



Spring 2014 MCAS Tests: Summary of State Results

September 2014



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Executive Summary

The seventeenth administration of the Massachusetts Comprehensive Assessment System (MCAS) tests took place in spring 2014.

Participation

A total of 541,643 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 2014, 8,892 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 nominally on six of the 17 MCAS tests administered in 2014. Between 2013 and 2014, the percentage of students scoring *Proficient* or higher² improved in ELA at grades 4, 6, and 8; in Mathematics at grade 3; and in STE at grades 5 and 8. The only annual changes greater than two percentage points were in grade 8 Mathematics, where results fell three points after rising three points the year before, and grade 8 STE, where results rose by three points after falling four points the year before.

Long-term Trends in Achievement

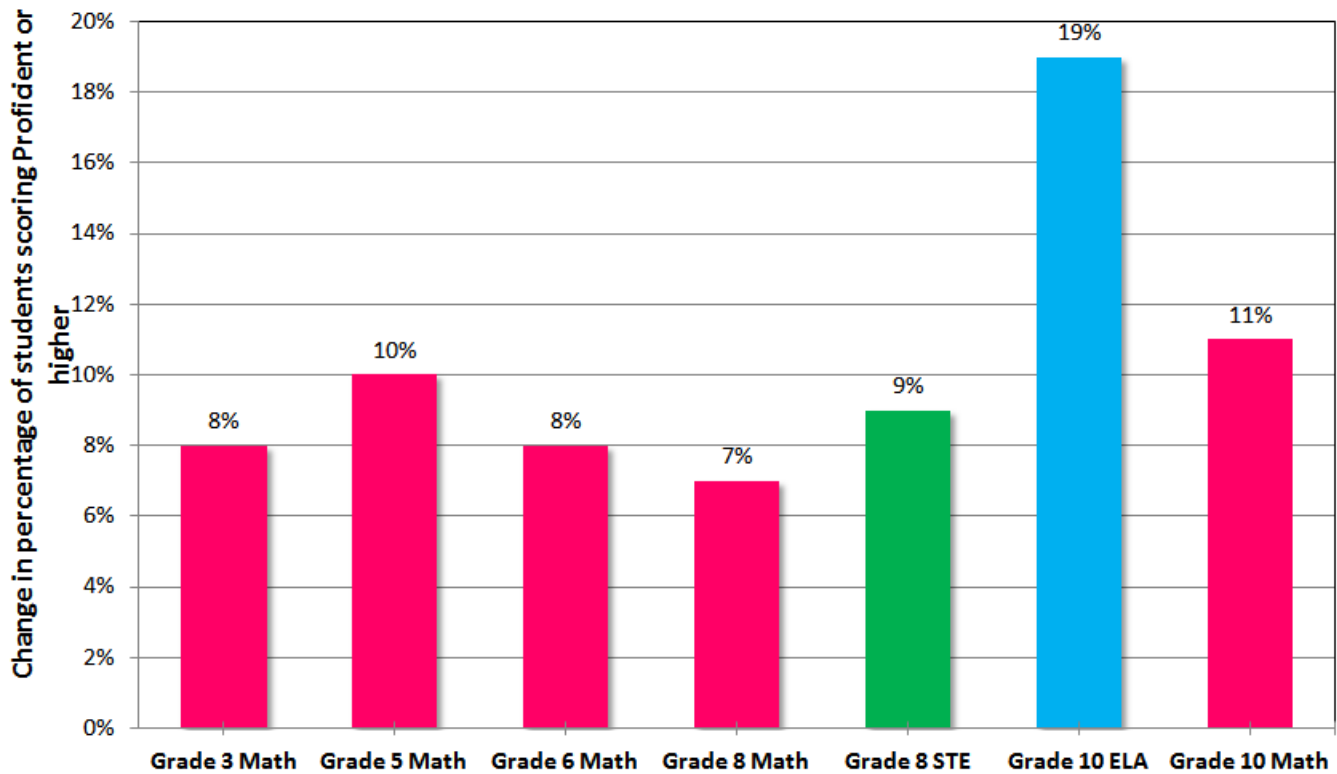
Because measures of student achievement often change incrementally over short periods of time, the Department is presenting a series of eight-year views in this report in order to reveal achievement trends that have occurred over multiple years. Over the eight-year period of MCAS assessments from 2007 to 2014, an increase of five or more percentage points indicates improvement that has been sustained, while a decrease of five or more percentage points indicates that a potentially meaningful decline has occurred. The grades and subject areas in which the percentage of students scoring *Proficient* or higher changed by five or more points over the last eight 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, 2007–2014



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

In ELA:

- Grade 10 increased from 71 to 90 percent *Proficient* or higher.

