



This report provides selected results for New Jersey's public school students at grades 4 and 8 from the National Assessment of Educational Progress (NAEP) assessment in mathematics. Results are reported by average scale scores and by achievement levels (*Basic*, *Proficient*, and *Advanced*).

State-level results in mathematics are available for eight assessment years (at grade 8 in 1990; and at both grades 4 and 8 in 1992, 1996, 2000, 2003, 2005, 2007, and 2009), although not all states may have participated or met the criteria for reporting in every year. All 50 states, the District of Columbia, and the Department of Defense Schools participated in the 2009 mathematics assessment at grades 4 and 8. For the first time in 2009, grade 12 mathematics results are also available for the 11 states that volunteered for the assessment and met the reporting criteria. Grade 12 results follow the grade 4 and 8 results in the NAEP reporting schedule.

For more information about the assessment, see the NAEP website <http://nces.ed.gov/nationsreportcard/> which contains

- *The Nation's Report Card, Mathematics 2009*
- The full set of national and state results in an interactive database
- Released test questions, scoring guides, and question-level performance data

NAEP is a project of the National Center for Education Statistics (NCES), reporting on the academic achievement of elementary and secondary students in the United States.

K E Y F I N D I N G S F O R 2 0 0 9

Grade 4:

- In 2009, the average mathematics score for fourth-grade students in New Jersey was 247. This was higher than that of the nation's public schools (239).
- The average score for students in New Jersey in 2009 (247) was higher than that in 1992 (227) and was not significantly different from that in 2007 (249).
- In 2009, the percentage of students in New Jersey who performed at or above *Proficient* was 49 percent. This was greater than that for the nation's public schools (38 percent).
- The percentage of students in New Jersey who performed at or above *Proficient* in 2009 (49 percent) was greater than that in 1992 (25 percent) and was not significantly different from that in 2007 (52 percent).
- In 2009, the percentage of students in New Jersey who performed at or above *Basic* was 88 percent. This was greater than that for the nation's public schools (81 percent).
- The percentage of students in New Jersey who performed at or above *Basic* in 2009 (88 percent) was greater than that in 1992 (68 percent) and was not significantly different from that in 2007 (90 percent).

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Grade 8:

- In 2009, the average mathematics score for eighth-grade students in New Jersey was 293. This was higher than that of the nation's public schools (282).
- The average score for students in New Jersey in 2009 (293) was higher than that in 1990 (270) and in 2007 (289).
- In 2009, the percentage of students in New Jersey who performed at or above *Proficient* was 44 percent. This was greater than that for the nation's public schools (33 percent).
- The percentage of students in New Jersey who performed at or above *Proficient* in 2009 (44 percent) was greater than that in 1990 (21 percent) and was not significantly different from that in 2007 (40 percent).
- In 2009, the percentage of students in New Jersey who performed at or above *Basic* was 80 percent. This was greater than that for the nation's public schools (71 percent).
- The percentage of students in New Jersey who performed at or above *Basic* in 2009 (80 percent) was greater than that in 1990 (58 percent) and was not significantly different from that in 2007 (77 percent).

The U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) has provided software that generated user-selectable data, statistical significance test result statements, and technical descriptions of the NAEP assessments for this report. Content may be added or edited by states or other jurisdictions. This document, therefore, is not an official publication of the National Center for Education Statistics.

Introduction

What Was Assessed?

The content for each NAEP assessment is determined by the National Assessment Governing Board. The framework for each assessment documents the content and process areas to be measured and sets guidelines for the types of questions to be used. The mathematics frameworks were developed with the guidance of the Council of Chief State School Officers (CCSSO) and under the direction of the Governing Board. The current framework is available at the Governing Board's website <http://www.nagb.org/publications/frameworks/math-framework09.pdf>.

For grades 4 and 8, the mathematics framework for the 2009 assessment is similar to earlier versions that guided the 1990, 1992, 1996, 2000, 2003, 2005, and 2007 mathematics assessments. Although the frameworks are updated periodically, the mathematics content objectives for grades 4 and 8 have not changed, allowing students' performance in 2009 to be compared with previous years.

For 2005, the Governing Board adopted a new mathematics framework for grade 12 to reflect changes in high school standards and coursework. For 2009, the grade 12 mathematics framework was updated, adding objectives addressing mathematics content beyond that typically taught in a standard 3-year course of study in high school mathematics.

Content Areas and Mathematical Complexity

The 2009 mathematics framework classifies assessment questions in two dimensions, *content area* and *mathematical complexity*, that are used to guide the assessment. Each question is designed to measure one of the five content areas. However, certain aspects of mathematics, such as computation, occur in all content areas. Although the names of the content areas (as well as some topics in those areas) have changed from one framework to the next, a consistent focus has remained on measuring student performance in all five content areas. The distribution of questions among each content area differs by grade to reflect the knowledge and skills appropriate for each grade level. At grade 12, the measurement and geometry content areas are combined into one for reporting purposes to reflect the fact that the majority of measurement topics suitable for grade 12 students are geometric in nature.

