Mathematics

Pilot Priority

Grades Pre-Kindergarten, Grade 4, and High School
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Diagnostic Online Mathematics Assessment (DOMA)–Let's Go Learn

Galileo Benchmark and Formative Assessment System–Assessment Technology Incorporated

INSPECT Formatives–Key Data Systems

Measures of Academic Progress (MAP), Achievement Level Tests (ALT)–Northwest Evaluation Association (NWEA)

Mississippi Subject Area Testing Program (MSATP2)

Pennsylvania Keystone Exams

Performance Series, Algebra I–Scantron

Scholastic Math Inventory (SMI)

Tennessee End-of-Course Assessment

Virginia End-of-Course Assessment

Algebra II

ACT QualityCore End-of-Course Assessments

Acuity–CTB/McGraw-Hill

Comprehensive Benchmark Assessment Series–Assessment Technology Incorporated

Dana Center Assessments–Agile Mind, Inc.

Delaware Department of Education Specifications for Select High School Courses and End-of-Course Assessments

Galileo Benchmark and Formative Assessment System–Assessment Technology Incorporated

Measures of Academic Progress (MAP), Achievement Level Tests (ALT)–Northwest Evaluation Association (NWEA)

Pennsylvania Keystone Exams

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ACT QualityCore End-of-Course Assessments

Galileo Benchmark and Formative Assessment System–Assessment Technology Incorporated

Probability & Statistics

Galileo Benchmark and Formative Assessment System–Assessment Technology Incorporated

Iowa End-of-Course Assessment Program
The Massachusetts Department of Elementary and Secondary Education (ESE), in partnership with WestEd, presents the following collection of assessments appropriate for use as District-Determined Measures (DDMs). These assessments were chosen as examples because they were aligned with critical content, as identified by the Core Course Objectives (CCOs) and/or appropriate Massachusetts Curriculum Framework, and reviewed to ensure overall quality. The following one page summaries cover a wide range of assessments including commercial, non-commercial, traditional, and non-traditional assessments. Districts can use this resource to choose DDMs to implement with or without modifications or as models for locally-developed measures.

**What is included in each one page summary?**

- Assessment name and subject, grade, or course
- Electronic link with additional information about the assessment
- Brief description of the assessment and the content it is intended to assess
- Source: publicly available (non-secure or open source) or must be purchased from a commercial developer
- Approach: assessment can be implemented without modifications (buy), with modifications (borrow), or can serve as model for a locally developed measure (build)
- Design: designed to measure growth or requires modifications
- Type of assessment: traditional end-of-grade or end-of-course test, non-traditional measure such as a performance task or portfolio rubric, screening tool, diagnostic measure, placement exam, classroom assessment, or certification exam
- Type of assessment items: selected response, constructed response, performance task, or portfolio
- Mode of administration: paper/pencil or computer supported
- Scoring method: machine scored or hand scored
Pre-Kindergarten
Massachusetts District-Determined Measures
Example Assessments

Mathematics — Pre-K

Assessment
Galileo Pre-K Online—Assessment Technology Incorporated

Publisher Website/Sample

Description
Observation-based. Assesses physical development and health, social and emotional development, approaches to learning, language and literacy development, and cognitive development. Companion to Galileo K-12 Online to provide continuous assessment. ATI Common Core Project currently is developing a broad range of technology-enhanced items for this measure.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☒ Other: Screening Tool

Non-Traditional Assessment
☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☑ Observation Rubric or Checklist

Administration/Scoring
☐ Paper/Pencil
☐ Computer Supported
☐ Computer Adaptive
☑ Machine Scored
☑ Scored Locally
☐ Scored Off-Site

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — Pre-K

Assessment
GOLD Assessment System—Teaching Strategies

Publisher Website/Sample

Description
Observation checklist developed by researchers at University of North Carolina-Charlotte. Measures development and content learning in social-emotional, physical, language, cognitive, literacy, mathematics, science, and the arts. Recommended by a number of districts, including Medford Public Schools. System addresses four mathematics objectives: number concepts and operations, spatial relationships and shapes, comparisons and measures, and knowledge of patterns. Three of the four objectives are aligned to curriculum framework for this grade.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment

☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other: Diagnostic Measure

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring

☐ Paper/Pencil
☐ Computer Supported
☐ Computer Adaptive
☐ Machine Scored
☐ Scored Locally
☐ Scored Off-Site

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### Mathematics — Pre-K

**Assessment**
Group Mathematics Assessment and Diagnostic Evaluation (GMADE)—Pearson

**Publisher Website/Sample**

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**Description**
Subtests and items developed to provide a sampling of mathematics tasks reflective of a standards-based test blueprint. Blueprint was generated from year-long research study of state standards, curriculum benchmarks, scope and sequence plans of various commonly used mathematics textbook series, and a review of research on best practice for the teaching and learning of mathematical concepts and skills. Cornerstone of that blueprint was Principles and Standards for School Mathematics as set forth by National Council of Teachers of Mathematics in 2000. Parallel forms support use as pre-post measure. Reporting and administration options. Generally aligned to CCOs.

**Source**
Commercial Test

**Approach**
Buying (commercial tool)

**Designed to Measure Growth**
Yes

---

**Traditional Assessment**
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

**Non-Traditional Assessment**
- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

**Administration/Scoring**
- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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**Mathematics — Pre-K**

*Assessment*

i-Ready Diagnostic Math—Curriculum Associates

*Description*

Relatively new assessment designed to measure growth using a continuous scale. Claims to be aligned to state standards and CCSS. Reporting at subscale level. Limited information on which to base content alignment at time of review, but districts can contact developer for additional information.

*Source*

Commercial Test

*Approach*

Buying (commercial tool)

*Designed to Measure Growth*

Yes

### Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

### Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

### Administration/Scoring

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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**Mathematics — Pre-K**

Assessment

Work Sampling System (WSS)—Pearson

**Publisher Website/Sample**

**Description**

Observation checklist developed by early childhood researcher (Meisels, 2001). Standards-based, curriculum-embedded, and intended to document and evaluate what children are learning and have begun to master. Teachers collect information from multiple sources. Includes checklists and guidelines, portfolios, and summary reports. Measures development and content learning in personal/social and physical development and health, language and literacy, social studies, mathematical thinking, scientific thinking, and the arts. Districts interested in this option can request additional information from developer to confirm alignment to CCOs.

**Source**

Commercial Test

**Approach**

Buying (commercial tool)

**Designed to Measure Growth**

Yes

---

**Traditional Assessment**

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Screening Tool

**Non-Traditional Assessment**

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

**Administration/Scoring**

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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Grade 4
Massachusetts District-Determined Measures
Example Assessments

Mathematics — 4
Assessment
Acuity—CTB/McGraw-Hill

Publisher Website/Sample

Description
Set of assessments, reports, and instructional resources linked to CCSS and intended to be used formatively. Includes performance tasks. Specific information about technical adequacy and content pulled from documents developer created for state of New York. Developer indicated that Massachusetts-specific research is underway to confirm alignment (breadth and depth) of new items to curriculum framework. Findings will be shared with stakeholders in fall 2013. Supports development of fully customized assessments.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

