NAEP

MASSACHUSETTS

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

2007 NAEP Tests:

Summary of Results for Massachusetts

MASSACHUSETTS DEPARTMENT OF EDUCATION

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Jeffrey Nellhaus, Acting Commissioner of Education

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Commissioner's Foreword

September 25, 2007

Dear Interested Parties:

I am pleased to announce the state results of the 2007 National Assessment of Educational Progress (NAEP), also known as "The Nation's Report Card." NAEP results provide policymakers, educators, business leaders, and parents the opportunity to draw comparisons of student performance in core academic subjects across states. During winter 2007, a representative sample of more than 18,800 students in Massachusetts took a NAEP test in reading or mathematics at grades 4 and 8, or writing at grade 8. In this report, we announce reading and mathematics results from the 2007 NAEP assessment. Grade 8 writing results will be reported in spring 2008.

The results of the 2007 NAEP tests are very encouraging. Massachusetts' fourth-grade students outscored their peers in all 49 states in reading and mathematics. At grade 8, students in Massachusetts scored first in mathematics, higher than students in the other 49 states, and tied for first in reading with three other states. While our standing among the rest of the nation is noteworthy, equally important is the improvement these scores show over 2005 results. In reading at grade 4 and mathematics at grades 4 and 8, both the average scaled scores and percents of Massachusetts' students scoring *Proficient* and above increased significantly since 2005.

With this positive news comes cause for concern. The scores gains made by Massachusetts' students in 2007 were not observed for all racial/ethnic groups. For example, while the average scaled scores of white students improved in reading at grade 4 and mathematics at grades 4 and 8, the scores for Hispanic students were flat at grade 8, and the scores for African American/black students were flat on all four tests.

Our success as a state will be measured by our ability to move all students to proficiency and beyond. To ensure that all students have access to and achieve a world-class education, we must devise innovative strategies for improving student performance across all racial/ethnic groups. Attaining this ambitious goal will require a cooperative and sustained effort among school administrators, teachers, leaders in government and business, parents, community members, and students.

Sincerely,

Jeffrey Nellhaus
Acting Commissioner of Education

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I. Executive Summary of the 2007 NAEP State Results

The National Assessment of Educational Progress (NAEP), also known as "The Nation's Report Card," is the only nationally representative and continuing assessment of what America's students know and can do in various subjects. NAEP assesses representative samples of students at grades 4, 8, and 12 in core academic subjects.

In 2007, more than 18,800 Massachusetts public school students in grades 4 and 8 participated in the Massachusetts administration of the National Assessment of Educational Progress (NAEP). Tests were administered in reading and mathematics at grades 4 and 8, and in writing at grade 8. State-level results for reading and mathematics are provided in this report.

- Interpreting this Report

When reviewing this report, it is important to keep in mind that the NAEP results are based on a representative *sample* of students across Massachusetts, not the *population* of Massachusetts students.

In analyzing these data, tests of significance were employed to determine what differences in the data could be confidently characterized as *not occurring by chance*. This type of difference is commonly referred to as a *significant* difference. In the text of this report, any comparison where one number is described as higher or lower than another number, or where a group of students is described as having outperformed or outscored another group of students, indicates the difference was significant at the $p<.05$ level. In the report's tables, an asterisk is used to denote a value that is significantly different than the value for the same jurisdiction in 2007.

- Overall Performance

Massachusetts ranked first alone among all states on three of the four 2007 NAEP tests, and tied for first on the fourth NAEP test.

- Based upon average scaled scores, Massachusetts scored statistically higher than the other 49 states in reading at grade 4, and mathematics at grades 4 and 8. In reading at grade 8, Massachusetts tied for first in the nation with three other states (Montana, New Jersey, and Vermont).
- In reading at grade 4 and mathematics at grades 4 and 8, the percent of Massachusetts students performing at or above *Proficient* was higher than the *Proficient* and above percents in the other 49 states. In reading at grade 8, the percent of Massachusetts students performing at or above *Proficient* was higher than the *Proficient* and above percents in 46 states and not found to differ significantly from the *Proficient* and above percents in the remaining 3 highest performing states (Montana, New Jersey, and Vermont).

The average scaled score for Massachusetts in 2007 was higher than the national average on all four NAEP tests.

- The average scaled score of Massachusetts fourth-grade students on the Reading Assessment was 236, higher than the national average of 220. Eighth-grade

Massachusetts students (273) also outscored their counterparts nationwide in reading (261).

- In mathematics, Massachusetts fourth-graders had an average scaled score of 252, higher than the national average of 239. Eighth-grade students scored 298, higher than the national average for eighth-graders (280).

In Massachusetts, more than 43% of students scored Proficient *and above in reading in 2007, and more than 50% of students scored* Proficient *and above in mathematics.*

- In reading, 49 percent of Massachusetts fourth-grade students and 43 percent of eighth-grade students scored at or above the *Proficient* level in 2007. Comparatively only 32 percent of fourth-grade students and 29 percent of eighth-grade students nationally performed similarly.
- In mathematics, 58 percent of Massachusetts fourth-grade students and 51 percent of eighth-grade students performed at or above the *Proficient* level. Across the nation, 39 percent of fourth-graders and 31 percent of eighth-graders performed similarly.

- Change in Performance between 2005 and 2007

In reading, the 2007 performance of Massachusetts students improved at grade 4 but did not change significantly at grade 8 as compared with 2005 performance. In mathematics, Massachusetts student performance in 2007 rose from 2005's performance at both grades 4 and 8. Table 1 below lists the change in performance of students in Massachusetts on the NAEP reading and mathematics tests at grades 4 and 8 between 2005 and 2007.

Table 1
2005 & 2007 Massachusetts NAEP Results
Average Scaled Scores and Percents of Students at Each Achievement Level

		Average Scaled Score	Percent of Students			
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*
READING						
Grade 4	2007	236	16	49	81	19
	2005	231*	12*	44*	78*	22*
Grade 8	2007	273	4	43	84	16
	2005	274	5	44	83	17
MATHEMATICS						
Grade 4	2007	252	11	58	93	7
	2005	247*	8*	49*	91*	9*
Grade 8	2007	298	15	51	85	15
	2005	292*	11*	43*	80*	20*

* Denotes a value that is significantly different from the value for 2007.

The NAEP reading and mathematics scales range from 0 to 500. Achievement levels correspond to the following points on the NAEP scale:

Reading, Grade 4: *Basic*, 208–237; *Proficient*, 238–267; and *Advanced*, 268 and above.
Reading, Grade 8: *Basic*, 243–280; *Proficient*, 281–322; and *Advanced*, 323 and above.
Mathematics, Grade 4: *Basic*, 214–248; *Proficient*, 249–281; and *Advanced*, 282 and above.
Mathematics, Grade 8: *Basic*, 262–298, *Proficient*, 299–332; and *Advanced*, 333 and above.

- Change in Subgroup Performance between 2005 and 2007

Table 2 displays the change in average scaled scores by subgroup (gender, race/ethnicity, disability status, language status, lunch status) between 2005 and 2007.

Table 2
2005 & 2007 Massachusetts NAEP Results
Change in Average Scaled Scores, by Subgroup

	GRADE 4			GRADE 8		
	Average Scaled Score			Average Scaled Score		
	2005	2007	Change	2005	2007	Change
READING						
All students	231	236	↑	274	273	=
Female	233	238	↑	278	278	=
Male	230	233	↑	269	269	=
White	237	241	↑	279	278	=
Black	211	211	=	253	253	=
Hispanic	203	209	↑	246	251	=
Asian	234	241	=	282	281	=
Students with disabilities	208	213	=	246	246	=
Non-disabled	235	239	↑	278	277	=
Limited English Proficient	198	205	=	222	232	=
Lunch eligible	211	214	↑	256	256	=
MATHEMATICS						
All students	245	252	↑	292	298	↑
Female	247	251	↑	292	296	=
Male	248	254	↑	291	300	↑
White	252	257	↑	297	305	↑
Black	228	232	=	263	264	=
Hispanic	225	231	↑	265	270	=
Asian	258	259	=	314	315	=
Students with disabilities	230	238	↑	264	271	=
Non-disabled	251	255	↑	295	301	↑
Limited English Proficient	226	230	=	242	251	=
Lunch eligible	231	237	↑	273	275	=

↑ Score increased significantly between 2005 and 2007.
↓ Score decreased significantly between 2005 and 2007.
= There was no significant difference between 2005 and 2007.