- **Number properties and operations** measures students' understanding of ways to represent, calculate, and estimate with numbers.
- **Measurement** measures students' knowledge of measurement attributes, such as capacity and temperature, and geometric attributes, such as length, area, and volume.
- **Geometry** measures students' knowledge and understanding of shapes in a plane and in space.
- **Data analysis, statistics, and probability** measures students' understanding of data representation, characteristics of data sets, experiments and samples, and probability.
- **Algebra** measures students' understanding of patterns, using variables, algebraic representation, and functions.

The mathematical complexity of a question refers to the level of cognitive demand it places on students. Each level of complexity includes aspects of knowing and doing mathematics, such as performing procedures, understanding concepts, or solving problems.

- **Low complexity** questions typically specify what a student is to do, which is often to carry out a routine mathematical procedure.
- **Moderate complexity** questions involve more flexibility of thinking and often require a response with multiple steps.
- **High complexity** questions make heavier demands and often require abstract reasoning or analysis in a novel situation.

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Assessment Design

Because of the breadth of the content covered in the NAEP mathematics assessment, each student took just a portion of the test, consisting of two 25-minute sections. Testing time was divided evenly between multiple-choice and constructed-response questions. Short constructed-response questions asked students to provide the answer for a numerical problem or to briefly describe the solution to a problem. Longer constructed-response questions required students to write both a solution and its justification, explanation, or interpretation. Released test questions, along with student performance data by state, are available on the NAEP website at <http://nces.ed.gov/nationsreportcard/itmrls/>.

Some questions in the 2009 assessment incorporated the use of calculators (four-function calculators at grade 4, and scientific or graphing calculators at grades 8 and 12), rulers, protractors (at grades 8 and 12), or manipulatives such as spinners and geometric shapes. Calculator use at all grades was permitted on approximately one-third of the assessment.

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Who Was Assessed?

All 50 states, the District of Columbia, and the Department of Defense Schools participated in the 2009 mathematics assessment at grades 4 and 8. For the first time in 2009, grade 12 mathematics results are also available for the following 11 states that met the reporting criteria: Arkansas, Connecticut, Florida, Idaho, Illinois, Iowa, Massachusetts, New Hampshire, New Jersey, South Dakota, and West Virginia.

The overall participation rates for schools and students must meet guidelines established by the National Center for Education Statistics (NCES) and the National Assessment Governing Board for assessment results to be reported publicly. A participation rate of at least 85 percent for schools in each subject and grade was required. Participation rates for the 2009 mathematics assessment are available on the NAEP website at http://nationsreportcard.gov/math_2009/participation.asp.

The schools and students participating in NAEP assessments are selected to be representative both nationally and for public schools at the state level. The comparisons between national and state results in this report present the performance of public school students only. In NAEP reports, the category "nation (public)" does not include Department of Defense or Bureau of Indian Education schools.

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How Is Student Mathematics Performance Reported?

The 2009 state results are compared to results from six earlier assessments at grade 4 and from seven earlier assessments at grade 8. At grade 12, state results are available for 2009 only.

Scale Scores: Student performance is reported as an average score based on the NAEP mathematics scale, which ranges from 0 to 500 for grades 4 and 8, and from 0 to 300 for grade 12. Because NAEP scales are developed independently for each subject and for each content area within a subject, the scores cannot be compared across subjects or across content areas within the same subject. Results are also reported at five percentiles (10th, 25th, 50th, 75th, and 90th) to show trends in performance for lower-, middle-, and higher-performing students.

Achievement Levels: Based on recommendations from policymakers, educators, and members of the general public, the Governing Board sets specific achievement levels for each subject area and grade. Achievement levels are performance standards indicating what students should know and be able to do. They provide another perspective with which to interpret student performance. NAEP results are reported in terms of three achievement levels—*Basic*, *Proficient*, and *Advanced*—and are expressed in terms of the percentage of students who attained each level. The three achievement levels are defined as follows:

- *Basic* denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
- *Proficient* represents 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 appropriate analytical skills.
- *Advanced* represents superior performance.

The achievement levels are cumulative; therefore, students performing at the *Proficient* level also display the competencies associated with the *Basic* level, and students at the *Advanced* level also demonstrate the competencies associated with both the *Basic* and the *Proficient* levels.

As provided by law, NCES, upon review of congressionally mandated evaluations of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted with caution. The NAEP achievement levels have been widely used by national and state officials. The mathematics achievement-level descriptions are summarized in figures 1-A and 1-B.

NAEP 2009 Mathematics Report for New Jersey

Figure 1-A	The Nation's Report Card 2009 State Assessment
	Descriptions of fourth-grade achievement levels for 2009 NAEP mathematics assessment

Basic Level (214)	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.
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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 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.

Proficient Level (249)	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.
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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 areas; 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 Level (282)	Fourth-grade students performing at the <i>Advanced</i> level should apply integrated procedural knowledge and conceptual understanding to complex and nonroutine real-world problem solving in the five NAEP content areas.
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Fourth-graders performing at the *Advanced* level should be able to solve complex and nonroutine 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.

