



2013 NAEP Reading and Mathematics: Summary of State Results

November 2013

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I. Executive Summary of the 2013 NAEP State Results in Reading and Mathematics

Fifty states took part in the 2013 state administration of the National Assessment of Educational Progress (NAEP) reading and mathematics assessments at grades 4 and 8. In Massachusetts, grade 4 students from 177 schools and grade 8 students from 144 schools participated in the 2013 NAEP state assessments; 9,000 students were assessed in reading and 8,800 students were assessed in mathematics. This report provides state-level results for the reading and mathematics assessments.

□ Interpreting this Report

When reviewing this report, it is important to keep in mind that the NAEP results are based on a *sample* of students across Massachusetts and not on the *population* of Massachusetts students. In analyzing the results, tests of significance were used to determine differences in the data that could be confidently characterized as *not occurring by chance*. This type of difference is commonly referred to as a statistically *significant* difference. In the report's tables, an asterisk is used to denote a value that is significantly different from the value for the nation's public schools.

□ Overall Performance for Reading

Massachusetts tied for first on the grades 4 and 8 NAEP reading test.

- Based on average scale scores, Massachusetts tied for first in the nation with four states at grade 4. At grade 8, Massachusetts tied for first in the nation with two states.
- In reading at grade 4, the percentage of Massachusetts students scoring at or above the *Proficient* level was higher than the percentage of students at or above the *Proficient* level in 46 states and no different from the percentage of students at or above the *Proficient* level in the remaining 3 states. At grade 8, the percentage of Massachusetts students scoring at or above the *Proficient* level in reading was higher than the percentage of students at or above the *Proficient* level in 46 states and no different from the percentage of students at or above the *Proficient* level in the remaining 3 states.

Students in Massachusetts outperformed students nationally on the NAEP reading tests.

- The average scale score of Massachusetts grade 4 students on the reading assessment was 232, higher than the national average of 221. Eighth-grade Massachusetts students (277) also outscored their counterparts nationwide (266).
- Forty-seven percent of Massachusetts grade 4 students and 48 percent of grade 8 students scored at or above the *Proficient* level. These percentages were higher than the comparable percentages of students nationally who scored at or above the *Proficient* level (34 percent at both grades 4 and 8).

□ **Overall Performance for Mathematics**

Massachusetts tied for first with two other states on the grade 4 mathematics assessment and outperformed all other states on the grade 8 mathematics assessment.

- Based on average scale scores, Massachusetts tied for first in the nation at grade 4 with two other states. At grade 8, Massachusetts outperformed all other states.
- In mathematics at grade 4, the percentage of Massachusetts students scoring at or above the *Proficient* level was higher than the percentage of students at or above the *Proficient* level in 47 states and no different from the percentage of students at or above the *Proficient* level in two states. At grade 8, the percentage of Massachusetts students scoring at or above the *Proficient* level in mathematics was higher than the percentage of students at or above the *Proficient* level in 49 states.

Students in Massachusetts outperformed students nationally on the NAEP mathematics tests.

- The average scale score of Massachusetts grade 4 students on the mathematics assessment was 253, higher than the national average of 241. Eighth-grade Massachusetts students (301) also outscored their counterparts nationwide (284).
- Fifty-eight percent of Massachusetts grade 4 students and 55 percent of grade 8 students scored at or above the *Proficient* level. These percentages were higher than the comparable percentages of students nationally who scored at or above the *Proficient* level (41 percent at grade 4 and 34 percent at grade 8).

□ **Students Performing at or above the *Proficient* level in the Top Performing States**

The following table lists the top-performing states on the 2013 reading and mathematics assessments according to the ordinal rank of the percentage of students in each state who scored at or above the *Proficient* level.

**Table 1. 2013 NAEP Reading Assessment
Percentage of Students at or above *Proficient* in the Top 10 States**

Grade 4		Grade 8	
Massachusetts	47	Massachusetts	48
Maryland	45	New Jersey	46
New Hampshire	45	Connecticut	45
Virginia	43	Vermont	45
Connecticut	43	New Hampshire	44
Vermont	42	Maryland	42
New Jersey	42	Pennsylvania	42
Minnesota	41	Washington	42
Colorado	41	Minnesota	41
Pennsylvania	40	Montana	40

**Table 2. 2013 NAEP Mathematics Assessment
Percentage of Students at or above *Proficient* in the Top 10 States**

Grade 4		Grade 8	
Minnesota	59	Massachusetts	55
New Hampshire	59	New Jersey	49
Massachusetts	58	Minnesota	47
Indiana	52	Vermont	47
Vermont	52	New Hampshire	47
Colorado	50	Colorado	42
New Jersey	49	Washington	42
Washington	48	Pennsylvania	42
North Dakota	48	North Dakota	41
Ohio	48	Kansas	40

□ **Student Subgroup Performance in Reading in Massachusetts Compared to the Nation**

- Race/Ethnicity: In 2013, at both grades 4 and 8, White students in Massachusetts outperformed their counterparts nationally. The performance of Massachusetts Hispanic, African/Black, and Asian students at both grades did not differ significantly from the performance of their counterparts nationally.
- Gender: At grades 4 and 8, both female and male students in Massachusetts outscored their counterparts nationally.
- Student Status: At both grades 4 and 8, students with disabilities and students eligible for free or reduced price lunch in Massachusetts outscored their counterparts nationally. English language learner students in Massachusetts in both grades scored significantly lower than their counterparts in the nation.