In Mathematics:

- Grade 3 increased from 60 to 68 percent *Proficient* or higher.
- Grade 5 increased from 51 to 61 percent *Proficient* or higher.
- Grade 6 increased from 52 to 60 percent *Proficient* or higher.
- Grade 8 increased from 45 to 52 percent *Proficient* or higher.
- Grade 10 increased from 68 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 90 percent in 2014, and in Mathematics from 24 percent in 1998 to 79 percent in 2014. 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 70 percent in 2014.

Among students in the class of 2016 participating in MCAS to earn a Competency Determination, 88 percent of students scored *Needs Improvement* or higher on the ELA, Mathematics, and STE high school tests, a two percentage point increase compared to students in 2010 in 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, 91 percent of students scored *Needs Improvement* or higher, which was unchanged 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.

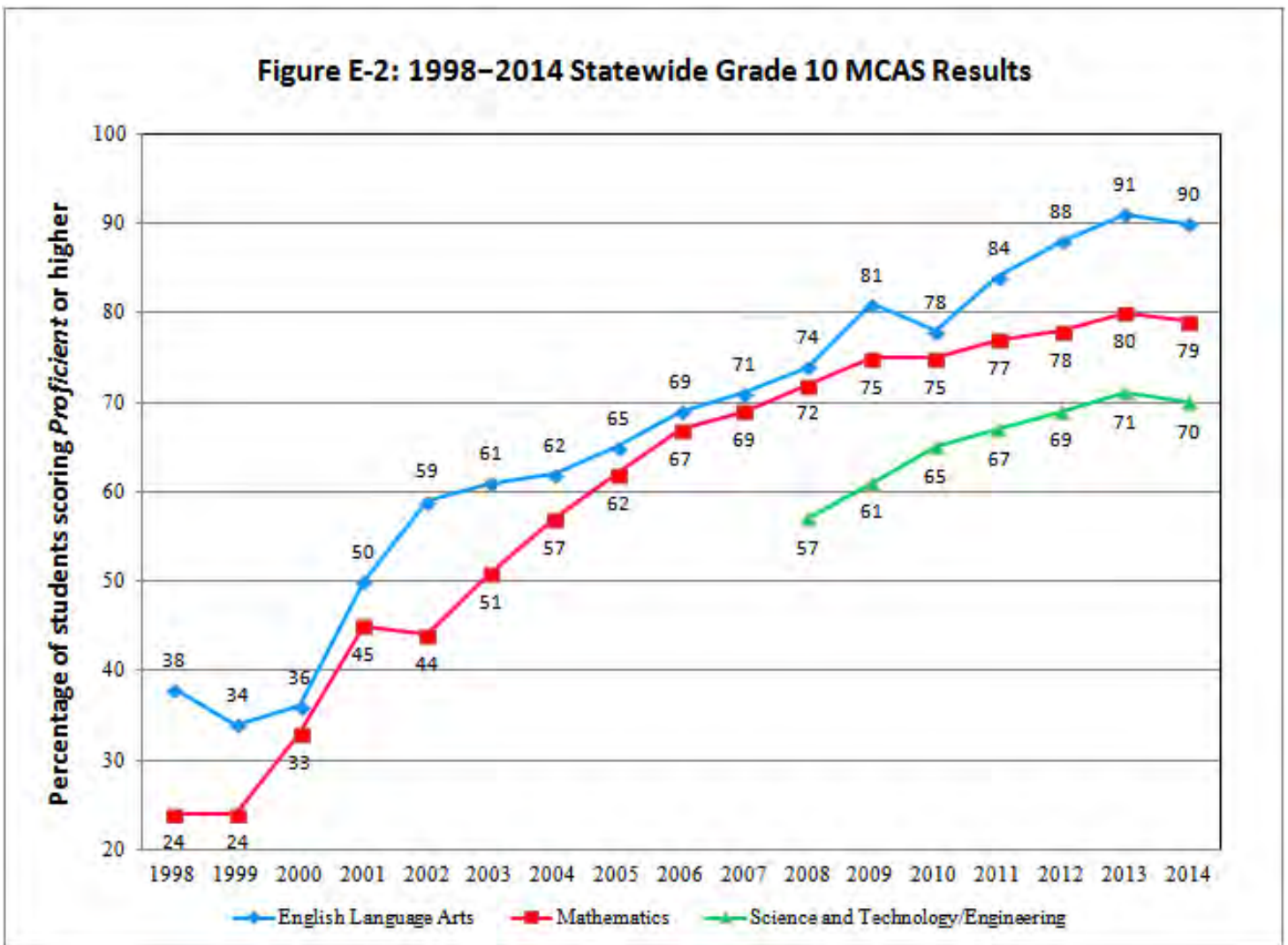


Table E-1 below shows ELA, Mathematics, and STE results at all grade levels for each test since its inception.