<table>
<thead>
<tr>
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<th>Non-Traditional Assessment</th>
<th>Administration/Scoring</th>
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</thead>
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<tr>
<td>Traditional End-of-Grade Assessment</td>
<td>Pre/Post or Repeated Measures</td>
<td>Paper/Pencil</td>
</tr>
<tr>
<td>Traditional End-of-Course Assessment</td>
<td>Performance Task Rubric</td>
<td>Computer Supported</td>
</tr>
<tr>
<td>Selected Response</td>
<td>Portfolio or Work Sample Rubric</td>
<td></td>
</tr>
<tr>
<td>Short Constructed Response</td>
<td>Project-Based Rubric</td>
<td>Machine Scored</td>
</tr>
<tr>
<td>Writing Prompt/Essay</td>
<td>Observation Rubric or Checklist</td>
<td></td>
</tr>
<tr>
<td>Other: Diagnostic Measure</td>
<td></td>
<td>Scored Off-Site</td>
</tr>
</tbody>
</table>

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — 4

Assessment
Adaptive Diagnostic Assessment of Mathematics (ADAM K-7)—Let's Go Learn

Publisher Website/Sample

Description
Adaptive assessment intended to be used formatively. Received high technical quality ratings. A variety of subtests align to the five major National Council of Teachers of Mathematics strands: numbers and operations, algebra, geometry, data analysis, and measurement. Intended to align to CCSS.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

Administration/Scoring

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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Mathematics — 4
Assessment
AIMSweb Mathematics Assessments—Pearson

Publisher Website/Sample

Description
Set of assessments that measure concepts and applications (M-CAP), computation (M-COMP), and curriculum-based mathematics (M-CBM). Can be used for screening and progress monitoring. Developer states that these assessments are compatible with any set of standards, including CCSS.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☑ Selected Response
☑ Short Constructed Response
☐ Writing Prompt/Essay
☑ Other: Diagnostic Measure

Non-Traditional Assessment
☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring
☑ Paper/Pencil
☑ Computer Supported
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Mathematics — 4

Assessment

aMath Adaptive Assessment–Ideal Consulting

Publisher Website/Sample

Description

Computer adaptive formative assessment grounded in research on instructionally sensitive assessments. Developers summarized collection of state standards into themes aligned to guidelines from the National Council of Teachers of Mathematics (NCTM) and the National Mathematics Advisory Panel (NMAP). Links to six domains measured by CCSS. Developer completed DDM survey.

Source

Commercial Test

Approach

Buying (commercial tool)

Designed to Measure Growth

Yes

Traditional Assessment

☐ Traditional End-of-Grade Assessment

☐ Traditional End-of-Course Assessment

☑ Selected Response

☐ Short Constructed Response

☐ Writing Prompt/Essay

☐ Other:

Non-Traditional Assessment

☑ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

☐ Observation Rubric or Checklist

Administration/Scoring

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Mathematics — 4

Assessment
Assessment Center/ipGrowth—CORE K12 Education

Publisher Website/Sample

Description
Item bank aligned to New York standards in mathematics. Assessment may not be available. Districts interested in exploring this option will need to request additional information from developer.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Screening Tool

Non-Traditional Assessment
- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

Administration/Scoring
- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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Massachusetts District-Determined Measures
Example Assessments

Mathematics — 4
Assessment
Edmentum Test Packs

Description
Battery for mathematics linked to PLATO Learning Environment. Can be customized to state standards. Insufficient information on which to make judgment about content alignment or technical quality; districts interested in exploring this option will need to request additional information from developer.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
No

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☒ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other: Diagnostic Measure

Non-Traditional Assessment
☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/ Scoring
☐ Paper/Pencil
☒ Computer Supported
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☐ Scored Off-Site

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### Mathematics — 4

**Assessment**
Galileo Benchmark and Formative Assessment System–Assessment Technology Incorporated

**Description**
Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

**Source**
Commercial Customizable Item Bank

**Approach**
Buying (commercial tool)

**Designed to Measure Growth**
Yes

#### Traditional Assessment
- [ ] Traditional End-of-Grade Assessment
- [ ] Traditional End-of-Course Assessment
- [X] Selected Response
- [X] Short Constructed Response
- [ ] Writing Prompt/Essay
- [X] Other: Interim or Benchmark

#### Non-Traditional Assessment
- [X] Pre/Post or Repeated Measures
- [ ] Performance Task Rubric
- [ ] Portfolio or Work Sample Rubric
- [ ] Project-Based Rubric
- [ ] Observation Rubric or Checklist

#### Administration/Scoring
- [X] Paper/Pencil
- [X] Computer Supported
- [ ] Computer Adaptive
- [X] Machine Scored
- [X] Scored Locally
- [ ] Scored Off-Site

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Mathematics — 4

Assessment

Grade 4 Mathematics Assessment—Partnership for the Assessment of Readiness for College and Careers (PARCC)

Publisher Website/Sample

Description

Released items for end-of-grade assessments for grades 3-8, but also provides useful ideas for districts seeking to build customized measures for this mathematics content at any grade. Items are representative of what will be appearing on the PARCC assessments. Designed to reflect shifts in focus, coherence, and rigor triggered by the transition to CCSS. Includes multi-step problems, conceptual questions, applications, and substantial procedures. Verified alignment to the PARCC Model Content Frameworks, which are CCSS-based.

Source

Open Source Items, Activities, Forms

Approach

Building (parts only)

Designed to Measure Growth

No

Traditional Assessment

☑️ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☑️ Selected Response
☑️ Short Constructed Response
☐ Writing Prompt/Essay
☑️ Other: Assessment Consortium Measure

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring

☑️ Paper/Pencil
☐ Computer Supported
☐ Computer Adaptive
☐ Machine Scored
☑️ Scored Locally
☐ Scored Off-Site

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### Mathematics — 4

**Assessment**

Group Mathematics Assessment and Diagnostic Evaluation (GMADE) – Pearson

**Publisher Website/Sample**

**Description**

Subtests and items developed to provide a sampling of mathematics tasks reflective of a standards-based test blueprint. Blueprint was generated from year-long research study of state standards, curriculum benchmarks, scope and sequence plans of various commonly used mathematics textbook series, and a review of research on best practice for the teaching and learning of mathematical concepts and skills. Cornerstone of that blueprint was Principles and Standards for School Mathematics as set forth by National Council of Teachers of Mathematics in 2000. Parallel forms support use as pre-post measure. Reporting and administration options. Districts interested in this measure will need additional information from developer to confirm alignment to CCSS.

**Source**

Commercial Test

**Approach**

Buying (commercial tool)

**Designed to Measure Growth**

Yes

<table>
<thead>
<tr>
<th>Traditional Assessment</th>
<th>Non-Traditional Assessment</th>
<th>Administration/Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional End-of-Grade Assessment</td>
<td>Pre/Post or Repeated Measures</td>
<td>✔ Paper/Pencil</td>
</tr>
<tr>
<td>Traditional End-of-Course Assessment</td>
<td>Performance Task Rubric</td>
<td>✔ Computer Supported</td>
</tr>
<tr>
<td>Selected Response</td>
<td>Portfolio or Work Sample Rubric</td>
<td>✔ Computer Adaptive</td>
</tr>
<tr>
<td>Short Constructed Response</td>
<td>Project-Based Rubric</td>
<td>✔ Machine Scored</td>
</tr>
<tr>
<td>Writing Prompt/Essay</td>
<td>Observation Rubric or Checklist</td>
<td>✔ Scored Locally</td>
</tr>
<tr>
<td>Other: Diagnostic Measure</td>
<td></td>
<td>✔ Scored Off-Site</td>
</tr>
</tbody>
</table>

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Description

Item bank developed to align to CCSS. Recommended by Commonwealth district. Developer says item bank can be customized for state standards and can include pre-built formative assessments to measure progress with CCSS.