□ **Student Subgroup Performance in Mathematics in Massachusetts Compared to the Nation**

- Race/Ethnicity: In 2013, grade 4 White, African American/Black, and Asian students in Massachusetts outperformed their counterparts nationally. At grade 8, Massachusetts White, African American/Black, Hispanic, and Asian students outperformed their counterparts nationally. The performance of Massachusetts Hispanic students at grade 4 did not differ significantly from the performance of their counterparts nationally.
- Gender: At grades 4 and 8, both female and male students in Massachusetts outscored their counterparts nationally.
- Student Status: At both grades 4 and 8, students with disabilities and students eligible for free/reduced lunch students in Massachusetts outscored their counterparts nationally. However, there was no significant difference between the performance of English language learner students in Massachusetts and the national average at both grades.

II. Background Information on the NAEP Reading and Mathematics Assessments

Participation in NAEP state assessments in reading and mathematics at grades 4 and 8 is mandated by the No Child Left Behind (NCLB) Act. Students from 50 states participated in the 2013 NAEP state assessments in reading and mathematics. Across the nation, roughly 350,000 fourth- and eighth grade students were assessed in reading. Roughly 345,000 fourth- and eighth-grade students were assessed in mathematics.

□ Test Content of the Reading Assessment

The 2013 NAEP reading framework approved by the National Assessment Governing Board carries forward changes that were made in 2009 to include more emphasis on literary and informational texts, a redefinition of reading cognitive processes, a systemic assessment of vocabulary knowledge, and the addition of poetry at grade 4. Results from special analyses conducted in 2009 determined that, even with these changes to the assessment, results could continue to be compared to those from earlier assessment years.

**Table 3. 2013 NAEP Reading Assessment
Distribution of Questions by Cognitive Skill across the Test**

Field of Reading	Grade 4	Grade 8
Locate and Recall: locating or recalling information from what they have read, students may identify explicitly stated main ideas or may focus on specific elements of a story.	30%	20%
Integrate and Interpret: when integrating and interpreting what they have read, students may make comparisons, explain character motivation, or examine relations of ideas across the text.	50%	50%
Critique and Evaluate: when critiquing or evaluating what they have read, students view the text critically by examining it from numerous perspectives or may evaluate overall text quality or the effectiveness of particular aspects of the text.	20%	30%

□ **Test Content of the Mathematics Assessment**

The 2013 NAEP mathematics framework approved by the National Assessment Governing Board specifies that each question in the assessment measure one of five mathematical content areas. Although the names of the content areas, as well as some of the topics in those areas, have changed over the years, there has been a consistent focus across frameworks on collecting information about students’ performance in the following five areas: number properties and operations; measurement; geometry; data analysis, statistics, and probability; and algebra.

**Table 4. 2013 NAEP Mathematics Assessment
Distribution of Questions By Content Area Across the Test**

Field of Mathematics	Grade 4	Grade 8
Number properties and operations measures students’ understanding of ways to represents, calculate, and estimate with numbers.	40%	20%
Measurement assesses students’ knowledge of units of measurement for such attributes as capacity, length, area, volume, time, angles, and rates.	20%	15%
Geometry measures students’ knowledge and understanding of shapes in two and three dimensions, and relationships between shapes such as symmetry and transformations.	15%	20%
Data analysis, statistics, and probability measures students’ understanding of data representation, characteristics of data sets, experiments and samples, and probability.	10%	15%
Algebra measures students’ understanding of patterns, using variables, algebraic representation, and functions.	15%	30%

□ **Types of Questions on the Reading and Mathematics Assessments**

The NAEP reading and mathematics assessments contained three types of questions, or items: multiple-choice, short constructed-response, and extended constructed-response.

□ **Student Participation**

Each student selected for NAEP participates in only one subject-area test, and he/she takes only a portion of the entire test in that subject. For instance, a student chosen for the 2013 reading or mathematics test took two 25-minute blocks or sets of test items out of a total of 13 blocks of items at that grade level.

NAEP spirals blocks of items into different test booklets, administers them to representative samples of students, and combines the results in order to produce average scale scores for the entire group and for subgroups of student populations. This approach reduces the burden on each individual student.

□ **Reporting**

Student performance on NAEP is indicated in two ways—scale scores and achievement levels. The NAEP reading and mathematics assessment scales range from 0 to 500. Performance for each grade is scaled separately. Therefore, average scale 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*.

- **Basic** denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at a given grade. Examples of skills demonstrated by students performing at the *Basic* level:
 - In Reading, fourth-grade students should be able to locate relevant information, make simple inferences, and use their understanding of the text to identify details that support a given interpretation or conclusion. Students should be able to interpret the meaning of a word as it is used in the text.
 - In Reading, eighth-grade students should be able to locate information; identify statements of main idea, theme, or author's purpose; and make simple inferences from texts. They should be able to interpret the meaning of a word as it is used in the text. Students performing at this level should also be able to state judgments and give some support about content and presentation content.
 - In Mathematics, fourth-grade students should show some evidence of understanding the mathematical concepts and procedures in the five NAEP content areas.
 - In Mathematics, eighth-grade students should exhibit evidence of conceptual and procedural understanding in the five NAEP content areas. This level of performance

signifies an understanding of arithmetic operations—including estimation—on whole numbers, decimals, fractions, and percents.

- ***Proficient*** represents solid academic performance. Students reaching this level have demonstrated competency over challenging subject matter. Examples of skills demonstrated by students performing at the *Proficient* level:
 - In Reading, fourth-grade students should be able to integrate and interpret texts and apply their understanding of the text to draw conclusions and make evaluations.
 - In Reading, eighth-grade students should be able to provide relevant information and summarize main ideas and themes. They should be able to make and support inferences about a text, connect parts of a text, and analyze text features. Students performing at this level should also be able to fully substantiate judgments about content and presentation of content.
 - In Mathematics, fourth-grade students should consistently apply integrated procedural knowledge and conceptual understanding to problem solving in the five NAEP content areas.
 - In Mathematics, eighth-grade students should apply mathematical concepts and procedures consistently to complex problems in the five NAEP content areas.

