87885	0.02767	0.36865	0.02758	- 0.22985	0.03244	- 1.01765	0.04335	0.00000	0.00000
IA12716 (SC004244016)	1.27419	0.05279	0.77686	0.02330	1.08706	0.04031	- 0.14873	0.04015	- 0.93833	0.05725	0.00000	0.00000	N/A	N/A
IA12765 (SC010181966)	1.53615	0.05755	0.46965	0.01583	1.03765	0.03723	0.38335	0.02975	- 0.31025	0.03061	- 1.11075	0.04246	0.00000	0.00000
IA12815 (SC028176655)	0.91546	0.03133	0.22495	0.02365	0.83885	0.04044	- 0.83885	0.04150	0.00000	0.00000	N/A	N/A	N/A	N/A
IA12826 (SC102944485)	1.03885	0.03409	- 0.22885	0.02342	0.90595	0.04617	- 0.90595	0.03403	0.00000	0.00000	N/A	N/A	N/A	N/A
IA12979 (SC316262)	1.16208	0.04562	0.68277	0.02555	1.54567	0.05297	0.55127	0.03933	- 0.46162	0.04455	- 1.63532	0.08198	0.00000	0.00000
IA13061 (SC831632902)	1.01557	0.02480	- 0.72855	0.01925	0.68755	0.03950	- 0.68755	0.02575	0.00000	0.00000	N/A	N/A	N/A	N/A
IA13069 (SC906753070)	1.22763	0.02857	0.44410	0.01071	0.22970	0.01747	- 0.22970	0.01959	0.00000	0.00000	N/A	N/A	N/A	N/A
IA13162 (SC936537700)	1.21992	0.05249	0.30696	0.02376	0.93316	0.04592	0.38326	0.03780	- 1.31643	0.05689	0.00000	0.00000	N/A	N/A
IA13163 (SC936558287)	1.00317	0.03433	- 0.46475	0.02481	0.73675	0.04973	- 0.73675	0.03494	0.00000	0.00000	N/A	N/A	N/A	N/A

Table L-11. IRT Parameters for Dichotomous Items—February 2025 Introductory Physics

Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA10708 (SC801430842)	0.89453	0.07248	-0.66020	0.06460	0.00000	0.00000
IA10944 (SC907060621)	0.58641	0.05532	0.55080	0.07360	0.00000	0.00000
IA12696 (SC002547573)	1.25073	0.14967	0.76440	0.06900	0.09940	0.02870
IA12697 (SC002548249)	0.36037	0.04767	1.84790	0.22300	0.00000	0.00000
IA12702 (SC002639982)	1.75255	0.17554	-0.23110	0.06910	0.15100	0.04480
IA12725 (SC004941734)	0.75714	0.08524	-1.49850	0.15920	0.00000	0.00000
IA12734 (SC007253949)	0.78753	0.09905	0.02670	0.15730	0.14680	0.06470
IA12822 (SC029632916)	0.74944	0.12962	0.43120	0.21820	0.32120	0.07000
IA12839 (SC129455822)	0.38965	0.06231	-0.66550	0.34800	0.17340	0.08310

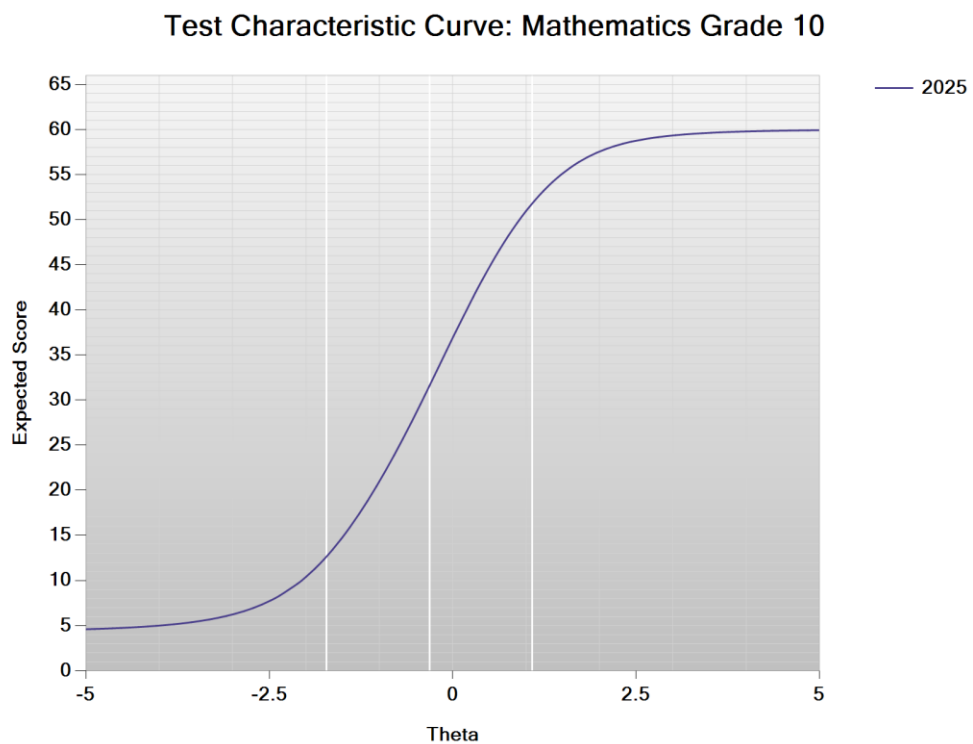
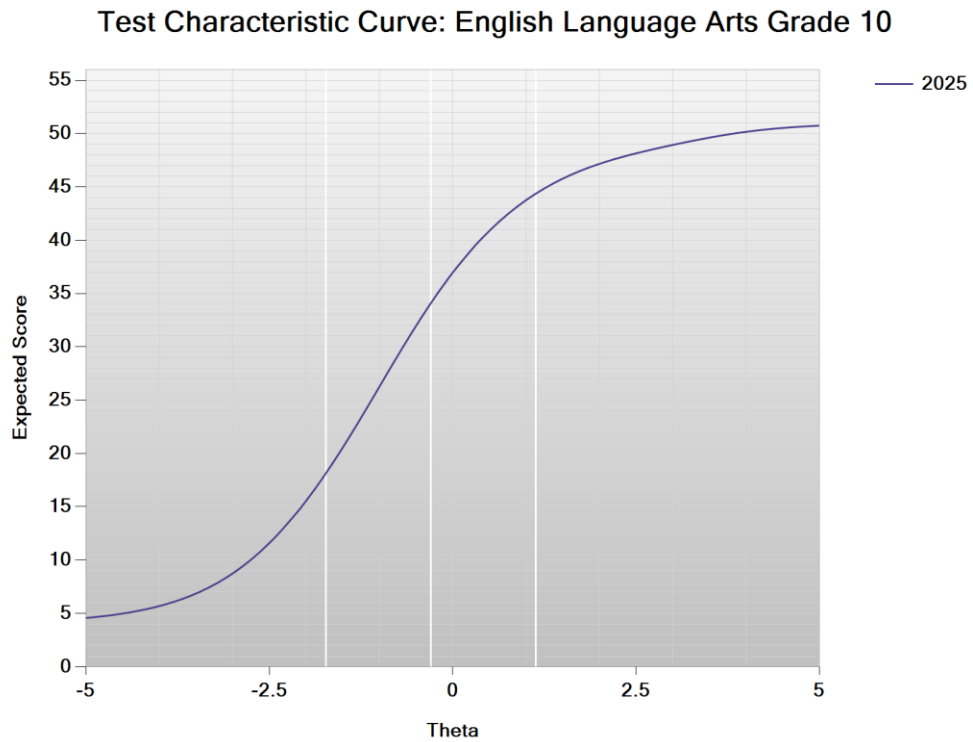
Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA12909 (SC280962)	1.14855	0.10917	-0.33720	0.09770	0.09100	0.05790
IA12980 (SC316286)	1.07813	0.09529	-0.76180	0.06860	0.00000	0.00000
IA12986 (SC317037)	1.13062	0.16102	0.61990	0.09450	0.22000	0.03880
IA12987 (SC317057)	1.21034	0.16249	0.88100	0.07520	0.15440	0.02960
IA12988 (SC317070)	1.23586	0.14126	0.21940	0.09480	0.20660	0.04660
IA13012 (SC719337635)	1.11293	0.07166	0.27380	0.04280	0.00000	0.00000
IA13019 (SC736423178)	0.89611	0.11275	-0.23830	0.15650	0.17780	0.07320
IA13022 (SC800552437)	1.59588	0.14256	-0.29620	0.06860	0.10000	0.04440
IA13023 (SC800558293)	1.37231	0.21169	0.99370	0.07560	0.19090	0.02820
IA13027 (SC801959956)	1.04967	0.14338	0.42570	0.10830	0.17930	0.04870
IA13033 (SC802832498)	0.74961	0.09459	-1.02900	0.21510	0.20810	0.08810
IA13043 (SC806136077)	0.69077	0.05655	-0.15140	0.06670	0.00000	0.00000
IA13044 (SC806651548)	1.24679	0.08348	-0.32870	0.04440	0.00000	0.00000
IA13046 (SC808230613)	1.80470	0.20399	-0.23470	0.07400	0.17360	0.05100
IA13059 (SC827655000)	0.98624	0.11105	-0.27810	0.13520	0.15650	0.06850
IA13063 (SC904331180)	1.02774	0.15473	0.59850	0.10020	0.16370	0.04500
IA13095 (SC929762010)	0.71669	0.06178	-0.44400	0.07600	0.00000	0.00000
IA13096 (SC929836344)	1.12480	0.21634	0.70610	0.12940	0.37520	0.04560
IA13098 (SC930461431)	0.70405	0.07865	-1.32960	0.14500	0.00000	0.00000
IA13107 (SC931562094)	1.09570	0.08218	0.36490	0.04500	0.00000	0.00000
IA13109 (SC931644554)	0.69917	0.05420	0.53060	0.06370	0.00000	0.00000
IA13141 (SC933948328)	1.11981	0.07601	0.26390	0.04320	0.00000	0.00000
IA13142 (SC934031046)	1.16743	0.11945	-0.70720	0.11890	0.14600	0.07280

Table L-12. IRT Parameters for Polytomous Items—February 2025 Introductory Physics

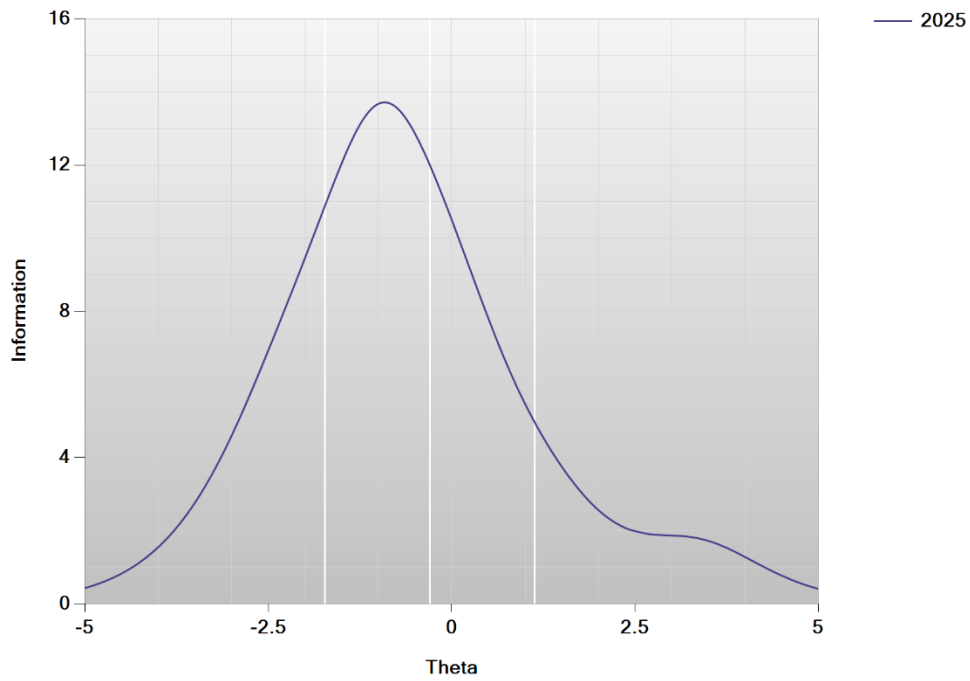
Item ID	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)	d3	SE(d3)	d4	SE(d4)
IA10736 (SC802853929)	0.77854	0.05590	- 0.70000	0.06904	1.11880	0.14262	- 1.11880	0.09088	0.00000	0.00000	N/A	N/A	N/A	N/A
IA10985 (SC910476372)	1.19288	0.05978	0.29372	0.03331	1.68722	0.08343	0.70822	0.05809	- 0.34767	0.05298	- 2.04777	0.09512	0.00000	0.00000
IA12701 (SC002562571)	1.18612	0.06537	0.69560	0.03312	1.11650	0.06047	0.10630	0.05364	- 1.22280	0.08144	0.00000	0.00000	N/A	N/A

Item ID	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)	d3	SE(d3)	d4	SE(d4)
IA12726 (SC004953091)	0.79347	0.04473	- 1.29820	0.06569	0.90210	0.13971	- 0.90210	0.07985	0.00000	0.00000	N/A	N/A	N/A	N/A
IA12808 (SC025949878)	1.67342	0.08400	0.37772	0.02000	0.88042	0.04544	0.31012	0.04031	- 0.16437	0.03953	- 1.02617	0.05246	0.00000	0.00000
IA13035 (SC803633687)	0.91634	0.06231	- 0.79700	0.06504	0.99610	0.13737	- 0.99610	0.08072	0.00000	0.00000	N/A	N/A	N/A	N/A
IA13041 (SC804329833)	1.31340	0.06848	0.70710	0.02715	1.36120	0.05471	0.32010	0.04776	- 0.40790	0.05786	- 1.27340	0.07826	0.00000	0.00000
IA13070 (SC906779820)	0.59935	0.03562	- 0.36965	0.05509	0.97635	0.11120	- 0.97635	0.07644	0.00000	0.00000	N/A	N/A	N/A	N/A
IA13105 (SC931559156)	1.21863	0.06596	0.78780	0.02994	1.00270	0.05109	- 0.03260	0.05380	- 0.97010	0.07247	0.00000	0.00000	N/A	N/A

Figure L-3. Test Characteristic Curves and Test Information Functions—March 2025 Retest



Test Information: English Language Arts Grade 10



Test Information: Mathematics Grade 10

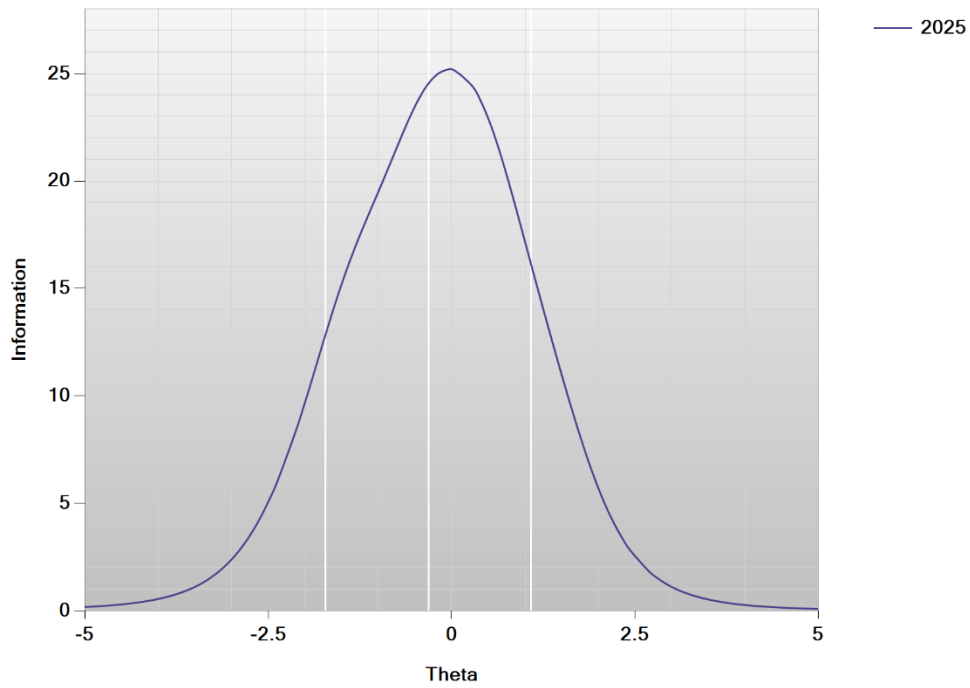


Table L-13. Raw Score to Scale Score Lookup Table—March 2025 Retest ELA

Raw Score	Scaled Score	Standard Error	Performance Level
0	440	10.0	1
1	440	10.0	1
2	441	10.0	1
3	441	10.0	1
4	442	10.0	1
5	442	10.0	1
6	443	9.9	1
7	443	9.8	1
8	444	9.7	1
9	444	9.5	1
10	448	8.8	1
11	452	8.2	1
12	455	7.8	1
13	458	7.5	1
14	461	7.2	1
15	463	6.9	1
16	465	6.7	1
17	468	6.5	1
18	469	6.4	1
19	472	6.2	2
20	474	6.1	2
21	476	6.0	2
22	478	5.9	2
23	479	5.8	2
24	481	5.8	2
25	483	5.7	2
26	485	5.7	2
27	487	5.7	2
28	488	5.7	2
29	490	5.7	2
30	492	5.7	2
31	494	5.8	2
32	496	5.9	2
33	498	5.9	2
34	499	6.1	2
35	502	6.2	3
36	504	6.3	3
37	506	6.5	3
38	509	6.7	3
39	511	6.9	3
40	514	7.2	3
41	517	7.6	3
42	520	8.0	3
43	524	8.5	3
44	528	9.2	3
45	533	10.0	4

Raw Score	Scaled Score	Standard Error	Performance Level
46	539	10.0	4
47	547	10.0	4
48	557	10.0	4
49	560	10.0	4
50	560	10.0	4
51	560	10.0	4

Table L-14. Raw Score to Scale Score Lookup Table—March 2025 Retest Math

Raw Score	Scaled Score	Standard Error	Performance Level
0	440	10.0	1
1	440	10.0	1
2	440	10.0	1
3	440	10.0	1
4	440	10.0	1
5	440	10.0	1
6	440	10.0	1
7	449	10.0	1
8	455	9.0	1
9	459	7.9	1
10	463	7.1	1
11	466	6.6	1
12	468	6.2	1
13	471	5.9	2
14	473	5.6	2
15	475	5.5	2
16	477	5.3	2
17	479	5.2	2
18	481	5.1	2
19	482	5.0	2
20	484	4.9	2
21	485	4.8	2
22	487	4.8	2
23	488	4.7	2
24	490	4.6	2
25	491	4.6	2
26	493	4.5	2
27	494	4.5	2
28	495	4.4	2
29	497	4.4	2
30	498	4.4	2
31	499	4.3	2
32	501	4.3	3
33	502	4.3	3
34	503	4.3	3
35	504	4.3	3
36	506	4.3	3

Raw Score	Scaled Score	Standard Error	Performance Level
37	507	4.3	3
38	508	4.3	3
39	510	4.3	3
40	511	4.3	3
41	512	4.3	3
42	514	4.3	3
43	515	4.4	3
44	516	4.4	3
45	518	4.5	3
46	519	4.6	3
47	521	4.6	3
48	523	4.7	3
49	524	4.9	3
50	526	5.0	3
51	528	5.2	3
52	530	5.4	4
53	533	5.6	4
54	535	5.9	4
55	538	6.4	4
56	542	7.0	4
57	546	8.0	4
58	553	10.0	4
59	560	10.0	4
60	560	10.0	4

Table L-15. IRT Parameters for Dichotomous Items—March 2025 Retest ELA

Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA07346 (EL916144247)	0.69594	0.09041	-0.38610	0.16360	0.23220	0.05660
IA07354 (EL916152205)	0.71152	0.09318	0.15560	0.12660	0.20700	0.04320
IA07355 (EL916153035)	0.89541	0.07025	-1.69330	0.14550	0.17520	0.06890
IA07356 (EL916153174)	0.45561	0.07066	-0.58720	0.31800	0.24780	0.07960
IA07399 (EL917655433)	1.13550	0.09747	-1.63050	0.11400	0.13140	0.05990
IA07401 (EL917746595)	1.22845	0.09617	-1.03470	0.07300	0.09300	0.03810
IA07402 (EL917752365)	0.89629	0.07666	-0.36010	0.08260	0.09680	0.03520
IA07404 (EL917836802)	1.31087	0.12322	-0.93420	0.07990	0.19670	0.04100
IA09689 (EL101940088)	0.69688	0.00000	-0.52930	0.00000	0.06050	0.00000
IA09693 (EL102462139)	0.89758	0.00000	-1.01690	0.00000	0.15970	0.00000
IA09694 (EL102462810)	0.36114	0.00000	-0.51250	0.00000	0.08890	0.00000
IA09695 (EL102463436)	0.71716	0.00000	-1.05520	0.00000	0.11860	0.00000
IA09697 (EL102465287)	0.83721	0.00000	-0.33180	0.00000	0.24640	0.00000
IA13353 (EL305354785)	0.36672	0.03192	-1.03300	0.25610	0.10190	0.06390
IA13354 (EL305355630)	0.71405	0.05032	-1.16900	0.13840	0.13950	0.05600
IA13355 (EL305356127)	0.51222	0.03950	-1.11150	0.19790	0.13040	0.06390
IA13356 (EL305356985)	0.87295	0.06296	-1.08170	0.11930	0.18140	0.05260
IA13357 (EL305357957)	0.83362	0.05814	-0.71520	0.10260	0.15980	0.04220
IA13358 (EL305358628)	0.82792	0.05097	-1.13930	0.11340	0.13940	0.04990
IA13815 (EL311638399)	0.80617	0.05285	-1.33240	0.12570	0.14350	0.05660
IA13816 (EL311639411)	0.80823	0.05079	-2.05960	0.14380	0.14070	0.07070

Table L-16. IRT Parameters for Polytomous Items—March 2025 Retest ELA

Item ID	a	SE(a)	b	SE(b)	d0	SE(d 0)	d1	SE(d 1)	d2	SE(d 2)	d3	SE(d 3)	d4	SE(d 4)	d5	SE(d 5)
IA07344A (EL916141936#SCORE_TRAIT _Conv)	1.159 67	0.070 42	- 1.075 76	0.043 39	1.219 53	0.116 66	- 0.126 76	0.070 13	- 1.092 76	0.063 74	0.000 00	0.000 00	N/A	N/A	N/A	N/A
IA07344D (EL916141936#SCORE_TRAIT _Ideadev)	1.057 78	0.060 78	0.319 22	0.060 93	2.279 92	0.112 94	1.262 52	0.083 78	0.284 52	0.077 69	- 0.879 78	0.100 72	- 2.947 18	0.274 64	0.000 00	0.000 00
IA07349 (EL916146099)	0.484 47	0.034 03	- 0.360 90	0.046 24	0.338 40	0.080 50	- 0.338 40	0.079 69	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A

Item ID	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)
IA13363 (EL305371719)	0.676 36	0.025 27	- 0.743 95	0.032 71	0.829 75	0.063 22	- 0.829 75	0.049 23	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
IA13365A (EL305458695#SCORE_TRAIT _Conv)	1.038 68	0.062 78	- 1.110 16	0.048 28	1.371 03	0.131 76	- 0.107 46	0.077 09	- 1.263 56	0.068 36	0.000 00	0.000 00	N/A	N/A	N/A	N/A
IA13365D (EL305458695#SCORE_TRAIT _Ideadev)	0.951 26	0.051 79	0.239 24	0.059 36	2.958 34	0.149 67	1.322 44	0.087 00	0.157 74	0.077 16	- 1.140 26	0.097 70	- 3.298 26	0.245 48	0.000 00	0.000 00
IA13366 (EL305464066)	0.843 20	0.031 15	- 2.013 70	0.053 60	1.313 00	0.115 22	- 1.313 00	0.062 94	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
IA13810 (EL311577222)	0.414 87	0.022 45	- 1.043 70	0.050 79	0.310 20	0.095 10	- 0.310 20	0.080 22	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
IA13947 (EL315953419)	1.048 08	0.036 97	- 1.253 00	0.025 64	0.561 90	0.049 80	- 0.561 90	0.038 26	0.000 00	0.000 00	N/A	N/A	N/A	N/A	N/A	N/A
Item ID	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)	d3	SE(d3)	d4	SE(d4)	d5	SE(d5)

Table L-17. IRT Parameters for Dichotomous Items—March 2025 Retest Math

Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA04533 (MA281617)	0.98606	0.04638	-0.20620	0.03230	0.00000	0.00000
IA04794 (MA717358824)	0.60199	0.08418	0.85900	0.13110	0.15300	0.04420
IA04866 (MA736046536)	1.33256	0.09935	-0.18520	0.05810	0.15410	0.03040
IA04973 (MA800981347)	0.98124	0.04221	-0.02750	0.03150	0.00000	0.00000
IA07534 (MA273582)	0.96166	0.06942	-1.01500	0.10250	0.12610	0.05380
IA07547 (MA287925)	1.54661	0.13439	0.23490	0.03930	0.19660	0.01760
IA07553 (MA293990)	1.20035	0.07219	-0.37470	0.04700	0.06670	0.02360
IA07574 (MA301007)	1.72433	0.10241	-0.21100	0.03150	0.10510	0.01550
IA07586 (MA302010)	0.69312	0.04997	-0.82410	0.13670	0.12820	0.05560
IA07611 (MA306587)	0.98206	0.04185	-1.05360	0.03390	0.00000	0.00000
IA07626 (MA308007)	0.66208	0.04926	-1.07580	0.16280	0.15660	0.06510
IA07650 (MA311199)	0.79159	0.04697	-1.25980	0.11520	0.09390	0.05720

Item ID	a	SE(a)	b	SE(b)	c	SE(c)
IA07671 (MA315472)	0.62475	0.05825	-0.34850	0.15080	0.15310	0.05300
IA07889 (MA900711981)	0.82098	0.03550	-0.36310	0.03210	0.00000	0.00000
IA08149 (MA903578308)	1.03039	0.10875	0.93580	0.05720	0.22140	0.01780
IA09851 (MA000744746)	1.34644	0.05020	-0.24380	0.02140	0.00000	0.00000
IA10257 (MA005172989)	0.93427	0.05914	-1.86050	0.12170	0.14080	0.07370
IA12225 (MA136255080)	1.58630	0.12427	0.33100	0.03780	0.24920	0.01580
IA12342 (MA202682091)	1.43562	0.11146	-1.29780	0.09210	0.25130	0.06410
IA12418 (MA274090)	0.80499	0.04750	-0.50500	0.07980	0.04770	0.03790
IA12457 (MA302022)	1.28136	0.09723	-0.01540	0.06610	0.39920	0.02410
IA12553 (MA800980337)	1.04021	0.04062	-0.61010	0.02660	0.00000	0.00000
IA12601 (MA900706123)	0.61069	0.04079	-0.47410	0.11060	0.05210	0.04360
IA14209 (MA135955395)	1.21093	0.11352	0.39030	0.05900	0.30800	0.02060
IA14248 (MA203208036)	1.39506	0.13515	0.69830	0.04480	0.23680	0.01500
IA14422 (MA234050700)	1.30640	0.09841	0.51480	0.04400	0.18890	0.01550
IA14484 (MA236074544)	0.92328	0.06266	-0.49730	0.08010	0.10860	0.03860
IA14528 (MA236485179)	0.77907	0.03133	-0.27120	0.03260	0.00000	0.00000
IA14612 (MA308027)	1.37007	0.09853	-0.42370	0.05500	0.21230	0.02860
IA14676 (MA718056686)	0.72251	0.02886	0.49220	0.04390	0.00000	0.00000
IA14698 (MA800976383)	0.60493	0.08653	0.86500	0.14010	0.28940	0.03810
IA14743 (MA903368735)	1.48647	0.14420	0.55650	0.04520	0.28350	0.01610

Table L-18. IRT Parameters for Polytomous Items—March 2025 Retest Math

Item ID	a	SE(a)	b	SE(b)	d0	SE(d0)	d1	SE(d1)	d2	SE(d2)	d3	SE(d3)	d4	SE(d4)
IA07647 (MA311169)	1.35338	0.04791	- 0.20767	0.01738	1.16982	0.04224	0.38612	0.03528	- 0.26987	0.03467	- 1.28607	0.04260	0.00000	0.00000
IA08035 (MA901382070)	0.66384	0.01887	- 0.30395	0.02563	1.04125	0.04468	- 1.04125	0.04411	0.00000	0.00000	N/A	N/A	N/A	N/A
IA10351 (MA306480)	1.41199	0.04720	- 0.14130	0.01706	1.36530	0.04431	0.45560	0.03219	- 0.42420	0.03151	- 1.39670	0.04275	0.00000	0.00000
IA10449 (MA901346045)	1.51969	0.05120	0.05592	0.01682	1.40062	0.03677	0.46762	0.03138	- 0.42517	0.03266	- 1.44307	0.04747	0.00000	0.00000
IA12467 (MA303456)	1.22386	0.04362	- 0.28212	0.01815	1.42637	0.05178	0.10637	0.03362	- 0.50452	0.03421	- 1.02822	0.04014	0.00000	0.00000
IA12573 (MA804477300)	1.19570	0.03762	- 0.00650	0.02038	0.83960	0.03133	- 0.83960	0.03887	0.00000	0.00000	N/A	N/A	N/A	N/A
IA14253 (MA218849368)	1.15884	0.04385	- 1.37960	0.02647	0.50720	0.05272	- 0.50720	0.03774	0.00000	0.00000	N/A	N/A	N/A	N/A
IA14672 (MA718037161)	0.79500	0.02957	- 0.93910	0.03161	0.84590	0.06309	- 0.84590	0.04491	0.00000	0.00000	N/A	N/A	N/A	N/A
IA14738 (MA901336761)	1.05726	0.03345	- 0.44640	0.02117	0.67320	0.03895	- 0.67320	0.03423	0.00000	0.00000	N/A	N/A	N/A	N/A
IA14746 (MA903662178)	0.46860	0.02186	- 1.25210	0.06794	1.66390	0.14165	- 1.66390	0.08735	0.00000	0.00000	N/A	N/A	N/A	N/A

APPENDIX M
MCAS STANDARD SETTING REPORT—GRADE 8 CIVICS



Massachusetts Comprehensive Assessment System (MCAS) Standard Setting Report – Grade 8 Civics

November 2025

Prepared for Massachusetts Department of Education (DESE)
and MCAS TAC Members
By Cognia



MASSACHUSETTS
Department of Elementary
and Secondary Education

This document was prepared by the Massachusetts Department of Elementary and Secondary Education
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APPENDIX O—FINAL CUT SCORES



MCAS Grade 8 Civics Standard Setting Meeting Executive Summary

The Massachusetts Department of Elementary and Secondary Education (DESE) partnered with Cognia to convene a panel of Massachusetts educators from August 5–7, 2025, to set achievement levels for the Massachusetts Comprehensive Assessment System (MCAS) assessment for grade 8 civics. Twenty-four panelists from around the state participated in three days of training and decision-making with DESE content and Cognia standard setting specialists. The standard setting panelists reviewed test content and achievement level descriptors and followed the Modified Angoff standard setting method.

This report summarizes the process and results of collecting panelists' cut score recommendations and setting achievement levels for the MCAS Civics Grade 8 assessment.

MCAS Civics Standard Setting Process

Achievement levels are used to classify student achievement on an assessment. MCAS assessments have four achievement levels: Not Meeting Expectations, Partially Meeting Expectations, Meeting Expectations, and Exceeding Expectations. To classify student achievement into the four different levels, the following components are required: (1) policy-level definitions, (2) Achievement Level Descriptors (ALDs), and (3) cut scores. Policy-level definitions provide general descriptions of the knowledge, skills, and abilities students must demonstrate to be classified into each achievement level and apply to all courses or subject areas. ALDs illustrate the achievement levels in terms that are specific to a grade level within a course or subject area. Cut scores represent the lowest boundary of each achievement level on the scale.

The process of recommending performance standards for the MCAS tests was based on standard setting procedures that were used for the other MCAS tests, was in line with national best practice, and was conducted with review and approval of the MCAS Technical Advisory Committee (TAC). Results and details of the process are presented in the following sections.

Policy-level Definitions

Policy-level definitions for the MCAS achievement levels are shown in Table 1. The titles and descriptions of the achievement levels were defined as part of a cohesive assessment system. The achievement levels indicate a student's ability to demonstrate proficiency in relation to subject- and grade-specific expectations, as indicators of a student's readiness for the next grade level or college and career, as defined in the Massachusetts curriculum framework.

The Commissioner and the Board of Elementary and Secondary Education approved the final policy-level definitions for MCAS assessments in March 2017.



Table 1. Policy-level Definitions for MCAS Achievement Levels

Achievement Level	Policy-level Definition
Exceeding Expectations	A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.
Meeting Expectations	A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.
Partially Meeting Expectations	A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.
Not Meeting Expectations	A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

Achievement Level Descriptors (ALDs)

The ALDs, shown in Appendix A, indicates the knowledge and skills that students performing at a given achievement level should be able to demonstrate with respect to grade 8 civics. Descriptors were developed for Partially Meeting Expectations, Meeting Expectations, and Exceeding Expectations only. A student classified as Not Meeting Expectations was defined as not having demonstrated the knowledge, skills, and abilities necessary to achieve Partially Meeting Expectations.

A multi-step process was used to develop, review, and approve the ALDs. Prior to the standard setting meeting, the DESE civics test developers created the ALDs based on the grade 8 civics standards in the 2018 Massachusetts History and Social Science Framework. Educators from the Grade 8 Civics Assessment Development Committee then met to review and edit the draft ALDs. A final summary report for the ALD meeting will be included in the full standard setting report.

Educators who participated in the standard setting meeting had the opportunity to provide suggestions and edits to the draft ALDs. To produce the final ALDs, DESE civics test developers edited the draft ALDs based on suggestions generated by the standard setting meeting panelists.

Cut Scores

The cut scores that were recommended for adoption for the MCAS Civics assessment are based on a standardized set of procedures implemented during the standard setting meeting. General methods used during the meeting for obtaining the recommended cut scores are provided below.

MCAS Civics Standard Setting Meeting and Results

From August 5 to August 7, 2025, after the first year of operational administration in spring 2025, a standard setting meeting was conducted to obtain cut score recommendations for the MCAS Grade 8 Civics test. There was one panel composed of 24 individuals, including teachers and non-teacher educators (e.g., administrators, curriculum specialists, professors of higher education). The participants were selected



for the standard setting meeting to provide content expertise and to be representative of the state teaching population, including geographic region, gender, ethnicity, educational experience, community size, and community socioeconomic status.

The Extended Modified (Yes/No) Angoff method was used for the standard setting meeting (Davis & Moyer, 2015; Plake, et al. 2005). This is a content- and item-based method that leads participants through a standardized process through which they consider student expectations, as defined by ALDs, and the individual items administered to students to recommend cut scores for each achievement level.

The process started with participants experiencing the test from the spring 2025 administration within the online testing system. Based on their experience with the test items and a review of the draft ALDs, panelists created borderline descriptions. During this process, participants worked together to modify the draft ALDs to create descriptors of the knowledge, skills, and abilities that “borderline” students, or those students who just barely enter an achievement level, would be expected to demonstrate.

During the judgment process, participants reviewed each item on the test, referencing the borderline descriptions, and answered the following question for each of the three achievement levels: *“How many points would a student with performance at the borderline of the [specific] achievement level likely earn if they answered the question?”*

The cut score recommendation for each individual participant was the expected raw score a borderline student at the respective achievement level would likely earn, calculated as the sum of the individual item judgments. For the purposes of the standard setting, “likely” was defined as two out three students at the borderline level. Each recommended cut score from the standard setting panel was the median of the recommendations from the individual panelists.

Additionally, the percentage of students who would be classified at each achievement level based on the panel’s recommendations (i.e., impact data) was calculated. The impact data were determined using student data from the spring 2025 test administration. As part of the discussion of the round 2 judgments, the impact data based on the round 2 recommendations were presented, so the participants could see the resulting student achievement level classifications prior to making their round 3 recommendations. This information was also presented after the round 3 cut score recommendations were calculated.

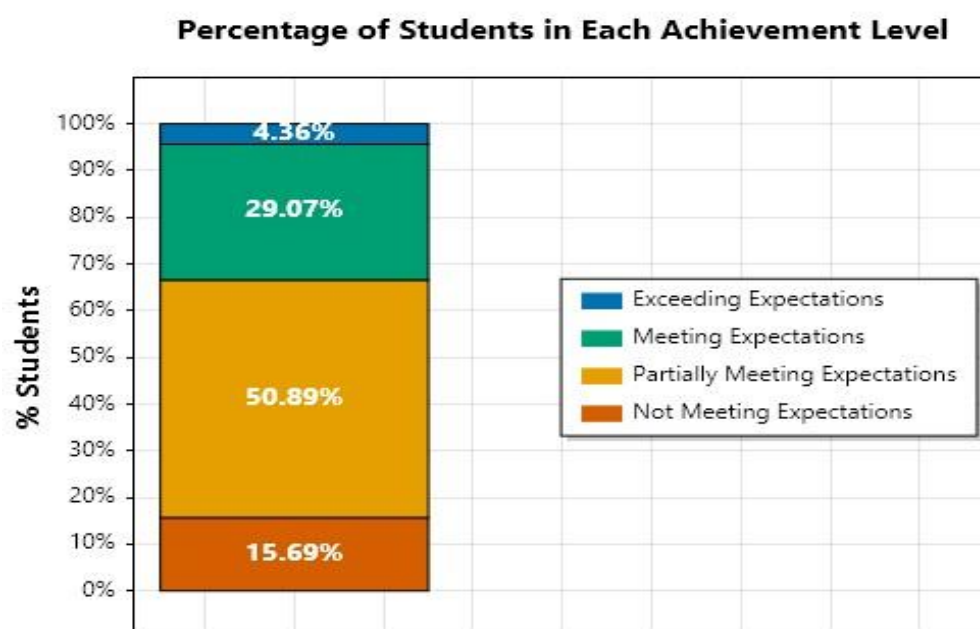
Standard Setting Recommendations and Results

The results (round 3 recommendations) from the standard setting meeting for the Civics panel are presented in Table 2. Three raw score cut recommendations along with the associated standard errors are presented in the second and third column, while the last column shows the percentage of students classified into each of the four achievement levels. Figure 1 presents the impact data from the final recommendations (round 3) of the standard setting meeting as a stacked bar graph.



Table 2. MCAS Grade 8 Civics Test Standard Setting Recommendations from Round 3

Achievement Level	Raw Cut Score	Standard Error	Raw Cut Score Range	% Students
Not Meeting Expectations	N/A	N/A	0—14	16
Partially Meeting Expectations	15	0.844	15—32	51
Meeting Expectations	33	1.014	33—44	29
Exceeding Expectations	45	0.691	45—50	4

Figure 1. Impact Data for MCAS Grade 8 Civics Test based on Standard Setting Recommendations from Round 3

Discussion after Round 3

Once panelists concluded the third and final judgment round, the recommended cut scores and associated impact data were presented for feedback and discussion. During this final discussion, panelists considered the round 3 cut score recommendations alongside the impact data and provided feedback on the percentage of students in each achievement level based on their knowledge of the content and their experience as educators for grade 8 civics in Massachusetts. Panelists also considered their experience, judgments, and discussions from previous rounds. After some discussion, panelists were verbally prompted to indicate whether they thought the percentage of students in each achievement level should be higher, remain the same, or be lower. Panelists also had the option of indicating that they were undecided. Facilitators and support staff took notes on the discussion and recorded panelists' responses.

Post-Meeting Activities and Final Recommendations

Following the standard setting meeting, DESE conducted a policy review of the standard setting panel's cut score recommendations, including the results from the discussion after round 3 and the data from panelists' evaluations. A scaling process was implemented to determine the final cut scores, as described below.

Scaling

The process of determining the rules for transforming the raw scores to the final MCAS reporting scale was guided by several principles identified by DESE:

1. The cut score recommendations provided by the standard setting panel should be respected while considering information from panelists' discussions and evaluation survey responses.
2. The impact data from the final scaling solution should reflect a coherent assessment system across the content areas.
3. The MCAS scaled score cuts for the three achievement levels should be the same across grades and tests.
4. The scaling solution should involve a single linear transformation, from the underlying IRT scale to the reporting MCAS scale.
5. The MCAS scaled score range should be the same across grades and tests.

The LOSS (i.e., lowest observable scale score) of 440 and HOSS (i.e., highest observable scale score) of 560 were held constant to maintain consistency in all MCAS assessments across grades and content areas. Additionally, to create common points of reference across the *assessments*, the same cuts on the MCAS scale for each achievement level were defined, with a Partially Meeting Expectations cut of 470, a Meeting Expectations cut of 500, and an Exceeding Expectations cut of 530. These requirements were established through discussion between DESE and Cognia psychometric staff after the 2017 standard setting, and a similar process was implemented to determine the final reporting scale and transformation rules for all MCAS standard settings since 2017.

Final Cut Scores

After the standard setting meeting, DESE considered the panelists' post-round 3 discussion as well as impact data from the MCAS tests in grade 8 English Language Arts, mathematics, and science and technology/engineering. DESE also reviewed data from panelists' evaluation survey responses. Based on their reviews, DESE determined that adjustments were needed to bring the Meeting Expectations and the Exceeding Expectations more in line with panelists' expectations and the other grade 8 MCAS tests. As a result of these discussions, the Meeting Expectations and Exceeding Expectations cuts were adjusted to 31 and 44, respectively. Table 3 presents the final cut scores in terms of raw scores and IRT scores, along with the raw score range and percentage students in each achievement level. Table 4 presents the final scaling constants, and Figure 2 presents the impact data from the final cut scores as a stacked bar graph.

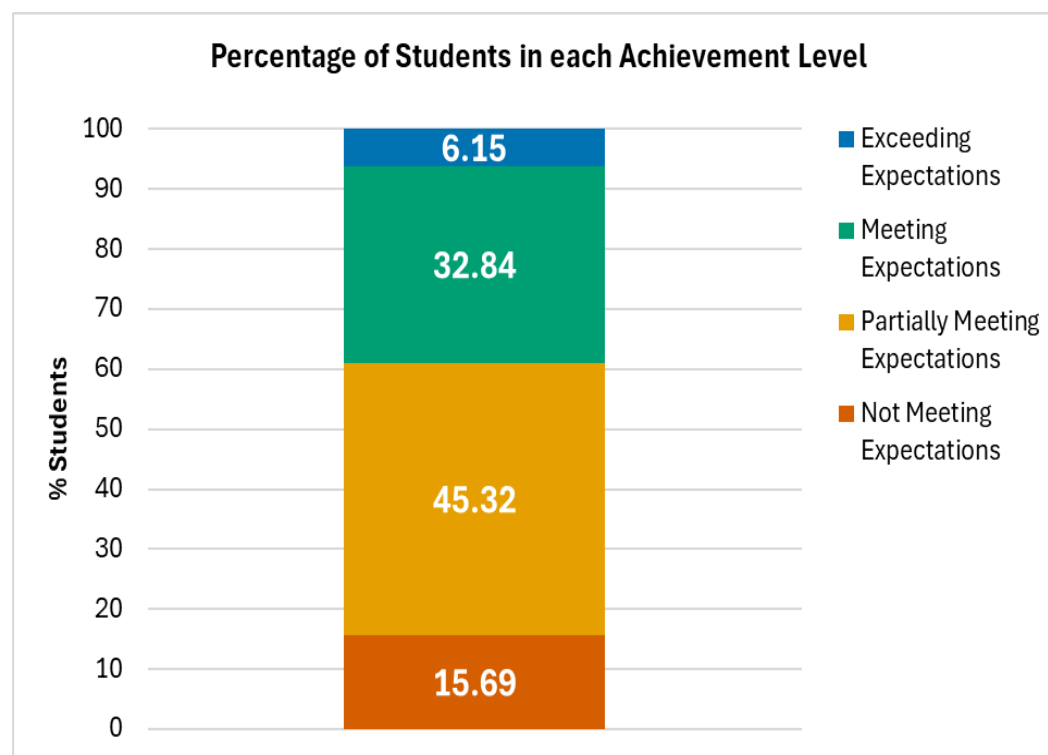


Table 3. Final Cut Scores for the MCAS Grade 8 Civics Test

Achievement Level	Raw Score Cut	Raw Score Range	IRT Cut Scores	% Students in Level
Not Meeting Expectations	N/A	0–14	N/A	16
Partially Meeting Expectations	15	15–30	-1.1263	45
Meeting Expectations	31	31–43	0.2416	33
Exceeding Expectations	44	44–50	1.6091	6

Table 4. Scaling Constants

Scaling Constant	Value
Slope	21.9314
Intercept	494.7014

Figure 2. Impact Data for MCAS Grade 8 Civics Test based on Final Cut Scores

Chapter 1. Overview of Standard Setting Procedures

The purpose of this report is to summarize the activities involved in the standard setting process for the Massachusetts Comprehensive Assessment System (MCAS) test for grade 8 civics on behalf of the Massachusetts Department of Elementary and Secondary Education (DESE).

Spring 2025 was the first administration of the MCAS Grade 8 Civics test. The assessment is based on the 2018 Massachusetts History and Social Science (HSS) Framework, which includes standards for a grade 8 civics course. DESE developed the civics assessment over several years, including a pilot test from 2021–2023 and a statewide field test in 2024.

The primary goal of the standard setting was to determine the knowledge and skills that were necessary for students to demonstrate to be classified into each achievement level based on their performance on assessment items. During the standard setting meeting, Massachusetts educators provided recommended cut scores for the assessment, which were used to categorize student achievement into four levels:

- Not Meeting Expectations
- Partially Meeting Expectations
- Meeting Expectations
- Exceeding Expectations

To establish the achievement levels for the assessment, the Extended Modified (Yes/No) Angoff Method (Davis & Moyer, 2015; Plake, et al. 2005) was used to guide participants as they determined their achievement level cut score recommendations. This standard setting procedure is a systematic method for combining various considerations into the process for recommending cut scores for the different achievement levels, including content standards and educator judgments about what students should know based on the Massachusetts Curriculum Framework and be able to demonstrate at each achievement level.

The following chapters describe the specific procedures and activities that occurred before, during, and after the standard setting meeting.



Chapter 2. Pre-meeting Tasks and Preparation

The grade 8 civics standard setting meeting was convened in person over the course of three days from August 5–7, 2025, and included one panel consisting of 24 panelists. The following sections describe the work that was completed in preparation for the standard setting meeting.

2.1 Development of the Achievement Level Descriptors (ALDs)

MCAS achievement levels relate student performance on the MCAS assessments directly to what students are expected to learn, based on the standards in the Massachusetts Curriculum Framework. Student achievement on all MCAS assessments is classified into four achievement levels that delineate what knowledge and skills students should demonstrate at each level. The MCAS achievement levels range from Not Meeting Expectations, representing the lowest level of student achievement, to Exceeding Expectations, representing the highest level of student achievement. Achievement level descriptors (ALDs) articulate knowledge and skill expectations for each achievement level at varying levels of specificity.

Policy-level ALDs provide general expectations for student achievement on the MCAS assessments across all content areas and grades. The achievement levels and associated policy ALDs (see Table 1) for the next-generation MCAS assessments were developed with input from the Standard Setting Policy Committee. This committee was composed of Massachusetts educators and policy makers representing K–12 education and higher education constituency groups (including MASS PTA, Massachusetts Association of School Committees, and the Board of Elementary and Secondary Education Members [BESE], among others). Language for these levels was refined by BESE at its monthly meeting in December 2016, and after eliciting public feedback, final Next-Generation MCAS Achievement Levels and Descriptors were adopted by BESE in March 2017.

Achievement level descriptors at a greater level of specificity were developed for the MCAS Civics Grade 8 assessment. This set of grade- and content-specific ALDs are composed of statements that describe the range of knowledge, skills, and abilities that students should demonstrate to be classified into one of the four achievement levels for the grade 8 civics assessment. The ALDs were associated with the achievement levels as follows:

- *Achievement levels* indicate a student’s level of competency of the standards defined in the *Massachusetts Curriculum Framework* through classification of their achievement on the grade 8 civics assessment as Not Meeting Expectations, Partially Meeting Expectations, Meeting Expectations, and Exceeding Expectations.
- *Achievement level descriptors* indicate the knowledge, skills, and abilities expected of students to demonstrate competency within each specific content area and at each grade level (in this case, grade 8 civics) to be classified in each achievement level.
- *Cut scores* partition the test scale and represent the minimum test score that a student must earn on the assessment for to be classified into a given achievement level.



The use of a well-defined set of ALDs is critical to ensuring the validity of the standard setting process. The MCAS grade 8 civics ALDs were developed by DESE test development staff. In addition, educators from the Civics Assessment Development Committee were convened to review drafts of the ALDs prior to the standard setting meeting. The educators first reviewed ALDs in terms of the appropriateness of the abilities for each achievement level, as well as the clarity and logic of the progression across the achievement levels. The resulting ALDs from this committee were used during the standard setting meeting. Note that ALDs were not developed for the lowest achievement level, Not Meeting Expectations. A student who performed at the Not Meeting Expectations achievement level is a student who has not demonstrated the knowledge and skills necessary to achieve Partially Meeting Expectations.

The MCAS Civics ALDs are presented in Appendix A.

2.2 The Cognia Standard Setting Toolkit

This section provides details about the Cognia Standard Setting Toolkit (Cognia SSTK) that panelists used to complete the standard setting tasks and activities prior to and during the meeting. The Cognia SSTK is a web-based platform that was developed by Cognia software developers and psychometricians for any standard setting or standards validation endeavors. The platform allows for a standard setting to be set up as a series of steps as shown in Figure 3.

Figure 3. Cognia Standard Setting Toolkit Interface – Management Screen

cognia Standard Setting Toolkit Home Admin ▾

Manage Standard Setting
MCAS Civics Grade 8
Program

MCAS

Position	Name	Status
1	Pre-Work for Standard Setting	Set as current step User Details
2	Practice Round	Set as current step User Details
3	Round 1 Readiness Survey	Set as current step User Details
4	Round 1 Judgments	Set as current step User Details
5	Round 1 Feedback	Set as current step User Details
6	Round 2 Readiness Survey	Set as current step User Details
7	Round 2 - Judgments	Set as current step User Details
8	Round 2 Feedback	Set as current step User Details
9	Round 3 Readiness Survey	Set as current step User Details
10	Round 3 Judgments	Set as current step User Details
11	Workshop Evaluation Survey	Set as current step User Details

[Clear Current Step](#)
[Pause Standard Setting](#)
[Resume Standard Setting](#)
[Complete Standard Setting](#)
[Uncomplete Standard Setting](#)
[Return to standard setting](#)

From a user perspective, the platform consists of a digital interface that, during judgment rounds, presents an item list view (i.e., a list of items separated by rows in operational test form order) as the initial screen. In the item list view (see Figure 4),

information below the navigation bar indicated which standard setting and which step panelists were working through. In addition, document tabs gave panelists access to digital copies of the standards, ALDs, and borderline ALDs (developed during the meeting). To the far right of each item, the ‘detail’ link enabled panelists to toggle to the corresponding item detail view (i.e., viewing each item as a single page with the option to use navigation arrows to move up or down in the item list).

Figure 4. Cognia Standard Setting Toolkit Interface – Item List View

Position	Asset ID	Description	Point Value	Partially Meeting Expectations	Meeting Expectations	Exceeding Expectations	
1	###	Item 1 (short description)	1	0	0	0	Detail
2	###	Item 2 (short description)	2	0	0	0	Detail
3	###	Item 3 (short description)	1	0	0	0	Detail
4	###	Item 4 (short description)	4	1	0	0	Detail
5	####	Item 5 (short description)	1	0	0	0	Detail

Integrated judgment forms were available within both the item list and detail views. The judgment forms enabled panelists to provide their ratings for each item across all borderline achievement levels. The detail view for each item (see Figure 3 as an example) gives all relevant item information that panelists need to make their judgments including the item itself, any associated stimuli or rubrics, item metadata, and digital copies of the standards and ALDs. In Figure 5, a PDF of the associated item and its contents appeared in the space shown as “No Image Available.”

Figure 5. Cognia Standard Setting Toolkit Interface – Item Detail View

Item Detail

MCAS Civics 8 step 1 Round 1

[Return to item review](#)

Position **2** Assetid **###** Point Value **2** [Prev Item](#) [Next Item](#)

[Item](#) [Rubric](#) [Stimulus 1](#) [Standards](#) [ALDs](#) [Borderline ALDs](#)

Item

Standard

8.T.4.3

Distinguish among civic, political, and private life.

Partially Meeting Expectations

0

Meeting Expectations

0

Exceeding Expectations

0

0

1

2

In addition to the above, the Cognia SSTK included the round-specific readiness surveys that panelists completed before undertaking each judgment round, as well as the workshop evaluation survey that panelists completed at the conclusion of the standard setting meeting.

Prior to the standard setting meeting, the Cognia Standard Setting Toolkit was configured to MCAS specifications and DESE was given a demonstration of the platform and opportunities to provide feedback.

2.3 Materials Preparation for the Standard Setting Meeting

Preparing for the standard setting meeting involved analyzing operational test data and organizing key materials. The materials that were prepared prior to the standard setting meeting include the following:

- MCAS Grade 8 Civics test forms
- Technological components
- Panelist materials
- Presentation materials
- Data, information, and analysis materials

Details related to the materials preparation for each of the above categories are provided below.

2.3.1 MCAS Grade 8 Civics Test Forms

The standard setting was conducted using the operational test items from the 2025 administration. The operational test forms included two components: the state-level performance task and the end-of-course (EOC) test. All matrix items were excluded from these forms.

The performance task was based on one topic from the civics standards in the MA HSS Framework. The task was composed of 11 items where seven of the items were 1-point machine-scored items, three items were 1-point hand-scored items, and the final item was a 4-point hand-scored item. The first and last items were standalone items, while the other nine items were arranged as three sets where each set shared common stimuli and consisted of two 1-point machine-scored items and one 1-point hand-scored item. The EOC test covered the breadth of the civics standards and was composed of 32 operational items, including 28 1-point and four 2-point machine-scored items, which were arranged in discrete, short, or medium sets.

During the standard setting judgment rounds, panelists were presented with a combined test form for a total of 43 operational test items between the two forms. The items were shown in the same order in which students took the test, starting with performance task items and followed by the EOC assessment items.

Preparation of the Grade 8 Civics test forms for the purpose of standard setting included gathering the necessary item metadata, as well as PDFs of the items, stimuli, and rubrics which were displayed within the Cognia Standard Setting Toolkit.



2.3.2 Technological components

A variety of technological devices and components were set up and/or available to panelists and the workshop staff for use during the standard setting meeting, including the following:

- Chromebooks for each panelist
- A larger monitor for each panelist
- The Cognia Standard Setting Toolkit
- High-speed internet and printer access
- Projectors, screens, microphones, and speakers

In addition to the technological components, panelists had access to notetaking essentials such as pens/pencils, highlighters, paper, and Post-it notes.

2.3.3 Panelist Materials

Cognia developed specific and relevant materials that were used by panelists during the meeting, including some that were presented digitally through the Cognia Toolkit. Table 5 includes a list of the materials that were developed for the panelists and their mode of presentation. DESE had the opportunity to review all materials prior to the standard setting meeting.

Table 5. Panelist Materials Prepared Prior to the Standard Setting Meeting

Panelist Materials	Paper	Digital-Online	Digital-Within the Toolkit
Meeting Agenda	✓	✓	N/A
Panelist Pre-work	N/A	N/A	✓
Sign in and out sheets with hours (for PDP and stipend purposes); nameplates and name tags	✓	N/A	N/A
Non-Disclosure Agreement; MCAS Electronic Device Policy; Reimbursement Forms; W-9 Forms	✓	N/A	N/A
MCAS Grade 8 Civics Test	N/A	✓	N/A
Civics Test Scoring Notes and Examples of Student Work	✓	N/A	N/A
Achievement Level Descriptors (ALDs)	✓	N/A	✓
MCAS Grade 8 Civics Standards and HSS Practice Standards	✓	N/A	✓
Experience the Test Item Comment Form	✓	N/A	N/A
Item Difficulty Comparison Handout	✓	N/A	N/A
Practice Items and Judgment Forms	N/A	N/A	✓
Round Readiness Surveys	N/A	N/A	✓
Integrated Item Lists and Judgment Forms	N/A	N/A	✓
Item Performance Data (i.e., p-values and score distributions)	✓	N/A	✓
Workshop Evaluation Survey	N/A	N/A	✓



Copies of the meeting agenda, panelist prework, non-disclosure form, experience the test item comment form, round readiness surveys, and the workshop evaluation survey are presented in Appendices B, C, D, E, F, and G-H respectively.

2.3.4 Presentation Materials

PowerPoint presentations guided the facilitators through the distribution of information and materials during the standard setting meeting. Cognia developed the initial presentations with multiple rounds of review by DESE. The presentations were adjusted based on DESE’s feedback and finalized ahead of the standard setting meeting. The presentation materials included the orientation session PowerPoint (Appendix H) and the standard setting facilitation PowerPoint (Appendix I), which was sectioned into slides corresponding to each of the three days of the meeting.

Notes and scripts that coincided with the PowerPoint slides were added within and alongside each presentation to guide facilitators. The notes and scripts included procedural steps, talking points, definitions to explain concepts to panelists, answers to commonly asked questions, and specific materials to distribute to panelists.

2.3.5 Data, Information, and Analysis Materials

Data, information, and other relevant analysis materials were generated for use prior to and during the meeting. Table 6 shows the data and analysis information that were generated, as well as their purposes.

Table 6. Data and Information Generated before or during the Standard Setting Process

Data, Information, or Analysis Materials	Description
Test Form(s)	The operational test forms (including PDFs of items, stimuli, and rubrics) and any relevant item metadata (e.g., point value, item type, key, p-value) were gathered, underwent quality checks, and were prepared for integration with the Cognia Toolkit.
Contextual Impact Data	Contextual impact data were prepared for use during the standard setting. This included impact data (i.e., percentage of students classified into each achievement level) for the grade 8 MCAS assessments (ELA, math, and science) based on the Spring 2024 test administrations.
Student Test Data	Student test data from the 2025 administration of the MCAS grade 8 Civics test were gathered and uploaded to the Cognia Toolkit in the appropriate formats to enable calculations during the standard setting meeting.
Programming	Programming within the Cognia Toolkit to calculate various statistics and generate presentation artifacts were configured to MCAS specifications.

Chapter 3. The Standard Setting Meeting

3.1 Standard Setting Process Overview

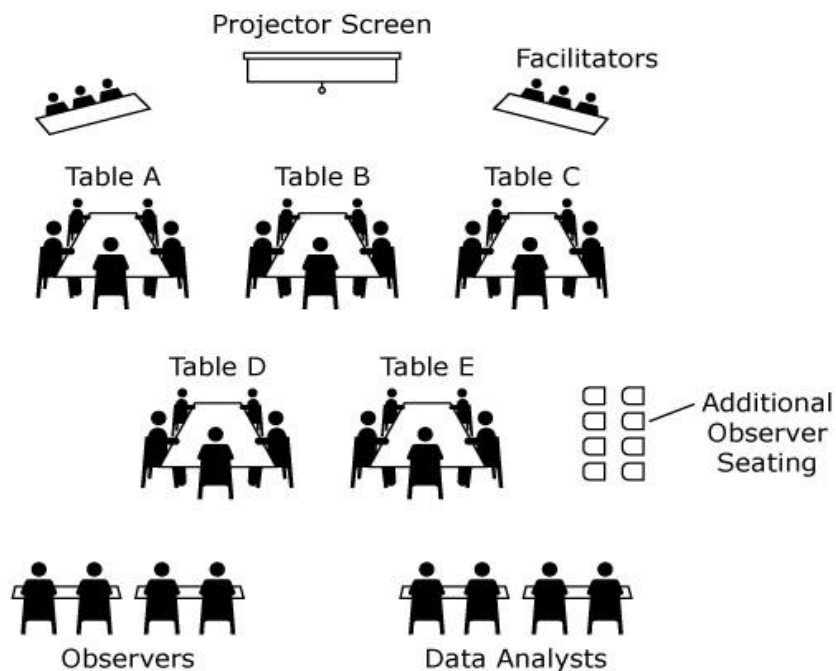
The Extended Modified (Yes/No) Angoff method was used during the standard setting meeting to guide panelists as they made their judgments and resulting cut score recommendations. This content- and item-based method led panelists through a process in which they considered expectations of student achievement, as defined by the ALDs, and the knowledge and skills measured by the individual test items to make judgments about student achievement on each item. The set of item judgments made by the panelists were used to determine individual-, table-, and panel-level cut score recommendations for each of three achievement levels (Partially Meeting Expectations, Meeting Expectations, and Exceeding Expectations).

3.2 Meeting Logistics

3.2.1 Standard Setting Panelists and Workshop Staff

Participants of the MCAS Grade 8 Civics Standard Setting meeting included facilitators, content specialists, panelists, observers, Cognia psychometricians and/or data analysts. Figure 6 illustrates the set-up for the meeting room.

Figure 6. Standard Setting Meeting – Room Setup



3.2.1.1 Facilitators

The standard setting meeting was co-led by one process facilitator and two content facilitators. The process facilitator (Sandra Sweeney) was a Cognia psychometrician who had experience with standard setting meetings and was responsible for leading the panelists through the standard setting process. The content facilitators included two

DESE content test development specialists (Ann Marie Gleeson and Marissa Roque) who were responsible for leading the panelists through the development of the test, procedures for scoring the items, and review of the ALDs. In addition, the content specialists were on hand throughout the meeting to address any content-related questions that arose.

The process facilitator ensured that appropriate standard setting processes were followed throughout the meeting and confirmed that panelists had a solid understanding of the tasks they were asked to complete. In addition, all facilitators engaged in preparatory working sessions in the weeks leading up to the standard setting meeting to ensure they were sufficiently familiar with the test and the process. These working sessions included the following:

- *MCAS Grade 8 Civics Overview*: The process facilitator was provided with an overview of the Grade 8 Civics test, including the test design, different item types, scoring rules, and achievement level descriptors. (Note: The content facilitators developed the test, so they were very familiar with the contents of this overview.)
- *Cognia Standard Setting Toolkit*: The Cognia Standard Setting Toolkit was used by panelists throughout the standard setting meeting to complete the standard setting activities. The facilitators became familiar with the Cognia Toolkit to lead the standard setting process and assist panelists with use of the platform.
- *Standard Setting Process*: Facilitators participated in a virtual dry run of the standard setting meeting, with a focus on specific topics for these meetings, such as time management, the use of the Cognia Standard Setting Toolkit, and communicating feedback information. In addition, on the afternoon before the first day of the meeting, facilitators participated in an on-site technical walkthrough to ensure the room was set up and the technology that was used during the meeting was working as expected.

3.2.1.2 Panelists

Standard setting panelists were selected by DESE. Goals for recruiting standard setting panelists included: (a) content expertise and teaching experience with the grade 8 civics content and practice standards; (b) experience working with diverse student populations; and (c) diverse representation among panelists in years of teaching, geographic regions in the state, school system sizes, school system urbanicity, and the racial/ethnic make-up of the student and teacher populations.

A total of 24 panelists were convened for the standard setting meeting. Panelists were assigned to table groups with 4–5 panelists per table group. Prior to the meeting, DESE selected a table leader for each group. The table leaders assisted the process facilitator during the meeting by helping to facilitate the table group discussions, ensuring that all participants had the opportunity to participate and that the discussion remained relevant to the meeting. To assist the table leaders in understanding and fulfilling their role during the meeting, the process facilitator provided table leader training on the first day of the standard setting meeting.

The tables in Appendix J summarize the characteristics and experience of the panelists.



3.2.1.3 Observers

Observers for the standard setting meeting included select DESE staff members as well as a staff member from the Center for Assessment (William Lorie, Ph.D.) who monitored the meeting and produced a report (see Appendix K). Observers did not participate in the standard setting meeting activities. DESE staff members observed the process and were on hand to answer assessment and curriculum questions, and address policy questions. DESE staff also monitored the cut score recommendations for each achievement level throughout the standard setting meetings. DESE was represented at the cut score setting meeting by Michol Stapel, Associate Commissioner for Student Assessment; Katie Bowler, Director of Test Development; Sadeq Sohrabie, Manager of Assessment, Reporting and Analysis; and Sarah Jo Torgrimson, Coordinator of Research and Psychometrics.

Cognia supplied observers with specific observer-status log in credentials for the Cognia Standard Setting Toolkit. Within the Cognia Toolkit, the observer(s) had all the same access and permissions as a panelist; however, any actions they took or data they entered were excluded from the analyses and proceedings. Thus, the observer(s) were able to follow along with the standard setting process.

3.2.1.4 Psychometricians/Data Analysts

A Cognia psychometrician and a data analyst were on hand to manage the Cognia Standard Setting Toolkit, complete real-time analyses during the meeting, and support the facilitators as needed throughout the standard setting process. This included calculating cuts, creating visualizations for the facilitator as described in the plan, and helping monitor that the meeting was correctly following the plan as intended.

3.2.2 Standard Setting Meeting Schedule

The standard setting meeting was conducted in-person over the course of three days, from August 5–7, 2025. The meeting started with an opening session on the morning of day one, followed by the experience the test activity and concluding with review of the ALDs and development of the borderline ALDs. On day two, panelists completed the borderline development activities before continuing with standard setting training, practice, and the first judgment round. The meeting was concluded on day three after the second and third judgment rounds, as well as a final workshop evaluation survey. Table 7 presents an overview of the standard setting schedule, and a detailed meeting agenda can be found in Appendix B.

Table 7. Overview of Standard Setting Agenda

Time	Day 1	Day 2	Day 3
08:00 AM – 08:30 AM	N/A	Breakfast	N/A
08:30 AM – 12:00 PM	• Orientation • Experience the Test & Scoring Activity	• Borderline Descriptor Development (continued) • Standard Setting Process (Judgment) Training	• Round 2 Judgments • Round 2 Feedback and Discussion (including impact data)



Time	Day 1	Day 2	Day 3
12:00 PM – 01:00 PM	Lunch	Lunch	Lunch
01:00 PM – 04:30 PM	• Achievement Level Descriptors Review • Borderline Descriptor Development Training • Borderline Descriptor Development (Begin)	• Practice Round and Discussion • Round 1 Judgments • Round 1 Feedback and Discussion (including introduction of results and how to interpret)	• Round 3 Judgments • Results Presentation (including impact data) • Evaluation Survey
04:30 PM	Adjourn for the Day	Adjourn for the Day	*Dismissal

3.2.3 Standard Setting Meeting Security

During the standard setting meeting, panelists reviewed operational test items, preliminary cut score recommendations, and associated impact data. Due to the secure nature of this information, specific procedures were established to ensure the security of all materials.

As part of the meeting, the facilitators reviewed the process for maintaining the security of materials, discussions, and preliminary results from the meeting. Panelists were not permitted to share or discuss secure materials and information outside of the meeting room. To confirm that the panelists understood and agreed to the security conditions, they signed a security and non-disclosure agreement.

To preserve the security of the materials and activities within the Cognia Standard Setting Toolkit, each panelist was provided with a Chromebook and unique login credentials. The supporting Cognia psychometrician-controlled panelist access to each section of the Cognia Toolkit throughout the meeting. Access to the platform was disabled at the conclusion of the standard setting meeting and the Chromebooks were wiped clean of all data.

Secure materials were provided to panelists in their meeting folder after they signed the non-disclosure agreement. All printed materials were collected at the end of each day to maintain test security. The facilitator and Cognia program management staff verified all printed materials were retained in the panelist folder at the end of each day.

3.3 Standard Setting Meeting Panelist Pre-Work

Confirmed and registered panelists received login credentials for the Cognia Standard Setting Toolkit two weeks prior to the meeting. Panelists were tasked with completing a set of pre-work tasks prior to attending the onsite meeting. The purpose of the pre-work was to expedite the training of the panelists by providing them with an opportunity to familiarize themselves with information that would be used throughout meeting. The pre-work included these activities:

- Cognia Standard Setting Toolkit: The pre-work was provided via the standard setting platform, which allowed panelists to access the platform and gain some familiarity with navigation in the system prior to the meeting.



- MCAS HSS Curriculum Framework: Panelists were provided access to the current version of the MCAS Curriculum Framework for History and Social Science.
- ALDs: Panelists reviewed policy-level and content-specific achievement level descriptors associated with the MCAS Civics assessment.
- Pework Survey: Panelists completed a prework survey that included questions about the documents they were asked to review ahead of the meeting.

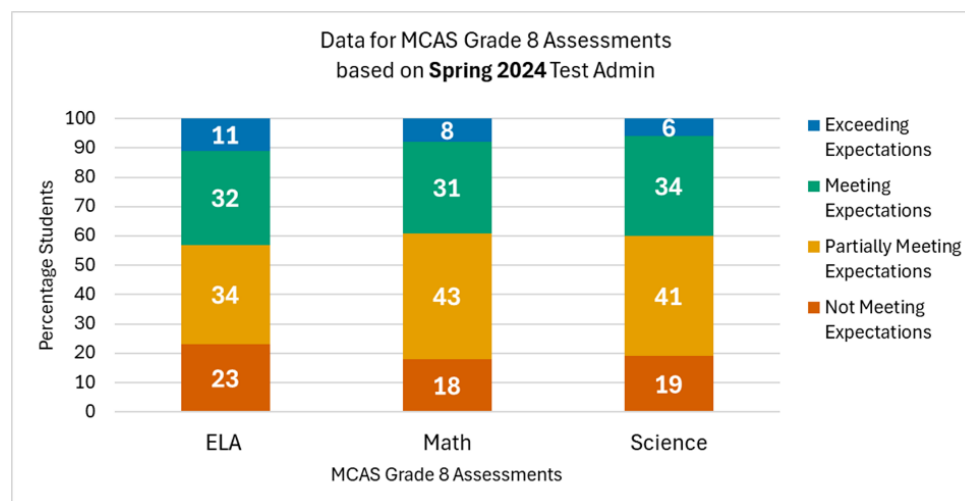
Panelists used their initial login credentials to access the platform and were then directed to change their passwords after logging in for the first time. The platform information and links were sent out to panelists on July 21, 2025, and they were asked to complete the prework by August 1, 2025. Panelists were able to complete the prework at any time within the two weeks before the meeting.

3.4 Opening Session and General Orientation

The purpose of the general session was to welcome the panelists, provide background information about the MCAS assessment system, and introduce the standard setting process. Rob Curtin, Chief Officer for Data, Assessment, and Accountability, provided a welcome to the Massachusetts educators and introduced the official charge for the meeting. An overview of the MCAS Civics Assessment timeline and work was provided by Michol Stapel, Associate Commissioner for Student Assessment. Ann Marie Gleeson, DESE test development specialist and one of the content facilitators for the meeting, facilitated introductions and discussed meeting ground rules and logistics.

As part of orienting panelists to MCAS as a system of assessments, Han Yi Kim, lead psychometrician at Cognia for the MCAS assessments, presented contextual impact data for the grade 8 MCAS tests in ELA, math, and science (see Figure 7). For each test, the impact data were presented as a stacked bar chart showing the percentage of students classified into each of the four achievement levels based on their performance during the spring 2024 administration of these tests. In addition, panelists were presented with the most recent NAEP Civics data.

Figure 7. Contextual Impact Data for MCAS Grade 8 Tests



A broad overview of the standard setting process and expected outcomes was presented by Sandra Sweeney. A clear description of the review process after the meetings was included to emphasize that panelists were making recommendations to DESE, including the Commissioner, to use in determining the final achievement level cut scores for the test.

3.5 Main Standard Setting Session

After the opening and general orientation session, panelists had a short break and then reconvened for the main session. Facilitators guided panelists through the following activities:

- Civics assessment overview
- Experience the test
- Review of ALDs and development of borderline ALDs
- Standard setting key concepts
- Practice judgment round and discussion
- Judgment rounds and feedback
- Workshop evaluation survey

3.5.1 Civics Assessment Overview

To begin the main session, the content facilitators provided an overview of the grade 8 MCAS civics assessment, including information about the assessment development process, test design, item types and point values, and the test blueprint and its relation to the reporting categories. Panelists were given the opportunity to ask questions before proceeding to the next activity.

3.5.2 Experience the Test

Panelists experienced the same operational MCAS Grade 8 Civics test form that was administered to students during the spring 2025 test administration. Using the individual Chromebooks provided by Cognia, panelists were instructed on how to log into their Chromebooks and navigate to the Lighthouse testing platform site. Cognia staff provided panelists with unique login credentials; once they successfully accessed the testing platform, panelists experienced the test the same way students did to become familiar with the test from the student's perspective.

Given the design of the Civics test (i.e., performance task and end-of-course test), panelists first experienced the performance task assessment portion, which was followed by a brief discussion. Next, panelists experienced the EOC portion, which was followed by another brief discussion session. As panelists experienced the test, they were encouraged to think from a student's perspective, taking notes of the specific knowledge and skills a student would need to respond correctly to the item. For constructed-response items, panelists were encouraged to think about the knowledge and strategies students used to engage with the items, essentially creating an outline of points and characteristics they would expect in a student's response.

During this activity, the panelists also reviewed scoring information and student work used to score the items. These materials helped panelists to understand the scoring rules for the different item types included on the test. Understanding the scoring provided a reference point for the judgment tasks that came later in the process.



Panelists were trained in any specific scoring rules used for the test. For constructed-response items, the panelists were introduced to the scoring rubrics and notes used to evaluate student responses. Additionally, panelists had access to examples of student work for the constructed-response items. The content facilitators assisted in the presentation and panelist training on item scoring.

The content facilitators also facilitated a discussion related to item characteristics that influence the difficulty of an item, including the associated stimuli, the item type or interaction, and the item response options. The purpose of this discussion was to provide panelists with a foundational understanding of what contributes to the overall difficulty of an item.

3.5.3 Review of ALDs and Development of Borderline ALDs

To begin this portion of the standard setting process, the content facilitators led panelists through a review and discussion of the ALDs, which describe general performance expectations for students across the range of each achievement level. The panelists were informed that the ALDs provided a snapshot of the ‘typical’ student’s academic characteristics at each achievement level, including the breadth and depth of the content and skills demonstrated by students within the level.

After the review and discussion of the ALDs, the process facilitator provided panelists with training on the development of borderline descriptions. The purpose of the borderline-descriptions activity was for panelists to develop a common understanding of student achievement at the threshold, or borderline, of each achievement level.

During the borderline descriptor training, panelists were introduced to the difference between typical student performance and borderline student performance within an achievement level. The borderline student performance was described as the performance to be minimally qualified to be classified within a particular achievement level (i.e., possessing just enough knowledge, skills, and abilities to achieve the specific achievement level classification). The facilitators then led the panelists through a modeling activity. A collaborative and guided approach was used to draft three borderline statements for the Meeting Expectations achievement level that served as examples for the panel. The facilitator asked guiding questions during the modeling activity to help panelists develop an appropriate understanding of how to create borderline descriptions.

Panelists worked in their table groups to review the ALDs for a specific assigned section and create three to five borderline descriptions for their assigned section at each borderline performance level. Panelists used borderline descriptions worksheets on the Google Docs platform to draft their descriptions, starting with the Meeting Expectations achievement level before moving on to the Partially Meeting and Exceeding Expectations levels. The borderline descriptions from each table group were collected into a master document and reviewed/discussed as a large group. Revisions to the master document were made during the whole-group discussion to create a common set of borderline descriptions.

The final borderline descriptions were printed and provided to each participant to place in his or her folder as a reference for subsequent activities. In addition, a digital copy of the descriptors was uploaded to the Cognia Standard Setting Toolkit.



3.5.4 Standard Setting Key Concepts

Once panelists developed borderline ALDs, the process facilitator provided panelists with training on the Extended Modified (Yes/No) Angoff standard setting method (Davis & Moyer, 2015; Plake, et al. 2005) and how to record their individual item judgments within the Cognia Standard Setting Toolkit. They were instructed to review each item from the assessment and to review the borderline descriptions, the answer key, and, if needed, the rubric and student exemplars for the item. Based on their review of the item and the related materials, the panelists answered the following question for each borderline achievement level: *“How many points would a borderline student at the [specific] achievement level likely earn if they answered the question?”*

Considerable time was spent describing the thought process the panelists should go through by parsing out the judgment question as follows:

- “would...” — When thinking about expected student response to an item, the panelists were asked to consider how a student would respond. Where “should” is an aspirational expectation, “would” is a more realistic expectation of a student response to an item.
- “...a student performing at the borderline of the [specific] performance level...” — The panelists were reminded to reference the borderline descriptions to determine how a student performing at the borderline of that performance level would be expected to respond.
- “...likely...” — “Likely” was defined as 2 out of 3 times. To make this concrete for panelists, facilitators asked them to think about three students at the borderline of an achievement level. If, for example, a panelist believed 2 of 3 students with performance at the borderline would correctly answer a dichotomous item, they would select “1” point in response to the question. If a panelist did not believe 2 of 3 students with performance at the borderline would correctly answer the item, they would select “0” points in response to the judgment question with respect to a dichotomous item.
- “...earn if they answered the question.” — Panelists selected the number of points a student with performance at the borderline would be expected to earn if they answered the item.

Panelists made three judgments for each item (i.e., one judgment for each of the three borderline levels). They reviewed each item, starting with the Partially Meeting Expectations achievement level and working up to the Exceeding Expectations achievement level. Because student performance on an item was expected to increase or at least stay the same as the achievement level increases, the number of points selected for each item should have stayed the same or increased as panelists moved across the borderline levels. The Cognia Standard Setting Toolkit included a judgment validation feature to assist panelists with monitoring their judgments. Panelist training included multiple examples with different judgment patterns, which were reviewed with panelists to help them understand the judgment task.

3.5.5 Practice Judgment Round

Before proceeding with modeling and practice, the facilitator took some time to make sure panelists knew how to navigate within the Cognia Standard Setting Toolkit.



Specifically, the facilitator pointed out that the first screen presented the item list view. Then she demonstrated how to: a) use the text boxes to record notes and item judgment dropdown menus; b) navigate to the item detail view; and c) use available tabs to access any additional information when relevant (i.e., stimuli or rubrics).

After the demonstration, the facilitator proceeded with the practice round consisting of three practice items (two MS1s and one HS1) related to the performance task assessment and five practice items related to the EOC assessment, which were a combination of dichotomous and polytomous items. The practice item set was a subset of the 2025 operational test form and included a range of different item types and item difficulty. During this practice round, the facilitator reinforced the standard setting training concepts.

The goals of the practice judgment activity were as follows:

- To enable panelists to get a feel for the range of different items and student responses panelists would encounter during the judgment task
- To give panelists experience reviewing and making judgments for different types of items
- To build panelists' confidence that they understood the task they were being asked to complete

Following the practice judgments, the process facilitator showed item-level judgment results, including the percentage of panelists that selected each point value for each achievement level. The facilitator walked through the judgment materials for the first two items to make sure panelists knew where to locate key information. The group also discussed each practice item and heard perspectives on why panelists selected different point values.

3.5.6 Judgment Rounds and Feedback

Panelists completed three judgment rounds after the practice round, and each judgment round consisted of three sessions: readiness, judgment, and feedback/discussion. This was an iterative process during which the outcome of each judgment round was considered during the next judgment round.

3.5.6.1 Readiness Surveys

Before each judgment round, panelists completed a readiness survey that consisted of questions about whether they felt prepared to undertake the upcoming round of judgements. All questions had two response options (yes and no/unsure), and all "Yes" responses indicated that panelists were ready to proceed. If one or more panelists answered "No/Unsure" to one or more questions, the facilitator reviewed the concepts associated with those questions, and panelists were then asked to complete the readiness survey again. The readiness surveys for each judgment round are available in Appendix F.

3.5.6.2 Judgment Rounds

During the three judgment rounds, panelists independently made judgments for each item. Starting with the first item, panelists made their judgment for the Partially Meeting achievement level, based on the borderline descriptions and the knowledge and skills required by the item. The panelists then made judgments about the same item for the



Meeting Expectations and the Exceeding Expectations achievement levels. The process was repeated for each item.

Judgments were recorded within the Cognia Standard Setting Toolkit using the integrated judgment form for the specific round. After all panelists completed the judgment activity for the round, psychometricians/data analysts from Cognia conducted an analysis, applied quality control checks, and created feedback reports to be provided to panelists.

3.5.6.3 Feedback and Discussion

After each judgment round, the panelists were given feedback data, and the facilitator guided a discussion around the feedback data to inform the next judgment round. The feedback data was based on the panelists' judgment from that round and included the following:

- Information about panelists' scores for each achievement level cut.
 - Individual cut scores: Each panelist's judgments for each achievement level were summed across items to obtain their individual cut score for each level.
 - Table-level cut scores: The median cut score was calculated for each table group at each achievement level based on the individual cut scores of the table group members.
 - Panel cut score recommendations and statistics: Panel-level recommendations were calculated as the median cut score across all panelists for each achievement level. In addition, summary statistics for the panel cut scores were also calculated and included the minimum, maximum, median, mean, standard deviation, 1st quartile, and 3rd quartile for each achievement level.
 - Panelist cut score distributions: Four bar graphs showed the frequency of individual recommended cut scores for each achievement level and across adjacent achievement levels.
- Item-level judgment agreement across panelists: Distribution of individual item judgments for each item.
- Item means (p -values and score distributions): The mean scores of students that were administered the assessment, along with the distribution of student scores for each item.
- Impact data: Proportion of students that would be classified into each achievement level, based on the recommended achievement level cut scores for the round and the performance of students on the 2025 administration of the MCAS Grade 8 Civics test.

During the feedback and discussion session, panelists were able to view their own judgments from the prior round as view only. The only field on the judgment form that could be edited during this time was the notes field that allowed panelists to take notes based on the conversation. Some of the feedback listed was available to panelists in the



Feedback Data tab within the platform, while other feedback was presented on the projection screen by the facilitator. In addition, feedback was shared based on the relevancy to the specific judgment round. Table 8 displays the type of feedback provided after each judgment round.

Table 8. Feedback Data Provided to Panelists after each Judgment Round

Feedback Data	Judgment Round	Judgment Round	Judgment Round
Individual cut score recommendations	✓	✓	✓
Table-level cut score recommendations	✓	✓	✓
Panel-level cut score recommendations	✓	✓	✓
Summary statistics for panel-level cut scores	✓	✓	✓
Panelist cut score distribution charts	✓	✓	✓
Item-level judgment agreement across panelists	✓	✓	N/A
Item P-values	N/A	✓	N/A
Impact Data	N/A	✓	✓

Appendix L provides examples of each of the feedback data provided to participants, along with a brief description of the feedback presented.

Before the discussions of feedback data, panelists were given guidance regarding the nature of the discussions and the independence of their judgments. They were encouraged to listen to other panelists and consider the rationales given for their judgments but not to feel pressured to reach consensus. Two to three items with the highest level of disagreement amongst the panel were revisited during the discussions after rounds 1 and 2. Panelists discussed a range of topics, such as item difficulty, student strategies when responding to the items, their individual rationale for a judgment, and the borderline descriptions. The goal of the discussions was to demonstrate to panelists how their judgments compared to the rest of the panel and to guide them toward a common understanding of the borderline descriptions and judgment task. Since round 3 was the final round, the feedback data was provided to facilitate the participants' evaluation of the final cut score recommendation by the panel.

3.5.7 Presentation of Results, Final Discussion, and Evaluation Survey

Once panelists completed the standard setting process (i.e., after round 3), the facilitator presented the final standard setting cut score recommendations and associated impact data (i.e., the percentage of students that would be classified into each of the four achievement levels when applying the cut scores). Panelists had the opportunity to review these final data and engage in a final discussion.

During this final discussion, panelists were asked to consider the round 3 cut score recommendations alongside the impact data and provide feedback on the percentage of students in each achievement level based on their knowledge of the content and their experience as educators for grade 8 civics in Massachusetts. After some discussion, and with the impact data graph projected to the room, panelists were asked to indicate whether they thought the percentage of students at each level should be higher, remain the same, or lower. Panelists also had the option of indicating that they were undecided. Table 9 presents the results from the discussion.



Table 9. Panelist Counts Regarding the Percent of Students in Each Category

Achievement Level	Panelist Count Higher	Panelist Count Remain the Same	Panelist Count Lower	Panelist Count Undecided
Not Meeting Expectations	N/A	18	3	3
Partially Meeting Expectations	N/A	10	12	2
Meeting + Exceeding Expectations	15	8	N/A	1
Exceeding Expectations	12	6	N/A	6

Panelists then completed an evaluation survey of the standard setting. The purpose of the survey was to collect information about each panelist's experience in recommending cut scores for the achievement levels associated with the MCAS Civics Grade 8 assessment. The survey solicited feedback on the following:

- (1) the level of success of the various components of the meeting
- (2) the usefulness of the activities conducted during the meeting
- (3) the adequacy of the various components of the meeting
- (4) the adequacy of opportunities to ask questions, etc., at the meeting
- (5) how confident panelists were that the recommended cut scores accurately reflected student performance at each achievement level
- (6) whether panelists thought that their judgments and opinions were treated with respect by the facilitators and fellow participants

Panelists were also given the opportunity to provide any additional information concerning their evaluation of the process of the standard setting meeting through open response questions. Appendix M presents results from the evaluation survey.