Source

Commercial Customizable Item Bank

Approach

Buying (commercial tool)

Designed to Measure Growth

No

Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

Administration/Scoring

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — 4

Assessment
Interim Assessments—Discovery Education

Publisher Website/Sample

Description
Intended to support CCSS-based instruction in ELA and mathematics. Aligned to multiple states' standards. Vertical scale supports interpretations about growth.Received high ratings for technical quality. Endorsed by National Center on Response to Intervention for grades 3-10.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☑ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☑ Other: Diagnostic Measure

Non-Traditional Assessment
☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring
☐ Paper/Pencil
☑ Computer Supported
☐ Computer Adaptive
☑ Machine Scored
☐ Scored Locally
☐ Scored Off-Site

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — 4

Assessment

Iowa Test of Educational Development, Form E—Riverside

Publisher Website/Sample

Description

Full battery for ELA, mathematics, science, and social studies. Continuous standard score scale that supports measuring growth. Developed in conjunction with researchers at the University of Iowa. Assesses number sense and operations, algebraic patterns and connections, data analysis, geometry, and measurement. Findings from study of alignment to CCSS are documented.

Source

Commercial Test

Approach

Buying (commercial tool)

Designed to Measure Growth

Yes

Traditional Assessment

☐ Traditional End-of-Grade Assessment

☐ Traditional End-of-Course Assessment

☑ Selected Response

☐ Short Constructed Response

☐ Writing Prompt/Essay

☐ Other:

Non-Traditional Assessment

☑ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

☐ Observation Rubric or Checklist

Administration/Scoring

☑ Paper/Pencil

☑ Computer Supported

☐ Computer Adaptive

☑ Machine Scored

☐ Scored Locally

☐ Scored Off-Site

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — 4

Assessment
i-Ready Diagnostic Math—Curriculum Associates

Publisher Website/Sample

Description
Relatively new assessment designed to measure growth using a continuous scale. Claims to be aligned to state standards and CCSS. Reporting at subscale level. Limited information on which to base content alignment at time of review, but districts can contact developer for additional information.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment

☑️ Selected Response

☐ Traditional End-of-Grade Assessment

☐ Traditional End-of-Course Assessment

☐ Short Constructed Response

☐ Writing Prompt/Essay

☐ Other: Diagnostic Measure

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

☐ Observation Rubric or Checklist

☐ Other: Diagnostic Measure

Administration/Scoring

☀️ Computer Adaptive

☐ Machine Scored

☐ Scored Locally

☐ Scored Off-Site

Paper/Pencil

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — 4

Assessment

Measures of Academic Progress (MAP), Achievement Level Tests (ALT)—Northwest Evaluation Association (NWEA)

Publisher Website/Sample

Description

Adaptive assessment that can be administered up to four times a year. Designed to measure growth. Received high ratings for technical quality. Study of alignment to CCSS was conducted. Comment from Buros Institute reviewer: "...available evidence suggests that MAP tests can be used with confidence by school districts to gauge student learning, relative standing, and growth with respect to educational objectives deemed central to the curricular emphases of those districts."

Source

Commercial Test

Approach

Buying (commercial tool)

Designed to Measure Growth

Yes

Traditional Assessment

☐ Traditional End-of-Grade Assessment

☐ Traditional End-of-Course Assessment

☑ Selected Response

☑ Short Constructed Response

☐ Writing Prompt/Essay

☑ Other: Diagnostic Measure

Non-Traditional Assessment

☑ Pre/Post or Repeated Measures

☐ Performance Task Rubric

□ Portfolio or Work Sample Rubric

□ Project-Based Rubric

□ Observation Rubric or Checklist

Administration/Scoring

☐ Paper/Pencil

☐ Computer Supported

☑ Computer Adaptive

☑ Machine Scored

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## Mathematics — 4

### Assessment

North Carolina Formative Assessments

**Publisher Website/Sample**

### Description

Set of assessment tasks, standards to which each performance task is aligned, and scoring rubrics. Tasks for operations and algebraic thinking, counting and cardinality, measurement and data, geometry, and numbers and operations. Aligned to CCSS and curriculum framework.

### Source

Open Source Items, Activities, Forms

### Approach

Borrowing (full measure)

### Designed to Measure Growth

No

### Traditional Assessment

- [ ] Traditional End-of-Grade Assessment
- [ ] Traditional End-of-Course Assessment
- [ ] Selected Response
- [X] Short Constructed Response
- [ ] Writing Prompt/Essay
- [ ] Other: Diagnostic Measure

### Non-Traditional Assessment

- [X] Pre/Post or Repeated Measures
- [ ] Performance Task Rubric
- [ ] Portfolio or Work Sample Rubric
- [ ] Project-Based Rubric
- [ ] Observation Rubric or Checklist

### Administration/Scoring

- [X] Paper/Pencil
- [ ] Computer Supported
- [ ] Computer Adaptive
- [ ] Machine Scored
- [X] Scored Locally
- [ ] Scored Off-Site

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Mathematics — 4

Assessment
Performance Series, Math–Scantron

Publisher Website/Sample

Description
Can be administered in conjunction with Scantron's Achievement Series assessments. Vertical scale supports measurement of growth; student growth percentiles can be calculated. Measures students' computation and problem-solving skills. Domains covered are numbers and operations, algebra, geometry, and data analysis and probability. Documentation suggests alignment to the CCSS for this grade. Endorsed by National Center on Response to Intervention for grades 3-10.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

<table>
<thead>
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Mathematics — 4

Assessment
PRO-Core Learning Systems—Computers in Education

Description
Diagnostic test intended to align to CCSS. Documents previewed were developed for Ohio but may be customizable to Commonwealth curriculum frameworks. Districts interested in this option can contact developer for more information.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☒ Selected Response
☒ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other: Diagnostic Measure

Non-Traditional Assessment
☒ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring
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Mathematics — 4

Assessment
Riverside Interim Assessments

Publisher Website/Sample

Description
Three parallel pre-built forms per grade to support use as repeated measure. Linked to Iowa Assessments and designed to assess CCSS. Scores for achievement, proficiency, and growth. Vertical scale supports longitudinal monitoring of progress. Blueprint suggests it is a strong match to the curriculum framework in terms of breadth of content assessed, though less so in terms of depth (cognitive complexity).

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☑ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☑ Other: Interim or Benchmark

Non-Traditional Assessment
☑ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring
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Mathematics — 4

Assessment
Scholastic Math Inventory (SMI)

Publisher Website/Sample

Description
Measures achievement and growth based on Quantile Framework for Mathematics (Metametrics). Flexible administration options and customizable to state standards. Link to CCSS not clear, but documentation does show alignment to state standards for North Carolina, California, Florida, Illinois, and Texas. Good option for those seeking link to Quantile Framework.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

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Mathematics — 4

Assessment
Stanford Achievement Test 10 (SAT 10)–Pearson

Description
Designed to measure growth and achievement. Seeks to be aligned to state standards and NAEP. Content is described as aligning to state and national standards, including NAEP. Information about test structure and content indicates many items are contextualized and involve non-routine problem-solving strategies. Received high ratings for technical quality, but districts interested in this option may want additional information from developer to confirm alignment to curriculum framework.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other:

Non-Traditional Assessment
☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring
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Massachusetts District-Determined Measures
Example Assessments