- ***Advanced*** represents superior performance. Examples of skills demonstrated by students performing at the *Advanced* level:
 - In Reading, fourth-grade students should be able to make complex inferences and construct and support their inferential understanding of the text. Students should be able to apply their understanding of a text to make and support a judgment.
 - In Reading, eighth-grade students should be able to make connections within and across texts and to explain causal relations. They should be able to evaluate and justify the strength of supporting evidence and the quality of an author’s presentation. Students performing at the *Advanced* level should be able to manage the processing demands of analysis and evaluation by stating, explaining, and justifying.
 - In Mathematics, fourth-grade students should apply integrated procedural knowledge and conceptual understanding to complex and non-routine real-world problem solving in the five NAEP content areas.
 - In Mathematics, eighth-grade students should be able to reach beyond the recognition, identification, and application of mathematical rules in order to generalize and synthesize concepts and principles in the five NAEP content areas.

III. 2013 NAEP Reading and Mathematics Results by Subgroup

Student performance data are reported for public school students in Massachusetts and the nation according to the following demographic characteristics:

- Race/ethnicity
- Gender
- Student eligibility for the National School Lunch Program
- Type of school location
- Parents' highest level of education

Results for each of the characteristics are reported in tables that include the percentage of students in each subgroup in the first column. The columns to the right show the average scale score and the percentage of students at each achievement level.

The reader is cautioned against making causal inferences about subgroup differences, as a complex mix of educational and socioeconomic factors may affect student performance.

□ Race/Ethnicity

The race/ethnicity of each student was reported by the schools. The next four tables show reading and mathematics average scale scores, achievement level data, and population percentages for public school students at grades 4 and 8 in Massachusetts and the nation by race/ethnicity.

**Table 5-A. 2013 NAEP Reading Assessment
Grade 4 Performance by Race/Ethnicity**

Race/Ethnicity		Percentage of Students	Average Scale Score	Percentage of Students			
				Below Basic	At or Above Basic	At or Above Proficient	At Advanced
White							
	Nation	51	231*	21*	79*	45*	11*
	Massachusetts	64	241	13	87	57	17
African American/Black							
	Nation	15	205	50	50	17	2
	Massachusetts	7	209	45	55	21	3
Hispanic							
	Nation	25	207	48	52	19	3
	Massachusetts	18	208	44	56	20	3
Asian/Pacific Islander							
	Nation	5	235	21	79	51	18
	Massachusetts	7	240	17	83	57	22

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 5-B. 2013 NAEP Reading Assessment:
Grade 8 Performance by Race/Ethnicity**

		Percentage of Students					
Race/Ethnicity		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
White							
	Nation	53	275*	15*	85*	44*	5*
	Massachusetts	67	285	9	91	57	10
African American/Black							
	Nation	15	250*	40	60	16*	1
	Massachusetts	9	255	36	64	24	2
Hispanic							
	Nation	23	255	33	67	21	1
	Massachusetts	16	253	36	64	20	1
Asian/Pacific Islander							
	Nation	5	279	15*	85*	50	9
	Massachusetts	6	286	9	91	56	14

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 6-A. 2013 NAEP Mathematics Assessment
Grade 4 Performance by Race/Ethnicity**

		Percentage of Students					
Race/Ethnicity		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
White							
	Nation	51	250*	9*	91*	54*	10*
	Massachusetts	64	260	4	96	68	18
African American/Black							
	Nation	16	224*	34	66	18	1
	Massachusetts	7	230	29	71	26	5
Hispanic							
	Nation	25	230	27	73	26	2
	Massachusetts	18	234	25	75	32	5
Asian/Pacific Islander							
	Nation	5	258*	9*	91	64	23
	Massachusetts	7	266	4	96	72	31

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 6-B. 2013 NAEP Mathematics Assessment
Grade 8 Performance by Race/Ethnicity**

				Percentage of Students			
Race/ethnicity		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
White							
	Nation	53	293*	17*	83*	44*	11*
	Massachusetts	67	307	8	92	63	21
African American/Black							
	Nation	15	263*	49*	51	14*	2*
	Massachusetts	9	277	33	67	28	6
Hispanic							
	Nation	23	271*	38*	62	21*	3
	Massachusetts	16	277	31	69	28	4
Asian/Pacific Islander							
	Nation	5	306*	13*	87*	60	25*
	Massachusetts	6	323	7	93	78	42

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

□ **Gender**

Information on student gender is reported by the student's school when rosters of the students eligible to be assessed are submitted to NAEP. The next four tables show reading and mathematics average scale scores, achievement level data, and population percentages for public school students at grades 4 and 8 in Massachusetts and the nation by gender.