NOTE: The scores in parentheses indicate the cut point on the scale at which the achievement-level range begins.
 SOURCE: National Assessment Governing Board. (2008). *Mathematics Framework for the 2009 National Assessment of Educational Progress*. Washington, DC: Author.

NAEP 2009 Mathematics Report for New Jersey

Figure 1-B	The Nation's Report Card 2009 State Assessment
	Descriptions of eighth-grade achievement levels for 2009 NAEP mathematics assessment

Basic Level (262)	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.
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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 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 *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 skill in communicating mathematically.

Proficient Level (299)	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.
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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 Level (333)	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.
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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.

NOTE: The scores in parentheses indicate the cut point on the scale at which the achievement-level range begins.

SOURCE: National Assessment Governing Board. (2008). *Mathematics Framework for the 2009 National Assessment of Educational Progress*. Washington, DC: Author.

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Interpreting Results

The scores and percentages in this report are estimates based on samples of students rather than on entire populations. In addition, the collection of questions used at each grade level is only a sample of the many questions that could have been asked to assess the skills and abilities described in the NAEP framework. Therefore, the results are subject to a measure of uncertainty, reflected in the standard error of the estimates—a range of up to a few points above or below the score or percentage—which takes into account potential score fluctuation due to sampling error and measurement error. Statistical tests that factor in these standard errors are used to determine whether the differences between average scores or percentages are significant. All differences were tested for statistical significance at the .05 level using unrounded numbers.

NAEP sample sizes have increased since 2002 compared to previous years, resulting in smaller standard errors. As a consequence, smaller differences are detected as statistically significant than were detected in previous assessments. In addition, estimates based on smaller groups are likely to have relatively large standard errors. Thus, some seemingly large differences may not be statistically significant. That is, it cannot be determined whether these differences are due to sampling error, or to true differences in the population of interest.

Differences between scores or between percentages are discussed in this report only when they are significant from a statistical perspective. Significant differences between 2009 and prior assessments are marked with a notation (*) in the tables. Any differences in scores within a year or across years that are mentioned in the text as "higher," "lower," "greater," or "smaller" are statistically significant.

The reader is cautioned against making simple causal inferences between student performance and the other variables (e.g., race/ethnicity, gender, and type of school location) discussed in this report. A statistically significant relationship between a variable and measures of student performance does not imply that the variable causes differences in how well students perform. The relationship may be influenced by a number of other variables not accounted for in this report, such as family income, parental involvement, or student attitudes.

NAEP 2009 Mathematics Overall Scale Score and Achievement-Level Results for Public School Students

Overall mathematics results are reported in this section for public school students from New Jersey along with regional and national results.

Prior to 2000, testing accommodations were not provided for students with special needs in NAEP state mathematics assessments. For 2000, results are displayed for both the sample in which accommodations were permitted and the sample in which they were not permitted. Subsequent assessment results were based on the more inclusive samples. In the text of this report, comparisons to 2000 results refer only to the sample in which accommodations were permitted.

Overall Scale Score Results

Student performance is reported as an average score based on the NAEP mathematics scale, which ranges from 0 to 500 for grades 4 and 8, and from 0 to 300 for grade 12.

Tables 1-A and 1-B show the overall performance results of grades 4 and 8 public school students in New Jersey, the nation (public), and the region. The list of states making up a given region for NAEP prior to 2003 differed from the list used by the U.S. Census Bureau, which has been used in NAEP from 2003 onward. Therefore, the data for the state's region are given only for 2003, 2005, 2007, and 2009. The first column of results presents the average score on the NAEP mathematics scale. The remaining columns show the scores at selected percentiles. A percentile indicates the percentages of students whose scores fell at or below a particular score. For example, the 25th percentile demarks the cut point for the lowest 25 percent of students within the distribution of scale scores.

Grade 4 Scale Score Results

- In 2009, the average scale score for students in New Jersey was 247. This was higher than that of students across the nation (239).
- In New Jersey, the average scale score for students in 2009 was not significantly different from that in 2007 (249). Similarly, the average scale score for students in public schools across the nation in 2009 was not significantly different from that in 2007 (239).
- In New Jersey, the average scale score for students in 2009 was higher than the scores in 1992, 1996, and 2003. However, it was not significantly different from the scores in 2005 and 2007.

Grade 8 Scale Score Results

- In 2009, the average scale score for students in New Jersey was 293. This was higher than that of students across the nation (282).
- In New Jersey, the average scale score for students in 2009 was higher than that in 2007 (289). Similarly, the average scale score for students in public schools across the nation in 2009 was higher than that in 2007 (280).
- In New Jersey, the average scale score for students in 2009 was higher than the scores in 1990, 1992, 2003, 2005, and 2007.