Mathematics — 4
Assessment
STAR Math Enterprise—Renaissance Learning

Publisher Website/Sample

Description
Normative growth reporting using student growth percentiles. Can be used for screening and progress monitoring or to track growth for different intervals. Assessments are periodic, constructed around mathematics strands, and adaptive. Strands assessed include numeration concepts, computations processes, word problems, estimation, data analysis, probability and statistics, geometry, measurement, and algebra. Extent to which items are aligned to CCSS is not clear. Correlations with several state tests were provided. Endorsed by National Center on Response to Intervention.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☑ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☑ Other: Interim or Benchmark

Non-Traditional Assessment
☑ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring
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Mathematics — 4

Assessment
TerraNova 3–CTB/McGraw-Hill

Publisher Website/Sample

Description
Complete battery for grades K-12 in ELA, mathematics, science, and social studies. Standardized grade-level tests of achievement that are vertically aligned. Flexibility in when administered and how scored (remotely or locally). Norm-referenced interpretation of results. Alignment to CCSS could not be verified with available documentation. Content is described as having been developed using state standards, NAEP objectives, and national standards such as National Council of Teachers of Mathematics.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment

☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other:

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring

☐ Paper/Pencil
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Massachusetts District-Determined Measures

Example Assessments

High School
Advanced Quantitative Reasoning
Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Advanced Quantitative Reasoning

Assessment
Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

Description
Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Design to Measure Growth
Yes

Traditional Assessment
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Interim or Benchmark

Non-Traditional Assessment
- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

Administration/Scoring
- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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Algebra I
Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Assessment

ACT QualityCore End-of-Course Assessments

Algebra I

Publisher Website/Sample

Description

Linked to scores on ACT's EXPLORE and PLAN. Research underway to explore use for growth purposes. Received high ratings for technical quality. Based on limited information, assessment may align to CCOs and to a variety of standards in the framework for this grade. Districts interested in exploring this option, however, will need to request additional information from developer to confirm alignment.

Source

Commercial Test

Approach

Buying (commercial tool)

Designed to Measure Growth

No

Traditional Assessment

☐ Traditional End-of-Grade Assessment

☑ Traditional End-of-Course Assessment

☐ Selected Response

☑ Short Constructed Response

☐ Writing Prompt/Essay

☐ Other:

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

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### Mathematics — HS

**Algebra I**

**Assessment**
Acuity–CTB/McGraw-Hill

**Publisher Website/Sample**

#### Description
Set of assessments, reports, and instructional resources linked to CCSS and intended to be used formatively. Includes performance tasks. Specific information about technical adequacy and content pulled from documents developer created for state of New York. Developer indicated that Massachusetts-specific research is underway to confirm alignment (breadth and depth) of new items to curriculum framework. Findings will be shared with stakeholders in fall 2013. Supports development of fully customized assessments.

#### Source
Commercial Customizable Item Bank

#### Approach
Buying (commercial tool)

#### Designed to Measure Growth
Yes

#### Traditional Assessment
- [ ] Traditional End-of-Grade Assessment
- [ ] Traditional End-of-Course Assessment
- [ ] Selected Response
- [x] Short Constructed Response
- [ ] Writing Prompt/Essay
- [x] Other: Diagnostic Measure

#### Non-Traditional Assessment
- [x] Pre/Post or Repeated Measures
- [ ] Performance Task Rubric
- [ ] Portfolio or Work Sample Rubric
- [ ] Project-Based Rubric
- [ ] Observation Rubric or Checklist

#### Administration/Scoring
- [x] Paper/Pencil
- [x] Computer Supported
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Mathematics — HS

Algebra I

Assessment
Arkansas Comprehensive Testing, Assessment, and Accountability (ACTAAP) End-of-Course Examinations

Publisher Website/Sample

Description
Released items and scoring guides. Released forms included one from mid-year and one from year-end. When viewed as a whole, the assessment aligned to all of the CCOs except one. Having the released forms provides administration options for districts interested in this assessment.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other:

Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
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Administration/Scoring

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Mathematics — HS

Assessment
Comprehensive Benchmark Assessment Series—Assessment Technology Incorporated

Publisher Website/Sample

Description
Sample items and answer key. Received high technical quality ratings. Strongly aligned to some CCQs and to the algebra and function standards in the curriculum framework. Less evidence of alignment, however, to the number and quantity and statistics and probability standards. Endorsed by the Colorado Professional Learning Community for this course.

Source
Open Source Items, Activities, Forms

Approach
Buying (commercial tool)

Designed to Measure Growth
No

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other: Interim or Benchmark

Non-Traditional Assessment
☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
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Mathematics — HS

Assessment
Dana Center Assessments–Agile Mind, Inc.

Publisher Website/Sample

Description
Set of research-supported, CCSS-aligned performance tasks, sample solutions, and suggestions for extending the lesson. Strong option for non-traditional assessment approach. Recommended by Colorado Professional Learning Community. Sample activities show strong alignment to curriculum framework and to several CCOs.

Source
Open Source Items, Activities, Forms

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional Assessment
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay

Non-Traditional Assessment
- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
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Mathematics — HS

Assessment
Diagnostic Online Mathematics Assessment (DOMA)—Let's Go Learn

Publisher Website/Sample

Description
Diagnostic assessment that can be used as an end-of-course exam. Assesses 11 different areas, including evaluating advanced exponents, solving linear equations, graphing and analyzing linear equations, relations and functions, solving and graphing inequalities, solving graphing systems, polynomial equations, factoring polynomials, radical equations and expressions, quadratic equations, and rational expressions and equations. More than half of the DOMA constructs align to the CCOs for this course, though the CCOs tended to be more cognitively challenging than those constructs. Other constructs (e.g., rational expressions and equations and radical expressions and equations), however, are well beyond the CCOs.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other: Diagnostic Measure

Non-Traditional Assessment
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Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Algebra I

Assessment

Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

Publisher Website/Sample

Description

Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

Source

Commercial Customizable Item Bank

Approach

Buying (commercial tool)

Designed to Measure Growth

Yes

Traditional Assessment

☐ Traditional End-of-Grade Assessment

☐ Traditional End-of-Course Assessment

☐ Selected Response

☐ Short Constructed Response

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### Mathematics — HS

**Algebra I**

**Assessment**

INSPECT Formatives—Key Data Systems

**Publisher Website/Sample**

### Description

Item bank developed to align to CCSS. Recommended by Commonwealth district. Literature indicates they will be adding advanced algebra and geometry content to item pool. Developer says item bank can be customized for state standards and can include pre-built formative assessments to measure progress with CCSS.

### Source

Commercial Customizable Item Bank

### Approach

Buying (commercial tool)

### Designed to Measure Growth

No

### Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

### Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

### Administration/Scoring

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

---

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Mathematics — HS

Assessment

Measures of Academic Progress (MAP), Achievement Level Tests (ALT)—Northwest Evaluation Association (NWEA)

Publisher Website/Sample

Description

Adaptive assessment designed to measure growth. A general content framework suggests alignment to the Massachusetts curriculum framework. Study of alignment to CCSS was conducted. Reviewed by Buros Institute: "...available evidence suggests that MAP tests can be used with confidence by school districts to gauge student learning, relative standing, and growth with respect to educational objectives deemed central to the curricular emphases of those districts."