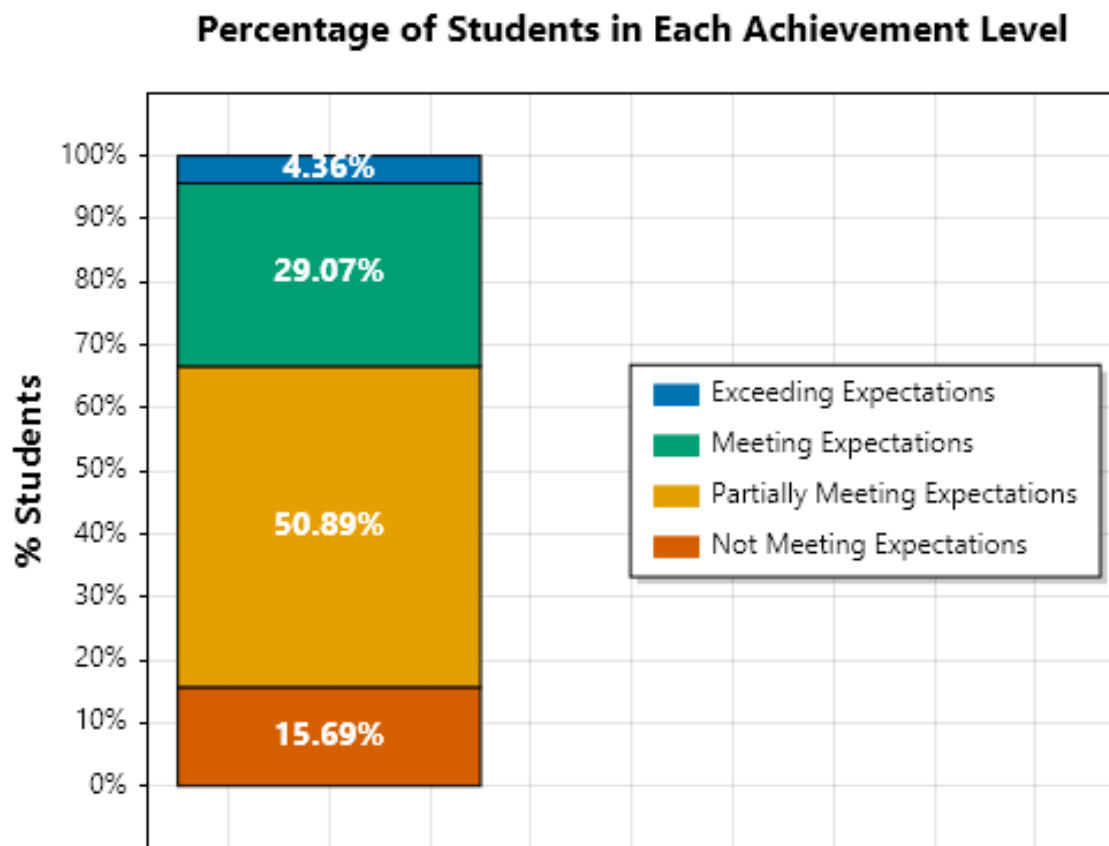
3.6 Cut Score Recommendations from the Standard Setting Panel

Variation between individual panelists' cut score recommendations is typical and expected in the standard setting process. To determine a single cut score recommendation for each achievement level, the individual cut score recommendations for the achievement level were averaged across panelists. Specifically, the median cut score from a set of panelists' cut score recommendations was used to determine the recommended cut score for an achievement level for the panel. The recommendation resulting from the round 3 judgments was considered as the panel's recommendation for the standard setting meeting. Table 10 displays the recommended cut scores for each achievement level based on the round 3 recommendations, and Figure 8 presents the associated impact data.

Table 10. Round 3 Cut Score Recommendations

Achievement Level	Raw Score Cut	Standard Error	% Students
Not Meeting Expectations	N/A	N/A	15.69
Partially Meeting Expectations	15	0.844	50.89
Meeting Expectations	33	1.014	29.07
Exceeding Expectations	45	0.691	4.36

Figure 8. Impact Data based on Round 3 Cut Score Recommendations



The results from each of the three standard setting judgment rounds are presented in Appendix N, which included the recommended cut scores for each achievement level as raw scores, the summary statistics for the recommended cut scores, and the panelist cut score distribution across achievement levels.

Chapter 4. Post-Standard Setting

This chapter provides details about the work completed after the standard setting meeting concluded, which included a policy review of cut score recommendations from the standard setting meeting alongside panelists' data from the round 3 discussion and the workshop evaluation survey, determining the final reporting scale and transformation rules, and documenting the standard setting process and outcomes in a technical report.

Following the standard setting meeting, DESE conducted a policy review of the standard setting panel's cut score recommendations, including the results from the discussion after round 3 and the data from panelists' evaluation survey responses. A scaling process was implemented to determine the final cut scores, as described below.

4.1 Policy Review of Cut Score Recommendations

Within five business days following the conclusion of the standard setting, Cognia provided DESE with a draft executive summary of the standard setting. The document detailed information about the recommended cut scores, associated impact data, as well as the methodology used to obtain the recommendation. The executive summary was designed to be used by DESE in evaluating the panelists' recommended cut scores, as well as the standard setting process.

During the policy review of the cut score recommendations, DESE considered the panelists' post-round 3 discussion as well as impact data from the MCAS tests in grade 8 English Language Arts, mathematics, and science and technology/engineering. DESE also reviewed data from panelists' evaluation survey responses. Based on these reviews, DESE determined that adjustments were needed to bring the Meeting Expectations and the Exceeding Expectations more in line with panelists' expectations and the other grade 8 MCAS tests. As a result of these discussions, the Meeting Expectations and Exceeding Expectations cuts were adjusted to 31 and 44, respectively.

4.2 Scaling and Final Cut Scores

The recommendations from the standard setting meeting, including the subsequent policy adjustments, were cut scores in terms of raw scores on the test. Student results are not reported as raw scores since the overall difficulty of tests may fluctuate from year to year and therefore would not be comparable across years. To address this, student results on the MCAS are reported using scaled scores, which are comparable across administration years.

The process of determining the rules for transforming the raw scores to the final MCAS reporting scale was guided by several principles identified by DESE:

- (1) Respect the cut score recommendations provided by the standard setting panel while considering information from panelists' discussions and evaluation survey responses.
- (2) The impact data from the final scaling solution should reflect a coherent assessment system across the content areas.
- (3) The MCAS scaled score cuts for the three achievement levels should be the same across grades and tests.

- (4) The scaling solution should involve a single linear transformation, from the underlying IRT scale to the reporting MCAS scale.
- (5) The MCAS scaled score range should be the same across grades and tests.

The LOSS (i.e., lowest observable scale score) of 440 and HOSS (i.e., highest observable scale score) of 560 were held constant to maintain consistency in all MCAS assessments across grades and content areas. Additionally, to create common points of reference across the assessments, the same cuts on the MCAS scale for each achievement level were defined, with a Partially Meeting Expectations cut of 470, a Meeting Expectations cut of 500, and an Exceeding Expectations cut of 530. These requirements were established through discussion between DESE and Cognia psychometric staff after the 2017 standard setting, and a similar process was implemented to determine the final reporting scale and transformation rules for all MCAS standard settings since 2017.

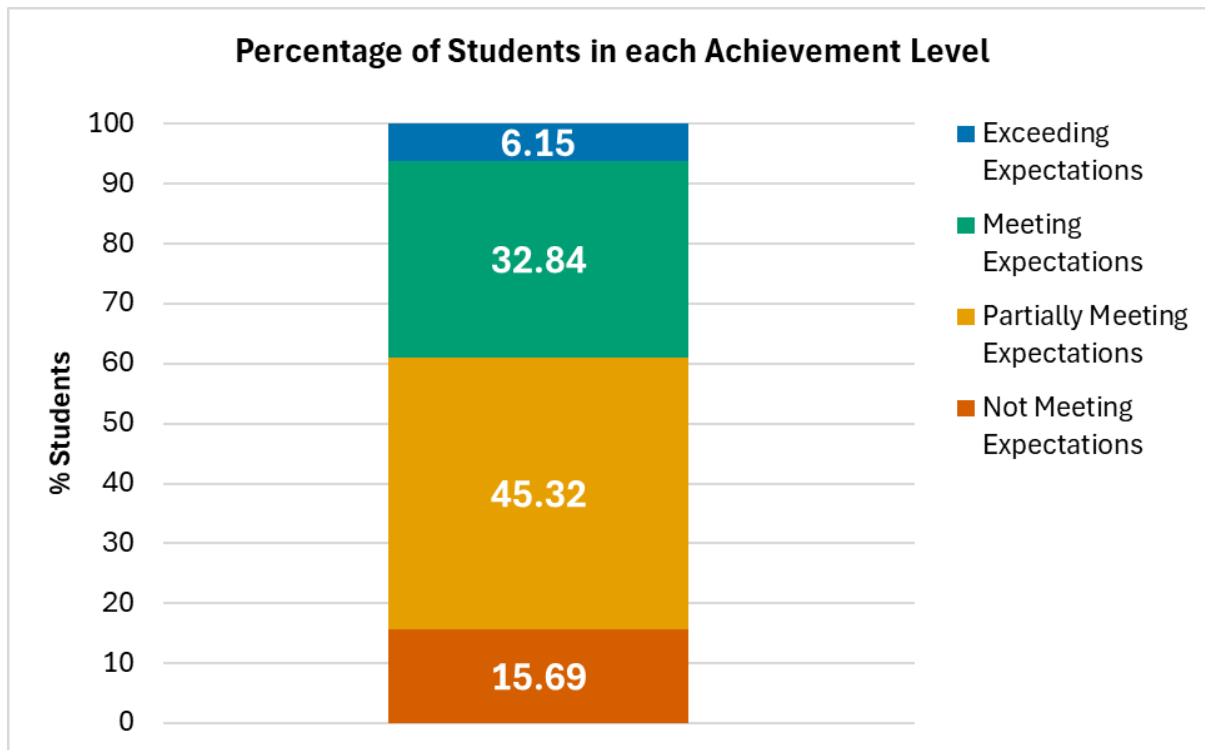
Table 11 displays the final cut scores for each achievement level based on the results of the scaling process. Figure 9 presents the impact data (i.e., the percentage of students classified into each achievement level) based on the final cut scores as a stacked bar graph.

Appendix O presents the final cut scores on the IRT scale alongside the scaling constants.

Table 11. Final Cut Scores for MCAS Civics Grade 8 Assessment

Achievement Level	Raw Score Cut	Raw Score Range	% Students in Level
Not Meeting Expectations	N/A	0 – 14	15.69
Partially Meeting Expectations	15	15 – 30	45.32
Meeting Expectations	31	31 – 43	32.84
Exceeding Expectations	44	44 – 50	6.15

Figure 9. Impact Data based on the Final Cut Scores



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Appendices

APPENDIX A
GRADE 8 CIVICS MCAS
ACHIEVEMENT-LEVEL DESCRIPTORS

Grade 8 Civics MCAS Achievement Level Descriptors

General MCAS Achievement Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.



Grade 8 Civics MCAS Achievement Level Descriptors

Student results on the MCAS tests are reported according to four achievement levels: *Exceeding Expectations*, *Meeting Expectations*, *Partially Meeting Expectations*, and *Not Meeting Expectations*. The descriptors below illustrate the knowledge, and skills students demonstrate on MCAS at each level. **Knowledge and skills are cumulative at each level.** No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.

Knowledge & Skills	Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Understanding and Application of Content Standards	Demonstrates a partial understanding of some civics concepts and processes by identifying and sometimes describing or providing evidence for these concepts and processes. Uses some basic civics terms in common history and social science examples.	Demonstrates a solid understanding of many civics concepts and processes by mostly describing, explaining, and providing evidence for these concepts and processes. Mostly applies appropriate civics terms in a variety of applications, including common history and social science examples and some novel situations.	Demonstrates a comprehensive, in-depth understanding of many civics concepts and processes by consistently describing, explaining, and providing evidence for these concepts and processes. Consistently applies appropriate civics terms in a variety of contexts including common history and social science examples and many novel situations.
Understanding and Application of History and Social Science Practices	Demonstrates a partial understanding of civic knowledge, skills, and dispositions by identifying, and sometimes describing, how individuals engage in active and responsible citizenship. Identifies a focus question or problem statement for an inquiry. Uses information from a source to draw general conclusions about a familiar civics concept. Identifies evidence to support a claim. Describes one-way individuals can participate in civic life.	Demonstrates a solid understanding of civic knowledge, skills, and dispositions by mostly describing and explaining how individuals engage in active and responsible citizenship. Develops a focus question or problem statement for an inquiry. Organizes and analyzes information and data from multiple primary and/or secondary sources to draw conclusions about a familiar civics concept. Constructs a basic argument or explanation using some evidence and reasoning for a civics concept. Determines next steps in a scenario where individuals take informed action to address a basic civic issue.	Demonstrates a comprehensive, in-depth understanding of civic knowledge, skills, and dispositions by consistently describing, explaining, and providing evidence for how individuals engage in active and responsible citizenship. Consistently develops focus questions and/or problem statements for an inquiry. Organizes and analyzes information and data from multiple primary and secondary sources to draw conclusions about a novel or complex civics concept. Constructs a thorough argument or explanation using several pieces of evidence and valid reasoning for a civics concept. Determines multiple ways individuals can take informed action to address a complex civic issue.



Grade 8 Civics MCAS Achievement Level Descriptors

Foundations of Government (Topics 1 and 2)

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes some characteristics of democratic and republican principles that were found in ancient Athens and the Roman Republic, such as how the power of governing is held in the hands of the people. Uses a source to identify natural rights as an important principle in the American Revolutionary period. Recognizes that British ideas and colonial government bodies helped develop practices for self-government in colonial America. Identifies a feature of the U.S. government based on a description of the government of the Iroquois Confederacy. Recognizes that opposition to British authority contributed to the American colonists declaring independence. Identifies basic concepts in the Declaration of Independence, including equality, right to liberty, and that governments are responsible for protecting these rights. Recognizes that the Articles of Confederation created a weak national government and identifies one of the weaknesses. Identifies an issue debated at the Constitutional Convention and identifies one way the issue was	Describes and explains the democratic and republican principles that were developed in ancient Athens and the Roman Republic and are found in the U.S. government, including voting rights, trial by jury, and representative government. Describes some Enlightenment concepts that influenced the American Revolution, such as criticizing England's monarchy in the Declaration of Independence and the need to have separation of government powers. Given a description of British ideas and colonial practices of government, such as the Mayflower Compact, town meetings, and colonial legislatures, describes how these practices prepared American colonists for self-government. Describes a similarity or difference between the U.S. government and the government of the Iroquois Confederacy. Describes multiple experiences or events, including British taxation policy and lack of representation in government, that contributed to the American colonists declaring independence. Analyzes excerpts of the Declaration of Independence and constructs explanations for the concepts of equality, natural rights, the common good, and the purpose of government. Analyzes information about the Articles of Confederation to describe how weaknesses of the	Compares democratic and republican characteristics in ancient Athens or the Roman Republic to characteristics of the U.S. government and explains the similarities and differences. Analyzes ideas from the Enlightenment period to explain how those concepts were used during the American Revolution, such as the use of natural rights and the social contract in the Declaration of Independence, and in the framework of the U.S. government, such as the integration of separation of powers within the U.S. Constitution. Uses evidence from multiple sources to explain how British ideas and political institutions in the colonies created forums for self-governance that were maintained in the U.S. political system, such as town meetings and state legislatures. Analyzes a description of the government of the Iroquois Confederacy and supports a conclusion using evidence about how the Iroquois Confederacy influenced the development of the U.S. government. Uses evidence and reasoning to explain why the American colonists declared independence. Analyzes a novel situation and constructs an explanation for how concepts described in the Declaration of Independence, including equality, natural rights, the common good, and the purpose of government, were applied.



Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
resolved. Analyzes a source to identify one difference between a Federalist and an Anti-Federalist position on an issue debated during the ratification of the U.S. Constitution. Identifies that the U.S. Constitution creates a framework for the structure and function of the U.S. government, including articles and amendments. Describes the Bill of Rights as a list of rights that were added to the U.S. Constitution to protect some individual freedoms. Identifies the First Amendment protection of freedom of speech as part of the Bill of Rights.	national government led to the Constitutional Convention. Explains how a major issue debated at the Constitutional Convention, such as representation in Congress, was resolved in the U.S. Constitution. Compares Federalist and Anti-Federalist positions on an issue debated during the ratification of the U.S. Constitution. Provides a general description of the different parts of the U.S. Constitution, including the Preamble, Articles 1 to 3, and the Bill of Rights. Describes several amendments in the Bill of Rights and how they are meant to protect some individual freedoms.	Uses critical events (such as Shays' Rebellion) to explain how weaknesses in the government under the Articles of Confederation (such as the inability of the national government to form an army) led to the Constitutional Convention. Analyzes several major issues debated at the Constitutional Convention, including the distribution of power among the branches of government and between the federal and state governments, and constructs an explanation for how the issues were addressed in the U.S. Constitution. Compares Federalist and Anti-Federalist positions on an issue debated during the ratification of the U.S. Constitution and uses evidence to explain how the issue was addressed in the U.S. government. Explains the roles and powers outlined in each section of the U.S. Constitution, including the Preamble, Articles 1 to 3, and the Bill of Rights. Explains why some Anti-Federalists wanted to add the Bill of Rights to protect some individual freedoms as a condition for ratifying the U.S. Constitution.

Grade 8 Civics MCAS Achievement Level Descriptors

Structures of Government (Topics 3 and 6)

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Identifies Congress as the legislative branch, the office of the President as the executive branch, and the Supreme Court as the judicial branch. Identifies the roles of the branches of government, (e.g., legislative branch makes the laws, the executive branch carries out the laws, and the judicial branch interprets laws). Recognizes that the checks and balances system was designed to prevent one branch of government from becoming too powerful. Recognizes that U.S. Senators and Representatives run for and are elected to office. Identifies some of the processes that are part of presidential elections. Recognizes that the president and Congress each play a role in the nomination and confirmation process for some positions in the executive and judicial branches. Identifies some ways that political parties support candidates in state or national elections. Identifies that state governments and the federal government have shared powers, such as making laws, and recognizes that national laws apply to the entire country but state laws apply	Describes the separate powers of the three branches of government: Congress (the Senate and the House of Representatives) as the legislative branch, the President and the executive agencies as the executive branch, and the Supreme Court and other federal lower courts as the judicial branch. Describes some of the powers of the three branches of the federal government, such as: - the Senate and House of Representatives work together to create legislation, approve federal spending, or declare war - the president, the Cabinet, and executive departments and agencies carry out laws, conduct foreign policy, nominate justices, or command the military - the Supreme Court and lower federal courts can use judicial review to decide whether laws and executive orders are constitutional, or can resolve disputes between states Describes the checks and balances system and identifies ways one branch of government can check the power of another branch of government, such as how the president can veto a bill passed by congress to prevent the bill from becoming a law.	Explains the processes that the three branches of the federal government use to carry out their powers, such as: - how Congress passes legislation through committees and hearings, or how elections and political parties affect Congress - how the president, the Cabinet, and executive departments and agencies distribute the responsibility to carry out laws - how legal challenges move between levels of the federal court system, including lower federal courts and the Supreme Court Analyzes a novel situation to describe the purpose of the checks and balances system and explains how the branches of government can check each other, such as examining a historical example of a federal law passed by Congress and signed by the president that was challenged and reviewed by the U.S. Supreme Court. Analyzes a scenario to explain why U.S. Senators and U.S. Representatives are elected for different terms. Explains the processes of a presidential election (campaigns, primaries, and general elections) and describes the role of the popular vote and the



Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
only to the state in which they were enacted. Recognizes that both the U.S. and Massachusetts constitutions protect some individual rights, such as the freedom of religion, and identifies the Bill of Rights as a list of some of these protections. Identifies that the Massachusetts Constitution protects some rights that are not provided by the U.S. Constitution. Recognizes that governments at the federal, state, and local levels share some responsibilities and have different responsibilities. Identifies that the Massachusetts state government has three branches: the executive branch, the legislative branch, and the judicial branch.	Compares and contrasts how U.S. Senators and U.S. Representatives are elected to office for different term lengths. Describes how a president is elected, including the role of the Electoral College. Describes how the president nominates individuals for Cabinet and Supreme Court positions and Congress confirms or rejects the nominations. Describes the role of political parties in elections, such as nominating candidates and helping voters learn about candidates. Describes some powers of the Massachusetts state government, such as issuing driver's licenses, and describes some powers of the federal government, such as coining money, as defined by the U.S. and Massachusetts constitutions.	Electoral College in an election. Uses evidence to explain why the executive branch nominates individuals for Cabinet and Supreme Court positions and the legislative branch confirms or rejects the nominations. Analyzes campaign materials to explain how political parties shape elections by nominating candidates, creating party platforms, and fundraising to help a candidate win the election. Compares and contrasts the powers of the federal government and the Massachusetts state government as outlined in the U.S. and Massachusetts constitutions. Analyzes a scenario to distinguish between an enumerated power in either the U.S. or Massachusetts constitution, such as the power to tax, and an implied power, such as creating an agency to collect taxes.

Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Describes how state and local taxes support some public facilities and services.	Describes the difference between an enumerated power that is listed in the U.S. or Massachusetts constitutions and an implied power as an action that is necessary to carry out an enumerated power. Describes some of the individual rights protected under the U.S. Constitution through the Bill of Rights and 14th Amendment and under the Massachusetts Constitution, such as freedom of speech and equal protection under the law. Identifies that powers not granted to the federal government in the U.S. Constitution are reserved for the state governments by the Tenth Amendment. Identifies one right that is protected by the Massachusetts Constitution that is not provided by the U.S. Constitution, such as the right to an education. Contrasts some responsibilities of local and state governments, such as funding and creating policies for public schools, with responsibilities of the federal government that address national concerns, such as negotiating international treaties. Describes the three branches of the Massachusetts state government as: the executive branch that carries out state laws through the governor and executive agencies	Analyzes multiple sources to compare some of the individual rights protected under the U.S. Constitution, including the Bill of Rights and the 14th Amendment, and Article 1 of the Massachusetts Constitution. Explains that the Tenth Amendment to the U.S. Constitution is important to state governments because it establishes that powers not granted to the federal government in the Constitution are reserved for state governments, such as the power to create laws about education. Explains how the Massachusetts Constitution provides additional rights to residents than what is provided by the U.S. Constitution, such as the right to an education and the right to a clean environment. Analyzes multiple sources to explain how the different branches within the Massachusetts state government fulfill their responsibilities. Uses evidence and reasoning to explain how state and local governments use taxes to support public facilities and services.



Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes positions or structures of local government in Massachusetts, such as mayor, school committee, or town meetings.	• the legislative branch that makes state laws through state representatives and state senators • the judicial branch that interprets state laws through the Supreme Judicial Court and lower courts Describes some tax-supported facilities and services provided by state and local governments, such as public schools and libraries. Describes positions and structures of local government in Massachusetts, including city councils, select boards, town meetings, and county offices.	Analyzes a scenario to explain how local governments in Massachusetts make decisions for the community, enact local laws, and provide services for residents.



Grade 8 Civics MCAS Achievement Level Descriptors

Rights and Responsibilities (Topics 4, 5, and 7)

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes that individuals who are born in the United States are U.S. citizens. Identifies one right or responsibility of citizens, such as voting in federal elections. Recognizes that individuals may engage in civic/political activities that relate to their communities and activities that relate to their personal lives. Identifies examples of fundamental principles and values of U.S. political and civic life, such as equality and representative democracy. Identifies some ways individuals can participate in the political process, such as voting or registering with a political party. Interprets information from a source, such as an electoral college map, to identify a concept related to elections. Recognizes leadership qualities when given information describing political leaders. Identifies that individuals work with elected leaders to create policies. Recognizes that public service positions support government responsibilities in carrying out laws and providing public services.	Uses information from a scenario to describe that an individual born outside of the United States must complete a process in order to become a U.S. citizen. Describes some rights and responsibilities of citizens, such as serving as a juror and holding federal elected office. Determines whether an activity is related to civic/political life or private life. Describes fundamental principles and values of U.S. political and civic life, such as justice, liberty, and the rights of individuals. Describes opportunities for citizens to participate in the political process through elections, political parties, and interest groups. Interprets information or data from a source, such as a political party platform, to draw a conclusion about elections. Uses information from sources to describe the qualities of good political leaders at local, state, or national levels. Describes how policies that benefit the people are created when individuals work and cooperate with elected leaders.	Analyzes a scenario to explain at least one way how an individual may become a citizen of the United States, including the naturalization process. Analyzes a scenario to distinguish between civic/political activities and private activities. Analyzes a scenario to explain how fundamental principles and values, such as the common good or due process, are part of U.S. political and civic life. Explains how citizens participate in the political process through elections (voting, running for office), through political parties (registering with a party, supporting a campaign), or through interest groups (raising awareness on an issue, joining an organization). Analyzes information or data from multiple sources and uses evidence to support a conclusion about elections. Analyzes a scenario and evaluates the leadership qualities of political leaders at local, state, or national levels. Explains why public policies may be more effective when individuals work with elected leaders to create those policies.



Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Based on a given scenario, identifies that liberty may be in conflict with equality/authority or that individual rights may be in conflict with the common good.	Identifies some tax-supported public service positions and describes how some public servants help carry out laws or provide public services.	Based on a scenario, explains why some public service positions are necessary to help carry out laws or provide public services at local, state, and national levels.

Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes that elected representatives reflect the views of their constituents in creating laws and making public policy. Based on a scenario, identifies an example of political courage as an elected representative making a decision that is morally right but may be unpopular. Identifies an example of political protest, such as a demonstration, based on a source. Interprets a chart created by a policy research organization to identify perspectives related to a public policy or issue. Recognizes that the U.S. Constitution has changed over time through amendments. Recognizes that Congress has passed laws over time to expand protections for civil rights. Recognizes that the U.S. Supreme Court can declare acts of Congress unconstitutional. Identifies that the U.S. Supreme Court selects which cases to hear, primarily appeals from lower courts. Recognizes that some U.S. Supreme Court cases have led to significant changes over time in individuals' lives, such as in cases related to protecting First Amendment rights.	Uses information from sources to describe how liberty may be in conflict with equality/authority or how individual rights may be in conflict with the common good in a given scenario. Describes one role of elected representatives, such as representing constituents in government and creating legislation. Using information from a scenario, describes how an elected representative has demonstrated political courage. Describes how political protest may lead to changes in policies or legislation in a democratic government. Uses information or data from a chart or graph created by a policy research organization to identify next steps for a policy. Uses information from a source to describe that the U.S. Congress has the power to stretch its authority to make laws that are necessary for the country even if the laws are not listed in the U.S. Constitution. Describes how some amendments to the U.S. Constitution expanded rights, such as extending the right to vote in federal elections to African Americans, women, and young adults.	Analyzes sources related to conflicts that occur in democratic governments, such as liberty in conflict with equality/authority or individual rights in conflict with the common good, to explain why these tensions may occur in a given scenario. Explains that elected representatives engage in multiple job functions, such as creating legislation, communicating with constituents, and campaigning in elections. Based on a scenario about an elected representative, determines how the individual has either demonstrated political courage or demonstrated actions that have failed to live up to the ideals of the U.S. Constitution. Analyzes sources to explain how political protest may influence public policy by drawing attention to injustice, mobilizing support for a cause, and persuading elected officials to pass new laws. Analyzes information and data from a policy research organization and uses evidence to support a conclusion about a public policy or issue. Explains how the "necessary and proper" clause allows the U.S. Congress to stretch its powers and make laws that are needed for the country, even if the issue is not listed as a power in the U.S. Constitution, and that this is often referred to as the "elastic clause."



Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Identifies freedom of the press as a right protected under the First Amendment.	Identifies the institution of slavery as the main cause of the Civil War and describes how changes to the U.S. Constitution after the war helped to expand civil rights and the power of the federal government to enforce those rights.	Explains why some amendments were added to the U.S. Constitution and how those amendments helped to expand rights to individuals, such as the 14th Amendment (citizenship rights, equal protection of laws), the 19th Amendment (women's right to vote), and include a dissenting opinion.



Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Recognizes that the free press can provide different information and views about government and politics. Identifies the purpose of news articles to inform the public and the purpose of editorials to provide an opinion on an issue. Recognizes that digital news and social media provide both benefits to a democratic society, such as increasing the availability of information, and challenges, such as making it more difficult to determine the credibility of sources. Identifies a strategy for evaluating information, such as reading multiple sources on the same topic.	Uses information from sources to describe how some laws passed by Congress have expanded protections for civil rights over time to include groups that were not previously included. Describes the principle of judicial review as the power of the U.S. Supreme Court to review Congressional laws that are challenged. Completes a diagram to describe the process of how cases go through the U.S. Supreme Court and how the Court issues decisions. Based on a scenario, describes how Supreme Court cases have made changes in individuals' lives, such as in cases related to the equal protection clause. Describes freedom of the press as the right to express and publish views without government censorship. Uses information from two print sources with different views on a civic issue to explain how the free press affects public discourse. Compares and contrasts the differences between news articles and editorials, op-eds, or political cartoons. Analyzes a source to describe how digital news and social media affect public discourse about a civic issue. Uses information from a source to describe specific methods for evaluating information, such as comparing an editorial to a news article.	Analyzes sources to explain that unresolved debates about slavery at the nation's founding led to the Civil War and that postwar amendments to the U.S. Constitution abolished slavery and helped to expand both civil rights and the federal government's power to enforce those rights. Uses evidence and reasoning to explain how some laws enacted by Congress, such as the 1964 Civil Rights Act and the 1990 Americans with Disabilities Act, expanded civil rights and equal protection by prohibiting legal discrimination based on race, gender, or disability. Uses information from a source to explain how the U.S. Supreme Court uses judicial review to review Congressional legislation when challenged. Analyzes a U.S. Supreme Court case to explain how cases reach the Supreme Court after an appeal from a lower court, that the Supreme Court chooses which cases to hear, and that the Supreme Court issues a majority decision that may also include a dissenting opinion. Analyzes multiple U.S. Supreme Court decisions to support a claim about how the Court's decisions affected people's lives, such as in cases where individual rights may be in conflict with other national interests. Analyzes a scenario to explain the role of freedom of the press in maintaining a healthy democracy. Analyzes multiple sources to draw conclusions about how the free press helps citizens keep government power accountable to the people.



Grade 8 Civics MCAS Achievement Level Descriptors

Partially Meeting Expectations <i>On MCAS, a student at this level:</i>	Meeting Expectations <i>On MCAS, a student at this level:</i>	Exceeding Expectations <i>On MCAS, a student at this level:</i>
Uses information from an editorial or op-ed to identify the purpose of the source.	Analyzes an editorial, op-ed, or political cartoon to describe the point of view of the source.	Analyzes sources, including news articles, political cartoons, editorials, and op-eds, to support a claim about a civic issue. Evaluates the benefits and challenges of digital news and social media on how policy decisions are made in a democratic society. Analyzes multiple sources to evaluate the claims and evidence in information presented in various formats, including political cartoons and commentaries. Analyzes an editorial, op-ed, or political cartoon related to a public policy issue and uses evidence and reasoning to construct an explanation about the issue.

APPENDIX B
MEETING AGENDA

MCAS Civics Standard Setting Meeting August 2025

Agenda

Day 1 – August 5, 2025

8:00 am	Breakfast
8:30 am	Orientation Session ○ Welcome ○ Standard Setting Overview
10:00 am	Break
10:15 am	Overview of Civics Test
11:00 am	Experience the Test Activity
12:00 pm	Lunch
12:45 pm	Experience the Test Activity (cont.)
1:45 pm	Break
2:00 pm	Achievement Level Descriptors Review and Discussion
2:45 pm	Introduction to Borderline Descriptions Borderline Description Development – Meeting Expectations
4:30 pm	Adjourn for the day

Day 2 – August 6, 2025

8:00 am	Breakfast
8:30 am	Borderline Descriptions Development – Partially Meeting and Exceeding Expectations
10:00 am	Break
10:15 am	Standard Setting Key Concepts and Training
11:00 am	Practice Judgment Activity and Discussion
12:00 pm	Lunch
12:45 pm	Round 1 Judgments
2:00 pm	Break
2:30 pm	Round 1 Judgment Feedback and Discussion
4:30 pm	Adjourn for the day

Day 3 – August 7, 2025

8:00 am	Breakfast
8:30 am	Round 2 Judgments
9:45 am	Break
10:15 am	Round 2 Feedback and Discussion
12:00 pm	Lunch
12:45 pm	Round 3 Judgments
1:30 pm	Break
2:00 pm	Results Presentation
2:30 pm	Wrap-up and Workshop Evaluation Survey
3:00 pm	Meeting Adjourned

APPENDIX C
PANELIST PREWORK

MCAS Civics Standard Setting Prework Survey

Welcome to the Cognia Standard Setting Toolkit. This will be the primary platform used for the MCAS Grade 8 Civics Standard Setting meeting. Please review and complete the prework survey below by **Thursday, July 31, 2025**.

Section 1: Cognia Standard Setting Toolkit Access and Navigation

To Get Started

In the top right corner of this screen, you will see your email address.

- Click on your email to see a screen with your profile information.
- Review your profile information and update it as needed.
- When finished, click on the **HOME** button in the top bar to return to this page.

The top left of this screen shows tabs as follows: | Hide Documents | Standards | ALDs | Borderline Descriptions |

You can click on “Standards” or “ALDs” (Achievement Level Descriptors) to show these documents and then click on “Hide Documents” to collapse them. The “Borderline ALDs” tab is currently inactive and will become active during the meeting after they are created.

Section 2: Standards

Click on the “Standards” link and then scroll through and scan the document to become familiar with the layout. You can zoom in or out to better see the standards. When done, either click on the “Hide Documents” tab or simply scroll down to view the survey.

Based on your review of the “Standards” document, select the appropriate response for each of the statements below.

Statement	Disagree	Agree
I can open and hide the “Standards” document.	N/A	N/A
I was able to scan through the “Standards” document.	N/A	N/A
I am familiar with the content of the Massachusetts Grade 8 History and Social Science Standards and HSS Practices.	N/A	N/A

Use the text box to note any additional comments or questions you have related to accessing the “Standards” document or the contents thereof.



Section 3: Achievement Level Descriptors (ALDs)

ALDs are statements that describe what students are expected to know and be able to do at three of the four achievement levels: Exceeding Expectations, Meeting Expectations, and Partially Meeting Expectations. (Note that there are no descriptors for the Not Meeting Expectations achievement level because students work at this level, by definition, does not meet the criteria of the Partially Meeting Expectations level.)

The first page of the ALDs provides the policy-level descriptors. These are broad descriptions that apply to all MCAS assessments.

Click on the “ALDs” link above and review the first page. When done, either click on the “Hide Documents” tab or simply scroll down to view the survey.

Based on your review of the first page of the “ALDs” document, select the appropriate response for each of the statements below.

Statement	Disagree	Agree
I can open and hide the “ALDs” document.	N/A	N/A
I reviewed the first page of the “ALDs” documents.	N/A	N/A
I understand that statements on the first page represent broad descriptors that apply to all MCAS assessments.	N/A	N/A
I was aware of these statements prior to this review.	N/A	N/A

The rest of the “ALDs” document provides subject-specific statements that describe what students should know and be able to do as it relates to the MCAS grade 8 civics content. These descriptors will be a critical component of the standard setting activities. In preparation for the standard setting meeting, please review the ALDs. As you review, pay attention to the following:

- the specific knowledge and skills expected
- the wording of the statements within each achievement level
- differences between adjacent achievement levels
- progressions across achievement levels (i.e., from lower to higher achievement levels)

Please note that the Civics ALDs are in draft form and may be updated during the standard setting meeting when they will be reviewed further. These ALDs are secure documents and should not be shared with others at this time.

Based on your review of the “ALDs” document, select the appropriate response for each of the statements below.

Statement	Disagree	Somewhat Disagree	Somewhat Agree	Agree
I understand that the ALDs are secure and should not be shared with others at this time.	N/A	N/A	N/A	N/A
I understand that the ALDs are in draft form and will be reviewed further at the meeting and that they may be revised at that time.	N/A	N/A	N/A	N/A
I understand that student results on the MCAS tests are reported according to four achievement levels: <i>Exceeding Expectations, Meeting Expectations, Partially Meeting Expectations, and Not Meeting Expectations</i> .	N/A	N/A	N/A	N/A
I understand that the ALDs describe the knowledge and skills students are expected to demonstrate on the gr. 8 civics test and that the knowledge and skills are cumulative at each level.	N/A	N/A	N/A	N/A
I understand why no descriptors are provided for the <i>Not Meeting Expectations</i> achievement level.	N/A	N/A	N/A	N/A
I could identify specific knowledge and skills within the statements.	N/A	N/A	N/A	N/A
I could identify differences between adjacent achievement levels.	N/A	N/A	N/A	N/A
I noticed a progression across the descriptors from left to right (i.e., from the lower to higher achievement levels).	N/A	N/A	N/A	N/A

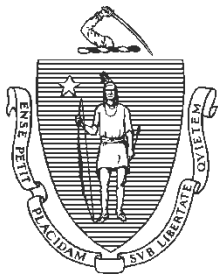
Use the text box to note any additional comments or questions you have as it relates to your review of the Civics ALDs.

Section 4: Pework Wrap Up

Once you have completed the prework surveys, please indicate that you are done by using the “I’m done” toggle in the top right corner. Then log out of the Cognia Standard Setting Toolkit by clicking on the “Logout” link (top right corner).

We look forward to working with you during the Standard Setting Meeting.

APPENDIX D
NON-DISCLOSURE FORM



Massachusetts Department of Elementary and Secondary Education

135 Santilli Highway, Everett, Massachusetts 02149-1962
Telephone: (781) 338-3000

TTY: N.E.T. Relay 1-800-439-2370

Jeffrey C. Riley
Commissioner

Massachusetts Comprehensive Assessment System NON-DISCLOSURE AGREEMENT

In order to preserve and ensure the security, validity, and integrity of Massachusetts Comprehensive Assessment System (MCAS) tests, the Massachusetts Department of Elementary and Secondary Education (the Department) requires that all individuals whom the Department authorizes to participate in the development, review, and production of MCAS tests and reports accept the terms of the following non-disclosure agreement.

- With the exception of test items released by the Department for informational purposes, all MCAS test items are deemed secure instruments. The materials are specifically excluded from the Massachusetts Public Records Law. (**G. L. c. 4, § 7(26)(l)**) As a result, I agree not to reproduce, discuss, or in any way release or distribute test items and associated materials to unauthorized persons (i.e., persons not specifically authorized by the Department to have access to secure MCAS materials and information).
- All information about MCAS English language arts passages and English language arts, mathematics, history and social science, and science and technology/engineering graphics under consideration for inclusion in current or future MCAS tests is confidential. Therefore, I agree not to share this information in any way with unauthorized persons.
- Details about MCAS test construction, including the positions of items in test forms, must be kept secure. Consequently, I agree not to share MCAS test blueprints or any information related to MCAS test blueprints with unauthorized persons.
- Discussions and materials related to all technical aspects of the MCAS program, including possible new models and future directions, are confidential. Therefore, I agree not to reveal information regarding discussions and deliberations that take place in committee meetings to

- unauthorized persons.
- I further understand and agree that all MCAS test items, ideas for items, and related test materials developed, reviewed, and produced by authorized persons working in collaboration with the Department are and will forever remain the exclusive property of the Massachusetts Department of Elementary and Secondary Education.

By signing below, I, as a member of the MCAS Bias and Sensitivity Committee, Assessment Development Committee, or Technical Advisory Committee, acknowledge and accept that I am bound by the terms of this agreement prohibiting the disclosure of information regarding secure materials and discussions. I also acknowledge and accept that my failure to abide by any term of this non-disclosure agreement will result in serious consequences, including but not limited to action to limit or revoke my Massachusetts educator license.

NAME: _____

COMMITTEE (include subject & grade): _____

AFFILIATION: _____

SIGNATURE: _____ **DATE:** _____

APPENDIX E

EXPERIENCE THE TEST-ITEM COMMENT FORM

MCAS Civics Standard Setting Meeting August 2025

Experience the Assessment Notes Form

Item #	Item Notes
Performance Task	N/A
PT_1	N/A
PT_2	N/A
PT_3	N/A
PT_4	N/A
PT_5	N/A
PT_6	N/A
PT_7	N/A
PT_8	N/A
PT_9	N/A
PT_10	N/A
PT_11	N/A
End-of-Course	N/A
EOC_1	N/A
EOC_2	N/A
EOC_3	N/A
EOC_4	N/A
EOC_5	N/A
EOC_6	N/A
EOC_7	N/A
EOC_8	N/A

Note: Above table represents an abbreviated version of the document for reference.

APPENDIX F
ROUND READINESS SURVEYS

The readiness surveys were designed to be a simple indicator of panelists' understanding of, and readiness to proceed to, the judgment activity for the upcoming round. If panelists were unsure about any of the processes discussed, it was important for the facilitators to know and understand this so they can better train panelists in this important work.

Readiness Survey—Round 1

Question	Yes	No/Unsure
I understand the goals of the standard setting meeting.	N/A	N/A
I understand the procedures we were using to set standards.	N/A	N/A
I understand the differences between the achievement levels.	N/A	N/A
I understand what materials/content I should consider when making judgments.	N/A	N/A
I understand how to use the Cognia Standard Setting Toolkit.	N/A	N/A
I am ready to proceed with the standard setting process.	N/A	N/A

Readiness Survey—Round 2

Question	Yes	No/Unsure
I understand the Round 1 feedback.	N/A	N/A
I understand that I should use the Round 1 feedback as information for me to consider as I make my judgements in Round 2.	N/A	N/A
I understand that I should consider the insights of my colleagues as information as I make decisions, but my final judgements were my own independent judgments in Round 2.	N/A	N/A
I am ready to proceed with Round 2 of the standard setting process.	N/A	N/A

Readiness Survey—Round 3

Question	Yes	No/Unsure
I understand the Round 2 feedback.	N/A	N/A
I understand that I should use the Round 2 feedback as information for me to consider as I make my judgements in Round 3.	N/A	N/A
I understand that I should consider the insights of my colleagues as information as I make decisions, but my final judgements were my own independent judgments in Round 3.	N/A	N/A
I am ready to proceed with Round 3 of the standard setting process	N/A	N/A

APPENDIX G
WORKSHOP EVALUATION SURVEY

Standard-Setting Evaluation Survey

Section 1: *Select the option that best reflects your opinion about the level of success of each of the meeting components listed below.*

Statement	Not Successful	Partially Successful	Successful	Very Successful
Meeting pre-work	N/A	N/A	N/A	N/A
Orientation session training	N/A	N/A	N/A	N/A
Overview of MCAS assessments	N/A	N/A	N/A	N/A
Experiencing the test activity	N/A	N/A	N/A	N/A
Discussion of the scoring of the items on the test	N/A	N/A	N/A	N/A
Discussion/review of achievement level descriptors (range ALDs)	N/A	N/A	N/A	N/A
Development of the borderline descriptors (Borderline ALDs)	N/A	N/A	N/A	N/A
Training in the standard setting method and judgment task	N/A	N/A	N/A	N/A
Practice judgment round	N/A	N/A	N/A	N/A
Main judgment rounds	N/A	N/A	N/A	N/A
Judgment round feedback	N/A	N/A	N/A	N/A
Discussions after each round	N/A	N/A	N/A	N/A

Section 2: *How useful were the following activities or information as you made your standard setting judgments.*

Statement	Not Useful	Somewhat Successful	Useful	Very Useful
Achievement Level Descriptors (Range ALDs)	N/A	N/A	N/A	N/A
Borderline Descriptors (Borderline ALDs)	N/A	N/A	N/A	N/A
Panel-level statistics after Rounds 1 and 2	N/A	N/A	N/A	N/A
Panelist agreement data after Rounds 1 and 2	N/A	N/A	N/A	N/A
Impact data after Round 2	N/A	N/A	N/A	N/A
Discussion after each round	N/A	N/A	N/A	N/A
Visual presentation of the feedback provided	N/A	N/A	N/A	N/A

Section 3: *How sufficient were the following elements of the standard setting meeting.*

Statement	Not Sufficient	Somewhat Sufficient	Sufficient	More Than Sufficient
Time spent on development and discussion of borderline descriptions	N/A	N/A	N/A	N/A
Amount of time training on the standard setting method and process	N/A	N/A	N/A	N/A
Time spent on the practice round and discussion	N/A	N/A	N/A	N/A
Amount of time to make judgments	N/A	N/A	N/A	N/A
Computers and technology used during the meeting	N/A	N/A	N/A	N/A



Statement	Not Sufficient	Somewhat Sufficient	Sufficient	More Than Sufficient
Cognia Standard Setting Toolkit for accessing all the information and completing judgments	N/A	N/A	N/A	N/A
Facilities used for the meeting	N/A	N/A	N/A	N/A

Section 4: *In applying the standard setting method, you were asked to recommend three cut scores (separating four achievement levels) for student performance on the MCAS grade 8 civics assessment.*

How confident do you feel that the ALDs for grade 8 civics are reasonable for each student achievement level?

Statement	Not Confident	Somewhat Confident	Confident	Very Confident
Exceeding Expectations	N/A	N/A	N/A	N/A
Meeting Expectations	N/A	N/A	N/A	N/A
Partially Meeting Expectations	N/A	N/A	N/A	N/A

How confident do you feel that the final cut score recommendations for grade 8 civics represent appropriate levels of student performance?

Statement	Not Confident	Somewhat Confident	Confident	Very Confident
Exceeding Expectations	N/A	N/A	N/A	N/A
Meeting Expectations	N/A	N/A	N/A	N/A
Partially Meeting Expectations	N/A	N/A	N/A	N/A

Section 5: *Please review each of the statements below and indicate your level of agreement with the statement.*

Note: Response options for the question below will be on the following Likert-type scale: Strongly Disagree, disagree, undecided, agree, or strongly agree.

1. I understood the goals of the standard setting workshop.
2. I understood the procedures we followed to set standards.
3. The workshop procedures made sense to me, and I learned how to apply them efficiently.
4. I am confident about my understanding of this standard setting process.
5. The workshop facilitators explained things clearly to us.
6. The workshop facilitators encouraged us to raise questions and put our understandings into our own words.
7. The workshop facilitators provided clear and helpful responses to my questions and other requests for clarification.
8. The workshop facilitators took steps to help the standard setting process run smoothly.
9. Sufficient time was allotted for training and practice on the standard setting concepts, tasks, and procedures.



10. I understood the progressions in expectations across the achievement levels as defined by the Achievement Level Descriptors.
11. I became sufficiently familiar with the assessment to make item judgements.
12. I had sufficient opportunities during the meeting to express my opinions about student achievement levels.
13. I had adequate opportunities to interact with my fellow panelists.
14. I understood how to use the Cognia Standard Setting Toolkit to record my responses.
15. I understood how the cut scores were calculated.
16. I understood how to use the feedback after round 1, in preparation for round 2.
17. I understood what the impact data, presented after rounds 2 and 3, represented.
18. I believe my opinions and judgments were treated with respect by my fellow panel members.
19. I believe my opinions and judgments were treated with respect by the facilitators.

Section 6: *Please use the space provided to respond to the following questions.*

- Please note any parts of the standard setting training and process that we should improve.
- Please note any parts of the standard-setting training and process that you felt worked really well.
- Please note any other feedback you would like us to consider.



APPENDIX H
ORIENTATION SESSION POWERPOINT

MCAS Grade 8 Civics Standard Setting Meeting

Day 1 - Orientation

Wakefield, MA

August 5 – 7, 2025

Welcome

Introductions and Orientation

Introductions

DESE Members

Rob Curtin, Chief Officer for Data, Assessment, and Accountability

Michol Stapel, Associate Commissioner for Student Assessment

Katie Bowler, Director of Test Development for MCAS

Ann Marie Gleeson and Marissa Roque, Test Development

Sadeq Sohrabie and Sarah Jo Torgrimson, Data Team

Cognia Members

Sandra Sweeney, Psychometrician

Han Yi Kim, Lead Psychometrician for MCAS

Andrea Herbert, Director of Reporting and Psychometrics

Nicole Mishiyev, Test Development

Erin Maskwa, Senior Vice President Program Management

Additional Staff and Observers

DESE and Cognia

Will Lorié, Center for Assessment

MCAS Civics Timeline

MCAS Civics Timeline



History and Social
Science MCAS
Program
Suspended



*An Act to Promote
and Enhance Civic
Engagement*

2008

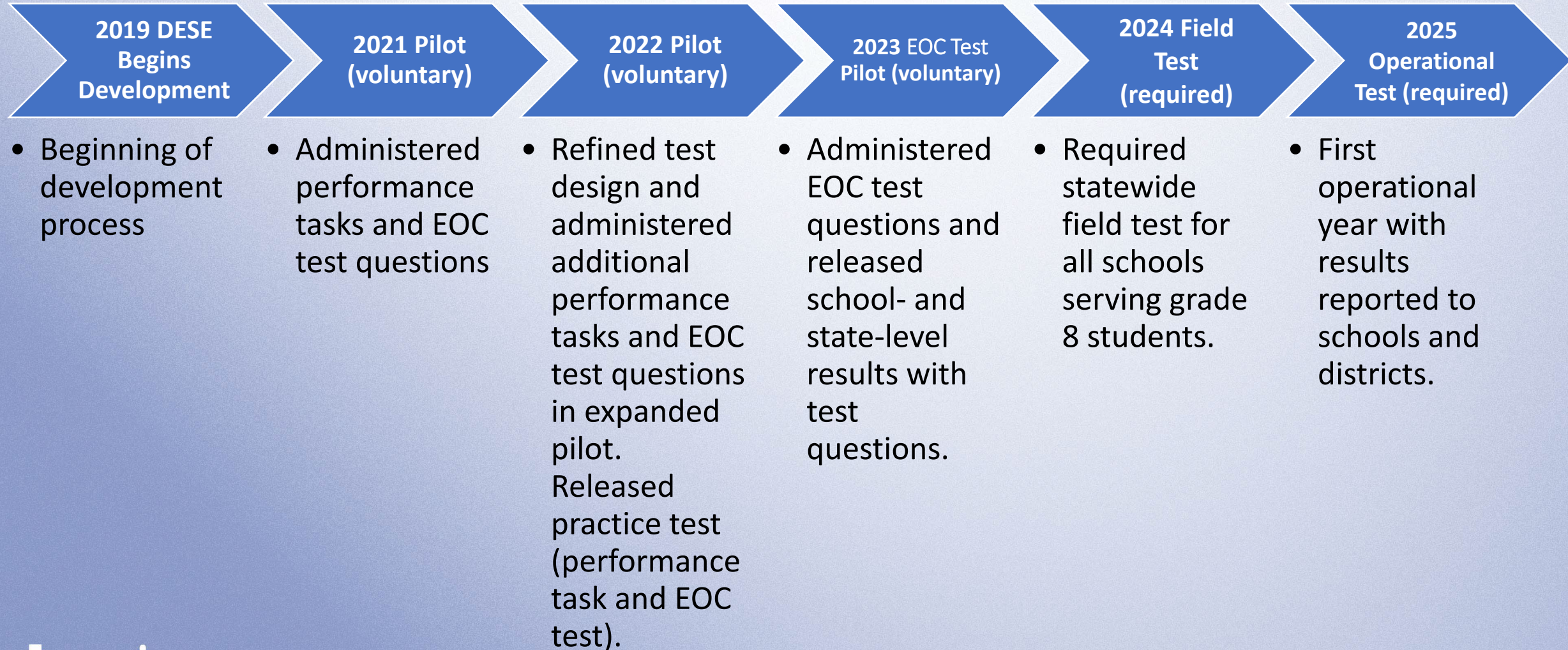
June 2018

Nov. 2018



New History and
Social Science
Curriculum
Framework

MCAS Civics Timeline (cont.)



Standard Setting Panelists

- Represent educators and stakeholders from schools and districts across the state
- Selected based on various criteria
 - Content knowledge expertise
 - Teaching experience
 - Experience with diverse student populations
 - Understanding of instructional environment

Panelists

- Average years of teaching experience: 15 years
- Representing 24 School Districts:

Acushnet	Amherst-Pelham	Boston	Chicopee
Devens	Douglas	Everett	Fall River
Groton Dunstable	Holyoke	Hudson	KIPP (Lynn & Boston)
Lawrence	Littleton	Malden	Manchester-Essex
Narragansett	Newton	Quincy	Silver Lake
Somerville	Springfield	Stoneham	West Bridgewater

Panelist Introductions

- Your name & pronouns used
- Your district & school
- Your role & courses you teach
- Years of experience in education
- Note if you are a table leader
- Any experience participating in assessment committees
- A fun activity/event that you participated in this summer



Overview of the Meeting

Tuesday

- Welcome and Orientation
- **Table leader training at lunch today**
- Experience the Test
- Review Achievement Level Descriptors (ALDs)
- Borderline ALD Development

Wednesday

- Borderline ALD Development (Cont.)
- Standard Setting Key Concepts and Training
- Practice Round and Discussion
- Round 1 Judgments and Discussion

Thursday

- Rounds 2 and 3 Judgments and Discussion
- Results Presentation and Evaluation Survey

Standard Setting Meeting Roles

Panelists

- Recommend cut scores
- Participate in discussions
- Table leaders help guide table discussions

Facilitators

- Lead whole group through process
- Guide whole group discussions
- Present information and data
- Answer questions

Data Analysts

- Analyze data
- Prepare feedback for panelists
- Provide psychometric and data support as needed

Observers

- Observe to learn about and evaluate standard setting process
- Answer policy questions

Standard Setting Overview

Selected Standard-Setting Terminology

Achievement Levels

Labels for levels of student achievement. MCAS levels: (1) Not Meeting Expectations, (2) Partially Meeting Expectations, (3) Meeting Expectations, and (4) Exceeding Expectations.

Achievement Level Descriptors (ALDs)

Descriptions of the knowledge and skills associated with each level of achievement for a specific grade and content

Cut Scores

Scores on an assessment that separate one level of achievement from another

Feedback Data

Data provided to panelists to help them analyze the validity and reasonableness of the recommended cut scores

Overview

Qualified educators are selected to represent educators and key stakeholders across the state

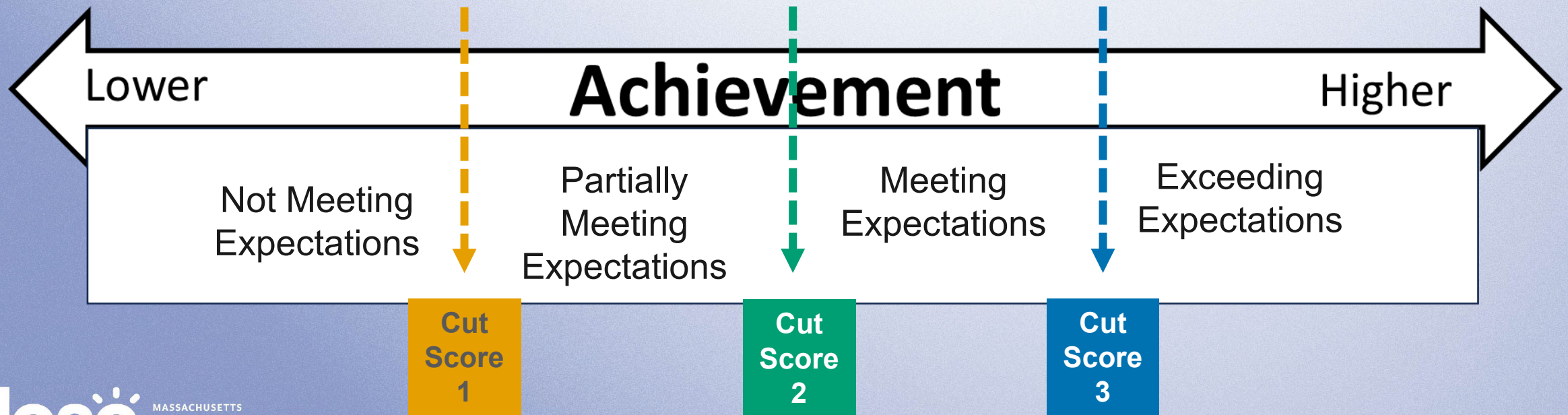
Selected educators participate in standard setting meeting that results in **cut score recommendations**

Cut score recommendations from standard setting are presented to the Commissioner

The Commissioner reviews and decides on standard setting recommendations

MCAS Achievement Levels and Cut Scores

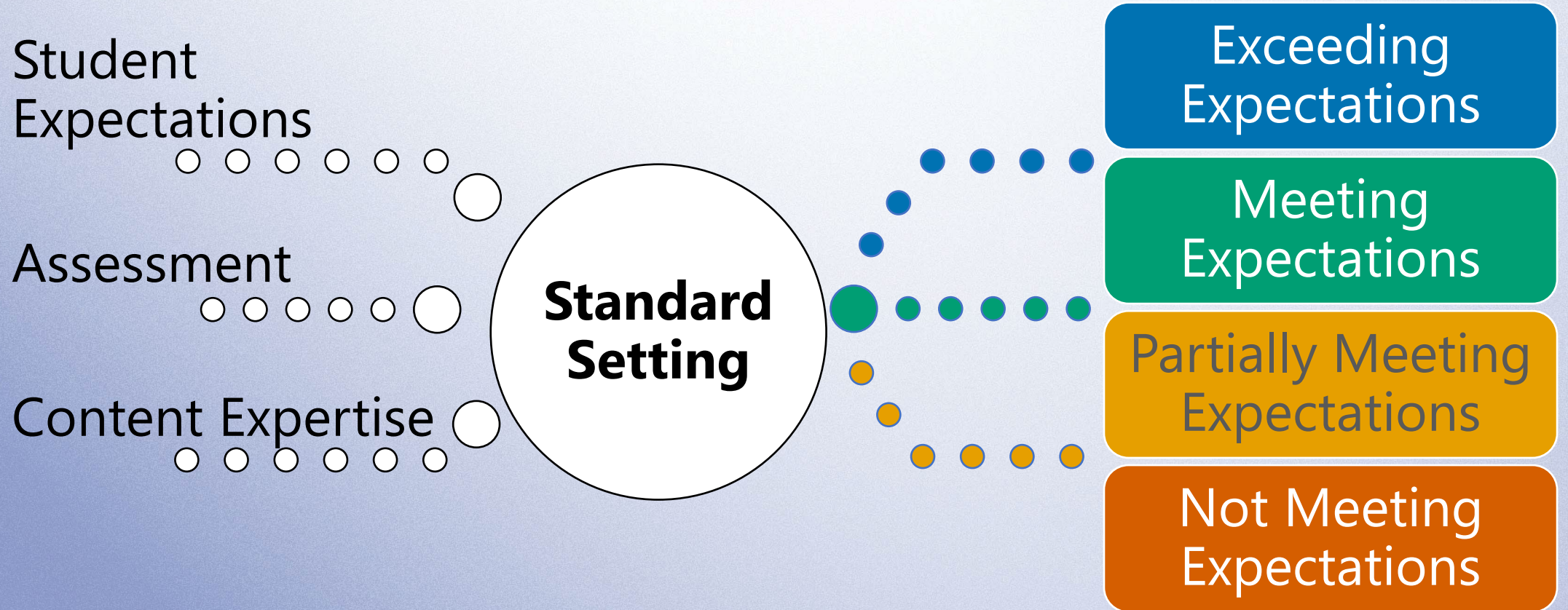
- **Achievement Levels** and the associated **descriptors** reflect the specific knowledge and skills that students should be able to demonstrate based on their performance on the test.
- A **cut score** is the minimum test score a student must earn to be considered at a specific achievement level.
- Three cut scores result in four levels of achievement.



Purpose and Goals of the Standard Setting Meeting

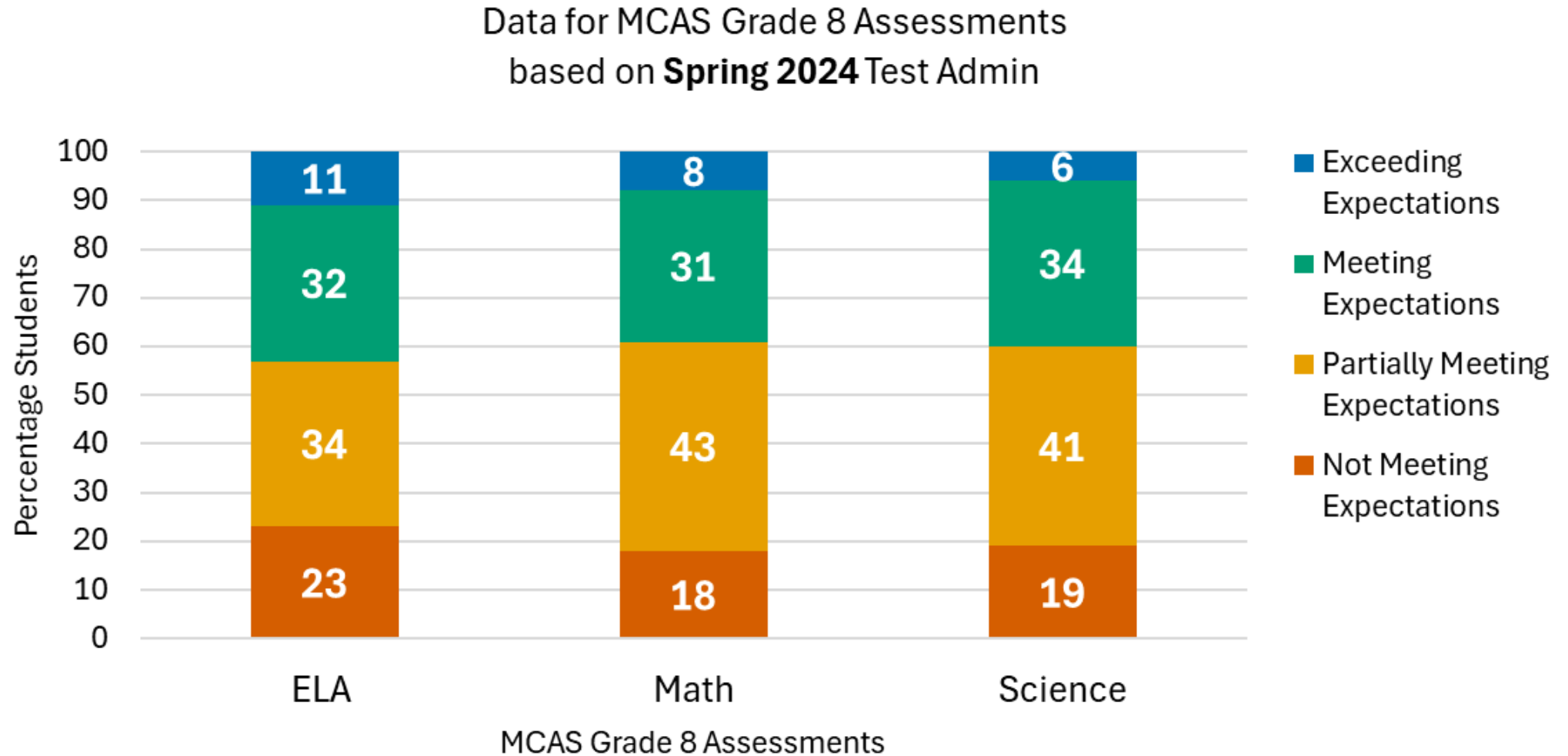
- Follow an established set of activities based on the Modified Angoff standard setting method to
 - Provide recommendations to DESE for three cut scores (i.e., partially meeting, meeting, and exceeding expectations cut scores) for the MCAS Grade 8 Civics test
 - Review the achievement level cut score recommendations for reasonableness
 - Help ensure recommendations are consistent with expectations stated in the Achievement Level Descriptors
- DESE will use the recommendations to help determine the final cut scores for reporting student achievement on the Civics test

Standard Setting



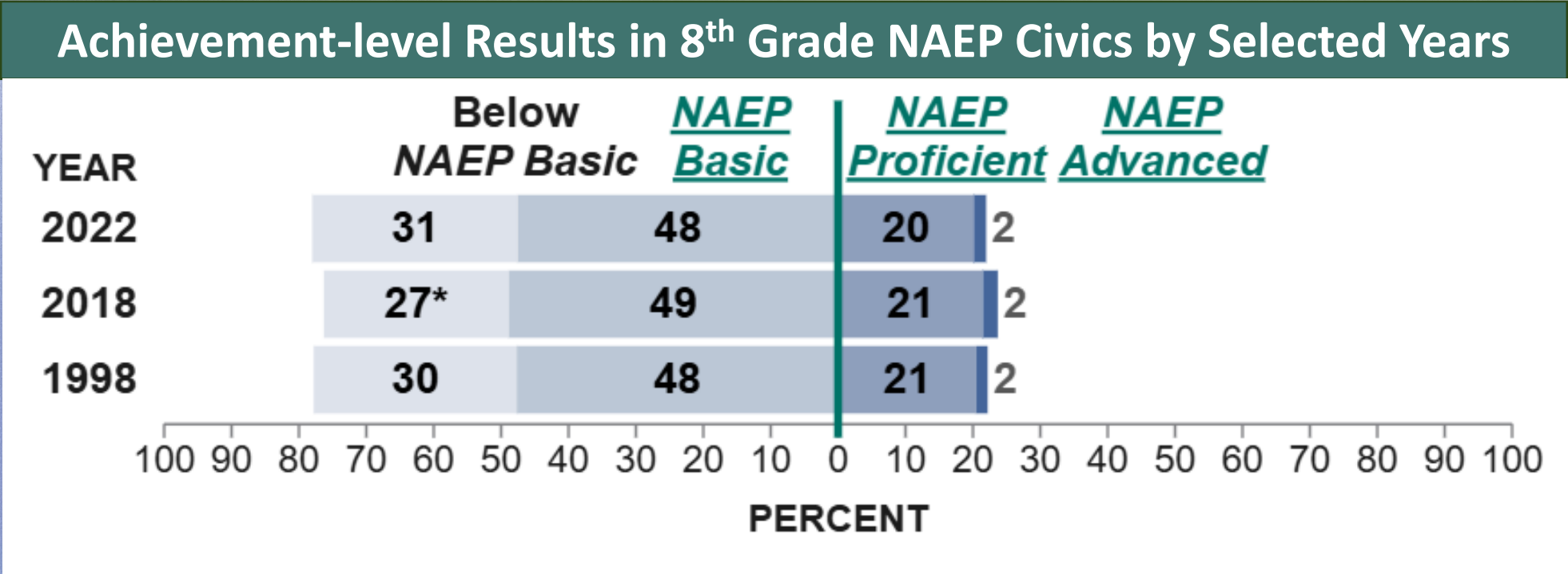
Contextual Data

MCAS Contextual Data



NAEP 8th Grade Civics Assessment Data

- Nationally representative sample of eighth-graders, **no state-level data**
- Test measured knowledge and skills in democratic citizenship, government, American constitutional democracy
- 2022 test was computer-based, included selected-response and constructed-response items



* Significantly different ($p < .05$) from 2022.

NOTE: NAEP achievement levels are to be used on a trial basis and should be interpreted and used with caution.

Meeting Ground Rules and Housekeeping

Meeting Ground Rules

Do...

- Be ready to begin at the times designated by the facilitators
- Ensure that you understand each phase of the process and request clarification when needed
- Share your thinking as a valued participant during the meetings

Do Not...

- Remove any secure materials from the room
- Discuss materials or results from the process outside of the meeting room
- Use the Chromebooks for anything other than standard setting activities

Security and Electronic Devices

- Cell phones
 - Mute during the meeting
 - Do not use in meeting room (leave room if needed)
- Do not look up any information (phone or laptop)—ask DESE or Cognia staff to do this

Sharing your Experience

Do Share...

- Process of recommending cut scores
- Benefits of participating in the standard setting meeting

Do Not Share...

- Information related to specific test items or sources
- Cut score recommendations
- Any data (including impact data)
- Conversations during the meeting

Non-Disclosure Agreement (NDA)

- Review, Fill Out, and Sign the NDA in your folder
- Affiliation: Your School District
- Committee: Gr. 8 Civics Standard Setting Panel
- We will collect signed NDAs

Reimbursement Forms

Stipend & Mileage Reimbursement

COGNIA

REQUEST FOR PAYMENT/REIMBURSEMENT

For processing of your attendance at meeting please complete Section A of this form.
The undersigned understands and agrees that he/she is acting as an independent contracting party and he/she shall not be considered an employee or agent of Cognia. The undersigned will be required to pay all taxes associated with the payments from Cognia. All intellectual property is owned exclusively by Cognia and is "works made for hire" by independent contractor. All information shared by Cognia is confidential information unless available publicly. The undersigned has all right and authority to perform the services requested by Cognia without liability to any party and such performance will not violate or breach any other agreement or obligation of the undersigned. The undersigned shall indemnify and hold harmless Cognia from any and all costs, taxes and liabilities incurred by it as a result of a breach of any of the foregoing.

Section A: To Be Completed by Committee Member

Content/Group: _____ Meeting Date(s) _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

E-mail: _____ Phone: _____

Social Security No. (required if requesting stipend) _____ Select one: Individual LLC Corporation

Date	Mileage \$0.50/mile	Tolls	Parking	Breakfast XX	Lunch xx	Dinner \$30.00	Other (Description)	Other Amount	Total
All receipts must be included for reimbursement									
stipend	Stipend: \$50.00 per day; not to exceed \$300.00 If you are eligible and not on contract, please indicate the total stipend in the box on the right. If you are not eligible for stipend, please put zero in the box.								\$
Please indicate total requested payment									\$

Signature: _____ Date: _____

Please email this completed form within two weeks of the meeting date to:

Cognia, Attn: Event Planning
MCASEvents@cognia.org

Please allow 6-8 weeks for processing.

Section B to Be Completed by Cognia

MCAS ADC Meeting -

Job Task: J0050400

OU: 025

DEPT: 65

A Code: C001

Total Reimbursement \$ _____ Approver _____ Date: _____

Stipend:
\$200/day
Total of \$600
for 3 days

W-9 Form

Form 1099-INT (Form 1, October 2018)	W-9 Request for Taxpayer Identification Number and Certification ➔ Go to www.irs.gov/FormW9 for instructions and the latest information. Name (as shown on your income tax return; Name is required on this form, do not leave this blank.) Business name/organization/entry name, if different from above Check appropriate box for federal tax classification (of the person whose name is entered on this line). Check only one of the following seven boxes: ☐ Individual sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/beneficiary ☐ Limited liability company. Enter the tax classification (C=Corporation, S=S corporation, P=Partnership) on line 10. Notes: Check the appropriate box in this line above for the tax classification of the single-member owner. Do not check LLC if this LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner by U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. ☐ Do not use this line to check the box for a trust or a beneficiary of a trust. Address (Complete street, street, P.O. box, or suite no.) See instructions. Requestor's Name (do not leave this blank.) City, state, and ZIP code 1 Last known country (leave optional)	Give Form to the requester. Do not send to the IRS.
Part I	Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1. A voided business card without withholding (because (a) I am exempt from backup withholding, or (b) I have been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and 1. I am a U.S. citizen or other U.S. person (defined below); and 2. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct. Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contribution to an individual retirement arrangement (IRA), and generally, payment for certain other interest and dividends, you are not required to sign this certification, but you must provide your correct TIN. See the instructions for Part I, later. Sign here _____ Signature of U.S. person _____ Date _____	4 Exemptions (code apply only to certain entities; not individuals; see instructions on page 3) Exempt payee code (if any) Exemption from FATCA reporting code (if any) (Check to exempt transferee/beneficiary of the U.S.)
Part II	Under penalty of perjury, I certify that: 1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and 2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and 3. I am a U.S. citizen or other U.S. person (defined below); and 4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct. Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contribution to an individual retirement arrangement (IRA), and generally, payment for certain other interest and dividends, you are not required to sign this certification, but you must provide your correct TIN. See the instructions for Part I, later. Sign here _____ Signature of U.S. person _____ Date _____	Social security number OR Employer identification number
General Instructions	Section references. See the Internal Revenue Code unless otherwise noted. Future developments. For the latest information about developments related to Form W-9 and its instructions, check the information located after they were published, go to www.irs.gov/formW9. Purpose of Form Individual or entity (Form W-9 requested) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amounts or benefits on an information return. Examples of information returns include, but are not limited to, the following: • Form 1099-INT (interest earned or paid) • Form 1099-DIV (dividends, including those from stocks or mutual funds) • Form 1099-MISC (various types of income, prizes, awards, or gross proceeds) • Form 1099-EB (stock or mutual fund sales and certain other transactions by brokers) • Form 1099-S (proceeds from real estate transactions) • Form 1098-C (mortgage card and third party network transactions) • Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition) • Form 1099-C (canceled debt) • Form 1099-A (acquisition or abandonment of secured property) Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN. If you do not return Form W-9 to the requester with this Form, you might be subject to backup withholding. See What is backup withholding, later.	

Break
Back at 10

APPENDIX I
FACILITATION POWERPOINT

MCAS Grade 8 Civics Standard Setting Meeting

Day 1

Wakefield, MA
August 5 – 7, 2025

Agenda Day 1

Break

01

Introductions & Orientation

02

Civics Assessment Overview

03

Experience the Assessment

**Lunch*

04

Achievement Level Descriptors

Break

05

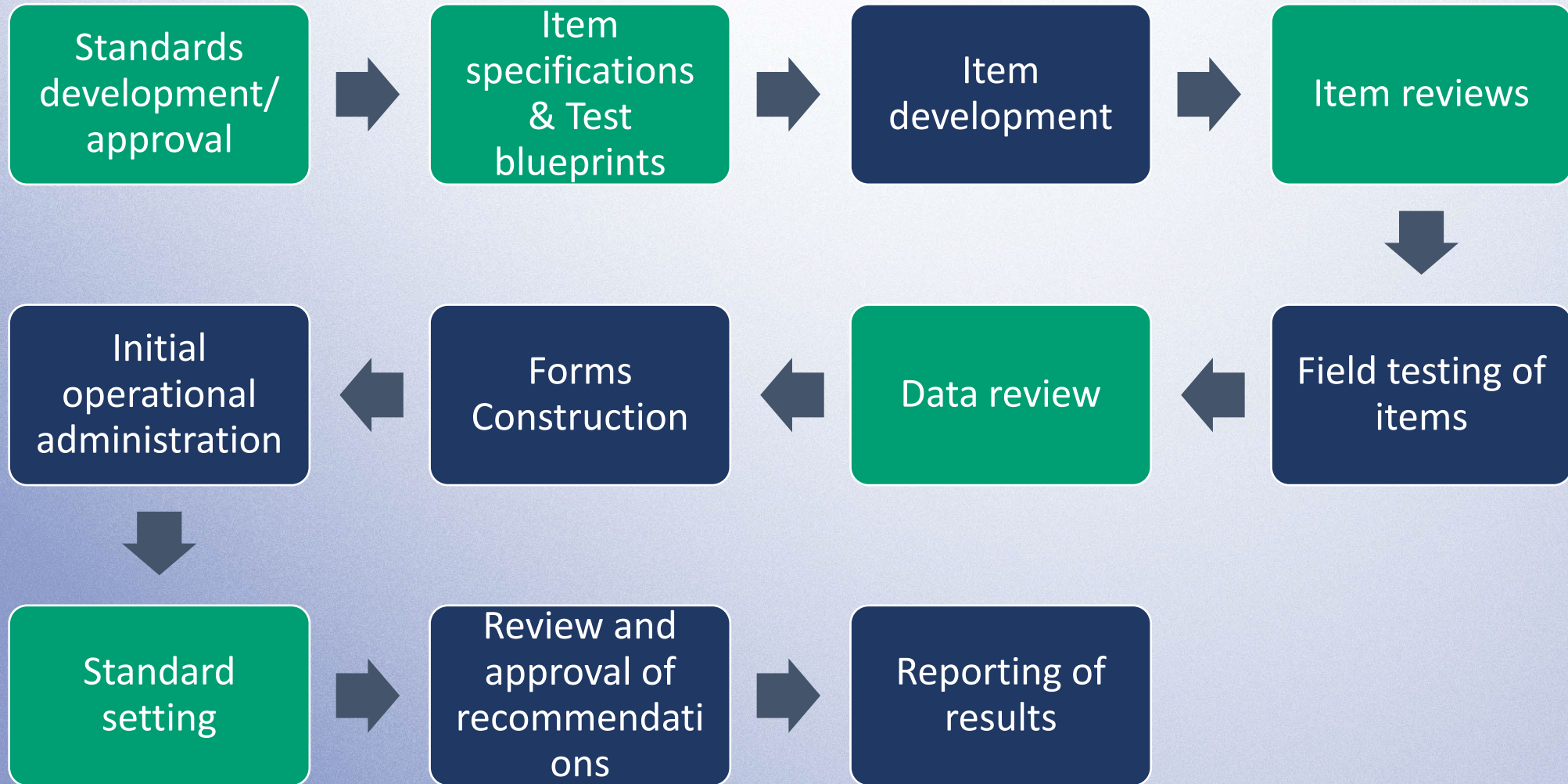
Borderline Descriptors Training

06

**Borderline Descriptor
Development - Begin**

Civics Assessment Overview

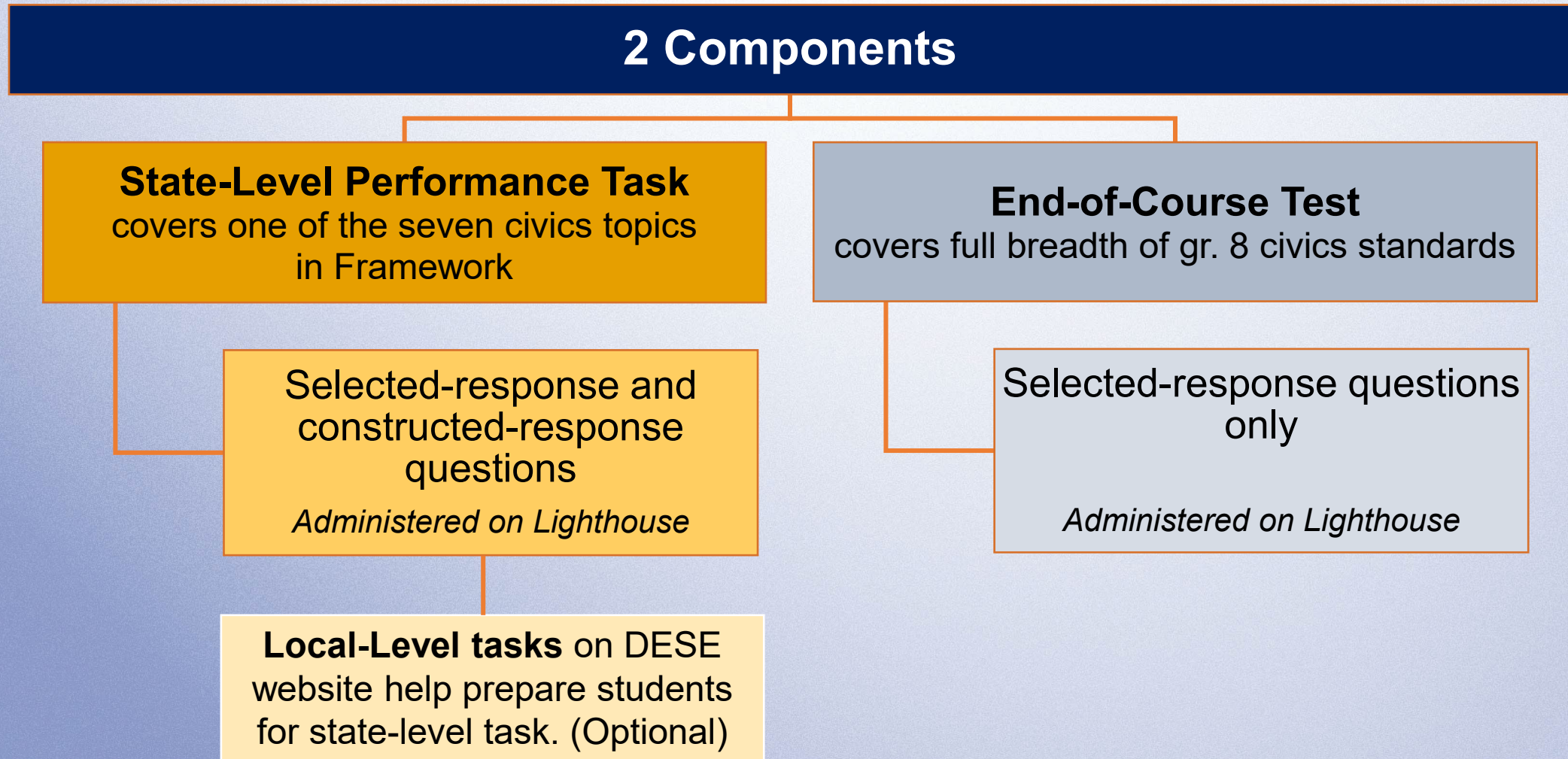
Assessment Development Journey



MCAS Grade 8 Civics Test Design

- The assessment allows students to use their civics content, knowledge, and skills to explain/describe civics concepts, support claims with evidence, and analyze sources and graphics.
- Each item is aligned to a civics content standard and HSS practice standard from the 2018 HSS Curriculum Frameworks
- Made up of two components
 - State-level performance task
 - End-of-course (EOC) test

MCAS Grade 8 Civics Test Design



Question Types and Points

State-level Performance Task		End-of-Course Test	
Question Type	Points	Question Type	Points
Three 1-pt constructed response questions	3	Twenty-two 1-pt selected response questions	22
One 4-pt constructed response question	4	Four 2-pt selected response questions	8
Seven 1-pt selected response questions	7	Two item sets with three 1-point selected response questions	6
Total Points		Total Points	
14		36	

Test questions are based on a source such as a primary or secondary text, photograph, graph, among other types of sources.

Test Design: Content Reporting Categories

Civics Content Reporting Categories	Percentage of Points (+/- 5%)
Foundations and development of the U.S. political system & government (Topics 1 & 2)	30%
Institutions and structure of U.S. government & Massachusetts state and local governments (Topics 3 & 6)	33%
Rights and responsibilities, the U.S. Constitution, and news & media literacy (Topics 4, 5, & 7)	37%

Reporting categories represent the combined points for the state-level performance task and the EOC

Test Design: HSS Practices Reporting Categories

HSS Practices Reporting Categories	Percentage of Points (+/- 5)%
Knowledge, skills, and dispositions (standard 1)	15-20%
Questioning and solving civics-related problems (standards 2, 7)	15-20%
Analyzing points of view and credibility from sources (standards 4, 5)	20-35%
Developing explanations using reasoning and evidence from sources (standards 3, 6)	20-35%

Reporting categories represent the combined points for the state-level performance task and the EOC

Item (Question) Types

Item Type	Description
Multiple Choice*	Students select one correct answer from among several answer options.
Multiple Select*	Students select more than one correct answer from among several answer options.
Technology Enhanced*	Students taking the computer-based tests answer questions using technology such as drag-and-drop, hot spot, and drop-down menus.
Constructed Response	Students write a response to a question that may have one or four parts.

**These items are collectively referred to as “selected-response items” and are machine scored.*

Experience the Civics Assessment

Experience the Assessment

Purpose

- To become familiar with the test form and items
- To become familiar with the administration materials and methods

Context

- Think about the testing experience from a student's perspective
- Experience the test in the same way students do
- Achievement is not the goal

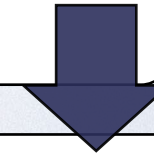
Consider

- Knowledge and skills necessary to answer each item
- Your expectation of student achievement on each item

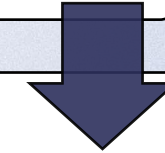
Experience the Assessment: Overview

1. Experience Performance Task

- Individual activity. Use item comment form; see student work samples handout

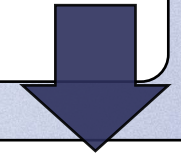


2. Brief Large Group Discussion



3. Experience End-of-Course

- Individual activity. Use item comment form.



4. Brief Large Group Discussion

Locate Relevant Documents

MCAS Civics Standard Setting Meeting August 2025

Experience the Assessment Notes Form

Item #	Item Notes
Performance Task	
PT_1	
PT_2	
PT_3	
PT_4	
PT_5	
PT_6	



2025 MCAS Sample Student Work and Scoring Guide

Grade 8 Civics

Question 4: Constructed-Response

Reporting Category: Rights & Responsibilities

Practice Category: Explanations and Reasoning

Standard: [8.T4.7](#) - Apply knowledge of the meaning of leadership and the qualities of good leaders to evaluate political leaders at the community, the state and national levels.

Item Description: Analyze a source to explain how an elected official demonstrated a leadership quality.

This item can be found in the released item sets on the [MCAS Resource Center](#).

Question

Based on the information in Source 3, identify one leadership quality demonstrated by Representative Powell. Explain your reasoning.