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Table 1-A Average scale scores and selected percentile scores in NAEP mathematics for fourth-grade public school students, by assessment year and jurisdiction: Various years, 1992–2009

Year and jurisdiction		Average scale score	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
1992 ¹	Nation (public)	219	176	197	220	241	259
	New Jersey	227	187	207	229	249	265
1996 ¹	Nation (public)	222	180	201	224	244	261
	New Jersey	227	186	207	229	249	266
2003	Nation (public)	234	196	215	235	254	270
	Northeast ²	238	200	219	239	258	272
	New Jersey	239	199	220	241	260	274
2005	Nation (public)	237	199	219	239	257	272
	Northeast ²	241	204	224	243	261	275
	New Jersey	244	207	227	246	263	278
2007	Nation (public)	239	201	221	241	259	274
	Northeast ²	245	209	228	247	264	279
	New Jersey	249	213	232	250	267	281
2009	Nation (public)	239	201	221	241	259	275
	Northeast ²	244	208	226	246	264	279
	New Jersey	247	210	229	248	266	280

* Value is significantly different ($p < .05$) from the value for the same jurisdiction in 2009.

¹ Accommodations were not permitted for this assessment.

² Region in which jurisdiction is located. Regional data are not provided for years prior to 2003 to be consistent with the U.S. Census Bureau defined regions.

NOTE: The NAEP grade 4 mathematics scale ranges from 0 to 500.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1992–2009 Mathematics Assessments.

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Table 1-B Average scale scores and selected percentile scores in NAEP mathematics for eighth-grade public school students, by assessment year and jurisdiction: Various years, 1990–2009

Year and jurisdiction		Average scale score	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
1990 ¹	Nation (public)	262	214	237	263	288	307
	New Jersey	270	223	245	270	294	316
1992 ¹	Nation (public)	267	219	242	268	293	314
	New Jersey	272	223	248	274	297	317
2003	Nation (public)	276	228	253	278	301	321
	Northeast ²	281	233	258	283	306	325
	New Jersey	281	232	258	284	307	326
2005	Nation (public)	278	230	254	279	303	323
	Northeast ²	282	235	259	284	307	327
	New Jersey	284	234	261	286	310	331
2007	Nation (public)	280	234	257	281	305	325
	Northeast ²	285	239	262	287	310	330
	New Jersey	289	241	265	291	314	334
2009	Nation (public)	282	235	258	283	307	328
	Northeast ²	288	240	265	290	314	334
	New Jersey	293	244	269	294	319	340

* Value is significantly different ($p < .05$) from the value for the same jurisdiction in 2009.

¹ Accommodations were not permitted for this assessment.

² Region in which jurisdiction is located. Regional data are not provided for years prior to 2003 to be consistent with the U.S. Census Bureau defined regions.

NOTE: The NAEP grade 8 mathematics scale ranges from 0 to 500.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1990–2009 Mathematics Assessments.

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Overall Achievement-Level Results

Student results are reported as the percentages of students performing relative to performance standards set by the National Assessment Governing Board. These performance standards for what students should know and be able to do were based on the recommendations of broadly representative panels of educators and members of the public.

Tables 2-A and 2-B show the percentage of students at grades 4 and 8 who performed below *Basic*, at or above *Basic*, at or above *Proficient*, and at *Advanced*. Because the percentages are cumulative from *Basic* to *Proficient* to *Advanced*, they may sum to more than 100 percent. Only the percentage of students performing at or above *Basic* (which includes the students at *Proficient* and *Advanced*) plus the students below *Basic* will sum to 100 percent.

Grade 4 Achievement-Level Results

- In 2009, the percentage of New Jersey's students who performed at or above *Proficient* was 49 percent. This was greater than the percentage of the nation's public school students who performed at or above *Proficient* (38 percent).
- In New Jersey, the percentage of students who performed at or above *Proficient* in 2009 was greater than the percentages in 1992, 1996, and 2003, but was not significantly different from the percentages in 2005 and 2007.
- In 2009, the percentage of New Jersey's students who performed at or above *Basic* was 88 percent. This was greater than the percentage of the nation's public school students who performed at or above *Basic* (81 percent).
- In New Jersey, the percentage of students who performed at or above *Basic* in 2009 was greater than the percentages in 1992, 1996, and 2003, but was not significantly different from the percentages in 2005 and 2007.

Grade 8 Achievement-Level Results

- In 2009, the percentage of New Jersey's students who performed at or above *Proficient* was 44 percent. This was greater than the percentage of the nation's public school students who performed at or above *Proficient* (33 percent).
- In New Jersey, the percentage of students who performed at or above *Proficient* in 2009 was greater than the percentages in 1990, 1992, 2003, and 2005, but was not significantly different from the percentage in 2007.
- In 2009, the percentage of New Jersey's students who performed at or above *Basic* was 80 percent. This was greater than the percentage of the nation's public school students who performed at or above *Basic* (71 percent).
- In New Jersey, the percentage of students who performed at or above *Basic* in 2009 was greater than the percentages in 1990, 1992, 2003, and 2005, but was not significantly different from the percentage in 2007.