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
No

Traditional Assessment

☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☑ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☑ Other: Diagnostic Measure

Non-Traditional Assessment

☑ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring

☐ Paper/Pencil
☐ Computer Supported
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Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Assessment
Mississippi Subject Area Testing Program (MSATP2)

Publisher Website/Sample

Description
Practice test and annotated exemplars. Strong alignment to more than half of the CCOs. Items not specifically aligned to CCOs are aligned to curriculum framework. Some content is below grade level and/or unrelated to specific course (e.g., Pythagorean theorem, radius/area of circles); district can select most appropriate items.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional Assessment

☐ Traditional End-of-Grade Assessment

☒ Traditional End-of-Course Assessment

☒ Selected Response

☒ Short Constructed Response

☐ Writing Prompt/Essay

☐ Other:

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

☐ Observation Rubric or Checklist

Administration/Scoring

☒ Paper/Pencil

☐ Computer Supported

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Mathematics — HS

Assessment
Pennsylvania Keystone Exams

Algebra I

Description
Released items of mixed quality but generally aligned to CCOs for this course. Districts interested in building their own customized measures, however, can easily modify to better align to local curricula.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional Assessment

☑ Traditional End-of-Course Assessment

☐ Traditional End-of-Grade Assessment

☐ Selected Response

☑ Short Constructed Response

☐ Writing Prompt/Essay

☐ Other:

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

☐ Observation Rubric or Checklist

☐ Other:

Administration/Scoring

☐ Paper/Pencil

☐ Computer Supported

☐ Computer Adaptive

☐ Machine Scored

☐ Scored Locally

☑ Scored Off-Site
### Mathematics — HS

**Algebra I**

**Assessment**
Performance Series, Algebra I–Scantron

**Publisher Website/Sample**

---

**Description**

Can be administered in conjunction with Scantron's Achievement Series assessments. Vertical scale supports measurement of growth; student growth percentiles can be calculated. Domains covered are arithmetic and polynomials, rational expressions, building functions, creating equations, linear and exponential models, reasoning with equations and inequalities, seeing structure in expressions, and trigonometric functions. Documentation suggests alignment to the CCSS and CCOs for this course.

---

**Source**
Commercial Test

**Approach**
Buying (commercial tool)

**Designed to Measure Growth**
Yes

---

**Traditional Assessment**

- [ ] Traditional End-of-Grade Assessment
- [ ] Traditional End-of-Course Assessment
- [x] Selected Response
- [x] Short Constructed Response
- [x] Writing Prompt/Essay
- [x] Other: Diagnostic Measure

**Non-Traditional Assessment**

- [x] Pre/Post or Repeated Measures
- [ ] Performance Task Rubric
- [ ] Portfolio or Work Sample Rubric
- [ ] Project-Based Rubric
- [ ] Observation Rubric or Checklist

**Administration/Scoring**

- [ ] Paper/Pencil
- [ ] Computer Supported
- [x] Computer Adaptive
- [x] Machine Scored
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Scholastic Math Inventory (SMI)

**Description**
Measures achievement and growth based on Quantile Framework for Mathematics (Metametrics). Flexible administration options and customizable to state standards. Link to CCSS not clear, but documentation does show alignment to state standards for North Carolina, California, Florida, Illinois, and Texas. Good option for those seeking link to Quantile Framework.

**Source**
Commercial Test

**Approach**
Buying (commercial tool)

**Designed to Measure Growth**
Yes

### Traditional Assessment
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

### Non-Traditional Assessment
- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

### Administration/Scoring
- Paper/Pencil
- Computer Supported
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- Machine Scored
- Scored Locally
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**Mathematics — HS**

**Algebra I**

**Tennessee End-of-Course Assessment**

**Description**

Released items with answer key strongly align to more than half of the CCOs. Items not aligned to a particular CCO are aligned to curriculum framework. Some of the content, however, is below grade level and/or unrelated to specific course as defined by the curriculum framework (e.g., estimating area on grid, Pythagorean theorem, statistical measures, probability).

**Source**

Released Items

**Approach**

Building (parts only)

**Designed to Measure Growth**

No

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### Mathematics — HS

**Algebra I**  

**Assessment**  
Virginia End-of-Course Assessment

**Publisher Website/Sample**

---

#### Description

Released form, scoring guides, and standards assessed. Strong alignment to many CCOs. Items not aligned to a particular CCO are aligned to curriculum framework. Exception: much of the statistics and probability content is below grade level as defined by the curriculum framework.

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#### Traditional Assessment

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- [✓] Traditional End-of-Course Assessment
- [✓] Selected Response
- [□] Short Constructed Response
- [□] Writing Prompt/Essay
- [□] Other:

#### Non-Traditional Assessment

- [□] Pre/Post or Repeated Measures
- [□] Performance Task Rubric
- [□] Portfolio or Work Sample Rubric
- [□] Project-Based Rubric
- [□] Observation Rubric or Checklist

#### Administration/Scoring

- [✓] Paper/Pencil
- [□] Computer Supported
- [□] Computer Adaptive
- [□] Machine Scored
- [✓] Scored Locally
- [□] Scored Off-Site

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Algebra II
Massachusetts District-Determined Measures
Example Assessments

Mathematics — HS

Algebra II

Assessment
ACT QualityCore End-of-Course Assessments

Publisher Website/Sample

Description
Linked to scores on ACT's EXPLORE and PLAN. Research underway to explore use for growth purposes. Received high ratings for technical quality. Based on limited information, assessment may align to CCOs and to a variety of standards in the framework for this grade. Districts interested in exploring this option, however, will need to request additional information from developer to confirm alignment.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
No

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Mathematics — HS

Assessment

Acuity—CTB/McGraw-Hill

Algebra II

Description

Set of assessments, reports, and instructional resources linked to CCSS and intended to be used formatively. Includes performance tasks. Specific information about technical adequacy and content pulled from documents developer created for state of New York. Developer indicated that Massachusetts-specific research is underway to confirm alignment (breadth and depth) of new items to curriculum framework. Findings will be shared with stakeholders in fall 2013. Supports development of fully customized assessments.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment

☑ Selected Response
☑ Short Constructed Response
☑ Other: Diagnostic Measure

☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Writing Prompt/Essay

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

☐ Paper/Pencil
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### Mathematics — HS

**Algebra II**

**Assessment**
Comprehensive Benchmark Assessment Series—Assessment Technology Incorporated

**Publisher Website/Sample**

---

**Description**
Sample items and answer key. Received high technical quality ratings. Items showed alignment to most of the CCQs and to the curriculum framework. May provide source for assessment ideas. Endorsed by the Colorado Professional Learning Community.

---

**Source**
Open Source Items, Activities, Forms

**Approach**
Buying (commercial tool)

**Designed to Measure Growth**
No

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**Other:**
- Interim or Benchmark

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Mathematics — HS

Algebra II

Assessment
Dana Center Assessments–Agile Mind, Inc.

Publisher Website/Sample

Description
Set of research-supported, CCSS-aligned performance tasks, sample solutions, and suggestions for extending the lesson. Strong option for non-traditional assessment approach. Recommended by Colorado Professional Learning Community. Sample activities show strong alignment to curriculum framework and to several CCOs.