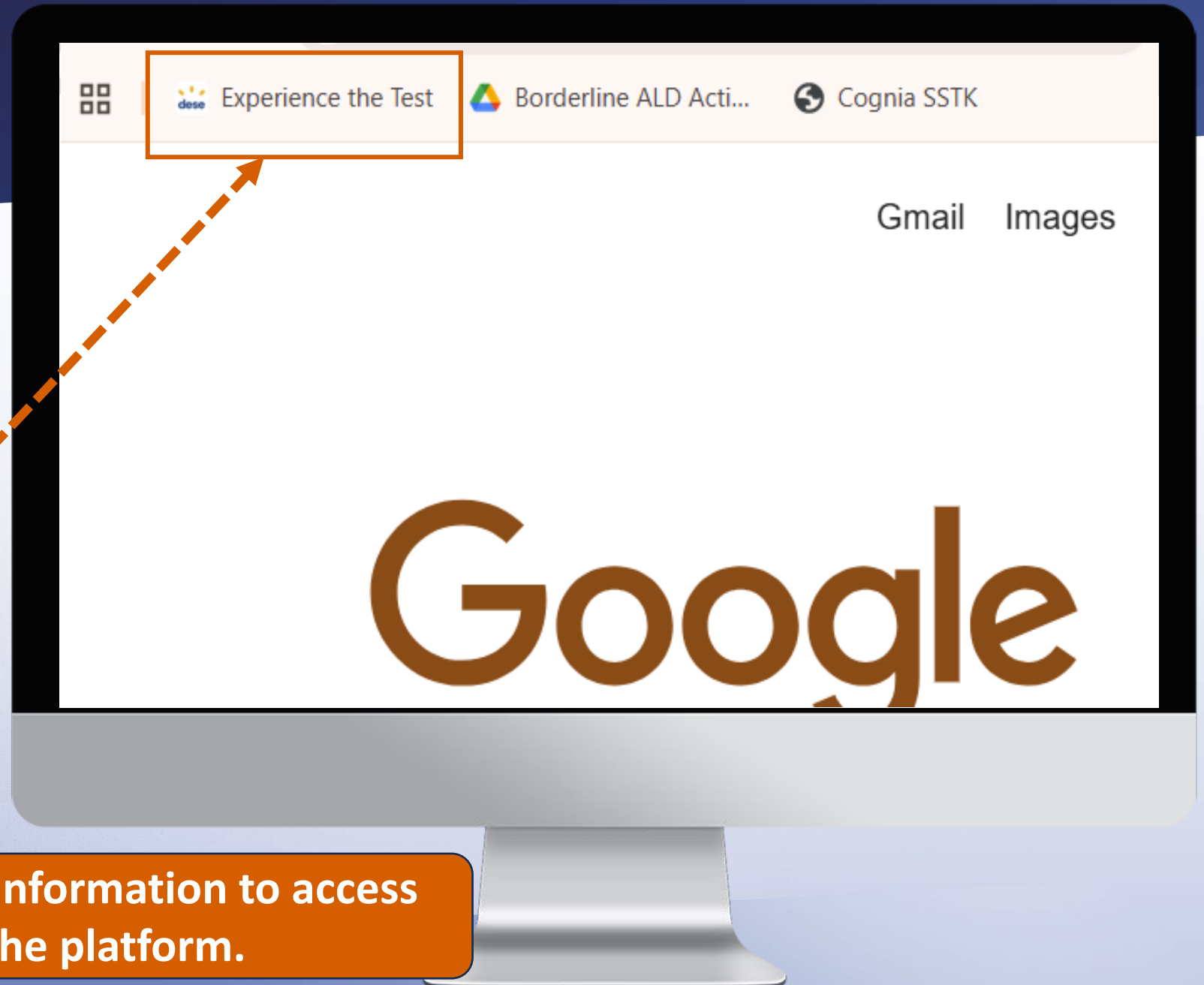
Source 3

A summary of Representative Adam Clayton Powell Jr.'s work in the U.S. House of Representatives is shown.

Adam Clayton Powell Jr. was a member of the U.S. House of Representatives from

Guidance: Take the test

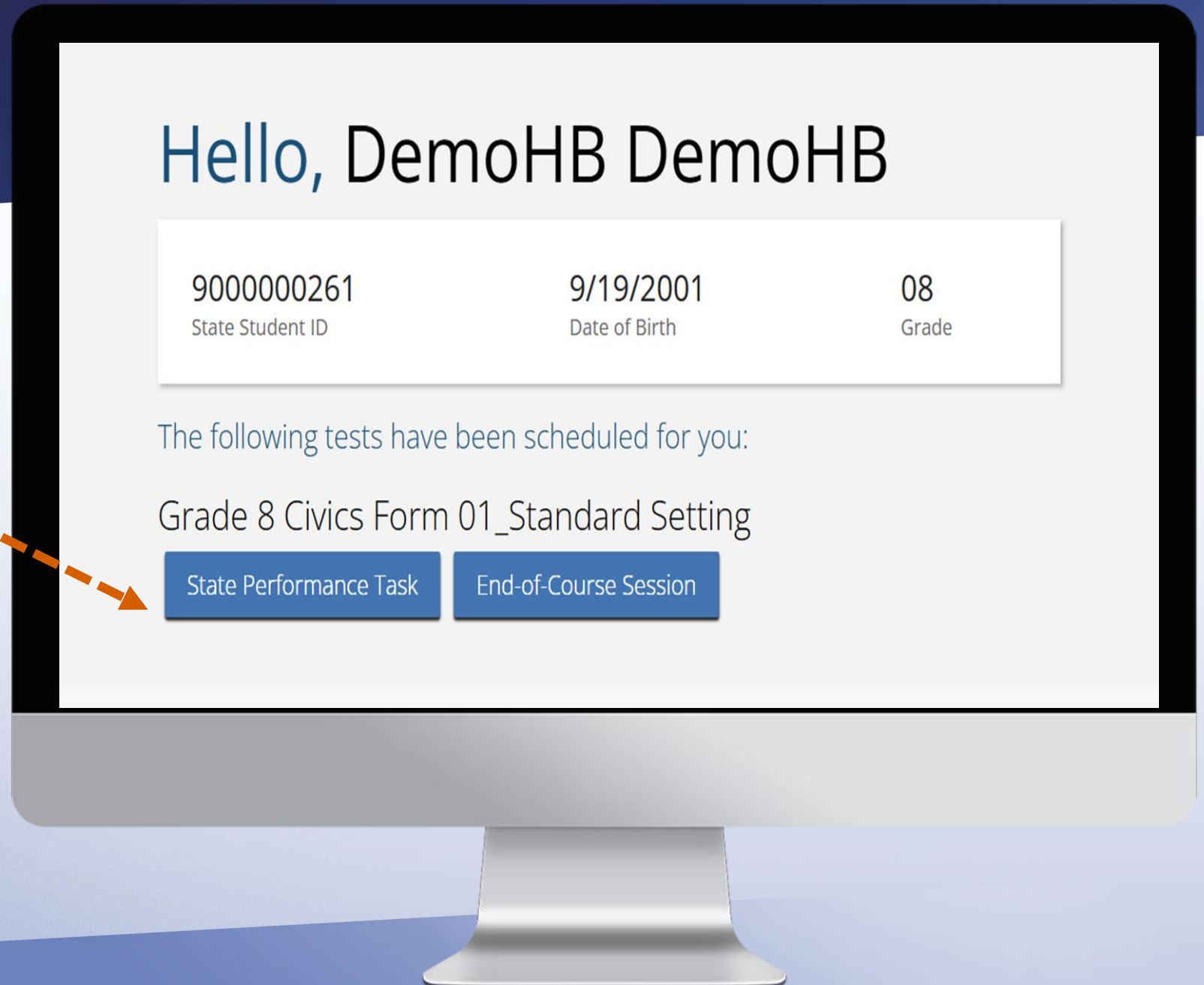
1. Chromebook:
navigate to Google
Chrome browser.
2. Click on
“**Experience the
Test**” link - top left.
3. Use the log in
credentials
provided to access
the test.



**HANDOUT: Test tickets with information to access
the assessment on the platform.**

Guidance: Take the test

- Start with the “**State Performance Task**”
- Individual activity – please do not discuss at this time
- Use the *Item Comment Form* and *Student Work* handouts



Experience the Assessment

Purpose

- To become familiar with the test form and items
- To become familiar with the administration materials and methods

Context

- Think about the testing experience from a student's perspective
- Experience the test in the same way students do
- Achievement is not the goal

Consider

- Knowledge and skills necessary to answer each item
- Your expectation of student achievement on each item

Discussion: Performance Task Assessment



- Brief Discussion
 - Share thoughts/observations based on your experience with the test.
- Review of Sample Student Work

2025 MCAS Sample Student Work and Scoring Guide

Grade 8 Civics

Question 4: Constructed-Response

Reporting Category: Rights & Responsibilities

Practice Category: Explanations and Reasoning

Standard: [8.T4.7](#) - Apply knowledge of the meaning of leadership and the qualities of good leaders to evaluate political leaders at the community, the state and national levels.

Item Description: Analyze a source to explain how an elected official demonstrated a leadership quality.

This item can be found in the released item sets on the [MCAS Resource Center](#).

Question

Based on the information in Source 3, identify one leadership quality demonstrated by Representative Powell. Explain your reasoning.

Source 3

A summary of Representative Adam Clayton Powell Jr.'s work in the U.S. House of Representatives is shown.

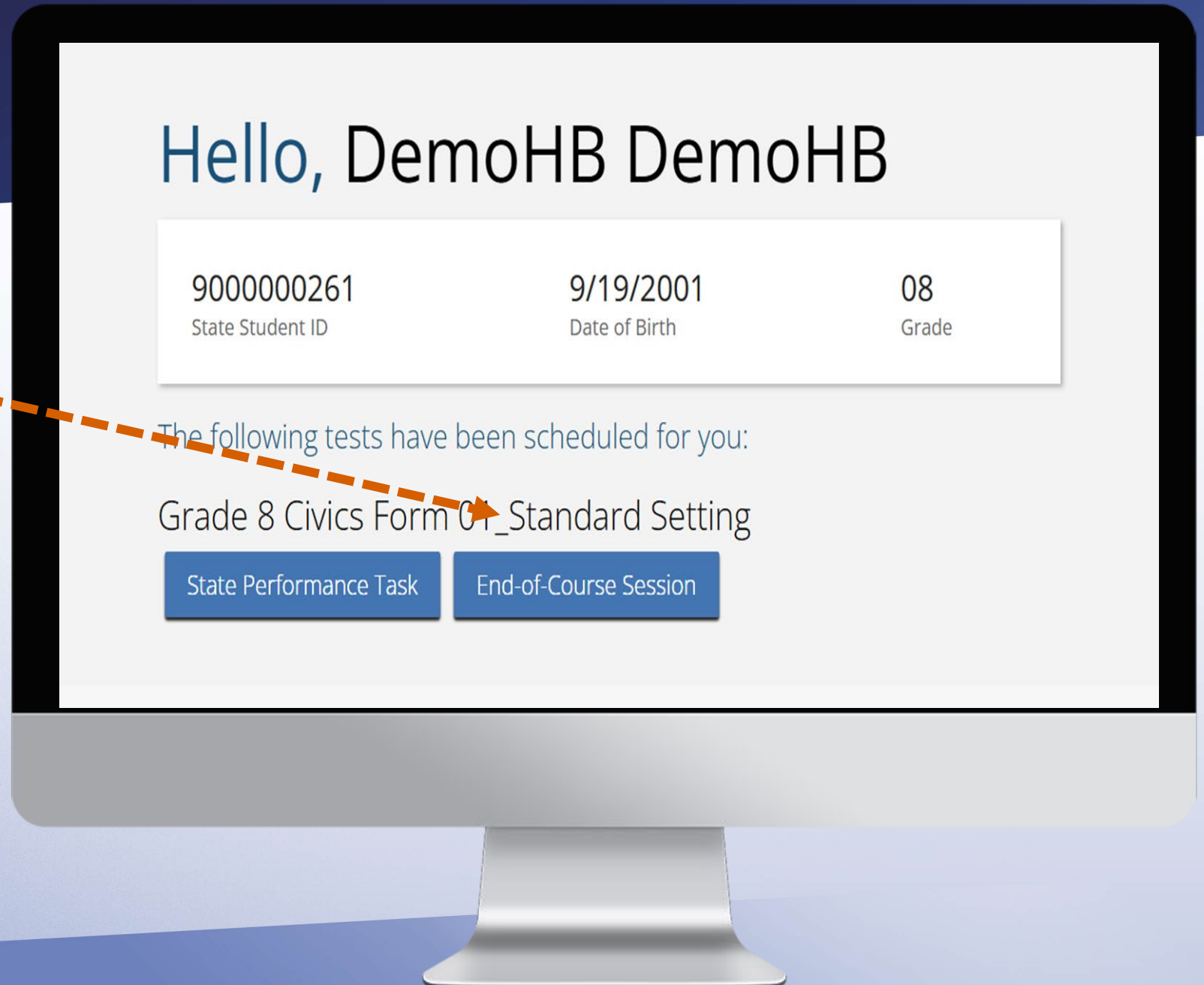
Adam Clayton Powell Jr. was a member of the U.S. House of Representatives from

(12:00 – 12:45)



Guidance: Take the test

- Access the “**End-of-Course Session**”
- Individual activity – please do not discuss at this time
- Use the Item Comment Form



Experience the Assessment

Purpose

- To become familiar with the test form and items
- To become familiar with the administration materials and methods

Context

- Think about the testing experience from a student's perspective
- Experience the test in the same way students do
- Achievement is not the goal

Consider

- Knowledge and skills necessary to answer each item
- Your expectation of student achievement on each item

Discussion: End-of-Course

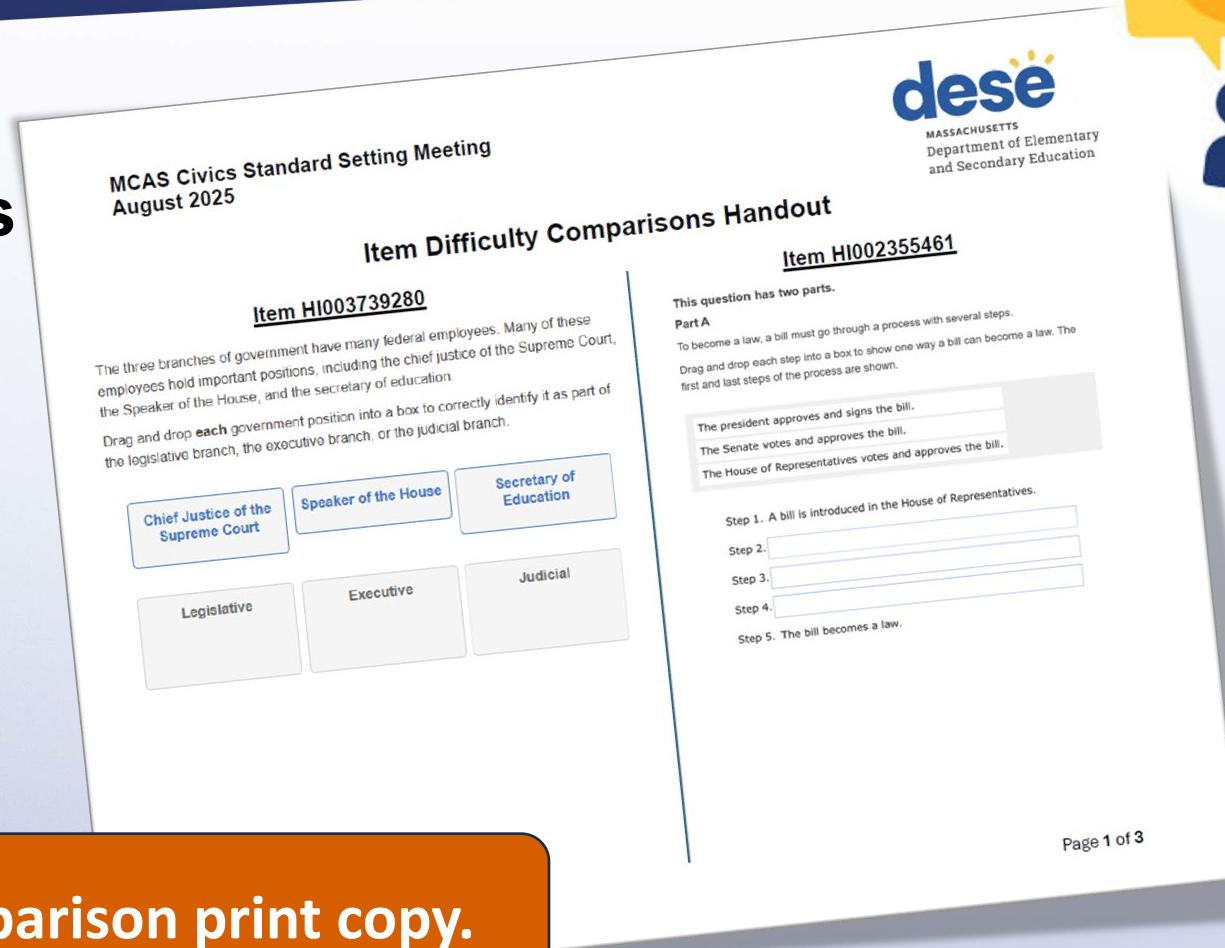
- Brief Discussion
- Share thoughts/observations based on your experience with the End-of-Course test.



Item Difficulty Comparisons

Discussion: Item Difficulty Comparisons

- Locate the “**Item Difficulty Comparisons Handout**”
- Printed copy in your folder



The image shows a printed handout titled "MCAS Civics Standard Setting Meeting August 2025 Item Difficulty Comparisons Handout". The handout is divided into two sections, Item HI003739280 and Item HI002355461. Item HI003739280 is a matching exercise where students drag and drop government positions into boxes representing the legislative, executive, and judicial branches. Item HI002355461 is a multiple-choice question about the process of a bill becoming a law.

**MCAS Civics Standard Setting Meeting
August 2025**

Item Difficulty Comparisons Handout

Item HI003739280

The three branches of government have many federal employees. Many of these employees hold important positions, including the chief justice of the Supreme Court, the Speaker of the House, and the secretary of education.

Drag and drop **each** government position into a box to correctly identify it as part of the legislative branch, the executive branch, or the judicial branch.

Chief Justice of the Supreme Court	Speaker of the House	Secretary of Education
Legislative	Executive	Judicial

Item HI002355461

This question has two parts.

Part A

To become a law, a bill must go through a process with several steps. Drag and drop each step into a box to show one way a bill can become a law. The first and last steps of the process are shown.

The president approves and signs the bill.
The Senate votes and approves the bill.
The House of Representatives votes and approves the bill.

Step 1. A bill is introduced in the House of Representatives.
Step 2. _____
Step 3. _____
Step 4. _____
Step 5. The bill becomes a law.

dese
MASSACHUSETTS
Department of Elementary
and Secondary Education

Page 1 of 3

HANDOUT: Item Difficulty Comparison print copy.

Item Difficulty Comparison – First Pair

Which item would you consider more difficult? Why?

Item HI003739280

The three branches of government have many federal employees. Many of these employees hold important positions, including the chief justice of the Supreme Court, the Speaker of the House, and the secretary of education.

Drag and drop **each** government position into a box to correctly identify it as part of the legislative branch, the executive branch, or the judicial branch.

Chief Justice of the
Supreme Court

Speaker of the House

Secretary of
Education

Legislative

Executive

Judicial

Item HI002355461

This question has two parts.

Part A

To become a law, a bill must go through a process with several steps.

Drag and drop each step into a box to show one way a bill can become a law. The first and last steps of the process are shown.

The president approves and signs the bill.

The Senate votes and approves the bill.

The House of Representatives votes and approves the bill.

Step 1. A bill is introduced in the House of Representatives.

Step 2.

Step 3.

Step 4.

Step 5. The bill becomes a law.

Part B

Which of the following is an example of how the power of Congress can be checked once a bill becomes a law?

- ☐ A. State governors can veto the law.
- ☐ B. The Senate can send the law to the Supreme Court.
- ☐ C. U.S. citizens can vote on the law before it is passed.
- ☐ D. The Supreme Court can declare the law unconstitutional.

Item Difficulty Comparison – Second Pair

Which item would you consider more difficult? Why?

Item HI010731049

A political cartoon is shown.



Based on the political cartoon, freedom of the press is necessary for

Choose... in the United States.

Choose...

- developing effective courts
- supporting democratic ideals
- establishing local newspapers
- constructing government buildings

Item HI002357582

In 1754, representatives from the colonies created the Albany Plan of Union. This plan proposed to unite the colonies but allowed each colony to have its own government.

A political cartoon encouraging colonies to join the Albany Plan of Union is shown. In the cartoon, each part of the snake represents a colony.

Which of the following ideas about government is promoted in the political cartoon?

- ☐ A. federalism
- ☐ B. judicial review
- ☐ C. electoral college
- ☐ D. checks and balances



Courtesy of Library of Congress

Item Difficulty Comparison – Third Pair

Which item would you consider more difficult? Why?

Item HI126527019

The following information is about Shirley Chisholm, a member of Congress from 1969 to 1983.

Shirley Chisholm was the first Black woman elected to the U.S. Congress. She served in the House of Representatives for seven terms. She also became the first woman to run for a presidential nomination from a major political party. Chisholm once wrote, “I ran for the presidency, despite hopeless odds, to demonstrate the sheer will and refusal to accept the status quo.”

Which of the following is best supported by the information?

- ☐ A. Shirley Chisholm voted for many bills.
- ☐ B. Shirley Chisholm met with many other political leaders.
- ☐ C. Shirley Chisholm expressed the power of special interest groups.
- ☐ D. Shirley Chisholm showed political courage by promoting social change.

Item HI126448449

The Articles of Confederation were adopted by the original 13 states in 1777. Summaries of three articles are shown.

Article 5. Each state was given one vote in Congress.

Article 8. States voluntarily gave money to a common treasury.

Article 10. Nine of the thirteen states had to agree in order to pass legislation.

Three weaknesses of the government under the Articles of Confederation are described in the table.

Select one button in each row to show which article most contributed to the weakness described.

Weakness	Article 5	Article 8	Article 10
The national government was unable to pay debts.	☐	☐	☐
The national government had difficulty making decisions.	☐	☐	☐
States with large populations had the same representation as states with small populations.	☐	☐	☐

15 Minutes



Achievement Level Descriptors (ALDs)

Locate the Civics ALDs

1. Digitally within the Cognia Standard Setting Toolkit
2. Hard copies in your folders

cognia™ Standard Setting Toolkit Home Admin ▾

Steps

Welcome to Cognia's Standard Setting Toolkit. The main standard setting activities will be completed within this platform below. Please await further instructions.

MCAS Civics Grade 8 Documents

Standards **ALDs** Borderline Descriptors

ALDs

MCAS Next-Generation Math Achievement Lev... 1 / 12 111% +

Grade 8 Civics MCAS Achievement Level Descriptors

General MCAS Achievement Level Descriptors

Exceeding Expectations
A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

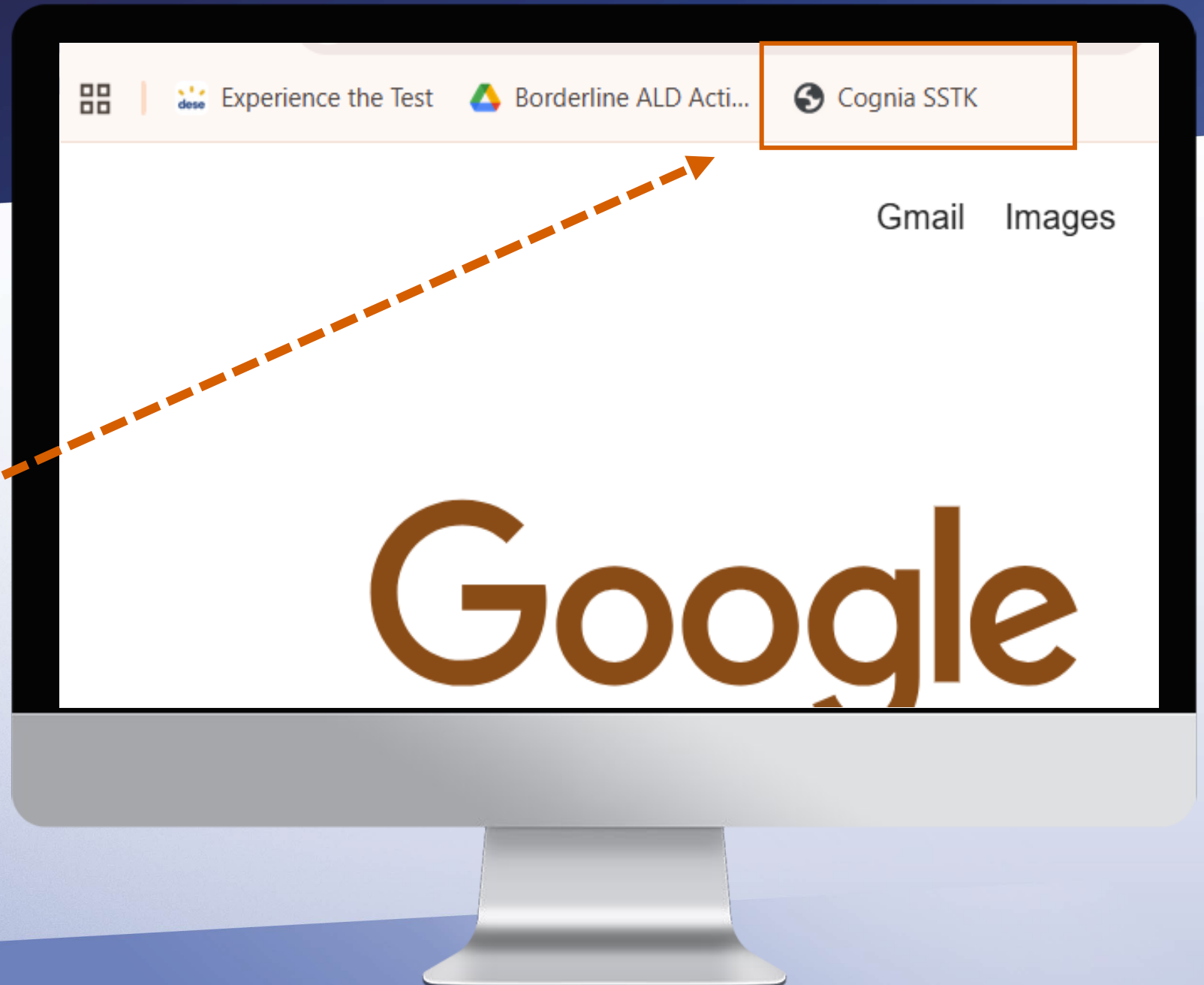
Meeting Expectations
A student who performed at this level met grade-level expectations and is academically on-track

	Partially Meeting Expectations On MCAS, a student at this level:	Meeting Expectations On MCAS, a student at this level:	Exceeding Expectations On MCAS, a student at this level:
Understanding and Application of Content Standards	Demonstrates a partial understanding of some civics concepts and processes by identifying and sometimes describing or providing evidence for these concepts and processes. Uses some basic civics terms in common history and social science examples.	Demonstrates a solid understanding of many civics concepts and processes by mostly describing, explaining, and providing evidence for these concepts and processes. Mostly applies appropriate civics terms in a variety of applications, including common history and social science examples and some novel situations.	Demonstrates a comprehensive, in-depth understanding of many civics concepts and processes by consistently describing, explaining, and providing evidence for these concepts and processes. Consistently applies appropriate civics terms in a variety of contexts including common history and social science examples and many novel situations.
Understanding and Application of History and Social Science Practices	Demonstrates a partial understanding of civic knowledge, skills, and dispositions by identifying, and sometimes describing, how individuals engage in active and responsible citizenship. Identifies a focus question or problem statement for an inquiry. Uses information from a source to draw general conclusions about a familiar civics concept.	Demonstrates a solid understanding of civic knowledge, skills, and dispositions by mostly describing and explaining how individuals engage in active and responsible citizenship. Develops a focus question or problem statement for an inquiry. Organizes and analyzes information from multiple sources to draw conclusions about a civics concept.	Demonstrates a comprehensive, in-depth understanding of civic knowledge, skills, and dispositions by consistently describing, explaining, and providing evidence for how individuals engage in active and responsible citizenship.

HANDOUT: Printed copy of ALDs.

Guidance: Toolkit Login

1. Chromebook:
navigate to
Google Chrome
browser.
2. Click on “**Cognia
SSTK**” link
3. Use your
credentials to log
in.



MCAS Achievement Levels

Student Achievement

Not Meeting
Expectations

Partially
Meeting
Expectations

Meeting
Expectations

Exceeding
Expectations

Achievement Level Descriptors

MCAS Policy-Level Descriptors

- Provide a general description of what students need to demonstrate for each achievement level
- Not subject or grade specific

Civics Achievement Level Descriptors (ALDs)

- Outline the expectations of student achievement at each achievement level for gr. 8 civics
- Describes what a typical student within a level should know and be able to demonstrate
- Show a progression of knowledge and skills across levels



MCAS Policy-Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.

Partially Meeting Expectations

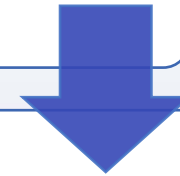
A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

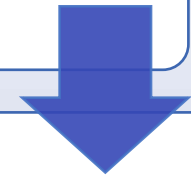
A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

Activity: Review of Civics Achievement Level Descriptors (ALDs)

Review the ALDs for the grade 8 civics assessment with your table.



The table leader will help facilitate the discussion of the questions on the next slide.



After the table discussions conclude, we will briefly discuss as a large group.

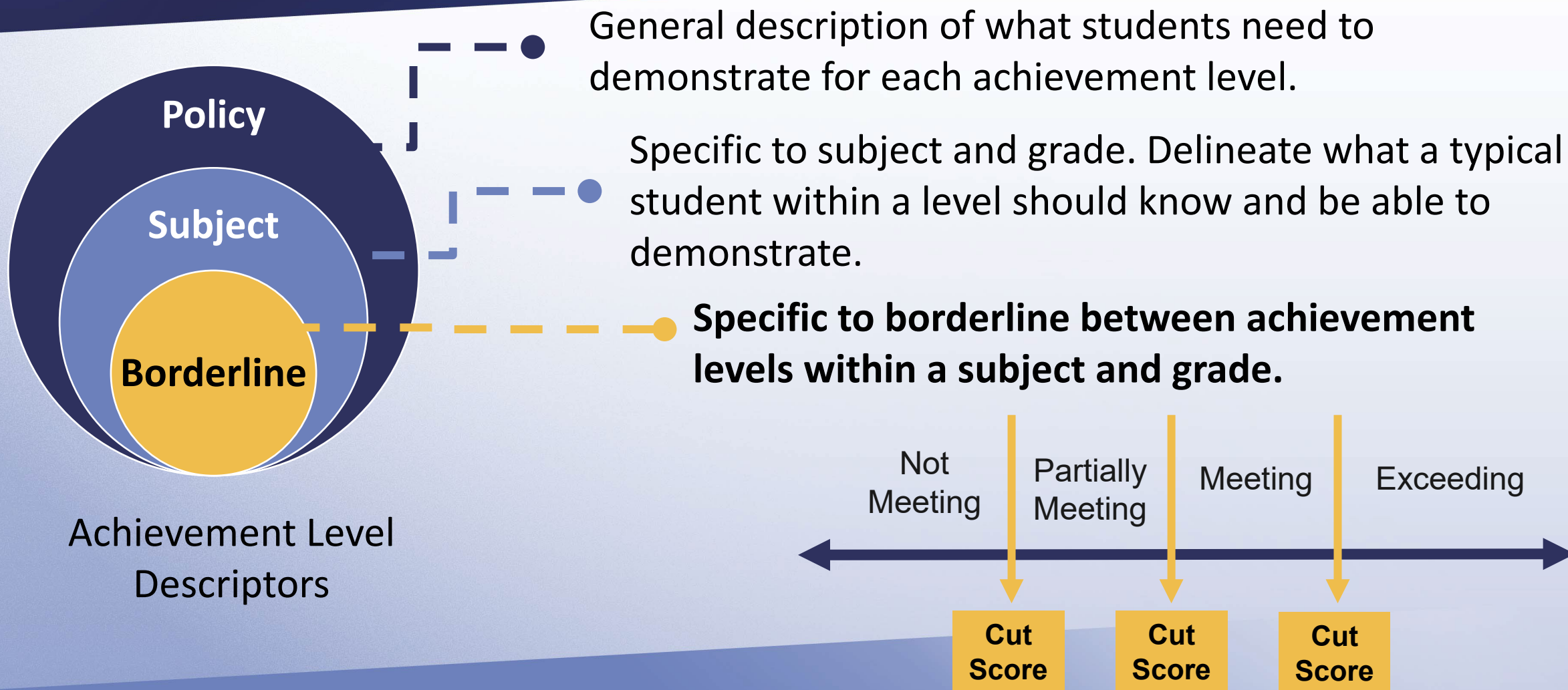
MCAS Civics Achievement Level Descriptors (ALDs) – Table and Group Discussions

- In what ways do the expectations increase from lower achievement levels to higher achievement levels?
- How different is student achievement at the very bottom of a higher level compared to a student at the top of the adjacent lower achievement level (for example, lower achievement in “Partially Meets” compared to higher achievement in “Meets”)?



Borderline Descriptions Training

Achievement Descriptors and Standard Setting

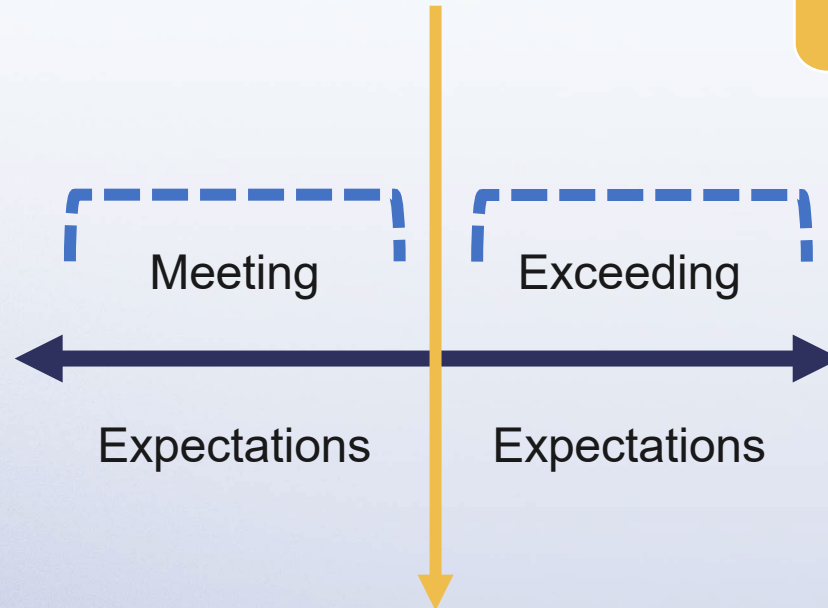


Typical vs. Borderline Achievement

Typical Achievement

In the “middle”
of the range of
an achievement
level

Achievement
Level Descriptors
(ALDs)

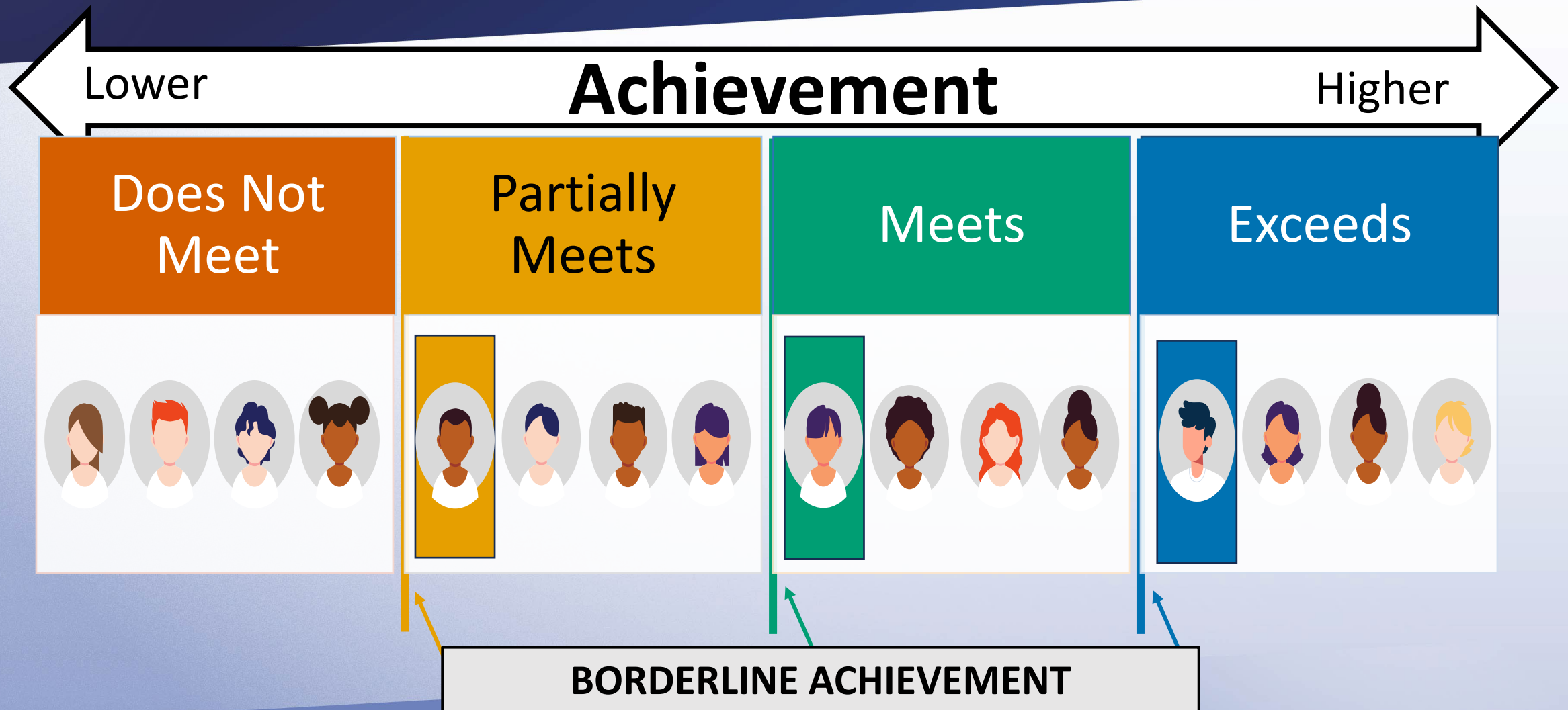


Borderline Achievement

“Just barely”
enough knowledge
to be in the
achievement level

Borderline
Descriptors

Typical vs. Borderline Achievement



Borderline Descriptions Task - Overview

Step 1: Work with your table group to develop 3-5 borderline descriptions for you assigned section that delineate the key distinguishing characteristics of borderline performance at each achievement level – Partially Meets, Meets, and Exceeds.
Consider:

What knowledge and skills should students performing at the borderline of the achievement level be expected to demonstrate relative to the particular skills associated with the achievement level?

Step 2: Large-group review and discussion of each achievement level.

Step 3: Large-group review and discussion across achievement levels.

Borderline Descriptions Modeling and Examples

- Facilitators model the task, provide examples, and work through additional examples with panelists.

Borderline Descriptions Task - Questions

- Does anyone have any remaining questions:
 - About what the borderline descriptors represent?
 - About the examples we discussed?

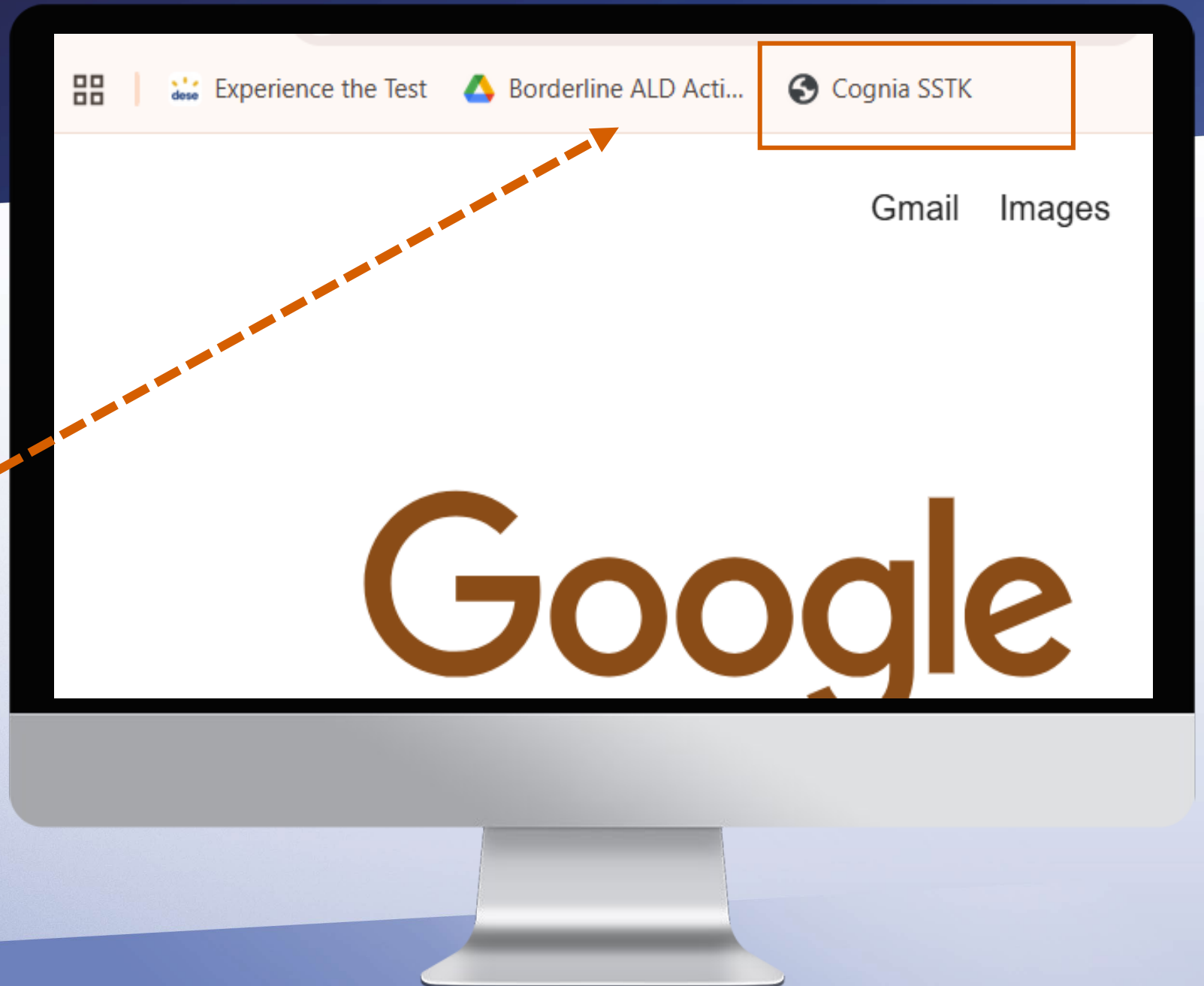
15 Minutes



Borderline Descriptions - Meets Expectations

Guidance: Google Docs

1. Chromebook:
navigate to
Google Chrome
browser.
2. Click on
“**Borderline
ALD**” link
3. Locate and
access your table
document



Borderline Descriptions Task - Guidance

- At the top of the worksheet for your group you will see your assigned section
- For convenience, the ALDs corresponding to your section have been added to the document.
- You will note a section for each borderline level; everyone will start with the ***Meets Expectations*** level

Borderline Descriptor Development Worksheet MCAS Civics Grade 8

Group: Table A

Assigned ALD Section: Foundations of Government (Topics 1 and 2)

Borderline Meets

As a group, develop 3-5 borderline descriptions (i.e., statements) that identify key characteristics that the "just-barely" student would be able to demonstrate at the *Meets* level.

Row	ALD Partially Meets	Borderline Meets	ALD Meets
1	Recognizes some characteristics of democratic and republican principles that were found in ancient Athens and the Roman Republic, such as how the power of governing is held in the hands of the people.		Describes and explains the democratic and republican principles that were developed in ancient Athens and the Roman Republic and are found in the U.S. government, including voting rights, trial by jury, and representative government.
2	Uses a source to identify natural rights as an important principle in the American Revolutionary period.		Describes some Enlightenment concepts that influenced the American Revolution, such as criticizing England's monarchy in the Declaration of Independence and the need to have separation of government powers.
3	Recognizes that British ideas and colonial government bodies helped develop practices for self-government in colonial America.		Given a description of British ideas and colonial practices of government, such as the Mayflower Compact, town meetings, and colonial legislatures, describes how these practices prepared

Table Group Work: Borderline Descriptions – Meets Expectations

- We will begin with the borderline meets level (i.e., “just barely meets”).
- Reminders:
 - The descriptions you create with your group serve as a starting point. We will review and revise them together as needed.
 - These descriptions are only for use during this standard setting meeting.
 - Content and process facilitators will be on hand to support your work.
 - Activity will take about 45 min.

Table Group Work: Borderline Descriptions – Meets Expectations

- Create 3-5 borderline descriptions that identify key characteristics that the “just-barely” student would be able to demonstrate at the **Meets** level. Consider the following:
 - If a student performance was minimally Meets, that is, they demonstrated *just enough to get into the Meets level*, what would they know and be able to do?
 - What differentiates student performance at the *borderline of the Meets* level relative to student performance in the middle or upper end of this level?
 - What differentiates student performance at the *borderline of the Meets* level relative to the upper end of the *Partially Meets* level?

Are there any remaining questions about the task?
We will be floating and provide guidance as needed.

Table Group Work: Borderline Descriptions – Meets Expectations

- Create 3-5 borderline descriptions that identify key characteristics that the “just-barely” student would be able to demonstrate at the Meets level. Consider the following:
 - If a student performance was minimally Meets, that is, they demonstrated just enough to get into the Meets level, what would they know and be able to do?
 - What differentiates student performance at the borderline of the Meets level relative to student performance in the middle or upper end of this level?
 - What differentiates student performance at the borderline of the Meets level relative to the upper end of the Partially Meets level?

Large Group Discussion: Borderline Descriptions – Meets Expectations

Let's take 5 – 10 minutes to review the **Meets** borderline descriptions.

Do you agree that they are representative of the knowledge, skills, and abilities demonstrated by a student at the borderline of the **Meets** achievement level for this grade?

Does anyone have any questions or concerns for the borderline descriptions for the **Meets** achievement level?

Adjourn for the day

- Place **all your documents** back in the folder.
- Log out of the website and close the lid to your laptop.
- Provide your folder to the facilitator to ensure all documents are in the folder.
- Sign the sign-out sheet to confirm that you are leaving **any secure materials or notes in your folder and have provided your folder to the facilitator.**



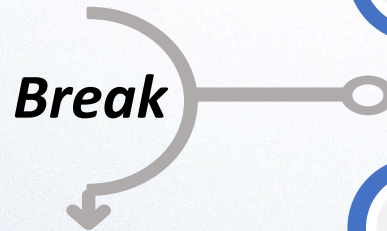
End Day 1

MCAS Grade 8 Civics Standard Setting Meeting

Day 2

Wakefield, MA
August 6, 2025

Agenda Day 2



01

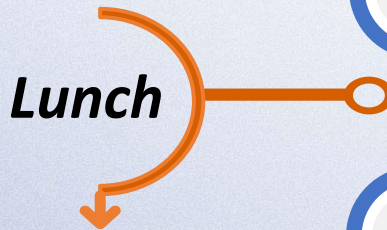
**Borderline Descriptor
Development - Continuation**

02

Standard Setting Key Concepts

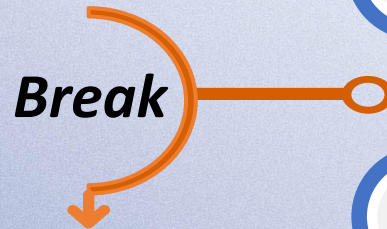
03

**Practice Judgment Activity &
Discussion**



04

Round 1 Judgments



05

Round 1 Feedback and Discussion

Large Group Discussion: Borderline Descriptions – Meets Expectations

Let's take 5 – 10 minutes to review the **Meets** borderline descriptions.

Do you agree that they are representative of the knowledge, skills, and abilities demonstrated by a student at the borderline of the **Meets** achievement level for this grade?

Does anyone have any questions or concerns for the borderline descriptions for the **Meets** achievement level?

Borderline Descriptions – Partially Meets and Exceeds Expectations

Table Group Work: Borderline Descriptions – Partially Meets and Exceeds Expectations

- Access the **borderline PME** descriptions worksheet for your table.
- Consider if a student was “just-barely” at the Partially Meets achievement level, what would they be able to do with respect to the skills at that level?
- Create 3-5 borderline descriptions that identify key characteristics that the “just-barely” student would be able to demonstrate for the Partially Meets level.
- Take about **10 minutes** for the Partially Meets borderline and then work on the Exceeds borderline descriptions.

Table Group Work: Borderline Descriptions – Partially Meets Expectations

- If a student performance was minimally Partially Meets, that is, they demonstrated just enough to get into the Partially Meets level, what would they know and be able to do?
- What differentiates a student performance at the borderline of the Partially Meets level relative to a student in the middle or upper end of this level?
- What differentiates a student performance at the borderline of the Partially Meets level relative to the upper end of the Does Not Meet level?

Table group work: Borderline Descriptions – Exceeds Expectations

- If a student performance was minimally Exceeds, that is, they demonstrated just enough to get into the Exceeds level, what would they know and be able to do?
- What differentiates a student performance at the borderline of the Exceeds level relative to a student in the middle or upper end of this level?
- What differentiates a student performance at the borderline of the Exceeds level relative to the upper end of the Meets level?

Large group discussion: Borderline Descriptions – Partially Meets Expectations

Let's take 5 – 10 minutes to review the **Partially Meets** borderline descriptions.

Do you agree that they are representative of the knowledge, skills, and abilities demonstrated by a student at the borderline of the **Partially Meets** achievement level for this grade?

Does anyone have any questions or concerns about the borderline descriptions for the **Partially Meets** achievement level?

Large group discussion: Borderline Descriptions – Exceeds Expectations

Let's take 5 – 10 minutes to review the **Exceeds** borderline descriptions.

Do you agree that they are representative of the knowledge, skills, and abilities demonstrated by a student at the borderline of the **Exceeds** achievement level for this grade?

Does anyone have any questions or concerns about the borderline descriptions for the **Exceeds** achievement level?

Large group discussion: Borderline Descriptions

Review the borderline descriptions across achievement levels.

Do you agree that the knowledge and skills increase across the levels?

Does anyone have any questions or concerns about any of the borderline descriptions?

15 Minutes



Standard Setting: Key Concepts and Training

Extended Modified Angoff Method for Standard Setting

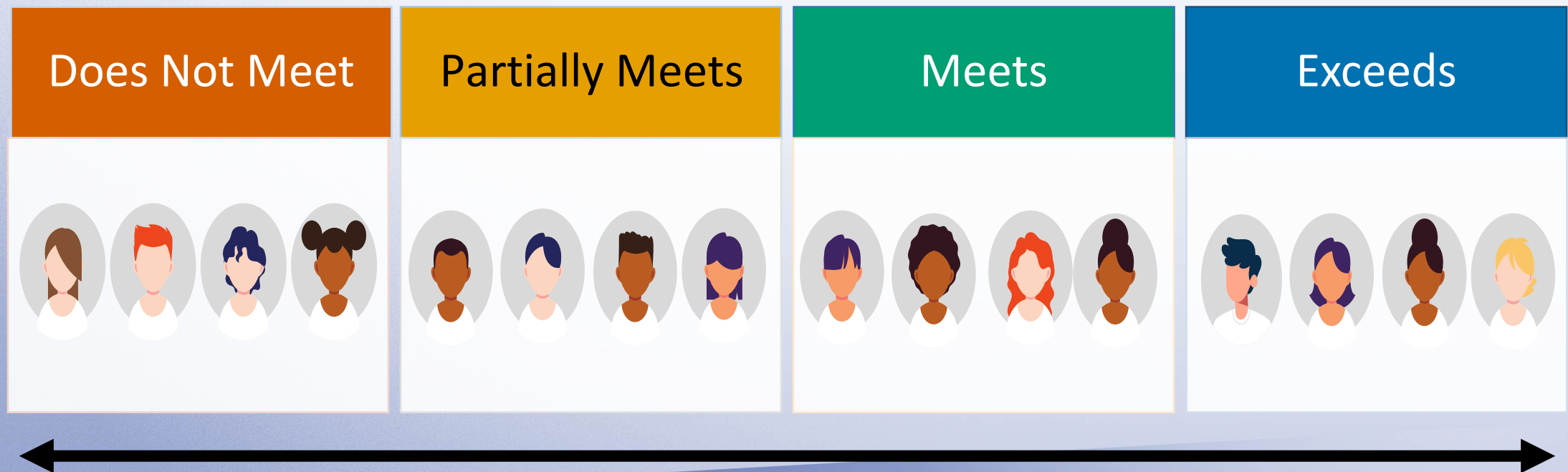
Item-centered
method

Content-based
judgment

Scaffolded &
Iterative
Process

Standard Setting and Student Performance

- In general, higher performance on the assessment indicates greater understanding with respect to the standards. Greater understanding will result in a greater probability of answering an item correctly.



Item Judgment Task - Overview

For each item on the assessment:

1. Review the item and consider the KSAs

- Read the item and any associated stimuli and/or rubrics
- Consider the knowledge, skills, and abilities (KSAs) needed to respond to the item.
- Consider the knowledge, skills, and abilities of the 'borderline' student based on the borderline descriptions.

2. Make an item judgment for each borderline achievement level

- Answer the judgment question: **How many points would a student with performance at the borderline of the achievement level likely earn, if they answered the question?**

Judgment Question - Breakdown

How many points

Judgment is focused on the number of points earned for the item

would

Realistic expectations of student performance on the assessment

**a student with performance
at the borderline of the
achievement level**

Knowledge & skills students with achievement at the borderline are expected to demonstrate

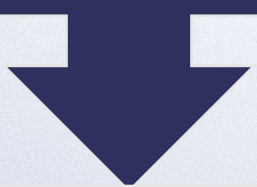
likely earn

2 out of 3 students*

**if they answered the
question?**

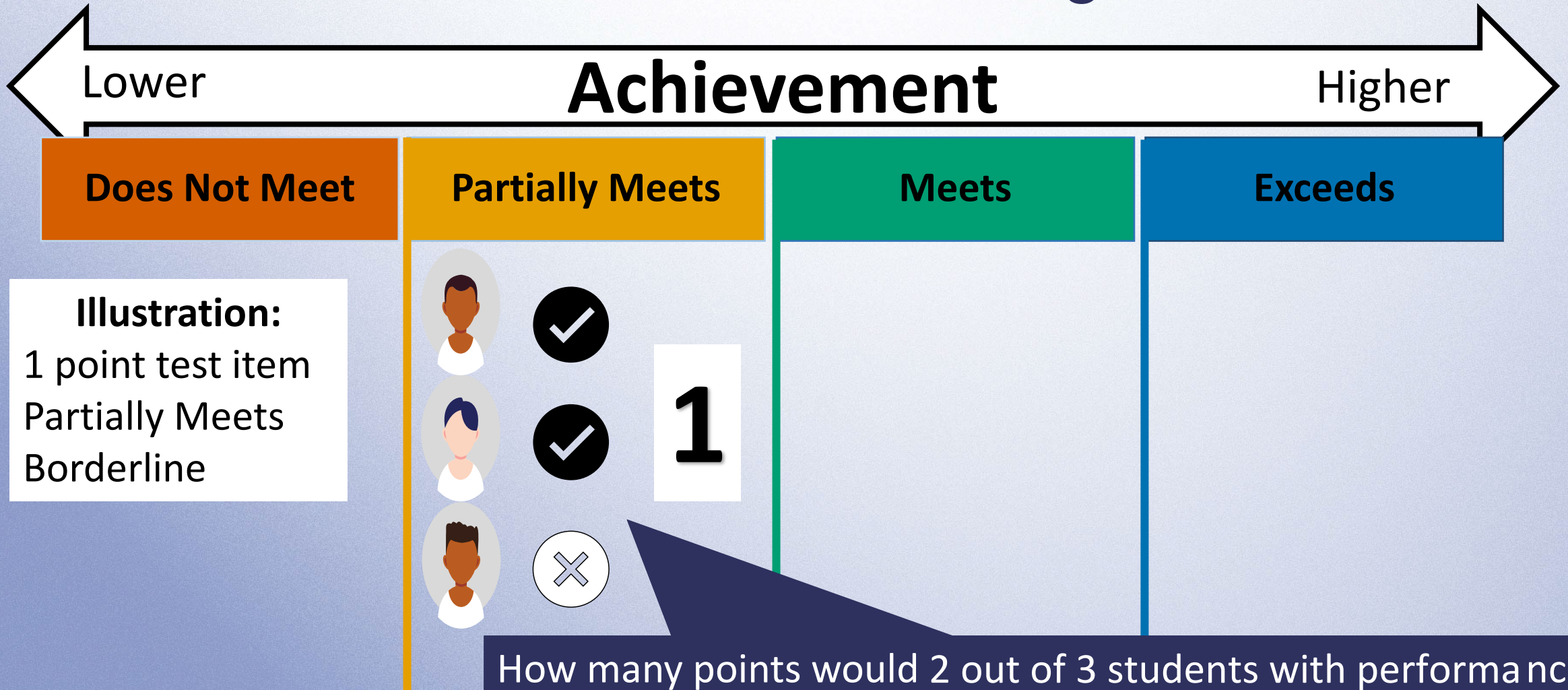
Judgment Question – Breakdown (Cont.)

How many points would a student with performance at the borderline of the achievement level likely earn if they answered the question?

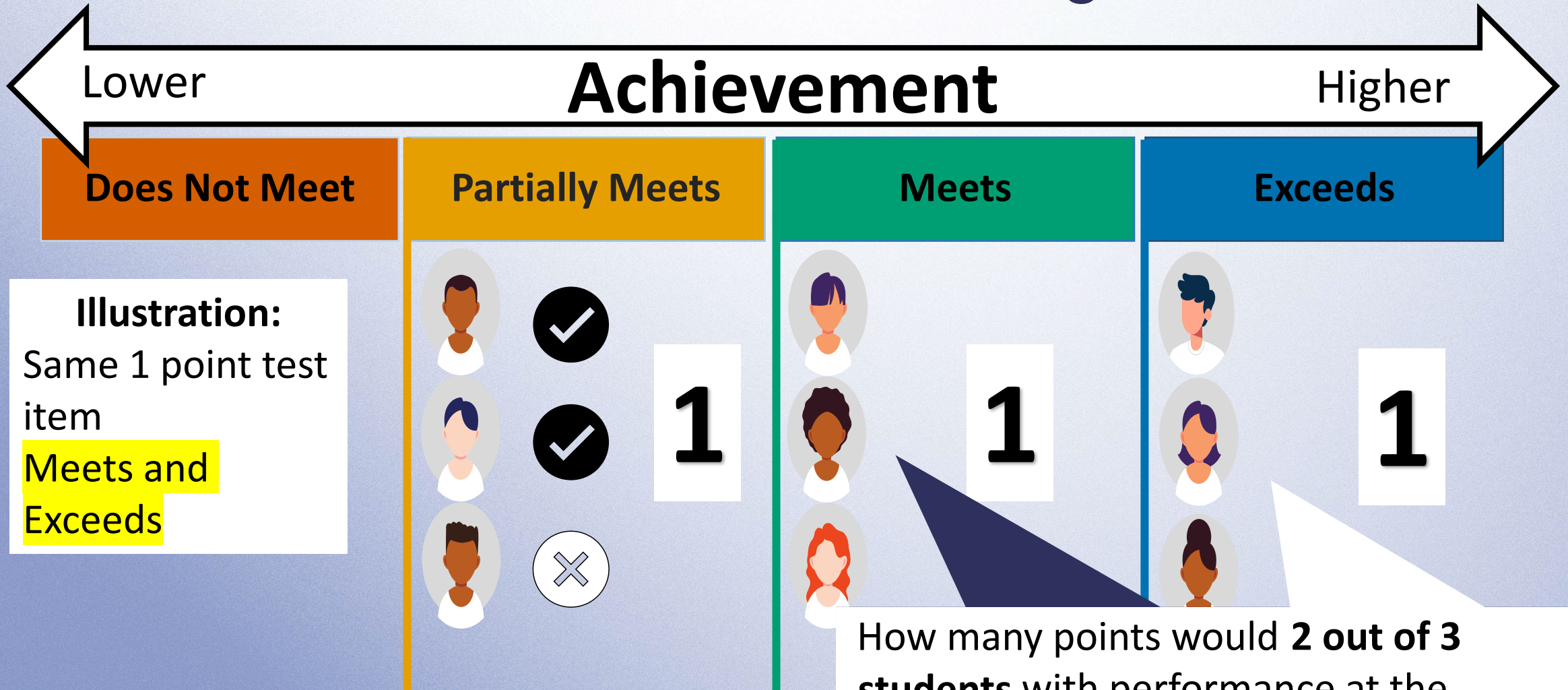


“likely” is defined generally as 2 out of 3 students performing at the borderline of the achievement level

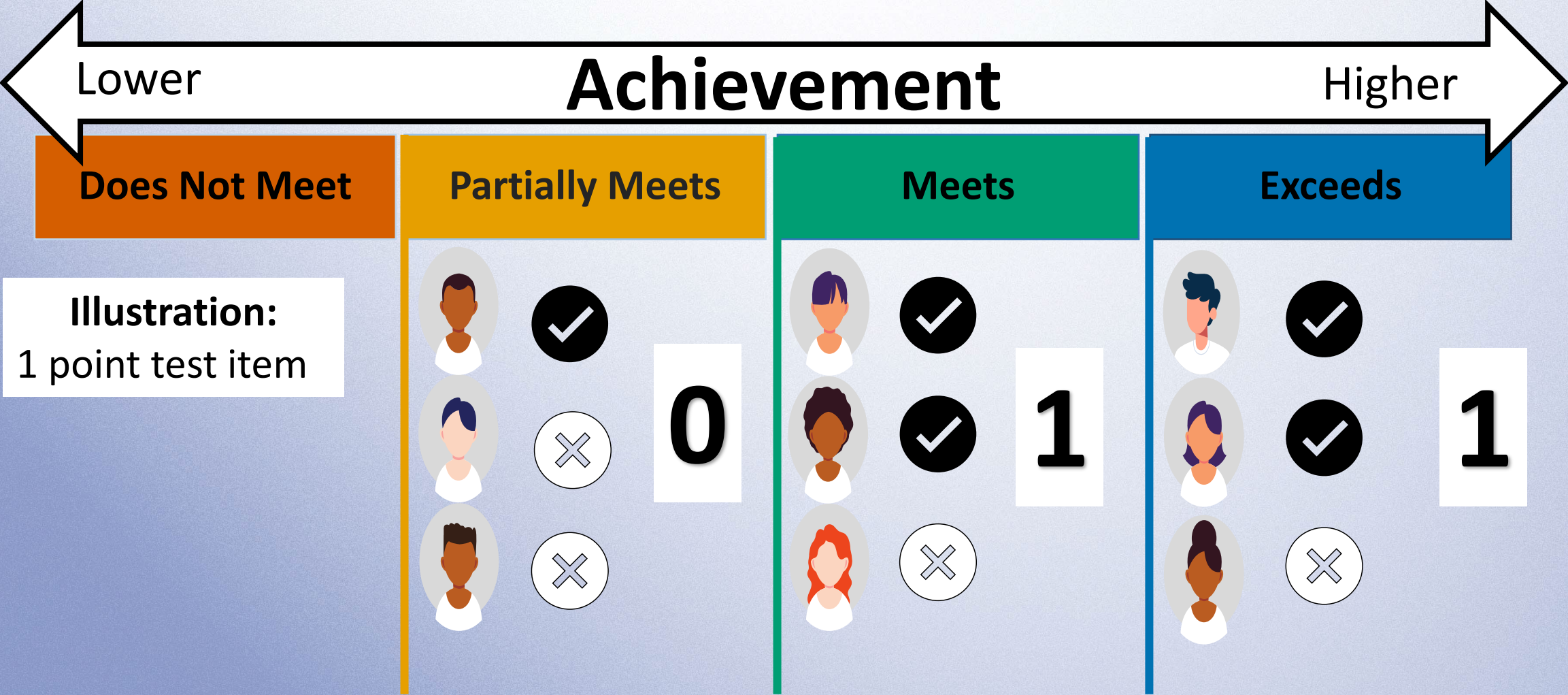
Student Performance and the Judgment Process



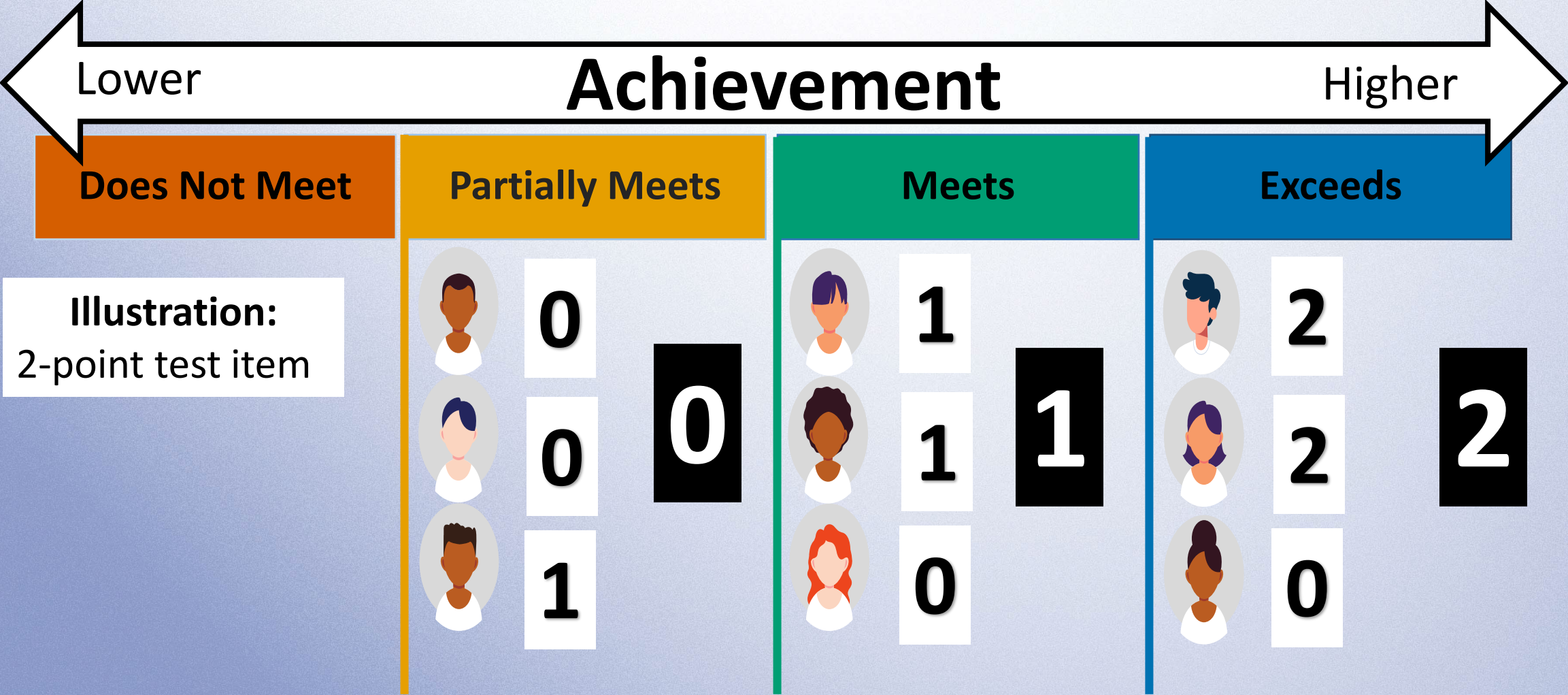
Student Achievement and the Judgment Process



Student Achievement and the Judgment Process



Student Achievement and the Judgment Process



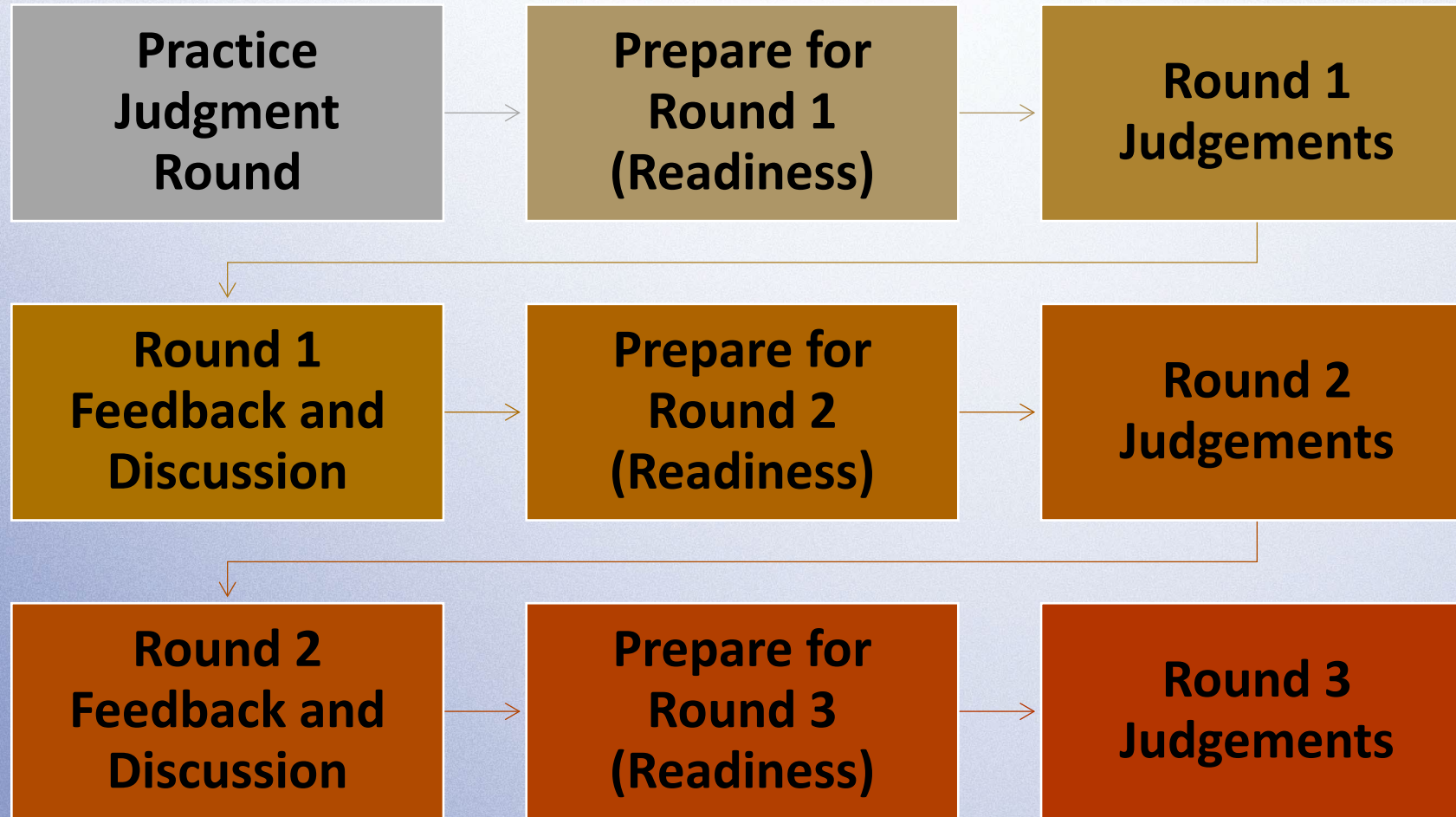
Item Judgment Patterns

Item	Max Point Value	Partially Meets	Meets	Exceeds
Item 1	1	1	1	1
Item 2	1	0	0	1
Item 3	1	0	1	0 
Item 4	2	1	1	2
Item 5	2	1	2	0 
Item 6	4	1	2	4

From Judgments to Cut Scores

Item	Max Point Value	Partially Meets	Meets	Exceeds
Item 1	1	1	1	1
Item 2	1	0	0	1
Item 3	1	0	1	1
Item 4	2	1	1	2
Item 5	5	1	2	4
TOTALS	10	3	5	9

Iterative Judgment Process



Practice Judgment Round

Practice Judgments – The Task

For each item:

1. Review the item and consider the KSAs

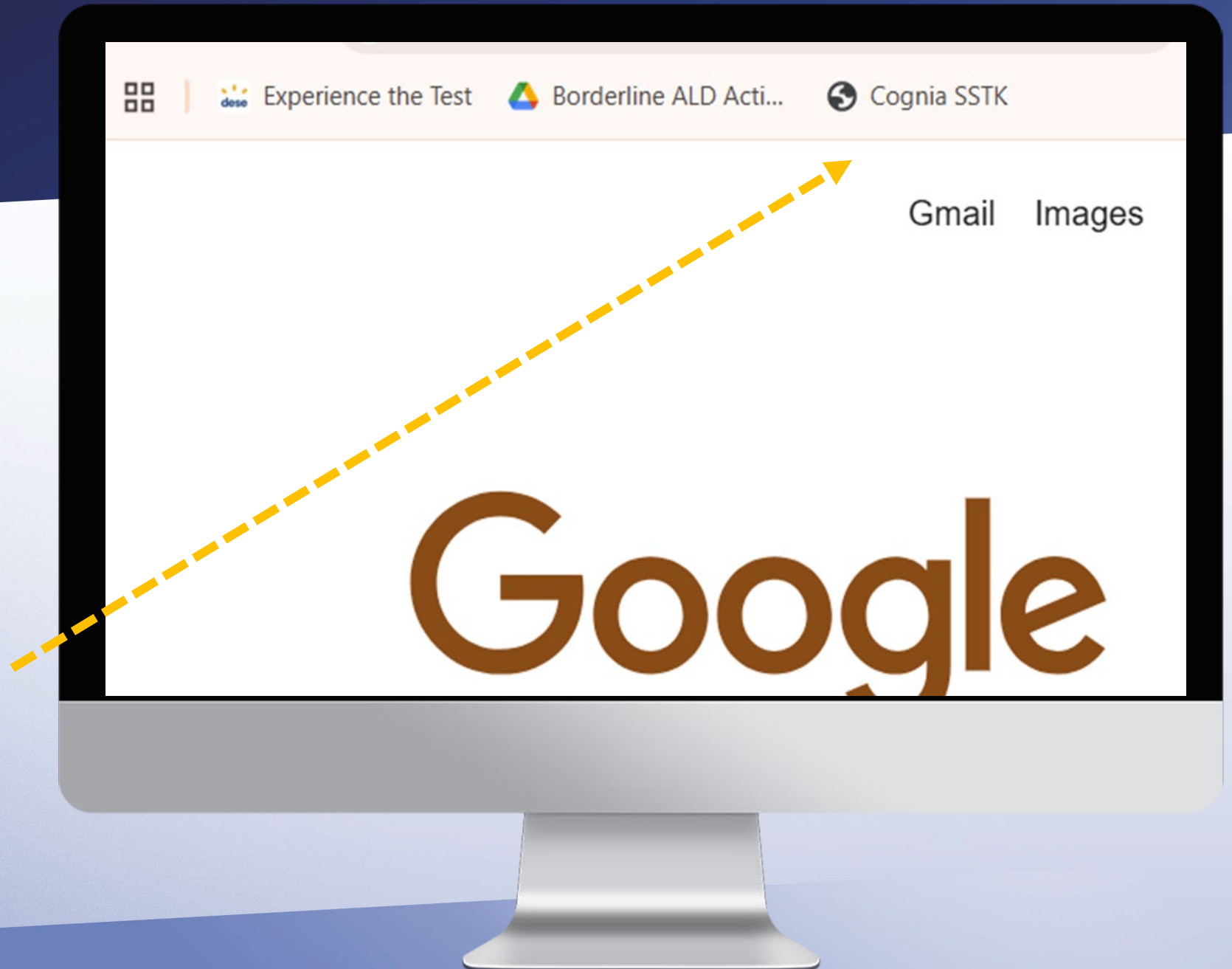
- Read the item and any associated stimuli and/or rubrics.
- Consider the knowledge, skills, and abilities (KSAs) needed to respond to the item.
- Consider the knowledge, skills, and abilities of the ‘borderline’ student based on the borderline descriptions.

2. Make an item judgment based on each borderline achievement level

- Answer the judgment question: **How many points would a student with performance at the borderline of the achievement level likely earn, if they answered the question?**

Guidance: Cognia Toolkit

1. Chromebook:
navigate to
Google Chrome
browser
2. Click on “**Cognia
SSTK**” link - top
left.



Judgment Task: Key Points



Practice Judgments – The Task

For each item:

1. Review the item and consider the KSAs

- Read the item and any associated stimuli and/or rubrics.
- Consider the knowledge, skills, and abilities (KSAs) needed to respond to the item.
- Consider the knowledge, skills, and abilities of the ‘borderline’ student based on the borderline descriptions.

2. Make an item judgment based on each borderline achievement level

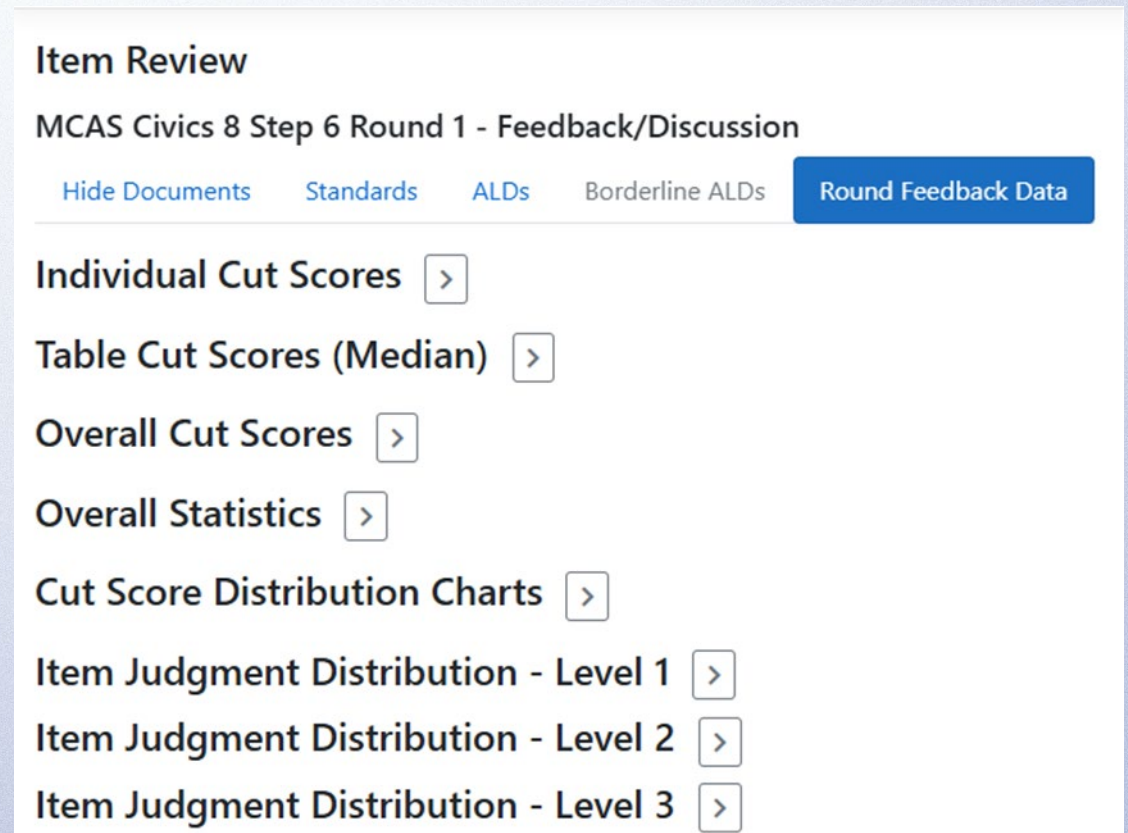
- Answer the judgment question: **How many points would a student with performance at the borderline of the achievement level likely earn, if they answered the question?**

Practice Round – Feedback/Discussion

Practice Round Feedback Data

The following feedback data will be provided from the Practice Round:

- Individual Feedback
 - Individual cut scores
- Table-Level Feedback
 - Table-level cut scores
- Panel-level Feedback
 - Overall cut scores
 - Overall Statistics
 - Panelist cut score agreement
 - Panelist item judgment agreement



Practice Feedback: Individual Judgments and Cut Scores

Individual Item Judgments and Cut Scores

- Your individual item judgments are simply the judgments your entered in the Toolkit.
 - You are currently able to view those judgments but not change them
 - You can, however, take notes in the note column
- Your individual cut scores are located under the Feedback Data tab

Item Review

MCAS Civics 8 Step 6 Round 1 - Feedback/Discussion

[Hide Documents](#) [Standards](#) [ALDs](#) [Borderline ALDs](#) [Round Feedback Data](#) ☐ I'm done

Individual Cut Scores

Name	Table	Cut 1	Cut 2	Cut 3
------	-------	-------	-------	-------

Practice Feedback: Table and Overall Cut Scores

- The table-level cut scores are the median (i.e., average) cut scores based on everyone at each table
- The overall cut scores are the median (i.e., average) cut scores for the panel.

Table	Cut 1	Cut 2	Cut 3
A			
B			
C			
D			
E			

	Cut 1	Cut 2	Cut 3
Panel Cut Scores			

Practice Round – From Judgments to Cut Scores

- Based on your judgments, how many total points would a student at the borderline of each level likely earn?
 - Partially meets
 - Meets
 - Exceeds
- How do the cut scores change across achievement levels?
- How is the panel cut score recommendation determined?

Practice Feedback: Overall Statistics

This presents statistics from the panel-level (i.e., overall) cut scores

Statistic	Cut 1 (PME)	Cut 2 (ME)	Cut 3 (EE)
N Panelists			
Median			
Mean			
Std. Deviation			
Minimum			
1 st Quartile			
3 rd Quartile			
Maximum			

Practice Feedback: Cut Score Distribution

Panelist Cut Score Agreement

- The goal of the standard setting process is to develop a common understanding of what students with performance at the borderline of each performance level can demonstrate.
- The bar graphs show the frequency of cut score recommendations from the panel.
- The graphs display consistency and differences in recommendations from the panel.
- For practice purpose, we will look at the graph for the Meets Expectations level

Practice Feedback: Item Judgment Distribution

Panelist Item Judgment Agreement

- The panelist item judgment agreement provides an indicator of the agreement of expectations across the panelists' judgments.
- The percent of panelists who selected each judgment option for the achievement level.

Asset ID	Point Value	0	1	2	3	4

Practice Round – Group Discussion

Based on the results for the practice judgment round:

- For the first item, what was the most popular judgment for
 - Partially Meets
 - Meets
 - Exceeds
- Is there general agreement or a lot of spread for the item judgments?

Discussion Guidelines

- Consensus is not a requirement
- The goal is to develop a common understanding of the expectations for students at the threshold of each performance level and how that relates to the specific items.
- Each panelist is an expert. Everyone should have an opportunity to participate in the discussion.



Practice: Feedback and Discussion

For each item flagged for discussion consider:

- What knowledge and skills are needed by the student at the borderline of the level to answer this item correctly?
- How are the knowledge and skills required by this item related to your borderline descriptions?
- Are 2 out of 3 borderline students expected to get this score on the item?

Feedback Discussion (cont.)

Before moving on to Round 1 Judgments:

- Based on our discussions, are there any adjustments to the borderline descriptions that are needed?

Practice Round – Wrap Up

- During the practice round
 - Became comfortable with the Cognia Standard Setting Toolkit
 - Practiced the judgment task with several items
 - Refined the borderline descriptions as needed
 - Reviewed and discussed feedback data
- Discussion
 - Is the Judgment task and process clear?
 - Are there any remaining questions or concerns before we proceed with the first judgment round?

(12:00 – 12:45)



Preparation for Round 1 Judgments

Round 1 – Readiness

- In a moment, you will be redirected in the Toolkit to a short survey.
- Goal: Determine if everyone understands the task at hand and is ready to proceed.
- Read and answer each question.
- Click “**I’m done**” when finished
- Once everyone has completed the survey, we will review responses and proceed accordingly.
 - Responses are viewed in summary only

The screenshot shows the Cognia Standard Setting Toolkit interface. At the top, the Cognia logo is on the left, and 'Standard Setting Toolkit' is in the center. To the right are links for 'Home', 'Admin', and a user email 'sstksetup@cognia.org'. Below this is a 'Questionnaire' section with a 'Hide Documents' button and tabs for 'Standards', 'ALDs', and 'Borderline ALDs'. A toggle switch for 'I'm done' is on the right. The main content is a table with 6 rows, each containing a 'Position' number, a 'Question/Statement', and a 'Response' dropdown menu.

Position	Question/Statement	Response
1	I understand the goals of the standard setting meeting.	--
2	I understand the procedures we are using to set standards.	--
3	I understand the differences between the achievement levels.	--
4	I understand what materials/content I should consider when making judgments.	--
5	I understand how to use the Cognia Standard Setting Toolkit.	--
6	I am ready to proceed with the standard setting process.	--

Round 1 Judgments – The Task

For each item on the assessment:

1. Review the item and consider the KSAs

- Read the item and any associated stimuli and/or rubrics.
- Consider the knowledge, skills, and abilities (KSAs) needed to respond to the item.
- Consider the knowledge, skills, and abilities of the 'borderline' student based on the borderline descriptions.

2. Make an item judgment based on each borderline achievement level

- Answer the judgment question: How many points would a student with performance at the borderline of the achievement level likely earn, if they answered the question?