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Table 2-A Percentage of fourth-grade public school students at or above NAEP mathematics achievement levels, by assessment year and jurisdiction: Various years, 1992–2009

Year and jurisdiction		Below <i>Basic</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>	At <i>Advanced</i>
1992 ¹	Nation (public)	43	57	17	2
	New Jersey	32	68	25	2
1996 ¹	Nation (public)	38	62	20	2
	New Jersey	32	68	25	3
2003	Nation (public)	24	76	31	4
	Northeast ²	20	80	36	5
	New Jersey	20	80	39	5
2005	Nation (public)	21	79	35	5
	Northeast ²	16	84	41	6
	New Jersey	14	86	45	8
2007	Nation (public)	19	81	39	5
	Northeast ²	13	87	47	8
	New Jersey	10	90	52	9
2009	Nation (public)	19	81	38	6
	Northeast ²	14	86	46	8
	New Jersey	12	88	49	9

* Value is significantly different ($p < .05$) from the value for the same jurisdiction in 2009.

¹ Accommodations were not permitted for this assessment.

² Region in which jurisdiction is located. Regional data are not provided for years prior to 2003 to be consistent with the U.S. Census Bureau defined regions.

NOTE: The NAEP grade 4 mathematics scale ranges from 0 to 500. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 213 or lower; *Basic*, 214–248; *Proficient*, 249–281; and *Advanced*, 282 and above. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1992–2009 Mathematics Assessments.

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Table 2-B Percentage of eighth-grade public school students at or above NAEP mathematics achievement levels, by assessment year and jurisdiction: Various years, 1990–2009

Year and jurisdiction		Below <i>Basic</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>	At <i>Advanced</i>
1990 ¹	Nation (public)	49	51	15	2
	New Jersey	42	58	21	3
1992 ¹	Nation (public)	44	56	20	3
	New Jersey	38	62	24	3
2003	Nation (public)	33	67	27	5
	Northeast ²	29	71	33	6
	New Jersey	28	72	33	6
2005	Nation (public)	32	68	28	6
	Northeast ²	27	73	33	7
	New Jersey	26	74	36	9
2007	Nation (public)	30	70	31	7
	Northeast ²	25	75	37	9
	New Jersey	23	77	40	10
2009	Nation (public)	29	71	33	7
	Northeast ²	22	78	40	11
	New Jersey	20	80	44	14

* Value is significantly different ($p < .05$) from the value for the same jurisdiction in 2009.

¹ Accommodations were not permitted for this assessment.

² Region in which jurisdiction is located. Regional data are not provided for years prior to 2003 to be consistent with the U.S. Census Bureau defined regions.

NOTE: The NAEP grade 8 mathematics scale ranges from 0 to 500. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 261 or lower; *Basic*, 262–298; *Proficient*, 299–332; and *Advanced*, 333 and above. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1990–2009 Mathematics Assessments.

Comparisons Between New Jersey, the Nation, and Participating States and Jurisdictions

All 50 states, the District of Columbia, and the Department of Defense Schools participated in the 2009 mathematics assessment at grades 4 and 8. For the first time in 2009, grade 12 mathematics results are also available for 11 states that met the reporting criteria. References to "jurisdictions" in the results statements may include states, the District of Columbia, and/or Department of Defense Schools.

Comparisons by Average Scale Scores

Figures 2-A and 2-B compare New Jersey's 2009 overall mathematics scale scores at grades 4 and 8 with those of public schools in the nation and all other participating states and jurisdictions. The different shadings indicate whether the average score of the nation (public), a state, or a jurisdiction was found to be higher than, lower than, or not significantly different from that of New Jersey in the NAEP 2009 mathematics assessment.

Grade 4 Scale Score Comparison Results

- Students' average score in New Jersey was higher than the scores in 38 jurisdictions, not significantly different from those in 11 jurisdictions, and lower than those in 2 jurisdictions.