**Table 7-A. 2013 NAEP Reading Assessment:
Grade 4 Performance by Gender**

				Percentage of Students			
Gender		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Male							
	Nation	51	217*	36*	64	31*	7*
	Massachusetts	50	229	24	76	44	12
Female							
	Nation	49	224*	30*	70	37*	9*
	Massachusetts	50	235	18	82	51	15

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 7-B. 2013 NAEP Reading Assessment:
Grade 8 Performance by Gender**

				Percentage of Students			
Gender		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Male							
	Nation	51	261*	27*	73*	29*	2*
	Massachusetts	50	273	19	81	43	6
Female							
	Nation	49	271*	19*	81*	40*	5*
	Massachusetts	50	281	13	87	54	10

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 8-A. 2013 NAEP Mathematics Assessment:
Grade 4 Performance by Gender**

				Percentage of Students			
Gender		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Male							
	Nation	51	242*	18*	82*	42*	7*
	Massachusetts	50	253	11	89	59	16
Female							
	Nation	49	241*	18*	82*	40*	7*
	Massachusetts	50	253	9	91	58	15

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 8-B. 2013 NAEP Mathematics Assessment:
Grade 8 Performance by Gender**

				Percentage of Students			
Gender		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Male							
	Nation	51	284*	27*	73*	35*	9*
	Massachusetts	50	301	15	85	54	19
Female							
	Nation	49	283*	27*	73*	34*	7*
	Massachusetts	50	300	14	86	55	17

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

□ **Free/Reduced-Price Lunch**

NAEP collects data on student eligibility for the federal program providing free or reduced-price school lunches. The free/reduced-price lunch component of the National School Lunch Program (NSLP) offered through the U.S. Department of Agriculture (USDA) is designed to ensure that children near or below the poverty line receive nourishing meals. Eligibility is determined through the USDA's Income Eligibility Guidelines, and is included as an indicator of lower family income. The following four tables show average scale scores, achievement level data, and population percentages for public school students at grades 4 and 8 in Massachusetts and the nation by eligibility for the NSLP.

**Table 9-A. 2013 NAEP Reading Assessment:
Grade 4 Performance by Free/Reduced Price Lunch Eligibility**

Eligibility Status		Percentage of Students	Average Scale Score	Percentage of Students			
				Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Eligible							
	Nation	54	207*	47	53*	20*	3
	Massachusetts	39	213	39	61	25	3
Not Eligible							
	Nation	46	236*	17*	83*	51*	14*
	Massachusetts	61	245	10	90	62	21

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 9-B. 2013 NAEP Reading Assessment:
Grade 8 Performance by Free/Reduced Price Lunch Eligibility**

Eligibility Status		Percentage of Students	Average Scale Score	Percentage of Students			
				Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Eligible							
	Nation	49	254*	34*	66	20*	1
	Massachusetts	38	260	29	71	28	2
Not Eligible							
	Nation	50	278*	13*	87*	48*	6*
	Massachusetts	62	288	7	93	61	12

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 10-A. 2013 NAEP Mathematics Assessment:
Grade 4 Performance by Free/Reduced Price Lunch Eligibility**

				Percentage of Students			
Eligibility Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Eligible							
	Nation	54	230*	27*	73	26*	2*
	Massachusetts	40	237	21	79	35	5
Not Eligible							
	Nation	46	254*	7*	93*	60*	14*
	Massachusetts	60	264	3	97	74	23

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 10-B. 2013 NAEP Mathematics Assessment:
Grade 8 Performance by Free/Reduced Price Lunch Eligibility**

				Percentage of Students			
Eligibility Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Eligible							
	Nation	50	270*	39*	61	20*	3*
	Massachusetts	38	281	28	72	31	6
Not Eligible							
	Nation	50	297*	14*	86*	49*	14*
	Massachusetts	62	313	6	94	69	26

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

□ Students with Disabilities and/or English Language Learners

To ensure that samples are representative, NAEP has established policies and procedures to maximize the inclusion of all students in the assessment. Every effort is made to ensure that all selected students who are capable of participating meaningfully in NAEP are assessed. While some students with disabilities (SD) and/or English language learner (ELL) students can be assessed without any special procedures, others require accommodations to participate. Still other SD and/or ELL students selected by NAEP may not be able to participate.

Tables 11-A, 11-B, 12-A, and 12-B show average scale scores, achievement level data, and population percentages for public school students at grades 4 and 8 in Massachusetts and the nation by disability status. Tables 13-A, 13-B, 14-A, and 14-B show average scale scores, achievement level data, and population percentages for public school students at grades 4 and 8 in Massachusetts and the nation by ELL status.

**Table 11-A. 2013 NAEP Reading Assessment:
Grade 4 Performance by Disability Status**

				Percentage of Students			
Disability Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
SD							
	Nation	12	184*	69*	31*	11*	2
	Massachusetts	18	201	54	46	17	3
Not SD							
	Nation	88	226*	28*	72*	37*	9*
	Massachusetts	82	239	14	86	54	16

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 11-B. 2013 NAEP Reading Assessment:
Grade 8 Performance by Disability Status**

				Percentage of Students			
Disability Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
SD							
	Nation	11	231*	62*	38*	8*	#
	Massachusetts	16	246	45	55	15	1
Not SD							
	Nation	89	270*	19*	81*	38*	4*
	Massachusetts	84	283	10	90	55	9

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 12-A. 2013 NAEP Mathematics Assessment:
Grade 4 Performance by Disability Status**

				Percentage of Students			
Disability Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
SD							
	Nation	13	218*	45*	55*	18*	2
	Massachusetts	18	232	28	72	29	5
Not SD							
	Nation	87	244*	14*	86*	45*	8*
	Massachusetts	82	258	7	94	65	18

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 12-B. 2013 NAEP Mathematics Assessment:
Grade 8 Performance by Disability Status**

				Percentage of Students			
Disability Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
SD							
	Nation	12	248*	66*	34*	8*	1
	Massachusetts	16	268	42	58	17	3
Not SD							
	Nation	88	288*	22*	78*	38*	9*
	Massachusetts	84	307	9	91	62	21

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 13-A. NAEP 2013 Reading Assessment:
Grade 4 Performance by ELL Status**