**Table E-1: 1998–2014 Statewide MCAS Test Results
Percentage of Students Scoring *Proficient* or Higher**

Grade	Year	English Language Arts	Mathematics	Science and Technology/Engineering
Grade 3	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	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	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	2014	68	60	–
	2013	67	61	–
	2012	66	60	–
	2011	68	58	–
	2010	69	59	–
	2009	66	57	–
	2008	67	56	–
2007	67	52	–	

**Table E-1: 1998–2014 Statewide MCAS Test Results
Percentage of Students Scoring *Proficient* or Higher**

Grade	Year	English Language Arts	Mathematics	Science and Technology/Engineering
Grade 6	2006	64	46	–
	2005	–	46	–
	2004	–	43	–
	2003	–	42	–
	2002	–	41	–
	2001	–	36	–
Grade 7	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	2014	79	52
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	2014	90	79	70
	2013	91	80	71
	2012	88	78	69
	2011	84	77	67
	2010	78	75	65
	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	–

**Table E-1: 1998–2014 Statewide MCAS Test Results
Percentage of Students Scoring *Proficient* or Higher**

Grade	Year	English Language Arts	Mathematics	Science and Technology/Engineering
Grade 10^a	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. 2014 MCAS at a Glance

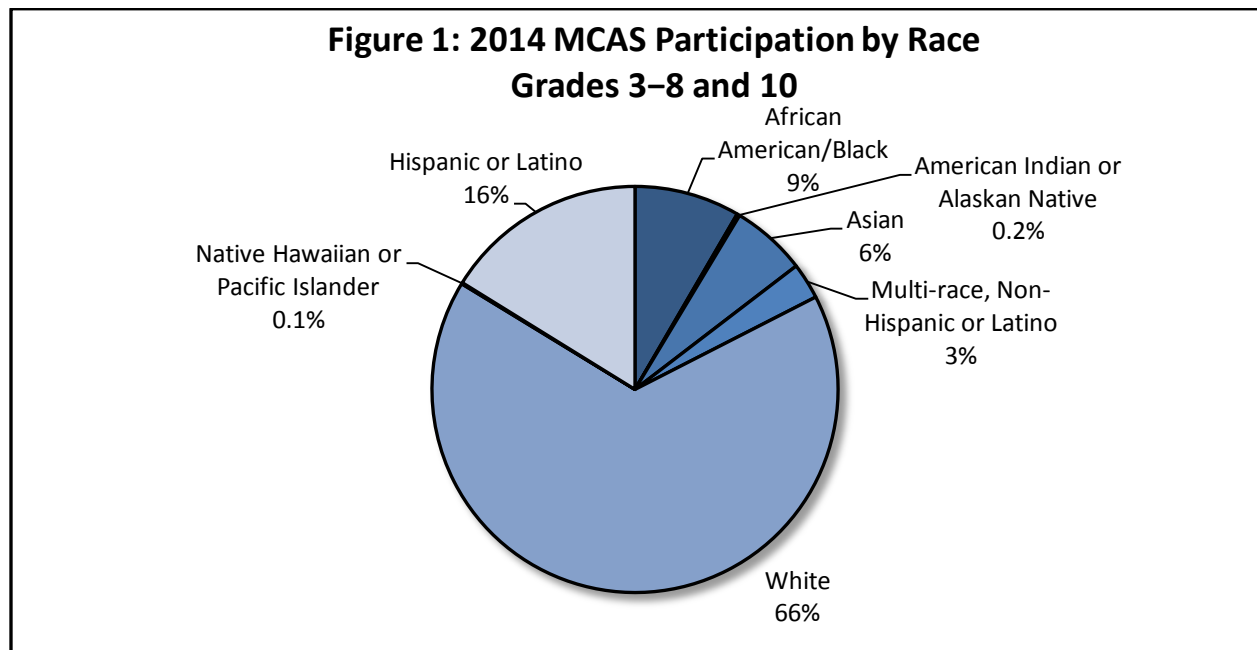
What is MCAS?

