

Spring 2015 MCAS Tests: Summary of State Results

September 2015



This document was prepared by the
Massachusetts Department of Elementary and Secondary Education
Mitchell D. Chester, Ed.D.
Commissioner

The Massachusetts Department of Elementary and Secondary Education, an affirmative action employer, is committed to ensuring that all of its programs and facilities are accessible to all members of the public.

We do not discriminate on the basis of age, color, disability, gender identity, national origin, race, religion, sex or sexual orientation.

Inquiries regarding the Department's compliance with Title IX and other civil rights laws may be directed to the Human Resources Director, 75 Pleasant St., Malden, MA 02148 781-338-6105.

© 2015 Massachusetts Department of Elementary and Secondary Education
Permission is hereby granted to copy any or all parts of this document for non-commercial educational purposes. Please credit the "Massachusetts Department of Elementary and Secondary Education."

This document printed on recycled paper

Massachusetts Department of Elementary and Secondary Education
75 Pleasant Street, Malden, MA 02148-4906
Phone 781-338-3000 TTY: N.E.T. Relay 800-439-2370
<http://www.doe.mass.edu/>



Table of Contents

Executive Summary	1
I. 2015 MCAS at a Glance	7
II. Summary of the 2015 Statewide MCAS Results	13
III. 2015 Statewide MCAS Participation Results	24

Executive Summary

The eighteenth administration of the Massachusetts Comprehensive Assessment System (MCAS) tests took place in spring 2015.

Participation

A total of 342,000 Massachusetts public school students in grades 3–10 participated in a total of 17 MCAS tests in English Language Arts (ELA), Mathematics, and Science and Technology/Engineering (STE).¹ Participation rates remained very high, ranging from 98 to 100 percent across the grades and subjects tested.

In 2015, 8,474 students with disabilities participated in the MCAS Alternate Assessment (MCAS-Alt) by submitting portfolios documenting their academic achievement in one or more subjects in grades 3–12.

Overall Achievement

Student achievement statewide improved on 11 of the 17 MCAS tests administered in 2015. Between 2014 and 2015, the percentage of students scoring *Proficient* or higher² in ELA improved by three percentage points at grades 3 and 6, and by seven percentage points at grade 5. In Mathematics, annual achievement decreased by five percentage points at grade 4; increased by six percentage points at grade 5; and increased by eight percentage points at grade 8. Student achievement on the remaining tests increased or decreased nominally, or remained unchanged.

Long-term Trends in Achievement

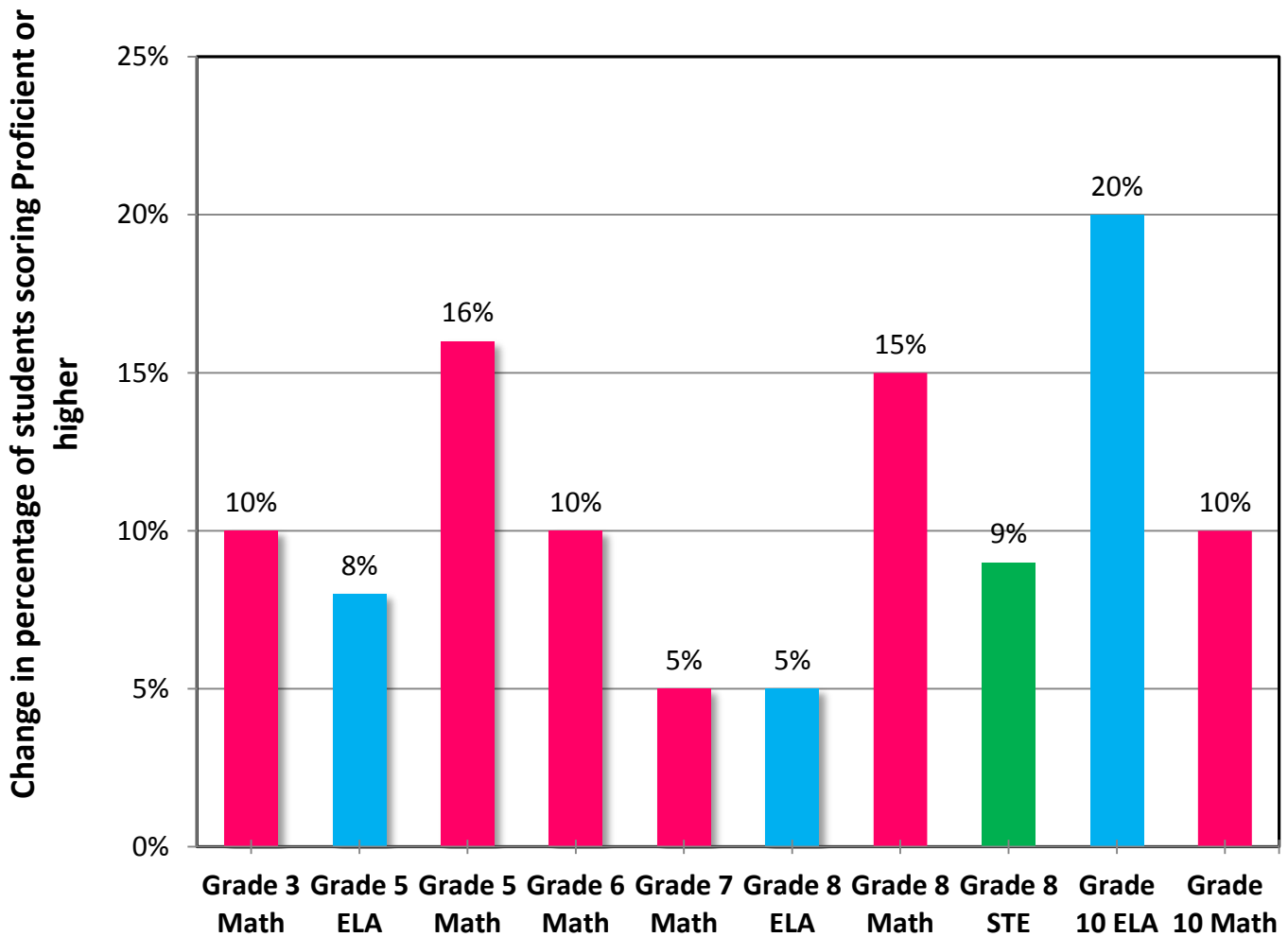
Because measures of student achievement often change incrementally over short periods of time, the Department is continuing to present a longitudinal view of student achievement and proficiency gap analysis in this report. The grades and subject areas in which the percentage of students scoring *Proficient* or higher changed by five or more points over the last nine years are shown in Figure E-1.³

¹ The four subject-specific high school Science and Technology/Engineering tests given in grades 9 and 10—Biology, Chemistry, Introductory Physics, and Technology/Engineering—are counted here as one operational test.

² In this report, *Proficient* or higher refers to the cumulative percentage of students scoring at the *Proficient* and *Advanced* levels.

³ Prior to 2013, the Department calculated the percentage of students scoring *Proficient* or higher by adding the rounded percent *Proficient* to the rounded percent *Advanced*. Since that time, the percent *Proficient* or higher has been calculated by dividing the number of students scoring *Proficient* or *Advanced* by the total number assessed, and then rounding. As a result, some historical data in the charts and tables in this report vary by one percent from past reports or the state profile.