				Percentage of Students			
ELL Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
ELL							
	Nation	10	187	69	31	7	1
	Massachusetts	10	204	60	40	12	1
Not ELL							
	Nation	90	225*	29*	71	37*	9*
	Massachusetts	90	237	17	83	51	15

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 13-B. NAEP 2013 Reading Assessment:
Grade 8 Performance by ELL Status**

				Percentage of Students			
ELL Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
ELL							
	Nation	5	225	70	30	3	#
	Massachusetts	5	224	72	28	4	#
Not ELL							
	Nation	95	268*	21*	79*	36*	4*
	Massachusetts	95	277	13	87	50	8

Rounds to zero

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 14-A. NAEP 2013 Mathematics Assessment:
Grade 4 Performance by ELL Status**

				Percentage of Students			
ELL Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
ELL							
	Nation	11	219	41	59	14	1
	Massachusetts	10	223	37	63	19	2
Not ELL							
	Nation	89	244*	15*	85*	45*	8*
	Massachusetts	90	255	7	93	63	17

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

**Table 14-B. NAEP 2013 Mathematics Assessment:
Grade 8 Performance by ELL Status**

				Percentage of Students			
ELL Status		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
ELL							
	Nation	5	245	69	31	5	1
	Massachusetts	5	249	66	34	8	2
Not ELL							
	Nation	95	286*	25*	75*	36*	9*
	Massachusetts	95	303	12	88	57	19

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

IV. 2013 NAEP Reading and Mathematics Results by School Location

Schools that participated in the assessment were classified as being located in four mutually exclusive types of communities: city, suburb, town, and rural. These categories indicate the geographic locations of schools. The following four tables show average scale scores, achievement-level data, and population percentages for public school students at grades 4 and 8 in Massachusetts and the nation, by type of location.

**Table 15-A. NAEP 2013 Reading Assessment:
Grade 4 Performance by School Location**

				Percentage of Students			
Location		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
City							
	Nation	29	214	40	60*	28	7
	Massachusetts	22	218	35	65	32	7
Suburb							
	Nation	35	225*	29*	71*	39*	10*
	Massachusetts	67	236	18	82	52	16
Town							
	Nation	11	219	33	67	32	6
	Massachusetts	1	‡	‡	‡	‡	‡
Rural							
	Nation	25	223*	29*	71*	35*	8
	Massachusetts	10	234	17	83	47	11

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size.

‡ Reporting standards not met

**Table 15-B. NAEP 2013 Reading Assessment:
Grade 8 Performance by School Location**

				Percentage of Students			
Location		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
City							
	Nation	28	260	30	70*	28	3
	Massachusetts	20	263	28	72	32	5
Suburb							
	Nation	35	270*	20*	80*	39*	5*
	Massachusetts	65	281	13	87	52	9
Town							
	Nation	13	263	25	75	31	2
	Massachusetts	3	‡	‡	‡	‡	‡
Rural							
	Nation	24	268*	21*	79*	36*	3*
	Massachusetts	12	282	9	91	52	9

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size

‡ Reporting standards not met

**Table 16-A. NAEP 2013 Mathematics Assessment:
Grade 4 Performance by School Location**

				Percentage of Students			
Location		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
City							
	Nation	30	236*	24*	76*	35*	7
	Massachusetts	22	241	18	82	42	8
Suburb							
	Nation	35	244*	15*	85*	46*	9*
	Massachusetts	67	256	8	92	62	18
Town							
	Nation	11	240	17	83	39	6
	Massachusetts	1	‡	‡	‡	‡	‡
Rural							
	Nation	25	243*	14*	86*	44*	7*
	Massachusetts	9	258	4	96	66	16

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size

‡ Reporting standards not met

**Table 16-B. NAEP 2013 Mathematics Assessment:
Grade 8 Performance by School Location**

				Percentage of Students			
Location		Percentage of Students	Average Scale Score	Below Basic	At or Above Basic	At or Above Proficient	At Advanced
City							
	Nation	28	278*	34*	66*	29*	7*
	Massachusetts	20	288	25	75	40	12
Suburb							
	Nation	35	288*	24*	76*	39*	10*
	Massachusetts	65	303	12	88	57	19
Town							
	Nation	13	281	28	72	32	6
	Massachusetts	3	‡	‡	‡	‡	‡
Rural							
	Nation	24	286*	24*	76*	36*	8*
	Massachusetts	12	308	8	92	64	22

* Value is significantly different from the value for the same subgroup in Massachusetts due to the larger national sample size

‡ Reporting standards not met

V. 2013 NAEP Reading and Mathematics Results by Parents' Level of Education

Eighth-grade students who participated in the NAEP 2013 assessment were asked to indicate the highest level of education they thought their father and mother had completed. Five response options—did not finish high school, graduated from high school, some education after high school, graduated from college, and “I don’t know”—were offered. The highest level of education reported for either parent was used in the analysis. The results by highest level of parental education are shown in Tables 17 and 18. Fourth-graders were not asked about their parents’ education level because their responses in previous NAEP assessments were not reliable, and a large percentage of them chose the “I don’t know” option.