End Day 2

MCAS Grade 8 Civics Standard Setting Meeting

Day 3

Wakefield, MA
August 7, 2025

Agenda Day 3

Finish Round 1

Round 1 Discussion

Round 2

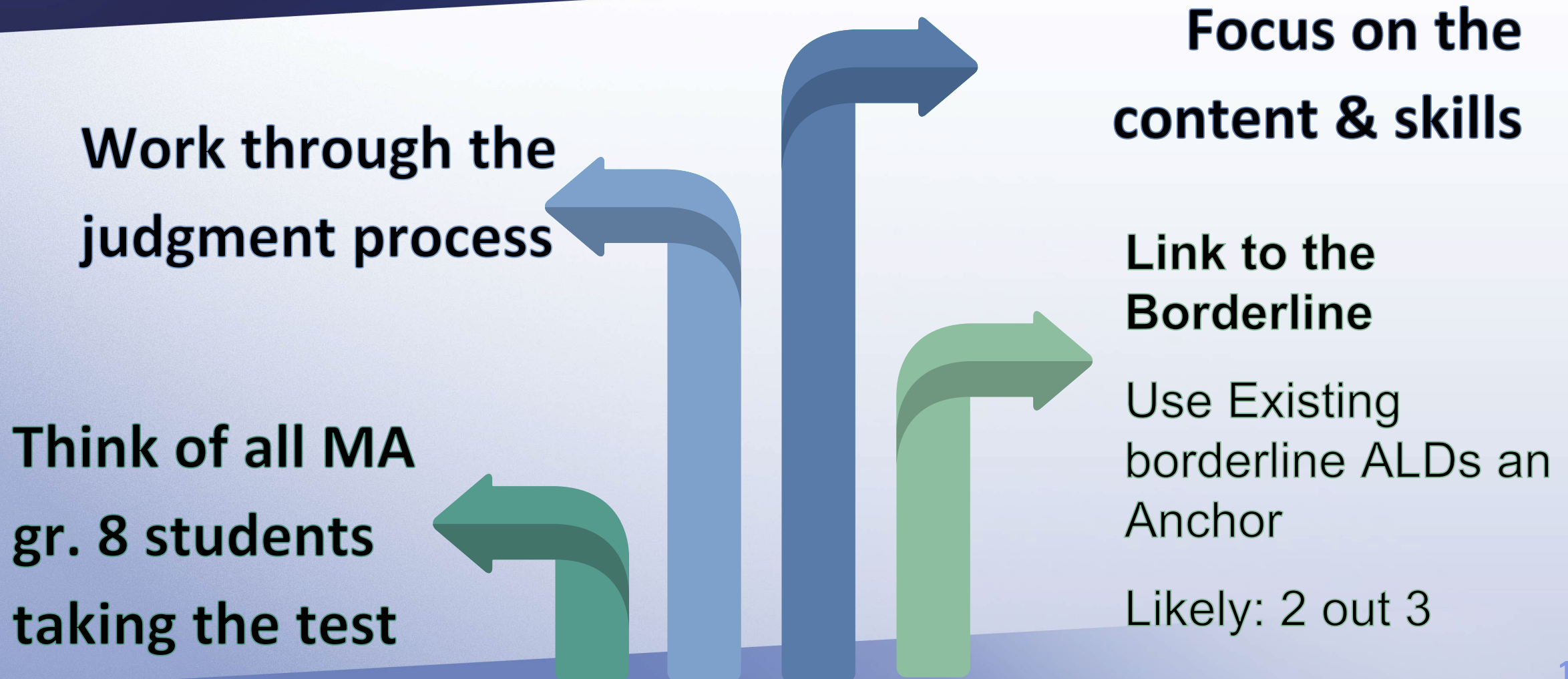
Round 2 Discussion

Round 3

Wrap up / Final Results

Evaluation Survey

Judgment Task: Key Points



Round 1 Judgments – The Task

For each item on the assessment:

1. Review the item and consider the KSAs

- Read the item and any associated stimuli and/or rubrics.
- Consider the knowledge, skills, and abilities (KSAs) needed to respond to the item.
- Consider the knowledge, skills, and abilities of the ‘borderline’ student based on the borderline descriptions.

2. Make an item judgment based on each borderline achievement level

- Answer the judgment question: How many points would a student with performance at the borderline of the achievement level likely earn, if they answered the question?

30 Minutes



Round 1: Feedback and Discussion

Round 1: Feedback and Discussion

Goal of the Discussion: To gain insight into the interpretations of students with achievement at the borderline which may be leading to discrepant ratings on individual items.

- There are no “Right” or “Wrong” judgments on any of the items
- Consensus is not required nor expected, but please share your perspective and listen to the perspective of others.
- Are there underlying differences in what the group expect students at the borderline should be able to do?

Discussion Guidelines: Items

- Consensus is not a requirement
- The goal is to develop a common understanding of the expectations for students at the threshold of each performance level and how that relates to the specific items.
- Each panelist is an expert. Everyone should have an opportunity to participate in the discussion.



Round 1: Feedback and Discussion

For each item flagged for discussion consider:

- What knowledge and skills are needed by the student at the borderline of the level to answer this item correctly?
- How are the knowledge and skills required by this item related to your borderline descriptions?
- Are 2 out of 3 borderline students expected to get this score on the item?

Feedback Discussion (cont.)

Before moving on to Round 2 Judgments:

- Based on the whole group and group discussions, are there any adjustments to the borderline descriptions that are needed?
- Consider what changes to your item judgments may be needed based on the feedback discussion.

Preparation for Round 2 Judgments

Round 2 – Readiness

- In a moment, you will be redirected in the Toolkit to a short survey.
- Goal: Determine if everyone understands the task at hand and is ready to proceed.
- Read and answer each question.
- Once everyone has completed the survey, we will review responses and proceed accordingly.

The screenshot shows the 'Standard Setting Toolkit' interface for a 'Questionnaire'. At the top, the Cognia logo is on the left, and navigation links for 'Home', 'Admin', and 'sstksetup@cognia.org' are on the right. Below the header, there are tabs for 'Hide Documents' (active), 'Standards', 'ALDs', and 'Borderline ALDs'. A toggle switch labeled 'I'm done' is on the right. The main content area is a table with four rows, each representing a question. The table has three columns: 'Position', 'Question/Statement', and 'Response'. Each 'Response' cell contains a dropdown menu with '--' and a downward arrow.

Position	Question/Statement	Response
1	I understand the Round 1 feedback.	-- ▾
2	I understand that I should use the Round 1 feedback as information for me to consider as I make my judgments in Round 2.	-- ▾
3	I understand that I should consider the insights of my colleagues as information as I make decisions, but my final judgments are my own independent judgments in Round 2.	-- ▾
4	I am ready to proceed with Round 2 of the standard setting process.	-- ▾

Judgment Task: Key Points

You are a different judge!
You are more informed
by the discussion with
your peers, you are more
comfortable with the
process, you have a
better understanding of
threshold performance
on the items.

Work through the
judgment process

Focus on the
content & skills

Link to the
Borderline

Think of all
gr. 8 MA
students
taking the
test

Round 2 Judgments

- You will now be redirected to Round 2
 - In the toolkit, you will see the same list of items with your work from round 1 (notes and judgments)
- Reminder – Your task for each item:
 1. Review the item and consider the KSAs
 2. Make an item judgment based on each borderline achievement level
 - Answer the judgment question: How many points would a student with performance at the borderline of the achievement level likely earn, if they answered the question?
- Item judgment is an individual activity. Please **DO NOT** discuss your work with your colleagues at this time.

11:45 – 12:30



Round 2: Feedback and Discussion

Round 2: Feedback and Discussion

Goal of the Discussion: To gain insight into the interpretations of students with achievement at the borderline which may be leading to discrepant ratings on individual items.

- There are no “Right” or “Wrong” judgments on any of the items
- Consensus is not required nor expected, but please share your perspective and listen to the perspective of others.
- Are there underlying differences in what the group expect students at the borderline should be able to do?

Round 2: Feedback and Discussion

- How much change was there between rounds 1 and 2?
- Are there any items on which there is still a lot of disagreement?
- Are there panelists whose judgments are much higher or lower than the others? Why?
- What were the key considerations that led to each judgment?
- Do panelists have different concepts of the performance of a student at the borderline level?

Round 2 Feedback: Impact Data

- Impact data reflects the percentage of students classified in each achievement level based on the cut scores recommended by the panel after round 2.
- The impact data is based on actual student performance on the spring 2025 administration.
- Although useful as a “reality check” for how students did on the test, judgments should still be based on content.

Preparation for Round 3 Judgments

Round 3 – Readiness

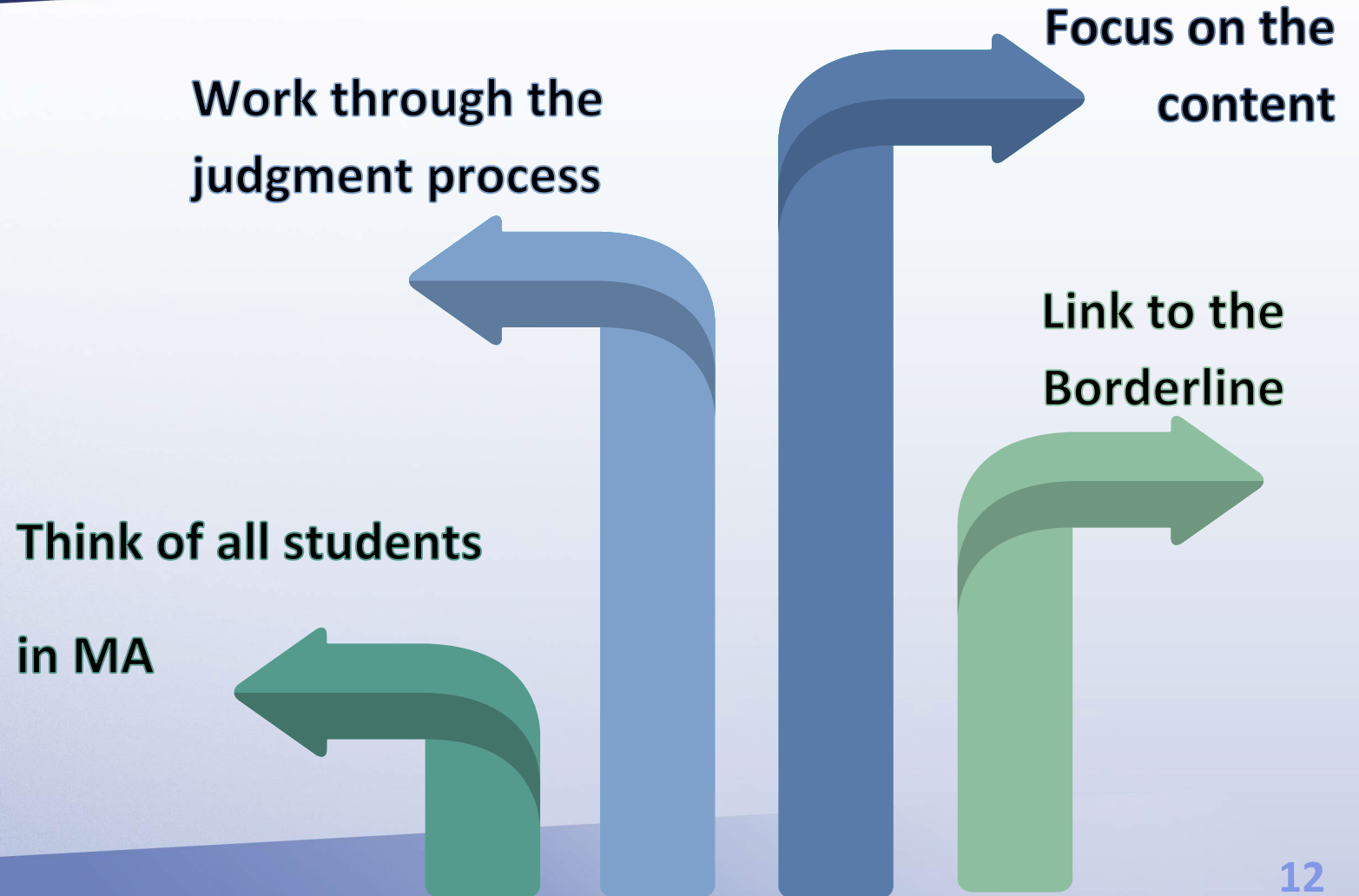
- In a moment, you will be redirected in the Toolkit to a short survey.
- Goal: Determine if everyone understands the task at hand and is ready to proceed.
- Read and answer each question.
- Once everyone has completed the survey, we will review responses and proceed accordingly.

The screenshot shows the Cognia Standard Setting Toolkit interface. At the top, the Cognia logo is on the left, and 'Standard Setting Toolkit' is in the center. To the right are links for 'Home', 'Admin', and the email 'sstksetup@cognia.org'. Below this is a 'Questionnaire' section with a 'Hide Documents' button and tabs for 'Standards', 'ALDs', and 'Borderline ALDs'. A toggle switch labeled 'I'm done' is on the right. The main content is a table with four rows, each containing a 'Position' number, a 'Question/Statement', and a 'Response' dropdown menu.

Position	Question/Statement	Response
1	I understand the Round 2 feedback.	--
2	I understand that I should use the Round 2 feedback as information for me to consider as I make my judgments in Round 3.	--
3	I understand that I should consider the insights of my colleagues as information as I make decisions, but my final judgments are my own independent judgments in Round 3.	--
4	I am ready to proceed with Round 3 of the standard setting process.	--

Judgment Task: Key Points

You are a different judge!
You are more informed
by the discussion with
your peers, you are more
comfortable with the
process, you have a
better understanding of
threshold performance
on the items.



Round 3 Judgments – The Task

For each item on the assessment:

1. Review the item and consider the KSAs

- Read the item and any associated stimuli and/or rubrics
- Consider the knowledge, skills, and abilities (KSAs) needed to respond to the item.
- Consider the knowledge, skills, and abilities of the ‘borderline’ student based on the borderline descriptions.

2. Make an item judgment based on each borderline achievement level

- Answer the judgment question: How many points would a student with performance at the borderline of the achievement level likely earn, if they answered the question?

30 Minutes



Round 3: Feedback and Discussion

Round 3: Feedback and Discussion

- How much change was there between rounds 2 and 3?
- Are there any items on which there is still a lot of disagreement?
- Are there panelists whose judgments are much higher or lower than the others? Why?
- What were the key considerations that led to each judgment?
- Do panelists have different concepts of the performance of a student at the borderline level?

Round 3 Feedback: Impact Data

- Impact data reflects the percentage of students classified in each achievement level based on the cut scores recommended by the panel after round 3.
- The impact data is based on actual student performance on the spring 2025 administration.

Workshop Evaluation Survey

Workshop Evaluation

The Workshop Evaluation is intended to capture your feedback on the following:

- Your opinion regarding our success in training and supporting you as you made your way through the standard setting process.
- Your perspective on your final recommendations for the cut scores associated with each performance level.

You will automatically be redirected to this survey in the Toolkit.

Wrap Up and Next Steps

Next Steps

- The results of the standard setting panel are a **recommendation only**, not the final outcome.
- The cut score recommendations from the standard setting panel will undergo a policy review.
- DESE and the Commissioner of Education will make the final determination of the performance level cut scores.

Close out directions

- Place all your documents back in the folder.
- Log out of the website and close the lid to your laptop.
- Provide your folder to the facilitator to ensure all documents are in the folder.
- Sign the sign-out sheet to confirm that you are leaving **any secure materials or notes in your folder and have provided your folder to the facilitator.**

APPENDIX J
STANDARD-SETTING
PANEL COMPOSITION

Standard-Setting Panel Composition

Years of Relevant Teaching Experience

Number of Years	Percentage
1–5	13%
6–10	25%
11–15	25%
16–20	13%
More than 20 years	25%

Panelist Position

Role	Percentage
Teacher (K-12 Education)	75%
Teacher (Higher Education)	4%
Coordinator/Coach (K-12 Education)	13%
Administrator (School)	4%
Administrator (District)	4%

Demographics: Race/Ethnicity and Gender

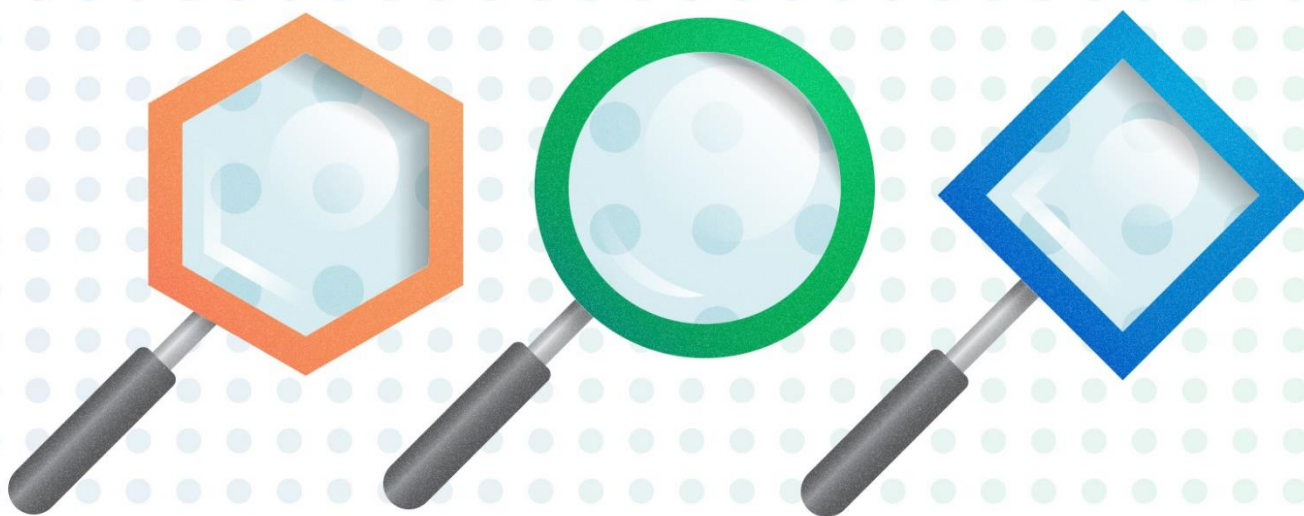
Demographic Category	Amount
<i>Race</i>	<i>Percentage</i>
Black or African American	4%
White	83%
White, Portuguese	4%
Hispanic or Latino	4%
Muti-Race	4%
<i>Gender</i>	<i>Percentage</i>
Female	63%
Male	38%

School District Representation

Category	Amount
<i>School District Type</i>	<i>Percentage</i>
Suburban	42%
Metropolitan/Urban	38%
Blank	8%
Rural	13%
<i>School District Size</i>	<i>Percentage</i>
Small	33%
Medium	42%
Large	13%
<i>School District SES</i>	<i>Percentage</i>
Low	33%
Moderate	42%
High	13%



APPENDIX K
MCAS GRADE 8 CIVICS 2025 STANDARD SETTING:
OBSERVATION REPORT



MCAS GRADE 8 CIVICS 2025 STANDARD SETTING: OBSERVATION REPORT

August 2025

Will Lorié, Ph.D.
Senior Associate
Center for Assessment



**Center for
Assessment**

National Center for the Improvement of
Educational Assessment
Dover, New Hampshire

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MCAS Grade 8 Civics Standard Setting: Background and Meeting Description

Cognia, under contract with the Massachusetts Department of Elementary and Secondary Education (DESE), held a standard-setting meeting on August 5-7, 2025, in Wakefield, MA. The purpose of the meeting was to establish cut scores for the Massachusetts Comprehensive Assessment System (MCAS) test in grade 8 civics.

Cognia planned for and implemented an Extended Modified Yes/No Angoff method (Davis & Moyer, 2015; Plake, Ferdous, Impara, & Buckendahl, 2005) to recommend achievement level cut scores for the grade 8 civics assessment. These cut scores will classify students into four levels: “Does Not Meet Expectations,” “Partially Meets Expectations,” “Meets Expectations,” and “Exceeds Expectations.” The workshop ran for three days. There were 24 panelists, principally teachers, from across the state. As planned, the panelists experienced the test, reviewed content standards and achievement level descriptions (ALDs), defined borderline expectations, and made item judgments over three rounds.

DESE contracted with the National Center for the Improvement of Educational Assessment (Center for Assessment) to observe the standard-setting meeting. Will Lorié was the Center for Assessment observer and the author of this observation report.

Participants

Several people attended the standard-setting meetings, including Cognia and DESE facilitators, educators who served as panelists, DESE representatives and observers, and an outside observer from the Center for Assessment.

Sandra Sweeney (Psychometrician, Cognia) facilitated the study. She was assisted by test development and data analysis staff at DESE and Cognia, including Katie Bowler (Director of Test Development for MCAS, DESE), Ann Marie Gleeson (Test Development, DESE), Marissa Roque (Test Development, DESE), Sadeq Schrabie (Data Team, DESE), Sarah Jo Torgrimson (Data Team, DESE), Han Yi Kim (Lead Psychometrician for MCAS, Cognia), Nicole Mishiyev (Test Development, Cognia), and Andrea Herbert (Director of Reporting and Psychometrics, Cognia).

Rob Curtin, Chief Officer for Data, Assessment, and Accountability (DESE) and Michol Stapel, Associate Commissioner for Student Assessment (DESE) provided opening remarks and attended the standard-setting meeting.

DESE invited 25 panelists to attend the standard setting; 24 attended. Throughout the standard-setting meeting, panelists were on task. They were engaged in the various activities of the meeting, posed questions to the facilitator and content leads (which were effectively addressed), and had content-referenced dialogue with each other.

Observation Notes

Pre-Work: July 21-31, 2025.

On Monday, July 21, 2025, Sandra Sweeney sent the grade 8 civics standard-setting panelists a pre-work survey with instructions designed to familiarize them with Cognia's standard-setting toolkit, Massachusetts' grade 8 history and social science standards, and grade 8 civics achievement level descriptors (ALDs). The survey included 15 statements (agree/disagree or agree/somewhat agree/somewhat disagree/disagree) about toolkit navigation, access to and familiarity with the standards, and several features of the ALDs (such as being able to identify

specific knowledge and skills, distinguish between adjacent levels, and notice a progression in the descriptors). Additionally, there were two survey items for open-ended comments or questions. All participants completed the pre-work, except for one who completed 85% of it. During a pre-meeting (just before Day 1 of the standard-setting), Sandra stated that this was acceptable because the remaining 15% was material that would be covered in the standard setting anyway.

Day 1: Tuesday, August 5, 2025.

The first day of the MCAS grade 8 civics standard-setting meeting started with opening remarks by Rob Curtin. He highlighted the important role of educators in Massachusetts' assessment system, noting that "one of the things I am most proud about in our assessment program is the amount of educator involvement." Rob said that "truth-telling" is the most crucial function of the MCAS assessments. He expressed gratitude to the panelists for their willingness to take on the responsibility of defining achievement expectations for the civics assessment.

Michol Stapel introduced DESE and Cognia staff and provided a brief timeline of the MCAS civics assessment, noting that 2024 was the field test year and 2025 marks the first operational administration. Ann Marie Gleeson then led panelists through introductions, who represent 24 school districts and have an average of 15 years of teaching experience. The panelists were selected based on content knowledge expertise, teaching experience, experience working with diverse student populations, and understanding of the instructional environment. The 24 panelists were seated at five tables (labeled A–E), each with four to five members.

Sandra Sweeney reviewed the week's schedule and explained the meeting's structure, including the roles of panelists, facilitators, observers, and data analysts. She provided an overview

of standard setting, covering key terminology such as achievement levels, achievement level descriptors, cut scores, and impact data. She also outlined the purpose of the meeting: to recommend cut scores that define the four achievement levels for the grade 8 civics assessment. Han Yi shared contextual data, including achievement level distributions from MCAS ELA, math, and science assessments, as well as data for NAEP grade 8 civics (nationally).

Panelists were reminded of logistical expectations, including assessment security; they signed NDAs. This was followed by a security briefing and a review of assessment development, test design, and blueprint content. In response to a panelist's question, the DESE team clarified that the standard-setting work applies to the entire test (including both the multiple-choice and performance task sections) and not to individual parts.

A panelist expressed concern about the validity of setting cut scores when a significant portion of the student population, particularly ELLs whose primary language is Portuguese, may not have full access to the assessment content in their native language. The panelist questioned whether this limitation affects the fairness or validity of the standard-setting process. DESE staff explained that although the state currently does not offer AI-generated translations, it is expanding text-to-speech (TTS) accommodations beyond English and Spanish (the second most common language among students). DESE acknowledged that it is not the panel's role to evaluate assessment validity but highlighted that the department regularly monitors the performance of English learners and conducts thorough accessibility and bias reviews, including differential item functioning analyses, to ensure that no group is systematically advantaged or disadvantaged.

Ann Marie presented the purpose and the design of the civics assessment. The purpose of the assessment was shown on a slide: "The assessment allows students to use their civics content,

knowledge, and skills to explain/describe civics concepts, support claims with evidence, and analyze sources and graphics.” Ann Marie gave a comprehensive description of the various parts of the test and the different reporting categories.

At around 10:30 am, the meeting transitioned into an “experience the assessment” activity, where panelists completed a secure version of the MCAS civics assessment, beginning with the performance task section. They were encouraged to annotate items and note the knowledge, skills, and abilities (KSAs) required to answer them correctly. Some panelists encountered minor technical difficulties, which were quickly addressed by support staff. Panelists completed this activity by 11:15.

Panelists then participated in structured discussions of the performance task section. At different tables, panelists raised questions about vocabulary load, background knowledge requirements, and the alignment of sources to questions. One panelist asked why only one word appeared in the glossary. A DESE facilitator responded that the test developers try to avoid glossing words unless they go beyond the expected vocabulary load. Other panelists commented on the cognitive complexity of the performance task, including its numerical demands. Several expressed concerns about item phrasing, such as “explain your reasoning,” and asked whether alternative prompts might better cue student responses. A facilitator explained that the language used was consistent with MCAS conventions for asking students to elaborate, and that this language had been refined in collaboration with teacher review panels. When a panelist raised a concern about one of the questions in the performance task section, recommending a way to make it more scaffolded for students, Sandra asked that they make a note of it, assuring panelists that they would review all notes about suggested changes to items. She took the opportunity to explain

that there are features of items (such as the one pointed out) that might make items harder or easier for students – an important consideration for the standard-setting judgments later.

During a working lunch with table leads, table leads reviewed sample responses and scoring rationales for selected performance task questions. Sandra introduced the next phase of work and explained the distinction between group and individual activities. She described the goals of group work as reaching “a common understanding of the language used and the interpretations,” while the purpose of individual work was to “gain insight from others’ perspectives,” and that consensus was not required. She presented the responsibilities of table leads. These included items under logistics, notetaking, and managing discussions at their tables. At this meeting, in response to table leaders’ input on confusions about scoring of the performance task section, a decision was made to go over the sample responses and rationales for the score points assigned on one of the four-point items.

This review was implemented with the whole group immediately after lunch. In response to panelist questions about scoring, DESE clarified that the performance tasks are scored holistically.

The afternoon continued with panelists experiencing the End-of-Course (EOC) sections of the civics assessment. In a large-group debrief afterward, one panelist remarked that the section “felt more cohesive than the performance task” and “easier as a student.” This prompted a discussion about test navigation policies. DESE clarified that sections are locked (students are unable to review items in the first part once they start the second part) to avoid clueing between items, as some content may appear in both parts. Panelists also raised questions about item formatting, such as why “most likely” was bolded in some questions but not others; DESE noted that formatting decisions were informed by teacher committee input.

Panelists then compared pairs of items to discuss relative difficulty, focusing particularly on drag-and-drop and pull-down formats. Some panelists noted that item phrasing and context clues could affect perceived difficulty. For instance, one noted that “there’s a lot of inference going on” in one item, while another remarked that a different item could lead a “smart aleck-y” student to select a particular incorrect response. Through these examples, DESE illustrated that student performance data did not always align with expectations about student difficulty.

The final activity of the day focused on reviewing MCAS achievement levels and the grade 8 civics achievement level descriptors (ALDs). Ann Marie presented policy-level ALDs and facilitated a guided review of the civics-specific ALDs. Panelists had reviewed these in advance, but the session was structured to deepen their understanding. A slide posed guiding questions for this activity:

- In what ways do the expectations increase from lower achievement levels to higher achievement levels?
- How different is student achievement at the very bottom of a higher level compared to a student at the top of the adjacent lower achievement level (for example, lower achievement in “Partially Meets” compared to higher achievement in “Meets”)?

The intent was to prepare panelists for the next day’s task of constructing threshold descriptions for the achievement levels.

At tables, panelists were having discussions consistent with the directions. At one table, for example, a panelist said, “they need to be able to describe and explain to be proficient.” At another, panelists noted that “describe and explain” vs “analyze and compare and contrast” drew a critical distinction between levels. In a large-group discussion, panelists shared that certain verbs, such as “recognizing and identifying,” “describing and determining,” and “analyzing” were critical to

distinguishing among levels. Others noted understanding something “literally” versus applying it to novel situations, and also frequency (“always versus sometimes or rarely”) as level-distinguishing characteristics.

Sandra then turned to training for the next activity, developing borderline achievement level descriptors. She explained that being at the borderline of an achievement level means having “just barely enough knowledge and skills to be in the achievement level.” A slide provided the key question for the borderline activity: “What knowledge and skills should students performing at the borderline of the achievement level be expected to demonstrate relative to the particular skills associated with the achievement level?”

DESE facilitators then modeled borderline ALD development, providing three sample borderline descriptions. DESE and Cognia addressed panelist questions accurately and provided guidance consistent with best practice for this activity – for example, emphasizing that the borderline for Meets is a student who Meets, and (relatedly) that borderline descriptions should not “overlap backwards” to the lower level. Panelists advanced several ideas for candidate borderline student descriptions, before Sandra asked the group to work at their tables. A slide provided the task instructions for the Meets Expectations borderline descriptors:

- Create 3-5 borderline descriptions that identify key characteristics that the “just-barely” student would be able to demonstrate at the Meets level. Consider the following:
 - If a student performance was minimally Meets, that is, they demonstrated just enough to get into the Meets level, what would they know and be able to do?
 - What differentiates student performance at the borderline of the Meets level relative to student performance in the middle or upper end of this level?
 - What differentiates student performance at the borderline of the Meets level relative to the upper end of the Partially Meets level?

The panelists drafted borderline achievement level descriptors for table-assigned topics in Google documents. At around 4:15, Sandra directed panelists to review another table's borderline descriptors, with A reviewing B, B reviewing C, etc. The task here was to determine if they agreed that the borderline descriptors developed by the other table were "representative of the knowledge skills, and abilities demonstrated by a student at the borderline of the Meets achievement level for this grade." Sandra asked panelists to use the comment feature if they believe the descriptors could use some edits. Panelists had positive comments about others' borderline descriptors and the value of the activity. One person commented on the importance of having test frameworks readily available, noting the value of "having a shared common language." One panelist was concerned with what would happen if they didn't get to all the borderline ALDs. Sandra responded that after the group has created a few, the group will use them and have an opportunity to add to and edit them further at that stage.

Day 2: Wednesday, August 6, 2025.

Day 2 began with continued work on the development of borderline ALDs, with a table review of the Meets Expectations borderline ALDs. Sandra Sweeney oriented panelists to this activity, asking if they agreed with the descriptors for Meets.

Sandra then brought the group together to review borderline ALDs one by one for potential edits. As one example, there was a discussion around whether a plural was needed in the Meets Expectations borderline descriptor, because a plural was in the Meets Expectations ALD. Panelists debated the issue of whether borderline implies just one example, even when a plural is in Meets

Expectations. A panelist suggested a way to resolve it is to specify the number of required examples to be two. Sandra then called for a vote on specific edits to this borderline ALD.

In response to concerns that a broader audience might misinterpret the word “beliefs” in one borderline ALD, Sandra clarified that these descriptors were internal to the standard-setting process and would not be made public. What was important was for the group to understand their terms for their standard-setting judgments later, and to reach a common understanding of the borderline student. Sandra raised this last point several times during Day 2.

At around 9:30, panelists began formulating the Partially Meets Expectations borderline descriptors. They then turned to formulating the Exceeds Expectations borderline descriptors.

At 10:00, panelists were directed to review a document that combined all the Partially Meets Expectations borderline ALDs and were invited to raise any observations or potential edits to the large group. Panelists suggested clarifications to the language of some of the borderline descriptors. There was unanimity or near-unanimity on proposed changes. There was extensive discussion on one of the borderline descriptors. Sandra emphasized that not everything needs to be resolved at this stage.

Panelists inquired about the relationship between the ALDs and the state’s content standards, occasionally confusing Meets Expectations with command of the academic content standards, and Exceeds Expectations with going beyond them. DESE clarified that while the standards articulate expectations for all students, they also embed indicators of more advanced performance, and that students at Exceeds Expectations are still operating within the scope of the standards.

Sandra then had the group engage in a side-by-side comparison of all three sets of descriptors. She led a structured reading of corresponding descriptors across the levels, asking panelists to confirm that they represented a clear progression. With only minor adjustments needed, the group reached consensus that the final versions captured progression across the borderline ALDs.

At 11:30 a.m., Sandra introduced the standard-setting methodology. She explained that the process would follow the extended modified Angoff method for standard setting. Sandra explained in general terms the key features of the method – item-centered, involving content-based judgments, and scaffolded and iterative. A slide provided the judgment task for panelists:

For each item on the assessment:

1. **Review the item and consider the KSAs**
 - Read the item and any associated stimuli and/or rubrics
 - Consider the knowledge, skills, and abilities (KSAs) needed to respond to the item.
 - Consider the knowledge, skills, and abilities of the ‘borderline’ student based on the borderline descriptions.
2. **Make an item judgment for each borderline achievement level**
 - Answer the judgment question: How many points would a student with performance at the borderline of the achievement level likely earn, if they answered the question?

Sandra explained the different parts of the judgment question – for example, indicating that the interpretation of “likely” is “two out of three students.”

Sandra next presented a series of hypothetical judgments, two of which were not valid (they violated the rule of having the same or higher judgments with increasing level); panelists successfully identified these non-valid judgments. A panelist asked, for one of the valid judgments, why there is a zero on Meets Expectations. Sandra addressed this effectively, explaining that the person making the judgment believed that two of three borderline Meets Expectations students would not get the item correct.

In response to panelist questions, Sandra explained why cut scores are not set every year, and that at the end of the standard-setting meeting, panelists' recommended cut scores will advance to DESE, who will conduct scaling and a policy review. Key points emphasized before the practice round were: Think of all grade 8 students taking the test; work through the judgment process, focus on the content and skills, and link to the borderline descriptors.

Panelists then engaged in a practice judgment round. After the practice round, Sandra went through the different kinds of Round 1 feedback. The feedback included individual cut scores, table cut scores, overall cut scores, overall statistics, cut score distribution charts, and item judgment distributions. To solidify understanding of the borderline students, Sandra led a discussion of items with high discrepancies in judgments. She invited panelists to provide their rationales for their judgments, and a few did so. They discussed the role of "analyze" in the borderline descriptor for Meets Expectations in relation to the item, as well as the need to be between two sources. In response to a panelist comment that the group needed more borderline statements, Sandra explained that it will not be possible to have borderline statements for all ALDs, and that the important thing is to try to come to a common understanding of the borderline student.

Panelists had questions about the Exceeds Expectations level, surfacing a potential confusion that the Exceeds Expectations cut must always be the top score. DESE and Cognia clarified that it is the student who *just barely* Exceeds Expectations that they need to focus on. Sandra added, "I always want us to come back to the knowledge and skills of the borderline student." As Sandra asked panelists to discuss at their tables, a slide outlined the discussion guidelines:

- Consensus is not a requirement
- The goal is to develop a common understanding of the expectations for students at the threshold of each performance level and how that relates to the specific items.
- Each panelist is an expert. Everyone should have an opportunity to participate in the discussion.

The group then discussed two practice items. Some ideas reinforced in the discussion are the need to focus on all the students in the state, and the role of “two out of three” borderline students. Panelists asked questions of each other on the interpretation of the borderline descriptor that they developed and that was relevant to one of the items. Panelists shared content-referenced rationales for their judgments.

A six-question readiness survey was conducted, asking for understanding of the goals of the standard-setting meeting, the procedures used to set standards, etc. One panelist requested more time to review the ALDs and borderline descriptors. Sandra acknowledged the feedback and posed the readiness question to the group. Except for the one panelist who wanted more time, all agreed to proceed. Sandra reminded them that questions and uncertainties were welcome and that it was normal at this point to be grappling with the nuances of the work.

Day 3: Thursday, August 7, 2025.

Day 3 began with the continuation of Round 1 standard setting. Sandra Sweeney reoriented panelists to the activity, reminding them that it is typical in standard setting not to have borderline achievement level descriptors (ALDs) for every content standard. She encouraged panelists to use the existing borderline ALDs as anchors when making judgments for items without a corresponding descriptor.

At 10:00 a.m., Sandra introduced the feedback and discussion portion for Round 1, noting its purpose was “to gain insight into the interpretation of students with achievement at the borderline which may be leading to discrepant ratings on individual items.” She explained that the discussion would focus on panel-level feedback and then on specific items with notable variance in judgments. Reviewing the distribution of cut points, Sandra highlighted substantial variability in judgments for Partially Meets Expectations.

Ann Marie Gleeson then facilitated a discussion on one such item, with panelists referencing the borderline descriptor and debating the implications of elements such as the use of sources, background knowledge requirements, and whether the task required “describing” versus “identifying.” One panelist noted that the “two out of three” criterion influenced his ratings. Two panelists indicated they changed their minds about their original judgments, having switched between scores during the process as they were “on the fence” about the item discussed. When Sandra asked the whole group if the conversation made them feel more secure about their ability to judge this item, several nodded.

Ann Marie then turned to the Partially Meets Expectations judgments on another item, this one tied to a standard without a borderline ALD. One panelist suggested that the relevant Partially Meets Expectations ALD was too advanced compared to other Partially Meets Expectations *borderline* descriptors, prompting a group discussion on possible revisions of that Partially Meets Expectations ALD. Proposed language changes were noted.

For another item presented for group discussion, debate about the phrase “and/or” in a borderline descriptor led to a vote to clarify language that could negatively affect panelist judgements, with most agreeing to remove “or.”

Following this discussion, Sandra opened the readiness survey for Round 2. Two panelists requested to review items with discrepancies at levels other than Partially Meets Expectations and to discuss a four-point item; Sandra assured them this would be addressed after Round 1 and noted that Round 2 would provide additional feedback on judgment changes.

Panelists then completed Round 2 judgments. After lunch, Sandra presented the goal of the next feedback discussion (identical to the goal of Round 1) and displayed side-by-side cut score recommendations from Rounds 1 and 2. For Meets Expectations and Exceeds Expectations, she noted convergence in judgments as expected. In contrast, Partially Meets Expectations showed divergence.

Sandra presented impact data for the panel's cut recommendations. One panelist expressed that in the Partially Meets Expectations category, there should be fewer students than implied by the group's cut score recommendations. Others made comparisons to statewide proficiency percentages for ELA, math, and science. Some panelists questioned whether they might be underestimating what borderline Partially Meets Expectations students could do. Others struggled with interpreting the impact data, with one asking whether the assumption should be to place more students in Not Meeting Expectations. Sandra indicated she would bring in p-values to help address the question.

Ann Marie led a discussion of an item with split judgments and a high p-value (0.87). She pointed out features such as easily eliminated distractors. Sandra explained that a high p-value might prompt reconsideration of whether a borderline student would likely answer the item correctly. Panelists asked whether familiarity with the content might be a factor making the item easy. DESE weighed in and explained how a very easy item might lead a person who gave a zero

for Partially Meets Expectations for that item to ask, for example, “Is my partially meets borderline student in that 87%?”

In response to panelist questions about the range of p-values on the test, Cognia staff noted that a well-functioning statewide summative test includes a range of p-values.

Some panelists asked whether they would see cut scores for other content areas; DESE clarified they would not. DESE also explained that too few students in Not Meeting Expectations could limit access to support services. Panelists reacted to both high and low p-values, with some celebrating high performance on some items as evidence of effective teaching.

Panelists then completed Round 3 judgments. Afterward, Sandra reviewed feedback and impact data. She asked for reactions. One panelist noted a large gap between the Partially Meets Expectations and Meets Expectations cut scores. Another observed a large drop between rounds in the percentage of students at or above Meets Expectations.

Some panelists felt rushed through feedback rounds – they wished for more time to build a common language of the borderline students. A few said that discussions had positively influenced their thinking, particularly for Partially Meets Expectations. One panelist said that she that when she reconsidered her judgments for Partially Meets Expectations, she increased the votes for the subsequent categories, resulting in an elevated cut score (for her) for Meets Expectations.

Votes were taken on whether the true percentage of students in certain categories is “higher,” “about the same,” or “lower” than shown. A show of hands indicated that 20 of 24 panelists felt the percentage at or above Meets Expectations should be higher than the current impact data showed, while others argued it accurately reflected current student performance and

could serve as a signal for instructional improvement. Other votes were taken about the percentage of students in the other categories.

In closing, Michol Stapel thanked the panelists and outlined next steps, explaining that DESE would synthesize panel recommendations with other evidence to make final decisions. Preliminary results were expected in late August, with official release in September. The day concluded with panelists completing the workshop evaluation survey.

Conclusion

The Massachusetts Department of Elementary and Secondary Education (DESE), with the assistance of Cognia, convened a standard-setting meeting on August 5–7, 2025, to recommend cut scores for the MCAS grade 8 civics assessment. Consistent with DESE’s plan, the meeting included content experts (principally grade 8 civics and social studies teachers) from across the state. Over three days, panelists experienced the test, reviewed achievement level descriptors (ALDs), drafted borderline student descriptors, rendered item judgments over multiple rounds, and received feedback in the form of cut score convergence, impact data, and select item-level p-values.

My observations confirm that DESE and Cognia implemented a process consistent with generally accepted guidelines for standard setting. Facilitators provided clear instructions, addressed questions accurately, and created opportunities for panelists to calibrate their judgments to shared understandings of borderline performance. Panelists engaged in substantive discussions grounded in the standards, the ALDs, and their borderline descriptors.

The Round 3 results for Meets Expectations warrant careful consideration before final cuts are adopted. Post-Round 3 reactions and the results of voting on expected impact data reflect some concern that some panelists increasing their Partially Meets Expectations item-level judgments may have also raised judgments for Meets, thinking it might have been necessary even in cases where this was not required.¹ It may be worthwhile reviewing the data to determine the extent to which this may have happened and its potential impact on the Meets Expectations (and possibly Exceeds Expectations) cut points. DESE may wish to consider the possibility of “unintended” upward shifts in Meets Expectations (and possibly Exceeds Expectations) between Rounds 2 and 3, alongside panelists’ votes on desired impact distributions, when determining final cut scores.

Overall, the process captured the considered judgment of Massachusetts educators. With attention to the noted possibility of upward shifts in Meets Expectations (and possibly Exceeds Expectations) between Rounds 2 and 3, DESE can ensure that the final cuts both honor panelist expertise and align with their intended interpretations of the MCAS civics knowledge and skills needed to qualify for each achievement level.

¹ To be sure, in some cases, changes to Partially Meets Expectations judgments logically imply changes to the Meets Expectations judgments. For example, if a Round 2 judgment was zero for Partially Meets and zero for Meets, then a change from zero to one for Partially Meets implies that Meets must also be changed to (at least) one. On the other hand, suppose that the Round 2 judgment for a multi-point item was zero and one for Partially Meets and Meets, respectively. There, a change from zero to one for Partially Meets does not imply a change from one to (at least) two for Meets.

References

- Davis, L. L. & Moyer, E. L. (2015). PARCC performance level setting technical report. Available from Partnership for Assessment of Readiness for College and Careers (PARCC), Washington, D.C.
- Plake, B. S., Ferdous, A. A., Impara, J. C., & Buckendahl, C. W. (2005). *Setting Multiple Performance Standards Using the Yes/No Method: An Alternative Item Mapping Method*. Meeting of the National Council on Measurement in Education. Montreal, Canada.
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Observation of the MCAS Grade 8 Civics Standard Setting

This report was prepared for the Massachusetts Department of Elementary and Secondary Education (DESE) by Will Lorie, Ph.D., Senior Associate at the National Center for the Improvement of Educational Assessment (Center for Assessment).

APPENDIX L
FEEDBACK DATA SAMPLES

Feedback Data

After each judgment round, the panelists were given a variety of feedback data. The feedback provided was based on each panelist's recommendations for the round, the recommendations of others in the panel, and relevant information from actual student results on the assessment.

Individual Item Judgments

Panelists could view their own item-level judgments, made during the judgment round, for the full list of items. These data were shown digitally within the Cognia Toolkit.

Figure 1. Abbreviated Mockup of Individual Item Judgment View

Position	Asset ID	Description	Point Value	P-Value	Key	Partially Meeting Expectations	Meeting Expectations	Exceeding Expectations
1	HI302439531	Performance Task_Item 1	1	0.43		0	1	1
2	HI302442143	Performance Task_Item 2	1	0.63		1	1	1
3	HI302446675	Performance Task_Item 3	1	0.43		0	0	1
4	HI302448411	Performance Task_Item 4	1	0.22		0	0	0
5	HI302457297	Performance Task_Item 5	1	0.63		1	1	1

Individual Cut Scores

Panelists could view their own individual cut scores for the round, which were based on the judgments they made during that round. These data were shown digitally within the *Round Feedback Data* tab of the Cognia Standard Setting Toolkit.

Figure 2. View of Individual-Level Cut Score Recommendation for the Round

 **Standard Setting Toolkit** [Home](#) [Admin](#) sstksetup@cognia.org [Logout](#)

Item Review

MCAS Civics 8 Step 11 Round 3 - Feedback

[Hide Documents](#) [Standards](#) [ALDs](#) [Borderline ALDs](#) **Round Feedback Data** ☐ I'm done

Individual Cut Scores

Name	Table	Partially Meeting	Meeting	Exceeding
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Table-level Cut Scores

Panelists were able to see the cut scores calculated at the table-level for the round. These data were shown digitally within the Cognia Toolkit.

Figure 3. View of Table-Level Cut Score Recommendation for the Round

The screenshot shows the Cognia Standard Setting Toolkit interface. At the top, the Cognia logo is on the left, and 'Standard Setting Toolkit' is in the center. To the right are links for 'Home', 'Admin', 'sstksetup@cognia.org', and 'Logout'. Below this is a header for 'MCAS Civics 8 Step 11 Round 3 - Feedback'. A navigation bar contains buttons for 'Hide Documents', 'Standards', 'ALDs', 'Borderline ALDs', and 'Round Feedback Data' (which is highlighted in blue). To the right of these buttons is a toggle switch labeled 'I'm done'. Below the navigation bar are two dropdown menus: 'Individual Cut Scores' and 'Table Cut Scores (Median)'. The 'Table Cut Scores (Median)' dropdown is open, showing a table with the following data:

Table	Partially Meeting	Meeting	Exceeding
A	16	36	47
B	12	30	45
C	18	33	45
D	14	32	41
E	12	29	45

Panel-Level Cut Scores

Participants will see the overall cut scores (i.e., the cut scores calculated based on all panelists' judgments) for the round. These data were shown digitally within the Cognia Toolkit.

Figure 4. View of Panel-Level Cut Score Recommendation for the Round

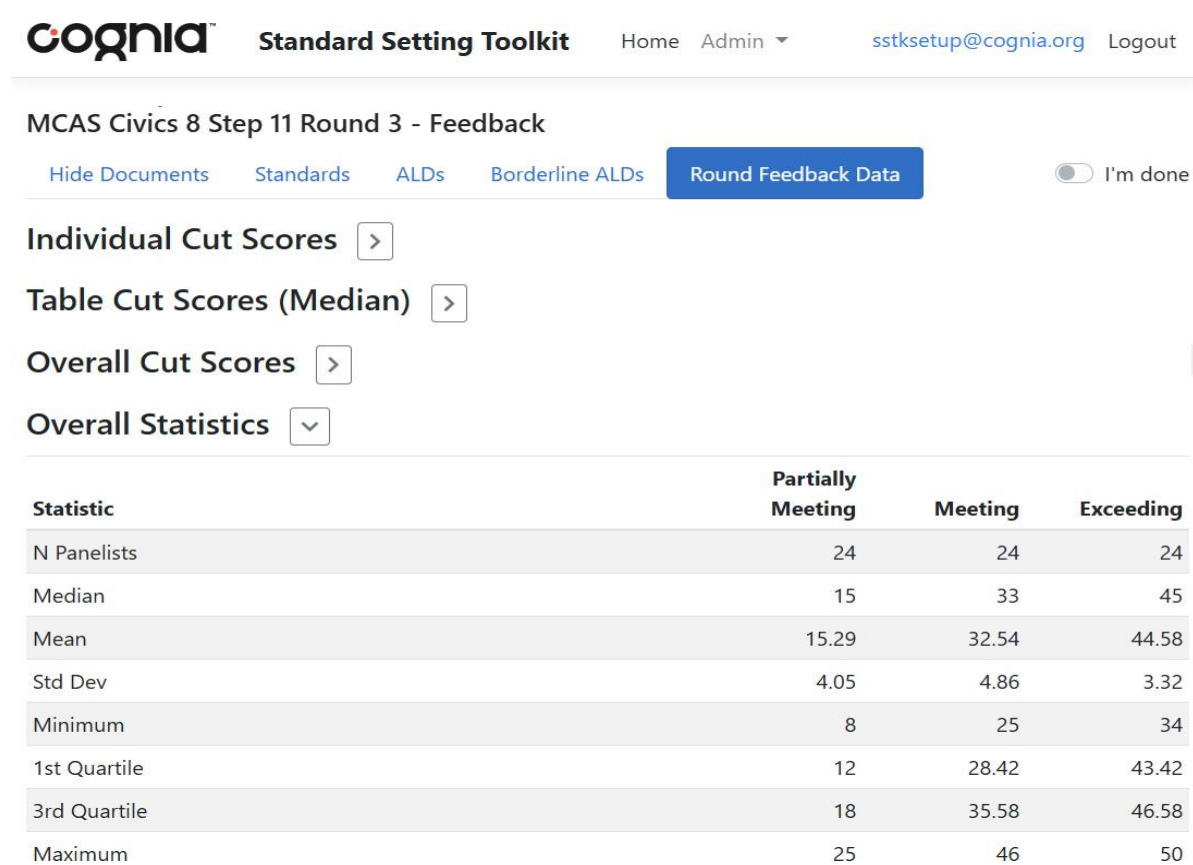
The screenshot shows the Cognia Standard Setting Toolkit interface, similar to Figure 3. The header and navigation bar are identical. The 'Table Cut Scores (Median)' dropdown is open, and the 'Overall Cut Scores' dropdown is also open. The 'Overall Cut Scores' dropdown shows a table with the following data:

	Partially Meeting	Meeting	Exceeding
Panel Cut Scores	15	33	45

Cut Score Summary Statistics

These data provided panelists with the summary statistics associated with the overall (i.e., panel-level) cut scores and included the number of participants, the median cut score of the group, the mean cut score of the group and the standard deviation associated with it, the minimum and maximum cut scores, and the first and third quartiles for each of the three borderline achievement levels. These data were shown digitally within the Cognia Toolkit.

Figure 5. View of Summary Statistics for Panel-Level Cut Score Recommendations for the Round

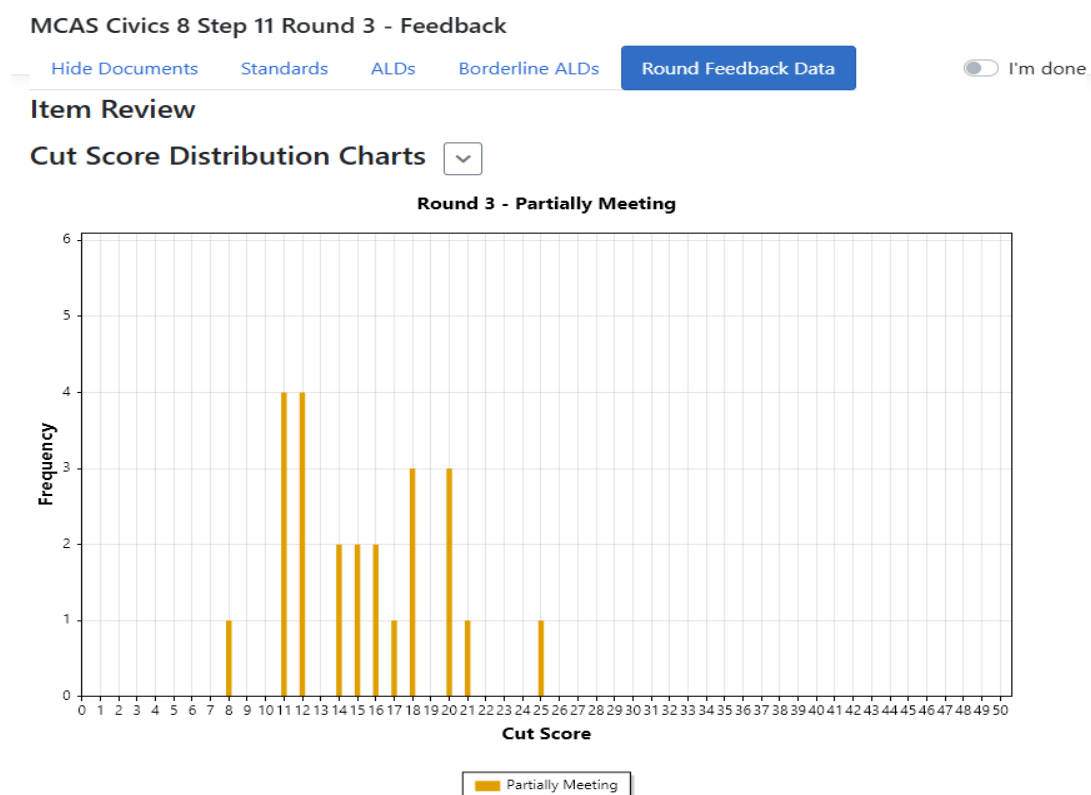


Panelist Cut Score Distributions

These data consisted of bar charts and were available to panelists with the *Round Feedback Data* tab of the Cognia Toolkit. In addition, the charts were projected on screen when relevant to the discussion.

There were four charts in total with the first three charts showing the distribution of panelists' cut score recommendations for the round at each borderline achievement level, and the fourth was a combination chart showing the distribution of cut score recommendations across all three borderline achievement levels.

Figure 6. View of First Cut Score Distribution Chart



Item-level Judgment Agreement

These feedback data comprised 3 tables (one for each borderline level) and provided the panelists with item-level judgment distributions for the panel for each item. Additionally, these were the tables that were used to identify the items with greatest judgment disagreement for the purpose of discussion.

Figure 7. Abbreviated View of Item Judgment Distribution Table for Partially Meeting Expectations

MCAS Civics 8 Step 11 Round 3 - Feedback

Hide Documents Standards ALDs Borderline ALDs Round Feedback Data I'm done

Item Review

Cut Score Distribution Charts

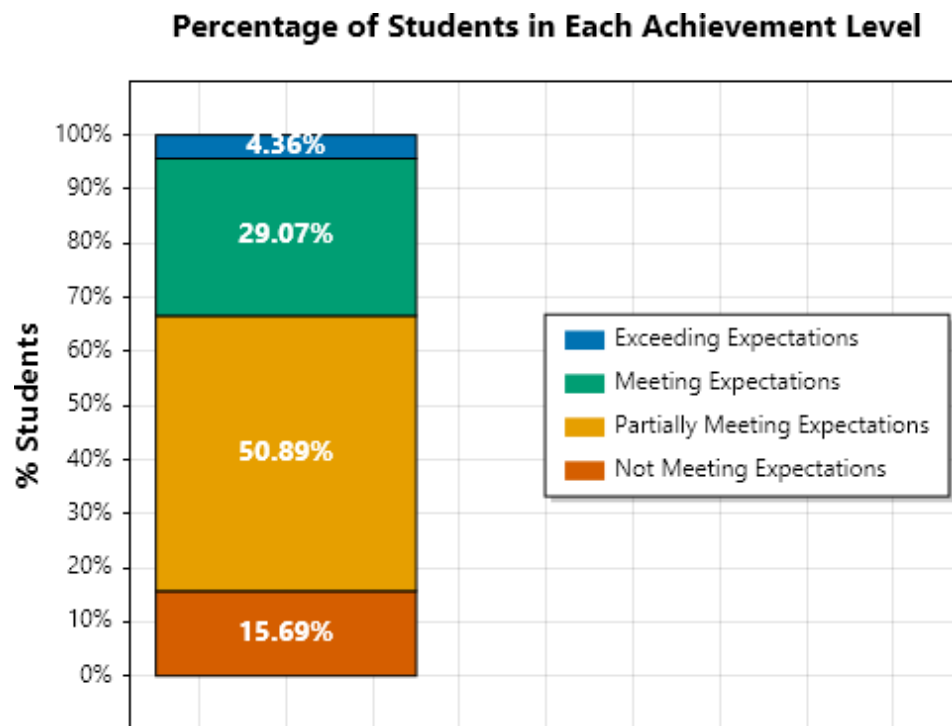
Item Judgment Distribution - Partially Meeting

Item ID	Position	Asset ID	Point Value	0	1	2	3	4	Total	Discrepancy Index
2879	1	HI302439531	1	33.33	66.67				100.00	0.918
2906	2	HI302442143	1	8.33	91.67				100.00	0.414
2907	3	HI302446675	1	45.83	54.17				100.00	0.995
2908	4	HI302448411	1	79.17	20.83				100.00	0.738
2909	5	HI302457297	1	95.83	4.17				100.00	0.250
2910	6	HI302458864	1	91.67	8.33				100.00	0.414
2911	7	HI302459561	1	83.33	16.67				100.00	0.650
2912	8	HI302637592	1	29.17	70.83				100.00	0.871

Impact Data based on Panelist Cut Scores

The impact data for the grade 8 civics test based on the panelists' cut scores were presented after rounds 2 and 3. These data were presented by the facilitator using the screen projector.

Figure 8. Example of Impact Data Chart for a Judgment Round



APPENDIX M
EVALUATION SURVEY RESULTS

Evaluation Survey Results

At the conclusion of the standard setting meeting, panelists completed a final evaluation survey. This appendix presents the results of the evaluation survey for each section of the survey. For each survey section, the overall prompt is provided followed by a table in which the statements are listed alongside the response count for each response option. A total of 24 panelists participated in the meeting and completed the evaluation survey.

Section 1: *Select the option that best reflects your opinion about the level of success of each of the meeting components listed below.*

Statement	Not Successful	Partially Successful	Successful	Very Successful
Meeting pre-work	1	3	14	6
Orientation session training	N/A	3	15	6
Overview of MCAS assessments	N/A	2	15	7
Experiencing the test activity	N/A	1	9	14
Discussion of the scoring of the items on the test	1	4	11	8
Discussion/review of achievement level descriptors (range ALDs)	1	8	11	4
Development of the borderline descriptors (Borderline ALDs)	1	18	3	2
Training in the standard setting method and judgment task	1	8	10	5
Practice judgment round	1	3	14	6
Main judgment rounds	1	11	11	1
Judgment round feedback	1	15	6	2
Discussions after each round	4	14	4	2

Section 2: *How useful were the following activities or information as you made your standard setting judgments.*

Statement	Not Useful	Somewhat Useful	Useful	Very Useful
Achievement Level Descriptors (Range ALDs)	N/A	5	13	6
Borderline Descriptors (Borderline ALDs)	N/A	10	11	3
Panel-level statistics after Rounds 1 and 2	N/A	10	8	6
Panelist agreement data after Rounds 1 and 2	N/A	9	9	6
Impact data after Round 2	1	7	12	4
Discussion after each round	1	10	10	3
Visual presentation of the feedback provided	1	2	8	13

Section 3: *How sufficient were the following elements of the standard setting meeting.*

Statement	Not Sufficient	Somewhat Sufficient	Sufficient	More Than Sufficient
Time spent on development and discussion of borderline descriptions	5	12	5	2
Amount of time training on the standard setting method and process	1	9	9	5
Time spent on the practice round and discussion	1	7	11	5

Statement	Not Sufficient	Somewhat Sufficient	Sufficient	More Than Sufficient
Amount of time to make judgments	2	6	8	8
Computers and technology used during the meeting	N/A	N/A	10	14
Cognia Standard Setting Toolkit for accessing all the information and completing judgments	N/A	2	10	12
Facilities used for the meeting	N/A	1	6	17

Section 4: *In applying the standard setting method, you were asked to recommend three cut scores (separating four achievement levels) for student performance on the MCAS grade 8 civics assessment.*

How confident do you feel that the ALDs for grade 8 civics are reasonable for each student achievement level?

Statement	Not Confident	Somewhat Confident	Confident	Very Confident
Exceeding Expectations	1	3	15	5
Meeting Expectations	2	5	15	2
Partially Meeting Expectations	3	8	11	2

How confident do you feel that the final cut score recommendations for grade 8 civics represent appropriate levels of student performance?

Statement	Not Confident	Somewhat Confident	Confident	Very Confident
Exceeding Expectations	2	14	7	1
Meeting Expectations	10	11	3	2
Partially Meeting Expectations	7	8	7	2

Section 5: *Please review each of the statements below and indicate your level of agreement with the statement.*

Note: Response options for the question below will be on the following Likert-type scale: Strongly Disagree, disagree, undecided, agree, or strongly agree.

Statement	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I understood the goals of the standard setting workshop.	N/A	N/A	3	12	9
I understood the procedures we followed to set standards.	N/A	2	3	12	7
The workshop procedures made sense to me, and I learned how to apply them efficiently.	N/A	2	5	12	5
I am confident about my understanding of this standard setting process.	N/A	N/A	3	13	8
The workshop facilitators explained things clearly to us.	N/A	1	4	11	8
The workshop facilitators encouraged us to raise questions and put our understandings into our own words.	1	N/A	4	7	12
The workshop facilitators provided clear and helpful responses to my questions and other requests for clarification.	1	1	4	10	8
The workshop facilitators took steps to help the standard setting process run smoothly.	N/A	2	2	12	8



Statement	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Sufficient time was allotted for training and practice on the standard setting concepts, tasks, and procedures.	2	3	4	13	2
I understood the progressions in expectations across the achievement levels as defined by the Achievement Level Descriptors.	N/A	N/A	2	14	8
I became sufficiently familiar with the assessment to make item judgements.	N/A	1	N/A	14	9
I had sufficient opportunities during the meeting to express my opinions about student achievement levels.	1	N/A	2	10	11
I had adequate opportunities to interact with my fellow panelists.	1	2	3	10	8
I understood how to use the Cognia Standard Setting Toolkit to record my responses.	N/A	N/A	N/A	10	14
I understood how the cut scores were calculated.	N/A	N/A	3	10	11
I understood how to use the feedback after round 1, in preparation for round 2.	N/A	N/A	5	13	6
I understood what the impact data, presented after rounds 2 and 3, represented.	1	1	2	12	8
I believe my opinions and judgments were treated with respect by my fellow panel members.	N/A	N/A	2	11	11
I believe my opinions and judgments were treated with respect by the facilitators.	1	N/A	4	6	13



APPENDIX N
STANDARD-SETTING RESULTS BY JUDGEMENT ROUNDS

Table 1. Panel Recommended Cut Scores by Judgment Round

Achievement Level	Max Score	Round 1	Round 2	Round 3
Partially Meeting Expectations	50	10	10	15
Meeting Expectations	50	27	28	33
Exceeding Expectations	50	44	44	45

Table 2. Cut Score Summary Statistics by Judgment Round and Achievement Level

Judgment Round	Statistic	Partially Meeting	Meeting	Exceeding
Round 1	Median	10	27	44
Round 1	Mean	11.54	27.96	43.42
Round 1	Standard Deviation	3.43	5.43	4.99
Round 1	Standard Error	0.69	1.11	1.02
Round 1	Minimum	6	19	32
Round 1	1st Quartile	9	25	39.83
Round 1	3rd Quartile	14.17	29.58	47.58
Round 1	Maximum	19	42	50
Round 2	Median	10	28	44
Round 2	Mean	10.38	28.46	43.54
Round 2	Standard Deviation	3.84	4.84	3.90
Round 2	Standard Error	0.78	0.99	0.80
Round 2	Minimum	3	18	32
Round 2	1st Quartile	8	26.42	41.83
Round 2	3rd Quartile	13	31	45.58
Round 2	Maximum	20	40	50
Round 3	Median	15	32.5	45
Round 3	Mean	15.29	32.54	44.58
Round 3	Standard Deviation	4.13	4.97	3.39
Round 3	Standard Error	0.84	1.01	0.69
Round 3	Minimum	8	25	34
Round 3	1st Quartile	12	28.42	43.42
Round 3	3rd Quartile	18	35.58	46.58
Round 3	Maximum	25	46	50



Figure 1. Round 1 - Panelist Cut Score Distribution across Achievement Levels

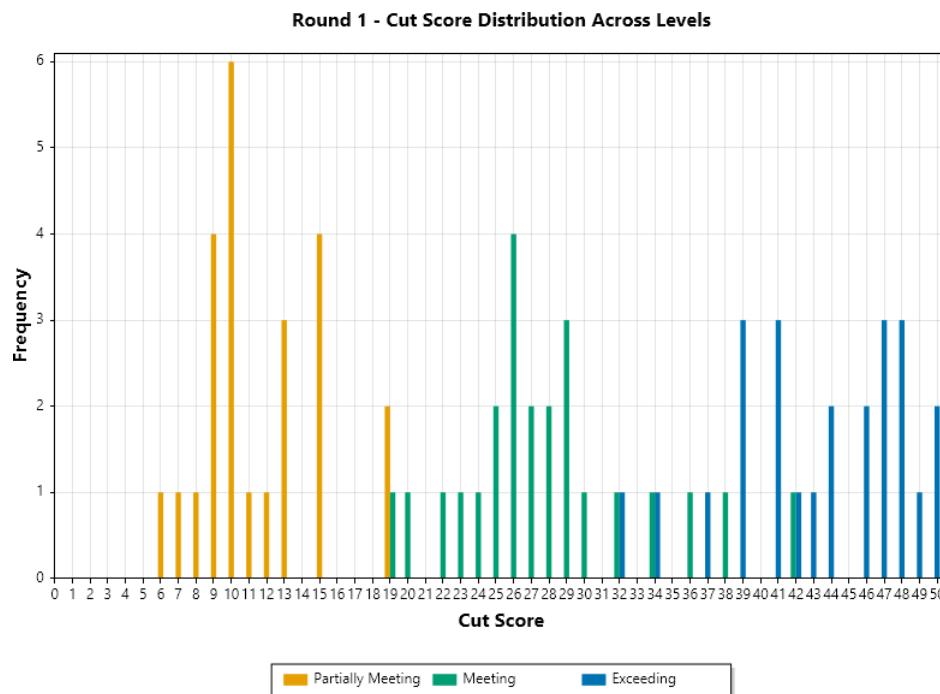


Figure 2. Round 2 - Panelist Cut Score Distribution across Achievement Levels

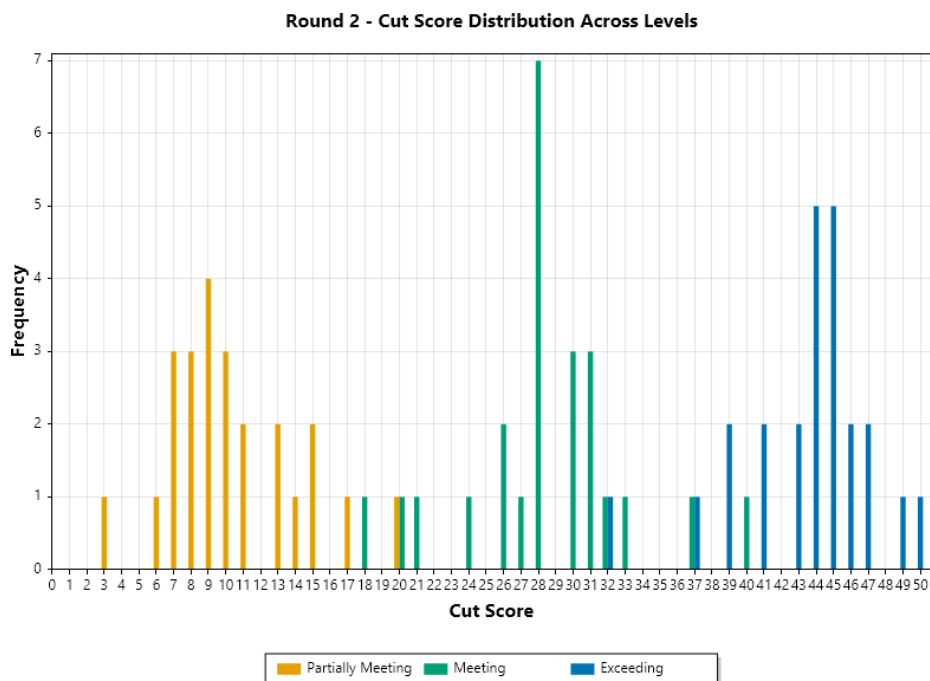
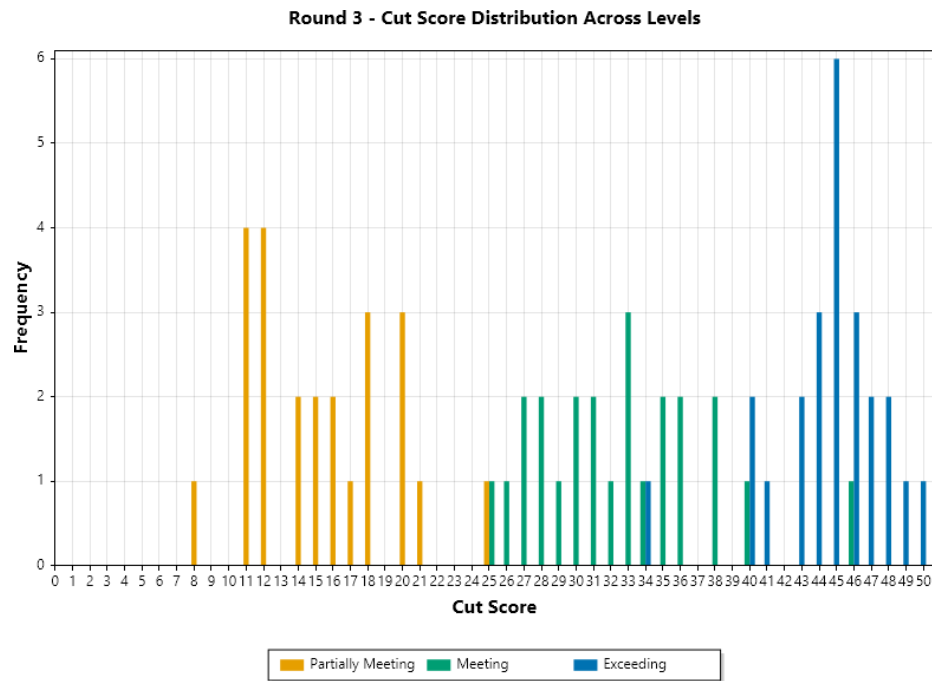


Figure 3. Round 3 - Panelist Cut Score Distribution across Achievement Levels



APPENDIX O
FINAL CUT SCORES

Final Cut Scores

Table 1. Final Cut Scores on IRT Scale

Achievement Level	Raw Cut Scores	Scale Cut Scores	IRT Cut Scores
Partially Meeting Expectations	15	470	-1.1263
Meeting Expectations	31	500	0.2416
Exceeding Expectations	44	530	1.609

Table 2. Scaling Constants

Scaling Constant	Value
Slope	21.9314
Intercept	494.7014



APPENDIX N
ACHIEVEMENT-LEVEL SCORE DISTRIBUTIONS

Table N-1. Achievement-Level Distributions by Grade—ELA¹

Grade	Achievement Level	Number of Students 2025 ²	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
3	Not Meeting Expectations	11,422	17	16	15	14
3	Partially Meeting Expectations	25,801	39	41	41	42
3	Meeting Expectations	24,233	37	36	37	38
3	Exceeding Expectations	3,934	6	6	7	6
4	Not Meeting Expectations	11,302	18	18	16	15
4	Partially Meeting Expectations	26,279	41	45	44	46
4	Meeting Expectations	23,229	36	33	35	35
4	Exceeding Expectations	2,875	5	4	5	4
5	Not Meeting Expectations	9,081	14	15	15	12
5	Partially Meeting Expectations	30,664	47	46	41	47
5	Meeting Expectations	21,806	34	33	39	36
5	Exceeding Expectations	3,434	5	6	5	5
6	Not Meeting Expectations	13,838	21	24	23	21
6	Partially Meeting Expectations	23,856	36	36	35	37
6	Meeting Expectations	21,463	33	29	35	34
6	Exceeding Expectations	6,395	10	11	8	8
7	Not Meeting Expectations	13,833	21	21	18	18
7	Partially Meeting Expectations	24,191	37	42	41	40
7	Meeting Expectations	22,754	35	30	33	36
7	Exceeding Expectations	4,810	7	7	8	5
8	Not Meeting Expectations	13,901	21	23	21	17
8	Partially Meeting Expectations	22,638	34	34	34	40
8	Meeting Expectations	22,347	34	32	34	36
8	Exceeding Expectations	7,307	11	11	10	7
10	Not Meeting Expectations	9,286	14	11	10	7
10	Partially Meeting Expectations	23,444	35	31	31	35
10	Meeting Expectations	27,830	41	43	43	50
10	Exceeding Expectations	6,531	10	14	16	9

¹ This table presents distributions from the standard MCAS ELA tests. Distributions from the MCAS-Alt assessment are displayed in Table O-7.

² These results are based on all test takers who earned an achievement level.

Table N-2. Achievement-Level Distributions by Grade—Mathematics¹

Grade	Achievement Level	Number of Students 2025 ²	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
3	Not Meeting Expectations	12,856	19	19	19	19
3	Partially Meeting Expectations	23,717	37	36	40	40
3	Meeting Expectations	22,421	34	35	34	35
3	Exceeding Expectations	6,449	10	10	8	6
4	Not Meeting Expectations	10,391	16	15	16	16
4	Partially Meeting Expectations	25,781	41	39	38	41
4	Meeting Expectations	22,594	35	38	37	37
4	Exceeding Expectations	5,004	8	8	8	6
5	Not Meeting Expectations	10,120	15	13	12	15
5	Partially Meeting Expectations	28,645	44	47	47	49
5	Meeting Expectations	21,998	34	34	36	33
5	Exceeding Expectations	4,297	7	6	5	4
6	Not Meeting Expectations	10,334	16	16	16	14
6	Partially Meeting Expectations	27,815	43	43	42	44
6	Meeting Expectations	22,865	35	33	35	37
6	Exceeding Expectations	4,529	7	7	7	5
7	Not Meeting Expectations	12,599	19	18	21	18
7	Partially Meeting Expectations	27,125	42	45	40	45
7	Meeting Expectations	20,062	31	30	31	31
7	Exceeding Expectations	5,692	9	8	8	7
8	Not Meeting Expectations	13,259	20	18	19	16
8	Partially Meeting Expectations	27,332	42	43	43	47
8	Meeting Expectations	20,424	31	31	31	30
8	Exceeding Expectations	5,143	8	8	8	7
10	Not Meeting Expectations	9,953	15	11	8	9
10	Partially Meeting Expectations	26,485	40	40	43	41
10	Meeting Expectations	21,884	33	36	40	39
10	Exceeding Expectations	8,043	12	13	10	11

¹ This table presents distributions from the standard MCAS Mathematics tests. Distributions from the MCAS-Alt assessment are displayed in Table O-8.

² These results are based on all test takers who earned an achievement level.

Table N-3. Achievement-Level Distributions by Grade—STE¹

Grade	Achievement Level	Number of Students 2025 ²	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
5	Not Meeting Expectations	12,204	19	19	18	17
5	Partially Meeting Expectations	22,573	35	36	40	40
5	Meeting Expectations	24,078	37	38	34	36
5	Exceeding Expectations	6,014	9	7	8	7
8	Not Meeting Expectations	11,921	18	19	18	17
8	Partially Meeting Expectations	29,044	45	41	41	41
8	Meeting Expectations	20,590	31	34	35	37
8	Exceeding Expectations	4,112	6	6	6	6

¹ This table presents distributions from the standard MCAS STE tests. Distributions from the MCAS-Alt assessment are displayed beginning with Table O-9.

² These results are based on all test takers who earned an achievement level.

Table N-4. Achievement-Level Distributions by Grade—Biology¹

Grade	Achievement Level	Number of Students 2025 ²	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022 ³
HS	Not Meeting Expectations	10,723	21	16	15	15
HS	Partially Meeting Expectations	20,408	40	38	37	40
HS	Meeting Expectations	15,626	30	35	37	34
HS	Exceeding Expectations	4,680	9	10	11	11

¹ This table presents distributions from the standard MCAS Biology tests. Distributions from the MCAS-Alt assessment are displayed in Table O-10.

² These results are based on all test takers who earned an achievement level.

³ 2022 was the first year Biology was administered as a Next-Generation MCAS test.

Table N-6. Achievement-Level Distributions by Grade—Introductory Physics¹

Grade	Achievement Level	Number of Students 2025 ²	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022 ³
HS	Not Meeting Expectations	2,132	16	13	12	10
HS	Partially Meeting Expectations	5,104	40	36	37	41
HS	Meeting Expectations	4,136	31	37	36	37
HS	Exceeding Expectations	1,686	13	14	16	12

¹ This table presents distributions from the standard MCAS Physics tests. Distributions from the MCAS-Alt assessment are displayed in Table O-11.

² These results are based on all test takers who earned an achievement level.

³ 2022 was the first year Introductory Physics was administered as a Next-Generation MCAS test.

Table N-5. Achievement-Level Distributions by Grade—Civics¹

Grade	Achievement Level	Number of Students 2025 ²	Percent in Level 2025 ³	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
8	Not Meeting Expectations	9,841	15	N/A	N/A	N/A
8	Partially Meeting Expectations	29,835	46	N/A	N/A	N/A
8	Meeting Expectations	21,879	33	N/A	N/A	N/A
8	Exceeding Expectations	4,104	6	N/A	N/A	N/A

¹ This table presents distributions from the standard MCAS Civics tests. Distributions from the MCAS-Alt assessment are displayed in Table O-12.

² These results are based on all test takers who earned an achievement level.

³ 2025 was the first year Civics was administered as a Next-Generation MCAS test.

Table N-7. Achievement-Level Distributions by Grade—Alt/ELA

Grade	Achievement Level	Number of Students 2025	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
3	Progressing	926	35	40	41	40
3	Emerging	926	58	48	50	48
3	Awareness	926	3	4	3	4
3	Incomplete	926	4	8	6	8
4	Progressing	868	41	41	48	47
4	Emerging	868	52	47	43	45
4	Awareness	868	3	3	3	3
4	Incomplete	868	4	10	5	5
5	Progressing	802	43	46	49	46
5	Emerging	802	45	45	44	42
5	Awareness	802	3	2	2	2
5	Incomplete	802	8	7	5	9
6	Progressing	868	43	43	49	46
6	Emerging	868	47	45	43	45
6	Awareness	868	3	4	2	2
6	Incomplete	868	7	8	7	8
7	Progressing	766	45	49	46	48
7	Emerging	766	47	39	41	41
7	Awareness	766	2	3	4	3
7	Incomplete	766	5	8	9	8
8	Progressing	711	43	46	52	47
8	Emerging	711	44	41	37	42
8	Awareness	711	3	3	3	3
8	Incomplete	711	10	10	8	8
10	Progressing	761	48	45	48	48
10	Emerging	761	42	41	38	38
10	Awareness	761	2	2	3	2
10	Incomplete	761	8	11	11	12

Table N-8. Achievement-Level Distributions by Grade—Alt/Mathematics

Grade	Achievement Level	Number of Students 2025	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
3	Progressing	924	69	68	69	68
3	Emerging	924	12	12	11	11
3	Awareness	924	3	3	2	2
3	Incomplete	924	16	17	18	19
4	Progressing	866	66	68	69	72
4	Emerging	866	12	10	12	10
4	Awareness	866	3	2	2	1
4	Incomplete	866	18	20	17	16
5	Progressing	805	66	65	75	68
5	Emerging	805	11	11	10	10
5	Awareness	805	2	2	2	2
5	Incomplete	805	21	21	13	20
6	Progressing	869	70	68	70	71
6	Emerging	869	11	13	14	12
6	Awareness	869	4	2	2	2
6	Incomplete	869	16	17	13	15
7	Progressing	764	72	70	68	71
7	Emerging	764	10	8	11	11
7	Awareness	764	2	2	3	2
7	Incomplete	764	16	20	19	16
8	Progressing	703	65	66	68	68
8	Emerging	703	10	9	10	13
8	Awareness	703	4	2	3	3
8	Incomplete	703	22	23	18	17
10	Progressing	756	66	62	63	66
10	Emerging	756	22	23	23	22
10	Awareness	756	2	1	2	2
10	Incomplete	756	10	13	13	11

Table N-9. Achievement-Level Distributions by Grade—Alt/STE

Grade	Achievement Level	Number of Students 2025	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
5	Progressing	792	63	52	70	61
5	Emerging	792	21	28	18	22
5	Awareness	792	6	4	4	4
5	Incomplete	792	10	16	7	12
8	Progressing	692	63	52	67	65
8	Emerging	692	23	28	19	19
8	Awareness	692	4	3	4	5
8	Incomplete	692	10	18	10	12

Table N-10. Achievement-Level Distributions—Alt/Biology

Grade	Achievement Level	Number of Students 2025	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
HS	Progressing	635	69	49	63	60
HS	Emerging	635	19	25	15	19
HS	Awareness	635	4	5	3	5
HS	Incomplete	635	8	21	19	16

Table N-11. Achievement-Level Distributions—Alt/Introductory Physics

Grade	Achievement Level	Number of Students 2025	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
HS	Progressing	104	60	50	70	53
HS	Emerging	104	24	22	19	26
HS	Awareness	104	6	0	6	11
HS	Incomplete	104	11	28	5	10

Table N-12. Achievement-Level Distributions—Alt/Civics

Grade	Achievement Level	Number of Students 2025	Percent in Level 2025	Percent in Level 2024	Percent in Level 2023	Percent in Level 2022
HS	Progressing	692	73	N/A	N/A	N/A
HS	Emerging	692	15	N/A	N/A	N/A
HS	Awareness	692	5	N/A	N/A	N/A
HS	Incomplete	692	7	N/A	N/A	N/A

APPENDIX O
CLASSICAL RELIABILITY AND SEM

Table O-1. Student Subgroup Reliabilities—ELA

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	All Students	63,649	44	23.06	9.20	0.90	2.97
3	English Learner/Former English Learner	14,600	44	18.00	8.65	0.88	2.95
3	Low Income	27,675	44	18.84	8.50	0.88	2.97
3	Black or African American	5,850	44	19.63	8.68	0.88	2.98
3	Asian	4,726	44	26.71	8.68	0.89	2.93
3	Hispanic or Latino	15,994	44	18.50	8.59	0.88	2.95
3	American Indian or Alaska Native	156	44	19.93	8.78	0.89	2.96
3	White	33,498	44	25.17	8.62	0.88	2.95
3	Native Hawaiian or Other Pacific Islander	50	44	18.84	9.33	0.91	2.86
3	Multi-Race, Not Hispanic or Latino	3,253	44	25.05	8.98	0.89	2.97
3	Male	32,223	44	22.57	9.16	0.90	2.95
3	Female	31,304	44	23.58	9.20	0.90	2.98
3	Title I	35,690	44	20.36	8.88	0.89	2.97
3	English Learner	10,866	44	15.21	6.98	0.83	2.91
3	Former English Learner	14,600	44	18.00	8.65	0.88	2.95
3	Students with Disabilities	13,036	44	16.42	7.95	0.87	2.89
3	Plan 504	3,943	44	23.91	8.34	0.87	2.97
4	All Students	62,216	44	26.02	9.33	0.91	2.84
4	English Learner/Former English Learner	13,985	44	20.70	9.31	0.90	2.92
4	Low Income	26,844	44	21.77	9.01	0.90	2.91
4	Black or African American	5,743	44	22.53	9.14	0.90	2.91
4	Asian	4,786	44	30.69	8.42	0.90	2.70
4	Hispanic or Latino	15,453	44	21.38	9.09	0.90	2.91
4	American Indian or Alaska Native	136	44	21.74	9.12	0.90	2.91
4	White	32,840	44	28.01	8.51	0.89	2.79
4	Native Hawaiian or Other Pacific Islander	56	44	24.21	9.94	0.92	2.88
4	Multi-Race, Not Hispanic or Latino	3,084	44	27.75	9.17	0.91	2.80
4	Male	31,494	44	25.62	9.34	0.91	2.84
4	Female	30,574	44	26.44	9.28	0.91	2.84
4	Title I	33,997	44	23.25	9.19	0.90	2.89
4	English Learner	9,262	44	16.52	7.21	0.84	2.91
4	Former English Learner	13,985	44	20.70	9.31	0.90	2.92
4	Students with Disabilities	13,034	44	18.87	8.43	0.88	2.89
4	Plan 504	4,261	44	27.21	8.19	0.88	2.81
5	All Students	63,664	48	26.82	9.83	0.90	3.15

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
5	English Learner/Former English Learner	13,654	48	21.12	9.76	0.90	3.16
5	Low Income	27,242	48	22.10	9.30	0.89	3.15
5	Black or African American	5,849	48	22.68	9.37	0.89	3.16
5	Asian	4,798	48	32.01	9.19	0.89	3.06
5	Hispanic or Latino	15,597	48	21.78	9.49	0.89	3.15
5	American Indian or Alaska Native	128	48	23.44	10.14	0.91	3.12
5	White	34,025	48	28.96	8.92	0.88	3.10
5	Native Hawaiian or Other Pacific Islander	53	48	27.94	9.89	0.90	3.18
5	Multi-Race, Not Hispanic or Latino	3,073	48	28.95	9.67	0.90	3.12
5	Male	32,184	48	26.06	9.96	0.90	3.14
5	Female	31,318	48	27.63	9.62	0.89	3.12
5	Title I	32,655	48	23.73	9.55	0.89	3.16
5	English Learner	6,817	48	14.71	6.68	0.81	2.95
5	Former English Learner	13,654	48	21.12	9.76	0.90	3.16
5	Students with Disabilities	13,373	48	19.25	8.78	0.88	3.06
5	Plan 504	4,723	48	28.08	8.52	0.87	3.10
6	All Students	64,470	50	28.84	10.97	0.91	3.24
6	English Learner/Former English Learner	13,417	50	22.41	10.74	0.90	3.35
6	Low Income	27,828	50	23.97	10.64	0.90	3.31
6	Black or African American	6,266	50	24.96	10.78	0.91	3.28
6	Asian	5,122	50	34.54	10.00	0.91	3.04
6	Hispanic or Latino	15,818	50	23.62	10.72	0.90	3.32
6	American Indian or Alaska Native	146	50	24.30	10.50	0.90	3.24
6	White	33,950	50	30.99	10.05	0.90	3.15
6	Native Hawaiian or Other Pacific Islander	62	50	27.44	10.50	0.91	3.20
6	Multi-Race, Not Hispanic or Latino	2,983	50	30.94	10.91	0.91	3.20
6	Male	32,608	50	27.28	11.06	0.91	3.27
6	Female	31,691	50	30.46	10.62	0.91	3.16
6	Title I	30,092	50	25.60	10.93	0.91	3.29
6	English Learner	5,559	50	14.48	7.31	0.82	3.11
6	Former English Learner	13,417	50	22.41	10.74	0.90	3.35
6	Students with Disabilities	13,267	50	19.51	9.62	0.89	3.22
6	Plan 504	5,257	50	29.97	9.45	0.89	3.16
7	All Students	64,737	50	28.59	10.56	0.91	3.09
7	English Learner/Former English Learner	12,320	50	21.29	10.08	0.90	3.21
7	Low Income	27,899	50	23.71	10.22	0.90	3.18
7	Black or African American	6,318	50	24.89	10.24	0.90	3.17

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
7	Asian	5,061	50	34.42	9.31	0.91	2.83
7	Hispanic or Latino	16,058	50	23.44	10.38	0.91	3.19
7	American Indian or Alaska Native	122	50	25.66	10.64	0.92	3.10
7	White	34,008	50	30.72	9.63	0.90	3.01
7	Native Hawaiian or Other Pacific Islander	40	50	27.85	11.47	0.93	3.06
7	Multi-Race, Not Hispanic or Latino	2,985	50	30.50	10.55	0.92	3.02
7	Male	32,917	50	27.36	10.76	0.92	3.11
7	Female	31,622	50	29.89	10.17	0.91	3.03
7	Title I	29,800	50	25.26	10.48	0.91	3.16
7	English Learner	5,942	50	15.06	7.36	0.83	3.07
7	Former English Learner	12,320	50	21.29	10.08	0.90	3.21
7	Students with Disabilities	13,086	50	20.10	9.36	0.89	3.13
7	Plan 504	5,311	50	29.64	9.23	0.89	3.03
8	All Students	65,482	50	30.14	11.20	0.92	3.25
8	English Learner/Former English Learner	11,000	50	20.69	10.26	0.89	3.37
8	Low Income	27,917	50	24.80	10.87	0.90	3.35
8	Black or African American	6,412	50	25.91	10.73	0.90	3.33
8	Asian	4,929	50	36.72	9.64	0.91	2.88
8	Hispanic or Latino	16,186	50	24.56	11.02	0.91	3.35
8	American Indian or Alaska Native	172	50	26.76	10.88	0.90	3.36
8	White	34,649	50	32.49	10.18	0.90	3.15
8	Native Hawaiian or Other Pacific Islander	70	50	31.03	10.59	0.91	3.13
8	Multi-Race, Not Hispanic or Latino	2,895	50	32.13	11.01	0.92	3.19
8	Male	33,333	50	28.66	11.31	0.92	3.29
8	Female	31,912	50	31.72	10.83	0.92	3.16
8	Title I	29,092	50	26.38	11.03	0.91	3.33
8	English Learner	5,990	50	15.07	7.41	0.82	3.17
8	Former English Learner	11,000	50	20.69	10.26	0.89	3.37
8	Students with Disabilities	12,867	50	20.96	9.84	0.89	3.29
8	Plan 504	5,703	50	31.29	9.75	0.89	3.20
10	All Students	66,070	49	32.45	10.78	0.91	3.17
10	English Learner/Former English Learner	7,887	49	20.20	10.55	0.90	3.38
10	Low Income	27,209	49	27.55	11.17	0.91	3.35
10	Black or African American	6,565	49	28.90	10.80	0.91	3.32
10	Asian	5,086	49	38.56	8.29	0.89	2.71
10	Hispanic or Latino	16,145	49	26.90	11.47	0.91	3.37
10	American Indian or Alaska Native	163	49	29.79	10.80	0.91	3.30

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
10	White	35,076	49	34.71	9.43	0.90	3.03
10	Native Hawaiian or Other Pacific Islander	62	49	32.15	11.04	0.91	3.26
10	Multi-Race, Not Hispanic or Latino	2,871	49	33.99	10.14	0.90	3.13
10	Male	33,729	49	30.98	11.14	0.92	3.22
10	Female	32,012	49	34.01	10.12	0.91	3.07
10	Title I	25,098	49	29.03	10.99	0.91	3.30
10	English Learner	5,530	49	16.07	8.22	0.85	3.23
10	Former English Learner	7,887	49	20.20	10.55	0.90	3.38
10	Students with Disabilities	11,287	49	23.93	10.33	0.90	3.29
10	Plan 504	6,386	49	34.03	9.08	0.89	3.06

Form 1, predominantly given to students with the text-to-speech special access accommodation, is excluded from these results.