Figure E-1: Five or More Percentage-Point Change in MCAS Achievement, 2007–2015



The nine-year changes in student achievement shown above include:

In ELA:

- Grade 5 increased from 63 to 71 percent *Proficient* or higher.
- Grade 8 increased from 75 to 80 percent *Proficient* or higher.
- Grade 10 increased from 71 to 91 percent *Proficient* or higher.

In Mathematics:

- Grade 3 increased from 60 to 70 percent *Proficient* or higher.
- Grade 5 increased from 51 to 67 percent *Proficient* or higher.
- Grade 6 increased from 52 to 62 percent *Proficient* or higher.
- Grade 7 increased from 46 to 51 percent *Proficient* or higher.
- Grade 8 increased from 45 to 60 percent *Proficient* or higher.
- Grade 10 increased from 69 to 79 percent *Proficient* or higher.

In STE:

- Grade 8 increased from 33 to 42 percent *Proficient* or higher.

At the high school level, where high stakes have been attached to tests in ELA and Mathematics since 2001 (for the class of 2003), the percentage of students scoring *Proficient* or higher has increased in ELA from 38 percent in 1998 to 91 percent in 2015, and in Mathematics from 24 percent in 1998 to 79 percent in 2015. Beginning with the class of 2010, students must also earn a score of *Needs Improvement* or higher on one of the four high school MCAS STE tests to be eligible to receive a high school diploma. In STE, the percentage of students scoring *Proficient* or higher has increased from 57 percent in 2008 to 72 percent in 2015.

Among students in the class of 2017 participating in MCAS to earn a Competency Determination, 88 percent scored *Needs Improvement* or higher on the ELA, Mathematics, and STE high school tests, an increase of two percent since the 2010 MCAS administration for the class of 2012. On the individual subject area tests, in ELA, 95 percent of students scored *Needs Improvement* or higher, an increase of one percent compared to the class of 2012; in Mathematics, 90 percent of students scored *Needs Improvement* or higher, a decrease of one percent compared to the class of 2012; and in STE, 93 percent of students scored *Needs Improvement* or higher, an increase of three percent compared to the class of 2012.

Figure E-2 shows the improvement in the percentage of students scoring *Proficient* or higher in grade 10 ELA and Mathematics over the duration of the MCAS program. Figure E-2 also shows the improvement in the percentage of students scoring *Proficient* or higher on the high school STE test since 2008.

Figure E-2: 1998–2015 Statewide Grade 10 MCAS Results

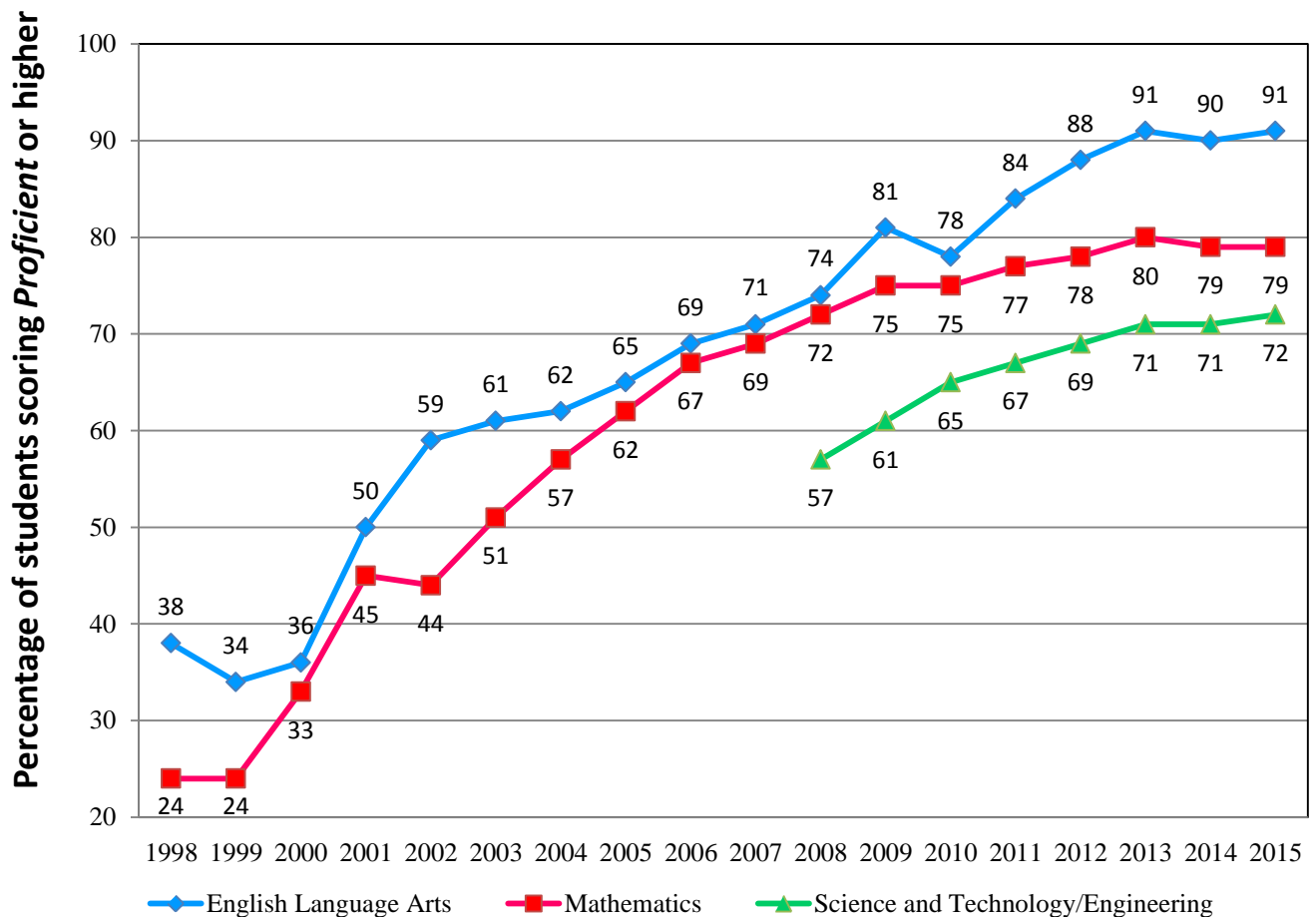


Table E-1 shows ELA, Mathematics, and STE results at all grade levels for each test since its inception.