The NAEP reading and mathematics scales range from 0 to 500. Achievement levels correspond to the following points on the NAEP scale:
Reading, Grade 4: *Basic*, 208–237; *Proficient*, 238–267; and *Advanced*, 268 and above.
Reading, Grade 8: *Basic*, 243–280; *Proficient*, 281–322; and *Advanced*, 323 and above.
Mathematics, Grade 4: *Basic*, 214–248; *Proficient*, 249–281; and *Advanced*, 282 and above.
Mathematics, Grade 8: *Basic*, 262–298, *Proficient*, 299–332; and *Advanced*, 333 and above.

- Racial Performance Gaps

Between 2005 and 2007, there were no significant changes in the performance gaps between white and African American/black students in reading and mathematics at grades 4 and 8. Table 3 displays the White–African American/Black performance gap change between 2005 and 2007.

Table 3
2005–2007 Massachusetts NAEP Reading Results
Performance Gap Change (in average scaled score points)

	African American / Black		White		White – African American / Black Difference[1]		
	Average Scaled Score				2005	2007	Performance Gap Change, 2005-2007
	2005	2007	2005	2007			
READING							
Grade 4	211	211	237*	241	26	31	+5
Grade 8	253	253	279	278	26	25	-1
MATHEMATICS							
Grade 4	228	232	252*	257	24	25	+1
Grade 8	263	264	297*	305	34	40	+6

[1] Score differences are calculated based on differences between unrounded average scaled scores. Therefore, details in the difference in performance gaps may not sum to total due to rounding.
* Denotes a value that is significantly different from the value for 2007.

Similarly, the performance gap change between white and Hispanic students did not change significantly between 2005 and 2007. Table 4 displays the White–Hispanic performance gap change between 2005 and 2007.

Table 4
2005–2007 Massachusetts NAEP Reading Results
Performance Gap Change (in average scaled score points)

	Hispanic		White		White – Hispanic Difference[1]		
	Average Scaled Score				2005	2007	Performance Gap Change, 2005-2007
	2005	2007	2005	2007			
READING							
Grade 4	203*	209	237*	241	35	32	-3
Grade 8	246	251	279	278	32	27	-5
MATHEMATICS							
Grade 4	225*	231	252*	257	27	26	-1
Grade 8	265	270	297*	305	32	35	+2

[1] Score differences are calculated based on differences between unrounded average scaled scores. Therefore, details in the difference in performance gaps may not sum to total due to rounding.
* Denotes a value that is significantly different from the value for 2007.

- Percent of Students Performing at or above *Proficient* in the Top Performing States[1]

	GRADE 4			GRADE 8	
Reading	**Massachusetts**	**49**		**Massachusetts**	**43**
	New Jersey	43		Vermont	42
	Connecticut	41		New Jersey	39
	New Jersey	41		Montana	39
	Vermont	41		New Hampshire	37
	Pennsylvania	40		Connecticut	37
	Montana	39		Maine	37
	(NATION	*32)*		*(NATION*	*29)*

	GRADE 4			GRADE 8	
Mathematics	**Massachusetts**	**58**		**Massachusetts**	**51**
	New Jersey	52		Minnesota	43
	New Hampshire	52		Vermont	41
	Kansas	51		North Dakota	41
	Minnesota	51		New Jersey	40
	Vermont	49		Kansas	40
	Pennsylvania	47		South Dakota	39
	(NATION	*39)*		*(NATION*	*31)*

Note: The bold line indicates the states that were determined to be statistically different than Massachusetts when examining the percent of students performing at or above *Proficient*. For instance, in grade 8 Reading, the percent of students performing at or above *Proficient* in three states (Vermont, New Jersey, and Montana) was not significantly different than in Massachusetts. In all other states, the percent of students performing at or above *Proficient* was statistically lower than in Massachusetts.

[1] For scaled score comparisons and significance testing, see pages 16-17.

II. Background on the NAEP Assessments

The National Assessment of Educational Progress (NAEP), also known as "The Nation's Report Card," is the only nationally representative and continuing assessment of what America's students know and can do in various subjects. NAEP assesses representative samples of students in grades 4, 8, and 12 in core academic subjects. For more than 30 years, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, U.S. history, civics, geography, and the arts. NAEP is also developing assessments in world history, economics, and foreign language.

NAEP is mandated by the U.S. Congress and is administered by the National Center for Education Statistics (NCES) at the U.S. Department of Education. The National Assessment Governing Board (NAGB), whose members are appointed by the Secretary of Education but remain independent of the Department of Education, sets policies for NAEP.

Students from all 50 states participated in the 2007 NAEP state assessments. Participating jurisdictions also included the District of Columbia and the Department of Defense Schools (Domestic and Overseas). Roughly 373,000 fourth-grade students from 7,300 public schools and 302,000 eighth-grade students from 6,450 public schools were assessed in reading and mathematics.

- Purpose

NAEP fairly and accurately measures student achievement across the nation and monitors change over time in nationwide student performance. NAEP has several components, including national assessments, long-term trend assessments, and state-by-state assessments. NAEP results permit educators, policymakers, and the public to examine student achievement across the nation and within individual states.

To report national results, NAEP assesses students in grades 4, 8, and 12 that attend public and nonpublic schools. For nationwide long-term trend assessments, NAEP measures student progress in basic achievement over time for students ages 9, 13, and 17.

Since 1990, NAEP has also reported results for participating states by assessing public school students in grades 4 and 8. State-level results are based on assessments conducted in mathematics, reading, science, and writing.

NAEP results are based on a sample of student populations of interest. NAEP does not provide scores for individual students or schools; instead, it offers results regarding subject-matter achievement, instructional experiences, and school environment for national and state populations of students (e.g., fourth–graders) and subgroups of those populations (e.g., female students, Hispanic students).

- State NAEP

The state component of NAEP began in 1990 with an assessment in mathematics; 1992 for reading, 1996 for science, and 1998 for writing. Beginning in 2003, the *No Child Left*

Behind Act of 2001 (NCLB) required that all states receiving Title I funding participate biennially in the NAEP state assessments in reading and mathematics at grades 4 and 8. Likewise, school districts receiving Title I funding must participate if selected.

With the exception of the mathematics assessment for eighth-grade students in 1990, Massachusetts has participated in every administration of state NAEP. Those state assessments include a mathematics assessment for fourth- and eighth-graders in 1992, 1996, 2000, 2003, 2005, and 2007; a reading assessment for fourth graders in 1992 and 1994 and for fourth- and eighth-graders in 1998, 2002, 2003, 2005, and 2007; a science assessment at grade 8 only in 1996 and at grades 4 and 8 in 2000 and 2005; and a writing assessment for eighth-graders in 1998 and 2007, and for fourth- and eighth-graders in 2002.

Table 5 below shows the schedule of NAEP state assessments from 2005 through 2013.

Table 5
Schedule of NAEP State Assessments by Year*

SUBJECT AREA	YEAR				
	2005	**2007**	**2009**	**2011**	**2013**
Reading	✓	✓	✓	✓	✓
Mathematics	✓	✓	✓	✓	✓
Science	✓		✓		✓
Writing		✓*		✓	

* Grades tested are 4 and 8, unless otherwise noted. In 2007, a writing assessment was administered to eighth-graders only.

- Test Development

The National Assessment Governing Board (NAGB) is responsible for formulating policy for NAEP. NAGB is charged with developing assessment objectives and test specifications, identifying appropriate achievement levels, and carrying out other NAEP policy responsibilities. Educational Testing Service (ETS) designs the NAEP assessments and oversees the analysis and reporting of results.

- Types of Questions on NAEP Assessments

NAEP assessments contain a variety of item (question) types to provide students with an opportunity to demonstrate their comprehension of the content areas. Item types include multiple-choice questions, short and extended constructed-response questions, and writing prompts (on the Writing Assessment only). Multiple-choice questions require students to select the correct answer from a set of four options. Constructed-response questions require students to provide a written response to a question. The length of the response required of students may vary between one or two sentences (short) to a paragraph or more (extended). Writing Assessment prompts ask students to write essays, letters, and stories for a variety of audiences.