Table O-2. Student Subgroup Reliabilities—Mathematics

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	All Students	63,521	48	26.67	12.05	0.94	3.05
3	English Learner/Former English Learner	14,812	48	21.40	11.91	0.93	3.04
3	Low Income	27,704	48	20.97	11.16	0.93	3.05
3	Black or African American	6,132	48	20.80	11.19	0.93	3.04
3	Asian	4,848	48	33.94	10.93	0.93	2.83
3	Hispanic or Latino	15,581	48	20.76	11.28	0.93	3.05
3	American Indian or Alaska Native	159	48	22.61	11.64	0.93	3.06
3	White	33,471	48	29.28	11.12	0.93	3.02
3	Native Hawaiian or Other Pacific Islander	48	48	21.63	11.35	0.93	3.10
3	Multi-Race, Not Hispanic or Latino	3,250	48	28.70	12.00	0.94	3.02
3	Male	32,195	48	27.54	12.18	0.94	3.03
3	Female	31,298	48	25.77	11.85	0.93	3.06
3	Title I	35,636	48	22.91	11.55	0.93	3.07
3	English Learner	11,113	48	18.14	10.34	0.92	3.00
3	Former English Learner	14,812	48	21.40	11.91	0.93	3.04
3	Students with Disabilities	12,630	48	18.40	11.10	0.93	3.01
3	Plan 504	3,909	48	27.51	11.16	0.92	3.06
4	All Students	61,921	54	30.24	13.26	0.94	3.30
4	English Learner/Former English Learner	14,160	54	24.21	13.06	0.94	3.28
4	Low Income	26,752	54	23.96	12.33	0.93	3.27
4	Black or African American	6,015	54	23.41	12.51	0.93	3.29
4	Asian	4,902	54	39.30	11.55	0.93	3.04
4	Hispanic or Latino	14,984	54	23.71	12.30	0.93	3.27

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
4	American Indian or Alaska Native	142	54	24.96	12.72	0.93	3.27
4	White	32,715	54	32.98	12.18	0.93	3.26
4	Native Hawaiian or Other Pacific Islander	56	54	30.21	14.94	0.95	3.22
4	Multi-Race, Not Hispanic or Latino	3,084	54	32.02	13.38	0.94	3.26
4	Male	31,403	54	31.35	13.48	0.94	3.27
4	Female	30,471	54	29.08	12.93	0.93	3.31
4	Title I	33,795	54	26.12	12.75	0.93	3.29
4	English Learner	9,500	54	19.30	10.61	0.91	3.16
4	Former English Learner	14,160	54	24.21	13.06	0.94	3.28
4	Students with Disabilities	12,599	54	20.43	12.00	0.93	3.22
4	Plan 504	4,238	54	31.22	12.08	0.93	3.29
5	All Students	63,345	54	28.43	12.83	0.92	3.53
5	English Learner/Former English Learner	13,775	54	22.76	12.29	0.92	3.45
5	Low Income	27,047	54	22.10	11.28	0.91	3.44
5	Black or African American	6,079	54	21.80	11.37	0.91	3.42
5	Asian	4,940	54	37.85	12.12	0.93	3.29
5	Hispanic or Latino	15,085	54	21.98	11.31	0.91	3.42
5	American Indian or Alaska Native	128	54	23.77	12.24	0.92	3.45
5	White	33,974	54	30.91	11.95	0.91	3.52
5	Native Hawaiian or Other Pacific Islander	54	54	30.59	13.91	0.94	3.47
5	Multi-Race, Not Hispanic or Latino	3,055	54	30.86	13.28	0.93	3.51
5	Male	32,138	54	29.14	13.29	0.93	3.54
5	Female	31,163	54	27.70	12.30	0.92	3.52
5	Title I	32,334	54	24.28	11.90	0.91	3.48
5	English Learner	7,040	54	16.32	8.79	0.87	3.15
5	Former English Learner	13,775	54	22.76	12.29	0.92	3.45
5	Students with Disabilities	13,023	54	18.99	10.73	0.90	3.35
5	Plan 504	4,690	54	29.36	11.64	0.91	3.52
6	All Students	64,572	54	27.81	13.35	0.93	3.58
6	English Learner/Former English Learner	13,732	54	21.03	11.98	0.92	3.46
6	Low Income	27,896	54	21.37	11.60	0.91	3.47
6	Black or African American	6,567	54	20.95	11.77	0.91	3.44
6	Asian	5,256	54	37.75	12.76	0.93	3.34
6	Hispanic or Latino	15,505	54	21.01	11.37	0.91	3.46
6	American Indian or Alaska Native	149	54	22.19	12.01	0.91	3.53
6	White	34,018	54	30.55	12.49	0.92	3.57
6	Native Hawaiian or Other Pacific Islander	63	54	24.78	12.63	0.92	3.60
6	Multi-Race, Not Hispanic or Latino	2,984	54	30.02	13.86	0.93	3.57
6	Male	32,722	54	28.24	13.59	0.93	3.58
6	Female	31,775	54	27.36	13.08	0.93	3.58
6	Title I	30,127	54	23.27	12.34	0.92	3.52

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
6	English Learner	5,937	54	14.33	8.28	0.86	3.10
6	Former English Learner	13,732	54	21.03	11.98	0.92	3.46
6	Students with Disabilities	13,107	54	17.58	10.71	0.90	3.32
6	Plan 504	5,231	54	28.92	11.91	0.91	3.59
7	All Students	64,711	54	24.08	13.10	0.94	3.28
7	English Learner/Former English Learner	12,545	54	16.95	10.56	0.92	3.07
7	Low Income	27,952	54	17.74	10.29	0.91	3.11
7	Black or African American	6,635	54	17.58	10.41	0.91	3.09
7	Asian	5,208	54	35.19	13.82	0.95	3.20
7	Hispanic or Latino	15,685	54	17.62	10.29	0.91	3.11
7	American Indian or Alaska Native	118	54	19.31	11.30	0.92	3.17
7	White	34,035	54	26.42	12.51	0.93	3.29
7	Native Hawaiian or Other Pacific Islander	40	54	20.73	13.51	0.95	3.15
7	Multi-Race, Not Hispanic or Latino	2,966	54	26.64	14.05	0.94	3.32
7	Male	32,964	54	24.97	13.36	0.94	3.27
7	Female	31,671	54	23.13	12.74	0.93	3.28
7	Title I	29,789	54	19.39	11.22	0.92	3.16
7	English Learner	6,180	54	12.69	7.59	0.86	2.85
7	Former English Learner	12,545	54	16.95	10.56	0.92	3.07
7	Students with Disabilities	12,908	54	15.24	9.37	0.90	2.99
7	Plan 504	5,301	54	24.79	12.02	0.93	3.27
8	All Students	65,574	54	27.39	13.65	0.94	3.43
8	English Learner/Former English Learner	11,234	54	18.82	11.18	0.91	3.28
8	Low Income	28,039	54	20.84	11.73	0.92	3.35
8	Black or African American	6,726	54	21.26	11.84	0.92	3.35
8	Asian	5,074	54	39.06	12.93	0.94	3.12
8	Hispanic or Latino	15,850	54	20.83	11.75	0.92	3.34
8	American Indian or Alaska Native	162	54	24.10	12.59	0.92	3.45
8	White	34,789	54	29.71	12.87	0.93	3.42
8	Native Hawaiian or Other Pacific Islander	69	54	27.10	14.99	0.95	3.33
8	Multi-Race, Not Hispanic or Latino	2,880	54	29.48	14.35	0.94	3.42
8	Male	33,472	54	27.07	13.90	0.94	3.43
8	Female	32,014	54	27.70	13.37	0.93	3.43
8	Title I	29,141	54	22.59	12.36	0.92	3.39
8	English Learner	6,238	54	14.75	8.67	0.87	3.07
8	Former English Learner	11,234	54	18.82	11.18	0.91	3.28
8	Students with Disabilities	12,734	54	16.91	10.15	0.90	3.17
8	Plan 504	5,727	54	27.91	12.51	0.92	3.43
10	All Students	64,992	60	30.28	14.74	0.94	3.64
10	English Learner/Former English Learner	7,398	60	19.06	11.41	0.91	3.42
10	Low Income	26,390	60	23.15	12.46	0.92	3.54

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
10	Black or African American	6,840	60	23.42	12.34	0.92	3.57
10	Asian	5,166	60	42.89	14.00	0.94	3.29
10	Hispanic or Latino	15,004	60	22.76	12.24	0.92	3.53
10	American Indian or Alaska Native	154	60	27.31	13.89	0.93	3.58
10	White	34,943	60	32.87	14.01	0.93	3.63
10	Native Hawaiian or Other Pacific Islander	63	60	29.16	14.33	0.94	3.59
10	Multi-Race, Not Hispanic or Latino	2,822	60	31.93	15.39	0.94	3.63
10	Male	33,254	60	30.41	15.11	0.94	3.63
10	Female	31,513	60	30.10	14.33	0.93	3.65
10	Title I	24,212	60	24.72	12.83	0.92	3.57
10	English Learner	5,059	60	15.82	8.82	0.86	3.25
10	Former English Learner	7,398	60	19.06	11.41	0.91	3.42
10	Students with Disabilities	11,009	60	18.94	10.73	0.90	3.37
10	Plan 504	6,339	60	31.13	13.59	0.93	3.64

Form 1, predominantly given to students with the text-to-speech special access accommodation, is excluded from these results.

Table O-3. Student Subgroup Reliabilities—STE

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
5	All Students	63,250	54	30.02	11.49	0.92	3.23
5	English Learner/Former English Learner	13,745	54	23.34	11.24	0.92	3.24
5	Low Income	26,985	54	24.32	10.87	0.91	3.25
5	Black or African American	6,068	54	23.69	10.93	0.91	3.25
5	Asian	4,939	54	35.19	10.75	0.91	3.15
5	Hispanic or Latino	15,038	54	24.08	10.97	0.91	3.25
5	American Indian or Alaska Native	127	54	25.20	11.51	0.92	3.26
5	White	33,944	54	32.83	10.35	0.90	3.20
5	Native Hawaiian or Other Pacific Islander	55	54	30.38	12.15	0.93	3.18
5	Multi-Race, Not Hispanic or Latino	3,051	54	32.41	11.19	0.92	3.19
5	Male	32,094	54	30.49	11.63	0.92	3.21
5	Female	31,113	54	29.53	11.32	0.92	3.25
5	Title I	32,257	54	26.29	11.21	0.92	3.25
5	English Learner	7,009	54	16.88	8.24	0.86	3.10
5	Former English Learner	13,745	54	23.34	11.24	0.92	3.24
5	Students with Disabilities	13,028	54	22.21	10.93	0.91	3.19
5	Plan 504	4,693	54	32.26	10.18	0.90	3.21
8	All Students	65,045	54	27.85	11.26	0.92	3.13
8	English Learner/Former English Learner	11,098	54	19.10	9.35	0.89	3.10
8	Low Income	27,681	54	22.22	10.17	0.91	3.13

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	Black or African American	6,679	54	22.01	10.07	0.90	3.14
8	Asian	5,065	54	34.77	10.49	0.92	3.05
8	Hispanic or Latino	15,597	54	22.02	10.17	0.91	3.13
8	American Indian or Alaska Native	163	54	24.46	10.34	0.91	3.13
8	White	34,577	54	30.44	10.38	0.91	3.11
8	Native Hawaiian or Other Pacific Islander	71	54	27.85	11.53	0.93	3.15
8	Multi-Race, Not Hispanic or Latino	2,867	54	29.92	11.60	0.93	3.10
8	Male	33,225	54	27.90	11.57	0.93	3.10
8	Female	31,736	54	27.78	10.92	0.92	3.15
8	Title I	28,760	54	23.52	10.41	0.91	3.14
8	English Learner	6,136	54	15.06	7.38	0.84	2.98
8	Former English Learner	11,098	54	19.10	9.35	0.89	3.10
8	Students with Disabilities	12,582	54	19.65	9.97	0.91	3.07
8	Plan 504	5,687	54	29.44	10.31	0.91	3.13

Form 1, predominantly given to students with the text-to-speech special access accommodation, is excluded from these results.

Table O-4. Student Subgroup Reliabilities—Biology

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
10	All Students	51,050	58	29.51	13.21	0.93	3.54
10	English Learner/Former English Learner	6,915	58	18.80	10.42	0.90	3.35
10	Low Income	21,348	58	23.41	11.69	0.91	3.51
10	Black or African American	5,463	58	23.24	11.76	0.91	3.51
10	Asian	3,879	58	38.50	13.07	0.94	3.33
10	Hispanic or Latino	12,034	58	23.30	11.70	0.91	3.51
10	American Indian or Alaska Native	122	58	25.50	12.09	0.92	3.51
10	White	27,309	58	32.13	12.43	0.92	3.50
10	Native Hawaiian or Other Pacific Islander	54	58	29.19	14.52	0.94	3.52
10	Multi-Race, Not Hispanic or Latino	2,184	58	30.97	13.52	0.93	3.51
10	Male	25,893	58	29.06	13.52	0.93	3.53
10	Female	25,012	58	29.93	12.85	0.92	3.54
10	Title I	18,891	58	25.14	11.97	0.91	3.54
10	English Learner	4,753	58	15.67	8.29	0.85	3.17
10	Former English Learner	6,915	58	18.80	10.42	0.90	3.35
10	Students with Disabilities	9,391	58	20.53	10.98	0.90	3.41
10	Plan 504	4,710	58	31.22	12.19	0.92	3.52

Form 1, predominantly given to students with the text-to-speech special access accommodation, is excluded from these results.

Table O-5. Student Subgroup Reliabilities—Introductory Physics

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
10	All Students	12,949	60	32.40	13.52	0.93	3.50
10	English Learner/Formal English Learner	1,641	60	22.51	11.85	0.92	3.38
10	Low Income	4,582	60	24.46	11.43	0.91	3.40
10	Black or African American	1,678	60	23.73	11.01	0.91	3.38
10	Asian	1,159	60	42.72	12.22	0.93	3.31
10	Hispanic or Latino	2,589	60	25.66	11.86	0.92	3.42
10	American Indian or Alaska Native	37	60	26.38	12.69	0.93	3.36
10	White	6,799	60	34.98	12.51	0.92	3.46
10	Native Hawaiian or Other Pacific Islander	8	60	37.00	14.99	0.95	3.25
10	Multi-Race, Not Hispanic or Latino	675	60	36.44	13.92	0.94	3.47
10	Male	6,670	60	32.57	13.83	0.94	3.48
10	Female	6,223	60	32.14	13.17	0.93	3.52
10	Title I	4,470	60	25.77	11.96	0.92	3.42
10	English Learner	1,036	60	18.80	9.62	0.89	3.24
10	Former English Learner	1,641	60	22.51	11.85	0.92	3.38
10	Students with Disabilities	2,096	60	21.98	11.38	0.92	3.30
10	Plan 504	1,224	60	32.68	11.96	0.92	3.45

Form 1, predominantly given to students with the text-to-speech special access accommodation, is excluded from these results.

Table O-6. Student Subgroup Reliabilities—Civics

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	All Students	65,047	50	27.07	10.70	0.92	3.07
8	English Learner/Formal English Learner	11,108	50	19.18	8.58	0.87	3.07
8	Low Income	27,687	50	21.96	9.52	0.89	3.09
8	Black or African American	6,663	50	22.56	9.67	0.90	3.10
8	Asian	5,060	50	33.28	10.19	0.92	2.93
8	Hispanic or Latino	15,633	50	21.89	9.54	0.89	3.09
8	American Indian or Alaska Native	160	50	24.01	9.66	0.90	3.08
8	White	34,570	50	29.25	10.17	0.91	3.05
8	Native Hawaiian or Other Pacific Islander	68	50	27.63	10.78	0.92	3.03
8	Multi-Race, Not Hispanic or Latino	2,871	50	28.86	11.04	0.92	3.04

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	Male	33,218	50	26.58	10.99	0.92	3.05
8	Female	31,746	50	27.58	10.37	0.91	3.08
8	Title I	28,828	50	23.20	9.85	0.90	3.10
8	English Learner	6,142	50	15.46	6.54	0.79	2.99
8	Former English Learner	11,108	50	19.18	8.58	0.87	3.07
8	Students with Disabilities	12,583	50	19.57	9.16	0.89	3.06
8	Plan 504	5,672	50	28.14	10.08	0.91	3.07

Table O-7. Student Subgroup Reliabilities—Alt/ELA

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	All Students	886	39	27.91	3.55	0.62	2.2
3	English Learner/Former English Learner	215	39	28.08	3.58	0.65	2.13
3	Low Income	569	39	28.09	3.41	0.63	2.08
3	Black or African American	157	39	28.18	3.28	0.61	2.05
3	Asian	80	39	27.53	3.54	0.61	2.23
3	Hispanic or Latino	278	39	28.1	3.72	0.65	2.21
3	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
3	White	327	39	27.85	3.48	0.61	2.18
3	Native Hawaiian or Other Pacific Islander	2	N/A	N/A	N/A	N/A	N/A
3	Multi-Race, Not Hispanic or Latino	41	39	26.93	3.96	0.52	2.74
3	Male	613	39	28.06	3.48	0.60	2.21
3	Female	273	39	27.57	3.71	0.66	2.16
3	Title I	524	39	28.15	3.44	0.63	2.1
3	English Learner	179	39	28.21	3.58	0.69	2.01
3	Former English Learner	36	39	27.42	3.56	0.44	2.67
3	Students with Disabilities	881	39	27.91	3.56	0.62	2.20
3	Plan 504	4	N/A	N/A	N/A	N/A	N/A
4	All Students	831	39	28.38	3.27	0.60	2.06
4	English Learner/Former English Learner	225	39	28.47	3.28	0.62	2.02
4	Low Income	569	39	28.36	3.28	0.62	2.02
4	Black or African American	171	39	28.41	3.54	0.66	2.08
4	Asian	80	39	28.92	2.77	0.53	1.90
4	Hispanic or Latino	250	39	28.46	3.21	0.64	1.92
4	American Indian or Alaska Native	2	N/A	N/A	N/A	N/A	N/A
4	White	292	39	28.14	3.36	0.54	2.29
4	Native Hawaiian or Other Pacific Islander	0	N/A	N/A	N/A	N/A	N/A

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
4	Multi-Race, Not Hispanic or Latino	36	39	28.39	2.50	0.64	1.49
4	Male	589	39	28.25	3.36	0.60	2.13
4	Female	242	39	28.69	3.03	0.62	1.87
4	Title I	509	39	28.59	3.25	0.61	2.03
4	English Learner	198	39	28.50	3.23	0.62	1.98
4	Former English Learner	27	39	28.26	3.68	0.60	2.33
4	Students with Disabilities	828	39	28.38	3.27	0.60	2.06
4	Plan 504	4	N/A	N/A	N/A	N/A	N/A
5	All Students	736	39	28.29	3.49	0.65	2.07
5	English Learner/Former English Learner	156	39	28.11	3.92	0.70	2.13
5	Low Income	501	39	28.30	3.54	0.67	2.02
5	Black or African American	142	39	28.81	3.15	0.57	2.07
5	Asian	69	39	27.74	3.46	0.69	1.94
5	Hispanic or Latino	226	39	28.56	3.51	0.69	1.96
5	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
5	White	273	39	28.02	3.46	0.62	2.14
5	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
5	Multi-Race, Not Hispanic or Latino	24	39	27.17	5.10	0.65	3.02
5	Male	522	39	28.16	3.49	0.64	2.11
5	Female	214	39	28.61	3.48	0.67	1.99
5	Title I	408	39	28.47	3.54	0.65	2.11
5	English Learner	135	39	27.89	4.06	0.72	2.17
5	Former English Learner	21	39	29.52	2.52	0.49	1.80
5	Students with Disabilities	735	39	28.29	3.5	0.65	2.07
5	Plan 504	4	N/A	N/A	N/A	N/A	N/A
6	All Students	807	39	28.39	3.39	0.63	2.07
6	English Learner/Former English Learner	175	39	28.73	3.41	0.61	2.14
6	Low Income	532	39	28.30	3.49	0.65	2.06
6	Black or African American	107	39	28.53	3.53	0.66	2.06
6	Asian	67	39	28.97	3.20	0.70	1.76
6	Hispanic or Latino	264	39	28.51	3.40	0.62	2.09
6	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
6	White	323	39	28.15	3.31	0.57	2.16
6	Native Hawaiian or Other Pacific Islander	0	N/A	N/A	N/A	N/A	N/A
6	Multi-Race, Not Hispanic or Latino	45	39	28.09	3.81	0.74	1.93
6	Male	544	39	28.40	3.34	0.6	2.11
6	Female	263	39	28.37	3.50	0.68	1.98

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
6	Title I	398	39	28.51	3.49	0.64	2.08
6	English Learner	144	39	28.57	3.49	0.62	2.15
6	Former English Learner	31	39	29.45	2.98	0.42	2.26
6	Students with Disabilities	806	39	28.39	3.39	0.63	2.07
6	Plan 504	2	N/A	N/A	N/A	N/A	N/A
7	All Students	724	39	28.42	3.31	0.61	2.07
7	English Learner/Former English Learner	131	39	28.46	3.51	0.67	2.03
7	Low Income	485	39	28.41	3.33	0.62	2.04
7	Black or African American	129	39	28.77	2.99	0.56	1.99
7	Asian	44	39	28.14	3.42	0.49	2.44
7	Hispanic or Latino	206	39	28.56	3.41	0.63	2.07
7	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
7	White	306	39	28.36	3.18	0.61	1.98
7	Native Hawaiian or Other Pacific Islander	0	N/A	N/A	N/A	N/A	N/A
7	Multi-Race, Not Hispanic or Latino	38	39	27.29	4.42	0.65	2.62
7	Male	493	39	28.37	3.34	0.61	2.09
7	Female	231	39	28.53	3.25	0.61	2.03
7	Title I	333	39	28.53	3.46	0.66	2.02
7	English Learner	112	39	28.56	3.29	0.65	1.95
7	Former English Learner	19	39	27.89	4.62	0.76	2.24
7	Students with Disabilities	723	39	28.42	3.31	0.61	2.07
7	Plan 504	4	N/A	N/A	N/A	N/A	N/A
8	All Students	641	39	28.31	3.45	0.62	2.13
8	English Learner/Former English Learner	116	39	28.64	3.24	0.58	2.11
8	Low Income	428	39	28.08	3.65	0.64	2.20
8	Black or African American	99	39	28.86	3.15	0.60	1.99
8	Asian	47	39	28.51	3.39	0.74	1.73
8	Hispanic or Latino	179	39	28.26	3.60	0.57	2.35
8	American Indian or Alaska Native	4	N/A	N/A	N/A	N/A	N/A
8	White	291	39	28.18	3.43	0.62	2.11
8	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
8	Multi-Race, Not Hispanic or Latino	20	39	27.65	3.94	0.61	2.45
8	Male	407	39	28.41	3.37	0.65	2.00
8	Female	234	39	28.14	3.58	0.55	2.39
8	Title I	284	39	28.76	3.42	0.53	2.33
8	English Learner	100	39	28.54	3.20	0.54	2.17
8	Former English Learner	16	39	29.31	3.52	0.73	1.82

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	Students with Disabilities	640	39	28.31	3.45	0.62	2.13
8	Plan 504	2	N/A	N/A	N/A	N/A	N/A
HS	All Students	678	39	28.62	3.25	0.62	2.01
HS	English Learner/Former English Learner	126	39	28.85	3.54	0.64	2.12
HS	Low Income	443	39	28.76	3.29	0.63	2.01
HS	Black or African American	122	39	28.20	3.65	0.71	1.97
HS	Asian	53	39	28.92	3.04	0.57	1.98
HS	Hispanic or Latino	189	39	28.85	3.45	0.63	2.09
HS	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
HS	White	279	39	28.68	2.89	0.54	1.95
HS	Native Hawaiian or Other Pacific Islander	2	N/A	N/A	N/A	N/A	N/A
HS	Multi-Race, Not Hispanic or Latino	32	39	28.22	3.63	0.65	2.16
HS	Male	447	39	28.58	3.2	0.59	2.05
HS	Female	229	39	28.67	3.35	0.66	1.95
HS	Title I	243	39	29.11	3.31	0.59	2.12
HS	English Learner	99	39	28.77	3.67	0.66	2.15
HS	Former English Learner	27	39	29.15	3.10	0.56	2.05
HS	Students with Disabilities	673	39	28.62	3.26	0.62	2.01
HS	Plan 504	1	N/A	N/A	N/A	N/A	N/A

No reliability or SEM values are reported for some subgroups, because there were some items for which only one student in the subgroup received a score.

Table O-8. Student Subgroup Reliabilities—Alt/Mathematics

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	All Students	773	26	20.88	1.60	0.57	1.05
3	English Learner/Former English Learner	189	26	20.88	1.61	0.62	0.99
3	Low Income	504	26	20.85	1.66	0.59	1.07
3	Black or African American	139	26	20.96	1.63	0.62	1.01
3	Asian	66	26	20.59	1.65	0.39	1.28
3	Hispanic or Latino	250	26	20.97	1.52	0.6	0.97
3	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
3	White	282	26	20.88	1.63	0.61	1.01
3	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
3	Multi-Race, Not Hispanic or Latino	34	26	20.50	1.78	0.30	1.49
3	Male	532	26	20.94	1.58	0.56	1.05
3	Female	241	26	20.76	1.64	0.60	1.04
3	Title I	464	26	20.97	1.52	0.58	0.98

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	English Learner	161	26	20.86	1.64	0.65	0.97
3	Former English Learner	28	26	20.96	1.43	0.42	1.09
3	Students with Disabilities	768	26	20.89	1.59	0.58	1.04
3	Plan 504	4	N/A	N/A	N/A	N/A	N/A
4	All Students	710	26	20.92	1.64	0.58	1.06
4	English Learner/Former English Learner	193	26	20.99	1.67	0.62	1.03
4	Low Income	488	26	20.90	1.71	0.61	1.07
4	Black or African American	145	26	20.96	1.81	0.67	1.04
4	Asian	71	26	21.17	1.30	0.50	0.92
4	Hispanic or Latino	212	26	21.01	1.70	0.64	1.01
4	American Indian or Alaska Native	2	N/A	N/A	N/A	N/A	N/A
4	White	249	26	20.77	1.58	0.49	1.13
4	Native Hawaiian or Other Pacific Islander	0	N/A	N/A	N/A	N/A	N/A
4	Multi-Race, Not Hispanic or Latino	31	26	20.74	1.57	0.55	1.06
4	Male	500	26	20.87	1.70	0.58	1.10
4	Female	210	26	21.06	1.50	0.61	0.94
4	Title I	442	26	21.12	1.60	0.65	0.94
4	English Learner	167	26	21.07	1.59	0.63	0.97
4	Former English Learner	26	26	20.50	2.12	0.63	1.28
4	Students with Disabilities	709	26	20.93	1.64	0.58	1.06
4	Plan 504	4	N/A	N/A	N/A	N/A	N/A
5	All Students	636	26	20.94	1.62	0.62	1.00
5	English Learner/Former English Learner	135	26	20.85	1.77	0.68	1.00
5	Low Income	433	26	20.91	1.67	0.64	1.01
5	Black or African American	120	26	21.21	1.42	0.57	0.93
5	Asian	57	26	20.77	1.96	0.67	1.12
5	Hispanic or Latino	197	26	20.90	1.58	0.59	1.01
5	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
5	White	238	26	20.82	1.68	0.63	1.02
5	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
5	Multi-Race, Not Hispanic or Latino	22	26	21.41	1.10	0.49	0.78
5	Male	434	26	20.92	1.60	0.59	1.03
5	Female	202	26	20.97	1.66	0.67	0.95
5	Title I	352	26	21.13	1.48	0.63	0.89
5	English Learner	118	26	20.80	1.83	0.69	1.02
5	Former English Learner	17	26	21.18	1.33	0.58	0.86
5	Students with Disabilities	635	26	20.94	1.62	0.62	1.00
5	Plan 504	2	N/A	N/A	N/A	N/A	N/A
6	All Students	734	26	20.93	1.64	0.60	1.04
6	English Learner/Former English Learner	159	26	21.04	1.47	0.49	1.06
6	Low Income	485	26	20.90	1.72	0.64	1.03

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
6	Black or African American	103	26	20.90	1.71	0.65	1.02
6	Asian	56	26	21.25	1.49	0.51	1.04
6	Hispanic or Latino	233	26	21.10	1.45	0.55	0.97
6	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
6	White	297	26	20.81	1.67	0.57	1.09
6	Native Hawaiian or Other Pacific Islander	0	N/A	N/A	N/A	N/A	N/A
6	Multi-Race, Not Hispanic or Latino	44	26	20.43	2.25	0.77	1.08
6	Male	497	26	20.89	1.66	0.58	1.08
6	Female	237	26	21.00	1.62	0.65	0.96
6	Title I	356	26	21.17	1.50	0.63	0.92
6	English Learner	134	26	21.02	1.48	0.46	1.09
6	Former English Learner	25	26	21.12	1.48	0.63	0.90
6	Students with Disabilities	733	26	20.93	1.64	0.60	1.04
6	Plan 504	2	N/A	N/A	N/A	N/A	N/A
7	All Students	639	26	21.07	1.49	0.62	0.92
7	English Learner/Former English Learner	117	26	21.11	1.45	0.58	0.95
7	Low Income	427	26	21.03	1.56	0.64	0.94
7	Black or African American	117	26	21.35	1.19	0.54	0.81
7	Asian	42	26	21.26	1.33	0.57	0.87
7	Hispanic or Latino	184	26	21.13	1.52	0.63	0.92
7	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
7	White	265	26	20.88	1.56	0.61	0.98
7	Native Hawaiian or Other Pacific Islander	0	N/A	N/A	N/A	N/A	N/A
7	Multi-Race, Not Hispanic or Latino	30	26	21.03	1.73	0.70	0.95
7	Male	438	26	21.13	1.47	0.64	0.89
7	Female	201	26	20.96	1.52	0.58	0.99
7	Title I	284	26	21.25	1.49	0.71	0.81
7	English Learner	101	26	21.06	1.51	0.60	0.95
7	Former English Learner	16	26	21.38	1.09	0.25	0.95
7	Students with Disabilities	638	26	21.07	1.49	0.62	0.92
7	Plan 504	3	N/A	N/A	N/A	N/A	N/A
8	All Students	551	26	20.89	1.64	0.59	1.06
8	English Learner/Former English Learner	93	26	21.07	1.64	0.61	1.03
8	Low Income	357	26	20.83	1.69	0.59	1.08
8	Black or African American	85	26	20.89	1.77	0.61	1.10
8	Asian	45	26	20.67	1.82	0.65	1.08
8	Hispanic or Latino	148	26	21.15	1.54	0.61	0.95
8	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
8	White	253	26	20.77	1.65	0.55	1.10
8	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
8	Multi-Race, Not Hispanic or Latino	18	26	20.94	1.26	0.43	0.95

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	Male	353	26	20.82	1.73	0.60	1.10
8	Female	198	26	21.01	1.48	0.56	0.98
8	Title I	235	26	21.32	1.39	0.66	0.81
8	English Learner	79	26	21.04	1.69	0.60	1.07
8	Former English Learner	14	26	21.21	1.37	0.67	0.79
8	Students with Disabilities	550	26	20.89	1.64	0.59	1.06
8	Plan 504	2	N/A	N/A	N/A	N/A	N/A
HS	All Students	661	39	30.30	3.63	0.83	1.49
HS	English Learner/Former English Learner	122	39	30.23	3.81	0.89	1.24
HS	Low Income	430	39	30.26	3.72	0.85	1.45
HS	Black or African American	120	39	29.67	4.42	0.87	1.61
HS	Asian	49	39	30.69	3.10	0.84	1.25
HS	Hispanic or Latino	189	39	30.11	3.70	0.87	1.32
HS	American Indian or Alaska Native	1	N/A	N/A	N/A	N/A	N/A
HS	White	270	39	30.59	3.26	0.76	1.60
HS	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
HS	Multi-Race, Not Hispanic or Latino	31	39	30.74	3.5	N/A	N/A
HS	Male	436	39	30.29	3.62	0.81	1.57
HS	Female	223	39	30.35	3.65	0.86	1.38
HS	Title I	243	39	30.32	4.00	0.86	1.48
HS	English Learner	97	39	29.90	4.00	0.89	1.32
HS	Former English Learner	25	39	31.52	2.62	N/A	N/A
HS	Students with Disabilities	656	39	30.31	3.61	0.83	1.48
HS	Plan 504	1	N/A	N/A	N/A	N/A	N/A

No reliability or SEM values are reported for some subgroups, because in some cases there were some items for which only one student in the subgroup received a score, and in other cases, the sample size of the subgroup or the number of items is too small to produce meaningful calculations.

Table O-9. Student Subgroup Reliabilities—Alt/STE

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
5	All Students	715	39	29.78	3.46	0.75	1.73
5	English Learner/Former English Learner	152	39	29.64	3.90	0.69	2.16
5	Low Income	482	39	29.83	3.51	0.79	1.62
5	Black or African American	130	39	30.53	3.22	0.79	1.49
5	Asian	67	39	29.42	3.99	0.67	2.29
5	Hispanic or Latino	223	39	29.86	3.44	0.84	1.37
5	American Indian or Alaska Native	2	N/A	N/A	N/A	N/A	N/A
5	White	269	39	29.42	3.40	0.71	1.84
5	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
5	Multi-Race, Not Hispanic or Latino	23	39	29.87	3.73	N/A	N/A
5	Male	501	39	29.71	3.53	0.76	1.73
5	Female	214	39	29.94	3.30	0.70	1.8

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
5	Title I	394	39	30.05	3.49	0.70	1.91
5	English Learner	132	39	29.50	4.00	0.70	2.18
5	Former English Learner	20	39	30.50	3.10	N/A	N/A
5	Students with Disabilities	714	39	29.78	3.46	0.75	1.73
5	Plan 504	4	N/A	N/A	N/A	N/A	N/A
8	All Students	624	39	29.77	3.49	0.72	1.84
8	English Learner/Former English Learner	119	39	29.88	3.63	0.80	1.62
8	Low Income	423	39	29.75	3.63	0.76	1.79
8	Black or African American	101	39	29.96	3.58	0.79	1.65
8	Asian	45	39	29.71	3.06	0.59	1.96
8	Hispanic or Latino	176	39	29.98	3.52	0.68	1.99
8	American Indian or Alaska Native	3	N/A	N/A	N/A	N/A	N/A
8	White	276	39	29.66	3.44	0.72	1.82
8	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
8	Multi-Race, Not Hispanic or Latino	22	39	29.18	4.11	0.76	2.00
8	Male	391	39	29.74	3.53	0.73	1.82
8	Female	233	39	29.82	3.44	0.70	1.87
8	Title I	272	39	30.38	3.46	0.78	1.61
8	English Learner	103	39	29.93	3.54	0.80	1.58
8	Former English Learner	16	39	29.56	4.21	N/A	N/A
8	Students with Disabilities	623	39	29.77	3.49	0.72	1.84
8	Plan 504	2	N/A	N/A	N/A	N/A	N/A

Table O-10. Student Subgroup Reliabilities—Alt/Biology

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
HS	All Students	555	39	30.22	3.29	0.70	1.81
HS	English Learner/Former English Learner	112	39	30.63	3.26	0.72	1.74
HS	Low Income	359	39	30.42	3.17	0.70	1.73
HS	Black or African American	103	39	30.15	3.43	0.74	1.75
HS	Asian	41	39	28.73	3.62	0.72	1.93
HS	Hispanic or Latino	153	39	30.76	3.08	0.71	1.66
HS	American Indian or Alaska Native	0	N/A	N/A	N/A	N/A	N/A
HS	White	237	39	30.14	3.28	0.67	1.87
HS	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
HS	Multi-Race, Not Hispanic or Latino	20	39	30.40	2.7	0.62	1.67
HS	Male	369	39	30.28	3.16	0.67	1.80
HS	Female	184	39	30.07	3.54	0.74	1.82
HS	Title I	203	39	30.68	2.95	0.68	1.66

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
HS	English Learner	82	39	30.74	3.23	0.73	1.68
HS	Former English Learner	30	39	30.33	3.4	0.69	1.90
HS	Students with Disabilities	550	39	30.24	3.26	0.70	1.80
HS	Plan 504	1	N/A	N/A	N/A	N/A	N/A

Due to the small sample size of the subgroup and the small number of items, the calculation of coefficient alpha does not produce meaningful values.

Table O-11. Student Subgroup Reliabilities—Alt/Introductory Physics

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
HS	All Students	89	39	29.86	3.17	0.65	1.88
HS	English Learner/Former English Learner	10	39	28.22	4.32	0.79	1.99
HS	Low Income	52	39	30.53	2.75	0.66	1.59
HS	Black or African American	14	39	29.50	2.62	0.46	1.92
HS	Asian	3	N/A	N/A	N/A	N/A	N/A
HS	Hispanic or Latino	20	39	30.00	3.00	0.63	1.83
HS	American Indian or Alaska Native	0	N/A	N/A	N/A	N/A	N/A
HS	White	47	39	29.85	3.28	0.63	2.00
HS	Native Hawaiian or Other Pacific Islander	0	N/A	N/A	N/A	N/A	N/A
HS	Multi-Race, Not Hispanic or Latino	5	N/A	N/A	N/A	N/A	N/A
HS	Male	58	39	30.14	2.76	0.65	1.62
HS	Female	31	39	29.33	3.84	0.66	2.24
HS	Title I	31	39	30.30	3.51	0.71	1.89
HS	English Learner	10	39	28.22	4.32	0.79	1.99
HS	Former English Learner	0	N/A	N/A	N/A	N/A	N/A
HS	Students with Disabilities	89	39	29.86	3.17	0.65	1.88
HS	Plan 504	0	N/A	N/A	N/A	N/A	N/A

Table O-12. Student Subgroup Reliabilities—Alt/Civics

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	All Students	643	26	10.19	0.97	0.03	0.96
8	English Learner/Former English Learner	119	26	10.17	0.95	0.09	0.91
8	Low Income	434	26	10.16	1.00	0.10	0.95
8	Black or African American	100	26	10.20	0.99	0.07	0.96
8	Asian	49	26	10.04	1.04	0.23	0.91

Grade	Subgroup	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	Hispanic or Latino	176	26	10.24	0.90	-0.03	0.92
8	American Indian or Alaska Native	4	N/A	N/A	N/A	N/A	N/A
8	White	291	26	10.19	0.98	0.01	0.98
8	Native Hawaiian or Other Pacific Islander	1	N/A	N/A	N/A	N/A	N/A
8	Multi-Race, Not Hispanic or Latino	22	26	10.14	1.04	-0.05	1.06
8	Male	402	26	10.17	1.00	0.05	0.98
8	Female	241	26	10.22	0.91	-0.01	0.92
8	Title I	290	26	10.26	0.93	0.05	0.90
8	English Learner	103	26	10.16	0.92	0.03	0.91
8	Former English Learner	16	26	10.25	1.18	0.31	0.98
8	Students with Disabilities	641	26	10.19	0.97	0.03	0.96
8	Plan 504	2	N/A	N/A	N/A	N/A	N/A

Table O-13. Reliabilities by Reporting Category by Grade—ELA

Grade	Item Reporting Category	Number of Items	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	Language	9	12	6.54	2.88	0.72	1.53
3	Reading	22	28	15.67	6.11	0.84	2.43
3	Writing	1	4	0.85	0.92	NaN	NaN
4	Language	7	9	4.86	2.23	0.65	1.32
4	Reading	24	31	19.89	6.81	0.88	2.39
4	Writing	1	4	1.27	0.98	NaN	NaN
5	Language	8	12	7.31	2.82	0.73	1.45
5	Reading	23	28	16.37	5.89	0.82	2.49
5	Writing	2	8	3.14	1.99	0.86	0.74
6	Language	8	12	6.84	3.20	0.73	1.66
6	Reading	23	28	18.24	6.22	0.86	2.32
6	Writing	2	10	3.75	2.44	0.90	0.78
7	Language	8	12	7.05	3.02	0.71	1.62
7	Reading	23	28	17.77	6.32	0.87	2.31
7	Writing	2	10	3.77	2.07	0.89	0.69
8	Language	7	11	7.15	2.95	0.73	1.54
8	Reading	24	29	18.92	6.64	0.87	2.41
8	Writing	2	10	4.07	2.45	0.90	0.79
10	Language	6	11	7.82	2.90	0.75	1.45
10	Reading	23	28	19.42	6.03	0.86	2.25
10	Writing	2	10	5.20	2.67	0.90	0.84

Table O-14. Reliabilities by Reporting Category by Grade—Mathematics

Grade	Item Reporting Category	Number of Items	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	Geometry	4	4	1.80	1.23	0.49	0.88
3	Measurement and Data	10	12	6.52	3.34	0.78	1.57
3	Number and Operations-Fractions	7	9	4.62	2.51	0.74	1.29
3	Number and Operations in Base Ten	6	8	4.18	2.56	0.75	1.28
3	Operations and Algebraic Thinking	13	15	9.55	3.84	0.82	1.63
4	Geometry	3	6	2.95	1.61	0.51	1.12
4	Measurement and Data	8	11	6.23	3.03	0.75	1.52
4	Number and Operations-Fractions	12	16	9.13	4.29	0.83	1.78
4	Number and Operations in Base Ten	9	10	6.19	2.67	0.76	1.32
4	Operations and Algebraic Thinking	8	11	5.74	3.10	0.75	1.56
5	Geometry	6	6	3.42	1.53	0.59	0.98
5	Measurement and Data	6	10	4.91	2.79	0.63	1.68
5	Number and Operations-Fractions	11	14	7.37	3.53	0.72	1.85
5	Number and Operations in Base Ten	12	16	8.53	4.24	0.83	1.77
5	Operations and Algebraic Thinking	5	8	4.21	2.33	0.60	1.47
6	Expressions and Equations	12	16	7.37	4.24	0.81	1.83
6	Geometry	5	8	3.83	2.55	0.70	1.41
6	Ratios and Proportional Relationships	8	11	5.86	3.07	0.67	1.77
6	Statistics and Probability	7	8	3.99	2.28	0.66	1.33
6	The Number System	8	11	6.76	2.89	0.68	1.63
7	Expressions and Equations	9	13	5.01	3.63	0.81	1.58
7	Geometry	5	8	3.10	2.31	0.62	1.43
7	Ratios and Proportional Relationships	10	11	5.88	2.90	0.78	1.35
7	Statistics and Probability	8	11	5.33	2.73	0.69	1.51
7	The Number System	8	11	4.77	2.90	0.73	1.49
8	Functions	8	11	6.06	3.10	0.68	1.75
8	Geometry	12	16	7.81	4.43	0.84	1.76
8	The Number System and Expressions and Equations	17	21	9.70	5.60	0.86	2.11
8	Statistics and Probability	3	6	3.82	1.68	0.57	1.10
10	Algebra and Functions	16	21	10.95	5.77	0.87	2.10
10	Geometry	16	21	10.43	5.46	0.85	2.13
10	Number and Quantity	5	9	4.43	2.70	0.65	1.60
10	Statistics and Probability	5	9	4.46	1.99	0.54	1.35

Table O-15. Reliabilities by Reporting Category by Grade—STE

Grade	Item Reporting Category	Number of Items	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
5	Earth and Space Science	11	14	7.45	3.23	0.77	1.56
5	Life Science	10	14	7.95	3.43	0.77	1.66
5	Physical Science	11	14	7.28	3.25	0.71	1.76
5	Technology/Engineering	9	12	7.34	2.84	0.73	1.47
5	A. Investigations and Questioning	5	8	4.56	2.23	0.65	1.32
5	B. Mathematics and Data	5	7	3.51	1.88	0.67	1.09
5	C. Evidence Reasoning and Modeling	24	32	16.97	6.69	0.86	2.53
8	Earth and Space Science	11	14	7.21	3.08	0.73	1.60
8	Life Science	11	14	6.60	3.34	0.79	1.52
8	Physical Science	10	14	7.90	3.31	0.74	1.69
8	Technology/Engineering	9	12	6.14	2.77	0.74	1.43
8	A. Investigations and Questioning	4	4	2.21	1.28	0.54	0.86
8	B. Mathematics and Data	5	6	3.62	1.83	0.69	1.02
8	C. Evidence Reasoning and Modeling	25	34	16.86	6.70	0.86	2.47

Table O-16. Reliabilities by Reporting Category by Grade—Biology

Grade	Item Reporting Category	Number of Items	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
10	Ecology	6	10	5.49	2.78	0.74	1.40
10	Evolution	8	12	6.22	2.90	0.67	1.68
10	Heredity	11	15	7.95	3.72	0.74	1.89
10	Molecules to Organisms	17	21	9.85	5.07	0.84	2.05
10	A. Investigations and Questioning	3	3	1.52	1.06	0.55	0.72
10	B. Mathematics and Data	8	18	9.64	4.40	0.78	2.04
10	C. Evidence Reasoning and Modeling	19	25	11.78	5.91	0.85	2.28

Table O-17. Reliabilities by Reporting Category by Grade—Introductory Physics

Grade	Item Reporting Category	Number of Items	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
10	Energy	11	18	9.07	4.66	0.82	1.98
10	Motion Forces and Interactions	23	30	17.14	6.49	0.86	2.40
10	Waves	9	12	6.19	3.10	0.74	1.59
10	A. Investigations and Questioning	2	4	1.46	1.23	0.52	0.85

Grade	Item Reporting Category	Number of Items	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
10	B. Mathematics and Data	18	28	15.34	6.51	0.86	2.45
10	C. Evidence Reasoning and Modeling	17	22	11.89	5.06	0.83	2.11

Table O-18. Reliabilities by Reporting Category by Grade—Civics

Grade	Item Reporting Category	Number of Items	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	Foundations of Government	13	14	7.58	3.57	0.79	1.64
8	Government Structures	14	16	8.72	3.58	0.77	1.72
8	Rights & Responsibilities	16	20	10.78	4.47	0.81	1.93
8	Analyzing Sources	10	11	6.14	2.86	0.76	1.41
8	Explanations and Reasoning	16	18	9.69	4.20	0.81	1.85
8	Civic Knowledge	11	12	6.84	2.66	0.69	1.47
8	Civic-based Questioning	6	9	4.41	2.17	0.60	1.37

Table O-19. Reliability by Achievement Level by Grade—Alt/ELA

Grade	Achievement Level	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	Awareness	31	39	18.77	3.06	-0.04	3.13
3	Emerging	535	39	26.78	2.99	0.39	2.34
3	Progressing	320	39	30.69	1.09	0.36	0.87
4	Awareness	29	39	20.32	3.46	-0.17	3.75
4	Emerging	448	39	26.98	2.76	0.36	2.20
4	Progressing	354	39	30.78	1.07	0.30	0.90
5	Awareness	28	39	19.79	2.78	0.18	2.52
5	Emerging	364	39	26.61	2.94	0.28	2.50
5	Progressing	344	39	30.76	1.19	0.33	0.97
6	Awareness	24	39	20.70	2.85	-0.65	3.66
6	Emerging	412	39	26.60	2.98	0.32	2.46
6	Progressing	371	39	30.85	1.13	0.35	0.91
7	Awareness	14	39	19.50	3.32	-1.75	5.51
7	Emerging	363	39	26.57	2.91	0.41	2.23
7	Progressing	347	39	30.72	1.22	0.40	0.95
8	Awareness	19	39	20.42	3.22	-1.17	4.74
8	Emerging	316	39	26.36	2.94	0.32	2.43
8	Progressing	306	39	30.81	1.13	0.30	0.94
HS	Awareness	12	39	21.08	2.11	-0.84	2.86
HS	Emerging	307	39	26.36	2.87	0.35	2.31
HS	Progressing	359	39	30.81	1.30	0.40	1.01

Due to the small sample size of the subgroup, the calculation of SEM does not produce meaningful values.

Table O-20. Reliability by Achievement Level by Grade—Alt/Mathematics

Grade	Achievement Level	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
3	Awareness	24	26	16.04	1.19	-1.63	1.92
3	Emerging	112	26	18.65	1.07	-2.05	1.87
3	Progressing	637	26	21.45	0.90	0.50	0.63
4	Awareness	28	26	16.04	1.29	-1.27	1.94
4	Emerging	108	26	18.84	1.26	-0.98	1.78
4	Progressing	574	26	21.54	0.79	0.43	0.60
5	Awareness	16	26	15.19	1.56	-1.10	2.26
5	Emerging	92	26	18.82	1.26	-1.06	1.81
5	Progressing	528	26	21.48	0.86	0.46	0.63
6	Awareness	31	26	16.13	1.23	-2.42	2.28
6	Emerging	96	26	18.60	1.20	-1.29	1.82
6	Progressing	607	26	21.54	0.74	0.32	0.61
7	Awareness	13	26	16.00	1.00	-3.85	2.20
7	Emerging	74	26	18.64	1.32	-0.76	1.75
7	Progressing	552	26	21.52	0.83	0.47	0.61
8	Awareness	25	26	16.00	1.15	-2.82	2.26
8	Emerging	68	26	18.81	1.02	-2.67	1.95
8	Progressing	458	26	21.46	0.86	0.46	0.64
HS	Awareness	12	39	21.17	3.01	N/A	N/A
HS	Emerging	162	39	25.33	2.53	0.74	1.29
HS	Progressing	487	39	32.19	1.29	0.71	0.70

Due to the small sample size of the subgroup, the calculation of SEM does not produce meaningful values.

Table O-21. Reliability by Achievement Level by Grade—Alt/STE

Grade	Achievement Level	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
5	Awareness	44	39	23.02	2.61	N/A	N/A
5	Emerging	169	39	26.11	2.44	0.13	2.28
5	Progressing	502	39	31.61	1.60	0.56	1.06
8	Awareness	30	39	22.93	2.24	N/A	N/A
8	Emerging	157	39	25.81	2.56	0.20	2.30
8	Progressing	437	39	31.66	1.51	0.62	0.94

Due to the small sample size of the subgroup, the calculation of SEM does not produce meaningful values.

Table O-22. Reliability by Achievement Level by Grade—Alt/Biology

Grade	Performance Level	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
HS	Awareness	26	39	23.85	1.46	-1.12	2.13
HS	Emerging	114	39	25.72	2.31	0.15	2.13
HS	Progressing	415	39	31.85	1.44	0.53	0.98

Due to the small sample size of the subgroup, the calculation of SEM does not produce meaningful values.

Table O-23. Reliability by Achievement Level by Grade— Alt/Introductory Physics

Grade	Performance Level	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
HS	Awareness	5	N/A	N/A	N/A	N/A	N/A
HS	Emerging	22	39	26.24	2.34	-1.08	3.38
HS	Progressing	62	39	31.56	1.43	0.46	1.06

Due to the small sample size of the subgroup, the calculation of SEM does not produce meaningful values.

Table O-24. Reliability by Achievement Level by Grade—Alt/Civics

Grade	Performance Level	Number of Students	Raw Score Maximum	Raw Score Mean	Raw Score Standard Deviation	α	SEM
8	Awareness	33	26	7.76	0.50	-4.83	1.21
8	Emerging	104	26	9.10	0.55	-6.13	1.47
8	Progressing	506	26	10.57	0.58	0.10	0.55

Due to the small sample size of the subgroup, the calculation of SEM does not produce meaningful values.

APPENDIX P
SAMPLE REPORTS—MCAS

Spring 2025 MCAS Test Results

Individual Student Report

Name:
SASID:
Date of Birth:
Local Student ID:
Grade: 8

District:
School:

About This Report

This report provides your student’s results on the spring 2025 Massachusetts Comprehensive Assessment System (MCAS) tests. For each test your student took in spring 2025, the report shows your student’s score and achievement level. For some tests, the report also provides information about your student’s academic progress, or growth.

The pages that follow provide additional details about your student’s performance on each test, including information about how they performed on individual test questions. The report also compares your student’s performance to the performance of students in the school, district, and state.

 Information about your student’s achievement in this report should be used alongside other assessments and information, such as school tests and classroom work, when possible.

What Is MCAS and How Are the Test Results Used?

MCAS is the Commonwealth’s standards-based assessment program. MCAS has the following primary purposes:

- to help families see whether their children are making expected academic progress
- to help educators identify areas of the curriculum where students are learning well and areas where students may need additional assistance to meet grade-level expectations
- to help the state direct resources to schools that need support
- at the high school level, to determine whether students have met the state’s scholarship eligibility requirements

Your Student’s Overall Results in 2025

English Language Arts

Meeting Expectations

<u>Score</u>	<u>Growth Percentile</u>
523	68
(Score range: 440-560)	(SGP Range: 1-99)

Mathematics

**Partially
Meeting
Expectations**

<u>Score</u>	<u>Growth Percentile</u>
491	35
(Score range: 440-560)	(SGP Range: 1-99)

Science and Technology/Engineering

Meeting Expectations

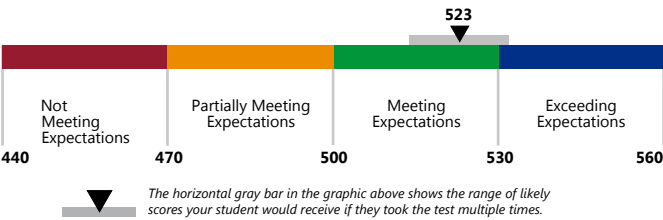
<u>Score</u>
509
(Score range: 440-560)

Civics

Meeting Expectations

<u>Score</u>
509
(Score range: 440-560)

Your Student's Scaled Score and Achievement Level



Scaled Score Comparison

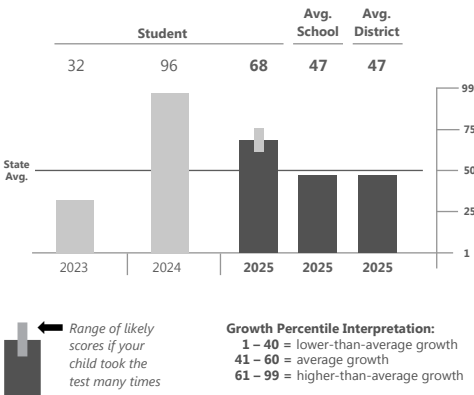
This table shows how your student performed compared to students in their school, district, and state. A historical record of your student's scaled scores for the last two years is also shown.

Year	Grade	Student Score	Average Scores		
			School	District	State
2025	8	523	473	477	494
2024	7	521			
2023	6	499			

Your Student's Growth

Student Growth Percentiles (SGP)

This student growth percentile (1-99) compares your student's learning to the learning of other students across the state with similar prior MCAS scores.



How Your Student Performed in Each Reporting Category

Reporting Category	Total Earned Points	Total Possible Points	% of Total Possible Points Earned
Language (LA)	11	11	Student 100%
			School 41%
			District 45%
			State 65%
Reading (RE)	24	29	Student 83%
			School 50%
			District 52%
			State 65%
Writing (WR)	7	10	Student 70%
			School 22%
			District 25%
			State 41%

How Your Student Performed on Each Individual Test Question

Question Number	Reporting Category	Points Earned
1	RE	0/1
2	RE	0/1
3	LA	1/1
4	RE	1/1
5	LA	1/1
6	RE	1/1
7	RE	0/1
8	RE	0/1
9	RE	1/1
10	RE	2/2

Question Number	Reporting Category	Points Earned
11	RE	2/2
12 CV	LA	3/3
12 ID	WR	3/5
13	RE	1/1
14	LA	1/1
15	RE	1/1
16	RE	1/1
17	RE	1/1
18	RE	1/1
19	RE	2/2

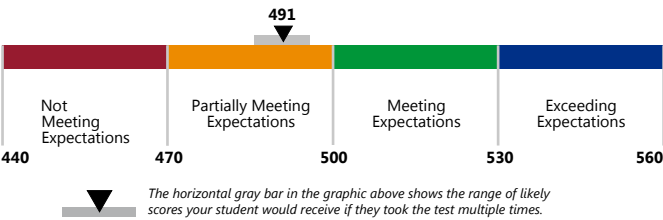
Question Number	Reporting Category	Points Earned
20	LA	1/1
21	RE	0/1
22	RE	1/1
23	RE	1/1
24	LA	1/1
25	RE	1/1
26	RE	1/1
27	RE	2/2
28	RE	1/1
29	RE	1/1

Question Number	Reporting Category	Points Earned
30	RE	2/2
31 CV	LA	3/3
31 ID	WR	4/5

KEY
Points Earned:
x/y = x points earned out of y possible points
Blank space = no answer
CV = Essay conventions score
ID = Essay idea development score

Go online to access released test questions at www.doe.mass.edu/mcas/testitems.html

Your Student's Scaled Score and Achievement Level



Scaled Score Comparison

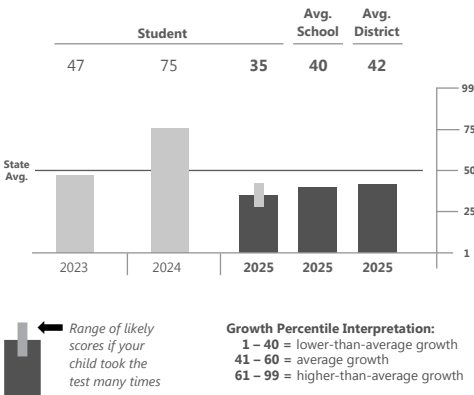
This table shows how your student performed compared to students in their school, district, and state. A historical record of your student's scaled scores for the last two years is also shown.

Year	Grade	Student Score	Average Scores		
			School	District	State
2025	8	491	476	480	493
202	7	49			
4	6	6			
2023		492			

Your Student's Growth

Student Growth Percentiles (SGP)

This student growth percentile (1–99) compares your student's learning to the learning of other students across the state with similar prior MCAS scores.



How Your Student Performed in Each Reporting Category

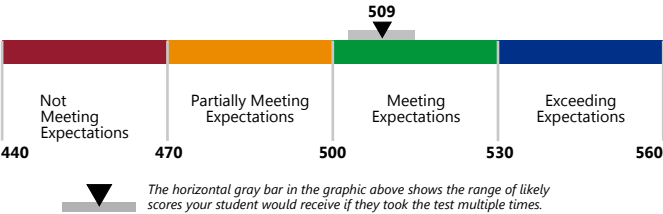
Reporting Category	Total Earned Points	Total Possible Points	% of Total Possible Points Earned
Functions (FN)	8	11	Student 73%
			School 37%
			District 40%
			State 55%
Geometry (GE)	8	16	Student 50%
			School 31%
			District 35%
			State 49%
The Number System and Expressions and Equations (NE)	7	21	Student 33%
			School 29%
			District 34%
			State 46%
Statistics and Probability (SP)	2	6	Student 33%
			School 45%
			District 48%
			State 63%

How Your Student Performed on Each Individual Test Question

Question Number	Reporting Category	Points Earned	Question Number	Reporting Category	Points Earned	Question Number	Reporting Category	Points Earned	Question Number	Reporting Category	Points Earned
1	NE	0/1	11	NE	1/1	21	GE	1/1	31	GE	1/1
2	FN	0/1	12	GE	1/1	22	NE	1/1	32	FN	4/4
3	NE	0/1	13	FN	1/1	23	NE	0/1	33	GE	1/1
4	FN	1/1	14	FN	0/1	24	SP	2/4	34	GE	1/1
5	NE	1/1	15	FN	0/1	25	NE	1/1	35	GE	0/1
6	NE	0/4	16	GE	0/4	26	NE	0/1	36	FN	1/1
7	GE	2/2	17	GE	1/1	27	NE	1/1	37	FN	1/1
8	NE	0/1	18	SP	0/1	28	NE	1/1	38	NE	0/2
9	NE	0/1	19	NE	1/1	29	NE	0/1	39	GE	0/1
10	SP	0/1	20	GE	0/1	30	NE	0/1	40	GE	0/1

KEY
Points Earned:
x/y = x points earned out of y possible points
Blank space = no answer
Go online to access released test questions at
www.doe.mass.edu/mcas/testitems.html

Your Student's Scaled Score and Achievement Level



Scaled Score Comparison					
This table shows how your student performed compared to students in their school, district, and state.					
Year	Grade	Student Score	Average Scores		
			School	District	State
2025	8	509	476	479	492

How Your Student Performed in Each Reporting Category

Reporting Category	Total Earned Points	Total Possible Points	% of Total Possible Points Earned
Earth and Space Science (ES)	11	14	Student 79%
			School 37%
			District 41%
			State 51%
			0% 25% 50% 75% 100%
Life Science (LS)	6	14	Student 43%
			School 31%
			District 35%
			State 47%
			0% 25% 50% 75% 100%
Physical Science (PS)	10	14	Student 71%
			School 41%
			District 44%
			State 56%
			0% 25% 50% 75% 100%
Technology/Engineering (TE)	10	12	Student 83%
			School 38%
			District 40%
			State 51%
			0% 25% 50% 75% 100%
Science and Engineering Practices [†]	31	44	Student 70%
			School 37%
			District 40%
			State 51%
			0% 25% 50% 75% 100%

[†] Information about the science and engineering practices is available at www.doe.mass.edu/mcas/tdd/practice-categories.html.

How Your Student Performed on Each Individual Test Question

Question Number	Reporting Category	Points Earned	Practice Category	Question Number	Reporting Category	Points Earned	Practice Category	Question Number	Reporting Category	Points Earned	Practice Category	Question Number	Reporting Category	Points Earned	Practice Category
1	PS	1/1	C	11	PS	1/1	C	21	LS	1/1	C	31	TE	1/1	C
2	ES	1/1	C	12	LS	0/1	C	22	ES	1/1	C	32	LS	0/1	C
3	TE	1/1	A	13	ES	1/1	B	23	ES	1/1	C	33	TE	1/1	/
4	ES	1/1	C	14	TE	1/1	B	24	PS	0/1	C	34	PS	1/1	A
5	LS	1/1	C	15	ES	0/2	/	25	ES	3/3	C	35	LS	1/1	A
6	LS	0/1	C	16	ES	1/1	C	26	PS	1/3	C	36	LS	1/2	/
7	LS	0/1	B	17	TE	1/3	C	27	TE	1/1	C	37	PS	1/1	C
8	LS	1/3	C	18	TE	1/1	/	28	ES	1/1	B	38	PS	1/1	C
9	PS	1/2	B	19	ES	0/1	C	29	ES	1/1	C	39	TE	2/2	/
10	PS	2/2	C	20	PS	1/1	C	30	LS	1/1	/	40	LS	0/1	/

KEY

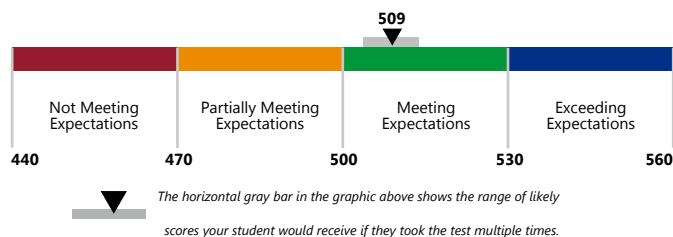
Points Earned:
x/y = x points earned out of y possible points

Blank space = no answer

Practice Category:
/ = Practice Category Not Assessed
A = Investigations and Questioning
B = Mathematics and Data
C = Evidence, Reasoning, and Modeling

Go online to access released test questions at www.doe.mass.edu/mcas/testitems.html

Your Student's Scaled Score and Achievement Level



Scaled Score Comparison

This table shows how your student performed compared to students in their school, district, and state.

Year	Grade	Student Score	Average Scores		
			School	District	State
2025	8	509	483	484	495

How Your Student Performed in Each Reporting Category

Reporting Category	Total Earned Points	Total Possible Points	% of Total Possible Points Earned
Foundations of Government (FG)	10	14	Student 71%
			School 41%
			District 44%
			State 54%
Government Structures (GS)	11	16	Student 69%
			School 45%
			District 46%
			State 54%
Rights & Responsibilities (RR)	14	20	Student 70%
			School 42%
			District 43%
			State 54%
Civics Practices [†]	35	50	Student 70%
			School 43%
			District 44%
			State 54%

[†] Information about the history and social science practices is available at www.doe.mass.edu/mcas/tdd/hss.html?section=testdesign.

How Your Student Performed on Each Individual Test Question

The MCAS Grade 8 Civics test is divided into two parts: a state-level performance task, focused on a specific topic, and an end-of-course test, covering the breadth of the standards. In 2025, the state-level task was focused on Topic 4: Rights and responsibilities of citizens. Below is information on how your student performed on items for each part of the test.

State-Level Performance Task											
Question Number	Reporting Category	Points Earned	Practice Category	Question Number	Reporting Category	Points Earned	Practice Category	Question Number	Reporting Category	Points Earned	Practice Category
1	RR	1/1	CK	4	RR	1/1	ER	7	RR	0/1	ER
2	RR	1/1	CK	5	RR	1/1	ER	8	RR	1/1	ER
3	RR	1/1	ER	6	GS	1/1	AS	9	RR	0/1	ER
10	RR	1/1	ER	11	RR	2/4	CQ				

KEY
Points Earned:
x/y = x points earned out of y possible points

Blank space = no answer

Practice Category:
AS = Analyzing Sources
ER = Explanations and Reasoning
CK = Civic Knowledge
CQ = Civic-based Questioning

End-of-Course Test															
Question Number	Reporting Category	Points Earned	Practice Category	Question Number	Reporting Category	Points Earned	Practice Category	Question Number	Reporting Category	Points Earned	Practice Category	Question Number	Reporting Category	Points Earned	Practice Category
12	FG	0/1	ER	19	FG	1/1	AS	26	RR	1/1	AS	33	GS	0/2	CK
13	GS	1/2	ER	20	FG	1/1	ER	27	FG	1/1	AS	34	FG	1/1	AS
14	GS	1/1	CK	21	GS	1/1	CK	28	FG	1/2	ER	35	FG	1/1	ER
15	GS	1/1	CK	22	GS	1/1	CK	29	RR	1/1	ER	36	FG	0/1	CK
16	GS	1/1	CQ	23	GS	1/1	ER	30	RR	1/1	AS	37	FG	1/1	CK
17	RR	0/1	ER	24	FG	0/1	ER	31	GS	1/1	CQ	38	GS	1/1	CQ
18	RR	0/1	AS	25	FG	1/1	AS	32	GS	0/1	CQ	39	FG	1/1	AS
40	FG	1/1	CK	41	GS	1/1	CQ	42	RR	2/2	AS	43	GS	0/1	CK

Go online to access released test questions at www.doe.mass.edu/mcas/testitems.html

Glossary of Terms/Definitions & Additional Resources

Achievement Level Descriptors

Exceeding Expectations

A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.

Meeting Expectations

A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.

Partially Meeting Expectations

A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.

Not Meeting Expectations

A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

Moving Forward Together

At the Massachusetts Department of Elementary and Secondary Education, we know that every lesson, every teacher, every pathway, and every innovation helps each student reach their full potential. That's why we're working with schools across the state to reimagine what teaching and learning looks like moving forward. We're reaching toward a better future.

From the moment your student enters kindergarten to the day they graduate from high school, we're reimagining K-12 education in Massachusetts.

DEEPER LEARNING

In today's world, young people need to understand complex information and draw connections across contexts in the classroom and in the wider world. Deeper learning helps students engage in grade-level work that's interactive and relevant.

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NEW SCIENCE ASSESSMENT

Students learn science through experiments, problem-solving, and discovery. On the new science assessment we're field testing for grades 5 and 8, students use interactive simulations to show what they can do solving real-world problems.

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EDUCATOR DIVERSITY

Studies show that all students benefit from having diverse teachers. That's why the state has launched comprehensive efforts to attract and retain talented professionals from diverse backgrounds.

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EARLY COLLEGE

To help more students enroll in and succeed in college, designated Early College programs help students pursue a sequence of free college courses that also meet their high school requirements.

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APPENDIX Q
MCAS & MCAS-ALT REPORTING BUSINESS
REQUIREMENTS

Reporting Business Requirements Massachusetts Comprehensive Assessment System (MCAS) Spring 2025

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I. Overview

The Massachusetts Department of Elementary and Secondary Education (DESE) administers the MCAS tests in grades 3-8 and High School. ELA and Math are administered in grades 3-8 and 10 and Science and Technology/Engineering (STE) is administered in grades 5 and 8. Civics is administered in 8th grade. High School sciences are administered starting in grade 9. Student in High School take either Introductory Physics or Biology. Operational Grades and subjects are:

NextGen

Grade	Subject	Mode of test
3-8	ELA	Online Paper
3-8	Math	Online Paper
8	Civics	Online Paper
5 and 8	Science and Technology/Engineering (STE)	Online Paper
10	ELA	Online Paper
10	Math	Online Paper
9	Introductory Physics, Biology	Online Paper
10	Introductory Physics, Biology	Online Paper

A. Year to Year Changes

1. Civics is an operational test in Spring 2025. It is administered in 8th grade.
2. The MCAS testing platform is now iTester in LightHouse. The Reporting platform is the Download Center in LightHouse.
3. Cognia will produce the Released Essay Reports and the V1 and V2 rosters and CSV data files.
4. The MCAS student report is redesigned to be a multi-page report that prints on 8 ½ x 11 paper.
5. MCAS is no longer a graduation requirement. CD is no longer calculated. High school rules have been updated accordingly.
6. Original grad class is no longer used for reporting purposes.
7. The longer school and district names are used for reporting purposes.

II. General Information

- ### A. Contract Code
- 164652

B. Reporting Deliverables

Preliminary Reporting External

- V1 and V2 rosters; by subject; school level
- V1 and V2 CSV data files; by subject; school, district and state levels
- Released Essay Report; school and district levels
- Megafiles-All grades and subjects
- Questionnaire Data files (Preliminary and Final versions)
- Accommodations-by subject
- Accommodations-by subject and item
- Students with both Alt and General results

Preliminary Reporting Internal

- Letter counts
- Language counts
- Discrepancy table

Final Reporting External

- Megafiles-All grades and subjects
- 1 student report-print copy
- Web student report-School and District level files
- Student label-print copy
- State File

Final Reporting Internal

- Printer data
- iCore data

C. Delivery of Reports

- 1 copy of the Student Report is printed and shipped to districts.
- 1 Student Results Label is printed and shipped to districts, for each student.

- ISRs are available to the student's official school and district. Students with testing school orgtype 4,22,25,31 or 50 will also be included in files to their testing school.
- Rosters are available in the student's official school or testing school if testing school orgtype= 4,22,25,31 or 50.
- Online ISRs and essay reports are available in the Download Center in LightHouse
- Student Reports are shipped to their tested school.
- CSV data files for V1 and V2 are available in the Download Center in LightHouse. They are available to the students' official school and official district and the state level. If the student's testing school orgtype is 4,22,25,31 or 50 the data files are available to their testing school.

III. Pre-Test Administration

A. Test Design

Item Metadata data is stored in the LightHouse's item banking system. A test map is an extract from LightHouse that provides the item metadata for each operational and field test being administered.

Grade	Subject	Form(s)	Items included in Raw Score	Item Types
3-8	ELA	Online, paper, online accommodated, Paper accommodated	Common (OP)	SR-Selected Response CR-Constructed Response ES-Essay
3-8	Mathematics	Online, paper, online accommodated, Paper accommodated, Online and paper Spanish	Common (OP)	SA=Short Answer SR-Selected Response CR-Constructed Response
5 and 8	Science	Online, paper, online accommodated, Paper Accommodated, Online and paper Spanish	Common (OP)	SR-Selected Response CR-Constructed Response
8	Civics	Online, paper, online accommodated, Paper Accommodated, Online and paper Spanish	Common (OP)	SR-Selected Response CR-Constructed Response
HS	Bio and Introductory Physics	Online, paper, online accommodated, Spanish online Paper accommodated, Spanish Paper	Common (OP)	SR-Selected Response CR-Constructed Response

Grade	Subject	Form(s)	Items included in Raw Score	Item Types
10	ELA	Online, paper, online accommodated, Paper accommodated	Common (OP)	SR-Selected Response ES-Essay
10	Mathematics	Online, paper, online accommodated, Paper accommodated Online Spanish, Paper Spanish	Common (OP)	SA=Short Answer SR-Selected Response CR-Constructed Response

B. Forms

- Cognia will produce fixed forms, composed of operational items only, for certain special editions—namely, Braille, American Sign Language, and Screen Reader/Assistive Technology—for grades 3-8 ELA and math.
- ELA and math grade 10, high school biology and introductory physics, and civics will not be included in the accommodated fixed form plan and will have new editions produced each year for large print, Braille, American Sign Language, and Screen Reader/Assistive Technology. 5 & 8 STE in 2025 will be a reuse of the Spring 2024 forms.

IV. Post Test Administration

A. Scoring

Machine scored items are scored according to the scoring rules in LightHouse. The following table is applicable to human/AI scored items.

Raw Data Value	Reported Value	Description	Point Value	Response Attempted
0-max pts	Final score	Constructed Response / Short Answer	0-max	Y
BL	<i>Blank space</i>	Blank response	0	N
DC	0	Repeats the Prompt	0	Y
UN	0	Unreadable\Unintelligible	0	Y
OT	0	Off Topic	0	Y
NE	0	Non-English	0	Y

B. Test Attemptedness

A test meets attemptedness if there is at least one **operational** item that is attempted **per session**.

If the student meets attemptedness then Attempt[sub]='F' (Fully Attempted). If the student has attempted operational items but not in each session, then Attempt[sub]='P' (Partially Attempted). If the student does not meet attemptedness Attempt[sub]='N' (Not Attempted).

C. Not Tested Reasons

The following not tested reasons apply to the Spring tests:

1. Medically Excused (MED)
2. Transfer (TRN)
3. First-year EL (LEP)
4. Void (VAB)
5. Multiple Answer Booklet (DUP)
6. Invalidated (INV)
7. Data Under Review (DUR)
8. Absent (ABS)
9. Student took the Alternate Assessment (ALT)
10. Not Required to Test (NRT)
11. Previously Tested (PRT)

If a student has more than one Not Tested Reason, the following hierarchy is applied:

D. Participation Status Assignment Hierarchy (by subject)

- a. Breach List (Amend Flag > '1') or Data Under Review list.
- b. Void
- c. Multiple Answer Booklets (Amend='1')
- d. **Summarize = '1' or TestGrade = '09':**
 - i. If the student is in the Alternate Assessment data, the student's participation status is taken from the Alternate Assessment data
 - ii. If ELFirstyear='1' then: Not Tested LEP (PartStatus='F').
- iii. **(Applicable for 3-8 and 10; HS STE without prior results):**
 1. If the student meets attemptedness then: Tested (PartStatus = 'Z').
 2. If the student partially attempted or did not attempt:
 - a. if Active_Test ≠ '1' then: Not Tested Transfer (PartStatus='D').
 - b. Otherwise if MED then: Not Tested Medically Excused (PartStatus='G').
 - c. Otherwise: Not Tested Absent (PartStatus='E').
- iv. **(Applicable for HS with prior results): Previously Tested (High_sPerf from SIMS is not blank or sciNTL='1'):**
 1. If the student meets or partially meets attemptedness then: Tested Accountable Retest (PartStatus='Y').

2. If the student did not meet attemptedness then:

Previously Tested (PartStatus='L').

e. Summarize = '0' (regardless of any prior test results):

- i. Student is found in the Alternate Assessment data the student's participation status is taken from the Alternate Assessment data.
- ii. Otherwise, if the student meets attemptedness then: Tested Not Accountable (Retest) (PartStatus = 'R').
- iii. Otherwise, if the student partially attempted then: Partially Tested Not Accountable (Retest) (PartStatus = 'B').
- iv. Otherwise, if the student did not attempt then: Not Required to Test (PartStatus = 'J').

Note:

1. Students with a blank High_sPerf and sciNTL ≠ '1' from SIMS are considered to not have prior results.
2. Students with SciNTL = '1' from SIMS are considered to have previously participated in science as a First Year EL student.
3. Tests with participation status Void in preliminary reporting may be unvoided during the discrepancy period. Post-Discrepancy any remaining void tests will be suppressed. Students with no test may be built out according to Data Processing rules.

The table below describes the calculation of the applicable participation statuses.

Summarize	Prior Results	Description	Part Status	Test Stat*	Discrepancy Site Code	Discrepancy Site Text
n/a	n/a	Breach**	Varies per Breach List	Based on participation status	3-character code associated with assigned participation status	Text associated with participation status
n/a	n/a	Void (Preliminary Only)	H	NTO	VAB	Void Answer Booklet
n/a	n/a	Multiple Answer Documents-Preliminary	I	NTO	DUP	Multiple Answer Booklets
n/a	n/a	Multiple Answer Documents-Final	N	NTO	n/a	n/a
n/a	n/a	Invalidated (Only assigned via Breach List)	N	NTO	INV	Invalidated
n/a	n/a	Data Under Review (Only assigned via Breach List)	Q	NTO	DUR	Data Under Review
1 (or Grade=09)	n/a	Tested Accountable Alternate Assessment	A	T	ALT	Tested Alternate Assessment

Summarize	Prior Results	Description	Part Status	Test Stat*	Discrepancy Site Code	Discrepancy Site Text
1 (or Grade=09)	n/a	Tested	Z	T	STD	Tested Standard
1 (or Grade=09)	n/a	Not Tested (/Partially Tested) – LEP (ELA Only)	F	NTL	LEP	Not Tested First Year EL
1 (or Grade=09)	n/a	Not Tested (/Partially Tested) - Transfer	D	NTO	TRN	Transferred
1 (or Grade=09)	n/a	Not Tested (/Partially Tested) – Medically Excused Absent	G	NTM	MED	Medically Documented Absence
1 (or Grade=09)	n/a	Not Tested (/Partially Tested) - Absent	E	NTA	ABS	Absent
1 (or Grade=09)	n/a	Incomplete	B	NTO	INC	Incomplete
1 (or Grade=09)	Prev. Tested	Tested Alternate Assessment Accountable Retest	C	TR	ALR	Retested Alternate Assessment
1 (or Grade=09)	Prev. Tested	Tested Accountable Retest	Y	TR	RET	Retested
1 (or Grade=09)	Prev. Tested	Not Tested Accountable	L	NTO	PRT	Previously Tested
0	Any	Tested Not Accountable Alternate Assessment (Retest)	W	TR	ALN	Retested Alternate Assessment Not Aggregated
0	Any	Tested Not Accountable (Retest)	R	TR	REN	Retested Not Aggregated
0	Any	Partially Tested Not Accountable (Retest)	B	NTO	INC	Incomplete
0	Any	Not Tested Not Accountable (Retest)	J	NTO	NRT	Not Required to Test

* Student results achieved while First-year EL, or students currently First-year EL (see rptLEPFirst calculation) are reported with TestStat = “NTL” in place of listed TestStat (all subjects). See Calculations by Participation Status Summary Table for more details.

**Breach Instructions are applied at the student level regardless of participation status and are identified by Amend > '1'

E. Inclusion/Exclusion Rules

The following applies to Item Analysis Student Inclusion/Exclusion (Ex[sub]) & Matrix Files

1. Only first-time accountable test takers that are not first-year LEP (Partstatus = ‘Z’ and rptLEP[sub] are included for item analysis and psychometric equating files (Ex[sub] = ‘0’). All other students are excluded (Ex[sub] = ‘1’).
2. All analysis will be based on CBT tests only.
3. Due to the way some accommodations cannot be spiraled. The accommodations listed below will have the following special handling.

- a. Students with unique accommodations to be excluded include paper-based testing, Braille, Spanish, screen reader, ASL, Human Reader, Human Signer and assistive technology;
 - b. Students with these accommodations will be excluded from all matrix files.
 - c. Students with these accommodations will be excluded from CTT and dif calculations for matrix items but will be included for scaling items.
4. The following applies to High School Science:
- a. First time test taker in HS science is a student with stugrade='09' and no prior results (high_sperf2 is null in SIMS and sciNTL≠1) **or** summarize='1' and no prior results (high_sper2 is null in SIMS and sciNTL≠1)
 - b. Only first-time test takers are included in analyses.