Source
Open Source Items, Activities, Forms

Approach
Building (parts only)

Designed to Measure Growth
No

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Mathematics — HS

Algebra II

Assessment

Delaware Department of Education Specifications for Select High School Courses and End-of-Course Assessments

Publisher Website/Sample

Description
Sample items, answer key. Shows integration of Algebra II and Mathematics III content. Items aligned to CCOs focused on writing/solving linear equations or systems of linear equations, but much of the content is below grade level and/or unrelated to the specific course as defined by the framework (e.g., Pythagorean theorem, statistical measures, probability). Some overlap of algebra and functions standards, but lacking any overlap in number and quantity and statistics and probability standards.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional Assessment

☐ Traditional End-of-Grade Assessment

☑ Traditional End-of-Course Assessment

☑ Selected Response

☐ Short Constructed Response

☐ Writing Prompt/Essay

☐ Other:

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

☐ Observation Rubric or Checklist

Administration/Scoring

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Assessment
Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

Algebra II

Publisher Website/Sample

Description
Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other: Interim or Benchmark

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Massachusetts District-Determined Measures
Example Assessments

Mathematics — HS

Assessment
Measures of Academic Progress (MAP), Achievement Level Tests (ALT)—Northwest Evaluation Association (NWEA)

Publisher Website/Sample

Description
Adaptive assessment designed to measure growth. A general content framework suggests alignment to the Massachusetts curriculum framework. Study of alignment to CCSS was conducted. Reviewed by Buros Institute: "...available evidence suggests that MAP tests can be used with confidence by school districts to gauge student learning, relative standing, and growth with respect to educational objectives deemed central to the curricular emphases of those districts."

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
No

Traditional Assessment
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

Non-Traditional Assessment
- Pre/Post or Repeated Measures
- Performance Task Rubric
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Administration/Scoring
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Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Algebra II

Assessment
Pennsylvania Keystone Exams

Publisher Website/Sample

Description
Released items of mixed quality but generally aligned to CCOs for this course, with the exception of using the unit circle to extend trigonometric functions, finding inverses, and drawing inferences or conclusions from sample surveys, experiments, and observational studies. Districts interested in building their own customized measures, however, can easily modify to better align to local curricula.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional Assessment

☐ Traditional End-of-Grade Assessment
☒ Traditional End-of-Course Assessment
☐ Selected Response
☒ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other:

Non-Traditional Assessment

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Mathematics — HS

Assessment
Performance Series, Algebra II—Scantron

Description
Can be administered in conjunction with Scantron's Achievement Series assessments. Vertical scale supports measurement of growth; student growth percentiles can be calculated. Domains covered: arithmetic and polynomials, rational expressions, building functions, creating equations, linear and exponential models, reasoning with equations and inequalities, seeing structure in expressions, and trigonometric functions. Documentation suggests alignment to the CCSS and CCOs for this course.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
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Non-Traditional Assessment
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Mathematics — HS

Assessment
Tennessee End-of-Course Assessment

Publisher Website/Sample

Description
Practice test for end-of-course assessment with answer key. Items aligned to most CCOs and to curriculum framework for this course.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

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Mathematics — HS

Algebra II

Assessment

University of the State of New York Regents High School Examination

Publisher Website/Sample

Description

Intact released end-of-course assessment for Algebra II course. Aligned to many CCOs. May provide districts with a starting place for a DDM for this course.

Source

Open Source Items, Activities, Forms

Approach

Borrowing (full measure)

Designed to Measure Growth

No

Traditional Assessment

☐ Traditional End-of-Grade Assessment

✓ Traditional End-of-Course Assessment

✓ Selected Response

✓ Short Constructed Response

☐ Writing Prompt/Essay

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

☐ Observation Rubric or Checklist

Administration/Scoring

✓ Paper/Pencil

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### Mathematics — HS

**Algebra II**

**Assessment**
Virginia End-of-Course Assessment

**Publisher Website/Sample**

---

**Description**
Released form, scoring guides, and standards assessed. Assessment shows strong alignment to the CCOs and to curriculum framework. Districts interested in building their own customized measures can select those items best aligned to local curricula.

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</tr>
<tr>
<td>Short Constructed Response</td>
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<tr>
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<td>Observation Rubric or Checklist</td>
<td>Scored Locally</td>
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<tr>
<td>Other:</td>
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Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Assessment
ACT QualityCore End-of-Course Assessments

Publisher Website/Sample

Geometry

Description
Linked to scores on ACT’s EXPLORE and PLAN. Research underway to explore use for growth purposes. Received high ratings for technical quality. Based on limited information, assessment may align to CCOs and to a variety of standards in the framework for this grade. Districts interested in exploring this option, however, will need to request additional information from developer to confirm alignment.

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
No

<table>
<thead>
<tr>
<th>Traditional Assessment</th>
<th>Non-Traditional Assessment</th>
<th>Administration/Scoring</th>
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Mathematics — HS

Assessment
Acuity—CTB/McGraw-Hill

Publisher Website/Sample

Description
Set of assessments, reports, and instructional resources linked to CCSS and intended to be used formatively. Includes performance tasks. Specific information about technical adequacy and content pulled from documents developer created for state of New York. Developer indicated that Massachusetts-specific research is underway to confirm alignment (breadth and depth) of new items to curriculum framework. Findings will be shared with stakeholders in fall 2013. Supports development of fully customized assessments.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Assessment
Arkansas Comprehensive Testing, Assessment, and Accountability (ACTAAP)
End-of-Course Examinations

Publisher Website/Sample

Description
Released items and scoring guides. Released forms included one from mid-year and one from year-end. When viewed as a whole, the assessment aligned to all of the CCOs except one. Having the released forms provides administration options for districts interested in this assessment.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional Assessment

☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Other:

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring

☑ Paper/Pencil
☐ Computer Supported
☐ Computer Adaptive
☐ Machine Scored
☐ Scored Locally
☐ Scored Off-Site

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Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS

Assessment

Comprehensive Benchmark Assessment Series—Assessment Technology Incorporated

Publisher Website/Sample

Description

Sample items and answer key. Received high technical quality ratings. Items showed alignment to most of the CCOS and to the curriculum framework. May provide source for assessment ideas. Endorsed by the Colorado Professional Learning Community.

Source

Open Source Items, Activities, Forms

Approach

Buying (commercial tool)

Designed to Measure Growth

No

Traditional Assessment

☐ Traditional End-of-Grade Assessment

☐ Traditional End-of-Course Assessment

☐ Selected Response

☑ Short Constructed Response

☐ Writing Prompt/Essay

☑ Other: Interim or Benchmark

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures

☐ Performance Task Rubric

☐ Portfolio or Work Sample Rubric

☐ Project-Based Rubric

☐ Observation Rubric or Checklist

Administration/Scoring

☑ Paper/Pencil

☐ Computer Supported

☐ Computer Adaptive

☐ Machine Scored

☑ Scored Locally

☐ Scored Off-Site

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# Mathematics — HS

**Assessment**  
Dana Center Assessments–Agile Mind, Inc.

**Publisher Website/Sample**

---

## Description

Set of research-supported, CCSS-aligned performance tasks, sample solutions, and suggestions for extending the lesson. Strong option for non-traditional assessment approach. Recommended by Colorado Professional Learning Community. Sample activities show strong alignment to curriculum framework and to several CCOs.

---

## Source

Open Source Items, Activities, Forms

## Approach

Building (parts only)

## Designed to Measure Growth

No

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### Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other:

### Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

### Administration/Scoring

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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Mathematics — HS

Assessment
Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

Publisher Website/Sample

Description
Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Interim or Benchmark

Non-Traditional Assessment
- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

Administration/Scoring
- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
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Mathematics — HS

Assessment
Measures of Academic Progress (MAP), Achievement Level Tests (ALT)—Northwest Evaluation Association (NWEA)

Geometry

Description
Adaptive assessment designed to measure growth. A general content framework suggests alignment to the Massachusetts curriculum framework. Study of alignment to CCSS was conducted. Reviewed by Buros Institute: "...available evidence suggests that MAP tests can be used with confidence by school districts to gauge student learning, relative standing, and growth with respect to educational objectives deemed central to the curricular emphases of those districts."