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?

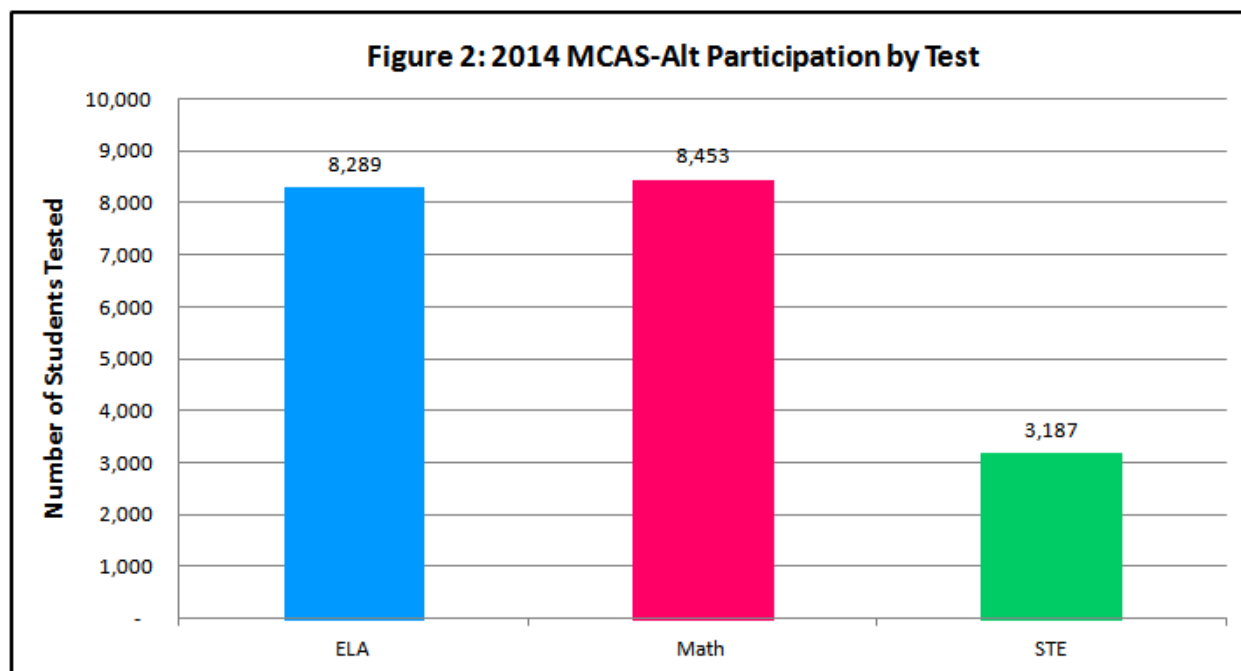
All students who are enrolled in the tested grades and who are educated at public expense are required by state and federal law to participate in MCAS testing. Figure 1 and the table below show the number and percentage of students by race who took the 2014 MCAS tests in ELA, Mathematics, and STE in grades 3–8 and 10.



MCAS Participation by Race, Grades 3-8 and 10	Number of Students	Percent of Total
African American/Black	41,143	9%
American Indian or Alaskan Native	1,092	0.2%
Asian	29,296	6%
Multi-race, non-Hispanic or Latino	14,112	3%
White	324,591	66%
Native Hawaiian or Pacific Islander	500	0.1%
Hispanic or Latino	79,311	16%
Total	490,045	

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 2014?

In 2014, 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 below shows the MCAS tests administered at each grade level in 2014.

Table 1: 2014 MCAS Tests Administered by Grade Level

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 2014.

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 below 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	72
Mathematics	31	16	6			53
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	72
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 Chemistry and Technology/Engineering tests in 2009 and Chemistry in 2014, 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 2014, the first testing period was March 18–31 for tests in English Language Arts. The second testing period was May 5–20 for tests in Mathematics and May 6–20 for tests in grades 5 and 8 Science and Technology/Engineering. The third testing period was June 2–6 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.

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

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.

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 below provides the scaled score point ranges and their corresponding achievement levels.

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.

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 2014 Statewide MCAS Results

In spring 2014, 541,643 Massachusetts public school students in grades 3–10 participated in the seventeenth 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.

Achievement Level Results by Subject

English Language Arts

Table 5 summarizes the percentage changes in ELA achievement by students statewide between 2007 and 2014. Data for 2013 are included to illustrate the one-year trend.