On the Reading Assessment, students read passages and answered associated comprehension questions. A combination of multiple-choice and constructed-response

questions are used to assess students' understanding of the passages. Passages are authentic and are drawn from sources commonly available to students both in and out of the school environment.

The Mathematics Assessment contains three types of assessment questions—multiple-choice, short constructed-response, and extended constructed-response. During a select number of assessment blocks, students were allowed to use various NAEP-provided materials (calculators, rulers, protractors, manipulatives) to derive their answers.

- Test Design

NAEP uses matrix sampling to achieve a comprehensive assessment of each subject area tested while limiting the time burden on each individual student. During their 50 minutes of testing, each student takes only a subset of the entire set of assessment questions. By distributing sets, or blocks, of items to a representative sample of students, NAEP is then able to combine results to generate average group and subgroup results for the entire assessment.

As an example, the complete 2005 grade 4 reading assessment was constructed of ten 25-minute blocks, which included five blocks of literary texts and questions and five blocks of informative texts and questions. Each block contained one passage and 9-12 multiple-choice and constructed-response questions. Students participating in the assessment were randomly assigned test booklets that contained a total of two of the ten blocks.

- Test Administration

The NAEP state assessments in reading, mathematics, and writing were administered between January 22 and March 2, 2007. To lessen the burden on participating schools, NAEP-trained field staff visited schools to conduct all assessment sessions. In addition to the 50 minutes allotted for testing, students spent a few additional minutes completing a background questionnaire.

- Requirements for Student Participation

NAEP uses a multistage stratification design (i.e., classification into groups having similar characteristics) to randomly select representative samples of schools and students. To improve the reliability of the national results, the national sample now contains the combined sample of students assessed in each state. In each state and jurisdiction, NAEP selects approximately 2,500 to 3,000 students per grade and subject area tested. Those students are drawn from between 100 and 200 schools per grade. Within an individual school, NAEP selects about 60 students, 30 for each subject, to participate.

Student participation in NAEP is voluntary. Under NCLB, parental notification prior to testing is mandatory to inform families that students who are sampled may opt not to participate.

- Students with Disabilities and Limited English Proficiency

Students with disabilities and students with limited English proficiency are included in NAEP samples. Prior to 1996, NAEP had no policy of allowing assessment accommodations for students with disabilities or English language learners. In 1998 and 2000, NAEP used a split sample of schools, one sample in which accommodations were permitted for special-needs students who normally received them and the other sample in which accommodations were not permitted. Comparison of combinations of the two samples' results showed that results for accommodated students could be combined with the results for nonaccommodated students without compromising the validity of the NAEP scales in trend comparisons. Therefore, beginning in 2002, accommodations are made available, where appropriate, if specified in a student's Individualized Education Plan (IEP) and routinely used in testing the student.

Using NAEP criteria on accommodations and each student's IEP, schools determine whether students with disabilities or limited English proficiency are able to meaningfully participate in NAEP. Typically, students with disabilities are tested unless the student's IEP team judges that he or she cannot participate or if NAEP does not allow an accommodation that the student requires (typically fewer than 10% in the majority of states, including Massachusetts). NAEP also assesses LEP students unless the student has received reading or mathematics instruction primarily in English for fewer than three school years **and** the student cannot demonstrate his or her knowledge of reading or mathematics in English even with an accommodation permitted by NAEP.

- Scoring

Multiple-choice responses were scored through a process of scanning student answer booklets.

Constructed-responses were scored using an image-processing system by expert scorers at Pearson. Scorers used unique scoring guides developed by ETS for each constructed-response question to score student answers. Answers to constructed-response questions were scored either "acceptable" or "unacceptable," or received partial credit. Answers to short-constructed response questions were scored according to a three-level guide. Answers to extended constructed-response questions were scored according to a four-level guide. More than 3.7 million constructed responses in reading and 3.7 million constructed responses in mathematics were scored in 2007.

- Reporting

Student performance on NAEP is indicated in two ways – scaled scores and achievement levels. The NAEP Reading and Mathematics Assessment scales each range from 0 to 500. Performance for each grade is scaled separately. Therefore, average scaled scores cannot be compared across grades.

Achievement levels are used to describe expectations for student performance according to a set of standards for what students should know and be able to do. The three achievement levels are *Basic*, *Proficient*, and *Advanced*. Table 6 below provides general

descriptions of each achievement level. To see how the achievement levels are used to describe reading and mathematics performance at each grade level, please see the Appendix to this report.

Table 6
General NAEP Achievement Level Definitions

ACHIEVEMENT LEVEL	DESCRIPTION
Advanced	Superior performance
Proficient	Solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
Basic	Partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade

III. Summary of 2007 NAEP Results for Massachusetts

- Students Tested

In Massachusetts, students from 167 schools at grade 4 and 135 schools at grade 8 participated in the 2007 NAEP state assessments. Approximately 7,800 students were assessed at grade 4 in reading or mathematics, and approximately 7,600 students were assessed at grade 8 in reading or mathematics. An additional 3,400 students at grade 8 were assessed in writing.

- Massachusetts and National Public Results in Reading and Mathematics, 1992-2007

Table 7
1992–2007 NAEP Results: Grade 4 Reading
Average Scaled Scores and Percents of Students at Each Achievement Level

		Average Scaled Score	Percent of Students			
			Advanced	***Proficient* and above**	***Basic* and above**	**Below *Basic***
READING						
Massachusetts	**2007**	**236**	**16**	**49**	**81**	**19**
	2005	231*	12*	44*	78*	22*
	2003	228*	10*	40*	73*	27*
	2002	234	13	47	80	20
	1998	223*	8*	35*	70*	30*
	1998[n]	225*	8*	37*	73*	27*
	1994[n]	223*	8*	36*	69*	31*
	1992[n]	226*	7*	36*	74*	26*
National Public	**2007**	**220**	**7**	**32**	**66**	**34**
	2005	217*	7*	30*	62*	38*
	2003	216*	7*	30*	62*	38*
	2002	217*	6*	30*	62*	38*
	1998	213*	6*	28*	58*	42*
	1998[n]	215*	6	29*	61*	39*
	1994[n]	212*	7*	28*	59*	41*
	1992[n]	215*	6*	27*	60*	40*

***** Denotes a value that is significantly different from the value for 2007.

n Denotes years in which accommodations were not permitted. In 1998 and 2000, NAEP used a split sample of schools, one sample in which accommodations were permitted for special-needs students who normally received them and the other sample in which accommodations were not permitted. Comparisons of scores between the accommodations-not-permitted and the accommodations-permitted samples should be interpreted with caution.

The NAEP reading scale ranges from 0 to 500. Achievement levels correspond to the following points on the scale at grade 4: *Basic*, 208-237; *Proficient*, 238-267; and *Advanced*, 268 and above.

Table 8
1992–2007 NAEP Results: Grade 4 Mathematics
Average Scaled Scores and Percents of Students at Each Achievement Level

		Average Scaled Score	Percent of Students			
			Advanced	***Proficient* and above**	***Basic* and above**	**Below *Basic***
MATHEMATICS						
Massachusetts	**2007**	**252**	**11**	**58**	**93**	**7**
	2005	247*	8*	49*	91*	9*
	2003	242*	6*	41*	84*	16*
	2000	233*	3*	31*	77*	23*
	2000[n]	235*	3*	33*	79*	21*
	1996[n]	229*	2*	24*	71*	29*
	1992[n]	227*	2*	23*	68*	32*
National Public	**2007**	**239**	**5**	**39**	**81**	**19**
	2005	237*	5*	35*	79*	21*
	2003	234*	4*	31*	76*	24*
	2000	224*	2*	22*	64*	36*
	2000[n]	226*	2*	25*	67*	33*
	1996[n]	222*	2*	20*	62*	38*
	1992[n]	219*	2*	17*	57*	43*

***** Denotes a value that is significantly different from the value for 2007.

n Denotes years in which accommodations were not permitted. In 1998 and 2000, NAEP used a split sample of schools, one sample in which accommodations were permitted for special-needs students who normally received them and the other sample in which accommodations were not permitted. Comparisons of scores between the accommodations-not-permitted and the accommodations-permitted samples should be interpreted with caution.