Table E-1: 1998–2015 Statewide MCAS Test Results Percentage of Students Scoring <i>Proficient</i> or Higher				
Grade	Year	English Language Arts	Mathematics	Science and Technology/Engineering
Grade 3	2015	60	70	–
	2014	57	68	–
	2013	57	66	–
	2012	61	61	–
	2011	61	66	–
	2010	63	65	–
	2009	57	60	–
	2008	56	61	–
	2007	59	60	–
	2006	58	52	–
	2005	62	–	–
	2004	63	–	–
	2003	63	–	–
	2002	67	–	–
	2001	62	–	–
Grade 4	2015	53	47	–
	2014	54	52	–
	2013	53	52	–
	2012	57	51	–
	2011	53	47	–
	2010	54	48	–
	2009	53	48	–
	2008	49	49	–
	2007	56	48	–
	2006	50	40	–
	2005	50	40	–
	2004	56	42	–
	2003	56	40	–
	2002	54	39	–
	2001	51	34	–
2000	–	40	–	
1999	–	36	–	
1998	–	34	–	
Grade 5	2015	71	67	51
	2014	64	61	53
	2013	66	61	51
	2012	61	57	52
	2011	67	59	50
	2010	63	55	53
	2009	63	54	49
	2008	61	52	50
	2007	63	51	51
	2006	59	43	50
	2005	–	–	51
	2004	–	–	55
2003	–	–	52	
Grade 6	2015	71	62	–
	2014	68	60	–
	2013	67	61	–

**Table E-1: 1998–2015 Statewide MCAS Test Results
Percentage of Students Scoring *Proficient* or Higher**

Grade	Year	English Language Arts	Mathematics	Science and Technology/Engineering
Grade 6	2012	66	60	–
	2011	68	58	–
	2010	69	59	–
	2009	66	57	–
	2008	67	56	–
	2007	67	52	–
	2006	64	46	–
	2005	–	46	–
	2004	–	43	–
	2003	–	42	–
	2002	–	41	–
	2001	–	36	–
Grade 7	2015	70	51	–
	2014	72	50	–
	2013	72	52	–
	2012	71	51	–
	2011	73	51	–
	2010	72	53	–
	2009	70	49	–
	2008	69	47	–
	2007	69	46	–
	2006	65	40	–
	2005	66	–	–
	2004	68	–	–
	2003	66	–	–
	2002	64	–	–
2001	55	–	–	
Grade 8	2015	80	60	42
	2014	79	52	42
	2013	78	55	39
	2012	81	52	43
	2011	79	52	39
	2010	78	51	40
	2009	78	48	39
	2008	75	49	39
	2007	75	45	33
	2006	74	40	32
	2005	–	39	33
	2004	–	39	33
	2003	–	37	32
	2002	–	34	–
	2001	–	34	–
	2000	–	34	–
1999	–	28	–	
1998	–	31	–	
Grade 10^a	2015	91	79	72
	2014	90	79	71
	2013	91	80	71
	2012	88	78	69
	2011	84	77	67
	2010	78	75	65

**Table E-1: 1998–2015 Statewide MCAS Test Results
Percentage of Students Scoring *Proficient* or Higher**

Grade	Year	English Language Arts	Mathematics	Science and Technology/Engineering
Grade 10^a	2009	81	75	61
	2008	75	72	57
	2007	71	69	–
	2006	70	67	–
	2005	64	61	–
	2004	62	57	–
	2003	61	51	–
	2002	59	44	–
	2001	51	45	–
	2000	36	33	–
	1999	34	24	–
	1998	38	24	–

^a Grade 10 STE results are reported based on students' best performance on any STE test taken in grade 9 or grade 10; only students continuously enrolled in Massachusetts public schools from fall of grade 9 through spring of grade 10 are included.

I. 2015 MCAS at a Glance

What is MCAS?

The Massachusetts Comprehensive Assessment System (MCAS) is the Commonwealth's standards-based student assessment program.

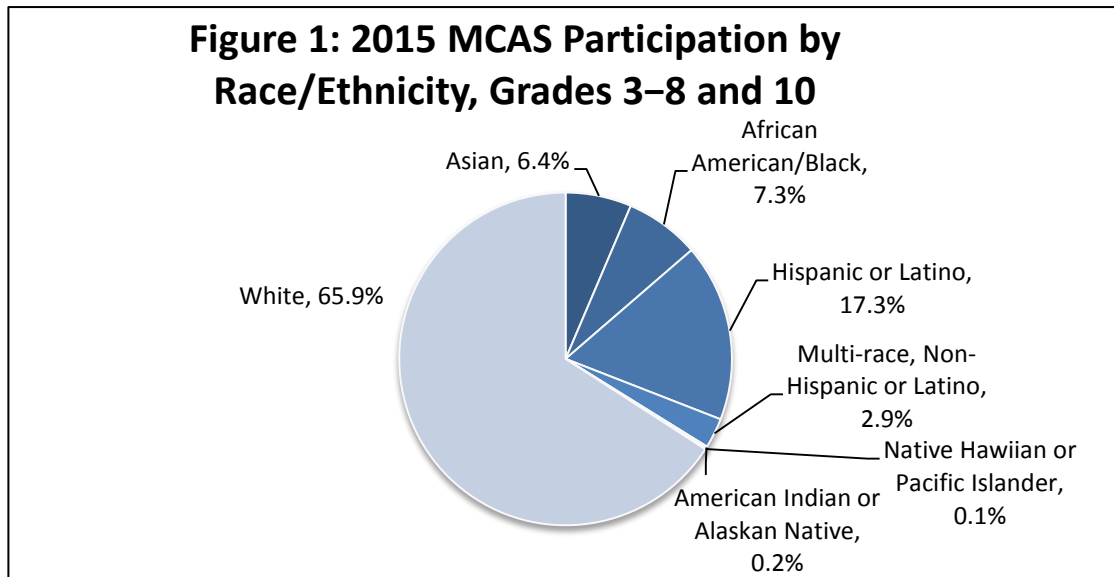
MCAS has three primary purposes: (1) to inform and improve curriculum and instruction; (2) to evaluate student, school, and district performance according to the Massachusetts curriculum framework content standards and MCAS performance standards; and (3) to determine whether a student has met the state requirements for the Competency Determination (i.e., whether a student is eligible for a high school diploma).

Who participates in MCAS?

During the 2014–15 school year, the Department offered districts the choice whether to administer MCAS or the Partnership for Assessment of Readiness for College and Careers (PARCC) tests to students in grades 3–8 in ELA and Mathematics. In spring 2015, approximately half of Massachusetts students took PARCC rather than MCAS in those grades and subjects. Students in grades 5, 8, and in high school participated in the MCAS STE tests.

All students who are enrolled in the tested grades and who are educated at public expense are required by state and federal law to participate in the state assessment (MCAS or PARCC in 2015). Figure 1 and the table below show the number and percentage of students by race who took the 2015 MCAS tests in ELA, Mathematics, and STE in grades 3–8 and 10.