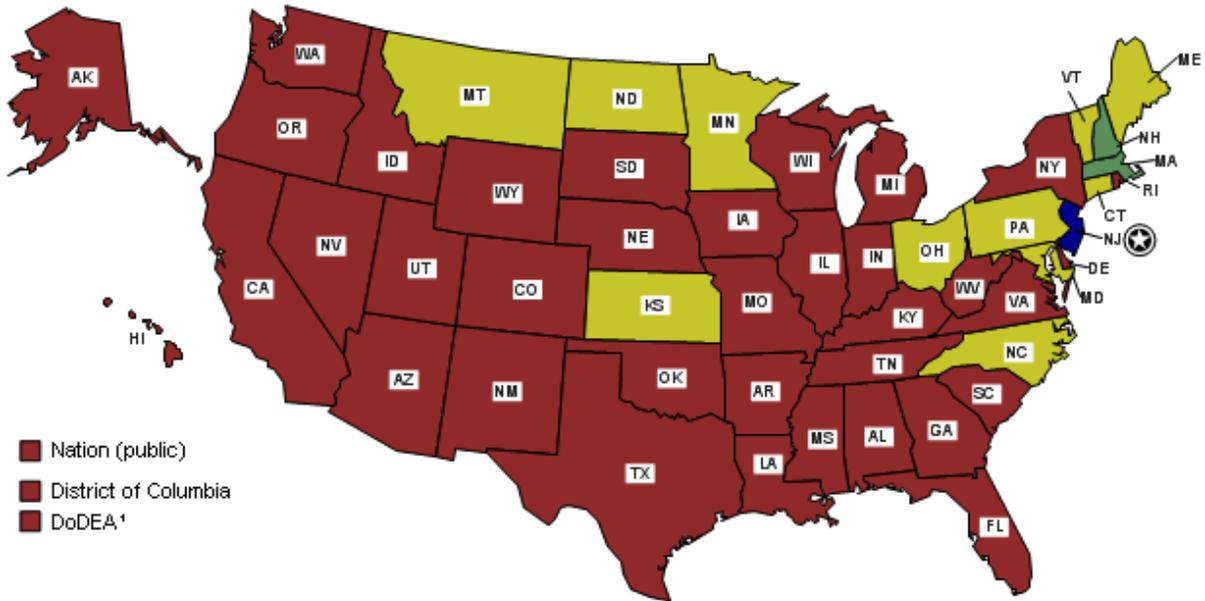
Grade 8 Scale Score Comparison Results

- Students' average score in New Jersey was higher than the scores in 44 jurisdictions, not significantly different from those in 6 jurisdictions, and lower than those in 1 jurisdiction.

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Figure 2-A New Jersey's average scale score in NAEP mathematics for fourth-grade public school students compared with scores for the nation and other participating jurisdictions: 2009



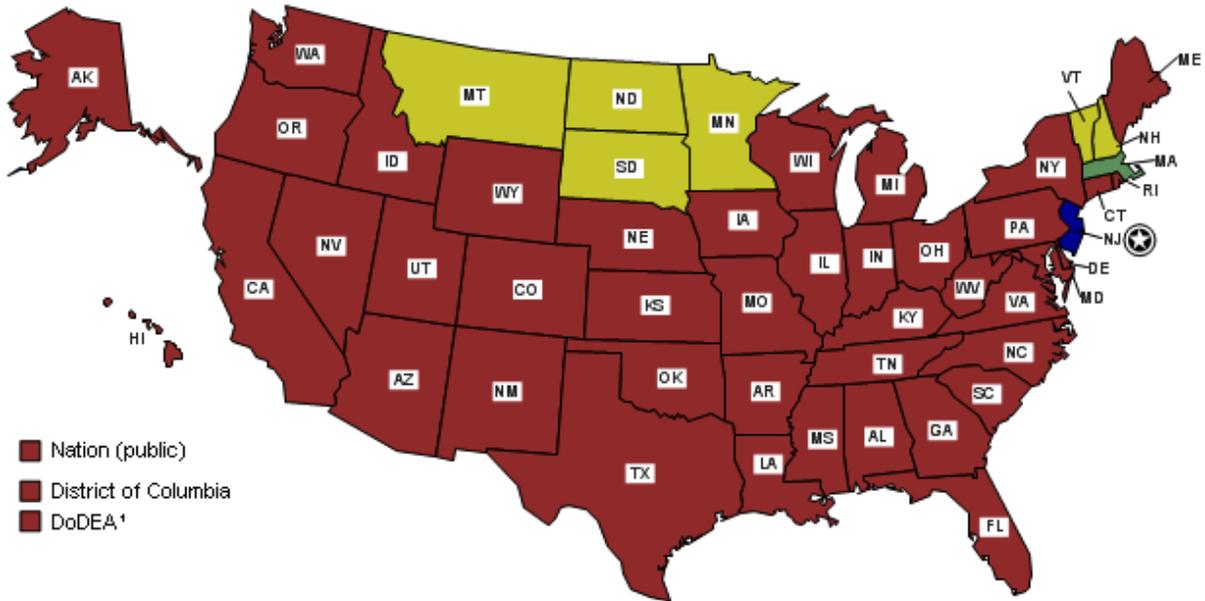
Focal state/jurisdiction (New Jersey)
Higher average scale score than New Jersey (2 jurisdictions)
Not significantly different from New Jersey (11 jurisdictions)
Lower average scale score than New Jersey (nation and 38 jurisdictions)

¹ Department of Defense Education Activity schools (domestic and overseas).
 SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

NAEP 2009 Mathematics Report for New Jersey

The Nation's Report Card 2009 State Assessment

Figure 2-B New Jersey's average scale score in NAEP mathematics for eighth-grade public school students compared with scores for the nation and other participating jurisdictions: 2009



Focal state/jurisdiction (New Jersey)

Higher average scale score than New Jersey (1 jurisdiction)

Not significantly different from New Jersey (6 jurisdictions)

Lower average scale score than New Jersey (nation and 44 jurisdictions)

¹ Department of Defense Education Activity schools (domestic and overseas).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

NAEP 2009 Mathematics Report for New Jersey

Comparisons by Achievement Levels

Figures 3-A and 3-B permit comparisons of all jurisdictions (and the nation) participating in the NAEP 2009 mathematics assessment in terms of percentages of grades 4 and 8 students performing at or above *Proficient*. The participating states and jurisdictions are grouped into categories reflecting whether the percentage of their students performing at or above *Proficient* (including *Advanced*) was found to be higher than, not significantly different from, or lower than the percentage in New Jersey.