The NAEP mathematics scale ranges from 0 to 500. Achievement levels correspond to the following points on the scale at grade 4: *Basic*, 214-248; *Proficient*, 249-281; and *Advanced*, 282 and above.

Table 9
1992–2007 NAEP Results, All Students: Grade 8 Reading and Mathematics
Average Scaled Scores and Percents of Students at Each Achievement Level

		Scaled Score	Percent of Students			
			Advanced	***Proficient*** **and above**	***Basic*** **and above**	**Below *Basic***
READING						
Massachusetts	**2007**	**273**	**4**	**43**	**84**	**16**
	2005	274	5	44	83	17
	2003	273	5	43	81	19
	2002	271	3	39	81	19
	1998	269*	3	38*	79*	21*
	1998[n]	269*	3	36*	80	20
National Public	**2007**	**261**	**2**	**29**	**73**	**27**
	2005	260*	3	29	71*	29*
	2003	261	3*	30*	72	28
	2002	263*	2	31*	74*	26*
	1998	261	2	30	71	29
	1998[n]	261	2	31	72	28
MATHEMATICS						
Massachusetts	**2007**	**298**	**15**	**51**	**85**	**15**
	2005	292*	11*	43*	80*	20*
	2003	287*	8*	38*	76*	24*
	2000	279*	5*	30*	70*	30*
	2000[n]	283*	6*	32*	76*	24*
	1996[n]	278*	5*	28*	68*	32*
	1992[n]	273*	3*	23*	63*	37*
National Public	**2007**	**280**	**7**	**31**	**70**	**30**
	2005	278*	6*	28*	68*	32*
	2003	276*	5*	27*	67*	33*
	2000	272*	5*	25*	62*	38*
	2000[n]	274*	5*	26*	65*	35*
	1996[n]	271*	4*	23*	61*	39*
	1992[n]	267*	3*	20*	56*	44*

***** Denotes a value that is significantly different from the value for 2007.

n Denotes years in which accommodations were not permitted. In 1998 and 2000, NAEP used a split sample of schools, one sample in which accommodations were permitted for special-needs students who normally received them and the other sample in which accommodations were not permitted. Comparisons of scores between the accommodations-not-permitted and the accommodations-permitted samples should be interpreted with caution.

The NAEP reading scale ranges from 0 to 500. Achievement levels correspond to the following points on the scale at grade 8: *Basic*, 243-280; *Proficient*, 281-322; and *Advanced*, 323 and above. The NAEP mathematics scale ranges from 0 to 500. Achievement levels correspond to the following points on the scale at grade 8: *Basic*, 262-298; *Proficient*, 299-332; and *Advanced*, 333 and above.

- 2007 NAEP Results by Student Subgroup for Massachusetts and the Nation

Table 10
2007 Massachusetts and Nationwide NAEP Results by Student Group: Grade 4
Average Scaled Scores and Percents of Students at Each Achievement Level

	Massachusetts						National Public					
	Avg. Scaled Score	Percent of Students*					Avg. Scaled Score	Percent of Students*				
		A	P+	B+	BB	% Assessed		A	P+	B+	BB	% Assessed
READING												
All Students	**236**	**16**	**49**	**81**	**19**	**100**	**220**	**7**	**32**	**66**	**34**	**100**
Student Status												
Students with Disabilities	213	6	23	54	46	14	190	2	13	36	64	10
Limited English Proficient	205	3	15	50	50	4	188	1	7	30	70	9
Gender												
Female	238	18	52	83	17	50	223	9	35	69	31	50
Male	233	14	46	79	21	50	216	6	29	62	38	50
Race/Ethnicity												
African American / Black	211	2	19	57	43	8	203	2	14	46	54	17
Asian / Pacific Islander	241	20	58	87	13	6	231	14	45	76	24	5
Hispanic	209	2	18	55	45	10	204	3	17	49	51	20
White	241	19	56	87	13	75	230	10	42	77	23	56
Free/Reduced-Price Lunch												
Eligible	214	4	22	60	40	26	205	2	17	50	50	45
School Location												
City	221	8	32	65	35	18	213	6	25	57	43	29
Suburb	239	17	53	85	15	72	224	9	37	71	29	37
Town	-	-	-	-	-	1	218	6	29	65	35	12
Rural	241	19	56	84	16	10	222	7	33	69	31	22
MATHEMATICS												
All Students	**252**	**11**	**58**	**93**	**7**	**100**	**239**	**5**	**39**	**81**	**19**	**100**
Student Status												
Students with Disabilities	238	4	33	83	17	14	220	2	19	60	40	11
Limited English Proficient	230	2	24	74	26	6	217	1	13	56	44	10
Gender												
Female	251	9	55	93	7	49	238	4	36	81	19	49
Male	254	13	60	93	7	51	240	7	41	82	18	51
Race/Ethnicity												
African American / Black	232	2	26	75	25	7	222	1	15	63	37	17
Asian / Pacific Islander	259	21	66	95	5	6	254	16	59	91	9	5
Hispanic	231	2	23	77	23	11	227	1	22	69	31	21
White	257	12	65	97	3	75	248	8	51	91	9	55
Free/Reduced-Price Lunch												
Eligible	237	3	32	83	17	27	227	1	22	70	30	46
School Location												
City	241	8	41	83	17	19	233	5	32	74	26	29
Suburb	255	11	61	95	5	71	243	7	44	85	15	37
Town	-	-	-	-	-	1	238	4	36	82	18	12
Rural	257	13	63	97	3	10	240	5	39	84	16	22

* The following symbols are used to denote the NAEP achievement levels: **A** for *Advanced*, **P+** for *Proficient* and above, **B+** for *Basic* and above, and **BB** for Below *Basic*.
\# Estimate rounds to zero.

Table 11
2007 Massachusetts and Nationwide NAEP Results by Student Group: Grade 8
Average Scaled Scores and Percents of Students at Each Achievement Level

	Massachusetts						National Public					
	Avg. Scaled Score	Percent of Students*					Avg. Scaled Score	Percent of Students*				
		A	P+	B+	BB	% Assessed		A	P+	B+	BB	% Assessed
READING												
All Students	**273**	**4**	**43**	**84**	**16**	**100**	**261**	**2**	**29**	**73**	**27**	**100**
Student Status												
Students with Disabilities	246	1	13	55	45	13	226	#	7	34	66	9
Limited English Proficient	232	#	4	40	60	2	222	#	4	29	71	6
Gender												
Female	278	6	50	88	12	48	266	3	34	77	23	50
Male	269	3	37	80	20	52	256	1	24	68	32	50
Race/Ethnicity												
African American / Black	253	1	17	65	35	8	244	#	12	54	46	17
Asian / Pacific Islander	281	6	54	89	11	5	269	5	40	79	21	5
Hispanic	251	1	15	63	37	9	246	1	14	57	43	18
White	278	5	49	89	11	76	270	3	38	83	17	58
Free/Reduced-Price Lunch												
Eligible	256	1	20	69	31	26	247	1	15	58	42	40
School Location												
City	264	3	31	75	25	20	254	2	23	64	36	28
Suburb	275	5	46	86	14	64	265	3	34	76	24	36
Town	-	-	-	-	-	3	261	2	28	73	27	13
Rural	276	6	46	88	12	12	264	2	31	76	24	22
MATHEMATICS												
All Students	**298**	**15**	**51**	**85**	**15**	**100**	**280**	**7**	**31**	**70**	**30**	**100**
Student Status												
Students with Disabilities	271	2	18	62	38	9	246	1	8	33	67	9
Limited English Proficient	251	3	16	33	67	3	245	1	6	30	70	6
Gender												
Female	296	13	48	84	16	51	279	6	29	70	30	49
Male	300	17	53	86	14	49	281	8	33	71	29	51
Race/Ethnicity												
African American / Black	264	1	13	54	46	8	259	1	11	47	53	17
Asian / Pacific Islander	315	28	74	94	6	5	296	17	49	82	18	5
Hispanic	270	5	19	59	41	10	264	2	15	54	46	19
White	305	17	58	91	9	75	290	9	41	81	19	58
Free/Reduced-Price Lunch												
Eligible	275	4	25	65	35	26	265	2	15	55	45	41
School Location												
City	286	10	39	74	26	21	273	5	25	62	38	28
Suburb	301	16	54	87	13	65	285	9	36	74	26	36
Town	-	-	-	-	-	3	280	5	29	71	29	13
Rural	302	16	54	91	9	12	282	6	32	74	26	22

* The following symbols are used to denote the NAEP achievement levels: **A** for *Advanced*, **P+** for *Proficient* and above, **B+** for *Basic* and above, and **BB** for Below *Basic*.
# Estimate rounds to zero.