F. Rounding Rules

Calculation	Rounded (to the nearest)
Average scale score	Whole Number
Average reporting category points	Tenth
Mean Growth Percentile	Whole Number

G. Files from DESE

1. Breach List

- a. Students who are considered a security breach are provided by DESE in the Breach List. Instructions for processing and reporting each security breach case are provided.
- b. Data Analysis reviews the breach list and adds necessary Amend flag values (> '1') and instructions to the Amend Code Definition Lookup for each distinct scenario on the Breach List.
- c. Data Processing applies any necessary changes to the raw student record based on DESE's instructions and applies the corresponding Amend Flag value from the lookup to the student for Data Analysis processing.

2. Technology Failure List

- a. DESE will provide a list of students who could not complete the assessment based on a persistent technology issue with the testing platform. This file will be provided at the same time as the Breach List or pulled from PAN.
- b. These students are processed with an Amend code (AmendCode=13).
 - i. If a student has a scale score ≥ 470 the following information is reported:

1. a. Student's earned raw score, earned item scores, and earned mfScaledScore and earned perflevel. These students will be reported as NTO.
 - c. iii. If a student does not have a scaled score ≥ 470 and partially attempted then the student is reported as "INC" with their raw score, and item scores reported. The student's perf2, numin, and assess values will all be blank.
3. Students from DESE who are under investigation are reported as DUR with no item level data. Raw score is populated. Perflev='DUR' (Data Under Review) and other performance fields are blank in the megafile and on the student report.
4. SIMS
 - a. Student data are provided by DESE for reporting use following the SIMS file layout (also provided by DESE).
 - b. SIMS contains various demographic, historical scores, and accountability data fields. The data populated depends on the time of year of the handoff.
 - c. Multiple handoffs occur during the year.
5. Current Year Student Growth Data
 - a. Current year student growth percentiles (and corresponding standard errors) are provided for ELA and Math at the student level from DESE based on preliminary results.
 - b. If a score changes after Preliminary reporting, the growth score from DESE is suppressed and no growth is reported for the test.
 - c. The state growth mean is calculated and rounded to the nearest whole number.
6. Grade Span Lookup
 - a. DESE provides a grade span lookup for all public official schools. It is used to assign "SchType" in the various megafile handoffs.
 - b. Cognia will provide DESE with a list of any public schools that have students assigned to them that are not included in the lookup, resulting in blank grade span data based on the Preliminary data release.
 - c. All public schools must have a grade span for final post-discrepancy reporting. For earlier releases grade spans may be blank for schools missing from the lookup.
7. Discrepancy Resolution
 - a. Data from preliminary reporting is posted to the discrepancy site for clean up by the field and the department.
 - b. See the Discrepancy Site Requirements for more details on which fields are available for editing at each user level.

- c. Data Processing re-processes data post-discrepancy to incorporate the updated information and discrepancy resolutions from DESE for DA for final reporting.
 - d. During final processing all information from the discrepancy site is considered final and is maintained, however, changes to certain fields require additional data audits and/or recalculation of student participation status to ensure consistency. See the Data Reconciliation section for these details.
 - e. DESE provides a spreadsheet with additional discrepancies reported by schools that were not able to be resolved in the tool or came later than the school window. Any late discrepancies reported well after the close of the window will be reported in the rerun.
- 8. Sprp_sch and Sprp_dis: Exceptions List
 - a. DESE will provide this list to Cognia
 - b. The lookup is used in the assignment of official student school and district (See Data Reconciliation Audits for details)
- 9. One School District List (daSingleSchDisLookup)
 - a. DESE will provide this list to Cognia
 - b. The lookup is used in the aggregate calculations (see Aggregate Calculations for details)

V. Scaling, Equating, and Item Statistics

Scaling and equating procedures are performed in Psychometrics. The *Psychometric Business Requirements* contains details about these procedures. These procedures apply to all grades and subject areas taken operationally.

Exclusions from analyses are described in the calculation section. Scaling

- a. Scaling is completed using a lookup table provided by Psychometrics. Scales are based on student's scaleform, and raw scores.
 - b. The scaled scores are integers from 440 to 560.
 - c. Only students with participations status='Z' are included in analyses.
- 2. Achievement Level Coding
 - a. MCAS has four possible achievement levels, assigned to students using the raw to scaled score lookup provided by psychometrics.
 - b. MCAS-Alt achievement levels are translated to their corresponding MCAS achievement level prior to computing any aggregate calculations that include alternate assessment achievement level results as shown below.

MCAS Achievement Level	MCAS Description	MCAS-Alt Achievement Level	MCAS-Alt Description
1	Not Meeting Expectations (NM)	7	Incomplete Portfolio (INP)
1	Not Meeting Expectations (NM)	8	Awareness (AWR)
1	Not Meeting Expectations (NM)	9	Emerging (EMG)
1	Not Meeting Expectations (NM)	10	Progressing (PRG)
2	Partially Meeting Expectations (PM)	N/A	N/A
3	Meeting Expectations (M)	N/A	N/A
4	Exceeding Expectations (E)	N/A	N/A

VI. Student Level Calculations

A. Calculations by Participation Status Summary

Current Year Reporting Results / Aggregation and Accountability Results

Multiple Answer Documents (Security Breach):

Summarize	Prior Results	Description	Part Stat	rptLEP [sub] ¹	Test Stat	Raw Scores	Item Scores	rScaled Score (Cognia Reports)	Achievement Level (rPerfLevel, mfPerfLev)	mfScaledScore	Achievement Level (Perf2/mfPerf2)	Numin	Assess ²
NR	NR	Breach	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
NR	NR	Void (Preliminary Only)	H	any	NTO	earned	earned	NR	VAB	NR	NR	NR	0 ³
NR	NR	Preliminary	I	any	NTO	earned	earned	NR	DUP	NR	NR	NR	NR
NR	NR	Final	N	any	NTO	NR	NR	NR	INV	NR	NR	NR	NR
1 (or Grade=09*)	NR	Tested Alternate Assessment	A	0	T	NR	NR	NR	earned (Alt)	NR	earned (Alt)	Y	1
1 (or Grade=09*)	NR	Tested Alternate Assessment	A	1	NTL	NR	NR	NR	earned (Alt)	NR	NR	NR	1
1 (or Grade=09*)	NR	Tested	Z	0	T	earned	earned	earned	earned	earned	earned	Y	1
1 (or Grade=09*)	NR	Tested	Z	1	NTL	earned	earned	Pass: earned Else: NR	Pass: earned Else: LEP	Pass: earned Else: NR	NR	NR	1
1 (or Grade=09*)	NR	Not Tested /Partially Tested – LEP (ELA Only)	F	1	NTL	Earned	Earned	HS Pass: earned Else: NR	HS Pass: earned Else: LEP	HS Pass: earned Else: NR	NR	NR	1

Summarize	Prior Results	Description	Part Stat	rptLEP [sub] ¹	Test Stat	Raw Scores	Item Scores	rScaled Score (Cognia Reports)	Achievement Level (rPerfLevel, mfPerfLev)	mfScaledScore	Achievement Level (Perf2/mfPerf2)	Numin	Assess ²
1 (or Grade=09*)	NR	Not Tested /Partially Tested - Transfer	D	0 (M/S/C 1)	NTO	Earned	Earned	HS Pass: earned Else: NR	HS Pass: earned Else: TRN	HS Pass: earned Else: NR	NR	NR	NR
1 (or Grade=09*)	NR	Not Tested /Partially Tested – Medically Excused Absent	G	0 (M/S/C 1)	NTM	Earned	Earned	HS Pass: earned Else: NR	HS Pass: earned Else: MED	HS Pass: earned Else: NR	NR	NR	0
1 (or Grade=09*)	NR	Not Tested /Partially Tested - Absent	E	0 (M/S/C 1)	NTA	Earned	Earned	HS Pass: earned Else: NR	HS Pass: earned Else: ABS	HS Pass: earned Else: NR	NR	NR	0
1 (or Grade=09*)	Prev. Tested	Tested Alternate Assessment Accountable Retest	C	0	TR	NR	NR	NR	earned (Alt)	NR	highest (Alt)	Y	1
1 (or Grade=09*)	Prev. Tested	Tested Alternate Assessment Accountable Retest	C	1	NTL	NR	NR	NR	earned (Alt)	NR	NR	NR	1
1 (or Grade=09*)	Prev. Tested	Not Tested Accountable	L	0	NTO	NR	NR	NR	PRT	NR	highest	Y	1

Summarize	Prior Results	Description	Part Stat	rptLEP [sub] ¹	Test Stat	Raw Scores	Item Scores	rScaled Score (Cognia Reports)	Achievement Level (rPerfLevel, mfPerfLev)	mfScaledScore	Achievement Level (Perf2/mfPerf2)	Numin	Assess ²
1 (or Grade=09*)	Prev. Tested	Not Tested Accountable	L	1	NTL	NR	NR	NR	PRT	NR	highest	Y	1
1 (or Grade=09*)	Prev. Tested	Tested Accountable Retest (meets or partially attempted)	Y	0	TR	earned	earned	earned	earned	earned	highest	Y	1
1 (or Grade=09*)	Prev. Tested	Tested Accountable Retest (meets or partially attempted)	Y	1	NTL	earned	earned	Pass: earned Else: NR	Pass: earned Else: LEP	Pass: earned Else: NR	NR	NR	1
0	Prev. Tested	Tested Not Accountable Alternate Assessment (Retest)	W	0	TR	NR	NR	NR	earned (Alt)	NR	NR	NR	NR
0	Prev. Tested	Tested Not Accountable Alternate Assessment (Retest)	W	1	NTL	NR	NR	NR	earned (Alt)	NR	NR	NR	NR
0	Prev. Tested	Tested Not Accountable (Retest)	R	0	TR	earned	earned	earned	earned	earned	NR	NR	NR

Summarize	Prior Results	Description	Part Stat	rptLEP [sub] ¹	Test Stat	Raw Scores	Item Scores	rScaled Score (Cognia Reports)	Achievement Level (rPerfLevel, mfPerfLev)	mfScaledScore	Achievement Level (Perf2/mfPerf2)	Numin	Assess ²
0	Prev. Tested	Tested Not Accountable (Retest)	R	1	NTL	earned	earned	Pass: earned Else: NR	Pass: earned Else: LEP	Pass: earned Else: NR	NR	NR	NR
0	Prev. Tested	Partially Tested Not Accountable (Retest)	B	any	NTO	earned	earned	Pass: earned Else: NR	Pass: earned Else: INC	Pass: earned Else: NR	NR	NR	NR
0	Prev. Tested	Not Required to Test (Retest)	J	any	NTO	NR	NR	NR	NRT	NR	NR	NR	NR

¹ rptLEP is LEPPFirst for all grades/subjects/participation statuses that do not have prior results. It is a calculated combination of LEPPFirst and prior LEP First status for Accountable partstatuses with prior results. See calculations section for details.

² Assess exceptions for ELA: there is an additional condition of participation on the Access test. See calculation specifics for details.

³If Summarize = 1 then Assess = 0. If Summarize = 0 then Assess is blank.

*Grade = 09 students are assigned participation statuses as if Summarize = '1'. Perf2, Numin, and Assess are populated for calculations but set to blank in the Megafire deliverable.

“(M/S/C 1)” indicates that rptLEP[sub] may also be ‘1’ in Math, Civics and Science for the listed participation statuses and Pass is defined as scaled score is >=470 all grades.

(“NR” Not Reported indicates data are blank)

Breach Instructions are applied at the student level regardless of participation status and are identified by Amend > '1'

B. Other Calculations

1. Official School and Official District Code

a. Official District (sprp_dis)

- i. If the student's testing discode+schcode is on the Exceptions List (System+School) then the official district is the sprp_dis from the Exceptions List.
- ii. If the student's testing orgtype is 6, 13,22, 25 or 50 then the official district is set to the discode concatenated with four zeroes.
- iii. Otherwise, the official district is the sending district from SIMS (sendddiscode) if it exists, concatenated with four zeroes at the end. If sendddiscode is blank the official district is set to '99999999'.

b. Official School (sprp_sch)

1. If the student's testing school (discode+schcode) is on the Exceptions List (System+School) then the official school is the sprp_sch from the Exceptions List.
2. If a student is from a collaborative school (testing OrgType = 3 or 4) then the official school is = 05XX0000 where XX is the 3rd and 4th digit of the testing district code.
3. If the student's testing orgtype is 25,31, or 50 then the official school is the official school code from SIMS (simsDiscode + SimsSchcode). If the simsDiscode and simsSchcode are blank the official school is set to the testing school code (discode+schcode). If the official school from SIMS is orgtype 22, then use the Exceptions list for official school. If the official school from SIMS is orgtype 3 or 4 apply formatting described in #2 above. If orgtype of the SIMS school is 4, set orgtype to 3.
4. Otherwise, the official school is the testing school (discode+schcode).

2. StudentID

- a. StudentID = rptStudentID from DPRaw (verified SASID)
- b. For non-demonstration students, if StudentID does not begin with '10' it was generated by DP for linking purposes and will be set to blank for reporting.

3. Accommodations and Accommodation Footnotes

- a. If a student did not attempt any items in a subject, the corresponding raw accommodation indicators (from DPRaw) are ignored during the determination of accommodations and footnotes for reporting. Otherwise, if a student attempts at least one item in a subject, the corresponding raw accommodation indicators are evaluated:
 - i. For ELA and Math accommodation all items (common, matrix, and field-test) are considered.
 - ii. All underlying accommodation fields in DPRaw are maintained as provided, regardless of student attempt status.
 - b. Standard Accommodations
 - i. Accom_e = '1' if the student received any accommodations in ELA, otherwise set it to blank.
 - ii. Accom_m = '1' if the student received any accommodations in mathematics, otherwise set it to blank.
 - iii. Accom_s = '1' if the student received any accommodations in science otherwise set it to blank.
 - iv. Accom_c='1' if the student received any accommodations in civics, otherwise set it to blank.
 - c. Special Access ELA Accommodations
 - i. If Human_Read_Aloud_special is indicated, then Accom_ReadAloud='H'
 - ii. If Text_to_Speech_Special is indicated, then Accom_ReadAloud='T'
 - iii. If Human_Scribe_Special is indicated, then Accom_Scribe='H'
 - iv. If Speech_to_Text_Special is indicated, then Accom_Scribe='S'
 - i. Special Access Math Accommodation: If Calculation_Device is indicated, then Accom_Calculator='1'
 - d. For special access Accommodation Student Report text based on elaNSAFootnote and matNSAFootnote see table Special Access Accommodation Footnote Text (Student Report)
4. Reporting First Year EL Status
- a. RptLEP is determined for each subject based on current year partstatus, test attemptedness, EL First-year status, and Prior EL First-year status (where applicable) to determine if a student's results should be considered achieved while under EL First-year status or as currently First-year EL. This takes into consideration the prior status of the student when prior results are eligible for accountability (currently only allowed in science)
 - b. For all participation statuses that are considered Not Accountable rptLEP[sub] = ELfirstyear.
 - c. Otherwise, if the student is considered Accountable then:
 - i. If the student has prior results:

1. If the student meets attemptedness this year, then:
rptLEP[sub] = ELFirstyear.
 2. If the student partially attempts or does not attempt this year, then:
 - a. rptLEP[sub] = '1' if either ELFirstyear = '1' or [sub]NTL = '1'
 - b. Otherwise rptLEP[sub] = '0'
 - ii. If the student does not have prior results, then rptLEP[sub] = ELFirstyear
5. Alt
 - a. [e/m/s]Alt is set to '1' if a student is considered Tested or Retested Alternate Assessment (accountable or not accountable; PartStatus in 'A','C','W'). Otherwise, it is set to '0'.
6. SpecialEd
 - a. If a student is considered Tested or Retested Alternate Assessment (accountable or not accountable) in any subject (eAlt, mAlt, cAlt or sAlt = '1') then SpecialEd = '1'. Otherwise, it is taken from IEP in SIMS. If it is blank it is defaulted to '0'.
7. SSubject
 - a. SSubject is set to the science subject that is used for reporting.
 - b. Data Processing will provide the science subject for the current test as well as science subject for prior results.
 - c. If a student took alt, then the alt science subject is reported.
 - d. Report the current science subject, if the student attempted at least 1 operational item.
 - e. If the student has prior results and did not attempted at least 1 operational item on the current test report previous science subject.
 - f. Otherwise, report the student as Biology (ssubject=5)
8. Raw Scores
 - a. Overall Raw Score
 - i. The student's overall raw score is the sum of scores for all scaling items.
 - ii. If a student has a partstatus that does not receive reported raw scores or if the student did not attempt any items (Attempt[sub]='N') then the raw score is set to blank after all subsequent calculations are complete.
 - iii. On V1 and V2 rosters, total points is based on the items that are scored at the time of reporting the version.
9. Points Earned

- a. [sub]SRpts are based on common, scaling multiple choice or selected response items with point values stored in item metadata tables. Where [sub]=e for ELA, m for Math, c for Civics, s for Science/Biology/Physics
- b. [sub]CRpts are based on non-MC or involving open response, constructed response and short answers (including essay scores). Item point totals are calculated based on item metadata tables.
- c. If a student does not receive reported raw scores these calculations are set to blank.

10. Reporting Category Points Earned

- a. The total points earned, and the percent of possible points earned by the student are calculated by reporting category.
- b. Calculations include all scaling items.
- c. If a student does not receive reported raw scores the number of points earned, and the percent of possible points earned are set to blank.

11. Item Responses

Students with a participation status that does not receive reported item scores and those who do not receive item scores due to test attempt status, passing status, or rptLEP conditions will have scores blanked out (NULL) after raw scores have been calculated, if applicable.

- a. All scaling items are reported and stored to support the student report and megafire, V1 and V2 deliverables (the State File, includes all items):
 - i. Individual Student Report: OR and MS items: the item score or not scorable code is reported. Responses of 'B' (blank) are set to NULL.
 - ii. Individual Student Report: Scores are formatted as x/y where x=earned score on the item; y=maximum score possible on the item.
 - iii. On the V1 and V2 rosters, only operational item scores that are scored at the time of reporting are included on the report. Question numbers for all common items are printed on the report for both versions.
 - iv. On the V1 and V2 rosters the item scores are printed without the maximum score possible on the item.
 - v. On the V1 and V2 rosters, a dash represents that the item is not yet scored and a blank cell indicates the item is not attempted.
- b. The order of the items is the releaseditemorder in the test map.
- c. Reporting Categories are stored in the Standards column in the test maps.
- d. Practice categories are stored in the Practice_Category column.

12. Current-Year Reporting Results

- a. Information stored in ScaledScore, Perflevel, rScaledScore, and rPerflevel are based on current year test results only. See the Calculations by Participation Status Summary table for details.
- b. ScaledScore
 - i. Current year scaled scores are used for aggregations. Conditions based on pass/fail, rptLEP or breach codes are not applied. This is an internal MP field that is not directly reported.
 - ii. Blank for alternate assessment students and students not eligible to receive a scaled score based solely on participation status.
- c. PerfLevel
 - i. Earned current-year achievement level based on scaledscore (1-4).

Scaled Score Range	Achievement Level	Achievement Level Name	Achievement Level Abbreviation
440-469	1	Not Meeting Expectations	NM
470-499	2	Partially Meeting Expectations	PM
500-529	3	Meeting Expectations	M
530-560	4	Exceeding Expectations	E

- ii. Conditions based on pass/fail, rptLEP, or breach codes are not applied.
 - iii. For Alternate Assessment students the un-translated PerfLevel from the Alternate Assessment data table StuPL is stored (7-10).
 - iv. If the student does not receive an achievement level based solely on partstatus PerfLevel is blank.
 - v. Valid Values: numeric achievement levels (1-4, 7-10) or blank. Internal Cognia field that is not directly reported.
- d. rScaledScore
 - i. rScaledScore is the current year earned scaled score for Cognia reporting purposes.
 - ii. rScaledScore = ScaledScore, with suppression based on pass/fail status, rptLEP, or breach codes applied from the participation status summary table.
- e. rPerfLevel
 - i. rPerfLevel is the current year achievement level or partstatus.
 - ii. rPerfLevel = Perflevel, modified based on pass/fail status, rptLEP, or breach codes for reporting as follows:

1. If perflevel = '1' and rptLEP[sub] = '1' and the student has a partstatus that receives the text "LEP" in place of a non-passing achievement level, then set perflevel='LEP'. This is applied by subject for all subjects.
 2. Otherwise, if perflevel is blank then rPerflevel = partstatus.
 3. If a student has a breach code, then rPerfLevel is assigned per the breach instructions to override any other standard rules.
 - iii. Valid values: numeric achievement levels (1-4, 7-10) and partstatus codes.
 - f. mfPerfLev (megafile: [e/m/s/c]PerfLev)
 - i. Formatted rPerfLevel (current year reporting results) to contain either the student's achievement level abbreviated text (Standard or Alt), or 3-character participation status code for all students (e.g., 'M', 'LEP' or 'TRN').
13. Aggregation/Accountability Results
- a. Aggregation and Accountability Results combine prior and current results, where applicable. See the Calculations by Participation Status Summary table for details.
 - b. mfScaledScore (megafile: [e/m/s/c]scaleds)
 - i. For Accountable or Grade 09 students mfScaledScore is populated with either the current year scaled score (if any attempt), or prior scaled score as applicable for accountability (if no attempt). For Not-Accountable students mfScaledScore is populated with current year results as applicable.
 - ii. mfScaledScore is populated as follows for Accountable students (or Grade 09):
 1. mfScaledScore = rScaledScore for First Time Testers and First Time Testers that did not meet attemptedness (ABS, MED, TRN, LEP).
 2. mfScaledScore = Prior highest scaled score for Previously Tested students ([sub]ScaledScore] from DPrw).
 - a. Note: if [sub]ScaledScore is blank for the above scenario, the student passed via appeals and an accurate scaled score may not be available. mfScaledScore is left blank.
 3. Otherwise mfScaledScore is blank.
 - iii. If rptLEP = '1' and the student's mfScaledScore (as determined above) is considered Failing, then mfScaledScore is set to blank.

- iv. mfScaledScore = rScaledScore for Not-Accountable students.
- c. Perf2 (used in aggregate calculations; not used for HS science aggregation for P/G reports)
 - i. Populated with the achievement level for aggregate calculations and to support the megafile Perf2 using current year and prior results as applicable.
 - ii. Perf2 is blank for all students with rptLep[sub] = '1'.
 - iii. Otherwise Perf2 is populated as follows for Accountable or Grade 09 students:
 - 1. Perf2 = rPerfLevel for First Time Testers (1-4,'6' is translated to '1').
 - 2. Perf2 is blank for First Time Testers that did not meet attemptedness (ABS, MED, TRN, LEP).
 - 3. Perf2 = Highest achievement level between rPerfLevel and High_xPerf for Accountable Retesters (science only).
 - 4. Perf2 = Translated Alternate Assessment Perf2 for students Tested Alternate Assessment or Accountable Retested Alternate Assessment. Translation is done from Alternate Assessment Achievement Levels of 7-10 to Standard Achievement Levels 1-4
 - iv. Otherwise perf2 is blank. Perf2 is blank for all Not-Accountable students except for grade 09 (available for grade 09 specific Cognia aggregations).
- d. mfPerf2 (megafile: [e/m/s/c]Perf2)
 - i. Perf2 formatted to contain the student's achievement level abbreviated text (using Standard Assessment text only, e.g., 'M' or 'E'). Blank if Perf2 is blank.
 - ii. mfPerf2 is set to blank for grade 09 students in the megafile export.

14. NumIn

See the calculations by participation status summary for a list of statuses that receive numin = '1'. Otherwise, it is '0.'

15. Assess

- a. The subject specific Assess field is populated to indicate whether Accountable students have met the participation requirement this year based on the Calculations by Participation Status Summary table.
- b. Exception for ELA only, when Assess = '1': If EL = '1' and ACCESS_Part = '0' then Assess = '0'.
- c. Fields are prefixed with e/m/s/c in the megafile.
- d. Student was assessed: 1=student tested on MCAS or student is first year EL, 0=ABS or MED or EL student who did not take ACCESS for

ELs test, blank=not included in participation reports. See the table on pages 15-17 for more detailed information.

16. Student Growth Percentile (SGP)

- a. Student growth percentiles (and standard error range) are reported for accountable first-time test takers that are not considered EL First Year (PartStatus = 'Z' and LEPPFirst[sub] = '0') in year 2 (students must receive test scores in consecutive grades two years in a row or have test scores in grade 8 and grade 10 over three years).
- b. For all other students, SGP is blank.
- c. Growth is provided by DESE for students in Math and ELA, in grades 4-8 & 10.
- d. After the discrepancy period, any student with changes to their preliminary raw score, perf2, partstatus, or StudentID will have growth data suppressed.

17. Complexity is populated with the student's alternate assessment composite complexity score for all students Tested or Retested (accountable or not-accountable) Alternate Assessment.

VII. Aggregate Calculations

1. Aggregation Summary

- a. These rules are applied to all aggregate calculations. Any additional rules specific to a particular calculation will be listed under the rules for the calculation.
 - i. All reporting levels (sch/dis/sta): Only students eligible for accountability (Summarize = '1') and test status = 'T' are included in aggregate calculations, except for Grade 09 specific calculations.
 - ii. For grade 9 and 10 HS Biology and Introductory Physics: aggregations include students with Teststatussci='T' (first time testers) for both grades together
 - iii. Students are aggregated to their official school (sprp_sch) and official district (sprp_dis), unless their sprp_dis is in daSingleSchDisLookup , in which case they are aggregated to the school associated with their sprp_dis and inclusion rules are dictated by the district (school and district calculations must match).
 - iv. Students with an SPRP Orgtype of 6 or 13 are used for school-level aggregations.
 - v. For district aggregations, if sprp_dis = '99999999' then delete.

- vi. Exclusions based on OctEnrol are not applied to one-school district school or district level calculations.
- vii. Aggregations are suppressed for affected reporting categories where items were removed from their form of the test the student took.
- b. Growth Aggregations
 - i. All students with GP populated are eligible to be included in the calculations.
 - ii. The following exclusions are applied to the pool of eligible students:
 - 1. Students with OctEnrol $\neq$ '1' are excluded at the school and district level unless they are at a one-school district.
 - iii. The state mean growth is calculated.
 - iv. Minimum N-Requirement: if $N < 20$ for a school or district results are calculated but suppressed from reports.
- c. Reporting Category Calculations
 - i. Paper and Online tests are aggregated together.
- d. Average Points Earned and Average Scale Score
 - 1. Calculate average for School, District and State
 - 2. Only students with Teststatus='T' are included in this calculation.
 - 3. Students with OctEnrol $\neq$ '1' are excluded at the school level unless they are at a one-school district.
 - 4. For HS Sciences, each science is aggregated by itself. Biology students are not combined with Introductory Physics students.

VIII.Data Deliverables Specifications

A. MegaFiles

Generic Details

- a. Megafile deliverables are posted by grade to the FTP site for the state and contain data for all processed students.
- b. All MegaFile deliverables follow the most recent layout: MCAS 2024-25 File Layout_Cognia.xlsx
- c. Test-result-based fields that are not applicable to particular deliveries are left blank. SIMS based fields are populated for all releases, where available.
- d. Amend

- i. If a student receives an amend code for the General or Alternate Assessment, then the amend field will contain the first letter of that test (e.g., A value of “EM” indicates the student received an amend code in ELA and Math).

Setting of Orgtype

1. Orgtype is based on the official school code.
 2. Using the official school code link to the MCAS org data file (DA use: icore) and pull the org type (DA use: Reportcode2).
 3. If an orgtype is not assigned, default orgtype to 'X'. This is expected due to some SPRP schools not being in the Org data file.
 4. If orgtype of official school is 4, orgtype is set to 3.
- a. The table below displays possible values for a school's Orgtype

Orgtype Code	Description
2	Special Education School
3	Collaborative
4	Collaborative Program
6	Public School
10	MA State Agency
11	Private School
13	Charter School
22	Charter School Program
25	Alternative Ed Program
29	Out-of-State School
30	Adult Diploma Site
31	MCAS Test Site
34	SEIS Program
37	Adult Basic Education Program
50	Public School Program
95	Special Education Program

- e. For 3-8, all not tested statuses will get scaled score and perflev if it's ≥ 470 . The exception is blanking out SS/perflev per the breach list.
- f. G3-8, **first-year EL**, full attempt, SS of 470+, get earned SS/perflev, teststat=NTL, perf2=blank.
- g. DataChanged

- i. DataChanged indicates if a student's record has changed since a prior release of the file. It is defaulted to '0' for all students.
- ii. Students whose record changes during the discrepancy period are flagged as datachanged = '1' (first full revision) in the post-discrepancy reporting file (release 4).
- iii. Only use the following fields when calculating datachanged:
 1. sprp_dis
 2. sprp_sch
 3. e/m/s/cteststat
 4. e/m/s/crawsc
 5. e/m/s/cscaleds
 6. e/m/s/cperflev
 7. e/m/s/cperf2
 8. e/m/s/cnumin
 9. e/m/s/cassess
- h. Commas are suppressed from school and district names, and student names.
- i. If [e/m/s/c]Alt. = '0' then set to blank.
- j. If ELfirstyear = '0' then set to blank.
- k. For the following Accommodation variables, if the accommodation equals '0', then set to blank: Accom_readaloud, accom_scribe, accom_calculator.
- l. [e/m/s/c]ScaledS is the combined current year and prior year official scaled score results for students included in aggregations and accountability.
- m. [e/m/s/c]Perflev is the formatted current year achievement level or code.
- n. [e/m/s/c]Perf2 is the formatted combined current and prior year achievement level results for accountability and aggregations. Set to blank for Grade = '09'.
- o. [e/m]SGP is the reported current-year student growth percentile.
- p. If Grade = '09' then the following accountability fields are set to blank:
 - i. sPerf2
 - ii. sNumin
 - iii. sAssess

2) Preliminary Release Specifics

- a. File Name:MCASYYYY_XX.dat
Where YYYY = 4-digit test year (e.g., 2025), XX = 2-digit test grade.
- b. Files are produced for grades 03-08 and HS (includes test grade 09 and 10 data).

- c. DataChanged is originally set to '0'. If a student record is new or was modified during the discrepancy period, datachanged is set to '1'. For any subsequent updates the datachanged flag will be maintained and incremented as necessary.
- d. MCASRowID
The mcasrowid is a 15-digit alpha-numeric field created in the following manner:
 - i. 2 digits = administration year (ie: 25 for the 2025 test)
 - ii. 2 digits = file grade (03-08 or HS)
 - iii. 1 digit = test (1 = Standard)
 - iv. 10 digits = bookletnumber (derived by DP from the student's SASID or submitted answer document)

B. Assigned Accommodations Data File(s)

- 1) File Name: [sub]Accom.csv where [sub]=e, m, s, or c
- 2) One file is produced by subject including all students in all grades and posted to the FTP.
- 3) The fields are described in the Accommodation File layout.

C. Accessed Accommodations Data File(s)

- 1) File Name: [sub]AccomByItem.csv where [sub]=e,m,s, or c
- 2) One file is produced by subject including all students in all grades and posted to the FTP.
- 3) For each test the file is stacked by item UIN and indicates which accommodations were accessed for that item.
- 4) Items with no accommodations accessed are not included in the file. If a student has not accessed any accommodations on the test this will result in that student not being included in the file.

D. Questionnaire (VOCAL) Data File(s)

- 1) File Name: Questionnaire Data GrXX.csv where XX = 2-digit grade
- 2) Layout: MCAS[4-digit year]Questionnairelayout.xlsx
- 3) Files are produced for Grades 04, 05, 08, and 10 and posted via FTP.
- 4) All students are included regardless of responses to questionnaire items, listed by SASID (StudentID)

5) Preliminary Questionnaire files will be delivered in June with final versions delivered in August. The Preliminary files will not have clean SASIDs. The MCASRowID in the final file will match the pre-discrepancy megafile.

E. Alt & Standard Participation File

A file is produced including students in all grades that took both the Alternate Assessment and Standard Assessment in the same subject. This file provides score and achievement level information for DESE to determine if any students should have their Standard Assessment results override their Alternate Assessment results. This file is posted to the FTP. The file naming convention is MCASyyyyTestedMCASandAlt.xlsx where yyyy=the academic year ex. 2122

F. State File

A state file is produced after all reruns have been done. The file contains information per the state file layout. An item list file accompanies the state file to indicate the item metadata for each item.

G. Early Release CSV file

- i. This file contains student level data for the students who tested in the grade/subject. The file is produced for each subject (ELA, Math, STE, HS Science, Civics) by school, district, and state. Files are produced by grade and for grade span 3-8. The students are included in files for their official school, official district, and the state. If the student's testing orgtype is in (4,22,25,31 or 50) then the student is also included in the file for their testing school.
- ii. The file is available for download by schools, and districts in the Download Center in LightHouse™.
- iii. The file contains all students who have attempted at least one item on the test.
- iv. The file follows the file layout EarlyReleaseCSVLayout.xlsx
- v. The file naming convention is
MCAS2425StudentData_[subject]_GrXX_<testingschcode>.csv
MCAS2425StudentData_[subject]_GrXX_<sprp_sch>.csv,
MCAS2425StudentData_[subject]_GrXX_<sprp_dis>.csv,
MCAS2425StudentData_[subject]_GrXX_ST.csv

IX. Report Deliverables Specifications

A. General Rules for Report Generation

1. If a student does not receive a student report, then no label is printed for the student.
2. If all tested subjects for the student are under the Alternate Assessment, then the student will not receive a label or student report for the general assessment.
3. If all subjects are NRT the student does not receive a label or student report.
4. “Orphan” schools, defined by the district code field in iCore beginning with a letter, have generic district names such as Test Site or Out-of-State School. These generic names will be printed on the slip sheet of the printed reports but will be blanked out on the reports themselves. This applies to both labels and student reports.

B. Student Labels

1) Templates

- a. There are 4 different label templates that differ depending on the number of subjects reported for the tested grade:
 - i. One subject – grade 09 (9th grader with no ELA and no Math submitted)
 - ii. Two subjects – grades 03, 04, 06, 07
 - iii. Three subjects – grades 05, 10 (also any 9th graders with ELA and/or Math submitted)
 - iv. Four subjects – grade 8

2) Label Displays

- a. Student Name
 - i. Presented as: FName MI. LName (with a period after the middle initial when the middle initial is not blank). Examples: JOHN T. SMITH or JENNY JONES
 - ii. This section requires special formatting when one or more of the names are missing:
 1. If Lname is blank and FName is blank, then section = “BLANK NAME”
 2. If Lname is blank and FName is not blank, then section = “Fname BLANK”

3. If Lname is not blank and Fname is blank, then section = "BLANK Lname"
- b. Grade
 - i. If grade='10' and summarize = 0 and StuGrade <> 'SP' then use StuGrade from SIMS.
 - ii. If stugrade='SP' then blank for the labels and student reports.
 - iii. Otherwise use the Test Grade and remove any leading zeroes.
- c. SASID – Student ID from SIMS, no special formatting applied.
- d. School Name, School Code, and District Name – School and District names and 8-digit School Code from iCore based on testing school (discode,schcode). No special formatting applied.
- e. Birth Date – DOB from SIMS, no special formatting applied. Stored in tblStudemo.DOB. Must be equal to 10 characters in length (MM/DD/YYYY).
- f. Test Date: "Spring 20YY" where 20YY = test year, e.g., 2024.
- g. Subject Title – Formatted with the following values:
 - i. If subject = 'ela' then 'English Language Arts'
 - ii. If subject = 'mat' then 'Mathematics'
 - iii. If subject = 'sci' then and grade is 05 or 08 then 'Science and Technology/Engineering'
 - iv. If subject='civ' then 'Civics'
 - v. Otherwise, if subject = 'sci' and grade is 09 or 10 (HS Sciences) then:
 1. If rptSciTry= '5' then 'Biology'
 2. If rptSciTry= '6' then 'Introductory Physics'
- h. Scaled Score – student earned scaled score stored as rScaledScore. If a student did not earn a scaled score for a tested subject (rScaledScore is NULL) the display is formatted as "---".
- i. Achievement level contains either the achievement level text or the not-tested statement stored in tblPerfLevelLookup. This is set using the student's rPerfLevel. This is always populated if the subject existed at the tested grade.
- j. Local Student ID is displayed as is provided by DESE.

C. Student Reports

1. General Information

- a. If all tested subjects for the student are under the Alternate Assessment, then students will not receive a student report or label for the general assessment.
- b. Test mode – Displayed is which mode of test the student used
 - i. "Paper-based test" or "Computer-based test"

- ii. If a student has not attempted items ([x]attempt='N') then test mode will be blank on the student's report.
- c. Web reports: A district level pdf contains all student report pdfs for students with that sprp_dis. A school level pdf contains all student report pdfs for students with that sprp_sch. If the testing orgtype in (4,22,25,31 or 50) then the student's report will also be included in the PDF for the testing school.
- d. Printed reports contain the student's testing school and testing district. Reports are shipped to where the student tested.

2. Templates

- a. Each subject is reported on its own page of the report.
- b. The cover page has the overall results for all subjects assessed at the student's grade.
- c. The resource page is the last page of the report.
- d. The subjects are reported in the order for grades 3-8: ELA, Math, STE, Civics. For High School the subjects are reported in the order ELA, Math, Biology/Introductory Physics.

3. Cover Page Header

- a. Title – “Spring 20YY MCAS Tests” where 20YY = test year, e.g. 2025.
- b. Student Name – Presented as proper case based on LName, FName MI. (with a period after the middle initial when the middle initial is not blank). Examples: Smith, John T. or Jones, Jenny
- c. This section requires special formatting when one or more of the names is missing:
 - i. If Lname is blank and FName is blank, then section = “Blank Name”
 - ii. If Lname is blank and FName is not blank, then section = “Blank, FName”
 - iii. If Lname is not blank and FName is blank then section = “Lname, Blank”
- d. SASID – Student ID from SIMS, no special formatting applied.
- e. School Name and District Name – School and District names are longer names from iCore based on testing school. No special formatting applied.
- f. School code is the 8-digit number with first 4=district code followed by the 4-digit school code.
- g. The district code is the 8-digit code with the last four digits=0000.
- h. Grade –single digit grade is grade< 10.
- i. DOB – DOB from SIMS, no special formatting. Must be equal to 10 characters in length (MM/DD/YYYY).
- j. Local Student ID is reported as is provided in SIMS.

4. Overall Results on the cover page

- a. The performance level or not tested reason is reported for each subject.

- b. The earned scale score, if the student is tested, is reported for the subject. If in HS previously tested in science (the prior score is reported). Otherwise, it is left blank.
- c. ELA and Math growth percentiles are reported if they are assigned.
- d. EL First-year students:
 - i. Students who are not Tested do not receive scaled scores
 - ii. if TestStat = NTL:
Scaled scores printed if earned Achievement Level is PM or above.

5. Detailed Results for each subject

- a. The student's earned scaled score is shown on the scale graphic along with the standard error.
- b. The historical scores for ELA and Mathematics are reported where available. Years reported in 2025 are **2025, 2024 and 2023 for grades 4-8**. For HS, the years are **2025, 2023, 2022**.
- c. Prior grades and scaled scores will be pulled from the SIMS data.
- d. Historical grades are populated from the SIMS fields Grade2022, Grade2023 and Grade2024. The fields are compared to the values in the table below:

Current Grade	Grade2024	Grade2023	Grade2022
04	03	NR	NR
05	04	03	NR
06	05	04	03
07	06	05	04
08	07	06	05
10	NR	08	07

If the grades from SIMS do not equal the above based on current grade, past scores, and SGP are not reported for the discrepant year.

- e. Display current year average scaled score based on official school and official district.
- f. The current year's SGP (with error band) is reported along with the prior year's growth is reported alongside the average school and district average SGP. This is applicable to ELA and Math only.
- g. Student Growth Percentile Display
 - i. Growth is provided by DESE.
 - ii. If a student's test status changes to Not Tested, then growth will be blanked out.
 - iii. Mean growth is based on official school and official district.
 - iv. Your Child – presents the student's growth percentile.
 - v. A gray vertical bar represents the SGP.

- vi. lowGP and highGP are used to draw a standard error bar behind the student score bar.
- vii. School/District – Mean value from the Summary table for school/district based on official school and district (sprp_sch and sprp_dis).
- viii. School/District Means are displayed regardless of whether the student has a growth percentile displayed.
- ix. State mean is calculated and rounded to the nearest whole number.
- h. Reporting category total earned points, total possible points and % of Total Possible Points Earned at the school, district and state level is compared to the student's % of Total Possible Points Earned.
- i. If the student has a not tested status for the test, the total earned points column is blank. The other columns and graphs are populated.
- j. The item level data is reported with the items in releaseditemorder from the test map.
- k. The Points earned in the item level data display are formatted as x/y where x=earned points on the item and y=total possible points on the item.
- l. If a student doesn't attempt an item, it is left blank.
- m. The 2-character abbreviations for the Reporting categories are used in the item level display.
- n. Reporting categories are sorted in alphabetical order.
- o. The reporting date is reported at the bottom of the report. It is formatted as [Month][4 digit year].
- p. Practice Category is reported for Civics and Science subjects.
- q. Reporting category results and state comparisons are displayed only for students who are Tested. State results include only students who are Tested.
- r. For essay points for each trait will be printed separately on the report in released item and trait order.
- s. Special Access Accommodation Student Report text based on table Special Access Accommodation Footnote Text (Student Report). See below for wording.
- t. Special access accommodation footnotes

Special Access Accommodation	Student Report Text
Read aloud	Information provided by the school indicates this student received a special access accommodation (the ELA test was read aloud to this student) as required by their IEP or 504 plan.
Scribe	Information provided by the school indicates this student received a special access accommodation (this student used a scribe for the ELA test) as required by their IEP or 504 plan.

Special Access Accommodation	Student Report Text
Calculator	Information provided by the school indicates this student received a special access accommodation (this student used a calculator for the non-calculator session of the mathematics test) as required by their IEP or 504 plan.
Read aloud and Scribe	Information provided by the school indicates this student received special access accommodations (the ELA test was read aloud to this student and the student used a scribe for the ELA test) as required by their IEP or 504 plan.

D. MCAS-Alt Feedback Form (MFF)

The Feedback Form is produced in June for the students who participate in the Alternate Assessment. This report is provided to educators as feedback to submitted student work. Alternate Assessment requirements are documented in the Reporting Business Requirements document for the Alternate Assessment.

X. Cognia Use Only:

- a. Only tests with ex[sub]='0' will be loaded to ODS
- b. Unique 4-character forms are created.
- c. Testmode is added to studenttest.demographic (values to indication: online or paper)
- d. Form definition for Psych Portal:
- e. For Grade 10
 - Paper Spanish form = 'PS00'
 - Online Spanish without special indicator = 'ES01'
 - Online Spanish with special indicator = 'ES' + first two characters of the special code
 - Online Form without special indicator = Accommodation/mode indicator + form #
 - Online Form with special indicator = special indicator + form #
- f. Science Practice Categories are stored in Objective 5 in the test map as follows:
 - Investigations and Questioning
 - Mathematics and Data
 - Evidence, Reasoning, and Modeling
- g. Civics Practice Categories are:
 - Analyzing Sources (AS)
 - Explanations and Reasoning (ER)
 - Civic Knowledge (CK)
 - Civic-based Questioning (CQ)
- A. eMetric Metadata file for the Individual Student Report PDFs
 - a. The column headings for the file are: ProgramName, ReportName, Year, Admin, Grade, Version, Subject, Org_Num, PDF_name
 - b. The file is a csv file
 - c. The naming convention for the file is MCAS2425_PDFmetadata.csv
 - d. The file is posted to the ftp site for eMetric to access

- e. ProgramName = MCAS
- f. ReportName = Individual Student Report
- g. Year=2025
- h. Admin=Spring
- i. Grade=03-08, HS
- j. Version=blank
- k. Subject=blank
- l. Org_Num=School level: Schoolcode (8-digit; first 4 digits=district code and last 4 digits=school code)
- m. Org_Num=District level: District code with four zeroes at the end to create an 8-digit code.
- n. School file naming convention: MCAS2425StudentParent_GrXX_<sprp_sch>.pdf

(school code will be sprp_sch or testing school code depending on testing school orgtype)

- o. District file naming convention: MCAS2425StudentParent_GrXX_<sprp_dis>.pdf

B. eMetric Metadata file for the Early Release Rosters

- o The column headings for the file are: ProgramName,ReportName,Year, Org_Num, PDF_name
- o The file is a csv file
- o The naming convention for the file is
MCAS2425StudentRoster_PDFmetadata.csv
- o The file is posted to the ftp site for eMetric to access
- o ProgramName = MCAS
- o ReportName = Early Release Rosters
- o Year=2025
- o Admin=Spring
- o Grade=03-08, 10, HS
- o Subject=Mathematics, ELA, Science and Technology/Engineering, Biology, Introductory Physics, Civics
- o Version=V1 or V2
- o Org_Num=Schoolcode (8 digit code)
- o PDF_Name School file naming convention (combined grade):
MCAS2025StudentRoster_[subject]_Gr38_<8-digitschoolcode>.pdf
(school code will be sprp_sch or testing school code depending on testing school orgtype)
MCAS2025StudentRoster_[subject]_GrHS_<8-digitschoolcode>.pdf
- o PDF_Name School file naming convention (single grades):
MCAS2025StudentRoster_[subject]_GrXX_<8-digitschoolcode>.pdf

(school code will be sprp_sch or testing school code depending on testing school orgtype)

Where XX=2-digit grade (HS for High School science)

Note: students at orgtype=3 or 4 are included only on rosters for their testing school. For these students their sprp_sch ends with 0000.

C. eMetric Metadata file for the Early Release CSV Files

- The column headings for the file are: ProgramName, ReportName, Year, Org_Num, PDF_name
- The file is a csv file
- The naming convention for the file is MCAS2425StudentCSV_PDFmetadata.csv
- The file is posted to the ftp site for eMetric to access
- ProgramName = MCAS
- ReportName = Early Release Data File
- Year=2025
- Admin=Spring
- Grade=03-08, 10, HS
- Subject=Mathematics, ELA, Science and Technology/Engineering, Civics, Science
- Version=V1 or V2
- Org_Num=Schoolcode (8 digit code) or district code (8 digit code) or ST for state level
- PDF_Name School file naming convention:
MCAS2425StudentData_[subject]_GrXX_<sprp_sch>.csv. If testing orgtype in (4,22,25,31 or 50) then
MCAS2425StudentData_[subject]_GrXX_<testingschcode>.csv
- PDF_Name district file naming convention:
MCAS2425StudentData_[subject]_GrXX_<sprp_dis>.csv
- PDF_Name state file naming convention:
MCAS2425StudentData_[subject]_GrXX_ST.csv

D. eMetric Metadata file for the Released Essay Files

- The column headings for the file are: ProgramName, ReportName, Year, Org_Num, PDF_name
- The file is a csv file
- The naming convention for the file is
MCAS2425ReleasedEssay_PDFmetadata.csv
- The file is posted to the ftp site for eMetric to access
- ProgramName = MCAS
- ReportName = Released Essay PDF

- Year=2025
- Admin=Spring
- Grade=03-08, 10
- Subject=ELA
- Version=blank
- Org_Num=Schoolcode (8 digit code) or District code (8 digit code)
- PDF_Name School file naming convention:
MCAS2425StudentReleasedEssay_GrXX_<sprp_sch>.csv. If testing orgtype in (4,22,25,31 or 50) then
(MCAS2425StudentData_[subject]_GrXX_<testingschcode>.pdf
- PDF_Name District file naming convention:
MCAS2425StudentReleasedEssay_GrXX_<sprp_dis>.pdf

E. Reporting Products

Contract Code: [164652] Description MCAS Spring 2025 Admin ID 1	Report Type	Report For	Grade(s)	Report Subtype	Content Code	Qty
Student Report Parent Copy	07	1	03-10	02	00	1
Student Label	07	1	03-10	03	00	1

XI. Appendices

A. Reporting Category table

The last 3 rows in the table below are the science practice categories.

Grade	Subject	RepCatID	RepCatLabel	RepCatAbb	rptRepCatOrder
3	ela	1	Reading	RE	2
3	ela	2	Language	LA	1
3	ela	3	Writing	WR	3
3	mat	1	Operations and Algebraic Thinking	OA	5
3	mat	2	Number and Operations in Base Ten	NT	4
3	mat	3	Number and Operations-Fractions	NF	3
3	mat	4	Measurement and Data	MD	2
3	mat	5	Geometry	GE	1
4	ela	1	Reading	RE	2
4	ela	2	Language	LA	1
4	ela	3	Writing	WR	3
4	mat	1	Operations and Algebraic Thinking	OA	5
4	mat	2	Number and Operations in Base Ten	NT	4
4	mat	3	Number and Operations-Fractions	NF	3

Grade	Subject	RepCatID	RepCatLabel	RepCatAbb	rptRepCatOrder
4	mat	4	Measurement and Data	MD	2
4	mat	5	Geometry	GE	1
5	ela	1	Reading	RE	2
5	ela	2	Language	LA	1
5	ela	3	Writing	WR	3
5	mat	1	Operations and Algebraic Thinking	OA	5
5	mat	2	Number and Operations in Base Ten	NT	4
5	mat	3	Number and Operations-Fractions	NF	3
5	mat	4	Measurement and Data	MD	2
5	mat	5	Geometry	GE	1
5	sci	1	Earth and Space Science	ES	1
5	sci	2	Life Science	LS	2
5	sci	3	Physical Science	PS	3
5	sci	4	Technology/Engineering	TE	4
6	ela	1	Reading	RE	2
6	ela	2	Language	LA	1
6	ela	3	Writing	WR	3
6	mat	1	Ratios and Proportional Relationships	RP	3
6	mat	2	The Number System	NS	5
6	mat	3	Expressions and Equations	EE	1
6	mat	4	Geometry	GE	2
6	mat	5	Statistics and Probability	SP	4
7	ela	1	Reading	RE	2
7	ela	2	Language	LA	1
7	ela	3	Writing	WR	3
7	mat	1	Ratios and Proportional Relationships	RP	3
7	mat	2	The Number System	NS	5
7	mat	3	Expressions and Equations	EE	1
7	mat	4	Geometry	GE	2
7	mat	5	Statistics and Probability	SP	4
8	ela	1	Reading	RE	2
8	ela	2	Language	LA	1
8	ela	3	Writing	WR	3
8	civ	1	Foundations of Government	FG	1
8	civ	2	Government Structures	GS	2
8	civ	3	Rights & Responsibilities	RR	3
8	mat	1	Number System & Expressions/Equations	NE	3
8	mat	2	Functions	FN	1
8	mat	3	Geometry	GE	2
8	mat	4	Statistics and Probability	SP	4
8	sci	1	Earth and Space Science	ES	1
8	sci	2	Life Science	LS	2
8	sci	3	Physical Science	PS	3
8	sci	4	Technology/Engineering	TE	4
10	ela	1	Reading	RE	2
10	ela	2	Language	LA	1

Grade	Subject	RepCatID	RepCatLabel	RepCatAbb	rptRepCatOrder
10	ela	3	Writing	WR	3
10	mat	1	Number and Quantity	NQ	3
10	mat	2	Algebra and Functions	AF	1
10	mat	3	Geometry	GE	2
10	mat	4	Statistics and Probability	SP	4
10	bio	1	Molecules to Organisms	MO	4
10	bio	2	Heredity	HE	3
10	bio	3	Evolution	EV	2
10	bio	4	Ecology	EC	1
10	phy	1	Motion, Forces, and Interactions	MF	2
10	phy	2	Energy	EN	1
10	phy	3	Waves	WA	3
5,8, HS	sci	N/A	Investigations and Questioning	A	N/A
5,8, HS	sci	N/A	Mathematics and Data	B	N/A
5,8, HS	sci	N/A	Evidence, Reasoning, and Modeling	C	N/A
8	civ	N/A	Analyzing Sources	AS	N/A
8	civ	N/A	Explanations and Reasoning	ER	N/A
8	civ	N/A	Civic Knowledge	CK	N/A
8	civ	N/A	Civic-based Questioning	CQ	N/A

B. Mapping for Civics Practices

Categories	Practices
Analyzing Sources	PS4, PS5
Explanations and Reasoning	PS3, PS6
Civic Knowledge	PS1
Civic-based Questioning	PS2, PS7

C. Top 15 Languages for report template translations

#	First Language	Frequency	Percent	Cumulative Percent
1	Spanish	82,465	12.5	86.1
2	Portuguese	24,991	3.8	89.9
3	Chinese	9,865	1.5	91.4
4	Creole (Haitian)	8,323	1.3	92.7
5	Arabic	5,580	0.8	93.5
6	Crioulo	4,933	0.7	94.3
7	Vietnamese	4,497	0.7	94.9
8	Russian	3,017	0.5	95.4
9	Khmer	2,415	0.4	95.8
10	French	1,684	0.3	96.3
11	Twi	1,424	0.2	96.5
12	Hindi	1,323	0.2	96.7
13	Telugu	1,201	0.2	96.9
14	Gujarati	1,166	0.2	97.1
15	Albanian	1,125	0.2	97.3

Coding in SIMS firstlanguage field

code	language
spa	Spanish
por	Portuguese
chi	Chinese
hat	Haitian Creole
ara	Arabic
cpp	Cape Verdean Crioulo
vie	Vietnamese
rus	Russian
khm	Khmer
fre	French
twi	Twi
hin	Hindi
tel	Telugu
guj	Gujarati
alb	Albanian

XII. Addenda:

1. Due to issues with the items rendering online, the following item in Grade 10 ELA will be flawed and not included in the students' raw score. Students who took accommodated forms for the items are not affected:

EL903436123

- a. DESE decided that the item be flawed and removed from **all** forms. The item is removed from the test maps, RIDs QTI etc.
 - b. The test will have 29 items reported.
2. Tests with no attempted common items will be excluded from V1 and V2 deliverables.
 3. FormType will be set to 'S' for students on an SR/AT or Braille form.
 4. If sprp_sch orgtype not in ('6' or '13') then aggregations are suppressed at the school level and note #1 is applied
If sprp_dis='99999999' then aggregations at the district level is suppressed and note #1 is applied.

We will apply the N-size note to:

Avg. school and district growth

Avg. school and district scaled score

Percent school and district reporting category aggregations

Note Text from DESE:

- #1: District/school level results are available only for public and charter schools.
- #2: To protect student privacy, results are not shown when the number of students is too small.
5. Students who took a special form will have the reporting category table reported as follows:
 - a. Their earned reporting category points will be reported.
 - b. The points possible column will be populated
 - c. The school, district and state level aggregations will be suppressed
 - d. Their items will be reported except for cases where the released item order overlaps in merge cases. In 2025, there is one case in Grade 8 ELA that falls into this type of special form. The items are not reported in this case.
 - e. There will be a note below the reporting category table that reads “*This information is not available because the student took a special form.*”
 6. Rerun
 - a. Megafire for DESE to include only affected students
 - b. Megafire for eMetric to include ALL students
 - c. Only affected ISRs printed
 - d. Web school and district files updated with affected ISRs. Only affected school and district files uploaded for eMetric.

Reporting Business Requirements

Massachusetts Comprehensive Assessment System Alternate Assessment (MCAS-Alt)

Spring 2025

This document details requirements for analysis and reporting. The final student level data used for analysis and reporting is described in the “Data Processing Specifications.” This document is considered a draft until the Massachusetts Department of Elementary and Secondary Education (DESE) signs off. If there are rules that need to be added or modified after said sign-off, DESE sign-off will be obtained for each such rule.

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I. Contract Overview

A. New For This Year

- Continuing into 2025: Achievement Level “Incomplete Portfolio” is changed to “Incomplete”
- Civics has been added to grade 8 subjects
- Students participating in the Alternate Assessment can no longer achieve the achievement levels:
Not Meeting Expectations
Meeting Expectations
Partially Meeting Expectations
Exceeding Expectations
- Achieving Competency Determination (CD) is no longer used as a graduation requirement
- The student report will be available to schools and districts in the Download Center in eMetric’s reporting platform
- There is a version of the student report created in the Family Portal
- Previously Failed and Previously Passed replaced with participation status Previously Tested
- Absent is not applicable to Grade 9 students. Not Required to Test status used instead for such cases.
- Only 1 copy of the student report will be printed.

B. Test Administration(s) Adminid=5

Subject	Required Grades	Permissible Grades	Test Type
ELA	03-08, 10	03-08, 10+	Portfolio
Mathematics	03-08, 10	03-08, 10+	Portfolio
Science & Technology/Engineering	05, 08	05, 08	Portfolio
Civics	08	08	Portfolio
One of either High School Biology, Introductory Physics	10	09,10+	Portfolio

C. General Information

- Client and internal deliverables for this contract are listed. Specifications for each deliverable are detailed in the Deliverable Specifications section provided. The Reporting Timeline is June through Post-Discrepancy.

Deliverable	Type	Delivery	June	Prelim	Post-Discrepancy
Student data Files	.xls	To PM	Y	N	Y
Alt Mega File	.dat	To PM	Y	N	N
Comments Summary	.xls	To PM	N	N	Y
General Comments Summary	.xls	To PM	N	N	Y
State Performance Level Summary	.xls	To PM	N	Y	Y
State Participation Summary	.xls	To PM	N	N	Y
Teacher Survey	.xls	To PM	N	Y	N
Participation by Disability	.xls	To PM	N	N	Y
Feedback Form (school level pdf)	.pdf	FTP for State	Y	N	N
Feedback Form (by student pdf)	.pdf	Shipped with Portfolio	Y	N	N
Individual Student Report* (school and district copy)	.pdf	Shipped to District Available in the Download Center	N	N	Y

*A version of the student report is available in the Family Portal.

II. Internal Data Sources

A. Scoring

- i. If score 1 does not match score 2 for any dimension, there must be a 3rd score for that dimension.
- ii. If there is a 3rd score for a dimension, that score is the score of record. Otherwise, the 1st score is the score of record.
- iii. If scorer 3 bubbles Strand not Submitted, the strand will be considered not submitted and no scores will be reported.
- iv. If Demonstration of Skills or Independence has a score of 'M' then both Demonstration of Skills and Independence must have a score of 'M'.
- v. A score of 'M' for scorer 1 and/or 2 will always have a 3rd score.
- vi. A score of '1' for Level of Complexity from scorer 1 and/or 2 will always have a 3rd score.
- vii. If Level of Complexity has a score of 1 then all other scores for that strand must be blank.
- viii. If 'At or Close to Grade Level Bubble' is 1 for a content area, then at least one of the required strands for that content area must have a Complexity score of 3 or higher.
- ix. A score of 'M' for Demonstration of Skill and Independence counts as a 1 for analysis.

- x. The performance level for each strand is determined by a lookup table (see section VI.B) using scores from Complexity, Demonstration of Skills, and Independence.
- xi. Strands with a Level of Complexity score of 1 will be treated as not submitted for analysis. If a required strand has a Level of Complexity score of 1, then the resulting performance level will be incomplete.
- xii. For High School sciences DP sets the SciTry variable to indicate which science test was submitted for the current year, SciTry is calculated by reconciling the subject indicated by scorer 1 with scorer 3.
 - ‘1’ = Legacy Biology
 - ‘2’ = Chemistry
 - ‘3’ = Legacy Physics
 - ‘4’ = Technology/Engineering
 - ‘5’ = NextGen Biology
 - ‘6’ = NextGen Introductory Physics
 - For grades 10+ where science was not submitted, default sciTry to 5.
 - SciTry is blank for grades 03-08.
 - DA calculates the final reporting SciTry value as rptScitry.

B. Data Processing (DP)

- i. **Amend Flag**
 - The Amend flag for each content area is set by DP based on test booklet reconciliation and the DESE Breach List on an individual student basis. The default Amend flag value for all students is ‘0’.
 - See the Amend Flag Lookup (a Cognia internal Document) for valid Amend Flag values and their impact on reporting.

III.External Data Sources

A. Breach List

- i. Students who are considered a security breach are provided by the DESE in the Breach List. These students are identified as Security Breach: Cheating and instructions for processing and reporting the tests on an individual case basis are provided.
- ii. Data Analysis adds necessary Amend flag values (> ‘1’) and instructions to the Amend Flag Lookup for each distinct scenario on the Breach List.

- iii. Data Processing applies any necessary changes to the student record based on the DESE instructions, and applies the corresponding Amend Flag value from the lookup to the student for Data Analysis processing.

B. SIMS

- i. Student demographic data is provided by the DESE for reporting use. Please see the Data Processing specifications for internal validations and requirements of the data.
- ii. **Summarize**
 - Summarize is populated in SIMS as either '1' or '0' or blank:
 - a. Summarize = '1' indicates that the student is expected to test in the subjects specified for their grade and should be included in aggregations (where applicable). Their results are included in accountability determinations.
 - Students in Grades 03-08 are all expected to test.
 - Students in Grade 10 (or students skipping grade 10 who have not yet been tested) are expected to test in Math and ELA and are expected to test or to have prior scores for science. They will have Summarize = '1'.
 - b. Blank Summarize in SIMS is only applicable to students from the student directory that do not link to SIMS.
 - c. Summarize = '0' indicates that the student is not expected or required to test at this time for accountability. These students are excluded from aggregations (except for grade 09 specific aggregations). Their results are not counted towards accountability determinations. This includes but is not limited to: grade 09 students, students that are retesting to increase their scores for scholarship purposes, students that are new to Massachusetts.
 - See the Data Reconciliation section IV.A for Data Processing rules for determining the final Summarize source or default value in the views for DA based on Test Grade and SIMS data.
- iii. **Banked Prior Achievement Level**
 - Only applicable for science. All references are specific to science; if these determinations are needed for Math or ELA, the corresponding Math and ELA specific fields would be used.
 - High_sPerf in SIMS contains the prior high achievement level to be considered during participation status assignment. ELA and Math fields are High_ePerf and High_mPerf respectively and are expected to be blank for HS students with Summarize = '1'.
 - All other fields with historical score or performance information, are ignored during the participation status determination for students.

- Data are stored in DPRaw for DA in [sub]PerfLevelHigh (for all subjects) and [sub]NTL fields (for science).

iv. SciNTL

- If SciNTL = '1' a student is considered to have previously tested in science as a first year EL student and was reported with a sTestStat = 'NTL'.

C. Discrepancy Site

- i. Data from preliminary reporting is posted to the discrepancy site for clean up by the field and the department.
- ii. See the Discrepancy Site Requirements for more details on which fields are available for editing at each user level.
- iii. Data Processing re-processes data post-discrepancy to incorporate the updated information and discrepancy resolutions from the DESE for DA for final reporting.
- iv. During final processing all information from the discrepancy site is considered final and is maintained, however, changes to certain fields require additional data audits and/or recalculation of student participation status to ensure consistency. See the Data Reconciliation section for these details.

D. Alternate Assessment Override

- i. Based on preliminary results from the Alt and Standard Results data file, the DESE may identify any students whose Standard Assessment results should be reported instead of their Alternate Assessment results during final reporting (subject specific).
- ii. The DESE will provide this list to Data Processing with the discrepancy resolutions.
- iii. DP will set the amend flag to appropriately identify these students for DA.

IV. Data Reconciliation

The following cleanup will be performed on student level data prior to analysis once demographic data and reconciled test information are compiled to ensure consistency. Calculations are performed in the order listed below, and audited values are used in each subsequent check and for all analysis and reporting, as applicable:

A. Summarize (performed by DP)

- i. If test grade is in 03-08, summarize is defaulted to '1' for all students, regardless of SIMS value.

- ii. If test grade is '09' summarize is defaulted to '0' for all students, regardless of SIMS value.
- iii. If test grade is '10':
 - If student grade is $\leq$ '09':
 - a. If the student submitted both Math and ELA (Alt or Standard), then summarize = '1'.
 - b. Otherwise, summarize = '0'.
 - If student grade = '10','11','12', or 'SP' then summarize is taken from SIMS. If summarize is missing, or if student grade is missing, it is defaulted to '0'.
- iv. The same rules are applied post-discrepancy, except summarize is taken from the updated Discrepancy data in place of SIMS. If summarize is updated during discrepancy reporting the participation status is set to blank to be reassigned.

B. ELfirstyear YrsInmass/ YrsInmass_num

- i. ELfirstyear is provided in SIMS and is not audited by Cognia
- ii. YrsInmass and YrsInMass_num are not audited by Cognia

C. EL

- i. If ELfirstyear = '1' then update existing EL to '1'.

D. EL_FormerEL

- i. If ELfirstyear = '1' or EL = '1' or FormerEL (DA Use: "flep_off" in dpraw) = '1' then update existing EL_FormerEL to '1'.

V. Official School and Official District Code

A. Terminology:

- i. Discode = Cognia Testing Discode from DPRaw (See DP Specifications)
- ii. SchCode = Cognia Testing SchCode from DPRaw (See DP Specifications)
- iii. SendDiscode = Sending District from SIMS
- iv. SimsDisCode = Official Discode from SIMS
- v. SimsSchCode = Official SchCode from SIMS
- vi. Testing Orgtype = Testing school (discode+schcode) Org type
- vii. OrgType = SPRP school org type
- viii. Exceptions List is provided to Cognia by the DESE.

ix. (DA Use): The exceptions list is stored in daTestSiteLookup

B. Official District (sprp_dis)

- i. If the student's testing discode+schcode is on the *Exceptions List* (System+School) then the official district is the sprp_dis from the *Exceptions List*.
- ii. If the student's testing orgtype is 6, 13, 22 or 25 then the official district is set to the discode concatenated with four zeroes.
- iii. Otherwise, the official district is the sending district from SIMS (senddiscode) if it exists, concatenated with four zeroes at the end. If senddiscode is blank the official district is set to '99999999'.

C. Official School (sprp_sch)

- i. If the student's testing school (discode+schcode) is on the *Exceptions List* (System+School) then the official school is the sprp_sch from the *Exceptions List*.
- ii. If a student is from a collaborative school (testing OrgType = 4) then the official school is = 05XX0000 where XX is the 3rd and 4th digit of the testing district code.
- iii. If the student's testing orgtype is 25, 31 then the official school is the official school code from SIMS (simsDiscode + SimsSchcode). If the simsDiscode and simsSchcode are blank the official school is set to the testing school code (discode+schcode). If the official school from SIMS turns out to be orgtype 22, then use the Exceptions list for official school.
- iv. Otherwise, the official school is the testing school (discode+schcode).

D. Setting of Orgtype

- i. Orgtype is based on the official school code.
- ii. Using the official school code link to the MCAS org data file (DA use: icore) and pull the org type (DA use: Reportcode2).
 - If an orgtype is not assigned, default orgtype to 'X'. This is expected due to some SPRP schools not being in the Org data file.

E. YrsInSch and YrsInDis

- i. If sprp_sch or testing school (discode+schcode) = the official SIMS school code from June SIMS (simsDiscode + simsSchcode) then use YrsInSch value from SIMS. Otherwise set YrsInSch = '1'.
- ii. If sprp_dis = SendDiscode+0000 from June SIMS, then use the YrsInDis value from SIMS. Otherwise set YrsInDis = '1'.

F. Oct_Enrol (*enrolled in same location since Oct*)

- i. If sprp_sch or testing school (discode+schcode) = SIMS school code from June SIMS (simsDiscode+simsSchcode) then OctEnr = Oct_off from SIMS. Otherwise set Oct_Enr = '0'.

G. Con_Enrol (*continuously enrolled for 2 years*)

- i. Only populated for students in the grade 10 view, otherwise blank.
- ii. If sprp_sch or testing school (discode+schcode) = the official SIMS school code from June SIMS (simsDiscode + simsSchcode) then use con_enr_sch value from SIMS. Otherwise set con_enr_sch = blank.
- iii. If sprp_dis = SendDiscode+0000 from June SIMS, then use the con_enr_dis value from SIMS. Otherwise set con_enr_dis = blank.
- iv. ConEnr_sta is taken from SIMS.

VI. Student Participation and Reporting Status**A. Basic Definitions****i. Test Attemptedness** (*by subject*)

- A strand was submitted if there is at least one scoring dimension with a valid score.
- Attempt: A student participated if at least one required strand was submitted
- Did not attempt: Students did not submit any required strands.

ii. Not Tested Indicators (*by subject*)

The following Not Tested reasons may be bubbled on the student's answer booklet.

- Tested Standard MCAS
- Absent-Medically Documented (MED)

iii. Transfer

- If Active_Test ≠ '1' and at least one required strand is missing the student is considered a transfer student.

iv. Void

- Students whose only Student Information booklet (SIB) has been voided (Void = '1') are considered "Void".

v. Prior Results (*by subject*)

Prior results currently only apply to HS Science. All references to High_sPerf and SciNTL

should be considered subject specific if ELA and Math are updated to allow for prior result determinations.

- **No Prior Results**

Students with a blank High_xPerf and sciNTL ≠ '1' from SIMS are considered to not have prior results.

- Student has High_xPerf populated in SIMS or sciNTL='1' are considered as **Previously Tested (PRT)**.

- **Previously First Year EL**

- a. Students with SciNTL = '1' from SIMS are considered to have previously tested in science as a First Year EL student and were reported as TestStat = 'NTL'.
 - Applies to Science only, corresponding variables for ELA and Math do not currently exist in SIMS.

B. Participation Status Assignment Hierarchy (by subject):

- i. Breach List (Amend Flag > '1:' continue through assignment, breach instructions will trump all reporting instructions)
- ii. Summarize = '1' or Grade='09' without prior results:
 - If the student **meets attemptedness** Tested (*PartStatus*= 'A').
 - If the student did not attempt:
 - a. If subject = 'ELA' and First Year EL then: **Not Tested, LEP** (*PartStatus*= 'F')
 - b. Otherwise, if MED then: **Not Tested Medically Documented** (*PartStatus*= 'G')
 - c. Otherwise if Tested Standard MCAS is indicated then: **Tested MCAS Standard Assessment** (*PartStatus*= 'Z')
 - d. Otherwise if Grade≠'09' : **Not Tested Absent** (*PartStatus*= 'E')
 - e. *Otherwise if grade='09': Not Required to Test* (*PartStatus*= 'J')
- iii. If (Summarize='1' or Grade='09') and **Previously Tested**:
 - If the student *meets attemptedness* then: **Tested Accountable Retest** (*PartStatus*= 'C').
 - If the student *did not attempt*, then: **Not Tested Accountable/Previously Tested** (*PartStatus*= 'L').
- iv. Summarize = '0' and grade≠'09' (regardless of any prior test results):
 - If the student meets attemptedness: **Not Accountable Retester** (*PartStatus*= 'W').
 - If the student did not attempt: **Not Required to Test (NRT)** (*PartStatus*= 'J').

C. Participation Status Summary

- i. **Note** there are some participation statuses in the chart that are not in the hierarchy above. These are not achievable in the alt and will only come out of the discrepancy site.

Summarize	Prior Results	Description	Part Status	Test Stat*	Discrepancy Site Code	Discrepancy Site Text
n/a	n/a	Breach**	N/A	N/A	N/A	N/A
n/a	n/a	Void (Preliminary Only)	H	NTO	VAB	Void Answer Booklet
n/a	n/a	Multiple Answer Documents-Preliminary	I	NTO	DUP	Multiple Answer Booklets
n/a	n/a	Multiple Answer Documents-Final	N	NTO	n/a	n/a
n/a	n/a	Invalidated (Only assigned via Breach List)	N	NTO	INV	Invalidated
1 (or Grade=09)	n/a	Tested Accountable Alternate Assessment	A	T*	ALT	Tested Alternate Assessment
1 (or Grade=09)	n/a	Tested	Z	T*	STD	Tested Standard
1 (or Grade=09)	n/a	Not Tested (/Partially Tested) – LEP (ELA only)	F	NTL	LEP	Not Tested First Year EL
1 (or Grade=09)	n/a	Not Tested (/Partially Tested) – Transfer	D	NTO	TRN	Transferred
1 (or Grade=09)	n/a	Not Tested (/Partially Tested) – Medically Documented	G	NTM	MED	Absent – Medically Documented
1 (or Grade=09)	n/a	Not Tested (/Partially Tested) – Absent (n/a for grade='09')	E	NTA	ABS	Absent
1 (or Grade=09)	Prev. Tested	Tested Alternate Assessment/ Accountable Retest	C	TR*	ALR	Retested Alternate Assessment
1 (or Grade=09)	Prev. Tested	Not Tested Accountable/Previously Tested	L	NTO*	PRT	Previously Tested
1 (or Grade=09)	Prev. Tested	Tested Not Accountable (Retest)	R	TR*	REN	Retested Not Aggregated
0	Any	Not Tested Not Accountable (Retest)	J	NTO*	NRT	Not Required to Test

* Student results achieved while First-year EL, or students currently First-year EL (see rptLEPFFirst calculation) are reported with TestStat = “NTL” in place of listed TestStat (all subjects). See Calculations by Participation Status Summary Table for more details.

**Breach Instructions are applied at the student level regardless of participation status and are identified by Amend > '1'

D. Post-Discrepancy Assignment

- ii. DA only “recalculates” participation statuses for students with a blank participation status during post-discrepancy processing. All other participation statuses are maintained as they are provided from the discrepancy data.

iii. DP will reset participation statuses to blank prior to final processing for the following discrepancy events so DA will recalculate a new status:

- Student test grade is changed.
- Summarize is changed (not applicable in unchanged grades 03-08, 09).
- First year EL status is changed.
- Answer document is still void (entire book is suppressed).
- Answer document(s) are added or removed for a student.
- Prior results (high_xPerf, sciNTL) are changed for a student.

Current Year Reporting / Aggregation/ Accountability Results

Summarize	Prior Results (Y/N)	Description	Part Stat	rptLEP [sub] ¹	Test Stat	Achievement Level (rPerfLevel, mfPerfLev)	Achievement Level (mfperf2)	Assess ²
NR	NR	Breach	NR	NR	NR	NR	NR	NR
NR	NR	Void	H	any	NTO	VAB	NR	0 ³
NR	NR	(Preliminary Only)	H	any	NTO	VAB	NR	0 3

Multiple Answer Documents (Security Breach):

Summarize	Prior Results (Y/N)	Description	Part Stat	rptLEP [sub] ¹	Test Stat	Achievement Level (rPerfLevel, mfPerfLev)	Achievement Level (mfperf2)	Assess ²
NR	NR	Preliminary	I	any	NTO	DUP	NR	NR
NR	NR	Final	N	any	NTO	INV	NR	NR
1 (or Grade=09*)	No	Tested Alternate Assessment	A	0	T	earned (Alt)	earned (Alt)	1
1 (or Grade=09*)	No	Tested Alternate Assessment	A	1	NTL	earned (Alt)	NR	1
1 (or Grade=09*)	No	Tested	Z	0	T	earned	earned	1
1 (or Grade=09*)	No	Tested	Z	1	NTL	Pass: earned Else: LEP	NR	1
1 (or Grade=09*)	No	Not Tested /Partially Tested – LEP (ELA only)	F	1	NTL	pass: earned Else: LEP	NR	1
1 (or Grade=09*)	No	Not Tested /Partially Tested - Transfer	D	0	NTO	Pass: earned Else: TRN	NR	NR
1 (or Grade=09*)	No	Not Tested /Partially Tested - Transfer	D	(M/S/C 1)	NTO	Pass: earned Else: TRN	NR	NR

Summarize	Prior Results (Y/N)	Description	Part Stat	rptLEP [sub] ¹	Test Stat	Achievement Level (rPerfLevel, mfPerfLev)	Achievement Level (mfperf2)	Assess ²
1 (or Grade=09*)	No	Not Tested /Partially Tested – Medically Documented Absent	G	0	NTM	Pass: earned Else: MED	NR	0
1 (or Grade=09*)	No	Not Tested /Partially Tested – Medically Documented Absent	G	(M/S/C 1)	NTM	Pass: earned Else: MED	NR	0
1 (or Grade=09*)	No	Not Tested /Partially Tested - Absent N/A for Grade 9	E	0	NTA	Pass: earned	NR	0
1 (or Grade=09*)	No	Not Tested /Partially Tested - Absent N/A for Grade 9	E	(M/S/C 1)	NTA	Else: ABS	NR	0
1 (or Grade=09*)	Yes	Tested Alternate Assessment Accountable Retest	C	0	TR	earned (Alt)	highest (Alt)	1
1 (or Grade=09*)	Yes	Tested Alternate Assessment Accountable Retest	C	1	NLT	earned (Alt)	NR	1
1 (or Grade=09*)	Yes	Not Tested Accountable/Previously Tested	L	0	NTO	PRT	Highest (Alt)	1
1 (or Grade=09*)	Yes	Not Tested Accountable/Previously Tested	L	1	NLT	PRT	NR	1
0	Yes	Tested Not Accountable Alternate Assessment (Retest)	W	0	TR	earned (Alt)	NR	NR
0	Yes	Tested Not Accountable Alternate Assessment (Retest)	W	1	NLT	earned (Alt)	NR	NR
0	No	Not Required to Test	J	any	NTO	NRT	NR	NR

* Grade='09' students are assigned participation statuses as if Summarize = '1'. Perf2, Numin, and Assess are populated for calculations but set to blank in the Megafire deliverable.

Note: "(M/S/C 1)" indicates that rptLEP[sub] may also be '1' in Math, Science and Civics for the listed participation statuses.

¹ rptLEP is First yearEL for all grades/subjects/participation statuses that do not have prior results. It is a calculated combination of

² Assess exceptions for ELA: there is an additional condition of participation on the Access test. See calculation specifics for details.

³ If Summarize=1, then Assess=0. If Summarize=0, then Assess is blank.

('NR' indicates data are blank)

Breach Instructions are applied at the student level regardless of participation status and are identified by Amend > '1'

First year EL and prior First year EL status for Accountable partstatuses with prior results. See calculations section for details.

VII. Calculations

i. *Calculation Summary by Participation Status (by subject)*

A. Student Level Calculations

i. *StudentID (tblStudemmo)*

- StudentID = rptStudentID from DPRaw.
- If StudentID begins with '8' it will be set to blank.

ii. *Grade Span (tblStudemmo)*

- Calculated using a lookup file provided by the DESE.

iii. *Reporting First Year EL Status (rptLEP[sub]) (tblStudemmo)*

- RptLEP is determined for each subject based on current year partstatus, test attemptedness, First Year EL status, and Prior First Year EL Status (where applicable) to determine if a student's results should be considered achieved while under First-Year EL status or as currently First-year EL. This takes into consideration the prior status of the student when prior results are eligible for accountability.
- For all participation statuses that are considered Not Accountable rptLEP[sub] = ELfirstyear.
- Otherwise, if the student is considered Accountable then:
 - a. If the student has prior results:
 - If the student meets attemptedness this year, then: rptLEP[sub] = ELFirstyear.
 - If the student does not attempt this year, then:
 1. rptLEP[sub] = '1' if either ELFirstyear = '1' or SciNTL = '1'.
 2. Otherwise rptLEP[sub] = '0'.
 - b. If the student does not have prior results, then rptLEP[sub] = ELFirstyear.

iv. *SpecialEd (tblStudemmo)*

- If a student is considered Tested or Retested Alternate Assessment (accountable or not accountable) in any subject, then Sped_off = '1'. Otherwise, it is '0'.

v. *ParentLetter (tblStudemmo)*

- The Parent Letter flag is set to '0' to indicate that the student should not receive an Individual Student Report in the following cases:

- a. If a student is classified as not tested or breach in all required subject, then ParentLetter = '0'.
- Class Pack Identifiers (Cognia) for printing the Parent version of the Individual Student Report are produced for all students with ParentLetter = '1'.

vi. General Comments (tblStuDemo)

- Scorers have the option of leaving comments for individual strands as well as for the whole portfolio.
- Comments will be sorted numerically.
- Only the first 4 general comments will be kept and reported on the feedback form.
- If a student did not receive a performance level of incomplete and the student has less than 4 general comment codes, then.
 - a. Data Analysis will add comment code associated with Gen Comment 1 from the lookup provided by client services as a general portfolio comment. If the student still has less than 4 general comment codes, Data Analysis will add comment code associated with Gen Comment 2 from the lookup provided by client services as a general comment.

vii. Strand Specific Comments (tblStuScore)

- Scorers have the option of leaving comments for individual strands as well as for the whole portfolio.
- Comments will be sorted numerically and then alphabetically.
- Data Analysis will set comment code associated with LOC=1 from the lookup provided by client services automatically when the Level of Complexity score is '1'.
- Only first 2 strand specific comments will be kept and reported on the feedback form.
- For Strand Specific comments, if the student's final score for a particular strand does not have an 'M' for Independence and Demonstration of Skill, then comments that refer to an 'M' in either of these dimensions will be suppressed.
- For strand specific comments, if a student's final score for a particular strand has an 'M' for Independence or Demonstration of Skills then the student will receive at least one comment that refers to an 'M.' (This is handled at scoring not programmatically)
- If the performance level for a particular subject is Student took the Standard MCAS then suppress all strand specific comments for that subject.

- For grades 11, 12, and 12+ suppress the comment “Strand required but not submitted” for all strands.

viii. Performance Level (tbIStuPL)

- A content area has a performance level of Incomplete when one of the following occurs:
 - a. When not all of the required strands are submitted for a content area, the content performance level is Incomplete.
 - b. If Demonstration of Skills and Independence = M:
 - For contents requiring 3 strands, if there are 2 strands or more M's in either Independence or Demonstration of Skills, the content performance level is Incomplete.
 - For contents requiring 2 strands, if there is 1 strand or more M's in either Independence or Demonstration of Skills, the content performance level is Incomplete.
- For content areas that are not incomplete, the performance level is found using the overall strand performance level and the lookup table.
 - a. The overall strand performance level for a content requiring 3 strands is found by averaging the performance levels of the 3 final strands of record. If the average is between 3 and 3.9 round down, otherwise, round to the nearest whole number.
 - b. When more than 3 strands are submitted for a content area that requires the choice of 3, use the 3 strands that yield the highest overall strand performance level. If more than 3 strands have the same performance level, sort the strands by self-evaluation, complexity, and generalized performance, and select the top 3 based on those criteria.
 - c. The overall strand performance level for a content requiring 2 strands is determined by averaging the performance levels of the 2 strands and rounding down.

ix. Aggregation/Accountability Results (tbIStuPL)

Aggregation and Accountability Results combine prior and current results, where applicable.

- **Perf2** (Cognia aggregate calculations)
 - a. Populated with the achievement level for aggregate calculations and the megafile.
 - b. Perf2 is blank for all students with rptLep[sub] = '1'.
 - c. Perf2 = rPerfLevel for Tested Alternate Assessment that are not first-year EL (PartStatus = 'A' and rptLEP = '0'). It is translated to standard assessment achievement levels (1-4).
 - d. Perf2 = the highest achievement level between PerfLevel and [sub]PerfLevelHigh for Accountable Retest Alternate Assessment

students that are not first-year LEP (PartStatus = 'C' and rptLEP = '0'). It is translated to standard assessment achievement levels (1-4).

e. Otherwise, Perf2 is calculated in general MCAS.

x. **NumIn (tblStuPL for Megafile)**

- For HS students and 5 and 8 Science, the subject specific numin field is set to '1' if the student is assigned sperf2 is not blank for the subject. Otherwise, it is '0'. Fields are prefixed with e/m/s in the megafile.
- For 03-08 ela and math, See the calculations by participation status summary for a list of statuses that result in numin = '1'. Because this calculation is only being done at grade 03-08, if Teststat is 'T' then numin='1'. Otherwise, it is '0'.

xi. **Assess (tblStuPL for Megafile):**

- Blank since alt mega file is only produced in June

xii. **Composite Level of Complexity (tblStuPL)**

- All students who receive an alt performance level will have a Composite Level of Complexity (CLC) computed.
- Composite Level of Complexity is calculated using the Complexity scores from the final strands used to calculate the content performance level-and a lookup table, which is based on the number of strands.
- Incomplete
 - a. For portfolios with not all required strands submitted, only the required strands that were submitted will be used to compute the CLC.
 - b. When a three-strand portfolio has a strand missing, apply the rules for a two-strand portfolio.
 - c. When a two or three strand portfolio has only one of the required strands, apply the rules for a one strand portfolio.

xiii. **Achievement Level Coding**

- The MCAS Standard Assessment has four possible achievement levels, assigned to students using the raw to scale score lookup provided by psychometrics.
- Alternate Assessment achievement levels are translated to their corresponding standard assessment achievement level prior to computing any aggregate calculations that include alternate assessment achievement level results as shown below:

MCAS and MCAS-Alt Achievement Levels

MCAS Achievement Level	MCAS Description	MCAS Alt Achievement Level	MCAS Alt Description
1	03-08, 10: Not Meeting Expectations (NM)	7	Incomplete (INC)
1	03-08, 10: Not Meeting Expectations (NM)	8	Awareness (AWR)
1	03-08, 10: Not Meeting Expectations (NM)	9	Emerging (EMG)
1	03-08, 10: Not Meeting Expectations (NM)	10	Progressing (PRG)

B. Aggregate Level Calculations

i. Aggregation Rules

- These rules are applied to all aggregate calculations. Any additional rules specific to a particular calculation will be listed under the rules for the calculation.
- Tested Students (PartStatus = 'A') are included in aggregations.