Note that the selected state is listed first in its category, and the other states and jurisdictions within each category are listed alphabetically; statistical comparisons among jurisdictions in each of the three categories are not included in this report. However, statistical comparisons among states by achievement level can be calculated online by using the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.

Grade 4 Achievement-Level Comparison Results

- The percentage of students performing at or above the *Proficient* level in New Jersey was higher than the percentage in 39 jurisdictions, not significantly different from those in 10 jurisdictions, and lower than those in 2 jurisdictions.
- The percentage of students performing at or above the *Basic* level in New Jersey was higher than the percentage in 28 jurisdictions, not significantly different from those in 20 jurisdictions, and lower than those in 3 jurisdictions (data not shown).

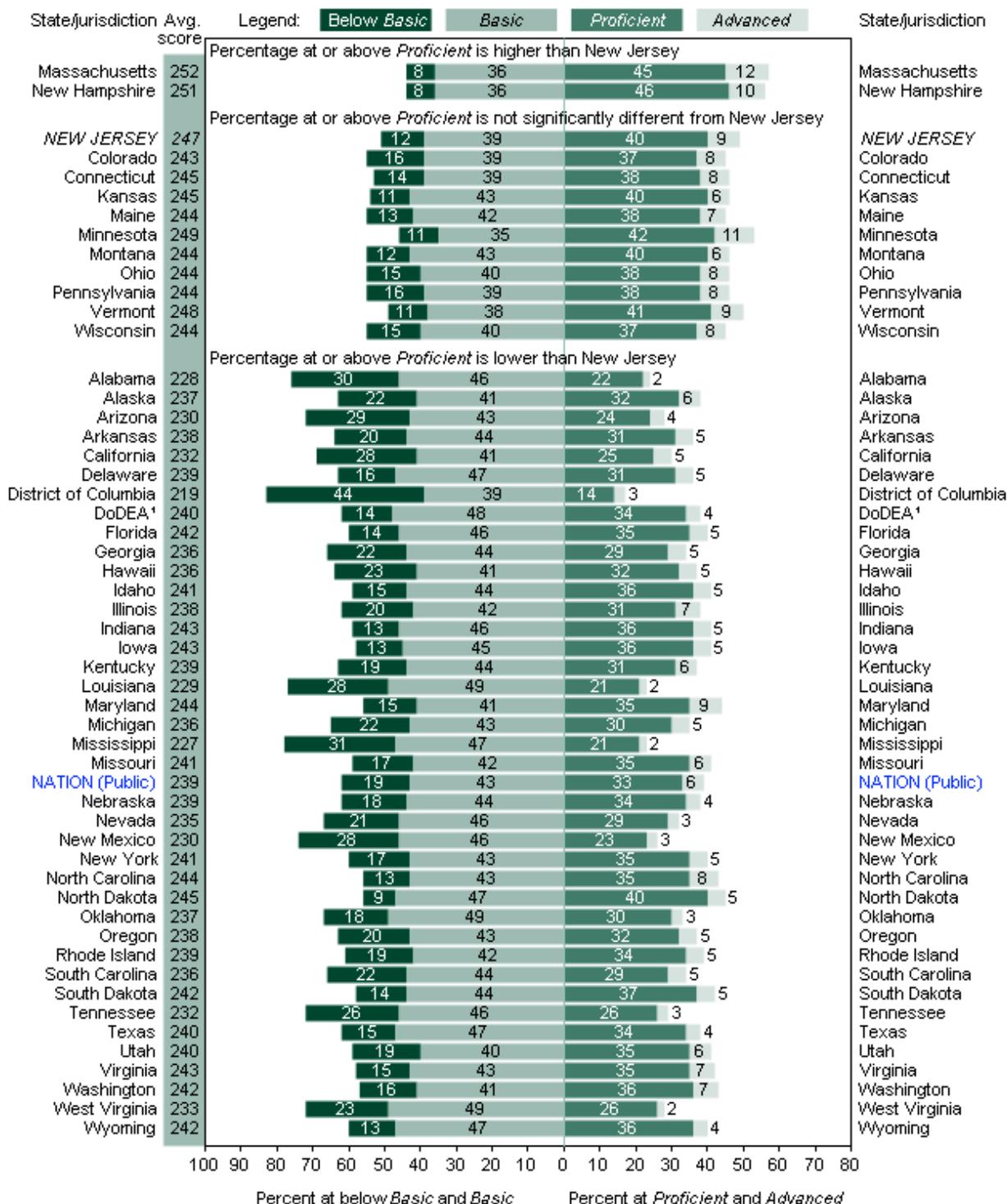
Grade 8 Achievement-Level Comparison Results

- The percentage of students performing at or above the *Proficient* level in New Jersey was higher than the percentage in 41 jurisdictions, not significantly different from those in 9 jurisdictions, and lower than those in 1 jurisdiction.
- The percentage of students performing at or above the *Basic* level in New Jersey was higher than the percentage in 31 jurisdictions, not significantly different from those in 18 jurisdictions, and lower than those in 2 jurisdictions (data not shown).