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
No

Tradition Assessment

Traditional End-of-Grade Assessment
Traditional End-of-Course Assessment
Selected Response
Short Constructed Response
Writing Prompt/Essay

Non-Traditional Assessment

Pre/Post or Repeated Measures
Performance Task Rubric
Portfolio or Work Sample Rubric
Project-Based Rubric
Observation Rubric or Checklist

Administration/Scoring

Paper/Pencil
Computer Supported
Computer Adaptive
Machine Scored
Scored Locally
Scored Off-Site

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## Massachusetts District-Determined Measures

### Example Assessments

### Mathematics — HS

**Assessment**
Pennsylvania Keystone Exams

**Publisher Website/Sample**

---

### Description

Released items of mixed quality but generally aligned to CCOs for this course, with the exception of equations of circles and parabolas. Districts interested in building their own customized measures, however, can easily modify to better align to local curricula.

### Source

- Released Items

### Approach

- Building (parts only)

### Designed to Measure Growth

- No

### Traditional Assessment

- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay

### Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

### Administration/Scoring

- Paper/Pencil
- Scored Locally

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Massachusetts District-Determined Measures

Example Assessments

**Mathematics — HS**

**Assessment**

Performance Series, Geometry–Scantron

**Publisher Website/Sample**

**Description**

Can be administered in conjunction with Scantron's Achievement Series assessments. Vertical scale supports measurement of growth; student growth percentiles can be calculated. Items originally grouped into units named by National Council of Teachers of Mathematics strands. Topics list suggests alignment to the CCSS and CCOs for this course.

**Source**

Commercial Test

**Approach**

Buying (commercial tool)

**Designed to Measure Growth**

Yes

**Traditional Assessment**

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

**Non-Traditional Assessment**

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

**Administration/Scoring**

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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Mathematics — HS

Assessment

University of the State of New York Regents High School Examination

Description

Intact released end-of-course assessment for geometry course. Aligned to many CCOs. May provide districts with a starting place for a DDM for this course.

Source

Open Source Items, Activities, Forms

Approach

Borrowing (full measure)

Designed to Measure Growth

No

Traditional Assessment

☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other:

Non-Traditional Assessment

☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring

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Mathematics — HS

Virginia End-of-Course Assessment

Description
Released form, scoring guides, and standards assessed. Assessment shows strong alignment to the CCOs and to curriculum framework. Districts interested in building their own customized measures can select those items best aligned to local curricula.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional
Assessment

☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other:

Non-Traditional
Assessment

☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/
Scoring

☑ Paper/Pencil
☐ Computer Supported
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Publisher Website/Sample

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Massachusetts District-Determined Measures

Example Assessments

Mathematics I
Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS
Assessment
Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

Description
Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

Source
Commercial Customizable Item Bank

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☑ Selected Response
☑ Short Constructed Response
☐ Writing Prompt/Essay
☑ Other: Interim or Benchmark

Non-Traditional Assessment
☑ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring
☑ Paper/Pencil
☑ Computer Supported
☐ Computer Adaptive
☑ Machine Scored
☑ Scored Locally
☐ Scored Off-Site

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### Mathematics — HS

**Assessment**

Measures of Academic Progress (MAP), Achievement Level Tests (ALT)–Northwest Evaluation Association (NWEA)

[Publisher Website/Sample](#)

### Description

Adaptive assessment designed to measure growth. A general content framework suggests that the content assessed would align to the curriculum framework. Study of alignment to CCSS was conducted. Note that there is one test for combined Mathematics I and II that should be administered at end of the Mathematics II course. Reviewed by Buros Institute: "...available evidence suggests that MAP tests can be used with confidence by school districts to gauge student learning, relative standing, and growth with respect to educational objectives deemed central to the curricular emphases of those districts."

### Source

- **Approach**
  - Commercial Test
  - Buying (commercial tool)
  - No

- **Designed to Measure Growth**
  - Yes

### Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

### Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist
- Other: Diagnostic Measure

### Administration/Scoring

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
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**Massachusetts District-Determined Measures**  
*Example Assessments*

### Mathematics — HS

**Assessment**  
Riverside Interim Assessments

**Publisher Website/Sample**

### Description

Three parallel pre-built forms per grade to support use as repeated measure. Linked to Iowa Assessments and designed to assess CCSS. Scores for achievement, proficiency, and growth. Vertical scale supports longitudinal monitoring of progress. Literature indicates this form is equivalent to CCSS Mathematics I, and blueprint suggests it is a strong match to the integrated Mathematics I standards in terms of breadth of content assessed, though less so in terms of depth (cognitive complexity).

### Source

Commercial Test

### Approach

Buying (commercial tool)

### Designed to Measure Growth

Yes

### Traditional Assessment

- [ ] Traditional End-of-Grade Assessment
- [ ] Traditional End-of-Course Assessment
- [✓] Selected Response
- [ ] Short Constructed Response
- [ ] Writing Prompt/Essay
- [✓] Other: Interim or Benchmark

### Non-Traditional Assessment

- [✓] Pre/Post or Repeated Measures
- [ ] Performance Task Rubric
- [ ] Portfolio or Work Sample Rubric
- [ ] Project-Based Rubric
- [ ] Observation Rubric or Checklist

### Administration/Scoring

- [ ] Paper/Pencil
- [ ] Computer Supported
- [ ] Computer Adaptive
- [✓] Machine Scored
- [ ] Scored Locally
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Mathematics II
**Mathematics — HS**

**Assessment**
Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

**Description**
Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

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Mathematics — HS

Assessment
Measures of Academic Progress (MAP), Achievement Level Tests (ALT)—Northwest Evaluation Association (NWEA)

Description
Adaptive assessment designed to measure growth. A general content framework suggests that the content assessed would align to the curriculum framework. Study of alignment to CCSS was conducted. Note that there is one test for combined Mathematics I and II that should be administered at end of the Mathematics II course. Reviewed by Buros Institute: "...available evidence suggests that MAP tests can be used with confidence by school districts to gauge student learning, relative standing, and growth with respect to educational objectives deemed central to the curricular emphases of those districts."

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
No

Traditional Assessment
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Diagnostic Measure

Non-Traditional Assessment
- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

Administration/Scoring
- Paper/Pencil
- Computer Supported
- Computer Adaptive
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Massachusetts District-Determined Measures

Example Assessments

Mathematics — HS
Assessment
Riverside Interim Assessments

Mathematics II

Publisher Website/Sample

Mathematics — HS
Assessment
Riverside Interim Assessments

Description
Three parallel pre-built forms per grade to support use as repeated measure. Linked to Iowa Assessments and designed to assess CCSS. Scores for achievement, proficiency, and growth. Vertical scale supports longitudinal monitoring of progress. Literature indicates this form is equivalent to CCSS Mathematics II, and blueprint suggests it is a strong match to the integrated Mathematics II standards in terms of breadth of content assessed, though less so in terms of depth (cognitive complexity).

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay

Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

Administration/Scoring

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
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Mathematics III
Massachusetts District-Determined Measures

**Example Assessments**

<table>
<thead>
<tr>
<th>Mathematics — HS</th>
<th>Mathematics III</th>
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<tbody>
<tr>
<td><strong>Assessment</strong></td>
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<tr>
<td>Delaware Department of Education Specifications for Select High School Courses and End-of-Course Assessments</td>
<td></td>
</tr>
</tbody>
</table>

[Publisher Website/Sample](#)

### Description

Sample items, answer key. Shows integration of Algebra II and Mathematics III content. Items aligned to CCOs focused on writing/solving linear equations or systems of linear equations but much of the content is below grade level and/or unrelated to the specific course as defined by the framework (e.g., Pythagorean theorem, statistical measures, probability). Some overlap of algebra and functions standards, but lacking any overlap in number and quantity and statistics and probability standards.