C. Lookup Tables

i. Required Strands by Content Area and Grade

Grade	Content Area	Number of Strands Required	Strands Required
3	ELA	3	Language, Reading & Writing
3	Math	2	Operations and Algebraic Thinking, Measurement and Data
4	ELA	3	Language, Reading & Writing
4	Math	2	Operations and Algebraic Thinking, Numbers and Operations – Fractions
5	ELA	3	Language, Reading & Writing
5	Math	2	Number and Operations in Base Ten, Numbers and Operations – Fractions
5	Sci	3	Choice of 3*
6	ELA	3	Language, Reading & Writing
6	Math	2	Statistics and Probability, The Number System
7	ELA	3	Language, Reading & Writing
7	Math	2	Ratios and Proportional Relationships, Geometry
8	ELA	3	Language, Reading & Writing
8	Math	2	Expressions and Equations, Geometry
8	Sci	3	Choice of 3*
8	Civics	1	Civics
10+	ELA	3	Language, Reading, Writing
10+	Math	3	Choice of 3**
09, 10+	Sci	3	Any three learning standards from one discipline: Biology, Physics

* Science 05 and 08: Choice of 3 of the following: 'Earth and Space Science', 'Life Science', 'Physical Sciences', and 'Technology/Engineering'

** Math 10+: The strands titles are: 'Functions', 'Geometry', 'Statistics and Probability', 'Number and Quantity', and 'Algebra'.

ii. Strand Performance Level

Level of complexity	Demonstration of skills	Independence	Performance Level
2	1	1	1
2	1	2	1
2	1	3	1
2	1	4	1
2	2	1	1
2	2	2	1
2	2	3	1
2	2	4	1
2	3	1	1
2	3	2	1
2	3	3	2
2	3	4	2
2	4	1	1
2	4	2	1
2	4	3	2
2	4	4	2
3	1	1	1
3	1	2	1
3	1	3	1
3	1	4	1
3	2	1	1
3	2	2	1
3	2	3	2
3	2	4	2
3	3	1	1
3	3	2	2
3	3	3	3
3	3	4	3
3	4	1	1
3	4	2	2
3	4	3	3
3	4	4	3
4	1	1	1
4	1	2	1
4	1	3	1
4	1	4	1
4	2	1	1
4	2	2	1
4	2	3	2
4	2	4	2
4	3	1	1
4	3	2	2
4	3	3	3
4	3	4	3

Level of complexity	Demonstration of skills	Independence	Performance Level
4	4	1	1
4	4	2	2
4	4	3	3
4	4	4	3
5	1	1	1
5	1	2	1
5	1	3	2
5	1	4	2
5	2	1	1
5	2	2	2
5	2	3	3
5	2	4	3
5	3	1	1
5	3	2	2
5	3	3	3
5	3	4	4
5	4	1	1
5	4	2	2
5	4	3	3
5	4	4	4

iii. Content Area Performance Lookup

Strand Performance Levels	Content Achievement Level	Description
1	8	Awareness
2	9	Emerging
3	10	Progressing

iv. Composite Level of Complexity

Composite Level of Complexity Lookup for a 3 strand Portfolio

At or Near Grade Level Bubble	Strand 1: Level of Complexity Score	Strand 2: Level of Complexity Score	Strand 3: Level of Complexity Score	Composite Level of Complexity
0	2, or 1	2, or 1	2, or 1	ACC
0	3, 2, or 1	3, 2, or 1	3	EP

Composite Level of Complexity Lookup for a 2 strand Portfolio

At or Near Grade Level Bubble	Strand 1: Level of Complexity Score	Strand 2: Level of Complexity Score	Composite Level of Complexity
0	2, or 1	2, or 1	ACC
0	3, 2, or 1	3	EP

Composite Level of Complexity Lookup for a 1 strand Portfolio

At or Near Grade Level Bubble	Strand 1: Level of Complexity Score	Composite Level of Complexity
0	2, or 1	ACC
0	3	EP

Key:

ACC = Access Skill

EP=Entry Point

Data Deliverables Specifications

I. Student Data Files

A. Student Demographics

B. Student Scores

C. Student Performance Levels

- i.* Use Roster code for the Performance Levels

II. MegaFile

A. Generic Details

- i.* Megafile deliverables are posted to the FTP site for the state and contain data for all processed students.
- ii.* All MegaFile deliverables follow the layout:
MCASAlt2425AllStudentFileLayout.xlsx.
- iii.* Fields that are not applicable to particular deliveries are left blank.
- iv.* Students with Amend > '1' are reported as Amend = '1'.
- v.* Subject specific fields are prefixed by 'x' such that: m=math, e=ela, s=science, c=civics.
- vi.* xAlt = '1' if the student Tested or Retested Alternate Assessment, otherwise blank.
- vii.* Sped_Off = tblStudemo.SpecialEd.
- viii.* xPerflev = tblStuPL.rPerfLevel reformatted to DESE code or achievement level code based on rPerfLevelLookup. DESE Code (See Appendix D).
- ix.* Students with NRT for all subjects assessed at that grade are not included in the megafile.

III. Summary Files

A. Comments Summary

- i.* Contains Counts of each strand specific comment by grade, subject, and strand
- ii.* One tab includes all students.
- iii.* One tab includes student with Performance Level Incomplete

B. General Comments Summary

- i.* Contains counts of each General Comment by grade
- ii.* Includes all students.

C. State Performance Level Summary

- i.* Layout is MCASAlt2425PerfSummaryLayout.xlsx
- ii.* Include counts and percents.
- iii.* Only include students who earned an achievement level.
- iv.* One tab will contain achievement levels aggregated by grade and subject.
- v.* One tab will contain achievement levels aggregated across grades and subjects.
- vi.* One tab will contain achievement level aggregations for grades 09 and 10 by subject.
- vii.* One tab will contain achievement levels aggregations for grades 11, 12, and SP by subject.

D. State Participation Summary Files

- i.* Layout is MCASAlt2425PartSummaryLayout.xlsx
- ii.* "Assessed Student" = partstatus in ('A','Z') and TestStatus = 'T' based on data in MCAS tblStudemo (therefore NTL or first-year EL students are excluded).
- iii.* Retest Students (TestStatust = 'TR' or Alt students in grades, 11, 12, or SP) were excluded from all counts.
- iv.* Sort first tab by subject, then grade and the PartByCLC tab by grade then subject.
- v.* One tab will contain counts and percents by grade and subject.
- vi.* Percent is based on number of students assessed in standard MCAS or MCAS-Alt
- vii.* One tab will contain count and percent of students taking alt across all grades and subjects.

- viii.* Percent is based on number of students assessed in standard MCAS or alt.
- ix.* One tab will contain counts and percents by grade and subject for the tested in Standard MCAS and Tested in MCAS Alt with a composite level of complexity of Access Skills or Entry Point.

E. Teacher Survey Summary

- i.* This file is created every other year and will not be produced for the 2425 assessment year.
- ii.* Calculate total number of surveys.
- iii.* Compute counts and percentages of responses for each question. Also compute number of non-responses for each question.

F. Participation by Disability

- i.* Counts of tested students by disability type

Report Deliverables Specifications

I. Specifications

A. Feedback Form

- i.* The files will be named
MCASAltFeedbackForms2425_[DisCode][SchCode].pdf
- ii.* A grade 09 or higher report lists the science discipline strands instead of the science strands that appear for grades 03-08.
- iii.* For grades 03-08 math and ELA the titles of the strands that were not submitted and not required will not print.
 - 1. Indicated in tblStuScore where ReportingAction='0'
 - 2. For these cases the strands below will move up to display with all blank rows at the bottom.
 - 3. In grade five where there are six possible strands, if a student turns in all six only the first five will print based on the strand sort order. The strand "Measurement and Data" will not print in this case.
- iv.* An asterisk (*) is displayed in place of missing strand scores for required strands that were not submitted.
- v.* For grades 11, 12, and SP do not display asterisks in any strands.
- vi.* If the performance level for a particular subject is Student took the Standard MCAS then do not display asterisks in any strands.
- vii.* Missing scores are left blank for non-required strands.

- viii. All strands submitted will be reported.
- ix. At most 4 general comments (see section III for description of choosing general comments).
- x. At most 2 strand specific comments (see section III for description of choosing strand specific comments).

B. Individual Student Report

The Individual Student Report was redesigned in 2025. The design reflects the changes to the MCAS General Individual Student Report

i. Cover Page Header

1. For student name print Last Name, First Name, MI. in all title case.
2. Print the one-digit grade for grades 3-8.
3. Print the school name associated with the student's testing school. Print school code in parentheses after the school name.
4. Print the district name associated with the student's sending district if it exists. Otherwise print the district name associated with the student's testing district. Print the district code in parentheses after the district name.
5. Print the local student ID from SIMS.
6. Print the verified SASID.
7. Print the achievement level earned for each subject tested at that grade.

The following applies to all subject pages which include detailed results for the subject.

ii. Achievement Display

1. For tested students, place a check and shade the achievement level box corresponding to the student's achievement level.
2. For not tested students, print the not tested reason in the achievement display for that content area. Based on tblPerfLevelLookup
3. If a content area is not tested at a given grade, then do not shade or check any achievement level boxes or that content area. Print 'NOT ASSESSED FOR STUDENTS IN THIS GRADE'.

iii. Score Display

1. If the student did not submit the required number of strands print an asterisk (*) after the subject text.
 - a. Print 'REQUIRED BUT NOT SUBMITTED' in the grid for required strands that were not submitted.
 - b. If the achievement level for a particular subject is Student took a Standard MCAS then do not display the asterisk or

print 'REQUIRED BUT NOT SUBMITTED' in the grid for any strand.

2. A grade 09 or higher report lists the High School Science discipline strands instead of the STE strands that appear for grades 03-08.
3. Score Grid
 - a. All strands submitted will be reported.
 - b. For strands that were submitted, gray shade the box associated with the dimension score for level of complexity, demonstration of skills, independence, self-evaluation, and generalized performance.
- iv. Data Page Header
 1. For student name print Last Name, First Name, MI in proper case.
 2. Print SASID.

Appendix

I. Assigning Sprp_sch and Sprp_dis: Exceptions List (daTestSiteLookup)

This information is collected and stored with the Operational General Assessment program. Please refer to the Operational General Assessment rules for the list of exceptions.

a. One-School District List

This information is collected and stored with the Operational General Assessment program. Please refer to the Operational General Assessment rules for the list of one-school districts.

b. rPerfLevel Lookup for MegaFile Codes

Achievement Level or Part Flag	MegaFile Code	Description
7	INP	Incomplete
8	AWR	Awareness
9	EMG	Emerging
10	PRG	Progressing
B	INC	Incomplete
D	TRN	Transferred
E	ABS	Absent
F	LEP	First-year EL
G	MED	Absent - Medically Documented
H	VAB	Void
I	DUP	Invalidated

Achievement Level or Part Flag	MegaFile Code	Description
J	NRT	Not Required to Test
L	PRT	Previously Tested
N	INV	Invalidated

Reporting Product Shipment

Contract Code: [164652] Description MCAS Alt 2025 - Admin ID 5	Report Type	Report For	Grade(s)	Report Subtype	Content Code	Qty
Student Report Parent Copy	07	1	00	08	00	1

eMetric Metadata file for the Individual Student Report PDFs

a. The column headings for the file are: ProgramName, ReportName, Year, Admin, Grade, Version, Subject, Org_Num, PDF_name

b. The file is a csv file

c. The naming convention for the file is MCASAlt2425_PDFmetadata.csv

d. The file is posted to the ftp site for eMetric to access

e. ProgramName = MCAS-Alt

f. ReportName = Individual Student Report

g. Year=2025

h. Admin=Spring

i. Grade=03-08, HS

j. Version=blank

k. Subject=blank

l. Org_Num=School level: Schoolcode (8-digit; first 4 digits=district code and last 4 digits=school code)

m. Org_Num=District level: District code with four zeroes at the end to create an 8-digit code.

14. School file naming convention: MCASAlt2425StudentParent_GrXX_<sprp_sch>.pdf (school code will be sprp_sch or testing school code depending on testing school orgtype)

15. District file naming convention: MCASAlt2425StudentParent_GrXX_<sprp_dis>.pdf

APPENDIX R
MCAS-ALT SKILLS SURVEY

MCAS-Alt SKILLS SURVEY

Introduction

The MCAS-Alt Skills Survey is a standardized component of the statewide alternate assessment (MCAS-Alt) that must be administered by the teacher to each student **BEFORE** selecting an entry point or access skill in the subject required for assessment. The survey will help determine a student's current level of knowledge, skills, and abilities so that challenging entry points can be selected in each strand. The survey will also familiarize teachers with the range of entry points in a strand/domain that may be selected for the assessment.

The results of the Skills Survey should be used as the basis for selecting an entry point or access skill listed in the Resource Guide to the Massachusetts Curriculum Framework for Students with Disabilities. A follow-up skills survey will not be required after teaching the skill, although it may be helpful to conduct the survey after the skill has been taught, especially if the student will attend a different classroom the following year.

Instructions for Completing the Skills Survey:

Conduct a brief assessment of each skill in the required strand/domain for a student in that grade. Check one box (A–E) for each skill in the required strand/domain(s). Teachers may use any combination of the following methods to conduct a brief assessment of each skill:

- a) observations, informal assessments, progress reports, or classroom work; OR
- b) 2–4 tasks, based on the **examples** provided in the survey form; or **tasks designed by the teacher** that are accommodated for each student's instructional level and needs.

If using specific tasks or activities to assess the student, please use the following protocol for each skill:

- 1) Present the first task to the student.
- 2) If the student does not respond on the first attempt, repeat the task with a verbal reminder or other prompt (if needed), but do not give the answer. (Note: If a prompt is given, the response may be accurate but is not independent.)
- 3) If the student responds to the first task, give a second, more complex task. Repeat with a prompt if needed. Make notes on the survey form to remind you of the student's performance of each task.
- 4) If the student does not respond to the second task, even with a prompt, do not introduce a third task. Simply mark an "X" in the column (A, B, C, D, or E) that most closely describes his or her performance of the skill.
- 5) Introduce the next task in the survey. Repeat steps 2 through 4 until all skills in the required strand/domain are assessed.

Once the survey has been completed for each required strand/domain, review the results and proceed as follows:

- **Select a related or higher-level-of-complexity entry point from the Resource Guide based on any skill that has been checked in columns A, B, or C.**
- **Do not select an entry point for any skills checked in columns D or E.**
- **If column A (“unable to perform the skill”) is checked for all skills in the strand/domain, consider assessing an access skill (i.e., a motor or communication skill).**
- **If columns D and/or E are checked for most of the skills in the strand/domain, then the IEP team should consider whether the standard MCAS test (paper or online) or grade-level/competency portfolio would be more appropriate for the student in that subject.**

Submit a completed MCAS-Alt Skills Survey for each assessed strand in the student’s portfolio, just after the Strand Cover Sheet. A strand without a Skills Survey will be considered incomplete.

Descriptors for each column listed on the following pages:

A	B	C	D	E
Student is unable to perform this skill. -----OR----- Teacher is unable to assess student on this skill.	Student is just starting to learn this skill and demonstrates the skill only rarely without support. --- Student performs this skill accurately with 0-25% independence . -----OR----- Student performs this skill independently with 0-25% accuracy .	Student demonstrates this skill intermittently and only occasionally without support. --- Student performs this skill accurately with 26-50% independence . -----OR----- Student performs this skill independently with 26-50% accuracy .	Student demonstrates this skill more often than not without support. --- Student performs this skill accurately with 51-75% independence . -----OR----- Student performs this skill independently with 51-75% accuracy .	Student demonstrates this skill almost all the time without support. --- Student performs this skill accurately with 76-100% independence . -----OR----- Student performs this skill independently with 76-100% accuracy .

** % Independence refers to the average percent of unprompted responses by the student.*

Student's Name _____ Grade _____ Date of Survey _____

ELA—All Grades

Language (Vocabulary Acquisition and Use)

Based on exposure to vocabulary during academic activities, student can:	A 0 % (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Communicate answers to simple questions about familiar objects.	Blank	Blank	Blank	Blank	Blank
2. Identify familiar objects/actions by name.	Blank	Blank	Blank	Blank	Blank
3. Match given words or symbols to pictures that mean the same or similar thing.	Blank	Blank	Blank	Blank	Blank
4. Answer questions about the meaning of words found in stories, poems, or during other academic activities.	Blank	Blank	Blank	Blank	Blank
5. Identify words/symbols/pictures that are opposite in meaning.	Blank	Blank	Blank	Blank	Blank
6. Identify words/symbols/pictures that are similar in meaning.	Blank	Blank	Blank	Blank	Blank
7. Use phrases to express a need, request, idea, or response during an academic activity.	Blank	Blank	Blank	Blank	Blank
8. Describe key attributes of different objects (e.g., the flower is colorful).	Blank	Blank	Blank	Blank	Blank
9. Communicate using common temporal words (e.g., before, after, now, later, first, next).	Blank	Blank	Blank	Blank	Blank
10. Identify examples of figurative language (e.g., idiom, metaphor, simile, hyperbole, or personification) used in a text.	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

ELA—All Grades

Reading (Informational or Literary Text)

Based on a literary or informational text read by or to the student, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Identify the main character(s) in the text.	Blank	Blank	Blank	Blank	Blank
2. Identify the setting of the text.	Blank	Blank	Blank	Blank	Blank
3. State key details from the text.	Blank	Blank	Blank	Blank	Blank
4. Identify events (or ideas) presented in the text.	Blank	Blank	Blank	Blank	Blank
5. Identify the central (main) idea of the text.	Blank	Blank	Blank	Blank	Blank
6. Explain <i>why</i> or <i>how</i> something occurred in the text.	Blank	Blank	Blank	Blank	Blank
7. Identify and define unknown words in the text; or match words or phrases from the text to their meaning.	Blank	Blank	Blank	Blank	Blank
8. Differentiate between a fact and the author's opinion.	Blank	Blank	Blank	Blank	Blank
9. Describe the author's point of view.	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

ELA—All Grades

Writing (Text Type and Purposes)

Does the student use a communication system* to express ideas, requests, and responses? YES NO If YES, student can use their communication system to:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Initiate expressive communication using a single word or symbol.	Blank	Blank	Blank	Blank	Blank
2. Respond to questions or writing prompts with single words.	Blank	Blank	Blank	Blank	Blank
3. Respond to questions or writing prompts with sentence fragments (i.e., phrases).	Blank	Blank	Blank	Blank	Blank
4. Respond to questions or writing prompts with one complete sentence.	Blank	Blank	Blank	Blank	Blank
5. Respond to questions or writing prompts with at least one paragraph (three or more sentences).	Blank	Blank	Blank	Blank	Blank
6. Retell at least three events in chronological order.	Blank	Blank	Blank	Blank	Blank
7. Express an opinion on a topic and gives at least one reason.	Blank	Blank	Blank	Blank	Blank
8. Express at least two relevant facts or details based on a given topic or text.	Blank	Blank	Blank	Blank	Blank
9. Respond to questions or writing prompts using descriptive language and connecting words or phrases.	Blank	Blank	Blank	Blank	Blank

* Communication systems may include verbal/gestural/symbolic/or iconic expression using a keyboard, handwriting, dictation, symbol-based system, assistive technology, ASL or other sign system, Braille, etc.

Student's Name _____ Grade _____ Date of Survey _____

Grade 3 Mathematics

Operations and Algebraic Thinking (OA)

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Count up to 5 objects to answer questions about "how many altogether."	Blank	Blank	Blank	Blank	Blank
2. Match numerals (up to 10) with the number of objects/pictures displayed.	Blank	Blank	Blank	Blank	Blank
3. Add two or more objects, or take away two or more objects, from a set of up to 5 objects and express "how many are left?"	Blank	Blank	Blank	Blank	Blank
4. Create two sets with an equal number of objects in each set.	Blank	Blank	Blank	Blank	Blank
5. Compare two groups of objects and indicate which has "more" and which has "less."	Blank	Blank	Blank	Blank	Blank

Using standard numerals, symbols, and notation, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Plot three single-digit numbers on a number line relative to each other.	Blank	Blank	Blank	Blank	Blank
2. Solve addition problems involving one-digit numbers up to a total of 10 (e.g., $1+3$; $2+5$; $4+6$).	Blank	Blank	Blank	Blank	Blank
3. Solve one-step word problems using addition within 100.	Blank	Blank	Blank	Blank	Blank
4. Solve one-step word problems using subtraction within 100.	Blank	Blank	Blank	Blank	Blank
5. Identify the missing number in a problem involving addition and subtraction (up to 15), with an unknown quantity (e.g., $12 - ? = 5$).	Blank	Blank	Blank	Blank	Blank
6. Show equalities in number sentence (e.g., $2 + 4 = 4 + 2$; $3 + 1 = 2 + 2$).	Blank	Blank	Blank	Blank	Blank
7. Count by 2's to 20.	Blank	Blank	Blank	Blank	Blank
8. Count by 5's to 25.	Blank	Blank	Blank	Blank	Blank
9. Identify the missing number in a problem involving multiplication and division (within 25), with an unknown quantity (e.g., $2 \times ? = 20$; $20 \div ? = 5$).	Blank	Blank	Blank	Blank	Blank
10. Use estimation to approximate the solution to a one-step word problem (e.g., if I have 12 marbles and I add 9 more, about how many marbles will I have in all?).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 3 Mathematics

Measurement and Data

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Given two objects, identify the object that is bigger.	Blank	Blank	Blank	Blank	Blank
2. Count the number of objects with a similar characteristic (e.g., count the number of red objects; count the objects with straight edges).	Blank	Blank	Blank	Blank	Blank
3. Compare up to three objects based on length, width, or height (longer, shorter, tallest, shortest).	Blank	Blank	Blank	Blank	Blank
4. Tell time to the nearest hour using analog clocks.	Blank	Blank	Blank	Blank	Blank
5. Identify up to three U.S. coins either by name or value.	Blank	Blank	Blank	Blank	Blank
6. Express the value of a combination of at least two coins up to 99 cents.	Blank	Blank	Blank	Blank	Blank
7. Measure the length of objects using a pre-selected standard tool (e.g., ruler).	Blank	Blank	Blank	Blank	Blank
8. Express time on an analog clock to the nearest minute.	Blank	Blank	Blank	Blank	Blank
9. Find the area of a rectangle by multiplying side lengths.	Blank	Blank	Blank	Blank	Blank
10. Calculate the perimeter of straight-edged polygons.	Blank	Blank	Blank	Blank	Blank
11. Solve word problems involving the addition or subtraction of distances (e.g., miles, yards) and/or money (e.g., dollars, cents).	Blank	Blank	Blank	Blank	Blank
12. Represent a set of data graphically (e.g., on a list, table, bar graph, or circle graph, etc.).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 4 Mathematics

Operations and Algebraic Thinking (OA)

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Add ("put together") or subtract ("take away") one object from a set of objects and express the resulting quantity.	Blank	Blank	Blank	Blank	Blank
2. Add two or more objects, or take away two or more objects, from a set of 5 objects and express the resulting quantity.	Blank	Blank	Blank	Blank	Blank
3. Create sets with an equal number of objects in each set.	Blank	Blank	Blank	Blank	Blank
4. Compare two groups of objects and indicate which has "more" and which has "less."	Blank	Blank	Blank	Blank	Blank
5. Answer questions about "how many altogether" (up to 10 objects).	Blank	Blank	Blank	Blank	Blank
6. Sort or group objects by multiples of two.	Blank	Blank	Blank	Blank	Blank
7. Match numerals (up to 10) with the number of objects/pictures displayed.	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 4 Mathematics

Using standard numerals, symbols, or notations, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Plot at least three single-digit numbers on a number line.	Blank	Blank	Blank	Blank	Blank
2. Solve addition problems involving one-digit numbers up to a total of 10.	Blank	Blank	Blank	Blank	Blank
3. Identify the missing number in a problem involving subtraction (up to 15) (e.g., $12 - ? = 5$).	Blank	Blank	Blank	Blank	Blank
4. Show equalities in number sentences (e.g., $2 + 4 = 4 + 2$; $3 + 1 = 2 + 2$).	Blank	Blank	Blank	Blank	Blank
5. Count by 2's to 20.	Blank	Blank	Blank	Blank	Blank
6. Count by 5's to 25.	Blank	Blank	Blank	Blank	Blank
7. Determine the unknown quantity in a multiplication problem (within 20) (e.g., how many groups of 5 objects is equal to 15?).	Blank	Blank	Blank	Blank	Blank
8. Solve multiplication problems with multipliers of 1–10.	Blank	Blank	Blank	Blank	Blank
9. Solve division problems within 100 with divisors of 1–10.	Blank	Blank	Blank	Blank	Blank
10. Identify the missing number in a word problem involving multiplication and division (within 25), with unknowns in all positions (e.g., $20 \div ? = 5$).	Blank	Blank	Blank	Blank	Blank
11. Create or extend a numerical pattern based on a given rule (e.g., “begin with 7, then the rule is to add 4”).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 4 Mathematics

Number and Operations—Fractions

Identify/recognize fractions:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Identify $\frac{1}{2}$ and whole using manipulatives and/or familiar objects.	Blank	Blank	Blank	Blank	Blank
2. Partition a whole into $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ equal parts.	Blank	Blank	Blank	Blank	Blank
3. Compare parts of the same whole (quarter, third, half) to determine the relative size of each.	Blank	Blank	Blank	Blank	Blank
4. Compare fractions of the same whole with like denominators to determine which is greater (e.g., $\frac{1}{4}$ or $\frac{3}{4}$).	Blank	Blank	Blank	Blank	Blank
5. Label points on a number line with simple fractions with like denominators (e.g., label $\frac{1}{6}$, $\frac{3}{6}$, $\frac{5}{6}$ on the same number line).	Blank	Blank	Blank	Blank	Blank
6. Demonstrate one or more fractions that are equivalent to $\frac{1}{2}$ using models or manipulatives (e.g., $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$).	Blank	Blank	Blank	Blank	Blank
7. Compare two fractions with unlike denominators and indicate which is greater or less ($\frac{1}{3}$ or $\frac{3}{5}$).	Blank	Blank	Blank	Blank	Blank

Operations with fractions:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Add and subtract "unit fractions" with like denominators (e.g., $\frac{1}{4} + \frac{1}{4} = ?$).	Blank	Blank	Blank	Blank	Blank
2. Add and subtract fractions with like denominators (e.g., $\frac{1}{8} + \frac{3}{8} = ?$ and $\frac{5}{8} - \frac{3}{8} = ?$).	Blank	Blank	Blank	Blank	Blank
3. Multiply simple fractions by a whole number (e.g., $\frac{3}{5} \times 5 = \frac{15}{5} = 3$).	Blank	Blank	Blank	Blank	Blank
4. Multiply fractions by fractions (e.g., $\frac{2}{4} \times \frac{4}{5} = \frac{8}{20}$).	Blank	Blank	Blank	Blank	Blank
5. Convert simple decimals to simple fractions and vice versa (e.g., $.25 = \frac{1}{4}$; $\frac{1}{2} = .50$).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 5 Mathematics

Number and Operations in Base Ten (NBT)

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Count by ones to 10.	Blank	Blank	Blank	Blank	Blank
2. Represent up to 5 objects with numerals, including 0.	Blank	Blank	Blank	Blank	Blank
3. Compose numbers from 1 to 9 to create 10, using objects.	Blank	Blank	Blank	Blank	Blank
4. Count by tens to 100.	Blank	Blank	Blank	Blank	Blank
5. Count forward beginning from a given number up to 100 (e.g., count on from 23).	Blank	Blank	Blank	Blank	Blank
6. Identify "ten more" (or "ten less") than a given two-digit number.	Blank	Blank	Blank	Blank	Blank
7. Add and subtract single-digit numbers.	Blank	Blank	Blank	Blank	Blank
8. Add and subtract two-digit numbers.	Blank	Blank	Blank	Blank	Blank
9. Round a given amount of money to the nearest dollar (e.g., \$2.57 rounds to \$3.00).	Blank	Blank	Blank	Blank	Blank
10. Round whole three-digit numbers to the nearest 100.	Blank	Blank	Blank	Blank	Blank
11. Multiply a one-digit number by a two-digit number.	Blank	Blank	Blank	Blank	Blank
12. Divide a three-digit number by a one-digit number (without remainders).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 5 Mathematics

Number and Operations—Fractions

Identify/recognize fractions:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Identify $\frac{1}{2}$ and whole using manipulatives and/or familiar objects.	Blank	Blank	Blank	Blank	Blank
2. Partition a whole into $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ equal parts.	Blank	Blank	Blank	Blank	Blank
3. Compare parts of the same whole ($\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$) to determine the relative size of each.	Blank	Blank	Blank	Blank	Blank
4. Compare fractions of the same whole with like denominators to determine which is greater (e.g., $\frac{1}{4}$ or $\frac{3}{4}$).	Blank	Blank	Blank	Blank	Blank
5. Label points on a number line with simple fractions with like denominators (e.g., label $\frac{1}{6}$, $\frac{3}{6}$, $\frac{5}{6}$ on the same number line).	Blank	Blank	Blank	Blank	Blank
6. Demonstrate one or more fractions that are equivalent to $\frac{1}{2}$ using models or manipulatives (e.g., $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$).	Blank	Blank	Blank	Blank	Blank
7. Compare two fractions with unlike denominators and indicate which is greater or less ($\frac{1}{3}$ or $\frac{3}{5}$).	Blank	Blank	Blank	Blank	Blank

Operations with fractions:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Add and subtract "unit fractions" with like denominators (e.g., $\frac{1}{4} + \frac{1}{4} = ?$).	Blank	Blank	Blank	Blank	Blank
2. Add and subtract fractions with like denominators (e.g., $\frac{1}{8} + \frac{3}{8} = ?$ and $\frac{5}{8} - \frac{3}{8} = ?$).	Blank	Blank	Blank	Blank	Blank
3. Multiply simple fractions by a whole number (e.g., $\frac{3}{5} \times 5 = \frac{15}{5} = 3$).	Blank	Blank	Blank	Blank	Blank
4. Multiply fractions by fractions (e.g., $\frac{2}{4} \times \frac{4}{5} = \frac{8}{20}$).	Blank	Blank	Blank	Blank	Blank
5. Convert simple decimals to simple fractions and vice versa (e.g., $.25 = \frac{1}{4}$; $\frac{1}{2} = .50$).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 6 Mathematics

Statistics and Probability

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Record responses to a survey.	Blank	Blank	Blank	Blank	Blank
2. Represent a simple set of data graphically, either from a survey or based on observations (e.g., on a table, chart, tally, bar graph, or circle graph).	Blank	Blank	Blank	Blank	Blank
3. Describe what is being shown in a simple data display (e.g., in a table or on a bar, line, or circle graph).	Blank	Blank	Blank	Blank	Blank
4. Answer questions related to the data shown in a data display (e.g., do more students have brown eyes or blue eyes?).	Blank	Blank	Blank	Blank	Blank
5. Order a set of numerical data.	Blank	Blank	Blank	Blank	Blank
6. Find the median in an ordered set of numerical data.	Blank	Blank	Blank	Blank	Blank
7. Calculate the range (spread) of a given set of data (e.g., by finding the difference of the greatest and least values).	Blank	Blank	Blank	Blank	Blank
8. Given two sets of numerical data, decide which has the greatest mean.	Blank	Blank	Blank	Blank	Blank
9. Calculate the mean of a given set of data.	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 6 Mathematics

The Number System

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Match visual representation of a simple fraction to the fraction itself (e.g., match one-third of a pie to "1/3").	Blank	Blank	Blank	Blank	Blank
2. Distinguish $\frac{1}{4}$ from $\frac{1}{2}$ of the same object.	Blank	Blank	Blank	Blank	Blank
3. Locate positive whole numbers on a number line.	Blank	Blank	Blank	Blank	Blank
4. Add and subtract one-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
5. Multiply and divide one-digit whole numbers	Blank	Blank	Blank	Blank	Blank
6. Add and subtract two-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
7. Add and subtract fractions with like denominators.	Blank	Blank	Blank	Blank	Blank
8. Multiply two-digit whole numbers by one-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
9. Multiply two- and three-digit whole numbers by two-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
10. Divide two-digit numbers by one-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
11. Multiply fractions by whole numbers (e.g., $4 \times \frac{2}{3}$)	Blank	Blank	Blank	Blank	Blank
12. Multiply fractions by fractions (e.g., $\frac{1}{4} \times \frac{3}{8}$).	Blank	Blank	Blank	Blank	Blank
13. Solve word problems involving fractions (e.g., have $\frac{2}{3}$ cup of water. Paul has half as much as me. How much water does Paul have?).	Blank	Blank	Blank	Blank	Blank
14. Identify numbers that are multiples of 2 or 3 from a list of numbers.	Blank	Blank	Blank	Blank	Blank
15. Add and subtract numbers including decimals to tenths (e.g., $3.6 + 4.7$).	Blank	Blank	Blank	Blank	Blank
16. Multiply and divide decimals by whole numbers to tenths (e.g., 7.4×4 ; $4.8 \div 6$).	Blank	Blank	Blank	Blank	Blank
17. Locate and plot points in the first quadrant of a coordinate plane (e.g., plot and/or locate the points (4, 5), (8, 12), (6,3) on a graph).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 7 Mathematics

Ratios and Proportional Relationships

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Create a part-to-part ratio among objects already pre-sorted into sets or categories (e.g., the ratio of red to blue objects is 5:3).	Blank	Blank	Blank	Blank	Blank
2. Express a part-to-whole ratio (e.g., If 5 of 9 students are boys, then the part-to-whole ratio is 5:9).	Blank	Blank	Blank	Blank	Blank
3. Identify two or more equivalent fractions ($\frac{1}{2} = \frac{3}{6}$).	Blank	Blank	Blank	Blank	Blank
4. Convert quantities from one measurement unit to another (e.g., 6 feet = 2 yards; 18 inches = $1\frac{1}{2}$ feet).	Blank	Blank	Blank	Blank	Blank
5. Calculate a percentage of a given quantity (e.g., What is 25 percent of 48?).	Blank	Blank	Blank	Blank	Blank
6. Calculate a unit rate using real-world examples (e.g., If 5 apples cost \$2.00, the unit rate is \$0.40 per apple).	Blank	Blank	Blank	Blank	Blank
7. Determine the percentage given the quantities (e.g., 10 is what percent of 50; 9 is what percent of 45?).	Blank	Blank	Blank	Blank	Blank
8. Solve one-step equations using multiplication (e.g., $3x = 45$ or $4x = 36$).	Blank	Blank	Blank	Blank	Blank
9. Create a table given a ratio (e.g., given the ratio 1:3, make a table with 2? 3:?, and 4:?).	Blank	Blank	Blank	Blank	Blank
10. Express a percentage as a fraction equivalent. 11. (e.g., $75\% = \frac{75}{100}$ or $\frac{3}{4}$).	Blank	Blank	Blank	Blank	Blank
12. Solve proportions where one quantity is represented by a variable (e.g., $\frac{3}{5} = \frac{x}{15}$).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 7 Mathematics

Geometry

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Find a shape that is round.	Blank	Blank	Blank	Blank	Blank
2. Partition a shape into two equal parts.	Blank	Blank	Blank	Blank	Blank
3. Match identical two-dimensional shapes (e.g., drawings of squares, triangles).	Blank	Blank	Blank	Blank	Blank
4. Match identical three-dimensional shapes (e.g., ball/sphere; box/cube).	Blank	Blank	Blank	Blank	Blank
5. Demonstrate the relative positions of objects.	Blank	Blank	Blank	Blank	Blank
6. (e.g., besides, inside, next to, above, below).	Blank	Blank	Blank	Blank	Blank
7. Sort two-dimensional shapes (e.g., squares, circles, and triangles).	Blank	Blank	Blank	Blank	Blank
8. Identify simple shapes by name (circle, square, triangle, box/cube, ball/sphere).	Blank	Blank	Blank	Blank	Blank
9. Sort two- and three-dimensional shapes by attribute, such as color, shape, and size.	Blank	Blank	Blank	Blank	Blank
10. Identify and label a line and an angle.	Blank	Blank	Blank	Blank	Blank
11. Identify angles as either acute, obtuse, or right.	Blank	Blank	Blank	Blank	Blank
12. Plot a given number on a horizontal number line.	Blank	Blank	Blank	Blank	Blank
13. Plot a given ordered pair in the first quadrant of a coordinate plane (e.g., (4, 5); (8, 12); (8, 3)).	Blank	Blank	Blank	Blank	Blank
14. Calculate the area of a square or rectangle.	Blank	Blank	Blank	Blank	Blank

Grade 8 Mathematics

Expressions and Equations

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Express the meaning of “equal to,” “greater than,” or “less than” by comparing groups of objects.	Blank	Blank	Blank	Blank	Blank
2. Compare number quantities using the symbols $<$, $=$, or $>$.	Blank	Blank	Blank	Blank	Blank
3. Represent repeated addition using groups of objects with equal amounts (e.g., given 12 objects, create 2 groups of 6; 3 groups of 4; etc.).	Blank	Blank	Blank	Blank	Blank
4. Create equivalent expressions using commutative property (e.g., $4 + 2 = 2 + 4$; $5 \times 3 = 3 \times 5$).	Blank	Blank	Blank	Blank	Blank
5. Solve addition and subtraction equations where the sum or difference is represented by a variable. (e.g., $5 + 7 = r$).	Blank	Blank	Blank	Blank	Blank
6. Identify the missing number in an equation involving addition or subtraction (e.g., $8 + ? = 13$).	Blank	Blank	Blank	Blank	Blank
7. Solve multiplication and division equations where the product or quotient is represented by a variable (e.g., $6 \times 7 = t$; $32 \div 8 = n$).	Blank	Blank	Blank	Blank	Blank
8. Identify the missing factor in an equation involving multiplication (e.g., $4 \times ? = 28$).	Blank	Blank	Blank	Blank	Blank
9. Identify equivalent numerical expressions. (e.g., $8 + 8 + 8$ can be written as 3×8 or 8×3).	Blank	Blank	Blank	Blank	Blank
10. Evaluate expressions with numbers and letters involving addition and subtraction, given the value of an unknown number. (e.g., What is $7 - p$, if $p = 2$; $p = 3$; $p = 5$?).	Blank	Blank	Blank	Blank	Blank
11. Generate a number pattern given an initial value and an addition rule (e.g., initial value is 6, rule is “add 4,” determine the next 5 numbers in the pattern).	Blank	Blank	Blank	Blank	Blank
12. Solve a one-step equation involving multiplication and/or division, with no remainder (e.g., $14 \div n = 7$).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 8 Mathematics

Geometry

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Find a shape that is round.	Blank	Blank	Blank	Blank	Blank
2. Match identical two-dimensional shapes (e.g., drawings of squares, triangles).	Blank	Blank	Blank	Blank	Blank
3. Match identical three-dimensional shapes e.g., ball/sphere; box/cube).	Blank	Blank	Blank	Blank	Blank
4. Match similar shapes of different sizes.	Blank	Blank	Blank	Blank	Blank
5. Distinguish squares, circles, and triangles.	Blank	Blank	Blank	Blank	Blank
6. Communicate the names of simple shapes.	Blank	Blank	Blank	Blank	Blank
7. Describe the relative positions of objects (e.g., besides, inside, next to, above, below).	Blank	Blank	Blank	Blank	Blank
8. Sort two- and three-dimensional shapes by attribute, such as color, shape, and size.	Blank	Blank	Blank	Blank	Blank
9. Partition a shape into two equal parts.	Blank	Blank	Blank	Blank	Blank
10. Identify and label a line and an angle.	Blank	Blank	Blank	Blank	Blank
11. Identify angles as either acute, obtuse, or right.	Blank	Blank	Blank	Blank	Blank
12. Plot numbers on a horizontal number line.	Blank	Blank	Blank	Blank	Blank
13. Plot ordered pairs in the first quadrant of a coordinate plane (e.g., (4, 5); (8, 12); (8, 3)).	Blank	Blank	Blank	Blank	Blank
14. Calculate the area of a square or rectangle.	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 10 Mathematics

(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Number and Quantity

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Locate positive whole numbers on a number line.	Blank	Blank	Blank	Blank	Blank
2. Match visual representation of a simple fraction to the fraction itself (e.g., match one-third of a pie to "1/3").	Blank	Blank	Blank	Blank	Blank
3. Compare two fractions and communicate whether one is "less than," equal to," or "greater than" the other.	Blank	Blank	Blank	Blank	Blank
4. Add and subtract one-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
5. Multiply and divide one-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
6. Add and subtract two-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
7. Add and subtract fractions with like or unlike denominators.	Blank	Blank	Blank	Blank	Blank
8. Multiply two-digit whole numbers by one- and two-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
9. Identify perfect squares and their square roots up to (e.g., $6^2 = 36$; $\sqrt{36} = 6$)	Blank	Blank	Blank	Blank	Blank
10. Divide two-digit numbers by one-digit whole numbers.	Blank	Blank	Blank	Blank	Blank
11. Multiply fractions by whole numbers (e.g., $4 \times \frac{2}{3}$).	Blank	Blank	Blank	Blank	Blank
12. Multiply fractions by fractions (e.g., $\frac{1}{4} \times \frac{3}{8}$)	Blank	Blank	Blank	Blank	Blank
13. Divide fractions by fractions (e.g., $\frac{1}{3} \div \frac{3}{5} = \frac{3}{15}$; $\frac{1}{3} \div \frac{3}{5} = \frac{5}{9}$)	Blank	Blank	Blank	Blank	Blank
14. Solve word problems involving fractions (e.g., I have $\frac{2}{3}$ cup of water. Paul has half as much as me. How much water does Paul have?)	Blank	Blank	Blank	Blank	Blank
15. Identify numbers that are multiples of 2 or 3 from a list of numbers.	Blank	Blank	Blank	Blank	Blank
16. Add and subtract numbers including decimals to tenths (e.g., $3.6 + 4.7$).	Blank	Blank	Blank	Blank	Blank
17. Multiply and divide decimals by whole numbers to tenths (e.g., 7.4×4 ; $4.8 \div 6$).	Blank	Blank	Blank	Blank	Blank
18. Plot and locate points on a coordinate grid (e.g., plot and/or locate the points (3, -2), (-4, 6), (-7, -3) on a graph).	Blank	Blank	Blank	Blank	Blank
19. Round a five-digit number (e.g., 25, 331) to the nearest hundred (e.g., 25, 300) and nearest thousand (e.g., 25,000).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 10 Mathematics

(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Algebra

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Compare number quantities using the symbols $<$, $=$, or $>$.	Blank	Blank	Blank	Blank	Blank
2. Create groups of objects with equal amounts in multiple ways (e.g., given 12 objects, create 2 groups of 6; 3 groups of 4 etc.).	Blank	Blank	Blank	Blank	Blank
3. Create equivalent expressions using the commutative property (e.g., $4 + 2 = 2 + 4$; $5 \times 3 = 3 \times 5$).	Blank	Blank	Blank	Blank	Blank
4. Solve addition and subtraction equations where the sum or difference is represented by a variable (e.g., $5 + 7 = n$).	Blank	Blank	Blank	Blank	Blank
5. Solve multiplication and division equations where the product or quotient is represented by a variable (e.g., $6 \times 7 = t$; $56 \div 7 = n$).	Blank	Blank	Blank	Blank	Blank
6. Identify the missing number in an equation involving addition or subtraction (e.g. $? + 8 = 13$).	Blank	Blank	Blank	Blank	Blank
7. Identify equivalent numerical expressions. (e.g., $8 + 8 + 8$ can be written as 3×8).	Blank	Blank	Blank	Blank	Blank
8. Solve one- and two-step equations with one variable (e.g., solve for x , if $3x = 15$; $5x + 7 = 42$).	Blank	Blank	Blank	Blank	Blank
9. Multiply a two-digit number by a one-digit number.	Blank	Blank	Blank	Blank	Blank
10. Evaluate expressions with numbers and letters involving addition and subtraction, given the value of an unknown number (e.g., $7 - p$, if $p=2$; $p=3$; $p=5$).	Blank	Blank	Blank	Blank	Blank
11. Extend a simple arithmetic sequence. (e.g., 7, 10, 13...).	Blank	Blank	Blank	Blank	Blank
12. Determine the point of intersection of two lines graphed on a coordinate plane by observation (e.g., the point of intersection of two lines is (5, -1)).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 10 Mathematics

(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Functions

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Create a part-to-part ratio among objects already pre-sorted into sets or categories (e.g., the ratio of red to blue objects is 5:3).	Blank	Blank	Blank	Blank	Blank
2. Express a part-to-whole ratio (e.g., If 5 of 9 students are boys, then 5/9 of the students are boys; or part-to-whole ratio is 5:9).	Blank	Blank	Blank	Blank	Blank
3. Identify two or more equivalent fractions ($1/2 = 3/6$).	Blank	Blank	Blank	Blank	Blank
4. Calculate a percentage of a given quantity (e.g., What is 25 percent of 48?).	Blank	Blank	Blank	Blank	Blank
5. Calculate a unit rate using real-world examples (e.g., If 5 apples cost \$2.00, the unit rate is \$0.40 per apple).	Blank	Blank	Blank	Blank	Blank
6. Determine the percentage given the quantity (e.g., 9 is what percent of 45? what is 40 percent of 300?).	Blank	Blank	Blank	Blank	Blank
7. Express a percent as a fraction equivalent (e.g., $75\% = 75/100$).	Blank	Blank	Blank	Blank	Blank
8. Solve proportions where one quantity is represented by a variable (e.g., $3/5 = x/15$).	Blank	Blank	Blank	Blank	Blank
9. Complete missing values on an input-output table (or use manipulatives) when given the function rule and input values (e.g., Rule: ribbon costs \$1.25 per yard; what is cost for 3 yards? 12 yards; etc.).	Blank	Blank	Blank	Blank	Blank
10. Create a table of ordered pairs (or generate a number pattern) representing a real-life relationship (e.g., based on \$.95 cost of one donut, create a table of ordered pairs when multiple donuts are bought; or miles traveled over different periods of time at 60 mph).	Blank	Blank	Blank	Blank	Blank
11. Complete a table (or extend a number pattern) based on an initial value and an addition or subtraction rule.	Blank	Blank	Blank	Blank	Blank
12. Determine the addition or subtraction rule of an input/output table, given the ordered pairs.	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 10 Mathematics

(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Geometry

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Find a shape that is round.	Blank	Blank	Blank	Blank	Blank
2. Match identical two-dimensional shapes (e.g., drawings of squares, triangles).	Blank	Blank	Blank	Blank	Blank
3. Match identical three-dimensional shapes (e.g., ball/sphere; box/cube).	Blank	Blank	Blank	Blank	Blank
4. Match similar shapes of different sizes.	Blank	Blank	Blank	Blank	Blank
5. Distinguish squares, circles, and triangles.	Blank	Blank	Blank	Blank	Blank
6. Communicate the names of simple shapes.	Blank	Blank	Blank	Blank	Blank
7. Describe the relative positions of objects (e.g., besides, inside, next to, above, below).	Blank	Blank	Blank	Blank	Blank
8. Sort two- and three-dimensional shapes by attribute, such as color, shape, and size.	Blank	Blank	Blank	Blank	Blank
9. Partition a shape into two equal parts.	Blank	Blank	Blank	Blank	Blank
10. Identify and label a line and an angle.	Blank	Blank	Blank	Blank	Blank
11. Identify angles as either acute, obtuse, or right.	Blank	Blank	Blank	Blank	Blank
12. Plot numbers on a horizontal number line.	Blank	Blank	Blank	Blank	Blank
13. Graph ordered pairs in the first quadrant of a coordinate plane (e.g., (4, 5); (8, 12); (8, 3)).	Blank	Blank	Blank	Blank	Blank
14. Calculate the area of a square or rectangle.	Blank	Blank	Blank	Blank	Blank
15. Identify lines of symmetry within a two-dimensional figure.	Blank	Blank	Blank	Blank	Blank
16. Use the Pythagorean Theorem to find the length of the hypotenuse of a right triangle, given the length of the two other sides.	Blank	Blank	Blank	Blank	Blank
17. Calculate the area of a circle (πr^2), given its diameter or radius (e.g., find the area of a circle with a radius of 3; find the area of a circle with a diameter of 8).	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

Grade 10 Mathematics

(Conduct the skills survey only in the three Conceptual Categories selected for the grade 10 MCAS-Alt.)

Statistics and Probability

Using objects, manipulatives, technology, or paper-pencil, student can:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Order a set of numerical data from least to greatest.	Blank	Blank	Blank	Blank	Blank
2. Identify the minimum and maximum values in a set of numbers.	Blank	Blank	Blank	Blank	Blank
3. Identify the range of numerical data in a set of numbers arranged from least to greatest.	Blank	Blank	Blank	Blank	Blank
4. Identify the median (i.e., the middle value) for a set of numerical data.	Blank	Blank	Blank	Blank	Blank
5. Answer simple questions related to data represented on a data display (e.g., numbers on a pie chart showing the number of sunny days to rainy days in a given month).	Blank	Blank	Blank	Blank	Blank
6. Calculate the mean of a set of numerical data.	Blank	Blank	Blank	Blank	Blank

Student's Name _____ Grade _____ Date of Survey _____

**Next Generation (Next-Gen) Science and
Technology/Engineering (STE):
Grade 5 and 8 – All Strands
High School – Biology and Introductory Physics ONLY**

Complete the skills survey **once** for each student in all eight science practices listed below.

Note: The Science Practices are the same across all next-gen STE strands and grade spans.

Before selecting entry points for the student, teachers should assess each student's skills and abilities in each Science Practice, checking the box if the student can perform the skill independently, at least some of the time.

The STE Skills Survey is based on the student's ability to independently perform a science skill (for example ask a question, follow directions, describe something), rather than on specific science content.

Teachers should select entry points at the highest-grade span in which the checked boxes appear.

Teachers may select entry points from different grade spans, depending on the results of the skills survey. For example, a student in grade 8 may be able to perform one science practice listed in grade span 6-8, while performing another science practice in grade span 3-5.

NOTE: High School Chemistry and Technology/Engineering are legacy, rather than next-gen, assessments that will be conducted as they have been in previous years (i.e., by submitting a data chart with at least eight dates; plus at least two pieces of evidence in each strand). This is the last year legacy science will be offered.

(revised 6/2/20)

SCIENCE AND TECHNOLOGY/ENGINEERING (STE) SKILLS SURVEY

Instructions: For grades 5 and 8 STE and high school Biology and Introductory Physics, check the boxes below in each of the eight numbered Science Practices that the student can perform independently, at least some of the time. Select an entry point from each science practice in the highest grade-span in which the checked boxes appear.

Less to More Complex	1. Asking Questions and Defining Problems
PreK Grade 2	☐ Ask clarifying questions about a topic or idea. ☐ Use observations to ask relevant questions. ☐ Define a simple problem related to a topic.
Grades 3–5	☐ Use observations and/or data (for example, multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) to ask a question about a topic or idea. ☐ Identify questions on a topic that can be answered by an investigation. ☐ Define a simple problem that can be solved related to a topic.
Grades 6–8	☐ Identify scientific (testable) and non-scientific (non-testable) questions. ☐ Generate scientific questions about a topic based on research and/or observations.
Grades 9–12	☐ Evaluate a scientific question to determine if it is testable and/or relevant to a topic. ☐ Generate a scientific question about a topic that is testable using available resources. ☐ My student cannot perform any of the skills in this science practice

Less to More Complex	2. Planning and Carrying Out Investigations
PreK Grade 2	☐ Choose how to collect data and/or observations (for example, using one-word descriptors, yes/no observations) on a topic. ☐ Follow the steps of an investigation to collect data and/or observations (for example, using one-word descriptors, yes/no observations) on a topic. ☐ Record observations (for example, based on first-hand experiences or through the media) on a topic. ☐ Use pictures and/or drawings to collect observations related to a topic.
Grades 3–5	☐ Choose how to collect data and/or observations (for example, using multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) on a topic. ☐ Follow the steps of an investigation to collect data and/or observations (for example, multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) on a topic. ☐ From multiple options, select the best method to collect data and/or observations on a topic. ☐ Record observations (for example, based on first-hand experiences, or through the media) to collect data on a topic.
Grades 6–8	☐ Choose how to collect data to serve as evidence (for example, descriptions or drawings of observations over time, measurements that may show a pattern). ☐ Follow the steps of an investigation on a topic to produce data to serve as evidence (for example, descriptions or drawings of observations over time, measurements that may show a pattern). ☐ Select and use appropriate methods and/or tools (for example, ruler, graduated cylinder, thermometer, carbon dioxide sensor) for collecting data in an investigation. ☐ Record observations and/or measurements to produce data to serve as evidence for an investigation. ☐ Test two different models of the same proposed design solution to determine which better meets the criteria for success.
Grades 9–12	☐ Choose how to collect data to serve as evidence (for example, measurements, or descriptions of observations comparing an experimental and control group over time). ☐ Follow the steps of an investigation to produce data to serve as evidence (for example, measurements, or descriptions of observations comparing an experimental and control group over time). ☐ Select appropriate tools (for example, ruler, graduated cylinder, thermometer, carbon dioxide sensor) to conduct an investigation on a topic. ☐ Select and/or create the appropriate organizer (for example, table, chart, graphic organizer) to collect data from an investigation. ☐ My student cannot perform any of the skills in this science practice

Less to More Complex	3. Analyzing and Interpreting Data
PreK–Grade2	☐ Display data (for example, one-word descriptors, number/tally of yes/no observations) visually using a simple graph, table, or picture to show information on a topic. ☐ Identify patterns by grouping information/data by similar observable properties. ☐ Make predictions on a topic prior to collecting data/observations.
Grades 3–5	☐ Represent data (for example, counted observations, measurements) on a data display. ☐ Answer questions based on a representation (for example, data display) of a data set. ☐ Make predictions about an outcome in order to compare predictions to actual data and/or observations. ☐ Compare predictions to actual data and/or observations from an investigation. ☐ Use data and/or observations (for example, multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) to identify patterns about a topic. ☐ Use data and/or observations to identify relationships between topics, ideas, or concepts. ☐ From tests of an object or tool, evaluate data and/or observations (for example, multiple-word descriptors, descriptions or drawings of observations, counted observations, measurements) to determine if it works as intended. ☐ Construct a conclusion based on evidence or observations (for example, from an investigation).
Grades 6–8	☐ Use data and/or observations (for example, descriptions or drawings of observations over time, measurements that may show a pattern) from an investigation to interpret features of the data or develop conclusions. ☐ Describe one or more patterns (for example, using multiple-word descriptors) in a data set. ☐ Analyze/interpret data (for example, descriptions or drawings of observations over time, measurements that may show a pattern) to make sense of a topic. ☐ Compare and contrast two data sets. ☐ Use observations and/or data (for example, descriptions or drawings of observations over time, measurements that may show a pattern) to evaluate and/or refine a design solution.
Grades 9–12	☐ Analyze/interpret data from a table or graph, citing details and/or evidence from the data display. ☐ Create two or more appropriate visual representations of the same data set (for example, line graph, bar graph, circle graph, table, etc.). ☐ My student cannot perform any of the skills in this science practice.

Less to More Complex	4. Using Mathematics and Computational Thinking
PreK–Grade2	☐ Use counting and numbers to show data on a topic (for example, count/tally the number of yes/no observations or responses from the class). ☐ Identify qualitative (i.e., using words) information about objects or data. ☐ Identify quantitative (i.e., using numbers) information about objects or data.
Grades 3–5	☐ Use counting and numbers to show data on a topic (for example, measurements). ☐ Describe, measure, and/or compare quantitative (i.e., numerical) attributes of objects or data. ☐ Identify patterns in quantitative (i.e., numerical) data about a topic.
Grades 6–8	☐ Organize simple data sets (for example, data table, chart, graph) to reveal patterns. ☐ Evaluate whether qualitative (i.e., descriptive) or quantitative (i.e., numerical) data is best to collect as evidence in an investigation about a topic. ☐ Use computations (for example, addition, subtraction, division, multiplication) to analyze data (for example, averages, totals, differences).
Grades 9–12	☐ Use given formulas to solve for relevant quantities (for example, speed, density). ☐ Apply mathematical concepts and/or processes (for example, ratios, rates, percentages, proportions, and/or basic operations) to answer questions or solve problems. ☐ My student cannot perform any of the skills in this science practice.

Less to More Complex	5. Developing and Using Models
PreK–Grade2	☐ Label a model that shows or explains a topic. ☐ Illustrate a model to show or explain a topic. ☐ Compare a model of an object with the actual object and identify similarities and differences.
Grades 3–5	☐ Given directions, construct a model to show or explain a topic. ☐ Develop or create a model to show/explain a topic. ☐ Distinguish between a model and the actual object, process, or event. ☐ Compare two (or more) models of the same topic (for example, compare models of human body systems to identify common features and differences).
Grades 6–8	☐ Revise a model to more clearly show or explain a topic. ☐ Show or explain a topic using a model.
Grades 9–12	☐ Refine an existing model by suggesting revisions. ☐ Evaluate a model citing details about clarity and accuracy of the model. ☐ My student cannot perform any of the skills in this science practice.

Less to More Complex	6. Constructing Explanations and Designing Solutions
PreK–Grade2	☐ Show/express one or more observations or characteristics of a familiar topic or object. ☐ Show/express the relationship between two objects or topics.
Grades 3–5	☐ Describe one or more characteristics of a topic or object based on observations. ☐ Identify a design problem and a potential solution using words, pictures, or drawings. ☐ Draw and/or explain a design solution for a content-related problem.
Grades 6–8	☐ Explain how a familiar object, device, or machine works. ☐ Construct conclusions based on evidence from an investigation of a topic. ☐ Generate a solution to a design problem using pictures or drawings. ☐ Use tools (for example, ruler/tape measure, scissors, hammer) and/or materials to build a prototype that solves a specific problem. ☐ Use observations and data from investigations (for example, descriptions or drawings of observations over time, measurements that may show a pattern) to design a solution to a problem.
Grades 9–12	☐ Construct an explanation of how an object, prototype, or machine works based on information from a variety of sources (for example, model, research, investigation, simulation) ☐ Generate multiple solutions to a design problem. ☐ Compare multiple solutions to a design problem. ☐ My student cannot perform any of the skills in this science practice.

Less to More Complex	7. Engaging in Argument from Evidence
PreK–Grade2	☐ Use scientific evidence (for example, data, observations from an investigation) to support an argument about a topic from the grades PreK-2 STE standards (see core ideas at each grade).
Grades 3–5	☐ Use scientific evidence to support a claim about a topic from the grades 3-5 STE standards (see core ideas at each grade). ☐ Use scientific evidence to support a claim for or against a design solution.
Grades 6–8	☐ Use scientific evidence to support an argument about a topic from the grades 6-8 STE standards (see core ideas at each grade). ☐ Compare and critique two arguments about a scientific topic or idea. ☐ Defend a claim about the merits of a particular design solution, citing relevant evidence.
Grades 9–12	☐ Use scientific evidence and observations to construct an argument about a topic from the high school STE standards (see core ideas at each grade). ☐ Make and defend a claim based on scientific evidence about a topic or idea. ☐ Evaluate competing design solutions for a problem using evidence related to the criteria for success and the constraints of the resources. ☐ My student cannot perform any of the skills in this science practice.

Less to More Complex	8. Obtaining, Evaluating, and Communicating Information
PreK–Grade2	☐ Research (for example, using media or informational text) and present information (for example, show or express) on a topic from the grades preK-2 STE standards (see core ideas at each grade). ☐ Communicate information or ideas (orally, graphically, textually, and/or mathematically) on a topic from grades preK-2 STE standards (see core ideas at each grade). ☐ Compare fictional and non-fictional resources on a topic. ☐ Recall (retell) important information from a text or from observations.
Grades 3–5	☐ Research (for example, using media or informational text) and present information on a topic from the grades 3-5 STE standards (see core ideas at each grade). ☐ Communicate information or ideas (for example, orally, graphically, textually, and/or mathematically) on a topic from grades 3-5 STE standards (see core ideas at each grade). ☐ Compare two informational sources (for example, using media, informational text, data display) to determine similarities and differences in how information was presented.
Grades 6–8	☐ Research and present information on a topic from grades 6-8 STE standards (see core ideas at each grade). ☐ Communicate information or ideas (for example, orally, graphically, textually, and/or mathematically) on a topic from grades 6-8 STE standards (see core ideas at each grade). ☐ Combine scientific information from multiple sources (for example, media, informational text, data display, observations from an investigation) to explain scientific information or phenomena.
Grades 9–12	☐ Research and present information on a topic from grades 9-12 STE standards (see core ideas at each grade). ☐ Communicate information or ideas (orally, graphically, textually, and/or mathematically) on a topic from grades 9-12 STE standards (see core ideas at each grade span). ☐ Evaluate the validity and reliability of information provided in multiple texts/media on the same topic. ☐ My student cannot perform any of the skills in this science practice.

High School Science and Technology/Engineering (STE)

Chemistry (Legacy Standards)

(Note: For this high school STE discipline, conduct the Skills Survey below.)

Illustrate, demonstrate, or respond verbally to:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Group objects by one similar observable property (e.g., size, shape, color, weight, or texture)	Blank	Blank	Blank	Blank	Blank
2. Identify three properties of three different objects/materials (e.g., the ball is round, smooth, and blue; water is cold, wet, and clear)	Blank	Blank	Blank	Blank	Blank
3. Identify up to 3 given materials/objects as either solid, liquid, or gas	Blank	Blank	Blank	Blank	Blank
4. Give examples of a physical versus chemical change (i.e., a physical change doesn't change the substance (melting an ice cube, tearing paper, mixing flour and an egg); in a chemical change (e.g., combustion), a new substance is formed and energy is either given off or absorbed) (e.g., rusting iron, baking a cake, burning wood)	Blank	Blank	Blank	Blank	Blank
5. Give examples of each basic form of energy (i.e., light, sound, heat, electrical, and/or magnetic)	Blank	Blank	Blank	Blank	Blank
6. Classify up to three substances as either a mixture (e.g., soil, sand, coffee with milk, sugar, and water) or a pure substance (e.g., air, water, diamonds, table salt, sugar)	Blank	Blank	Blank	Blank	Blank

High School Science and Technology/Engineering (STE)

Technology/Engineering (Legacy Standards)

(Note: For this high school STE discipline, conduct the Skills Survey below.)

Illustrate, demonstrate, or respond verbally to:	A 0% (unable)	B Up to 25% (rarely)	C Up to 50% (occasionally)	D Up to 75% (more often than not)	E Up to 100% (almost always)
1. Name three tools and what they were designed to do.	Blank	Blank	Blank	Blank	Blank
2. Identify parts of the human body that act as tools (e.g., teeth for cutting, fingers for grasping).	Blank	Blank	Blank	Blank	Blank
3. Match various tools to their intended purpose.	Blank	Blank	Blank	Blank	Blank
4. Determine whether given objects are natural or human-made.	Blank	Blank	Blank	Blank	Blank
5. Identify different means of transportation.	Blank	Blank	Blank	Blank	Blank
6. Draw or describe a picture/diagram of a specific object you would like to construct.	Blank	Blank	Blank	Blank	Blank
7. Describe the materials you would use to build the object you would like to construct and why you chose those materials.	Blank	Blank	Blank	Blank	Blank
8. Name or describe at least one tool you would use to construct the object you chose and describe why you chose the tool.	Blank	Blank	Blank	Blank	Blank
9. Match a symbol (without text) used to communicate an idea to its message or meaning (e.g., symbols used for wheelchair access, danger, bicycle lane).	Blank	Blank	Blank	Blank	Blank
10. Calculate the actual length of an object from a scaled drawing.	Blank	Blank	Blank	Blank	Blank

APPENDIX S
GUIDELINES FOR SCORING
2025 MCAS-ALT



Guidelines for Scoring 2025 MCAS-Alt

**MCAS Alternate Assessment
Massachusetts Comprehensive Assessment System**

This document was prepared by the
Massachusetts Department of Elementary and Secondary Education

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Purpose of the Scoring Guidelines

The purpose of the *Guidelines for Scoring 2025 MCAS-Alt* is to train scorers to evaluate the 2025 MCAS Alternate Assessment (MCAS-Alt). These guidelines provide important information so that scorers can give valid scores on statewide MCAS-Alt assessments and maintain consistency in applying the scoring rules during the scoring process. Massachusetts educators are also encouraged to use these guidelines to familiarize themselves with the process used to evaluate the MCAS-Alt assessments for their students.

MCAS-Alt is the state's alternate assessment for students with the most significant cognitive disabilities who cannot be assessed on standard MCAS tests, even with accommodations, due to the severity of their disabilities. Students must be deemed eligible to participate in the alternate assessment based on the state's definition and criteria.

It is important to assess the academic performance of all students concerning learning standards and to include students with disabilities in MCAS reporting, so results provided to their schools can be used to improve instruction. The MCAS-Alt ensures that students with the most significant cognitive disabilities have an opportunity to show what they know academically and to receive instruction at a level that is challenging and attainable.

By participating in alternate assessments and including their scores in the results of their school and district, students have a greater chance of being considered when decisions are made to allocate staff and resources. Requirements for conducting the MCAS-Alt are provided in the *2025 Educator's Manual for MCAS-Alt*, available at www.doe.mass.edu/mcas/alt/resources.html.

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Introduction and Background

The MCAS Alternate Assessment (MCAS-Alt) has been administered annually in Massachusetts since 2001. According to state and federal laws, all students with disabilities are required to participate in statewide assessments, either by taking standard MCAS tests with or without accommodations or by taking the MCAS-Alt. Decisions regarding how each student will participate in MCAS must be made by the student's IEP team and documented in the student's IEP.

Contents and Structure of the MCAS-Alt

The MCAS-Alt consists of 1) the MCAS-Alt Skills Survey, which is a standardized, measurable, and scorable component that must be completed before selecting entry points or access skills for subsequent, deeper assessment in the required strand and subject; 2) a collection of “primary evidence” consisting of data charts, work samples, and photographs/video based on the selected entry points or access skills in the specific areas identified for submission in the required subject; and 3) optional “supporting documentation” that describes or shows the context of the assessment activities, including materials, setting, format, and student reflections. The collection of evidence is organized into “strands” according to the standards specified for assessment in each grade and content area. Each strand includes the following products and information related to the specific topics and domains being assessed:

- **MCAS-Alt Skills Survey**
- **one data chart** showing the student's performance on at least eight different dates, based on a skill listed in the state's Resource Guide for Students with Disabilities in the learning standard and subject required for assessment. (ELA-Reading, Language and Mathematics)
- at least **two pieces of evidence**, including work samples, video clips, and/or photographs, showing the student's performance based on the skill listed on the data chart, with a brief description of how the student demonstrated the skill.
- examples of **supporting documentation**, including materials and tools used by the student, reflection sheets, and other supporting documentation at the discretion of the teacher.

Exceptions to the above assessment requirements are described on pages 21–23 for ELA-Writing (all grades) and on page 24 for Science and Technology/Engineering (grades 5 and 8 and high school Biology and Introductory Physics).

Detailed instructions for conducting the MCAS-Alt are available in the Department's publication entitled the Educator's Manual for MCAS-Alt, which is updated annually. The Educator's Manual is posted on the Department's website at www.doe.mass.edu/mcas/alt/resources.html.

Scoring the MCAS-Alt

After the skills surveys and evidence collections are submitted to the Department on March 28, 2025, they are reviewed and scored at

a scoring institute sponsored by the Department and Cognia, the state's alternate assessment contractor. The *Guidelines for Scoring 2025 MCAS-Alt* (this publication) provides detailed information on the process that will be used by scorers to review and rate each student's alternate assessment. This publication is available at www.doe.mass.edu/mcas/alt/results.html.

General Guidelines for Scorers

Carefully review the following guidelines and each step of the scoring process included in this booklet, including all scoring rules and onscreen displays in the AltScore program.

Scorers must:

- **Score objectively and impartially.**
Put aside opinions about the appropriateness of the student's placement, program, or services; opinions on why the student is participating in the alternate assessment; and personal feelings about statewide assessment in general.
- **Review all evidence in a strand before scoring the strand.**
- **Score only what is provided in each strand.**
Do not make inferences or assumptions about what the student or teacher may have intended or should have included. Use *actual evidence*, rather than the description of the evidence provided by the teacher, as the basis for determining the score.
- **Avoid biases in reviewing the assessment based on overall presentation, neatness, and/or organization of the contents.**
- **Score each rubric area separately for each strand.**
- **Respect student and teacher confidentiality.**
In accordance with the Family Educational Rights and Privacy Act (FERPA), do not discuss confidential student information with anyone. Do not use the names of teachers or students when discussing the contents of any assessment. Do not score any assessment if you are familiar with the student or teacher who submitted it.
- **Respect the contents of the assessments.**
Student assessments must be returned in the same condition in which they were submitted. Maintain the order of all contents in the three-ring binder. Remove notes, flags, and placeholders you may have used during scoring.
- **Keep food and drinks away from the binders.** Store uncovered, sticky, or greasy edibles underneath the scoring table at all times.
- **Score at a reasonable pace, without rushing.**
Read each question and answer it based on the evidence in front of you. Be methodical without taking too long. Each strand should take no more than about fifteen minutes to score. Ask for assistance only if you get stuck.

Content Areas Assessed by MCAS-Alt: Grades 3, 4, and 5

Grade 3:

English Language Arts

One portfolio strand each in:

- Reading (Literature or Informational Text), Language (Vocabulary Acquisition and Use), and Writing (Text Types and Purposes)

Mathematics

One portfolio strand each in:

- Operations and Algebraic Thinking, and Measurement and Data

Grade 4:

English Language Arts

One portfolio strand each in:

- Reading (Literature or Informational Text), Language (Vocabulary Acquisition and Use), and Writing (Text Types and Purposes)

Mathematics

One portfolio strand each in:

- Operations and Algebraic Thinking, and Number and Operations - Fractions

Grade 5:

English Language Arts

One portfolio strand each in:

- Reading (Literature or Informational Text), Language (Vocabulary Acquisition and Use), and Writing (Text Types and Purposes)

Mathematics

One portfolio strand each in:

- Number and Operations in Base Ten, and Number and Operations – Fractions

Science*

One portfolio strand each in:

- Three different STE disciplines, one core idea for each discipline

* STE assessments may include evidence collected during the current and one immediately preceding school year.

Content Areas Assessed by MCAS-Alt: Grades 6, 7, and 8

Grade 6:

English Language Arts

One portfolio strand each in:

- Reading (Literature or Informational Text), Language (Vocabulary Acquisition and Use), and Writing (Text Types and Purposes)

Mathematics

One portfolio strand each in:

- The Number System, and Statistics and Probability

Grade 7:

English Language Arts

One portfolio strand each in:

- Reading (Literature or Informational Text), Language (Vocabulary Acquisition and Use), and Writing (Text Types and Purposes)

Mathematics

One portfolio strand each in:

- Ratios and Proportional Relationships, and Geometry

Grade 8:

English Language Arts

One portfolio strand each in:

- Reading (Literature or Informational Text), Language (Vocabulary Acquisition and Use), and Writing (Text Types and Purposes)

Mathematics

One portfolio strand each in:

- Expressions and Equations, and Geometry

Science*

One portfolio strand each in:

- Three different STE disciplines, one core idea for each discipline

* STE assessments may include evidence collected during the current and one immediately preceding school year.

Civics

One portfolio strand with:

- Three different Civics Core Ideas (A, B, and C)

Content Areas Assessed by MCAS-Alt: High School

Grades 9 or 10:

Science*

- Choose one STE discipline: Biology or Introductory Physics

Grade 10:

English Language Arts

One portfolio strand each in:

- Reading (Literature or Informational Text), Language (Vocabulary Acquisition and Use), and Writing (Text Types and Purposes)

Mathematics

One portfolio strand each in any three of the following strands:

- Number and Quantity
- Statistics and Probability
- Algebra
- Geometry
- Functions

* STE assessments may include evidence collected during the current and one immediately preceding school year. Review the STE assessment format on page 24.

Required Assessment Contents

Assessment Overview

The MCAS-Alt consists of 1) a completed MCAS-Alt Skills Survey for each assessed strand; and 2) either two or three assessed strands in each content area, depending on the subject and student's grade (see tables on pages 3–5) organized in a three-ring binder for each student. Guidelines for assembling the MCAS-Alt are provided in the *2025 Educator's Manual for MCAS-Alt*, available at www.doe.mass.edu/mcas/alt/resources.

Required Forms

- MCAS-Alt Cover Sheet
- Student's Weekly Schedule
- Student's Introduction
- Verification Form
- School Year Calendar

The overall score will not be affected if a required form is missing, but the scorer should provide comment 54 or 55 from the Comment Key, as appropriate.

Contents of ELA-Reading and Language, and Mathematics:

The “evidence” shown below must be included, at minimum, in each required strand (except ELA–Writing and STE which have different formats and requirements). Additional supporting documentation may be submitted at the teacher's discretion (see below). The measurable outcome being assessed must **remain the same** throughout each strand.

Primary evidence may be a **work sample**, **video sample**, **photograph**, or **series of photos** clearly showing a final product. Video samples may be up to 3 minutes in duration. Evidence must be labeled with name, date, percent accuracy, and percent independence, and must include a brief description of the activity (either written directly on the evidence or a Work Sample Description form).

Supporting Documentation (Optional):

- Work Sample Description form(s)
- Tools, templates, organizers, reference sheets, computer screenshots, description, or sample screen of an Augmentative and Alternative Communication (AAC) or other technology-based device used by the student.
- Reflection sheets or other examples of self-evaluation.

Summary of Scoring Process: Scorers

The Scorer:

Step 1:

- Receives a three-ring binder from the Table Leader
- Removes it from unsealed white envelope
- Stores the envelope under or near the binder

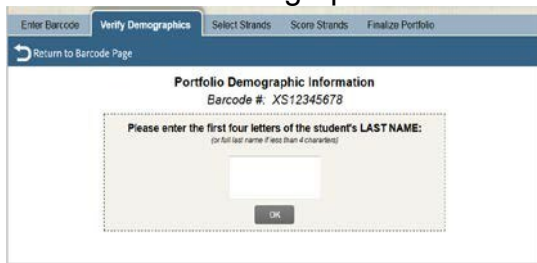
Step 2:

Enters the 10-digit barcode found on the white envelope (beneath the student's name label) into the AltScore program



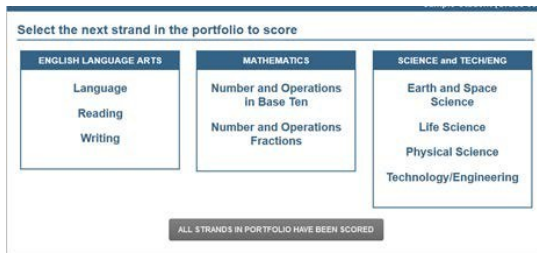
Step 3:

Confirms that demographic information in the AltScore program matches the MCAS-Alt Cover Sheet of the assessment to be scored



Step 4:

Select strand to be scored



Step 5:

- Scores each strand individually
- Answers each question in the AltScore program for each strand, in order to determine scores for:
 - Level of Complexity
 - Completeness
 - Demonstration of Skills and Concepts
 - Independence
 - Self-Evaluation
 - Generalized Performance

Step 6:

- Adds Strand Comments, as appropriate, for each strand
- Informs Table Leader of any scores of “M” or Level of Complexity (LOC) = 1

(Note: a score of “M” means that strand evidence was either missing or insufficient to score. “M” comments will be generated automatically, as needed, according to scorers’ responses to the AltScore “Completeness” questions.)

Step 7:

- Scores the remaining strands in each content area until all have been scored
- Adds General Portfolio Comment(s), as appropriate.

Step 8:

- Places binder back in white envelope and returns it to the Table Leader.

Summary of Scoring Process: Table Leaders

The Table Leader:

Step 1:

- Distributes binders to the scorers at their table
- Answers questions from scorers at their table
- Uses AltScore “Arbitration” screen to complete steps 2, 3, and 4

Step 2:

- Double-scores each scorer every fifth binder (or at least once each morning and afternoon)
- Determines whether a double or resolution score is needed
- Ensures the double scores are conducted by a scorer at another table

Step 3:

- Tracks and maintains the flow of binders into and out of the double-score box
- Follows procedure for “M” resolution and discrepancy resolution scores.

(Note: a score of “M” means that strand evidence was either missing or insufficient to score.)

Step 4:

- Discusses and inaccurate scores with the scorer, based on the resolution score
- Checks percent of inter-rater reliability (IRR) in AltScore for scorers based on their double-scored binders.

Step 5:

- Returns binders to their original box when completely scored
- Confirms that all strands have been scored.

Step 6:

- Returns completed boxes to the Quality Control room
- Retrieves a new box of binders from storage room.

Scoring: Complexity

The following numbered questions appear in AltScore, the online program that guides scorers through the scoring process. Many of the AltScore questions will be different for **ELA-Writing** and **Science and Technology/Engineering**

1. DOES THE MEASURABLE OUTCOME CONTAIN AN ACCEPTABLE ENTRY POINT OR ACCESS SKILL FOUND IN THE RESOURCE GUIDE FOR THIS STRAND/DOMAIN?

Scorer must confirm that:

- The strand includes a measurable outcome (listed on line 5 on the Strand Cover Sheet).
- The entry point or access skill is listed in the Resource Guide. Line 4 of the Strand Cover Sheet lists the **page number** in the Resource Guide on which the entry point or access skill is listed (If the page number is not listed, use **CTRL+F** and type in a keyword to search.)
- The wording of the entry point or access skill has not been **excessively modified** in the measurable outcome (i.e., the original meaning and intent of the entry point or access skill have been maintained).
- If the measurable outcome is not based on an entry point or access skill found in the Resource Guide, the scorer reports to the table leader who will request the **floor manager's approval** before answering NO.

Examples of entry points that were modified in the measurable outcome:

1. Entry point (Mathematics–The Number System): Represent a real-life negative quantity using a vertical or horizontal number line.

Acceptable modification of the measurable outcome:

- *Student will represent a real-life negative quantity using a number line with 80% accuracy and 100% independence.*
(Note: "...vertical or horizontal" was deleted.)

2. Entry point (Mathematics–Number and Operations–Fractions): Solve a multiplication word problem involving fractions using manipulatives.

An unacceptable modification of the measurable outcome:

- *Student will solve a multiplication word problem using manipulatives with 80% accuracy and 100% independence.*
(Note: Measurable outcome from the *Number and Operations–Fractions* domain must include "fractions.")

If the answer to question 1 is YES, the scorer answers this follow-up question:

- **DOES THE MEASURABLE OUTCOME INCLUDE MULTIPLE SKILLS** (e.g., "addition and subtraction")?

Scoring: Complexity (Continued)

2. IS THE SKILL ADDRESSED DURING A STANDARDS-BASED ACTIVITY? (ONLY WHEN LOC=2)

Scorers must confirm that:

- The student has addressed the skill in the context of an academic (i.e., standard-based) activity.
- If Level of Complexity =2 (i.e., “access skills”), the student addressed the skill in the context of an academic (i.e., standard-based) activity (see line 4, Strand Cover Sheet).

Examples:

Academic activities expose the student to the tools, concepts, and materials of the **content area** required for assessment, for example:

- Student will *turn her device on/off* to participate in a counting sequence activity within 10 seconds of a directive.
- Student will *visually track materials* representing informational text within a specified amount of time.
- Student will *orient or manipulate materials* used to create a possible solution(s) to a simple design problem model.

Non-academic activities might include:

- Carrying a jug of water
- Engaging in personal hygiene (e.g., bathroom routines)
- Choosing a motivational reward

The scoring rubric below is the basis for the score in Level of Complexity. The AltScore program will score this area automatically, based on scorers’ responses to the AltScore “Complexity” questions.

Scoring Rubric for Level of Complexity

1	2	3	4	5
Strand reflects little or no basis in, or is unmatched to, curriculum framework learning standard(s) required for assessment.	Student primarily addresses motor and communication “access skills” during instruction based on curriculum framework standards in this strand.	Student addresses curriculum framework standards that have been modified below grade-level expectations in this strand.	Not Attainable on Standard MCAS-Alt	Not Attainable on Standard MCAS-Alt

Scoring: Completeness

1. DOES THE STRAND INCLUDE A COMPLETED SKILLS SURVEY, A DATA CHART, AND AT LEAST TWO PIECES OF PRIMARY EVIDENCE?

If the answer to question 1 is YES, then the scorer will review primary evidence and determine which, if any, of the following are included:

☐ Photographs and/or videos ☐ Teacher-Documented work sample (see p.18) ☐ None of these

(If photographs and/or videos, or teacher-Documented work samples are checked above, **Questions 11 and 12** will be activated in AltScore.)

If a completed skills survey, plus one data chart and two pieces of evidence are **not** included in the strand, the scorer answers NO. Scorer will be directed to **Scoring: Self-Evaluation**

2. IS THE STUDENT'S NAME, % ACCURACY, AND % INDEPENDENCE LISTED ON THE DATA CHART?

Scorers must confirm that the following information is listed:

- Student's correct name
- Percent (%) accuracy and percent (%) independence for at least 8 data points

3. IS THE FIRST DATA POINT ON THE DATA CHART BELOW 80 PERCENT FOR ACCURACY AND/OR INDEPENDENCE?

Scorer must confirm that: The earliest (typically first) data point on the data chart is below 80% for either Accuracy or Independence, or both.

Scoring: Completeness (Data Chart)

4. DOES THE DATA CHART INCLUDE AT LEAST 8 DIFFERENT VALID DATES?

Scorer must confirm that:

- All dates for **English Language Arts (ELA), Mathematics, and Civics** occur in the current school year (i.e., between 7/1/24 and 3/28/25).
- All dates for **Science and Technology/Engineering (STE)** include the current and up to one previous school year (i.e., between 7/1/23 and 3/28/25)
- No data points are included that indicate 0% accuracy and 0% independence – those are not valid data points.

5A. DO AT LEAST 8 BRIEF DESCRIPTIONS ADDRESS ONLY THE SKILL IDENTIFIED IN THE MEASURABLE OUTCOME?

- On at least 8 dates, the student was assessed on the same skill listed in the measurable outcome, as documented in the brief descriptions for each activity included at the bottom portion of the data chart.
- Scorer should not score any data point that assesses a skill that is different from the skill listed in the measurable outcome.

For example, in **ELA–Literature**, if the measurable outcome is:

Student will compare and contrast characters in a story with 80% accuracy and 100% independence.

- **An acceptable brief description might be:** *After reading Cinderella, the student used a Venn diagram to compare and contrast the character traits of Cinderella and her stepsisters.*
- **An unacceptable brief description might be:** *Student answered questions about Cinderella and her stepsisters after reading two chapters and recorded her answers on a worksheet.* (“Answering questions” is **not** the same skill as “comparing and contrasting.”)

5B. DO AT LEAST 8 BRIEF DESCRIPTIONS ADDRESS ALL OF THE SKILLS FOUND IN THE MEASURABLE OUTCOME? (Only appears if scorer answers yes to “multiple skills” question)

Scorer must confirm that:

- If multiple skills are listed in the measurable outcome (e.g., addition and subtraction), then **all** the skills must be addressed on at least 8 different dates (e.g., were both addition *and* subtraction included in the descriptions of at least 8 data points?)

This question only appears if the scorer indicated that the measurable outcome included multiple skills
(See bottom of page 10).

For example, in ELA–Reading, the measurable outcome is: Student will *identify the main idea and key details in an informational text* with 80% accuracy and 100% independence.

Acceptable Brief Description: The student read *Martin Luther King, Jr.*, and wrote the main idea from the first two paragraphs and listed the key details. (NOTE: The brief descriptions on the data chart must show that both skills were addressed on at least 8 dates.)

Unacceptable Brief Description: The student read Martin Luther King, Jr., and found the main idea for each paragraph. (Note: Student did not perform both skills listed in the measurable outcome, since the teacher said the student would *identify the main idea and key details*

If the answer to Question 5A or 5B is NO, question 6 will not appear.

6. DO AT LEAST 8 BRIEF DESCRIPTIONS ON THE DATA CHART SHOW HOW THE STUDENT ADDRESSED THE SKILL? (I.E., WHAT ACTIVITY, INSTRUCTIONAL APPROACH, AND/OR MATERIALS WERE USED)

Scorer must confirm that:

A minimum of 8 brief descriptions were provided that indicate what the student did (skill) and how the student demonstrated the skill (e.g., activity, instructional approach, materials used).

It should be clear to the scorer how the activity was conducted. If not, the scorer should click NO.

- The skill listed in the measurable outcome **and** the method(s) or approach(es) used by the student to demonstrate the skill or respond to questions should BOTH be included in the brief description.

For example, the following brief descriptions indicate **what** the student did and **how** they performed the activity:

In ELA–Reading, the measurable outcome: Student will *answer simple comprehension questions about informational text*.

Acceptable brief descriptions:

- After reading *All About Penguins*, the student **answered 5 questions** about penguins' habits (**SKILL** being assessed in the measurable outcome) on a **worksheet** (**HOW** the student demonstrated the skill).
- Students **orally answered 8 questions** about the possible reasons for extinction (**SKILL** being assessed in the measurable outcome), based on the class assignment to read *Gone but Not Forgotten* (**HOW** the activity was conducted).
- Student read *National Geographic for Kids* online and **answered 8 comprehension questions** (**SKILL** being assessed in the measurable outcome) on his **computer** (**HOW** the activity was conducted).

In ELA–Reading, the measurable outcome is: Student will *identify the main idea* about a literary text.

Unacceptable brief description:

- Student identified the main idea in *Silly Penguins* (i.e., **HOW** was not addressed).

Note to Scorers:

A scorer's response of "NO" to any of the preceding questions will result in a score of "M" in both Demonstration of Skills and Concepts (i.e., accuracy) and Independence, which will result in an overall score of *Incomplete* in the content area.