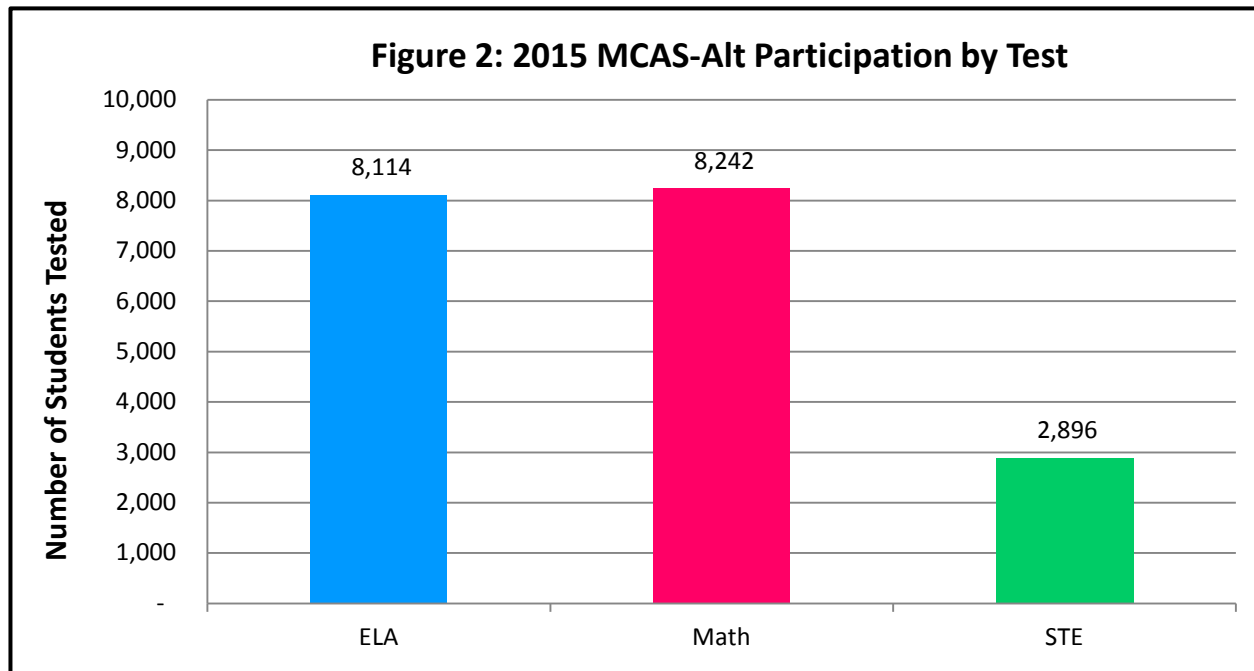
MCAS Participation Data



MCAS Participation by Race/Ethnicity Grades 3–8 and 10	Number of Students	Percentage of Total
Asian	22,019	6.4%
African American/Black	24,291	7.3%
Hispanic or Latino	58,328	17.3%
Multi-race, Non-Hispanic or Latino	10,001	2.9%
American Indian or Alaskan Native	696	0.2%
Native Hawaiian or Pacific Islander	317	0.1%
White	226,190	65.9%
(missing race/ethnicity information)	158	< 0.1%
Total	342,000	100.0%

MCAS-Alt Participation

Students with significant cognitive disabilities who are unable to take the standard MCAS tests, even with accommodations, are required to participate in the MCAS Alternate Assessment (MCAS-Alt). The MCAS-Alt enables these students to submit portfolios of their work that demonstrate their performance on the curriculum framework learning standards. Figure 2 shows the number of students who took the MCAS-Alt.



Which MCAS tests were administered in 2015?

In 2015, a total of 17 operational MCAS tests in English Language Arts, Mathematics, and Science and Technology/Engineering were administered to students across eight grade levels.

Table 1 shows the MCAS tests administered at each grade level in 2015.

Content Area	Grade Level							
	3	4	5	6	7	8	9	10
English Language Arts	✓	✓	✓	✓	✓	✓		✓
Mathematics	✓	✓	✓	✓	✓	✓		✓
Science and Technology/Engineering			✓			✓	✓ ^a	✓ ^a

^a Students may take one of four high school STE tests offered in Biology, Chemistry, Introductory Physics, and Technology/Engineering in grade 9 or grade 10. Results of the grade 9 and 10 tests are summarized and reported in grade 10.

In February 2009, due to fiscal considerations, the Board of Elementary and Secondary Education approved a two-year suspension of operational MCAS History and Social Science testing and waived the Competency Determination requirement in this subject area. As a result, no History and Social Science tests were administered in grade 5, grade 7, or high school in spring 2015.

What are the administration guidelines for the tests?

MCAS test sessions are designed to be completed in 45–60 minutes. However, all MCAS test administrations are untimed, and schools must allocate the necessary resources, including staff and classrooms, to ensure that all students have sufficient time to complete each individual session.

Except in grade 3 (for which a combined test/answer booklet is used), students at each grade level receive separate test and answer booklets. The test booklets contain all item-specific information, including the actual test questions, any reading passages and corresponding illustrations, writing prompts, and answer options for multiple-choice items. Students must record their answer to each test item in the corresponding answer booklet.

The standard MCAS tests are composed of a variety of question types at each grade level and for each subject. Table 2 shows the point values by item type for each grade and test.

Subject-Area Test	Raw Score Point Values by Item Type					Total Number of Raw Score Points
	Multiple-Choice	Open-Response	Short-Answer	Short-Response	Writing Prompt	
Grade 3						
English Language Arts	36	4		8		48
Mathematics	26	8	6			40
Grade 4						
English Language Arts	36	16			20	72
Mathematics	32	16	6			54

Grade 5				
English Language Arts	36	16		52
Mathematics	32	16	6	54
Science and Tech/Eng	38	16		54
Grade 6				
English Language Arts	36	16		52
Mathematics	32	16	6	54
Grade 7				
English Language Arts	36	16		20
Mathematics	32	16	6	54
Grade 8				
English Language Arts	36	16		52
Mathematics	32	16	6	54
Science and Tech/Eng	38	16		54
Grade 10/High School				
English Language Arts	36	16		20
Mathematics	32	24	4	60
Science and Tech/Eng	40	20		60

Each MCAS test booklet contains both *common* and *matrix-sampled* questions. Common questions—which comprise roughly 80 percent of a student’s test booklet—are those items that are identical in each student’s booklet and from which all student, school, and district results are derived. Prior to 2009, the Department of Elementary and Secondary Education released 100 percent of the MCAS common items to the public after each test administration for use as a tool to improve curriculum and instruction. Beginning in 2009, in order to reduce testing time and test development costs, the Department began releasing approximately 50 percent of the common items for grades 3–8 while continuing to release 100 percent of the common items at the high school level (with the exception of the 2009 Chemistry and Technology/Engineering tests and the 2015 Chemistry test, for which no common items were released). Matrix-sampled questions are used to equate MCAS tests from year to year and to field test new items for future tests.

When are MCAS tests administered?

Each spring there are three MCAS test administration periods. In 2015, the first testing period was March 24–April 13 for tests in English Language Arts. The second testing period was May 4–26 for tests in Mathematics and May 5–26 for tests in grades 5 and 8 Science and Technology/Engineering. The third testing period was June 2–11 for the end-of-course high school STE tests.

How are results on MCAS tests reported?

Results on the MCAS tests are reported by achievement levels that describe a student’s knowledge and skills as they relate to the MCAS performance standards and the content standards contained in the Massachusetts curriculum frameworks. Students receive a separate score and attain a separate achievement level in each subject area. School and district results are reported according to the percentage of students attaining each achievement level in each grade-level subject area tested.

Table 3 below provides the general MCAS achievement level definitions.

Table 3: General MCAS Achievement Level Definitions

Achievement Level	Definition
<i>Advanced</i> ⁴	Students at this level demonstrate a comprehensive and in-depth understanding of rigorous subject matter and provide sophisticated solutions to complex problems.
<i>Proficient</i>	Students at this level demonstrate a solid understanding of challenging subject matter and solve a wide variety of problems.
<i>Needs Improvement</i>	Students at this level demonstrate a partial understanding of subject matter and solve some simple problems.
<i>Warning / Failing</i> ⁵	Students at this level demonstrate a minimal understanding of subject matter and do not solve simple problems.