**Table 17. NAEP 2013 Reading Assessment:
Grade 8 Performance by Parents' Level of Education**

Parent Education	Percentage of Students	Average Scale Score	Percentage of Students			
			Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Did Not Finish High School						
Nation	8	250	37	63	16	#
Massachusetts	5	251	37	63	19	1
Graduated High School						
Nation	16	255	33	67	20	1
Massachusetts	13	260	28	72	27	2
Graduated College						
Nation	49	276	15	85	46	6
Massachusetts	62	286	9	91	59	11

Rounds to zero

**Table 18. NAEP 2013 Mathematics Assessment:
Grade 8 Performance by Parents' Level of Education**

Parent Education	Percentage of Students	Average Scale Score	Percentage of Students			
			Below Basic	At or Above Basic	At or Above Proficient	At Advanced
Did Not Finish High School						
Nation	8	267	42	58	16	2
Massachusetts	7	274	32	68	22	3
Graduated High School						
Nation	17	270	39	61	19	2
Massachusetts	12	283	25	75	33	5
Graduated College						
Nation	49	295	17	83	47	14
Massachusetts	60	311	8	92	67	26

VI. 2013 NAEP Reading Achievement Level Descriptions for Grade 4

NAEP achievement levels are cumulative; therefore, student performance at the *Proficient* level includes the competencies associated with the *Basic* level, and the *Advanced* level also includes the skills and knowledge associated with both the *Basic* and the *Proficient* levels. The cut score indicating the lower end of the score range for each level is noted in parentheses.

Achievement Level	Description
<i>Basic</i> (208)	<p>Fourth-grade students performing at the <i>Basic</i> level should be able to locate relevant information, make simple inferences, and use their understanding of the text to identify details that support a given interpretation or conclusion. Students should be able to interpret the meaning of a word as it is used in the text.</p> <p>When reading literary texts such as fiction, poetry, and literary nonfiction, fourth-grade students performing at the <i>Basic</i> level should be able to make simple inferences about characters, events, plot, and setting. They should be able to identify a problem in a story and relevant information that supports an interpretation of a text.</p> <p>When reading informational texts such as articles and excerpts from books, fourth-grade students performing at the <i>Basic</i> level should be able to identify the main purpose and an explicitly stated main idea, as well as gather information from various parts of a text to provide supporting information.</p>
<i>Proficient</i> (238)	<p>Fourth-grade students performing at the <i>Proficient</i> level should be able to integrate and interpret texts and apply their understanding of the text to draw conclusions and make evaluations.</p> <p>When reading literary texts such as fiction, poetry, and literary nonfiction, fourth-grade students performing at the <i>Proficient</i> level should be able to identify implicit main ideas and recognize relevant information that supports them. Students should be able to judge elements of an author's craft and provide some support for their judgment. They should be able to analyze character roles, actions, feelings, and motivations.</p> <p>When reading informational texts such as articles and excerpts from books, fourth-grade students performing at the <i>Proficient</i> level should be able to locate relevant information, integrate information across texts, and evaluate the way an author presents information. Student performance at this level should demonstrate an understanding of the purpose for text features and an ability to integrate information from headings, text boxes, and graphics and their captions. They should be able to explain a simple cause-and-effect relationship and draw conclusions.</p>

	Description
<i>Advanced</i> (268)	<p>Fourth-grade students performing at the <i>Advanced</i> level should be able to make complex inferences and construct and support their inferential understanding of the text. Students should be able to apply their understanding of a text to make and support a judgment.</p> <p>When reading literary texts such as fiction, poetry, and literary nonfiction, fourth-grade students performing at the <i>Advanced</i> level should be able to identify the theme in stories and poems and make complex inferences about characters' traits, feelings, motivations, and actions. They should be able to recognize characters' perspectives and evaluate characters' motivations. Students should be able to interpret characteristics of poems and evaluate aspects of text organization.</p> <p>When reading informational texts such as articles and excerpts from books, fourth-grade students performing at the <i>Advanced</i> level should be able to make complex inferences about main ideas and supporting ideas. They should be able to express a judgment about the text and about text features and support the judgments with evidence. They should be able to identify the most likely cause given an effect, explain an author's point of view, and compare ideas across two texts.</p>

VII. 2013 NAEP Reading Achievement Level Descriptions for Grade 8

Achievement Level	Description
<i>Basic</i> (243)	<p>Eighth-grade students performing at the <i>Basic</i> level should be able to locate information; identify statements of main idea, theme, or author's purpose; and make simple inferences from texts. They should be able to interpret the meaning of a word as it is used in the text. Students performing at this level should also be able to state judgments and give some support about content and presentation of content.</p> <p>When reading literary texts such as fiction, poetry, and literary nonfiction, eighth-grade students performing at the <i>Basic</i> level should recognize major themes and be able to identify, describe, and make simple inferences about setting and about character motivations, traits, and experiences. They should be able to state and provide some support for judgments about the way an author presents content and about character motivation.</p> <p>When reading informational texts such as exposition and argumentation, eighth-grade students performing at the <i>Basic</i> level should be able to recognize inferences based on main ideas and supporting details. They should be able to locate and provide relevant facts to construct general statements about information from the text. Students should be able to provide some support for judgments about the way information is presented.</p>
<i>Proficient</i> (281)	<p>Eighth-grade students performing at the <i>Proficient</i> level should be able to provide relevant information and summarize main ideas and themes. They should be able to make and support inferences about a text, connect parts of a text, and analyze text features. Students performing at this level should also be able to fully substantiate judgments about content and presentation of content.</p> <p>When reading literary texts such as fiction, poetry, and literary nonfiction, eighth-grade students performing at the <i>Proficient</i> level should be able to make and support a connection between characters from two parts of a text. They should be able to recognize character actions and infer and support character feelings. Students performing at this level should be able to provide and support judgments about characters' motivations across texts. They should be able to identify how figurative language is used.</p> <p>When reading informational texts such as exposition and argumentation, eighth-grade students performing at the <i>Proficient</i> level should be able to locate and provide facts and relevant information that support a main idea or purpose, interpret causal relations, provide and support a judgment about the author's argument or stance, and recognize rhetorical devices.</p>