IV. Comparison of NAEP Results with Other States' Results[2]

- Grade 4 Reading

  Scaled Scores: In Massachusetts, the average scaled score in reading for fourth-grade students (236) was higher than the average scaled scores in the other 49 states.

  Percent *Proficient* and above: The percent of Massachusetts fourth-grade students performing at or above *Proficient* in reading (49 percent) was higher than the *Proficient* and above percents in the other 49 states.

- Grade 4 Mathematics

  Scaled Scores: The average scaled score in mathematics for fourth-grade students in Massachusetts (252) was higher than the average scaled scores in the other 49 states.

  Percent *Proficient* and above: The percent of Massachusetts fourth-grade students performing at or above *Proficient* in mathematics (58 percent) was higher than the *Proficient* and above percents in the other 49 states.

- Grade 8 Reading

  Scaled Scores: In Massachusetts, the average scaled score in reading for eighth-grade students (273) was higher than the average scaled scores in 46 states and not found to differ significantly in the remaining 3 highest performing states (Montana, New Jersey, and Vermont).

  Percent *Proficient* and above: The percent of Massachusetts eighth-grade students performing at or above *Proficient* in reading (43 percent) was higher than the *Proficient* and above percents in 46 states and not found to differ significantly in the remaining 3 highest performing states (Montana, New Jersey, and Vermont).

- Grade 8 Mathematics

  Scaled scores: The average scaled score in mathematics for eighth-grade students in Massachusetts (298) was higher than the average scaled scores in the other 49.

  Percent *Proficient* and above: The percent of Massachusetts eighth-grade students performing at or above *Proficient* in mathematics (51 percent) was higher than the *Proficient* and above percents in the other 49 states.

[2] The comparisons included in this section of the report do not include the District of Columbia or the Department of Defense Domestic and Overseas schools.

- Comparison of Massachusetts with Top Performing States

Table 12
2007 NAEP Results in Top Performing States by Scaled Score: Grade 4
Average Scaled Scores and Percents of Students at Each Achievement Level

	Average Scaled Score	**Percent of Students**			
		Advanced	***Proficient* and above**	***Basic* and above**	**Below *Basic***
READING					
Massachusetts	236	16	49	81	19
New Jersey	231	12	43	77	23
New Hampshire	229	11	41	76	24
Vermont	228	11	41	74	26
Connecticut	227	12	41	73	27
Virginia	227	9	38	74	26
Montana	227	8	39	75	25
Pennsylvania	226	11	40	73	27
North Dakota	226	6	35	75	25
Ohio	226	8	36	73	27
National Public	220	7	32	66	34
MATHEMATICS					
Massachusetts	252	11	58	93	7
New Jersey	249	9	52	90	10
New Hampshire	249	9	52	91	9
Kansas	248	9	51	89	11
Minnesota	247	9	51	87	13
Vermont	246	7	49	89	11
North Dakota	245	5	46	91	9
Indiana	245	6	46	89	11
Ohio	245	7	46	87	13
Wisconsin	244	7	47	85	15
National Public	239	5	39	81	19

Table 13
2007 NAEP Results in Top Performing States by Scaled Score: Grade 8
Average Scaled Scores and Percents of Students at Each Achievement Level

	Scaled Score	**Percent of Students**			
		Advanced	***Proficient*** **and above**	***Basic*** **and above**	**Below *Basic***
READING					
Massachusetts	273	4	43	84	16
Vermont	273	4	42	84	16
Montana	271	2	39	85	15
New Jersey	270	4	39	81	19
Maine	270	3	37	83	17
New Hampshire	270	3	37	82	18
South Dakota	270	2	37	83	17
Minnesota	268	3	37	80	20
North Dakota	268	1	32	84	16
Ohio	268	3	36	79	21
National Public	261	2	29	73	27
MATHEMATICS					
Massachusetts	298	15	51	85	15
Minnesota	292	11	43	81	19
North Dakota	292	7	41	86	14
Vermont	291	10	41	81	19
Kansas	290	9	40	81	19
New Jersey	289	10	40	77	23
South Dakota	288	7	39	81	19
Virginia	288	9	37	77	23
New Hampshire	288	8	38	78	22
Montana	287	7	38	79	21
National Public	280	7	31	70	30

V. Massachusetts NAEP Results for Student Subgroups

- Students with Disabilities and Limited English Proficient Students

Table 14
1998–2007 Massachusetts NAEP Results by Student Status / Disability: Grade 4
Average Scaled Scores and Percents of Students at Each Achievement Level

Student Status		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
Students with Disabilities:	**2007**	**213**	**6**	**23**	**54**	**46**	**14**
	2005	208	2*	17	53	47	14
	2003	200*	1*	13*	41*	59*	15
	2002	208	4	20	49	51	12
	1998	192*	1	11*	36*	64*	13
Non-Disabled Students:	**2007**	**239**	**17**	**53**	**85**	**15**	**86**
	2005	235*	13*	48	82	18	86
	2003	233*	12*	45*	79*	21*	85
	2002	237	15	51	84	16	88
	1998	227*	9*	39*	75*	25*	87
MATHEMATICS							
Students with Disabilities:	**2007**	**238**	**4**	**33**	**83**	**17**	**14**
	2005	230*	1	22*	74*	26*	15
	2003	224*	1	19*	65*	35*	16*
	2000	216*	1	12*	54*	46*	14
Non-Disabled Students:	**2007**	**255**	**12**	**61**	**95**	**5**	**86**
	2005	251*	9	54*	94	6	85
	2003	245*	7*	46*	88*	12*	84*
	2000	236*	3*	34*	81*	19*	86

* Denotes a value that is significantly different than the value for 2007.

Table 15
2002–2007 Massachusetts NAEP Results by Student Status / LEP: Grade 4
Average Scaled Scores and Percents of Students at Each Achievement Level

Student Status		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
Limited English Proficient Students:	**2007**	**205**	**3**	**15**	**50**	**50**	**4**
	2005	198	2	11	39	61	5
	2003	193*	#	7	32*	68*	4
	2002	‡	‡	‡	‡	‡	2
Non-LEP Students:	**2007**	**237**	**16**	**51**	**82**	**18**	**96**
	2005	233*	12*	45*	80	20	95
	2003	229*	11*	42*	75*	25*	96
	2002	235	13	48	81	19	98*
MATHEMATICS							
Limited English Proficient Students:	**2007**	**230**	**2**	**24**	**74**	**26**	**6**
	2005	226	2	19	68	32	6
	2003	217*	1	9*	55*	45*	4
Non-LEP Students:	**2007**	**254**	**11**	**60**	**94**	**6**	**94**
	2005	249*	9*	51*	92*	8*	94
	2003	243	6	43	86	14	96

* Denotes a value that is significantly different than the value for 2007.
‡ Reporting standards not met.
\# Estimate rounds to zero.