Student-level MCAS results are reported as scaled scores, which range from 200 to 280 in each content area. Scaled scores provide more precise feedback to schools, parents, and students by quantifying a student’s achievement according to the continuum of scores within achievement levels. At grade 3, 2010 was the first year in which student results were reported as scaled scores; prior to 2010, only raw score points representing the total number of points a student earned were reported. Table 4 provides the scaled score point ranges and their corresponding achievement levels.

Table 4: MCAS Scaled Score Ranges

Scaled Score Range	Achievement Level
260–280	<i>Advanced</i>
240–258	<i>Proficient</i>
220–238	<i>Needs Improvement</i>
200–218	<i>Warning / Failing</i>

How does the Department collect and report race/ethnicity data?

Pursuant to Massachusetts General Laws, Chapter 69, Section 1I, the Department is authorized to collect race/ethnicity data but cannot make such information public. The Department reports these data only in the aggregate. Prior to the 2005–2006 school year, the Department collected data on students according to the following five race/ethnicity categories:

- African American/Black
- American Indian or Alaskan Native
- Asian or Pacific Islander
- Hispanic
- White

Each student was identified by one and only one race/ethnicity category.

⁴ Prior to 2011, the highest achievement level at grade 3 was *Above Proficient*. This was changed to *Advanced* in 2011 to provide consistency in reporting.

⁵ The *Warning* level is applicable to grades 3–8, and the *Failing* level is applicable to grades 9 and 10.

Beginning in 2006, the Department revised its data collection procedures to comply with the Office of Management and Budget (OMB) revisions to the standards for classification of federal data on race and ethnicity announced in the Federal Register Notice of October 30, 1997. The revised standards require that agencies offer individuals the opportunity to select one or more races when reporting information on race in federal data collections. In addition, race and Hispanic or Latino origin are considered two separate and distinct concepts.

In accordance with these changes, the Department now reports aggregate MCAS results according to the following seven race/ethnicity categories:

- African American/Black
- Asian
- Hispanic or Latino
- American Indian or Alaskan Native
- White
- Native Hawaiian or Pacific Islander
- Multi-race, Non-Hispanic or Latino

MCAS results reported according to the former five race/ethnicity categories and the current seven race/ethnicity categories are not directly comparable. To better inform comparisons made between MCAS results by race/ethnicity across years, the Department published the 2005–2006 MCAS Race/Ethnicity Comparison Report, available at profiles.doe.mass.edu/mcas/racecomparison.aspx?linkid=29&orgcode=00000000&fycode=2006&orgtypecode=0&. This report provides a crosswalk between the current and former race/ethnicity categories, giving both total numbers of students tested and percentages of students at each achievement level. This information is also available at the school and district levels on the Department’s website through the school and district profiles.

Where can I find more information about MCAS?

The Department’s website is a resource for educators, parents, and others who are seeking additional information about MCAS results, released items, curriculum frameworks, and other test-related topics. To access that information, visit www.doe.mass.edu/mcas/. If you have additional questions, you may contact the Department’s Student Assessment Services Unit at 781-338-3625.

II. Summary of the 2015 Statewide MCAS Results

In spring 2015, 342,000 Massachusetts public school students in grades 3–10 participated in the eighteenth administration of the MCAS tests. A total of 17 MCAS tests in ELA, Mathematics, and STE were administered to students across eight grade levels. State-level results for these tests are provided in this report.

MCAS and PARCC Achievement Data for ELA and Mathematics Grades 3–8

As noted in “Who participates in MCAS?” in Section I above, the Department offered districts the choice, during the 2014–2015 school year, whether to administer MCAS tests or the Partnership for Assessment of Readiness for College and Careers (PARCC) tests to students in grades 3–8 in ELA and Mathematics. In spring 2015, approximately half of Massachusetts students took PARCC in those grades and subjects, and half took MCAS.

Because districts were permitted to self-select into either testing program, the population of students taking MCAS ELA and Mathematics tests at grades 3–8 in 2015 differed from the total state population in terms of demographic characteristics and past performance. Even though these differences were minor, the MCAS population at these grade levels was not fully representative of the state population.

To reduce differences in student characteristics between the samples and the state population, the Department drew a large (75%) representative sample of those students who participated in MCAS to approximate state results. A separate sample was drawn at each grade level (3 through 8) this spring, in consultation with the state MCAS Technical Advisory Committee, before any results were produced. Each sample was designed to match the total state population on past achievement and demographics.

In this document, these statistically representative samples were used to report student achievement at the state level. The achievement results reported for each grade and subject matter reflect the performance of the students in the representative sample; they do not reflect the performance of all students who took the test. By using this approach, the Department was able to maintain state-level achievement trends that are comparable to prior years.

The first two rows of the following table summarize the 2014 MCAS achievement of students in the 2015 MCAS and PARCC representative samples. Student achievement is within two-tenths of a percentage point in ELA and within one percentage point in Mathematics. The remaining rows show the percentage of each student subgroup selected for the 2015 MCAS and PARCC representative samples.

Subgroups	MCAS Representative Sample	PARCC Representative Sample
2014 MCAS ELA % Proficient or Above*	64.3%	64.5%
2014 MCAS Mathematics % Proficient or Above*	59.5%	60.5%
Economically Disadvantaged†	30%	32%
High Needs Students†	45%	46%
Free and Reduced Lunch (grades 3–8 in 2013–2014 school year)	38%	42%
African American†	6%	10%
Hispanic†	18%	17%
White†	66%	62%

Asian†	7%	6%
ELL Students†	7%	8%
Ever Identified as ELL†	15%	16%
Students with Disabilities†	18%	17%

* grades 4–8 in 2013–14 school year

† grades 3–8 in 2014–15 school year

Because all students were required to participate in MCAS STE tests and in grade 10 ELA and Mathematics tests, there was no need to use samples to report the results of those tests. Results in those grades and subjects are reported as in prior years. For additional information about PARCC, please visit www.doe.mass.edu/parcc/.

Achievement Level Results by Subject

English Language Arts

Table 5 summarizes the percentage changes in ELA achievement by students statewide between 2007 and 2015. Data for 2014 are included to illustrate the one-year trend.

Student achievement in ELA⁶ improved statewide between 2007 and 2015 at all grades levels except grade 4, where it decreased by three percentage points. Achievement in ELA improved markedly at grades 5 and 10, where the percentage of students scoring *Proficient* or higher increased by eight and 20 percentage points, respectively.

In 2015, the percentage of students statewide scoring *Proficient* or higher ranged from a low of 53 percent at grade 4 to a high of 91 percent at grade 10.

Table 5: 2007–2015 Statewide MCAS English Language Arts Results

Grade	Percentage of Students Scoring <i>Proficient</i> or Higher			Percentage Point Change, 2007 to 2015
	2007	2014	2015	
Grade 3	59	57	60	+1
Grade 4	56	54	53	-3
Grade 5	63	64	71	+8
Grade 6	67	68	71	+4
Grade 7	69	72	70	+1
Grade 8	75	79	80	+5
Grade 10	71	90	91	+20

Mathematics

Table 6 summarizes the percentage changes in Mathematics achievement by students statewide between 2007 and 2015. Data for 2014 are included to illustrate the one-year trend.

⁶ The ELA tests at grades 3, 5, 6, and 8 assess reading comprehension, while the ELA tests at grades 4, 7, and 10 assess reading comprehension and writing.