	Description
<i>Advanced</i> (323)	<p>Eighth-grade students performing at the <i>Advanced</i> level should be able to make connections within and across texts and to explain causal relations. They should be able to evaluate and justify the strength of supporting evidence and the quality of an author's presentation. Students performing at the <i>Advanced</i> level also should be able to manage the processing demands of analysis and evaluation by stating, explaining, and justifying.</p> <p>When reading literary texts such as fiction, literary nonfiction, and poetry, eighth-grade students performing at the <i>Advanced</i> level should be able to explain the effects of narrative events. Within or across texts, they should be able to make thematic connections and make inferences about characters' feelings, motivations, and experiences.</p> <p>When reading informational texts such as exposition and argumentation, eighth-grade students performing at the <i>Advanced</i> level should be able to infer and explain a variety of connections that are intra-textual (such as the relation between specific information and the main idea) or inter-textual (such as the relation of ideas across expository and argument texts). Within and across texts, students should be able to state and justify judgments about text features, choice of content, and the author's use of evidence and rhetorical devices.</p>

VIII. 2013 NAEP Mathematics Achievement Level Descriptions for Grade 4

Achievement Level	Description
<i>Basic</i> (214)	<p>Fourth-grade students performing at the <i>Basic</i> level should show some evidence of understanding the mathematical concepts and procedures in the five NAEP content areas.</p> <p>Fourth-graders performing at the <i>Basic</i> 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 areas. Students at this level should be able to use—although not always accurately—four-function calculators, rulers, and geometric shapes. Their written responses are often minimal and presented without supporting information.</p>
<i>Proficient</i> (249)	<p>Fourth-grade students performing at the <i>Proficient</i> level should consistently apply integrated procedural knowledge and conceptual understanding to problem solving in the five NAEP content areas.</p> <p>Fourth-graders performing at the <i>Proficient</i> 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 areas; and use four-function calculators, rulers, and geometric shapes appropriately. Students performing at the <i>Proficient</i> 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.</p>
<i>Advanced</i> (282)	<p>Fourth-grade students performing at the <i>Advanced</i> level should apply integrated procedural knowledge and conceptual understanding to complex and non-routine real-world problem solving in the five NAEP content areas.</p> <p>Fourth-graders performing at the <i>Advanced</i> level should be able to solve complex and non-routine real-world problems in all NAEP content areas. They should display mastery in the use of four-function calculators, rulers, and geometric shapes. These 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.</p>

IX. 2013 NAEP Mathematics Achievement Level Descriptions for Grade 8

Achievement Level	Description
<i>Basic</i> (262)	<p data-bbox="488 306 1433 485">Eighth-grade students performing at the <i>Basic</i> level should exhibit evidence of conceptual and procedural understanding in the five NAEP content areas. This level of performance signifies an understanding of arithmetic operations—including estimation—on whole numbers, decimals, fractions, and percents.</p> <p data-bbox="488 527 1419 961">Eighth-graders performing at the <i>Basic</i> 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 areas 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 <i>Proficient</i> level, students at the <i>Basic</i> 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 skill in communicating mathematically.</p>
<i>Proficient</i> (299)	<p data-bbox="488 1043 1406 1146">Eighth-grade students performing at the <i>Proficient</i> level should apply mathematical concepts and procedures consistently to complex problems in the five NAEP content areas.</p> <p data-bbox="488 1188 1370 1434">Eighth-graders performing at the <i>Proficient</i> 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 <i>Basic</i> level arithmetic operations—an understanding sufficient for problem solving in practical situations.</p> <p data-bbox="488 1451 1422 1759">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.</p>

<i>Advanced</i> (333)	<p>Eighth-grade students performing at the <i>Advanced</i> level should be able to reach beyond the recognition, identification, and application of mathematical rules in order to generalize and synthesize concepts and principles in the five NAEP content areas.</p> <p>Eighth-graders performing at the <i>Advanced</i> 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 <i>Advanced</i> 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.</p>
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NAEP Assessment Reporting Glossary

Accommodations. Accommodations are alterations in the way tasks are presented that allow children with learning disabilities to complete the same assignments as other students. Accommodations do not alter the content of assignments, give students an unfair advantage or in the case of assessments such as NAEP, change what a test measures.

Achievement levels. Performance standards set by the National Assessment Governing Board that provide a context for interpreting student performance on NAEP, based on recommendations from panels of educators and members of the public. The levels, *Basic*, *Proficient*, and *Advanced*, measure what students should know and be able to do at each grade assessed. See each NAEP subject for a detailed description of what students should know and be able to do at each level at grade 4, 8, or 12.

- ***Basic.*** One of the three NAEP achievement levels, denoting partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade assessed. NAEP also reports the proportion of students whose scores place them below the *Basic* achievement level. See each NAEP subject for a detailed description of what students should know and be able to do at grade 4, 8, or 12 at the *Basic* level. The cut scores determining each level are available with these descriptions.
- ***Proficient.*** One of the three NAEP achievement levels, representing 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. See each NAEP subject for a detailed description of what students should know and be able to do at grade 4, 8, or 12 at the *Proficient* level. The cut scores determining each level are available with the descriptions.
- ***Advanced.*** One of the three NAEP achievement levels, denoting superior performance at each grade assessed. See each NAEP subject for a detailed description of what students should know and be able to do at grade 4, 8, or 12 at the *Advanced* level. The cut scores determining each level are available with these descriptions.

Achievement-level percentages. The percentage of students within the total population, or in a particular student group, who meet or exceed expectations of what students should know and be able to do. Specifically, it is the weighted percentage of students with NAEP composite scores that are equal to, or exceed, the achievement-level cut scores specified by the National Assessment Governing Board.