Student achievement in ELA⁶ improved statewide between 2007 and 2014 at grades 5, 6, 7, 8, and 10, and decreased at grades 3 and 4. Achievement in ELA improved markedly at grade 10, as the percentage of students scoring *Proficient* or higher increased by 19 percentage points.

The percentage of students statewide scoring *Proficient* or higher in 2014 ranged from a low of 54 percent at grade 4 to a high of 90 percent at grade 10.

Table 5: 2007–2014 Statewide MCAS English Language Arts Results

Grade	Percentage of Students Scoring <i>Proficient</i> or Higher			Percentage Point Change, 2007 to 2014
	2007	2013	2014	
Grade 3	59	57	57	-2
Grade 4	56	53	54	-2
Grade 5	63	66	64	+1
Grade 6	67	67	68	+1
Grade 7	69	72	72	+3
Grade 8	75	78	79	+4
Grade 10	71	91	90	+19

Mathematics

Table 6 summarizes the percentage changes in Mathematics achievement by students statewide between 2007 and 2014. Data for 2013 are included to illustrate the one-year trend.

Student achievement in Mathematics improved at all grade levels between 2007 and 2014. Achievement in Mathematics improved by 10 percentage points at grades 5 and 10; eight percentage points at grades 3 and 6; seven percentage points at grade 8; and four percentage points at grades 4 and 7.

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.

The percentage of students scoring *Proficient* or higher in 2014 ranged from a low of 50 percent at grade 7 to a high of 79 percent at grade 10.

Table 6: 2007–2014 Statewide MCAS Mathematics Results

Grade	Percentage of Students Scoring <i>Proficient</i> or Higher			Percentage Point Change, 2007 to 2014
	2007	2013	2014	
Grade 3	60	66	68	+8
Grade 4	48	52	52	+4
Grade 5	51	61	61	+10
Grade 6	52	61	60	+8
Grade 7	46	52	50	+4
Grade 8	45	55	52	+7
Grade 10	69	80	79	+10

Science and Technology/Engineering

Table 7 summarizes the percentage changes in STE achievement by students statewide between 2007 and 2014. Data for 2013 are included to illustrate the one-year trend.

Student achievement in STE improved statewide at grades 5 and 8 between 2007 and 2014. Achievement in STE improved by nine percentage points at grade 8, and by two percentage points at grade 5. 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 2014 ranged from a low of 42 percent at grade 8 to a high of 70 percent at grade 10.

Table 7: 2007–2014 Statewide MCAS Science and Technology/Engineering Results

Grade	Percentage of Students Scoring <i>Proficient</i> or Higher			Percentage Point Change, 2007 to 2014
	2007	2013	2014	
Grade 5	51	51	53	+2
Grade 8	33	39	42	+9
Grade 10	n/a	71	70	

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 2014 in the ELA proficiency gap between African American/Black students and white students, and between Hispanic or Latino students and white students. Data for 2013 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 2014. The greatest narrowing of the gap was seen at grade 10, where it decreased by 15 percentage points for African American/Black students and by 16 percentage points for Hispanic or Latino students.

Table 8: 2007–2014 Statewide MCAS English Language Arts Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher

Grade	Percentage of Students Scoring <i>Proficient</i> or Higher						Eight-Year Between-Group Gap		
	African American/Black			White			2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	36	33	38	66	65	65	30	27	-3
Grade 4	31	32	34	63	61	61	32	27	-5
Grade 5	39	46	43	70	72	71	31	28	-3
Grade 6	42	45	49	75	75	75	33	26	-7
Grade 7	48	53	56	76	79	78	28	22	-6
Grade 8	55	61	63	82	84	85	27	22	-5
Grade 10	47	83	79	77	95	94	30	15	-15

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

Table 9: 2007–2014 Statewide MCAS English Language Arts Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher

Grade	Percentage of Students Scoring <i>Proficient</i> or Higher						Eight-Year Between-Group Gap		
	Hispanic or Latino			White			2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	32	31	34	66	65	65	34	31	-3
Grade 4	28	30	31	63	61	61	35	30	-5
Grade 5	34	43	40	70	72	71	36	31	-5
Grade 6	38	40	45	75	75	75	37	30	-7
Grade 7	42	48	50	76	79	78	34	28	-6
Grade 8	48	56	58	82	84	85	34	27	-7
Grade 10	43	78	76	77	95	94	34	18	-16

^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 2014 in the Mathematics proficiency gap between African American/Black students and white students, and between Hispanic or Latino students and white students. Data for 2013 are included to illustrate the one-year trend.