Student achievement in Mathematics improved statewide between 2007 and 2015 at all grade levels except grade 4, where it decreased by one percentage point. Achievement in Mathematics improved markedly at grades 3, 5, 6, 8, and 10, where it increased between 10 and 16 percentage points at each level.

The percentage of students scoring *Proficient* or higher in 2015 ranged from a low of 47 percent at grade 4 to a high of 79 percent at grade 10.

Table 6: 2007–2015 Statewide MCAS Mathematics Results

Grade	Percentage of Students Scoring <i>Proficient</i> or Higher			Percentage Point Change, 2007 to 2015
	2007	2014	2015	
Grade 3	60	68	70	+10
Grade 4	48	52	47	-1
Grade 5	51	61	67	+16
Grade 6	52	60	62	+10
Grade 7	46	50	51	+5
Grade 8	45	52	60	+15
Grade 10	69	79	79	+10

Science and Technology/Engineering

Table 7 summarizes the percentage changes in STE achievement by students statewide between 2007 and 2015. Data for 2014 are included to illustrate the one-year trend.

Student achievement in STE was unchanged at grade 5 and increased by nine percentage points at grade 8 between 2007 and 2015. Since the high school STE test was first administered in 2008, achievement data is not available for 2007.

The percentage of students scoring *Proficient* or higher in 2015 ranged from a low of 42 percent at grade 8 to a high of 72 percent at grade 10.

Table 7: 2007–2015 Statewide MCAS Science and Technology/Engineering Results

Grade	Percentage of Students Scoring <i>Proficient</i> or Higher			Percentage Point Change, 2007 to 2015
	2007	2014	2015	
Grade 5	51	53	51	0
Grade 8	33	42	42	+9
Grade 10	n/a	71	72	

Note on the Use of Between-Group Gap Data for Subgroups

The state representative sample used to report student achievement in 2015, described at the beginning of this section above, was designed to replicate student achievement of the state population for the reporting of results of all students; however, it does not necessarily contain a representative sample of each subgroup. It is therefore important to note that the representative sample may not in all cases accurately reflect the achievement of each student demographic and race/ethnic subgroup in this report. Subgroup data in this report should be used with caution.

Between-Group Gap in the Percentage of Students Scoring *Proficient* or Higher: African American/Black and Hispanic or Latino Students

English Language Arts

Tables 8 and 9 summarize changes that occurred between 2007 and 2015 in the ELA proficiency gap between African American/Black students and white students, and between Hispanic or Latino students and white students. Data for 2014 are included to illustrate the one-year trend.

In ELA, the between-group gap in the percentage of students scoring *Proficient* or higher for African American/Black students and for Hispanic or Latino students narrowed at all grades between 2007 and 2015. The greatest narrowing of the gap was seen at grade 10, where it decreased by 19 percentage points for African American/Black students and by 18 percentage points for Hispanic or Latino students.

Grade	African American/Black			White			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 3	36	38	40	66	65	67	30	27	-3
Grade 4	31	34	38	63	61	60	32	22	-10
Grade 5	39	43	53	70	71	78	31	25	-6
Grade 6	42	49	53	75	75	77	33	24	-9
Grade 7	48	56	52	76	78	76	28	24	-4
Grade 8	55	63	66	82	85	85	27	19	-8
Grade 10	47	79	84	77	94	95	30	11	-19

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

Table 9: 2007–2015 Statewide MCAS English Language Arts Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher

Grade	Hispanic or Latino			White			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 3	32	34	36	66	65	67	34	31	-3
Grade 4	28	31	31	63	61	60	35	29	-6
Grade 5	34	40	46	70	71	78	36	32	-4
Grade 6	38	45	46	75	75	77	37	31	-6
Grade 7	42	50	45	76	78	76	34	31	-3
Grade 8	48	58	61	82	85	85	34	24	-10
Grade 10	43	76	79	77	94	95	34	16	-18

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

Mathematics

Tables 10 and 11 summarize changes that occurred between 2007 and 2015 in the Mathematics proficiency gap between African American/Black students and white students, and between Hispanic or Latino students and white students. Data for 2014 are included to illustrate the one-year trend.

Between 2007 and 2015 in Mathematics, the between-group gap in the percentage of students scoring *Proficient* or higher for African American/Black students and for Hispanic or Latino students narrowed at all grades. For African American/Black students, the greatest decrease in the gap occurred at grade 4, where it narrowed by eight percentage points. For Hispanic or Latino students, the greatest decrease in the gap occurred at grade 3, where it decreased by 11 percentage points.

Table 10: 2007–2015 Statewide MCAS Mathematics Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher

Grade	African American/Black			White			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 3	35	49	51	67	74	76	32	25	-7
Grade 4	22	30	29	54	58	53	32	24	-8
Grade 5	26	36	44	57	68	73	31	29	-2
Grade 6	27	37	40	60	66	68	33	28	-5
Grade 7	19	26	26	52	57	56	33	30	-3
Grade 8	19	30	36	52	58	65	33	29	-4
Grade 10	45	60	62	75	85	85	30	23	-7

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

Table 11: 2007–2015 Statewide MCAS Mathematics Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher

Grade	Hispanic or Latino			White			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 3	34	50	54	67	74	76	33	22	-11
Grade 4	24	33	28	54	58	53	30	25	-5

Grade 5	25	37	43	57	68	73	32	30	-2
Grade 6	25	37	40	60	66	68	35	28	-7
Grade 7	19	26	26	52	57	56	33	30	-3
Grade 8	18	29	39	52	58	65	34	26	-8
Grade 10	42	56	56	75	85	85	33	29	-4

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

Science and Technology/Engineering

Tables 12 and 13 summarize changes that occurred between 2007 and 2015 in the STE proficiency gap between African American/Black students and white students, and between Hispanic or Latino students and white students. Data for 2014 are included to illustrate the one-year trend.

From 2007 to 2015 in STE, the between-group gap in the percentage of students scoring *Proficient* or higher for African American/Black students narrowed by six percentage points at grade 5 and increased by four percentage points at grade 8. For Hispanic or Latino students, the between-group gap narrowed by eight percentage points at grade 5 and increased marginally at grade 8. Since the high school STE test was first administered in 2008, achievement data is not available for 2007.

**Table 12: 2007–2015 Statewide MCAS Science and Technology/Engineering Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	African American/Black						White			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher									2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015						
Grade 5	20	26	26	59	62	59	39	33	-6			
Grade 8	9	17	16	39	49	50	30	34	+4			
Grade 10 ^b	n/a	47	50	n/a	79	79	n/a	29	n/a			

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

^b Grade 10 STE results are reported based on students' best performance on any STE test taken in grade 9 or grade 10; only students continuously enrolled in Massachusetts public schools from fall of grade 9 through spring of grade 10 are included.

**Table 13: 2007–2015 Statewide MCAS Science and Technology/Engineering Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	Hispanic or Latino						White			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher									2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015						
Grade 5	20	27	28	59	62	59	39	31	-8			
Grade 8	8	18	18	39	49	50	31	32	+1			
Grade 10 ^b	n/a	42	44	n/a	79	79	n/a	35	n/a			

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

^b Grade 10 STE results are reported based on students' best performance on any STE test taken in grade 9 or grade 10; only students continuously enrolled in Massachusetts public schools from fall of grade 9 through spring of grade 10 are included.