Gender. NAEP results are reported separately for males and females, based on students' self-reported gender.

English language learners (ELL). A term used to describe students who are in the process of acquiring English language skills and knowledge.

NAEP. 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 subject areas. Since 1969, assessments have been conducted periodically in mathematics, reading, science, writing, U.S. history, geography, civics, the arts, and other subjects.

NAEP scales. The scales common across age or grade levels and assessment years used to report NAEP results.

National Assessment Governing Board. An independent organization whose members are appointed by the U.S. Secretary of Education. The Governing Board provides overall policy direction to the NAEP program. It is an independent, bipartisan group whose members include governors, state legislators, local and state school officials, educators, business representatives, and members of the general public.

National School Lunch Program (NSLP). A federally assisted meal program that provides low-cost or free lunches to eligible students. It is sometimes referred to as the free/reduced-price lunch program. Free lunches are offered to those students whose family incomes are at or below 130 percent of the poverty level; reduced-price lunches are offered to those students whose family incomes are between 130 percent and 185 percent of the poverty level.

Parental education. A NAEP reporting group defined by the highest level of education of the mother and father of an assessed student as derived from the student's response to two background questionnaire items.

Percentile. A score location below which a specified percentage of the population falls. For example, in 1998, the tenth percentile of fourth-grade reading scores was 167. This means that in 1998, ten percent of fourth-graders had NAEP reading scores below 167, while 90 percent scored at or above 167.

Race/ethnicity. In order to allow comparisons across years, assessment results presented are based on information for six mutually exclusive racial/ethnic categories: White, Black, Hispanic, Asian/Pacific Islander, American Indian (including Alaska Native), and Other. Students who identified with more than one of the first five categories or had a background other than the ones listed were categorized as Other. In all NAEP assessments, data about student race/ethnicity is collected from two sources: school records and student self-reports. Before 2002, NAEP used students' self-report of their race and ethnicity on a background questionnaire as the source of race/ethnicity data. In 2002, it was decided to change the student race/ethnicity variable highlighted in NAEP reports. Starting in 2002, NAEP reports of students' race and ethnicity are based on the school records, with students' self-report used only if school data are missing. Information based on student self-reported race/ethnicity will continue to be reported in the NAEP Data Explorer for assessments after 2001.

Reporting group. Groups within the national population for which NAEP data are reported; for example, gender, race/ethnicity, grade, age, level of parental education, region, and type of location.

Sample. A subset of a population whose characteristics are studied to gain information about the entire population. NAEP assesses a representative sample of students each year, rather than the entire population of students.

Sampling error. The error in survey estimates that occurs because only a sample of the population is observed. Measured by sampling standard error.

Scale score. A score, derived from student responses to assessment items, that summarizes the overall level of performance attained by that student. While NAEP does not produce scale scores for individual students, NAEP does produce summary statistics describing scale scores for groups of students. NAEP subject area scales typically range from 0 to 500 (reading, mathematics, U.S. history, and geography) or from 0 to 300 (science, writing, and civics).

School location. The physical location of a school. NAEP reporting includes city, suburb, town, and rural.

Significantly different, statistically significant, statistically significant difference. Statistical tests are conducted to determine whether the changes or differences between two result numbers are statistically significant. The term "significant" does not imply a judgment about the absolute magnitude or educational relevance of changes in student performance. Rather, it is used to indicate that the observed changes are not likely to be associated with sampling and measurement error, but are statistically dependable population differences. NAEP uses widely accepted statistical standards in analyzing data. For instance, this website discusses only findings that are statistically significant at the .05 level. However, some differences that are statistically significant appear small, particularly in recent assessment years, when the sample sizes have been larger.

NOTE: Differences between scale scores or percentages are calculated using unrounded values. In some instances, the result of the subtraction differs from what would be obtained by subtracting the rounded values shown in the accompanying figure or table.

Standard error. In NAEP, a measure of sampling variability and measurement error for a NAEP scale score. However, for other statistics, it reflects the sampling variability. Because of NAEP's complex student sampling design, sampling standard errors are estimated by jackknifing the samples from first-stage sample estimates. Standard errors may also include a component due to the error of measurement of individual scores estimated using plausible values.

Student sample. A portion of a population, or a subset from a set of units, that is selected by some probability mechanism for the purpose of investigating the properties of the population.

Students with disabilities (SD). A student with a disability may need specially designed instruction to meet his or her learning goals. A student with a disability will usually have an Individualized Education Plan (IEP), which guides his or her special education instruction. Students with disabilities are often referred to as special education students and may be classified by their school as learning disabled (LD) or emotionally disturbed (ED). The goal of NAEP is that students who are capable of participating meaningfully in the assessment are assessed, but

some students with disabilities selected by NAEP may not be able to participate, even with the accommodations provided.

Subject area. One of the areas assessed by NAEP: the arts, civics, economics, foreign language, geography, mathematics, reading, science, U.S. history, world history, or writing.

Weighted percentage. A percentage that has been calculated by differentially weighting observations to account for complex sampling procedures. It differs from a simple percentage in which all cases are equally weighted.

In NAEP, each sampled student is assigned a weight that makes proper allowances for the sampling design and reflects adjustments for school and student nonparticipation.

Weighted percentages are estimates of the percentages of the total population, student group that share a specified characteristic. For example, the weighted percentage of fourth-grade students in the NAEP sample that correctly answered a particular NAEP test item is an estimate of the percentage of fourth-grade students in the nation that can correctly answer that question.