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Figure 3-A Average scale scores in NAEP mathematics for fourth-grade public school students, percentage within each achievement level, and New Jersey's percentage at or above *Proficient* compared with the nation and other participating states/jurisdictions: 2009



¹ Department of Defense Education Activity schools (domestic and overseas).

NOTE: The bars above contain percentages of students in each NAEP mathematics achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Proficient* category begins, so that

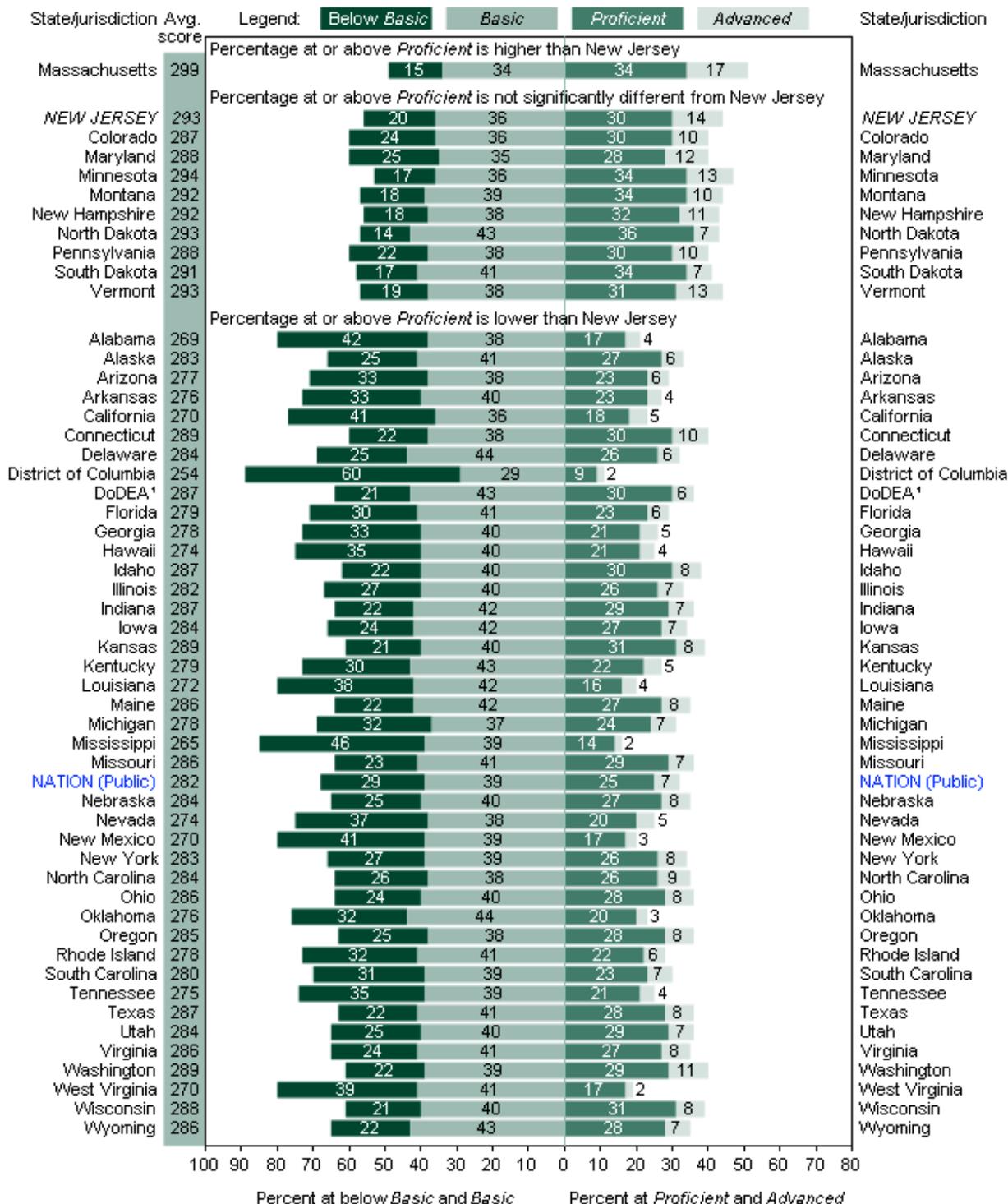
they may be compared at *Proficient* and above. Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers. Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

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Figure 3-B Average scale scores in NAEP mathematics for eighth-grade public school students, percentage within each achievement level, and New Jersey's percentage at or above *Proficient* compared with the nation and other participating states/jurisdictions: 2009



¹ Department of Defense Education Activity schools (domestic and overseas).

NOTE: The bars above contain percentages of students in each NAEP mathematics achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Proficient* category begins, so that

they may be compared at *Proficient* and above. Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers. Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.