Between-Group Gap in the Percentage of Students Scoring *Proficient* or Higher: Students with Disabilities

Tables 14–16 summarize changes that occurred between 2007 and 2015 in the ELA, Mathematics, and STE proficiency gaps between students with disabilities and all students. Data for 2014 are included to illustrate the one-year trend.

From 2007 to 2015 in ELA, the between-group gap in the percentage of students scoring *Proficient* or higher for students with disabilities narrowed markedly at grade 10, where it decreased by 17 percentage points. The gap widened at grades 3 and 5, where it increased by six and five percentage points, respectively. In other grades, the between-group gap increased marginally or remained unchanged. In Mathematics, the between-group gap increased by nine percentage points at grade 5, by six percentage points at grade 8, and by three or four percentage points at grades 3, 6, and 7. The gap increased marginally or remained unchanged at grades 4 and 10, respectively. In STE, the between-group gap increased marginally at grade 5 and increased by six percentage points at grade 8. Since the high school STE test was first administered in 2008, achievement data is not available for 2007.

**Table 14: 2007–2015 Statewide MCAS English Language Arts Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	Students with Disabilities			All Students			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 3	27	21	22	59	57	60	32	38	+6
Grade 4	19	16	16	56	54	53	37	37	0
Grade 5	25	24	28	63	64	71	38	43	+5
Grade 6	27	25	30	67	68	71	40	41	+1
Grade 7	28	30	29	69	72	70	41	41	0
Grade 8	36	40	41	75	79	80	39	39	0
Grade 10	30	63	68	70	90	91	40	23	-17

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

**Table 15: 2007–2015 Statewide MCAS Mathematics Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	Students with Disabilities			All Students			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 3	28	34	35	60	68	70	32	35	+3
Grade 4	17	19	16	48	52	47	31	31	0
Grade 5	17	22	24	51	61	67	34	43	+9
Grade 6	16	19	21	53	60	62	37	41	+4
Grade 7	12	12	13	46	50	51	34	38	+4
Grade 8	9	13	18	45	52	60	36	42	+6
Grade 10	31	41	40	69	79	79	38	39	+1

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

**Table 16: 2007–2015 Statewide MCAS Science and Technology/Engineering Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	Students with Disabilities			All Students			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 5	22	21	20	51	53	51	29	31	+2
Grade 8	8	12	11	33	42	42	25	31	+6
Grade 10 ^b	n/a	33	35	n/a	71	72	n/a	37	n/a

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

^b Grade 10 STE results are reported based on students' best performance on any STE test taken in grade 9 or grade 10; only students continuously enrolled in Massachusetts public schools from fall of grade 9 through spring of grade 10 are included.

Between-Group Gap in the Percentage of Students Scoring *Proficient* or Higher: English Language Learner (ELL) Students

Tables 17–19 summarize changes that occurred between 2007 and 2015 in the ELA, Mathematics, and STE proficiency gaps between ELL students and all students. Data for 2014 are included to illustrate the one-year trend.

From 2007 to 2015 in ELA, the between-group gap in the percentage of students scoring *Proficient* or higher for ELL students narrowed at all grades except grade 5, where it increased by three percentage points. The greatest narrowing of the between-group gap was seen at grades 8 and 10, where it decreased by 10 and 11 percentage points, respectively. At grades 3, 4, and 7, the between-group gap decreased by four or five percentage points, while it decreased marginally at grade 6.

In Mathematics, the between-group gap for ELL students narrowed markedly at grade 3, where it decreased by 10 percentage points. The gap narrowed or remained unchanged at grades 4 and 7. The gap widened at all other grades, increasing by 12 percentage points at grade 5, five percentage points at grade 6, six percentage points at grade 8, and seven percentage points at grade 10. In STE, the gap for ELL students narrowed marginally at grade 5, and increased by eight percentage points at grade 8. Since the high school STE test was first administered in 2008, achievement data is not available for 2007.

**Table 17: 2007–2015 Statewide MCAS English Language Arts Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	ELL Students			All Students			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 3	22	25	27	59	57	60	37	33	-4
Grade 4	17	19	19	56	54	53	39	34	-5
Grade 5	16	21	21	63	64	71	47	50	+3
Grade 6	15	20	20	67	68	71	52	51	-1
Grade 7	15	24	20	69	72	70	54	50	-4
Grade 8	17	26	32	75	79	80	58	48	-10
Grade 10	12	36	44	70	90	91	58	47	-11

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

**Table 18: 2007–2015 Statewide MCAS Mathematics Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	ELL Students			All Students			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 3	30	46	50	60	68	70	30	20	-10
Grade 4	18	25	19	48	52	47	30	28	-2
Grade 5	19	24	23	51	61	67	32	44	+12
Grade 6	15	21	19	53	60	62	38	43	+5
Grade 7	10	13	15	46	50	51	36	36	0
Grade 8	10	14	19	45	52	60	35	41	+6
Grade 10	27	31	30	69	79	79	42	49	+7

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

**Table 19: 2007–2015 Statewide MCAS Science and Technology/Engineering Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	ELL Students			All Students			Nine-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2015	Between-Group Gap Change, 2007–2015 ^a
	2007	2014	2015	2007	2014	2015			
Grade 5	10	12	11	51	53	51	41	40	-1
Grade 8	3	4	4	33	42	42	30	38	+8
Grade 10 ^b	n/a	13	16	n/a	71	72	n/a	56	n/a

^a Negative value represents narrowing of between-group gap; positive value represents widening of gap.

^b Grade 10 STE results are reported based on students' best performance on any STE test taken in grade 9 or grade 10; only students continuously enrolled in Massachusetts public schools from fall of grade 9 through spring of grade 10 are included.

MCAS results for all grades, student groups, and prior MCAS test administrations are available on the Department's School and District Profiles pages at profiles.doe.mass.edu.

Competency Determination Attainment Results

The class of 2003 was the first graduating class in Massachusetts that was required to earn a Competency Determination (in addition to meeting local requirements) to be eligible to graduate from high school. In order to earn a Competency Determination (CD), students in the classes of 2003–2009 were required to earn a scaled score of 220 (*Needs Improvement*) or higher on the grade 10 MCAS tests or retests in ELA and Mathematics.

Beginning with the class of 2010, in order to earn a CD, students must *either* earn a scaled score of 240 (*Proficient*) or higher on the grade 10 MCAS ELA and Mathematics tests or retests *or* earn a score of 220–238 on the grade 10 MCAS ELA and Mathematics tests or retests and fulfill the requirements of an Educational Proficiency Plan (EPP).

Each EPP must include, at a minimum,

- a review of the student’s strengths and weaknesses, based on MCAS and other assessment results, coursework, grades, and teacher input;
- the courses the student will be required to take and successfully complete in grades 11 and 12; and
- a description of the assessments the school will administer on a regular basis to determine if the student is moving toward proficiency. (For 2014–2015, the assessment options included locally developed end-of-course assessments, locally scored grade 10 MCAS test forms designed for the EPP, the March 2015 MCAS retest in ELA only, and College Board’s Accuplacer.)

Students in the class of 2010 and beyond must also earn a score of 220 (*Needs Improvement*) or higher on one of four high school MCAS tests in Science and Technology/Engineering (Biology, Chemistry, Introductory Physics, or Technology/Engineering) to be eligible to receive a high school diploma. In addition, students must meet all local requirements in order to graduate.