### Source

- Released Items

### Approach

- Building (parts only)

### Designed to Measure Growth

- No

### Traditional Assessment

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Other:

### Non-Traditional Assessment

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

### Administration/Scoring

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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**Mathematics — HS**
**Assessment**
Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

**Mathematics III**

**Description**
Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

**Source**
Commercial Customizable Item Bank

**Approach**
Buying (commercial tool)  Yes

**Designed to Measure Growth**
Yes

**Traditional Assessment**
- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Interim or Benchmark

**Non-Traditional Assessment**
- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

**Administration/Scoring**
- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
- Scored Off-Site

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Mathematics — HS
Assessment
Measures of Academic Progress (MAP), Achievement Level Tests (ALT)–Northwest Evaluation Association (NWEA)

Publisher Website/Sample

Description
Adaptive assessment designed to measure growth. A general content framework shows some overlap with curriculum framework for this course (e.g., complex numbers and focus on trigonometric), though some content not assessed (e.g., building functions) and some content included that is covered in middle school or Mathematics I and II. Study of alignment to CCSS was conducted. Reviewed by Buros Institute: "...available evidence suggests that MAP tests can be used with confidence by school districts to gauge student learning, relative standing, and growth with respect to educational objectives deemed central to the curricular emphases of those districts."

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
No

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other: Diagnostic Measure

Non-Traditional Assessment
☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring
☐ Paper/Pencil
☐ Computer Supported
☐ Computer Adaptive
☐ Machine Scored
☐ Scored Locally
☐ Scored Off-Site

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Mathematics — HS

Assessment
Riverside Interim Assessments

Mathematics III

Publisher Website/Sample

Description
Three parallel pre-built forms per grade to support use as repeated measure. Linked to Iowa Assessments and designed to assess CCSS. Scores for achievement, proficiency, and growth. Vertical scale supports longitudinal monitoring of progress. Literature indicates this form is equivalent to CCSS Mathematics III, and blueprint suggests it is a strong match to the integrated Mathematics III standards in terms of breadth of content assessed, though less so in terms of depth (cognitive complexity).

Source
Commercial Test

Approach
Buying (commercial tool)

Designed to Measure Growth
Yes

Traditional Assessment

☐ Traditional End-of-Grade Assessment
☐ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other: Interim or Benchmark

Non-Traditional Assessment

✓ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
☐ Observation Rubric or Checklist

Administration/Scoring

✓ Paper/Pencil
☐ Computer Supported
☐ Computer Adaptive
✓ Machine Scored
☐ Scored Locally
✓ Scored Off-Site
Pre-Calculus
### Massachusetts District-Determined Measures

**Example Assessments**

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### Mathematics — HS

#### Pre-Calculus

**Assessment**

**ACT QualityCore End-of-Course Assessments**

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**Publisher Website/Sample**

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**Description**

Linked to scores on ACT's EXPLORE and PLAN. Research underway to explore use for growth purposes. Received high ratings for technical quality. Based on limited information, assessment may align to CCOs and to a variety of standards in the framework for this grade. Districts interested in exploring this option, however, will need to request additional information from developer to confirm alignment.

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**Source**

Commercial Test

**Approach**

Buying (commercial tool)

**Designed to Measure Growth**

No

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**Traditional Assessment**

- [ ] Traditional End-of-Grade Assessment
- [x] Traditional End-of-Course Assessment
- [x] Selected Response
- [x] Short Constructed Response
- [ ] Writing Prompt/Essay
- [ ] Other:

**Non-Traditional Assessment**

- [ ] Pre/Post or Repeated Measures
- [ ] Performance Task Rubric
- [ ] Portfolio or Work Sample Rubric
- [ ] Project-Based Rubric
- [ ] Observation Rubric or Checklist
- [ ] Other:

**Administration/Scoring**

- [ ] Paper/Pencil
- [x] Computer Supported
- [ ] Computer Adaptive
- [x] Machine Scored
- [ ] Scored Locally
- [ ] Scored Off-Site

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### Mathematics — HS

**Pre-Calculus**

**Assessment**

Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

**Publisher Website/Sample**

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**Description**

Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

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**Source**

Commercial Customizable Item Bank

**Approach**

Buying (commercial tool)

**Designed to Measure Growth**

Yes

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**Traditional Assessment**

- Traditional End-of-Grade Assessment
- Traditional End-of-Course Assessment
- Selected Response
- Short Constructed Response
- Writing Prompt/Essay
- Other: Interim or Benchmark

**Non-Traditional Assessment**

- Pre/Post or Repeated Measures
- Performance Task Rubric
- Portfolio or Work Sample Rubric
- Project-Based Rubric
- Observation Rubric or Checklist

**Administration/Scoring**

- Paper/Pencil
- Computer Supported
- Computer Adaptive
- Machine Scored
- Scored Locally
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Probability & Statistics
### Mathematics — HS

**Assessment**

Galileo Benchmark and Formative Assessment System—Assessment Technology Incorporated

### Description

Customized benchmark assessments developed from secure item bank. State or district can submit standards and ATI builds tests to match. Typically includes 5 items for 8 standards to create 40-item tests. Vertical scale supports interpretations about growth. Claims alignment to CCSS. Piloted in seven districts in Massachusetts in grades 3-10 in ELA and mathematics; alignment work done at that time suggested strong linkage to curriculum frameworks in terms of both depth and breadth.

### Source

Commercial Customizable Item Bank

### Approach

Buying (commercial tool)

### Designed to Measure Growth

Yes

### Traditional Assessment

- [ ] Traditional End-of-Grade Assessment
- [ ] Traditional End-of-Course Assessment
- [✓] Selected Response
- [✓] Short Constructed Response
- [ ] Writing Prompt/Essay
- [✓] Other: Interim or Benchmark

### Non-Traditional Assessment

- [✓] Pre/Post or Repeated Measures
- [ ] Performance Task Rubric
- [ ] Portfolio or Work Sample Rubric
- [ ] Project-Based Rubric
- [ ] Observation Rubric or Checklist

### Administration/Scoring

- [✓] Paper/Pencil
- [✓] Computer Supported
- [ ] Computer Adaptive
- [✓] Machine Scored
- [✓] Scored Locally
- [ ] Scored Off-Site

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Massachusetts District-Determined Measures
Example Assessments

Mathematics — HS
Assessment
Iowa End-of-Course Assessment Program

Probability & Statistics

Description
Released items. Each was matched to a CCSS and found to align to a CCO. However, the sample items were judged to be "entry-level" to the CCO in most cases, so might best be used as a pre-assessment of student understanding related to the probability and statistics CCOs rather than an end-of-course assessment.

Source
Released Items

Approach
Building (parts only)

Designed to Measure Growth
No

Traditional Assessment
☐ Traditional End-of-Grade Assessment
☑ Traditional End-of-Course Assessment
☐ Selected Response
☐ Short Constructed Response
☐ Writing Prompt/Essay
☐ Other:

Non-Traditional Assessment
☐ Pre/Post or Repeated Measures
☐ Performance Task Rubric
☐ Portfolio or Work Sample Rubric
☐ Project-Based Rubric
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