Between 2007 and 2014 in Mathematics, the between-group gap in the percentage of students scoring *Proficient* or higher for African American/Black students narrowed at all grades except grade 5, where it increased marginally. The gap for Hispanic or Latino students narrowed at all grades. The greatest change in the gap occurred at grade 3, where it narrowed by seven percentage points for African American/Black students and by nine percentage points for Hispanic or Latino students.

Grade	African American/Black			White			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	35	45	49	67	73	74	32	25	-7
Grade 4	22	28	30	54	58	58	32	28	-4
Grade 5	26	37	36	57	67	68	31	32	+1
Grade 6	27	39	37	60	67	66	33	29	-4
Grade 7	19	28	26	52	59	57	33	31	-2
Grade 8	19	33	30	52	61	58	33	28	-5
Grade 10	45	60	60	75	86	85	30	25	-5

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

Grade	Hispanic or Latino			White			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	34	47	50	67	73	74	33	24	-9
Grade 4	24	30	33	54	58	58	30	25	-5
Grade 5	25	40	37	57	67	68	32	31	-1
Grade 6	25	37	37	60	67	66	35	29	-6
Grade 7	19	27	26	52	59	57	33	31	-2
Grade 8	18	31	29	52	61	58	34	29	-5
Grade 10	42	57	56	75	86	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 2014 in the STE proficiency gap between African American/Black students and white students, and between Hispanic or Latino students and white students. Data for 2013 are included to illustrate the one-year trend.

From 2007 to 2014 in STE, the between-group gap in the percentage of students scoring *Proficient* or higher for African American/Black students narrowed by three percentage points at grade 5 and increased marginally at grade 8. For Hispanic or Latino students, the between-group gap narrowed by four percentage points at grade 5 and remained unchanged at grade 8. Since the high school STE test was first administered in 2008, achievement data is not available for 2007.

**Table 12: 2007–2014 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			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						Percentage of Students Scoring <i>Proficient</i> or Higher			2007	2014	Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014	2007	2013	2014			
Grade 5	20	24	26	59	59	62	39	36			-3	
Grade 8	9	17	17	39	46	49	30	32			+2	
Grade 10 ^b	n/a	47	47	n/a	78	79						

^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: 2007–2014 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			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						Percentage of Students Scoring <i>Proficient</i> or Higher			2007	2014	Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014	2007	2013	2014			
Grade 5	20	25	27	59	59	62	39	35			-4	
Grade 8	8	16	18	39	46	49	31	31			0	
Grade 10 ^b	n/a	41	42	n/a	78	79						

^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 2014 in the ELA, Mathematics, and STE proficiency gaps between students with disabilities and all students. Data for 2013 are included to illustrate the one-year trend.

From 2007 to 2014 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 13 percentage points, and increased by four percentage points at grade 3. In all other grades, the between-group gap increased marginally or remained unchanged. In Mathematics, the between-group gap increased by five percentage points at grade 5; increased by four percentage points at grades 6 and 7; and increased marginally or remained unchanged at grades 3, 4, 8, and 10. In STE, the between-group gap increased

marginally at grade 5 and increased by five 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: 2007–2014 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			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	27	19	21	59	57	57	32	36	+4
Grade 4	19	14	16	56	53	54	37	38	+1
Grade 5	25	24	24	63	66	64	38	40	+2
Grade 6	27	25	25	67	67	68	40	43	+3
Grade 7	28	29	30	69	72	72	41	42	+1
Grade 8	36	38	40	75	78	79	39	39	0
Grade 10	30	66	63	70	91	90	40	27	-13

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

**Table 15: 2007–2014 Statewide MCAS Mathematics Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	Students with Disabilities			All Students			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	28	30	34	60	67	68	32	34	+2
Grade 4	17	18	19	48	52	52	31	33	+2
Grade 5	17	22	22	51	61	61	34	39	+5
Grade 6	16	20	19	53	61	60	37	41	+4
Grade 7	12	14	12	46	52	50	34	38	+4
Grade 8	9	15	13	45	55	52	36	39	+3
Grade 10	31	40	41	69	80	79	38	38	0

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

**Table 16: 2007–2014 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			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 5	22	19	21	51	51	53	29	32	+3
Grade 8	8	11	12	33	39	42	25	30	+5
Grade 10 ^b	n/a	33	33	n/a	71	71			

^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 2014 in the ELA, Mathematics, and STE proficiency gaps between ELL students and all students. Data for 2013 are included to illustrate the one-year trend.