Table 20 displays the cumulative percentage of all students and student subgroups in the class of 2017 who have already met or partially met the MCAS requirements for graduation by performing at the *Needs Improvement* level or higher in ELA, Mathematics, and STE through the spring 2015 test administration. In 2015, 88 percent of students in the class of 2017 performed at the *Needs Improvement* level or higher in all three subjects by the end of grade 10. The percentage of students scoring *Needs Improvement* or higher in all three subjects by the end of grade 10 is identical to that of the Classes of 2016 and 2015.⁷

⁷ The achievement figures for students in the class of 2017 may be lower than the corresponding figures for grade 10 students cited elsewhere in this report because the figures for students in the class of 2017 include students participating in a retest administration (primarily students retained in grade) while those for grade 10 students include first-time spring MCAS administration testers only.

Table 20: 2015 Statewide MCAS Results: Class of 2017
Percentage of Students Scoring *Needs Improvement* or Higher in ELA, Mathematics, and STE
through the Spring 2015 Administration

Subgroup	Class of 2017					Class of 2016 ^a	Class of 2015 ^a
	ELA	Math	ELA and Math	STE	All Three Tests	All Three Tests	All Three Tests
All Students	95	90	89	93	88	88	88
Gender							
Female	96	91	90	94	89	90	89
Male	94	89	88	92	86	87	87
Race/Ethnicity							
African American/Black	93	82	80	87	77	78	76
Asian	96	96	94	95	93	92	91
Native Hawaiian, Pacific Islander	94	89	85	82	77	93	84
Hispanic or Latino	88	76	74	81	71	73	71
Multi-Race, Non-Hispanic or Latino	96	90	90	94	88	89	88
Amer. Ind. or Alaskan Nat.	96	85	84	91	81	85	87
White	97	94	93	96	92	93	92
Student Status							
High Needs ^b	89	78	77	84	74	77	76
Non-Disabled	98	95	94	96	93	93	93
Students with Disabilities	84	66	64	77	61	64	61
English Language Learner (ELL)	69	54	48	60	42	44	41
Former ELL	97	87	87	91	83	84	82
ELL and Former ELL	77	63	58	68	54	56	53
Economically Disadvantaged ^c	92	82	80	87	77	78 ^d	77 ^d

^a To provide comparable data, results for the classes of 2016 and 2015 are based on MCAS tests through the spring 2014 and spring 2013 administrations, respectively.

^b Beginning in 2015, the High Needs group includes students with disabilities, English language learner and former English language learner students, and economically disadvantaged students.

^c Beginning in 2015, the Economically Disadvantaged student group replaced the Low Income student group.

^d Class of 2016 and 2015 percentages include students in the Low Income group who passed all three tests.

The percentage of students scoring *Needs Improvement* or higher in ELA, Mathematics, and STE varied widely by subgroup.

- Of the major racial/ethnic subgroups in the state, the percentage of students scoring *Needs Improvement* or higher in all three subjects was highest for Asian students at 93 percent, followed by White students at 92 percent, African American/Black students at 77 percent, and Hispanic or Latino students at 71 percent. When results for the class of 2017 are compared to those for the class of 2016, Hispanic or Latino students decreased by two percentage points, while African American/Black and White students decreased by one percentage point. Asian students increased by one percent.
- Seventy-seven percent of economically disadvantaged students performed at the *Needs Improvement* level or higher in all three subjects, followed by 74 percent of high-needs students, 61 percent of students with disabilities, and 42 percent of ELL students. With the exception of the Economically Disadvantaged group, which is new in 2015, and the High Needs group, which

changed in 2015, other subgroups demonstrated a marginal decrease compared to the class of 2016 in the percentage of students scoring *Needs Improvement* or higher in all three subjects.

Table 21 shows the number and cumulative percentage of students in the class of 2017 who have already fully met the CD standard by performing at the *Proficient* level or higher in both ELA and Mathematics and by performing at the *Needs Improvement* level or higher in STE, through the spring 2015 test administration. The table also shows the number and percentage of students who have met individual components of the CD requirement.

Table 21: 2015 Statewide MCAS Results: Class of 2017
Number and Percentage of Students Scoring *Proficient* or Higher in ELA and Mathematics and *Needs Improvement* or Higher in STE through the Spring 2015 Administration

CD Requirement	Number	Percent
Earned CD	53,591	75
ELA and Mathematics <i>Proficient</i> or Higher	53,844	75
ELA <i>Proficient</i> or Higher	63,594	89
Mathematics <i>Proficient</i> or Higher	54,860	77
STE <i>Needs Improvement</i> or Higher	66,479	93

III. 2015 Statewide MCAS Participation Results

Students Tested

Table 22 presents information on the number and percentage of enrolled students who participated in the spring 2015 MCAS tests. The figures include participation rates for students educated with public funds, including regular education students, students with disabilities, and ELL students.

For the ELA and Mathematics tests at grades 3–8, the participation rate calculations do not include students that participated in PARCC testing instead of MCAS. As in previous years, participation rates were very high, ranging from 98 to 100 percent.

Table 22: Participation Rates^a
Number and Percentage of Enrolled Students Tested on the Spring 2015 MCAS Tests

Grade	English Language Arts		Mathematics		Science and Technology/Engineering ^b	
	Number	Percent	Number	Percent	Number	Percent
Grade 3	33,162	100	33,128	100		
Grade 4	33,177	99	33,186	100		
Grade 5	34,024	99	33,797	100	71,810	99
Grade 6	33,743	99	33,774	99		
Grade 7	33,598	99	33,627	99		
Grade 8	34,545	99	34,337	99	73,226	99
Grade 10	71,770	98	71,691	98	71,854	99

^a Includes regular education students, students with disabilities, and ELL students.

^b Grade 10 STE figures include students in the class of 2017 who participated in an STE test in grade 9 in 2014 or grade 10 in 2015; only students continuously enrolled in Massachusetts public schools from fall of grade 9 through spring of grade 10 are included.

How is participation calculated?

Participation rates indicate the number of students who participated in standard MCAS tests and the MCAS Alternate Assessment (MCAS-Alt) divided by the number of students enrolled in schools that administered MCAS in 2015 on the date the tests were administered. ELL students enrolled in U.S. schools for the first time were not required to take ELA tests; however, they were reported in ELA school and district participation rates based on their participation in the ACCESS for ELLs (Assessing Comprehension and Communication in English State-to-State for English Language Learners) tests. The Department used ACCESS for ELLs testing for state and federal accountability purposes, which require that all ELL students, with the exception of students for whom an accommodation was not available, participate in the ELL assessment.

Students absent during testing, including those with medical excuses, were counted against school and district participation as non-participants. A student is neither a participant nor a non-participant (i.e., is excluded from both the numerator and the denominator in participation rate calculations) if all of the following statements are true: (1) the student transferred during the testing window (between the first day of ELA testing and the last day of testing for Mathematics or STE), (2) the student missed at least one entire session of the test in question, and (3) the student was not medically excused or absent for the test in question.

How are absent students treated in MCAS performance results?

The federal Elementary and Secondary Education Act requires that absent students be counted as non-participants for school and district accountability calculations. Schools are placed in a lower accountability level if their participation rates fall below 95% or 90% in the aggregate or for a subgroup.