Table 16
1998–2007 Massachusetts NAEP Results by Student Status / Disability: Grade 8
Average Scaled Scores and Percents of Students at Each Achievement Level

Student Status		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
Students with Disabilities:	**2007**	**246**	**1**	**13**	**55**	**45**	**13**
	2005	246	#	13	53	47	13
	2003	239	#	11	44*	56*	14
	2002	242	#	9	51	49	14
	1998	241	#	14	49	51	12
Non-Disabled Students:	**2007**	**277**	**5**	**47**	**88**	**12**	**87**
	2005	278	6	48	87	13	87
	2003	278	6	48	87	13	86
	2002	275	4	44	86	14	86
	1998	272*	4	41*	83*	17*	88
MATHEMATICS							
Students with Disabilities:	**2007**	**271**	**2**	**18**	**62**	**38**	**9**
	2005	264	3	17	51	49	12*
	2003	254*	1	9*	41*	59*	15*
	2000	243*	1	6*	28*	72*	15*
Non-Disabled Students:	**2007**	**301**	**16**	**54**	**87**	**13**	**91**
	2005	295*	13*	47*	84	16	88*
	2003	292*	10*	43*	82*	18*	85*
	2000	285*	6*	34*	78*	22*	85*

***** Denotes a value that is significantly different than the value for 2007.
# Estimate rounds to zero.

Table 17
2003–2007 Massachusetts NAEP Results by Student Status / LEP: Grade 8
Average Scaled Score and Percent of Students at Each Achievement Level

Student Status		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
Limited English Proficient Students:	**2007**	**232**	**#**	**4**	**40**	**60**	**2**
	2005	222	#	2	26	74	2
	2003	222	#	2	24	76	2
Non-LEP Students:	**2007**	**274**	**5**	**44**	**85**	**15**	**98**
	2005	275	5	45	84	16	98
	2003	274	6	44	83	17	98
MATHEMATICS							
Limited English Proficient Students:	**2007**	**251**	**3**	**16**	**33**	**67**	**3**
	2005	242	1	8	27	73	2
	2003	242	#	4	29	71	2
Non-LEP Students:	**2007**	**299**	**15**	**52**	**87**	**13**	**97**
	2005	293*	12*	44*	81*	19*	98
	2003	287*	9*	39*	77*	23*	98

***** Denotes a value that is significantly different than the value for 2007.
# Estimate rounds to zero.

- Race/Ethnicity

Table 18
1998–2007 Massachusetts NAEP Results by Race/Ethnicity: Grade 4 Reading
Average Scaled Scores and Percents of Students at Each Achievement Levels

Race/Ethnicity		SCALED SCORE AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
African American/Black:	**2007**	**211**	**2**	**19**	**57**	**43**	**8**
	2005	211	2	20	57	43	9
	2003	207	2	15	50	50	10
	2002	212	2	19	57	43	9
	1998	202*	#	12	44*	56*	6
Hispanic:	**2007**	**209**	**2**	**18**	**55**	**45**	**10**
	2005	203*	1	11	45	55	10
	2003	202*	2	15	43*	57*	11
	2002	207	2	15	51	49	8
	1998	194*	1	11	34*	66*	7
Asian/Pacific Islander:	**2007**	**241**	**20**	**58**	**87**	**13**	**6**
	2005	234	15	47	80	20	5
	2003	229*	13	40*	74*	26*	4
	2002	233	16	46	79	21	4
	1998	211*	8	19*	50*	50*	3
White:	**2007**	**241**	**19**	**56**	**87**	**13**	**75**
	2005	237*	14*	51*	85	15	76
	2003	234*	13*	48*	81*	19*	74*
	2002	239	16	54	86	14	78
	1998	228*	9*	40*	76*	24*	82*

* Denotes a value that is significantly different than the value for 2007.
\# Estimate rounds to zero.

Table 19
2000–2007 Massachusetts NAEP Results by Race/Ethnicity: Grade 4 Mathematics
Average Scaled Scores and Percents of Students at Each Achievement Level

Race/Ethnicity		SCALED SCORE AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
MATHEMATICS							
African American/Black:	**2007**	**232**	**2**	**26**	**75**	**25**	**7**
	2005	228	1	18	73	27	9
	2003	222*	#	13*	62*	38*	11
	2000	213*	1	7*	51*	49*	7
Hispanic:	**2007**	**231**	**2**	**23**	**77**	**23**	**11**
	2005	225*	1	14*	73	27	11
	2003	222*	1	13*	63*	37*	12
	2000	203*	1	7*	36*	64*	10
Asian/Pacific Islander:	**2007**	**259**	**21**	**66**	**95**	**5**	**6**
	2005	258	16	64	95	5	5
	2003	248*	13	49*	89	11	4
	2000	237*	8*	36*	77	23	4
White:	**2007**	**257**	**12**	**65**	**97**	**3**	**75**
	2005	252*	10	57*	95*	5*	75
	2003	247*	7*	49*	91*	9*	73
	2000	239*	3*	36*	85*	15*	77

* Denotes a value that is significantly different than the value for 2007.
\# Estimate rounds to zero.

Table 20
1998–2007 Massachusetts NAEP Results by Race/Ethnicity: Grade 8 Reading
Average Scaled Scores and Percents of Students at Each Achievement Level

Race/Ethnicity		SCALED SCORE AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
African American/Black:	**2007**	**253**	**1**	**17**	**65**	**35**	**8**
	2005	253	1	18	65	35	8
	2003	252	1	18	62	38	8
	2002	246	1	12	56	44	9
	1998	246	2	12	54	46	7
Hispanic:	**2007**	**251**	**1**	**15**	**63**	**37**	**9**
	2005	246	1	15	56	44	10
	2003	246	#	14	56	44	9
	2002	246	1	16	54	46	11
	1998	242	#	12	46*	54*	9
Asian/Pacific Islander:	**2007**	**281**	**6**	**54**	**89**	**11**	**5**
	2005	282	13	52	86	14	5
	2003	281	11	52	87	13	4
	2002	270	3	37	81	19	5
	1998	269*	3	40	79	21	4
White:	**2007**	**278**	**5**	**49**	**89**	**11**	**76**
	2005	279	6	50	88	12	77
	2003	278	6	49	86	14	78
	2002	278	4	47	89	11	73
	1998	274*	4	43*	85*	15*	79

* Denotes a value that is significantly different than the value for 2007.
\# Estimate rounds to zero.

Table 21
2000–2007 Massachusetts NAEP Results by Race/Ethnicity: Grade 8 Mathematics
Average Scaled Scores and Percents of Students at Each Achievement Level

Race/Ethnicity		SCALED SCORE AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
MATHEMATICS							
African American/Black:	**2007**	**264**	**1**	**13**	**54**	**46**	**8**
	2005	263	2	15	50	50	8
	2003	260	1	10	48	52	8
	2000	258	#	9	43	57	7
Hispanic:	**2007**	**270**	**5**	**19**	**59**	**41**	**10**
	2005	265	1	15	55	45	10
	2003	255*	1	9*	41*	59*	10
	2000	246*	1	8*	34*	66*	8
Asian/Pacific Islander:	**2007**	**315**	**28**	**74**	**94**	**6**	**5**
	2005	314	31	68	91	9	5
	2003	304	20	57	88	12	4
	2000	292*	13*	44*	79*	21*	4
White:	**2007**	**305**	**17**	**58**	**91**	**9**	**75**
	2005	297*	13*	49*	86*	14*	76
	2003	292*	9*	44*	83*	17*	77
	2000	284*	6*	34*	76*	24*	79

* Denotes a value that is significantly different than the value for 2007.
\# Estimate rounds to zero.

- Gender

Table 22
1998–2007 Massachusetts NAEP Results by Gender: Grade 4
Average Scaled Scores and Percents of Students at Each Achievement Level

GENDER		SCALED SCORE AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
Male:	**2007**	**233**	**14**	**46**	**79**	**21**	**50**
	2005	230*	11	42	76	24	51
	2003	225*	8*	38*	71*	29*	53*
	2002	231	11	43	77	23	51
	1998	219*	5*	31*	67*	33*	48
Female:	**2007**	**238**	**18**	**52**	**83**	**17**	**50**
	2005	233*	13*	45*	79	21	49
	2003	231*	13*	43*	76*	24*	47*
	2002	237	16	52	83	17	49
	1998	226*	10*	39*	73*	27*	52
MATHEMATICS							
Male:	**2007**	**254**	**13**	**60**	**93**	**7**	**51**
	2005	248*	9*	50*	91	9	49
	2003	244*	7*	44*	86*	14*	51
	2000	235*	3*	33*	78*	22*	50
Female:	**2007**	**251**	**9**	**55**	**93**	**7**	**49**
	2005	247*	7	48*	90*	10*	51
	2003	239*	4*	38*	82*	18*	49
	2000	232*	2*	29*	75*	25*	50

***** Denotes a value that is significantly different from the value for 2007.

Table 23
1998–2007 Massachusetts NAEP Results by Gender: Grade 8
Average Scaled Scores and Percents of Students at Each Achievement Level