From 2007 to 2014 in ELA, the between-group gap in the percentage of students scoring *Proficient* or higher for ELL students narrowed at all grades. The greatest narrowing of the between-group gap was seen at grades 3, 7, and 8, where it decreased by five or six percentage points. At grades 4, 5, 6, and 10, the between-group gap decreased by four percentage points.

In Mathematics, the between-group gap for ELL students narrowed by eight percentage points at grade 3, and narrowed marginally at grade 4. The gap widened by five percentage points at grade 5 and by six percentage points at grade 10. In STE, the gap for ELL students was unchanged 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: 2007–2014 Statewide MCAS English Language Arts Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	ELL Students			All Students			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	22	19	25	59	57	57	37	32	-5
Grade 4	17	17	19	56	53	54	39	35	-4
Grade 5	16	23	21	63	66	64	47	43	-4
Grade 6	15	17	20	67	67	68	52	48	-4
Grade 7	15	19	24	69	72	72	54	48	-6
Grade 8	17	23	26	75	78	79	58	53	-5
Grade 10	12	43	36	70	91	90	58	54	-4

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

**Table 18: 2007–2014 Statewide MCAS Mathematics Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	ELL Students			All Students			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	30	39	46	60	67	68	30	22	-8
Grade 4	18	22	25	48	52	52	30	27	-3
Grade 5	19	27	24	51	61	61	32	37	5
Grade 6	15	24	21	53	61	60	38	39	1
Grade 7	10	12	13	46	52	50	36	37	1
Grade 8	10	16	14	45	55	52	35	38	3
Grade 10	27	27	31	69	80	79	42	48	6

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

**Table 19: 2007–2014 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			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 5	10	11	12	51	51	53	41	41	0
Grade 8	3	3	4	33	39	42	30	38	8
Grade 10 ^b	n/a	16	13	n/a	71	71			

^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: Low-Income Students

Tables 20–22 summarize changes that occurred between 2007 and 2014 in the ELA, Mathematics, and STE proficiency gaps between low-income students and all students. Data for 2013 are included to illustrate the one-year trend.

From 2007 to 2014 in ELA, the between-group gap in the percentage of students scoring *Proficient* or higher for low-income students narrowed at all grades. The between-group gap decreased by 13 percentage points at grade 10 and by five percentage points at grades 4–8. The gap in Mathematics for low-income students narrowed at all grades. In STE, the gap for low-income students also narrowed at all tested grades.

**Table 20: 2007–2014 Statewide MCAS English Language Arts Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher**

Grade	Low-Income Students			All Students			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	36	34	38	59	57	57	23	19	-4
Grade 4	31	32	34	56	53	54	25	20	-5
Grade 5	38	46	44	63	66	64	25	20	-5
Grade 6	43	46	49	67	67	68	24	19	-5
Grade 7	46	52	54	69	72	72	23	18	-5
Grade 8	54	61	63	75	78	79	21	16	-5
Grade 10	47	82	80	70	91	90	23	10	-13

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

Table 21: 2007–2014 Statewide MCAS Mathematics Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher

Grade	Low-Income Students			All Students			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 3	38	49	52	60	67	68	22	16	-6
Grade 4	27	32	34	48	52	52	21	18	-3
Grade 5	29	41	41	51	61	61	22	20	-2
Grade 6	29	41	40	53	61	60	24	20	-4
Grade 7	22	30	28	46	52	50	24	22	-2
Grade 8	22	34	32	45	55	52	23	20	-3
Grade 10	47	63	61	69	80	79	22	18	-4

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

Table 22: 2007–2014 Statewide MCAS Science and Technology/Engineering Results
Change in Between-Group Gap in Percentage of Students Scoring *Proficient* or Higher

Grade	Low-Income Students			All Students			Eight-Year Between-Group Gap		
	Percentage of Students Scoring <i>Proficient</i> or Higher						2007	2014	Between-Group Gap Change, 2007–2014 ^a
	2007	2013	2014	2007	2013	2014			
Grade 5	25	30	31	51	51	53	26	22	-4
Grade 8	11	19	21	33	39	42	22	21	-1
Grade 10 ^b	n/a	50	49	n/a	71	71			

^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 2013–2014, the assessment options included locally developed end-of-course assessments, locally scored grade 10 MCAS test forms designed for the EPP, the March 2014 MCAS retest in ELA only, and College Board’s Accuplacer.)