A score of "M" means that the required information in the strand was either missing or insufficient to provide a score. "M" comments will be generated automatically, based on the scorer's "NO" response(s).

All scores of "M" will be reviewed by a Floor Manager (Massachusetts Teacher Consultant).

For ELA–Reading: Informational or Literary Text

R1. DO AT LEAST 8 BRIEF DESCRIPTIONS INCLUDE TEXT TITLES? IF NOT, ARE COPIES OF THE ACTUAL TEXT INCLUDED ELSEWHERE IN THE STRAND?

Scorers must confirm that:

- At least 8 brief descriptions for ELA–Reading include the **title of the text**, a reference to the topic of the text (e.g., a text about ghosts) used during each activity, or a **photocopy** of the text (e.g. if it was teacher-created or taken from a website). If titles of texts are not listed on the data chart, look for a list elsewhere in the strand.

R2. DO ALL ACTIVITIES ON THE DATA CHART ASSESS EITHER INFORMATIONAL TEXT OR LITERARY TEXT?

After reviewing the *Literature and Informational Text* hyperlink in AltScore (see Appendix H), scorers must confirm that:

- The activities listed on the data chart assessed **either informational or literary text**, but not both.

ELA–Reading: A definition of “Text”

For the ELA–Reading strand, “text” is at least one complete sentence (not phrases or isolated words). Isolated words or phrases may be assessed, but only if these have been extracted from the text listed on the data chart, and/or in brief descriptions, and/or from the photocopied text submitted in the strand.

The student may demonstrate **comprehension** of text either in writing (including scribed by the teacher), verbally, or through use of actions (e.g., pointing to one picture from an array that represents the text), symbols (e.g., selection of pictures, illustrations, or text), or technology (e.g., a computer or electronic communication system).

Scoring: Completeness (Primary Evidence)

7. IS THE STUDENT'S NAME, VALID DATE, % ACCURACY, AND % INDEPENDENCE LISTED ON AT LEAST TWO PIECES OF PRIMARY EVIDENCE, OR LISTED ON WORK SAMPLE DESCRIPTION LABELS?

Primary evidence includes any combination of work samples, videos, or photographs.

Scorers must confirm that:

- At least **two** pieces of evidence include the student's correct name, valid date, percent (%) accuracy, and percent (%) independence, listed either directly on the piece or on a Work Sample Description form attached (or adjacent) to the evidence.

8. DO AT LEAST TWO PIECES OF PRIMARY EVIDENCE DIRECTLY ADDRESS THE SKILL IDENTIFIED IN THE MEASURABLE OUTCOME?

Scorers must confirm that:

- At least two pieces of primary evidence address the skill listed in the measurable outcome.

9. DO AT LEAST TWO PIECES OF EVIDENCE ADDRESS ALL OF THE SKILLS FOUND IN THE MEASURABLE OUTCOME? (E.G., "ADDITION AND SUBTRACTION")

Scorers must confirm that:

- If multiple skills are listed in the measurable outcome, then all skills listed are addressed in at least two pieces of primary evidence (work samples, videos, or photographs).

This question only appears if the scorer indicated that the measurable outcome included multiple skills
(See bottom of page 10).

10. DO THE PHOTOGRAPH(S) OR VIDEO(S) SHOW A FINAL PRODUCT AND IS EACH ONE CLEARLY LABELED?

If photographs or videos are **not** included, then scorers will not see this question. After reviewing the photographs or videos, scorers must confirm that:

- The photo or video documents the skill listed in the measurable outcome.
- A final product from the activity is visible.
- Products are clearly labeled with name, valid date, % accuracy, and % independence.
- Video samples are no more than 3 minutes in length (i.e., scorers should view only the first 3 minutes of the video)

11. DOES THE “TEACHER-DOCUMENTED WORK SAMPLE” INCLUDED AS PRIMARY EVIDENCE PROVIDE SUFFICIENT INFORMATION TO DETERMINE WHAT THE STUDENT DID FOR EACH TASK AND HOW THE STUDENT ADDRESSED THE MEASURABLE OUTCOME?

A “**teacher-documented work sample**” is a piece of primary evidence produced by the teacher on behalf of a student who is unable to generate his or her written work samples. In the teacher-documented work sample, a teacher may document one or more student responses on a single date that addresses the same measurable outcome.

- If teacher-documented work samples are **not** included, then scorers will not see this question.
- See a sample “teacher-documented work sample” in Appendix F.

Scorers must confirm that:

- The teacher-documented work sample provides documentation of a series of trials conducted on the same date.
- The student’s responses are recorded for each trial, task, or question, together with the % accuracy and % independence.
- The teacher-documented work sample must include detailed information describing the context of each activity and how it was conducted. (Note: click the hyperlink in the AltScore program for further information and an example.)

For ELA—Reading

R3. DO AT LEAST TWO PIECES OF PRIMARY EVIDENCE INCLUDE TITLES OR PHOTOCOPIES OF TEXTS?

Scorers must confirm that:

- At least two pieces of primary evidence include the **title** of the text used during the activity or a **photocopy** of the text if it was teacher-created or taken from a website.

Note: In AltScore, refer to the list of informational texts that require only the title and do **not** require a photocopy of the text (see Appendix G or use the hyperlink located in AltScore to view).

R4. DO AT LEAST TWO PIECES OF PRIMARY EVIDENCE DOCUMENT ACTIVITIES BASED SOLELY ON INFORMATIONAL OR LITERARY TEXT?

After reviewing the *Literature and Informational Text* handout (Appendix H), scorers must confirm that:

- At least two pieces of primary evidence document the same text type (i.e., either Literary or Informational text, but not both) listed in the measurable outcome. Copies of the text should be provided when the text is teacher-created or internet-based, unless it is included on the supplementary list of well-known informational text in Appendix G.

Scoring: Demonstration of Skills & Concepts (DSC) and Independence (IND)

For all strands **except ELA–Writing** and **STE** (grades 5, 8, and High School Biology and Introductory Physics), the scorer must determine the dates of the **final 1/3-time frame** of the data points on the data chart (or at least the last 3 dates on the data chart).

Scorer performs the following steps in AltScore:

1. Enters the **date, % accuracy, and % independence for each acceptable piece of primary evidence**.
2. Enters the **date, % accuracy, and % independence** in the final 1/3-time frame on the data chart (or last 3 data points).
3. AltScore will automatically calculate an average of all scores in the final 1/3-time frame (including primary evidence, when applicable) for DSC and IND, based on the scoring rubric shown below.
4. Scorer reviews the averages calculated by AltScore and confirms that the scores “appear to be correct,” based on the scoring rubrics shown below.

Rubric Area	M	1	2	3	4
Demonstration of Skills and Concepts (Accuracy)	The strand contains insufficient information to determine a score.	Student's performance is primarily inaccurate and demonstrates minimal understanding in this strand (0–25% accurate).	Student's performance is limited and inconsistent with regard to accuracy and demonstrates limited understanding in this strand (26–50% accurate).	Student's performance is mostly accurate and demonstrates some understanding in this strand (51–75% accurate).	Student's performance is accurate and is of consistently high quality in this strand (76–100% accurate).
Independence	The strand contains insufficient information to determine a score.	Student requires extensive verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (0–25% independent).	Student requires frequent verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (26–50% independent).	Student requires some verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (51–75% independent).	Student requires minimal verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (76–100% independent).

For ELA–Writing

W1. IS THERE A COMPLETED SKILLS SURVEY AND 3 DIFFERENT WRITING SAMPLES WITH CORRESPONDING PRE-SCORED WRITING RUBRICS?

Scorers must confirm that:

- A completed ELA Writing Skills Survey is included.
- A minimum of three different final writing samples were submitted together with three completed Writing scoring rubrics attached or adjacent to each sample. If any are missing, the scorer clicks NO and follows prompts.
- If a student's writing sample contains personal bathroom-related activities, do not count the writing sample as one of the three required samples. Check with your table leader if you are uncertain.

Writing samples may be created using the student's primary mode of communication, including samples that are:

- handwritten or word-processed by the student
- dictated or signed to a scribe with the student's own words transcribed verbatim (scribes may assume correct capitalization and punctuation.)
- created using a symbol-based communication system or icons

Writing samples may be submitted in any combination of the following **text types**:

1. **Opinion / Argument:** stating a claim, opinion, preference, or analysis based on a text or topic, citing reasons and evidence from a text, where possible.
2. **Informative / Explanatory text:** conveying or explaining facts, information, or ideas on a topic, including descriptions taken and/or adapted from a text.
3. **Narrative (including poetry):** telling a story based on real or imagined events from a text or from personal experience, including fiction, drama (script), a personal reflection, or an event sequence; using figurative language (e.g., similes, metaphors), imagery, sounds of words (e.g., rhyme), meter, and/or repetition to express emotion or tell a story.

Teachers are required to pre-score their students' final writing samples (not the baseline sample) by completing a separate **writing scoring rubric** for each final writing sample.

W2. IS THE STUDENT'S NAME, VALID DATE, AND % INDEPENDENCE INCLUDED ON EACH OF THE THREE FINAL WRITING SAMPLES (EITHER ON THE SAMPLE OR THE WORK SAMPLE DESCRIPTION)?

Scorers must confirm that:

- Each final writing sample includes the student's name, a valid date, and % independence, listed either on the piece or on a Writing Work Sample Description either attached or adjacent to the evidence.

W3. IS THERE A BASELINE SAMPLE SUBMITTED?

Scorers must confirm that:

- A **baseline writing sample** was submitted that consists of either a draft, outline, notes, completed graphic organizer, or partially completed writing sample. Check the Work Sample Description to determine whether the sample was considered "final" or "baseline."
- If a baseline sample was NOT submitted, then the scorer clicks NO. (NOTE: This will not affect the final score in this strand)
- **Note:** Completed writing scoring rubrics are **not** required for baseline samples because these will not be included in the score.

W4. IS THE LEVEL OF COMPLEXITY ON THE SUBMITTED RUBRICS ACCESS SKILLS (2) OR ENTRY POINTS (3)?

- Scores will see questions 5 and 5A for entry points (Level of Complexity= 3).
- Scorers will see question 5B for access skills (Level of Complexity = 2).

W5. DOES THE WRITING SAMPLE INCLUDE ONLY...?

- Single words/pictures/symbols,
- list of single words,
- fill-in-the-blank, matching, true/false, circling correct responses, selecting multiple-choice response(s), **or**
- text provided by the teacher, with **no** evidence of original text expressed by the student.

If **yes to W5**, then the scorer clicks YES and proceeds to question W5A.

If **no**, Scorer clicks **NO** and enters the writing rubric scores provided by the teacher. Scorers do NOT change any scores.

W5A. IF THE WRITING SAMPLE DOES INCLUDE ONE OR MORE OF THE EXAMPLES LISTED IN W5, DOES THE PRE-SCORED WRITING RUBRIC CONTAIN SCORES OF 3 OR 4 IN EXPRESSION OF IDEAS AND CONTENT, KNOWLEDGE OF CONVENTIONS, TEXT STRUCTURE, OR USE OF VOCABULARY?

Scorer must confirm that:

- A writing sample includes one or more of the examples listed in W5 above **and** that
 - **scores of 3 or 4** are provided by the teacher for the *Expression of Ideas and Content, Knowledge of Conventions, Text Structure, or Use of Vocabulary*.
 - If so, the scorer clicks YES. **Scorer must change the scores of 3 or 4 in the areas available on the rubric, to scores of 1 or 2** (according to the writing rubric descriptions for each area) and must enter the revised scores onscreen, rather than the scores provided by the teacher.
 - **scores of 1 or 2** are provided by the teacher for the *Expression of Ideas and Content, Knowledge of Conventions, Text Structure, or Use of Vocabulary*.
 - If so, the scorer clicks NO to this question and enters the writing rubric scores provided by the teacher.

NOTE: The scores in the four areas of the writing rubric listed above will be used to determine the score for the Demonstration of Skills and Concepts.

W5B. DOES THE WRITING SAMPLE DOCUMENT THE STUDENT'S PARTICIPATION IN THE CREATION OF A WRITTEN PRODUCT? (FOR THE LEVEL OF COMPLEXITY = 2 ONLY)

Scorer confirms that a written product is provided for a student who is working on “access skills” with a description of the student’s participation.

FOR SCIENCE AND TECHNOLOGY/ENGINEERING (STE) IN GRADES 5, 8 AND HIGH SCHOOL BIOLOGY AND INTRODUCTORY PHYSICS

S1. IS THERE ONE COMPLETED STE SKILLS SURVEY FOR THE ENTIRE STE DISCIPLINE, AND AT LEAST 3 STE SUMMARY SHEETS?

Scorers must confirm that:

- **One completed STE Skills Survey is included for the entire STE discipline** (i.e., all science practices have been surveyed with at least one checked box beneath each practice).
- At least **three** STE Summary Sheets per strand were submitted.
- If the scorer answers NO, the scorer will be redirected to **Scoring: Self-Evaluation**

S2. DO AT LEAST THREE STE SUMMARY SHEETS PER STRAND HAVE PRIMARY EVIDENCE ATTACHED WITH VALID NAME, DATE, AND % ACCURACY AND INDEPENDENCE?

Scorers must confirm that:

- At least **three** STE summary sheets have primary evidence (e.g., work samples) attached.
- Each summary sheet includes the student's name, valid date, and % accuracy and independence.
- If the scorer answers NO, the scorer will be redirected to Scoring: Self-Evaluation

S3. ARE THREE DIFFERENT SCIENCE PRACTICES REFLECTED ON EACH STE STRAND COVER SHEET?

Scorers must confirm that:

- The **three** summary sheets reflect **three** different science practice numbers.
- If the scorer answers NO, the scorer will be redirected to **Scoring: Self-Evaluation**

S4. DO ACTIVITIES ON THREE STE SUMMARY SHEETS ASSESS THE SAME CORE IDEA?

Core Idea is found on the Strand Cover Sheet (Line 4)

Scorers must:

- In AltScore, select from the dropdown menu the **Core Idea** listed on the Strand Cover Sheet.
- Review the list of related topics within the selected Core Idea.
- Confirm that the activities relate to *any* of the listed topics.

S5. DOES EACH PIECE OF EVIDENCE DOCUMENT THE ENTRY POINT/ACCESS SKILL LISTED ON THE STE SUMMARY SHEET?

Scorers must confirm that:

- The evidence documents the entry point/access skill listed on the STE Summary Sheet (e.g., the entry point states, *Illustrate, construct, and/or label a model to show/explain the parts of a plant*. The evidence shows a picture of a plant with parts labeled.)
- **Note:** If STE Summary Sheets were completed last year and this year, please alert your table leader.

STE SUMMARY SHEET — DATA ENTRY

In AltScore, scorers will enter the Science Practice numbers (1–8) and the overall percentages of accuracy and independence for the three most recent and complete STE Summary Sheets in the strand.

Note: If three different science practices are not indicated on the STE Summary Sheet, click BACK to return to question #3 and answer NO.

FOR CIVICS (GRADE 8 ONLY)

C1. IS THERE A SKILLS SURVEY AND AT LEAST 3 COMPLETED CIVICS SUMMARY SHEETS?

Scorers must confirm that:

- **One completed Civics Skills Survey is included.**
- At least **three** Civics Summary Sheets per strand were submitted.
- If the scorer answers NO, the scorer may be redirected to **Scoring: Self-Evaluation**

C2. DO AT LEAST THREE CIVICS SUMMARY SHEETS HAVE PRIMARY EVIDENCE ATTACHED WITH VALID NAME, DATE, AND % ACCURACY & INDEPENDENCE (EITHER ON THE EVIDENCE OR CORRESPONDING SUMMARY SHEET)?

Scorers must confirm that:

- At least **three** summary sheets have primary evidence (e.g., work samples) attached.
- Each summary sheet includes the student's name, valid date, and % accuracy and independence.
- If the scorer answers NO, the scorer will be redirected to Scoring: Self-Evaluation.

C3. ARE THREE DIFFERENT CORE IDEAS (A, B, AND C) REFLECTED ON THE CIVICS SUMMARY SHEETS?

Scorers must confirm that:

- The three summary sheets reflect one each from **Civics Core Idea A, B, and C.**
- If the scorer answers NO, the scorer will be redirected to **Scoring: Self-Evaluation**

C4. DO THE ACTIVITIES ON THE CIVICS SUMMARY SHEETS ALL ASSESS THE SELECTED ENTRY POINT OR ACCESS SKILL?

Scorers must confirm that:

- Activities listed on the summary sheets for Core Idea A, B, and C relate all represent the selected skill for each Core Idea.

STE SUMMARY SHEET - DATA ENTRY

In AltScore, scorers will enter the overall percentages of accuracy and independence from the Civics Summary Sheet for Core Idea A, B, and C.

Scoring: Self-Evaluation (S-E)

Instructions to Scorers: The scorer should review the evidence in the strand for examples of self-evaluation. The following examples should each be counted as one example of self-evaluation, if it is **performed by the student** (as indicated on the evidence, in an attached note, or on a Work Sample Description label):

- selecting student's own work for the assessment
- choosing materials/activities
- reflecting on performance
- goal setting
- graphing or monitoring own performance
- completing a K-W-L chart (i.e., "What I know? What I want to know? What did I learn?")
- checking off or listing tasks as they are accomplished.
- self-correcting errors in the work sample

The scorer indicates whether none, one, or multiple example(s) of self-evaluation were found in the strand.

Scoring Rules:

1. If the same self-evaluation activity was used on multiple pieces of primary evidence, count each as an example of self-evaluation.
2. Do not count a stamp, sticker, or teacher expressing praise as examples of self-evaluation.
3. If a teacher scribes a student's responses to a self-evaluation question, that should count as an example.
4. Count any example that uses pictures and/or symbols, rather than words, to self-evaluate, as shown below.



The score for *Self-Evaluation* will be determined by AltScore based on the scoring rubric below:

M	1	2
Evidence of planning, self-correction, task-monitoring, goal-setting, and reflection was not found in this strand.	Student infrequently plans, self-corrects monitors, sets goals, and reflects in this content area — only one example of self-evaluation was found in this strand.	Student frequently plans, self-corrects monitors, sets goals, and reflects in this content area — multiple examples of self-evaluation were found in this strand.

Scoring: Generalized Performance (GP)

Instructions to Scorers: The scorer should review all evidence and brief descriptions for examples of “generalized performance.” Generalized Performance reflects the number of **instructional approaches** and **activity formats** used by the student to acquire and demonstrate knowledge and skills, including any of the following variations:

- *Media and materials* (e.g., uses a variety of materials, such as printed text, manipulatives, art materials, computer, etc.)
- *Activity formats* (e.g., classroom projects, research, experiments, worksheets, open/constructed responses)
- *Presentation formats* (e.g., oral, written, multimedia)
- *Response formats* (e.g., handwritten, word-processed, oral presentation, or visual display)
- Application of skills and/or knowledge in a setting outside the school

The scorer should indicate in AltScore whether one or multiple example(s) of generalized performance were found in the strand.

Scoring Rules:

- a) Activities in **community settings** (i.e., outside the school, including homework) always count as one example of GP when this is indicated in the evidence or in the brief description.
- b) **Use of age-inappropriate instructional materials** (e.g., dolls, nursery rhymes, etc.) by a student in grades 6–10 will result in a score of GP = 1, regardless of other factors contributing to the GP score. In this case, add Comment G from the Comment Key. Check with your Table Leader if you are uncertain.
- c) **For ELA–Writing and STE ONLY:** The scorer does not need to indicate a score for Generalized Performance for strands in ELA–Writing and STE. When the minimum requirements are met, a score of GP=2 will be generated automatically for these strands

The score for *Generalized Performance* will either be “**1**” or “**2**,” based on the rubric below:

1	2
Student demonstrates knowledge and skills in one context or uses one approach and/or method of response and participation in this strand.	Student demonstrates knowledge and skills in multiple contexts or uses multiple approaches and/or methods of response and participation in this strand.

Scoring Rules in Special Cases

1) Can pieces of primary evidence also be included as points on the data chart? If so, is the strand complete?

Yes. At the teacher's discretion, the work samples, videos, and other primary evidence may be included as data points on a data chart, but it is *not* required. Regardless of whether primary evidence is also included as data points on the chart, scorers will count the evidence for determining completeness, provided the work reflects the skill listed in the measurable outcome. If a work sample is also included on the data chart, the percentage of accuracy and independence will only be counted once by AltScore.

2) What if a required strand is not submitted?

The scorer must indicate that the strand was not submitted by checking the box "strand required but not submitted" on the final AltScore screen.

3) What if a strand was submitted that was not required for a student in that grade?

If a strand was submitted in a discipline or domain that was **not** required, scorers should **not score** the strand.

4) Can primary evidence be submitted from previous school years?

The requirement is that submitted evidence should have been created during the current school year. Only **Science and Technology/Engineering (STE)** assessments in grades 5, 8, and high school may contain evidence accumulated over two consecutive school years, the current and one previous year (i.e., beginning July 1, 2023).

5) Can photographs (or a series of photographs) and video samples be submitted as primary evidence?

Products submitted in a strand will be counted and scored as primary evidence if the final product of instruction is visible and photo(s) or video(s) clearly describes how the student demonstrated the measurable outcome. Each product must be labeled with all required information. Video samples must be intelligible (or transcribed in writing), clear enough for a scorer to see the final product, and no longer than three (3) minutes in duration.

Maintaining Validity and Reliability

Training and Qualification of Scorers

Before the first day of actual scoring, prospective scorers receive intensive training supervised by Department staff. After training is completed, each prospective scorer, Table Leader, scoring specialist, and Floor Manager must pass a qualifying test before scoring any student assessments.

Qualifying Test

To qualify, prospective scorers must individually score several pre-calibrated, simulated MCAS-Alt strands using the AltScore onscreen scoring program. These “qualification strands” cover a range of scenarios scorers are likely to encounter in the actual scoring of student assessments. Prospective scorers are permitted to refer to the following publications while taking the qualifying test:

- *Guidelines for Scoring 2025 MCAS-Alt* (this publication)
- *Resource Guide to the Massachusetts Curriculum Frameworks for Students with Disabilities* (Fall 2024 edition) (digital version)
- *Training for MCAS-Alt Scorers* – PowerPoint presentation handout
- Sample strands used during scorer training

The passing scores for the qualifying test are as follows:

- Scorers must achieve a score of at least **85 percent** correct
- Table Leaders, Floor Managers, and MCAS-Alt scoring specialists must achieve a score of at least **90 percent** correct.

Prospective scorers, Table Leaders, scoring specialists, and Floor Managers who do *not* qualify on the first attempt are allowed to review their tests and receive additional training, after which a second qualifying test is administered. Those who do not qualify on the second attempt will be excused from scoring. Table Leaders and scoring specialists who score 85–89 percent will be invited to participate as scorers, but not as Table Leaders or scoring specialists.

Maintaining the Accuracy and Consistency of Scores

All scoring discrepancies and scores of “M” for DSC and IND are resolved by a scoring specialist and Floor Managers.

Table Leaders and Department staff will track each scorer’s inter-rater reliability (IRR). For assessments in grades 3–10, this is accomplished by double-scoring at least one student’s entire assessment (i.e., skills surveys and strands) each morning and afternoon for each scorer, or at least one entire assessment out of every five scored. Table Leaders and scoring specialists will be double-scored on at least two complete assessments each week, with discrepancies resolved by a Floor Manager. Each scorer’s rate of agreement with an expert scorer (i.e., inter-rater reliability) must be maintained at a level of 80 percent or higher for all rubric areas in the double-scored assessments. When the rate of agreement falls below 80 percent, scorers are retrained and subsequently double-scored for the remainder of that day and may be released from scoring at the discretion of the Department if their rate of agreement falls below 80 percent two or more subsequent times.

Appendix A: MCAS-Alt Glossary

The following terms are used to describe and score the MCAS-Alt:

Access Skills: Student outcomes that address a social or motor skill during a standards-based (i.e., academic) activity in the required strand

Conceptual Category: The high school Mathematics standards are clustered in “conceptual categories:” Number and Quantity (N), Algebra (A), Functions (F), Modeling, Geometry, and Statistics and Probability (S) which together present a coherent view of high school mathematics.

Content Area: The subject assessed by the MCAS-Alt, including English Language Arts and Literacy (ELA), Mathematics, and Science and Technology/Engineering (STE)

A core set of evidence: The minimum amount of evidence required for a strand to receive a score. For subjects, other than ELA–Writing and STE, this includes:

- **One data chart** showing a student’s progress over time in learning the measurable outcome; **PLUS**
- **Two additional pieces of primary evidence** (e.g., work samples) showing the student’s performance of the same measurable outcome shown on the data chart.

Domain: A topic or cluster of related Mathematics standards in grades PreK–8, according to the Massachusetts Curriculum Framework.

Entry Point: An academic outcome based on a learning standard that has been modified below grade-level expectations. Entry points are listed at progressively lower levels of complexity in the Fall 2024 *Resource Guide to the Massachusetts Curriculum Frameworks for Students with Disabilities (the “Resource Guide”)*.

Learning Standard: Specific statement of what *all* students should know and be able to do by the end of each grade.

Measurable Outcome: A specific goal for a student taking the MCAS-Alt that serves as the basis of his or her data charts and/or primary evidence. Measurable outcomes are based on entry points and access skills listed in the Resource Guide that identify the specific skill to be assessed in the strand/domain required for the assessment of a student in that grade. Measurable outcomes have been individualized with percentages of accuracy and independence (e.g., “[Student] will add 3-digit numbers with 80 percent accuracy and 100 percent independence”)

Primary evidence: A work sample, photograph, video sample, or teacher-documented work sample that documents the student’s knowledge or demonstration of a skill.

Resource Guide to the Massachusetts Curriculum Frameworks for Students with Disabilities: The Resource Guides list the Massachusetts learning standards in each subject and grade and identify student outcomes (i.e., entry points and access skills) based on each standard at successively lower levels of complexity (i.e., from more-to-less complex).

Strand: A unit of scorable evidence in the alternate assessment; a cluster of related standards in the Massachusetts Curriculum Framework.

Supporting documentation: Products that show the context and/or format of an instructional activity, but not the final product or

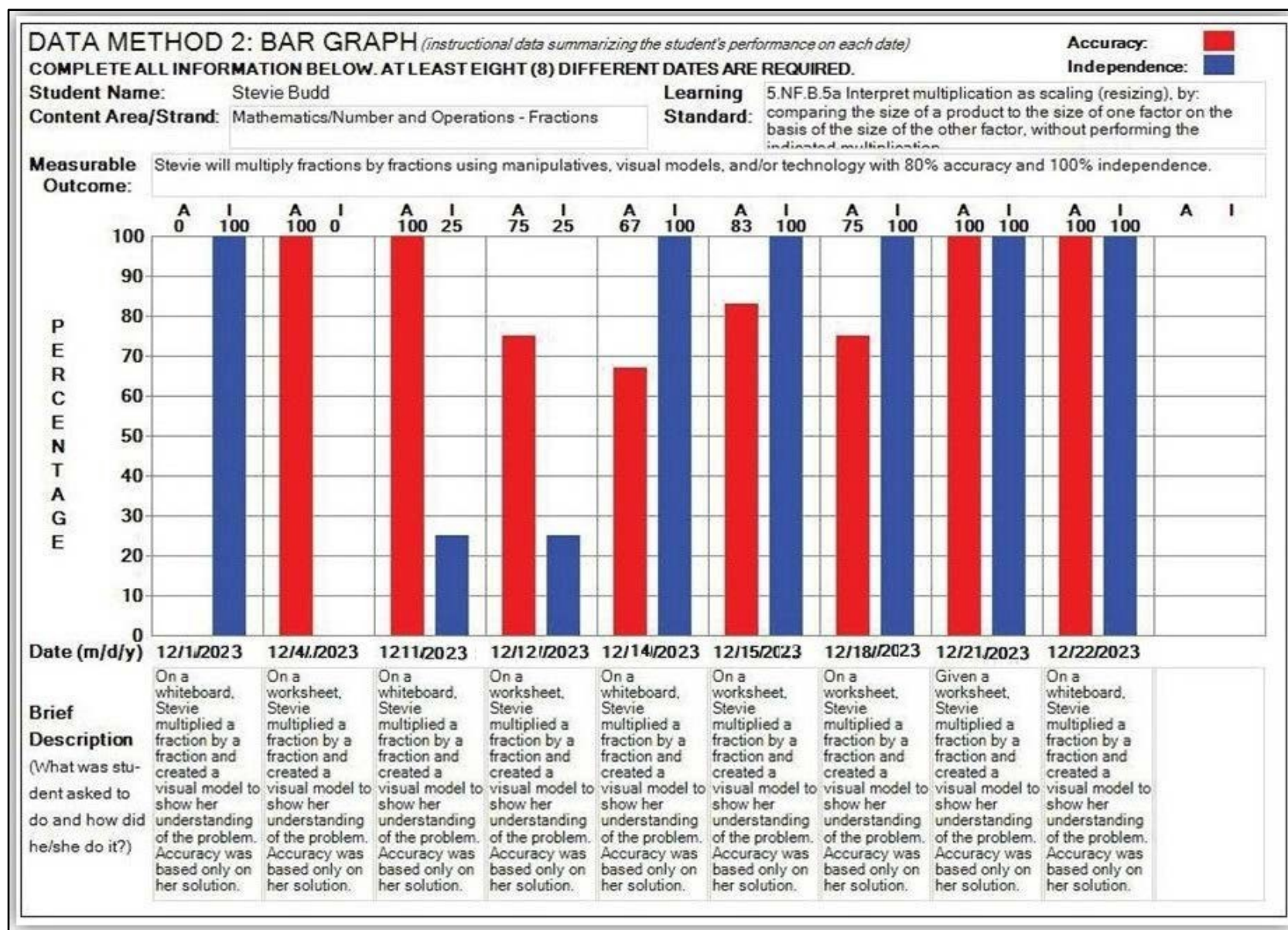
performance of the activity, i.e., how did the instruction occur? Examples of supporting documentation might include a blank graphic organizer, a computer screenshot of a program or application used by the student, a reflection sheet, or a work description.

Appendix B: Data Chart–Sample Field Data Chart

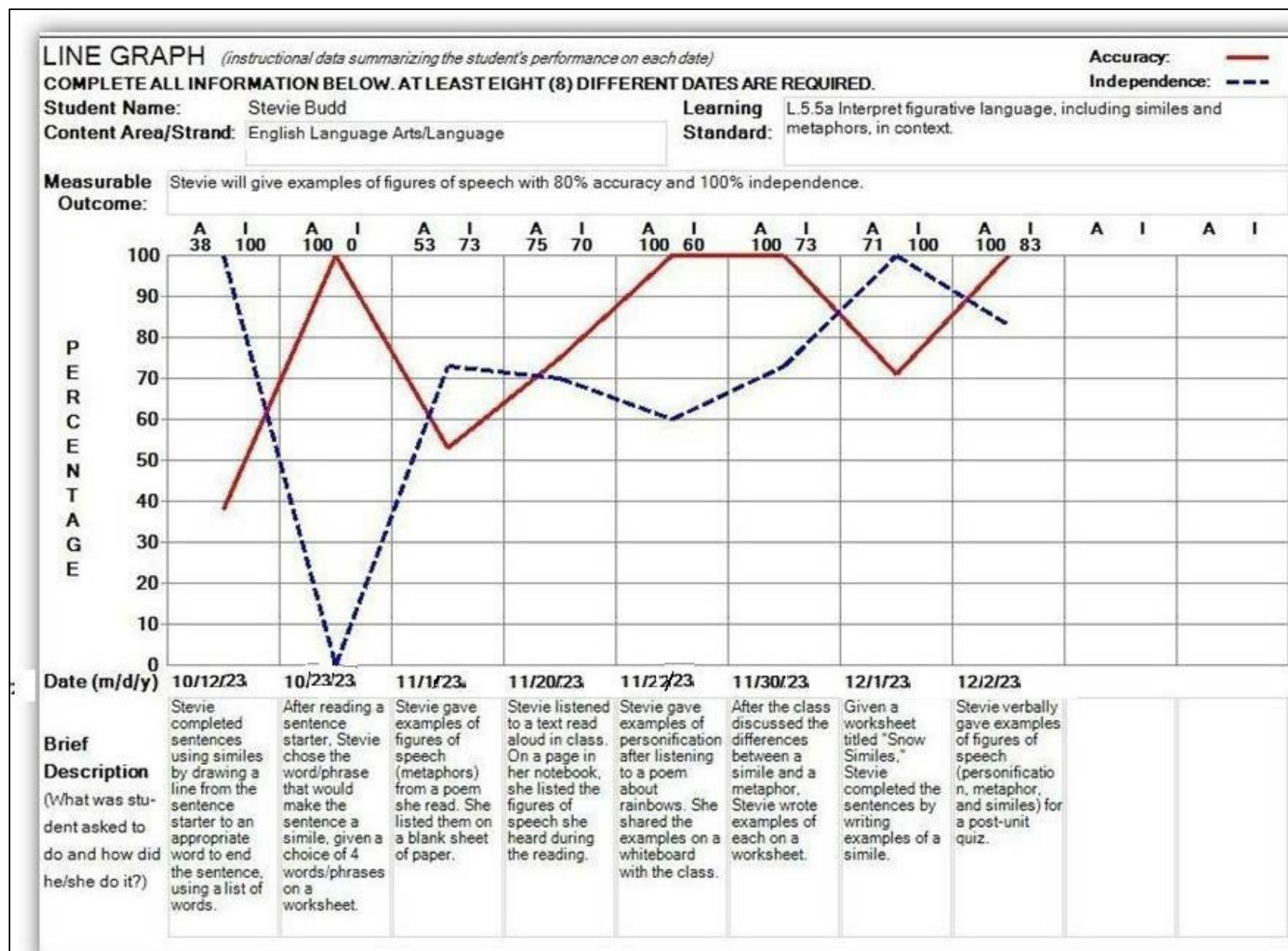
DATA METHOD 1: FIELD DATA CHART										
COMPLETE ALL INFORMATION BELOW.										
Student Name: Rosie Riverter						KEY Accurate (+ or -) (I or P) Independence		+ Accurate		
Content Area/Strand: English Language Arts - Language								- Incorrect		
Learning Standard: L.8.4a Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.								I Independent		
Measurable Outcome: Student will attend visually, aurally, or tactilely to materials related to vocabulary acquisition within 15 seconds with 80% accuracy and 60% independence.								P Prompt Used		
At least eight (8) different dates are required.										
Date (mo/day/yr):	10/4/23	10/11/23	10/13/23	10/16/23	10/18/23	10/23/23	10/25/23	10/30/23	11/2/23	11/7/23
Accuracy and Independence for each trial (see KEY):	+ / P	+ / P	+ / I	- / P	- / P	- / P	+ / P	- / P	+ / P	- / P
	- / P	- / P	+ / I	- / P	+ / P	+ / P	+ / I	+ / P	+ / I	+ / P
	+ / I	+ / P	+ / I	- / P	- / P	+ / I	+ / I	+ / I	- / P	+ / I
	+ / I	- / P	+ / I	- / P	- / P	+ / I	- / P	+ / I	+ / I	+ / I
	- / P	+ / I	+ / P	- / P	+ / P	+ / I		+ / P	+ / P	+ / I
	- / P	- / P	- / P	- / P	+ / P	- / P		+ / P	+ / I	- / P
	+ / I	+ / I	- / P	- / P	+ / P	- / P		+ / P	+ / I	- / P
	- / P	+ / I	+ / I	- / P	- / P	- / P		+ / P	+ / I	+ / I
		- / P	- / P	+ / I	+ / P			+ / I	+ / I	- / P
	+ / P	+ / P	+ / I	- / P				+ / I	+ / P	+ / I
% Accuracy: SUMMARY for this date	50	60	70	20	50	50	75	90	90	60
% Independence: SUMMARY for this date	38	30	50	20	0	38	50	40	60	50
Brief Description (What was student asked to do and how did he/she do it?)	During a literacy group, was read chapter 8 (Margalo) in Stuart Little. A story box of objects was used to represent vocabulary from the text.	During a literacy group, was read chapter 10 (Springtime) in Stuart Little. A story box of objects was used to represent vocabulary from the text.	During a literacy group, was read chapter 11 (The Automobile) in Stuart Little. A story box of objects was used to represent vocabulary from the text.	During a literacy group, was read chapter 13 (Ames' Crossing) in Stuart Little. A story box of objects was used to represent vocabulary from the text.	During a literacy group, was read chapter 15 (Heading North) in Stuart Little. A story box of objects was used to represent vocabulary from the text.	During a literacy group, was read a poem about snow. During the reading, a story box of objects was used to represent vocabulary from the poem.	During morning meeting, the class discussed the topics of attendance, the calendar (month and day of the week), and the weather. Tactile objects and images were used to represent the vocabulary	During literacy group, was read chapter 1 (Peter Breaks Through) in Peter Pan. A story box of objects was used to represent vocabulary from the text.	During a literacy group, was read chapter 2 (The Shadow) in Peter Pan. A story box of objects was used to represent vocabulary from the text.	During a literacy group, was read chapter 3 (Come Away, Come Away) in Peter Pan. A story box of objects was used to represent vocabulary from the text.

Data was taken on whether the student attended within 15 seconds of being shown the object.

Appendix C: Data Chart–Sample Bar Graph



Appendix D: Data Chart–Sample Line Graph



Appendix E: Rubric for Scoring ELA–Writing

LEVEL OF COMPLEXITY

Rubric Area	M	1	2	3	4
Level of Complexity	n/a	Writing sample not submitted or unmatched to requirement.	Student address Writing through “access skills”	Student address Writing through “entry points”	Student address Writing at “grade-level”

DEMONSTRATION OF SKILLS AND CONCEPTS

Rubric Area	M	1	2	3	4
Expression of Ideas and Content	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English or could not be read or understood	No main idea (informative), point of view (opinion), event sequence (narrative), or focus (poetry); or was unclear or off-topic; or used single word, picture, or symbol to express ideas; or all text provided by teacher	Writing sample related to assignment only minimally; included no or only one detail or description; or used picture sequence to express ideas; or used no figurative language or poetry form (poetry)	Main idea (informative), point of view (opinion), or event sequence (narrative) was evident; limited use of facts, details, and/or descriptions; sometimes repetitive and/or off-topic; limited use of figurative language (poetry);	Main idea (informative), point of view (opinion), or event sequence (narrative) was clearly expressed; three or more accurate and relevant facts, details, or descriptions included; used vivid imagery and figurative language appropriately (poetry)
Knowledge of Conventions	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English or could not be read or understood	Little or no original text; or used pictures or isolated words; or could not be understood due to errors in grammar and/or usage	General meaning could be understood, though use of grammar was limited and/or contained errors or run-on sentences; or lacked poetry form (poetry)	Complete sentences with some errors; grammar was effective; correct noun-verb agreement; some evidence of poetry form (poetry)	Meaning was clear, with rare or no errors in grammar and overall usage; poetry form used appropriately (poetry)
Text Structure	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English or could not be read or understood	Used single words, pictures, symbols without text; or all text provided by teacher	Sentence fragments (phrases) or one complete sentence used to express ideas; produced two related lines (poetry)	At least two complete sentences were used to express ideas; produced up to four related lines (poetry)	A paragraph of at least three related, well-constructed sentences was used to express ideas; more than four related lines (poetry)

Rubric Area	M	1	2	3	4
Use of Vocabulary	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English or could not be read or understood	Vocabulary was unrelated to assignment; or all text was provided by teacher	Vocabulary was related to assignment, but word choice was limited and/or sometimes inappropriate	Vocabulary was functional and relevant; used basic common words, with some descriptive language	Vocabulary was clear and precise; used descriptive language, modifiers, connecting words and/or phrases
Independence	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English; or could not be read or understood	Student required extensive, almost continuous prompts to complete writing sample (0-25% independent) _____%	Student required frequent prompts to complete writing assignment (26-50% independent) _____%	Student required some prompts to complete writing assignment (51-75% independent) _____%	Student required no, or very few, prompts to complete writing assignment (76-100% independent) _____%

Appendix F: Sample of Teacher-Documented Work Sample

Grade Level: 7th Grade

Content Area (Subject): Math

Strand: Ratios and Proportional Relationships

Learning Standards: 7.RP.A.2 Recognize and represent proportional relationships between quantities.

Measureable Outcome: _____ will turn on technology used to demonstrate ratios and proportional relationships by pressing an access switch to turn the page of a teacher made story on the computer about ratios and proportions with 80% accuracy and 100% independence. _____ will turn on the technology within 15 seconds of a directive.

Brief Description: During a math work session, _____ turned on technology by pressing an access switch to turn the page of a teacher made book on the computer within 15 seconds of a directive. The book taught _____ about ratios and proportional relationships by showing her a series of farm animals using the phrase "for every" to talk about how many of each appendage each animal had. (ex: for every cow there are 4 legs)

Trial Number	Page Number	Did she turn on technology by pressing her switch to activate the reading?	Latency In seconds	What was the ratio on the page?	+/-	I/P
1	1	No	15+ seconds	For every pig there is one tail	-	I
2	1	Yes	4 seconds	For every pig there is one tail	+	I
3	2	Yes	14 seconds	For every sheep there are 2 ears	+	I
4	3	No	15+ seconds	For every cow there are 4 legs	-	I
5	3	No	15+ seconds	For every cow there are 4 legs	-	I
6	3	Yes	10 seconds	For every cow there are 4 legs	+	P
7	4	Yes	3 seconds	For every duck there is 1 beak	+	I
8	5	Yes	1 second	For every goat there are 2 horns	+	I
9	6	Yes	11 seconds	For every horse there are 4 legs	+	I
10						

Accuracy	Independence
67%	89%

Appendix G: Informational Text – Supplemental List

Teachers are directed to include a photocopy of any Internet-based or teacher-created texts being submitted in the student's ELA-Reading assessment. **The following *informational* texts do not require a photocopy for the ELA/Reading/Informational Text strand because they are widely used and well-known:**

- ***News-2-You*** (symbol and text-based)
- ***Scholastic for Kids***
 - ***Science Spin***
- ***Weekly Reader***
- ***Time for Kids***
- ***Newsweek for Kids***
- ***National Geographic for Kids***
- ***Newsela*** (daily online news articles at five different reading levels from grades 3–12)
- ***Unique Learning Systems*** (symbol and text-based)
- ***Wonderopolis* or *Camp Wonderopolis***
- **Digital Textbooks (provide the name of the textbook)**

Teachers may simply list the title and topic of articles, plus the name of the publication, from the sources listed above either in the brief description or directly on the evidence. For example:

“(Student) read an article about goats from National Geographic for Kids and answered five comprehension questions on a worksheet.”

Appendix H: Literature and Informational Text Types

The 2011 Massachusetts Curriculum Framework in ELA/Literacy includes separate strands for **Reading- Literature** and **Reading- Informational Text**. Therefore, these genres may not be combined in the MCAS-Alt portfolio strand in Reading. Teachers may choose to assess one or the other, but not both. The following information will assist in determining whether a text is literary or informational.

READING: LITERATURE VS. INFORMATIONAL TEXT

Literature:

Examples of literary text:

- A. adventure stories
- B. nursery rhymes
- C. poems
- D. fables and folktales
- E. legends
- F. myths
- G. fantasy
- H. plays
- I. historical fiction
- J. mysteries
- K. science fiction
- L. realistic fiction
- M. allegories
- N. parodies
- O. satire
- P. graphic novels

Informational text:

Examples of informational text

A. Literary nonfiction

- biographies and autobiographies
- exposition, argument, and functional text
 1. personal essays and speeches
 2. opinion pieces
 3. essays about art or literature
 4. biographies and memoirs (including autobiographies and diaries)
 5. journalism

B. Historical, Scientific, and Technical Texts

- texts about history, social studies, science, and the arts
- technical texts: (directions from a manual or a recipe), information displayed in graphs, charts, or maps, and digital sources on a range of topics (must be in the context of a text, not in isolation)
- historical, scientific, technical, or economic accounts (including digital sources)
- journalistic pieces (news articles, magazine features, including digital sources)

APPENDIX T
SCORING RUBRIC FOR MCAS-ALT
ELA—WRITING

Scoring Rubric for ELA–Writing

LEVEL OF COMPLEXITY

Rubric Area	M	1	2	3	4
Level of Complexity	N/A	Writing sample not submitted or unmatched to requirement.	Student address Writing through “access skills”	Student address Writing through “entry points”	Student address Writing at “grade-level”

DEMONSTRATION OF SKILLS AND CONCEPTS

Rubric Area	M	1	2	3	4
Expression of Ideas and Content	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English or could not be read or understood	No main idea (informative), point of view (opinion), event sequence (narrative), or focus (poetry); or was unclear or off-topic; or used single word, picture, or symbol to express ideas; or all text provided by teacher	Writing sample related to assignment only minimally; included no or only one detail or description; or used picture sequence to express ideas; or used no figurative language or poetry form (poetry)	Main idea (informative), point of view (opinion), or event sequence (narrative) was evident; limited use of facts, details, and/or descriptions; sometimes repetitive and/or off-topic; limited use of figurative language (poetry);	Main idea (informative), point of view (opinion), or event sequence (narrative) was clearly expressed; three or more accurate and relevant facts, details, or descriptions included; used vivid imagery and figurative language appropriately (poetry)
Knowledge of Conventions	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English or could not be read or understood	Little or no original text; or used pictures or isolated words; or could not be understood due to errors in grammar and/or usage	General meaning could be understood, though use of grammar was limited and/or contained errors or run-on sentences; or lacked poetry form (poetry)	Complete sentences with some errors; grammar was effective; correct noun-verb agreement; some evidence of poetry form (poetry)	Meaning was clear, with rare or no errors in grammar and overall usage; poetry form used appropriately (poetry)
Text Structure	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English or could not be read or understood	Used single words, pictures, symbols without text; or all text provided by teacher	Sentence fragments (phrases) or one complete sentence used to express ideas; produced two related lines (poetry)	At least two complete sentences were used to express ideas; produced up to four related lines (poetry)	A paragraph of at least three related, well-constructed sentences was used to express ideas; more than four related lines (poetry)

Rubric Area	M	1	2	3	4
Use of Vocabulary	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English or could not be read or understood	Vocabulary was unrelated to assignment; or all text was provided by teacher	Vocabulary was related to assignment, but word choice was limited and/or sometimes inappropriate	Vocabulary was functional and relevant; used basic common words, with some descriptive language	Vocabulary was clear and precise; used descriptive language, modifiers, connecting words and/or phrases

INDEPENDENCE

Rubric Area	M	1	2	3	4
Independence	Writing sample not submitted; or contained insufficient information to determine a score; or written in a language other than English; or could not be read or understood	Student required extensive, almost continuous prompts to complete writing sample (0-25% independent) %	Student required frequent prompts to complete writing assignment (26-50% independent) %	Student required some prompts to complete writing assignment (51-75% independent) %	Student required no, or very few, prompts to complete writing assignment (76-100% independent) %

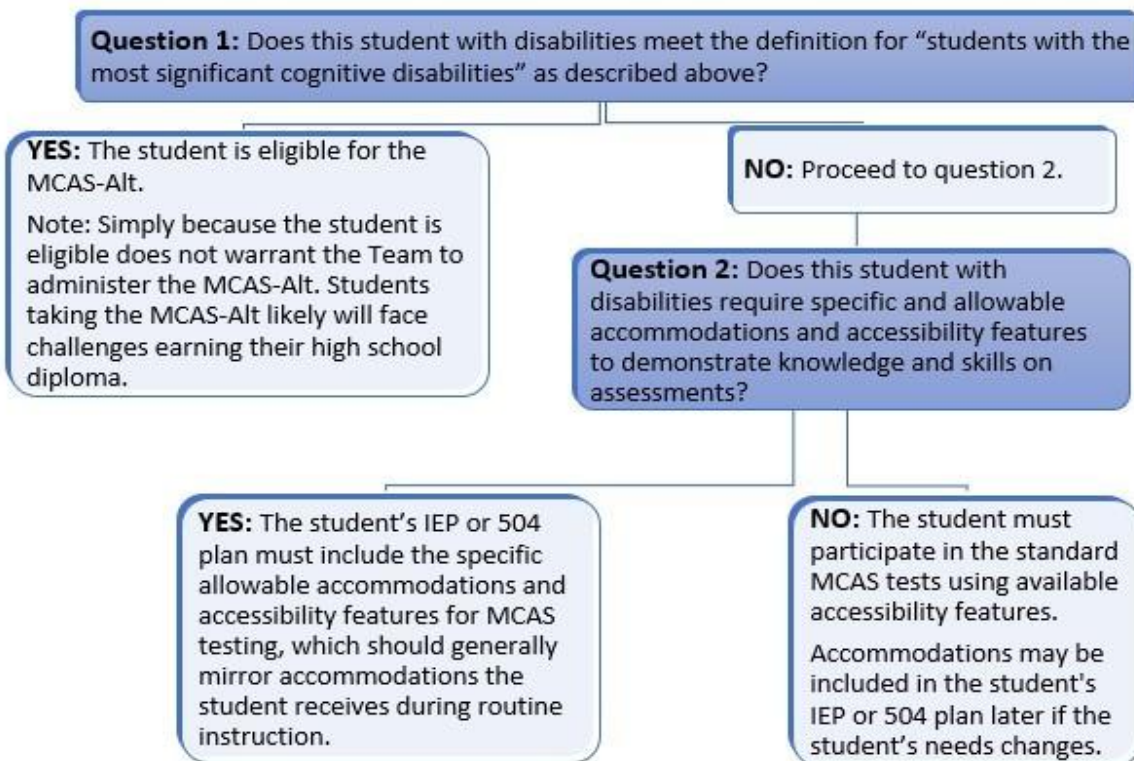
APPENDIX U
DECISION-MAKING TOOL FOR
MCAS-ALT PARTICIPATION

Decision-Making Tool for MCAS Participation by Students with Disabilities (Excerpted from the Accessibility and Accommodations Manual for the 2023–24 MCAS)

Use the definition and the questions below to guide discussions of how students will participate in MCAS testing.

Massachusetts defines “students with the most significant cognitive disabilities” as those who meet **all** the following criteria:

- have cognitive disabilities evidenced by significant delays in attaining age-level academic achievement standards, even with systematic, extensive individually designed instruction, related services, and modifications
- have cognitive disabilities that significantly impact their educational performance and ability to apply learning from one setting to another
- require extensive, direct individualized instruction and substantial supports to achieve measurable gains on the challenging State academic content standards for the grade in which the student is enrolled
- perform significantly below average in general cognitive functioning and adaptive behavior. Note: “Significantly below average” is defined as a student functioning two or more standard deviations below the mean on commonly accepted norm-referenced assessments in both cognitive functioning and adaptive behavior (e.g., two or more adaptive skill areas such as daily living skills, communication, self-care, social skills, and academic skills).



APPENDIX V
CRITERIA FOR PARTICIPATION—MCAS-ALT

Guidance on Designating Students for the MCAS-Alt

Decisions regarding participation in statewide assessments by students with disabilities must be discussed at the student's annual IEP team meeting and be documented in the IEP.

IEP team members should familiarize themselves with the criteria used to designate students for alternate assessments. The criteria listed below together with the Decision-Making Tool for MCAS-Alt Participation should be used by teams as the basis for making **annual assessment decisions for each student in each subject required for academic assessment**.

Criteria for Designating a Student for an Alternate Assessment

A student with the *most significant cognitive disability* should take the **MCAS-Alt** if he or she

- is working on *learning standards* in the content area that have been *substantially modified* due to the severity of the disability; **and**
- is receiving *intensive, individualized instruction* in order to acquire, generalize, and demonstrate knowledge and skills; **and**
- is *unable to demonstrate knowledge and skills on a standardized paper or online test*, even with accommodations.

Teams should **not** assume that a student should take an alternate assessment based on the fact that he or she

- has not been provided instruction in the general curriculum;
- has a specific disability (e.g., all students with intellectual disabilities should not automatically be designated for the MCAS-Alt);
- is placed in a program or classroom where it is expected that students will take the MCAS-Alt;
- has taken an alternate assessment previously (since this is an annual decision);
- has previously failed the MCAS test;
- is an English learner;
- is from a low-income family or is a child in foster care;
- requires the use of assistive technology or an alternative augmentative communication system; or
- attends a school in which the IEP team may have been influenced to designate the student for an alternate assessment in order for the school to receive disproportionate credit toward the school's accountability rating.

Other Considerations

When an IEP team (or 504 plan coordinator) is *undecided* as to which assessment format is most appropriate for a particular student, the Department recommends that the ***standard test, either with or without accommodations, be assigned as the default assessment format for the student.***

When assigning the standard test, teams should also deliberate as to whether it would be more appropriate for a student to take the computer-based Next-Generation MCAS test (for which universally designed accessibility features, tools, and accommodations are available) or a paper-based MCAS test (offered as an accommodation instead of the computer-based test).

When the decision is made to administer a standard MCAS test, with or without accommodations, the IEP team should evaluate after administration whether useful information was provided by the test results. If so, it may be preferable to have the student continue taking the standard MCAS test in that subject because of the broad range of standards that are assessed and reported on MCAS tests compared to the limited standards assessed in an MCAS-Alt portfolio. Students who take the MCAS-Alt will not be eligible to earn a Competency Determination and receive a high school diploma.

Questions on alternate assessment may be addressed to mcas@mass.gov. Thank you for your attention to this important information.

APPENDIX W
SUMMARY OF MCAS-ALT SCORE FREQUENCIES

Table W-1. Frequency of Scores by Grade, by Strand, by Rubric Area—Alt/ELA

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
3	LANG	Complexity	0	44	881	0	0
3	LANG	Independence	6	33	139	675	0
3	LANG	Skills	1	14	114	724	0
3	READ	Complexity	0	65	858	0	0
3	READ	Independence	20	33	132	659	0
3	READ	Skills	4	14	129	697	0
3	WRT	Complexity	0	116	805	0	0
3	WRT	Independence	32	96	255	489	0
3	WRT	Skills	473	283	109	7	0
4	LANG	Complexity	0	35	833	0	0
4	LANG	Independence	11	39	108	654	0
4	LANG	Skills	1	6	77	728	0
4	READ	Complexity	0	45	820	0	0
4	READ	Independence	19	34	132	617	0
4	READ	Skills	0	19	95	688	0
4	WRT	Complexity	1	95	767	0	0
4	WRT	Independence	34	96	235	453	0
4	WRT	Skills	379	283	143	13	0
5	LANG	Complexity	0	34	762	0	0
5	LANG	Independence	10	22	105	572	0
5	LANG	Skills	1	11	89	608	0
5	READ	Complexity	0	40	761	0	0
5	READ	Independence	7	46	113	547	0
5	READ	Skills	1	22	93	597	0
5	WRT	Complexity	1	80	712	0	0
5	WRT	Independence	32	75	209	419	0
5	WRT	Skills	309	255	154	17	0
6	LANG	Complexity	0	35	832	0	0
6	LANG	Independence	5	33	101	637	0
6	LANG	Skills	3	16	82	675	0
6	READ	Complexity	0	33	834	0	0
6	READ	Independence	14	36	107	623	0
6	READ	Skills	5	22	85	668	0
6	WRT	Complexity	1	65	800	0	0
6	WRT	Independence	28	84	222	459	0
6	WRT	Skills	312	257	216	8	0
7	LANG	Complexity	0	24	738	0	0
7	LANG	Independence	6	21	120	546	0
7	LANG	Skills	1	9	88	595	0
7	READ	Complexity	0	28	738	0	0
7	READ	Independence	8	33	133	523	0
7	READ	Skills	1	12	104	580	0
7	WRT	Complexity	0	56	705	0	0
7	WRT	Independence	25	69	214	404	0
7	WRT	Skills	260	263	175	14	0
8	LANG	Complexity	0	36	670	0	0
8	LANG	Independence	6	22	98	497	0

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
8	LANG	Skills	4	14	61	544	0
8	READ	Complexity	0	39	663	0	0
8	READ	Independence	10	26	94	489	0
8	READ	Skills	2	13	89	515	0
8	WRT	Complexity	3	64	638	0	0
8	WRT	Independence	16	71	180	370	0
8	WRT	Skills	224	240	159	14	0
HS	LANG	Complexity	0	37	717	0	0
HS	LANG	Independence	5	21	106	546	0
HS	LANG	Skills	2	18	102	556	0
HS	READ	Complexity	0	39	722	0	0
HS	READ	Independence	9	21	118	542	0
HS	READ	Skills	4	14	125	547	0
HS	WRT	Complexity	1	73	680	0	0
HS	WRT	Independence	20	69	202	406	0
HS	WRT	Skills	245	230	190	32	0

*LANG=Language; READ=Reading; WRT=Writing

**Table W-2. Frequency of Scores by Grade, by Strand, by Rubric Area
—Alt/Mathematics**

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
3	OA	Complexity	0	62	861	0	0
3	OA	Independence	16	39	175	596	0
3	OA	Skills	1	17	104	704	0
3	MD	Complexity	0	51	872	0	0
3	MD	Independence	14	40	128	649	0
3	MD	Skills	3	23	107	698	0
4	OA	Complexity	0	46	819	0	0
4	OA	Independence	21	49	133	567	0
4	OA	Skills	2	9	75	684	0
4	NOF	Complexity	0	63	803	0	0
4	NOF	Independence	17	39	112	594	0
4	NOF	Skills	0	18	81	663	0
5	NOB	Complexity	0	49	754	0	0
5	NOB	Independence	9	36	122	521	0
5	NOB	Skills	2	15	72	599	0
5	NOF	Complexity	0	52	746	0	0
5	NOF	Independence	10	33	122	528	0
5	NOF	Skills	1	11	89	592	0
6	NS	Complexity	0	56	811	0	0
6	NS	Independence	13	37	133	579	0
6	NS	Skills	2	18	78	664	0
6	SP	Complexity	0	44	820	0	0
6	SP	Independence	13	49	131	591	0
6	SP	Skills	1	20	77	686	0
7	RP	Complexity	0	46	715	0	0
7	RP	Independence	16	25	124	528	0

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
7	RP	Skills	0	9	92	592	0
7	GMY	Complexity	0	28	731	0	0
7	GMY	Independence	4	21	99	546	0
7	GMY	Skills	3	9	83	575	0
8	EE	Complexity	0	47	653	0	0
8	EE	Independence	15	30	106	460	0
8	EE	Skills	1	10	77	523	0
8	GMY	Complexity	0	35	660	0	0
8	GMY	Independence	12	20	107	457	0
8	GMY	Skills	2	14	74	506	0
HS	FUN	Complexity	0	12	164	0	0
HS	FUN	Independence	2	13	21	123	0
HS	FUN	Skills	0	5	20	134	0
HS	GMY	Complexity	0	38	573	0	0
HS	GMY	Independence	7	16	82	438	0
HS	GMY	Skills	1	17	64	461	0
HS	SP	Complexity	0	21	463	0	0
HS	SP	Independence	3	15	66	354	0
HS	SP	Skills	2	10	49	377	0
HS	NQ	Complexity	0	63	505	0	0
HS	NQ	Independence	7	27	83	389	0
HS	NQ	Skills	2	16	60	428	0
HS	ALG	Complexity	0	29	379	0	0
HS	ALG	Independence	8	15	51	275	0
HS	ALG	Skills	1	7	42	299	0

*ALG=Algebra; EE=Expressions and Equations; FUN=Functions; GMY=Geometry; MD=Measurement and Data; NOB=Number of Operations in Base 10; NOF=Number of Operations-Fractions; NQ=Number and Quantity; NS=The Number System; OA=Operations and Algebraic Thinking; RP= Ratios and Proportional Relationships; SP=Statistics and Probability.

Table W-3. Frequency of Scores by Grade, by Strand, by Rubric Area—Alt/Science Grades 5 & 8

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
5	ESS	Complexity	0	56	711	0	0
5	ESS	Independence	39	99	172	394	0
5	ESS	Skills	1	16	61	626	0
5	LS	Complexity	0	53	713	0	0
5	LS	Independence	37	85	167	408	0
5	LS	Skills	5	18	54	620	0
5	PS	Complexity	0	53	701	0	0
5	PS	Independence	46	88	168	393	0
5	PS	Skills	0	13	82	600	0
5	TECH	Complexity	0	9	31	0	0
5	TECH	Independence	1	5	7	21	0
5	TECH	Skills	0	0	0	34	0
8	ESS	Complexity	0	50	604	0	0
8	ESS	Independence	27	70	155	344	0

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
8	ESS	Skills	2	13	68	513	0
8	LS	Complexity	0	42	617	0	0
8	LS	Independence	30	48	152	348	0
8	LS	Skills	1	12	63	502	0
8	PS	Complexity	0	54	572	0	0
8	PS	Independence	23	59	143	360	0
8	PS	Skills	1	12	59	513	0
8	TECH	Complexity	0	11	78	0	0
8	TECH	Independence	2	7	24	48	0
8	TECH	Skills	1	1	9	70	0

*ESS=Earth and Space Science; LS=Life Science; PS=Physical Science; TECH=Technology/Engineering

Table W-4. Frequency of Scores by Grade, by Strand, by Rubric Area—Alt/Biology

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
HS	BIO1	Complexity	0	56	580	0	0
HS	BIO1	Independence	32	54	151	349	0
HS	BIO1	Skills	0	13	63	510	0
HS	BIO2	Complexity	0	50	564	0	0
HS	BIO2	Independence	29	52	133	364	0
HS	BIO2	Skills	0	9	61	508	0
HS	BIO3	Complexity	0	45	561	0	0
HS	BIO3	Independence	25	44	128	373	0
HS	BIO3	Skills	2	12	52	504	0

*BIO1=Biology 1; BIO2=Biology 2; BIO3=Biology 3

Table W-5. Frequency of Scores by Grade, by Strand, by Rubric Area—Alt/ Introductory Physics

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
HS	PHY1	Complexity	0	6	98	0	0
HS	PHY1	Independence	4	17	22	54	0
HS	PHY1	Skills	0	2	10	85	0
HS	PHY2	Complexity	0	5	96	0	0
HS	PHY2	Independence	5	11	32	44	0
HS	PHY2	Skills	0	1	20	71	0
HS	PHY3	Complexity	0	7	93	0	0
HS	PHY3	Independence	5	16	22	49	0
HS	PHY3	Skills	1	5	7	79	0

*PHY1=Physics 1; PHY2=Physics 2; PHY3=Physics 3

Table W-6. Frequency of Scores by Grade, by Strand, by Rubric Area—Alt/Civics

Grade	Strand*	Rubric Area	Score 1	Score 2	Score 3	Score 4	Score 5
8	CIV	Complexity	0	56	636	0	0
8	CIV	Independence	26	58	179	380	0
8	CIV	Skills	0	17	68	558	0

*CIV=Civics

KEY—Strand Names

Strand Code	Strand Name
LANG	Language
READ	Reading
WRT	Writing
ALG	Algebra
EE	Expressions and Equations
FUN	Functions
GMV	Geometry
MD	Measurement and Data
NOB	Number and Operations in Base Ten
NOF	Number and Operations - Fractions
NQ	Number and Quantity
NS	The Number System
OA	Operations and Algebraic Thinking
RP	Ratios and Proportional Relationships
SP	Statistics and Probability
ESS	Earth and Space Science
LS	Life Science
PS	Physical Science
TECH	Technology/Engineering
BIO1	Biology 1
BIO2	Biology 2
BIO3	Biology 3
PHY1	Introductory Physics 1
PHY2	Introductory Physics 2
PHY3	Introductory Physics 3
CIV	Civics

APPENDIX X
MCAS-ALT ACHIEVEMENT STANDARDS AND
DESCRIPTORS

Grade-Level and Alternate Academic Achievement Standards and Descriptors

Grade-Level Achievement Standards and Descriptors

For each student who takes the standard MCAS tests, one of the following *grade-level academic achievement standards (levels)* will be reported in each content area.

Grades 3-10 (MCAS Grade-Level Academic Achievement Standards for ELA, Mathematics, and High School Biology and Introductory Physics)

- **Not Meeting Expectations**—Students performing at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.
- **Partially Meets Expectations**—Students performing at this level partially meet grade-level expectations for knowledge, skills, and understanding. These students may need coordinated assistance and/or additional instruction to succeed at the next grade level.
- **Meeting Expectations**—Students performing at this level meet grade-level expectations for knowledge, skills, and understanding, and are academically prepared to succeed at the next grade level.
- **Exceeding Expectations**—Students performing at this level exceed grade-level expectations for knowledge, skills, and understanding, and are academically well prepared to succeed at the next grade level.

Alternate Academic Achievement Standards and Descriptors

For each student who takes the MCAS-Alt, one of the following *alternate academic achievement standards (levels)* will be reported in each content area.

Grades 3-10 (Alternate Assessments Based on Alternate Achievement Standards):

- **Awareness**—Students demonstrate **very little understanding** of standards and core knowledge topics contained in the Massachusetts curriculum framework for the content area. Students require extensive prompting and assistance, and their performance is mostly inaccurate.

- ***Emerging***—Students demonstrate a **simple understanding that is below grade-level expectations** of a limited number of standards and core knowledge topics contained in the Massachusetts curriculum framework for the content area. Students require frequent prompting and assistance, and their performance is limited and inconsistent.
- ***Progressing***—Students demonstrate a **partial understanding that is below grade-level expectations** of selected standards and core knowledge topics contained in the Massachusetts curriculum framework for the content area. Students are steadily learning new knowledge, skills, and concepts. Students require minimal prompting and assistance, and their performance is basically accurate.
- While not technically an achievement level, a score of ***Incomplete*** will be given if **insufficient evidence and information was included** to allow an achievement level to be determined.

The state’s alternate academic achievement standards (*Awareness, Emerging, Progressing*) and their descriptors reflect the collaboration, input, and professional judgment of numerous stakeholders who have affirmed that these achievement levels represent the highest possible standards achievable by students taking the MCAS-Alt; and that these standards are appropriate and aligned to ensure that a student who meets those standards is on track to pursue productive post-secondary education, vocational training, and/or competitive integrated employment.

APPENDIX Y
SAMPLE REPORTS—MCAS-ALT

Spring 2025 MCAS Alternate Assessment (MCAS-Alt) Individual Student Report

Name:

SASID:

Date of Birth:

Local Student ID:

Grade: 8

District:

School:

From The Commissioner

Enclosed are your child’s results from the 2025 MCAS Alternate Assessment (MCAS-Alt). All students are required to participate in federally mandated statewide assessments, either by taking the standard MCAS tests or by participating in the MCAS Alternate Assessment (MCAS-Alt) for students with the most significant disabilities who meet the eligibility requirements. Your child’s school submitted their MCAS-Alt last spring, as designated by their IEP.

The MCAS-Alt is a record of your child’s level of achievement of alternate academic achievement standards. Before the MCAS-Alt was submitted, your child’s school was required to invite you to review your child’s MCAS-Alt assessment. If you have questions about the results, please meet with your child’s educator(s) to discuss the alternate achievement standards and your child’s performance. The Department of Elementary and Secondary Education (DESE) would like to acknowledge the efforts your school put forth to ensure all students have challenging expectations.

Purposes of the MCAS-Alt

The MCAS-Alt is designed to measure alternate achievement that is aligned to grade-level academic achievement standards in areas of English Language Arts, Mathematics, Science and Technology/Engineering, and Civics. Your child is expected to demonstrate knowledge of the state’s learning standards at a level that is challenging and appropriate.

The purpose of the MCAS-Alt is to ensure all schools are teaching academic standards to all students, regardless of identified disabilities.

What is the MCAS-Alt?

Your child’s MCAS-Alt includes specific academic schoolwork as evidence of their progress and knowledge in the assessed academic subject areas. Each assessment includes work samples, a skills survey, and documentation of their knowledge in the same subjects that are assessed on the standard MCAS tests for a student in that grade. Students taking the MCAS-Alt are working on academic standards based on alternate achievement standards, which are significantly reduced in complexity and breadth compared to their age-related peers. More elements about the MCAS-Alt are provided in the *Educator’s Manual for MCAS-Alt*, which is available at www.doe.mass.edu/mcas/alt/edmanual.docx.



Your Student’s Overall Results in Grade 8

English Language Arts Progressing	Mathematics Incomplete
Science and Technology/Engineering Progressing	Civics Progressing

Name: SASID:

Your Student's English Language Arts Achievement Level (✓)

The section shows your child's overall achievement level in this subject of the alternate assessment.

Exceeding Expectations	A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.
Meeting Expectations	A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.
Partially Meeting Expectations	A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.
Not Meeting Expectations	A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.
Progressing	A student at this level demonstrated a partial understanding below grade-level expectations of selected learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level are steadily learning new knowledge, skills, and concepts. Students require minimal prompting and assistance, and their performance is basically accurate.
Emerging	A student at this level demonstrated a simple understanding below grade-level expectations of a limited number of learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level require frequent prompting and assistance, and their performance is limited and inconsistent.
Awareness	A student at this level demonstrated very little understanding of learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level require extensive prompting and assistance, and their performance is mostly inaccurate.
Incomplete	Sufficient evidence and information was not included to allow an achievement level to be determined in the subject.

Only students taking the standard MCAS tests can attain these achievement levels.



MCAS-Alt Scoring Areas and Your Child's Scores

ENGLISH LANGUAGE ARTS

Strand	Level of Complexity					Demonstration of Skills and Concepts					Independence					Self-Evaluation			Generalized Performance	
	1	2	3	4	5	M	1	2	3	4	M	1	2	3	4	M	1	2	1	2
Language	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Reading	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Writing	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

The MCAS-Alt was scored in each area shown. Scores for *Level of Complexity*, *Demonstration of Skills and Concepts (accuracy)*, and *Independence* were combined to give the overall achievement level.

English Language Arts

Your child's MCAS-Alt was scored in the following Scoring Areas:

Level of Complexity — How your child addressed the learning standards in each subject (strand)

- 5 - Student addresses a broad range of curriculum framework learning standards (three or more) at grade-level expectations in this strand.
- 4 - Student addresses a narrow sample of curriculum framework learning standards (one or two) at grade-level expectations in this strand.
- 3 - Student addresses curriculum framework learning standards that have been modified below grade-level expectations in this strand.
- 2 - Student primarily addresses social, motor, and communication "access skills" during instruction based on curriculum framework learning standards in this strand.
- 1 - Strand reflects little or no basis in, or is unmatched to, curriculum framework learning standard(s) required for assessment.

Demonstration of Skills and Concepts — The percentage of accurate (correct) responses

- 4 - Student's performance is accurate and is of consistently high quality in this strand (76-100% accurate).
- 3 - Student's performance is mostly accurate and demonstrates some understanding in this strand (51-75% accurate).
- 2 - Student's performance is limited and inconsistent with regard to accuracy and demonstrates limited understanding in this strand (26-50% accurate).
- 1 - Student's performance is primarily inaccurate and demonstrates minimal understanding in this strand (0-25% accurate).
- M - Strand contains insufficient information to determine a score.

Independence — The amount of assistance your child received

- 4 - Student requires minimal verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (76-100% independent).
- 3 - Student requires some verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (51-75% independent).
- 2 - Student requires frequent verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (26-50% independent).
- 1 - Student requires extensive verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (0-25% independent).
- M - Strand contains insufficient information to determine a score.

Self-Evaluation — Your child's awareness of his or her performance

- 2 - Student frequently plans, self-corrects, monitors, sets goals, and reflects in this subject; multiple examples of self-evaluation were found in this strand.
- 1 - Student infrequently plans, self-corrects, monitors, sets goals, and reflects in this subject; only one example of self-evaluation was found in this strand.
- M - Evidence of planning, self-correction, task-monitoring, goal-setting, and reflection was not found in this strand.

Generalized Performance — The number of approaches used by your child to demonstrate knowledge and skills

- 2 - Student demonstrates knowledge and skills in multiple contexts, or uses multiple approaches and/or methods of response and participation in this strand.
- 1 - Student demonstrates knowledge and skills in one context, or uses one approach and/or method of response and participation in this strand.

Name: SASID:

Your Student's Mathematics Achievement Level (✓)

The section shows your child's overall achievement level in this subject of the alternate assessment.

Exceeding Expectations	A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.
Meeting Expectations	A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.
Partially Meeting Expectations	A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.
Not Meeting Expectations	A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.
Progressing	A student at this level demonstrated a partial understanding below grade-level expectations of selected learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level are steadily learning new knowledge, skills, and concepts. Students require minimal prompting and assistance, and their performance is basically accurate.
Emerging	A student at this level demonstrated a simple understanding below grade-level expectations of a limited number of learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level require frequent prompting and assistance, and their performance is limited and inconsistent.
Awareness	A student at this level demonstrated very little understanding of learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level require extensive prompting and assistance, and their performance is mostly inaccurate.
Incomplete	Sufficient evidence and information was not included to allow an achievement level to be determined in the subject.

Only students taking the standard MCAS tests can attain these achievement levels.



MCAS-Alt Scoring Areas and Your Child's Scores

MATHEMATICS

Strand	Level of Complexity					Demonstration of Skills and Concepts					Independence					Self-Evaluation			Generalized Performance	
	1	2	3	4	5	M	1	2	3	4	M	1	2	3	4	M	1	2	1	2
Expressions and Equations	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Geometry	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
The Number System	Not required for assessment in this grade																			
Functions	Not required for assessment in this grade																			
Statistics and Probability	Not required for assessment in this grade																			

The MCAS-Alt was scored in each area shown. Scores for *Level of Complexity*, *Demonstration of Skills and Concepts (accuracy)*, and *Independence* were combined to give the overall achievement level.

Mathematics

Your child's MCAS-Alt was scored in the following Scoring Areas:

Level of Complexity — How your child addressed the learning standards in each subject (strand)

- 5 - Student addresses a broad range of curriculum framework learning standards (three or more) at grade-level expectations in this strand.
- 4 - Student addresses a narrow sample of curriculum framework learning standards (one or two) at grade-level expectations in this strand.
- 3 - Student addresses curriculum framework learning standards that have been modified below grade-level expectations in this strand.
- 2 - Student primarily addresses social, motor, and communication "access skills" during instruction based on curriculum framework learning standards in this strand.
- 1 - Strand reflects little or no basis in, or is unmatched to, curriculum framework learning standard(s) required for assessment.

Demonstration of Skills and Concepts — The percentage of accurate (correct) responses

- 4 - Student's performance is accurate and is of consistently high quality in this strand (76-100% accurate).
- 3 - Student's performance is mostly accurate and demonstrates some understanding in this strand (51-75% accurate).
- 2 - Student's performance is limited and inconsistent with regard to accuracy and demonstrates limited understanding in this strand (26-50% accurate).
- 1 - Student's performance is primarily inaccurate and demonstrates minimal understanding in this strand (0-25% accurate).
- M - Strand contains insufficient information to determine a score.

Independence — The amount of assistance your child received

- 4 - Student requires minimal verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (76-100% independent).
- 3 - Student requires some verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (51-75% independent).
- 2 - Student requires frequent verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (26-50% independent).
- 1 - Student requires extensive verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (0-25% independent).
- M - Strand contains insufficient information to determine a score.

Self-Evaluation — Your child's awareness of his or her performance

- 2 - Student frequently plans, self-corrects, monitors, sets goals, and reflects in this subject; multiple examples of self-evaluation were found in this strand.
- 1 - Student infrequently plans, self-corrects, monitors, sets goals, and reflects in this subject; only one example of self-evaluation was found in this strand.
- M - Evidence of planning, self-correction, task-monitoring, goal-setting, and reflection was not found in this strand.

Generalized Performance — The number of approaches used by your child to demonstrate knowledge and skills

- 2 - Student demonstrates knowledge and skills in multiple contexts, or uses multiple approaches and/or methods of response and participation in this strand.
- 1 - Student demonstrates knowledge and skills in one context, or uses one approach and/or method of response and participation in this strand.

Name: SASID:

Your Student's Science and Technology/Engineering Achievement Level (✓)

The section shows your child's overall achievement level in this subject of the alternate assessment.

Exceeding Expectations	A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.
Meeting Expectations	A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.
Partially Meeting Expectations	A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.
Not Meeting Expectations	A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.
Progressing	A student at this level demonstrated a partial understanding below grade-level expectations of selected learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level are steadily learning new knowledge, skills, and concepts. Students require minimal prompting and assistance, and their performance is basically accurate.
Emerging	A student at this level demonstrated a simple understanding below grade-level expectations of a limited number of learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level require frequent prompting and assistance, and their performance is limited and inconsistent.
Awareness	A student at this level demonstrated very little understanding of learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level require extensive prompting and assistance, and their performance is mostly inaccurate.
Incomplete	Sufficient evidence and information was not included to allow an achievement level to be determined in the subject.

Only students taking the standard MCAS tests can attain these achievement levels.



MCAS-Alt Scoring Areas and Your Child's Scores

SCIENCE and TECHNOLOGY/ENGINEERING

Strand	Level of Complexity					Demonstration of Skills and Concepts					Independence					Self-Evaluation			Generalized Performance	
	1	2	3	4	5	M	1	2	3	4	M	1	2	3	4	M	1	2	1	2
Earth and Space Sciences	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Life Science	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Physical Sciences	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Technology/Engineering	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

The MCAS-Alt was scored in each area shown. Scores for *Level of Complexity*, *Demonstration of Skills and Concepts (accuracy)*, and *Independence* were combined to give the overall achievement level.

Science and Technology/Engineering

Your child's MCAS-Alt was scored in the following Scoring Areas:

Level of Complexity — How your child addressed the learning standards in each subject (strand)

- 5 - Student addresses a broad range of curriculum framework learning standards (three or more) at grade-level expectations in this strand.
- 4 - Student addresses a narrow sample of curriculum framework learning standards (one or two) at grade-level expectations in this strand.
- 3 - Student addresses curriculum framework learning standards that have been modified below grade-level expectations in this strand.
- 2 - Student primarily addresses social, motor, and communication "access skills" during instruction based on curriculum framework learning standards in this strand.
- 1 - Strand reflects little or no basis in, or is unmatched to, curriculum framework learning standard(s) required for assessment.

Demonstration of Skills and Concepts — The percentage of accurate (correct) responses

- 4 - Student's performance is accurate and is of consistently high quality in this strand (76-100% accurate).
- 3 - Student's performance is mostly accurate and demonstrates some understanding in this strand (51-75% accurate).
- 2 - Student's performance is limited and inconsistent with regard to accuracy and demonstrates limited understanding in this strand (26-50% accurate).
- 1 - Student's performance is primarily inaccurate and demonstrates minimal understanding in this strand (0-25% accurate).
- M - Strand contains insufficient information to determine a score.

Independence — The amount of assistance your child received

- 4 - Student requires minimal verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (76-100% independent).
- 3 - Student requires some verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (51-75% independent).
- 2 - Student requires frequent verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (26-50% independent).
- 1 - Student requires extensive verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (0-25% independent).
- M - Strand contains insufficient information to determine a score.

Self-Evaluation — Your child's awareness of his or her performance

- 2 - Student frequently plans, self-corrects, monitors, sets goals, and reflects in this subject; multiple examples of self-evaluation were found in this strand.
- 1 - Student infrequently plans, self-corrects, monitors, sets goals, and reflects in this subject; only one example of self-evaluation was found in this strand.
- M - Evidence of planning, self-correction, task-monitoring, goal-setting, and reflection was not found in this strand.

Generalized Performance — The number of approaches used by your child to demonstrate knowledge and skills

- 2 - Student demonstrates knowledge and skills in multiple contexts, or uses multiple approaches and/or methods of response and participation in this strand.
- 1 - Student demonstrates knowledge and skills in one context, or uses one approach and/or method of response and participation in this strand.

Name: SASID:

Your Student's Civics Achievement Level (✓)

The section shows your child's overall achievement level in this subject of the alternate assessment.

Exceeding Expectations	A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.
Meeting Expectations	A student who performed at this level met grade-level expectations and is academically on track to succeed in the current grade in this subject.
Partially Meeting Expectations	A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.
Not Meeting Expectations	A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.
Progressing	A student at this level demonstrated a partial understanding below grade-level expectations of selected learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level are steadily learning new knowledge, skills, and concepts. Students require minimal prompting and assistance, and their performance is basically accurate.
Emerging	A student at this level demonstrated a simple understanding below grade-level expectations of a limited number of learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level require frequent prompting and assistance, and their performance is limited and inconsistent.
Awareness	A student at this level demonstrated very little understanding of learning standards and core knowledge topics contained in the Massachusetts curriculum framework for the subject. Students at this level require extensive prompting and assistance, and their performance is mostly inaccurate.
Incomplete	Sufficient evidence and information was not included to allow an achievement level to be determined in the subject.

Only students taking the standard MCAS tests can attain these achievement levels.



MCAS-Alt Scoring Areas and Your Child's Scores

CIVICS																						
Strand	Level of Complexity					Demonstration of Skills and Concepts					Independence					Self-Evaluation			Generalized Performance			
	1	2	3	4	5	M	1	2	3	4	M	1	2	3	4	M	1	2	1	2		
Civics	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☒	☐	☐	☒	☐	☒		

The MCAS-Alt was scored in each area shown. Scores for *Level of Complexity*, *Demonstration of Skills and Concepts (accuracy)*, and *Independence* were combined to give the overall achievement level.

Civics

Your child's MCAS-Alt was scored in the following Scoring Areas:

Level of Complexity — How your child addressed the learning standards in each subject (strand)

- 5 - Student addresses a broad range of curriculum framework learning standards (three or more) at grade-level expectations in this strand.
- 4 - Student addresses a narrow sample of curriculum framework learning standards (one or two) at grade-level expectations in this strand.
- 3 - Student addresses curriculum framework learning standards that have been modified below grade-level expectations in this strand.
- 2 - Student primarily addresses social, motor, and communication "access skills" during instruction based on curriculum framework learning standards in this strand.
- 1 - Strand reflects little or no basis in, or is unmatched to, curriculum framework learning standard(s) required for assessment.

Demonstration of Skills and Concepts — The percentage of accurate (correct) responses

- 4 - Student's performance is accurate and is of consistently high quality in this strand (76-100% accurate).
- 3 - Student's performance is mostly accurate and demonstrates some understanding in this strand (51-75% accurate).
- 2 - Student's performance is limited and inconsistent with regard to accuracy and demonstrates limited understanding in this strand (26-50% accurate).
- 1 - Student's performance is primarily inaccurate and demonstrates minimal understanding in this strand (0-25% accurate).
- M - Strand contains insufficient information to determine a score.

Independence — The amount of assistance your child received

- 4 - Student requires minimal verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (76-100% independent).
- 3 - Student requires some verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (51-75% independent).
- 2 - Student requires frequent verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (26-50% independent).
- 1 - Student requires extensive verbal, visual, and physical assistance to demonstrate skills and concepts in this strand (0-25% independent).
- M - Strand contains insufficient information to determine a score.

Self-Evaluation — Your child's awareness of his or her performance

- 2 - Student frequently plans, self-corrects, monitors, sets goals, and reflects in this subject; multiple examples of self-evaluation were found in this strand.
- 1 - Student infrequently plans, self-corrects, monitors, sets goals, and reflects in this subject; only one example of self-evaluation was found in this strand.
- M - Evidence of planning, self-correction, task-monitoring, goal-setting, and reflection was not found in this strand.

Generalized Performance — The number of approaches used by your child to demonstrate knowledge and skills

- 2 - Student demonstrates knowledge and skills in multiple contexts, or uses multiple approaches and/or methods of response and participation in this strand.
- 1 - Student demonstrates knowledge and skills in one context, or uses one approach and/or method of response and participation in this strand.

What is the MCAS?

The Massachusetts Comprehensive Assessment System (MCAS) is a set of statewide standardized tests. Students in grades 3-8 and 10 take MCAS tests in English Language Arts and Mathematics; students in grades 5, 8, and one high school grade (usually grade 9 or 10) take a Science MCAS test. Students in grade 8 take a Civics MCAS test.

A very small number of students participate in alternate academic assessments based on alternate achievement standards. These alternate academic achievement standards are significantly modified and less complex than grade-level academic standards. In Massachusetts, the alternate assessment is known as the MCAS-Alt. Only a student's IEP Team determines if a student is eligible to participate in an alternate assessment. Students who take the alternate assessment receive individualized instruction that has been substantially modified from the instruction other students receive. Participation in an alternate assessment may delay a child's ability to meet their high school's graduation competencies.

Why are students with the most significant cognitive disabilities required to participate in the MCAS and MCAS-Alt?

State and federal laws require the participation of all students in statewide assessments. The participation requirement for all students ensures that all students are expected to learn challenging academic achievement standards. Although some students may receive substantially modified instruction, progress towards alternate standards must also be measured. The MCAS-Alt allows students with the most significant cognitive disabilities, who cannot participate in grade-level assessments, an opportunity to demonstrate their knowledge of alternate academic standards.

Why does Massachusetts give MCAS tests?

Statewide testing gives families an objective measure of their child's and school's progress and is one way for taxpayers to see the results of their investment in schools. State test scores are just one piece of a student's academic picture, but they provide important information. In addition, federal and [state](#) laws require statewide testing.



How are the MCAS-Alt results used?

MCAS-Alt results can be used by the school and the IEP team to:

- identify challenging academic goals and plan instruction for the student
- measure the student's progress in achieving skills based on alternate academic achievement standards from the Massachusetts curriculum frameworks
- allocate sufficient school resources for the student's education
- establish whether schools and districts are making progress in educating students with the most significant disabilities

For more information

Massachusetts Comprehensive Assessment System (MCAS)
www.doe.mass.edu/mcas



MCAS Alternate Assessment (MCAS-Alt)
www.doe.mass.edu/mcas/alt



Questions about MCAS
Email: mcas@mass.gov