GENDER		SCALED SCORE AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
Male:	**2007**	**269**	**3**	**37**	**80**	**20**	**52**
	2005	269	4	38	79	21	49
	2003	268	4	37	77	23	50
	2002	266	2	33	78	22	48*
	1998	264*	2	30*	75*	25*	51
Female:	**2007**	**278**	**6**	**50**	**88**	**12**	**48**
	2005	278	7	50	87	13	51
	2003	278	7	49	86	14	50
	2002	275	5	45	85	15	52*
	1998	274*	4	45	83	17	49
MATHEMATICS							
Male:	**2007**	**300**	**17**	**53**	**86**	**14**	**49**
	2005	291*	11*	43*	79*	21*	49
	2003	289*	10*	42*	78*	22*	51
	2000	279*	6*	31*	70*	30*	52*
Female:	**2007**	**296**	**13**	**48**	**84**	**16**	**51**
	2005	292	12	43	81	19	51
	2003	284*	7*	35*	74*	26*	49
	2000	278*	4*	29*	70*	30*	48*

***** Denotes a value that is significantly different from the value for 2007.

- School Lunch Eligibility

Table 24
1998–2007 Massachusetts NAEP Results by School Lunch Eligibility: Grade 4 Reading

School Lunch Eligibility		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
Eligible:	**2007**	**214**	**4**	**22**	**60**	**40**	**26**
	2005	211*	2	19	55	45	27
	2003	210*	3	20	53	47	29
	2002	215	3	23	60	40	27
	1998	203*	1*	15*	46*	54*	26
Not eligible:	**2007**	**243**	**20**	**59**	**89**	**11**	**73**
	2005	239*	15*	53*	86	14	73
	2003	236*	14*	51*	83*	17*	62*
	2002	241	17	56	88	12	67
	1998	230*	10*	43*	79*	21*	69
Info not available:	**2007**	**‡**	**‡**	**‡**	**‡**	**‡**	**#**
	2005	‡	‡	‡	‡	‡	#
	2003	225	9	35	71	29	9*
	2002	238	17	54	84	16	6
	1998	224	9	35	72	28	5

* Denotes a value that is significantly different than the value for 2007.
‡ Reporting standards are not met.
\# Estimate rounds to zero.

Table 25
2000–2007 Massachusetts NAEP Results by School Lunch Eligibility: Grade 4
Average Scaled Scores and Percents of Students at Each Achievement Level

School Lunch Eligibility		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
MATHEMATICS							
Eligible:	**2007**	**237**	**3**	**32**	**83**	**17**	**27**
	2005	231*	2	22*	78	22	29
	2003	226*	1*	17*	69*	31*	29
	2000	210*	#	8*	47*	53*	26
Not eligible:	**2007**	**258**	**14**	**67**	**97**	**3**	**72**
	2005	254*	11	60*	96	4	71
	2003	249*	8*	52*	91*	9*	63*
	2000	242*	4*	39*	89*	11*	67
Info not available:	**2007**	**‡**	**‡**	**‡**	**‡**	**‡**	**#**
	2005	‡	‡	‡	‡	‡	#
	2003	242	4	44	84	16	8*
	2000	234	4	35	74	26	7*

* Denotes a value that is significantly different than the value for 2007.
‡ Reporting standards are not met.
\# Estimate rounds to zero.

Table 26
1998–2007 NAEP Results by School Lunch Eligibility: Grade 8 Reading
Average Scaled Scores and Percents of Students at Each Achievement Level

School Lunch Eligibility		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
Eligible:	**2007**	**256**	**1**	**20**	**69**	**31**	**26**
	2005	256	2	23	67	33	27
	2003	251	1	19	61*	39*	23
	2002	253	#	18	64	36	28
	1998	247*	#	14*	57*	43*	23
Not eligible:	**2007**	**279**	**6**	**51**	**89**	**11**	**74**
	2005	280	7	52	89	11	70
	2003	280	6	51	88	12	64*
	2002	278	5	49	89	11	69
	1998	276	4	45*	87	13	72
Info not available:	**2007**	**‡**	**‡**	**‡**	**‡**	**‡**	**#**
	2005	275	5	45	87	13	3
	2003	278	8	49	84	16	13*
	2002	259	1	24	73	27	3
	1998	265	6	31	73	27	5

* Denotes a value that is significantly different than the value for 2007.
‡ Reporting standards are not met.
\# Estimate rounds to zero.

Table 27
2000–2007 NAEP Results by School Lunch Eligibility: Grade 8 Mathematics
Average Scaled Scores and Percents of Students at Each Achievement Level

School Lunch Eligibility		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
MATHEMATICS							
Eligible:	**2007**	**275**	**4**	**25**	**65**	**35**	**26**
	2005	273	3	22	64	36	29
	2003	261*	1*	13*	49*	51*	23*
	2000	257*	1*	10*	45*	55*	22
Not eligible:	**2007**	**306**	**19**	**60**	**92**	**8**	**74**
	2005	299*	15*	52*	87*	13*	69
	2003	295*	10*	46*	85*	15*	65*
	2000	286*	7*	37*	78*	22*	71
Info not available:	**2007**	**‡**	**‡**	**‡**	**‡**	**‡**	**#**
	2005	296	15	49	81	19	2
	2003	291	12	43	79	21	12*
	2000	274	5	27	64	36	7*

* Denotes a value that is significantly different than the value for 2007.
‡ Reporting standards are not met.
\# Estimate rounds to zero.

- Type of Community

Schools that participated in 2007 NAEP were classified as being located in one of four mutually exclusive types of community: city, suburb, town, and rural. More information on the classification of type of location is available at: http://nces.ed.gov/ccd/Rural_Locales.asp.

Table 28
2007 Massachusetts NAEP Results by Type of Community: Grade 4
Average Scaled Scores and Percents of Students at Each Achievement Level

Type of Community		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
City	**2007**	**221**	**8**	**32**	**65**	**35**	**18**
Suburb	**2007**	**239**	**17**	**53**	**85**	**15**	**72**
Town	**2007**	**-**	**-**	**-**	**-**	**-**	**1**
Rural	**2007**	**241**	**19**	**56**	**84**	**16**	**10**
MATHEMATICS							
City	**2007**	**241**	**8**	**41**	**83**	**17**	**19**
Suburb	**2007**	**255**	**11**	**61**	**95**	**5**	**71**
Town	**2007**	**-**	**-**	**-**	**-**	**-**	**1**
Rural	**2007**	**257**	**13**	**63**	**97**	**3**	**10**

Table 29
2007 Massachusetts NAEP Results by Type of Community: Grade 8
Average Scaled Scores and Percents of Students at Each Achievement Level

Type of Community		SCALED SCORES AND ACHIEVEMENT LEVELS					
		Average Scaled Score	Percent of Students				Percent of Students Assessed
			Advanced	*Proficient* and above	*Basic* and above	Below *Basic*	
READING							
City	**2007**	**264**	**3**	**31**	**75**	**25**	**20**
Suburb	**2007**	**275**	**5**	**46**	**86**	**14**	**64**
Town	**2007**	**-**	**-**	**-**	**-**	**-**	**3**
Rural	**2007**	**276**	**6**	**46**	**88**	**12**	**12**
MATHEMATICS							
City	**2007**	**286**	**10**	**39**	**74**	**26**	**21**
Suburb	**2007**	**301**	**16**	**54**	**87**	**13**	**65**
Town	**2007**	**-**	**-**	**-**	**-**	**-**	**3**
Rural	**2007**	**302**	**16**	**54**	**91**	**9**	**12**

Appendix A. Reading and Mathematics Performance Levels

NAEP Reading Achievement Levels[3]

Achievement Level	Description
Basic – Grade 4	Fourth-grade students performing at the *Basic* level should demonstrate an understanding of the overall meaning of what they read. When reading text appropriate for fourth-graders, they should be able to make relatively obvious connections between the text and their own experiences and extend the ideas in the text by making simple inferences. For example, when reading **literary** text, they should be able to tell what the story is generally about – providing details to support their understanding – and be able to connect aspects of the stories to their own experiences. When reading **informational** text, *Basic*-level fourth-graders should be able to tell what the selection is generally about or identify the purpose for reading it, provide details to support their understanding, and connect ideas from the text to their background knowledge and experiences.
Proficient – Grade 4	Fourth-grade students performing at the *Proficient* level should be able to demonstrate an overall understanding of the text, providing inferential as well as literal information. When reading text appropriate to fourth grade, they should be able to extend the ideas in the text by making inferences, drawing conclusions, and making connections to their own experiences. The connection between the text and what the student infers should be clear. For example, when reading **literary** text, *Proficient*-level fourth graders should be able to summarize the story, draw conclusions about the characters or plot, and recognize relationships such as cause and effect. When reading **informational** text, Proficient-level students should be able to summarize the information and identify the author's intent or purpose. They should be able to draw reasonable conclusions from the text, recognize relationships such as cause and effect or similarities and differences, and identify the meaning of the selection's key concepts.
Advanced – Grade 4	Fourth-grade students performing at the *Advanced* level should be able to generalize about topics in the reading selection and demonstrate an awareness of how authors compose literary devices. When reading text appropriate to fourth grade, they should be able to judge text critically and, in general, to give thorough answers that indicate careful thought. For example, when reading **literary** text, *Advanced*-level students should be able to make generalizations about the point of the story and extend its meaning by integrating personal experiences and other readings with ideas suggested by the text. They should be able to identify literary devices such as figurative language. When reading **informational** text, *Advanced*-level fourth-graders should be able to explain the author's intent by using supporting material from the text. They should be able to make critical judgments of the form and content of the text and explain their judgments clearly.