Students in the class of 2010 and beyond also must 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 23 displays the cumulative percentage of all students and student subgroups in the class of 2016 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 2014 test administration. In 2014, 88 percent of students in the class of 2016 performed at the *Needs Improvement* level or higher in all three subjects by the end of grade 10. This represents the same percentage of students compared to the class of 2015, and a two-point increase over the class of 2014.⁷

⁷ The achievement figures for students in the class of 2016 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 2016 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 23: 2014 Statewide MCAS Results: Class of 2016
Percentage of Students Scoring *Needs Improvement* or Higher in ELA, Mathematics, and STE
through the Spring 2014 Administration

Subgroup	Class of 2016					Class of 2015 ^a	Class of 2014 ^a
	ELA	Math	ELA and Math	STE	All Three Tests	All Three Tests	All Three Tests
All Students	95	91	90	93	88	88	86
Gender							
Female	96	93	92	94	90	89	88
Male	94	90	89	92	87	87	85
Race/Ethnicity							
African American/Black	92	84	82	86	78	76	73
Asian	96	95	94	95	92	91	90
Native Hawaiian, Pacific Islander	95	95	95	93	93	84	79
Hispanic or Latino	88	79	77	82	73	71	67
Multi-Race, Non-Hispanic or Latino	96	92	91	94	89	88	87
Amer. Ind. or Alaska Nat.	98	89	88	91	85	87	77
White	97	95	94	96	93	92	92
Student Status							
High Needs	91	83	81	86	77	76	73
Non-Disabled	98	96	95	96	93	93	92
Students with Disabilities	84	71	69	77	64	61	60
English Language Learner (ELL)	69	59	51	60	44	41	43
Former ELL	96	88	88	90	84	82	80
ELL and Former ELL	78	68	62	70	56	53	51
Low Income	92	84	82	86	78	77	75

^a To provide comparable data, results for the classes of 2015 and 2014 are based on MCAS tests through the spring 2013 and spring 2012 administrations, respectively.

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 white students at 93 percent, followed by Asian students at 92 percent, African American/Black students at 78 percent, and Hispanic or Latino students at 73 percent—all representing increases over the class of 2015. When results for the class of 2016 are compared to those for the class of 2015, African American/Black students and Hispanic or Latino students showed the highest percentage increase, at two percent. The other major racial/ethnic subgroups increased by one percent.
- Seventy-eight percent of low-income students performed at the *Needs Improvement* level or higher in all three subjects, followed by 77 percent of high-needs students, 64 percent of students with disabilities, and 44 percent of ELL students. All of these subgroups demonstrated an increase over the class of 2015 in the percentage scoring *Needs Improvement* or higher in all three subjects, with the highest increase among students with disabilities.

Table 24 shows the number and cumulative percentage of students in the class of 2016 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 2014 test administration. Seventy-five percent of students in the class of 2016 have earned a CD 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. For the individual components of the CD requirement, 87 percent of students performed at the *Proficient* level or higher in ELA, 77 percent of students performed at the *Proficient* level or higher in Mathematics, and 93 percent of students performed at the *Needs Improvement* level or higher in STE.

CD Requirement	Number	Percent
Earned CD	53,729	75
ELA and Mathematics <i>Proficient</i> or Higher	53,996	75
ELA <i>Proficient</i> or Higher	63,017	87
Mathematics <i>Proficient</i> or Higher	55,403	77
STE <i>Needs Improvement</i> or Higher	66,981	93

III. 2014 Statewide MCAS Participation Results

Students Tested

Table 25 presents information on the number and percentage of enrolled students who participated in the spring 2014 MCAS tests. The figures include participation rates for all enrolled students educated with public funds, including regular education students, students with disabilities, and ELL students. As in previous years, participation rates were very high, ranging from 98 to 100 percent.

Grade	English Language Arts		Mathematics		Science and Technology/Engineering^b	
	Number	Percent	Number	Percent	Number	Percent
Grade 3	68,900	100	68,801	100		
Grade 4	69,615	100	70,119	100		
Grade 5	70,380	100	70,378	100	71,514	100
Grade 6	70,173	100	70,439	100		
Grade 7	71,258	99	71,613	99		
Grade 8	71,659	99	71,933	99	72,600	99
Grade 10	71,116	98	71,295	98	71,860	99

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

^b Grade 10 STE figures include students in the class of 2015 who participated in an STE test in grade 9 in 2013 or grade 10 in 2014; 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 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.