[3] Source: National Assessment Governing Board. (2006) *Reading Framework for the 2007 National Assessment of Educational Progress*. Washington, DC: Author http://www.nagb.org/frameworks/reading_07.doc

Basic – Grade 8	Eighth-grade students performing at the *Basic* level should demonstrate a literal understanding of what they read and be able to make some interpretations. When reading text appropriate to eighth grade, they should be able to identify specific aspects of the text that reflect overall meaning, extend the ideas in the text by making simple inferences, recognize and relate interpretations and connections among ideas in the text to personal experience, and draw conclusions based on the text. For example, when reading **literary** text, *Basic*-level eighth graders should be able to identify themes and make inferences and logical predictions about aspects such as plot and characters. When reading **informational** text, they should be able to identify the main idea and the author's purpose. They should make inferences and draw conclusions supported by information in the text. They should recognize the relationships among the facts, ideas, events, and concepts of the text (e.g., cause and effect, order). When reading **practical** text, they should be able to identify the main purpose and make predictions about the relatively obvious outcomes of procedures in the text.
Proficient – Grade 8	Eighth-grade students performing at the *Proficient* level should be able to show an overall understanding of the text, including inferential as well as literal information. When reading text appropriate to eighth grade, they should be able to extend the ideas in the text by making clear inferences from it, by drawing conclusions, and by making connections to their own experiences – including other reading experiences. *Proficient* eighth-graders should be able to identify some of the devices authors use in composing text. For example, when reading **literary** text, students at the Proficient level should be able to give details and examples to support themes that they identify. They should be able to use implied as well as explicit information in articulating themes; to interpret the actions, behaviors, and motives of characters; and to identify the use of literary devices such as personification and foreshadowing. When reading **informational** text, they should be able to summarize the text using explicit and implied information and support conclusions with inferences based on the text. When reading **practical** text, *Proficient*-level students should be able to describe its purpose and support their views with examples and details. They should be able to judge the importance of certain steps and procedures.
Advanced – Grade 8	Eighth-grade students performing at the *Advanced* level should be able to describe the more abstract themes and ideas of the overall text. When reading text appropriate to eighth grade, they should be able to analyze both meaning and form and support their analyses explicitly with examples from the text, and they should be able to extend text information by relating it to their experiences and to world events. At this level, student responses should be thorough, thoughtful, and extensive. For example, when reading **literary** text, *Advanced*-level eighth-graders should be able to make complex, abstract summaries and theme statements. They should be able to describe the interactions of various literary elements (i.e., setting, plot, characters, and theme) and explain how the use of literary devices affects both the meaning of the text and their response to the author's style. They should be able to critically analyze and evaluate the composition of the text. When reading **informational** text, they should be able to analyze the author's purpose and point of view. They should be able to use cultural and historical background information to develop perspectives on the text and be able to apply text information to broad issues and world situations. When reading **practical** text, *Advanced*-level students should be able to synthesize information that will guide their performance, apply text information to new situations, and critique the usefulness of the form and content.

NAEP Mathematics Achievement Levels[4]

Achievement Level	Description
Basic – Grade 4	Fourth-grade students performing at the *Basic* level should show some evidence of understanding the mathematical concepts and procedures in the five NAEP content strands. Fourth-graders performing at the *Basic* level should be able to estimate and use basic facts to perform simple computations with whole numbers; show some understanding of fractions and decimals; and solve some simple real-world problems in all NAEP content strands. Students at this level should be able to use – though not always accurately – four-function calculators, rulers, and geometric shapes. Their written responses are often minimal and presented without supporting information.
Proficient – Grade 4	Fourth-grade students performing at the *Proficient* level should consistently apply integrated procedural knowledge and conceptual understanding to problem solving in the five NAEP content strands. Fourth-graders performing at the *Proficient* level should be able to use whole numbers to estimate, compute, and determine whether results are reasonable. They should have a conceptual understanding of fractions and decimals; be able to solve real-world problems in all NAEP content strands; and use four-function calculators, rulers, and geometric shapes appropriately. Students performing at the *Proficient* level should employ problem-solving strategies such as identifying and using appropriate information. Their written solutions should be organized and presented both with supporting information and explanations of how they were achieved.
Advanced – Grade 4	Fourth-grade students performing at the *Advanced* level should apply integrated procedural knowledge and conceptual understanding to complex and nonroutine real-world problem solving in the five NAEP content strands. Fourth-graders performing at the *Advanced* level should be able to solve complex and nonroutine real-world problems in all NAEP content strands. They should display mastery in the use of four-function calculators, rulers, and geometric shapes. The students are expected to draw logical conclusions and justify answers and solution processes by explaining why, as well as how, they were achieved. They should go beyond the obvious in their interpretations and be able to communicate their thoughts clearly and concisely.

[4] Source: Appendix A, NAGB (2006). *Mathematics Framework for the 2007 National Assessment of Educational Progress*. Washington, DC: Author http://www.nagb.org/frameworks/math_07.doc

Basic – Grade 8	Eighth-grade students performing at the *Basic* level should exhibit evidence of conceptual and procedural understanding in the five NAEP content strands. This level of performance signifies an understanding of arithmetic operations – including estimation – on whole numbers, decimals, fractions, and percents. Eighth-graders performing at the *Basic* level should complete problems correctly with the help of structural prompts such as diagrams, charts, and graphs. They should be able to solve problems in all NAEP content strands through the appropriate selection and use of strategies and technological tools – including calculators, computers, and geometric shapes. Students at this level also should be able to use fundamental algebraic and informal geometric concepts in problem solving. As they approach the *Proficient* level, students at the *Basic* level should be able to determine which of the available data are necessary and sufficient for correct solutions and use them in problem solving. However, these eighth-graders show limited skills in communicating mathematically.
Proficient – Grade 8	Eighth-grade students performing at the *Proficient* level should apply mathematical concepts and procedures consistently to complex problems in the five NAEP content strands. Eighth-graders performing at the *Proficient* level should be able to conjecture, defend their ideas, and give supporting examples. They should understand the connections among fractions, percents, decimals, and other mathematical topics such as algebra and functions. Students at this level are expected to have a thorough understanding of basic-level arithmetic operations – an understanding sufficient for problem solving in practical situations. Quantity and spatial relationships in problem solving and reasoning should be familiar to them, and they should be able to convey underlying reasoning skills beyond the level of arithmetic. They should be able to compare and contrast mathematical ideas and generate their own examples. These students should make inferences from data and graphs; apply properties of informal geometry; and accurately use the tools of technology. Students at this level should understand the process of gathering and organizing data and be able to calculate, evaluate, and communicate results within the domain of statistics and probability.
Advanced – Grade 8	Eighth-grade students performing at the *Advanced* level should be able to reach beyond the recognition, identification, and application of mathematical rules to generalize and synthesize concepts and principles in the five NAEP content strands. Eighth-graders performing at the *Advanced* level should be able to probe examples and counterexamples in order to shape generalizations from which they can develop models. Eighth-graders performing at the *Advanced* level should use number sense and geometric awareness to consider the reasonableness of an answer. They are expected to use abstract thinking to create unique problem-solving techniques and explain the reasoning processes underlying their conclusions.