The Nation's Report Card

Mathematics 2009

TRIAL URBAN DISTRICT ASSESSMENT

RESULTS AT GRADES 4 AND 8

ies NATIONAL CENTER FOR EDUCATION STATISTICS
Institute of Education Sciences
U.S. Department of Education
NCES 2010–452

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What is The Nation's Report Card™?

The Nation's Report Card™ informs the public about the academic achievement of elementary and secondary students in the United States. Report cards communicate the findings of the National Assessment of Educational Progress (NAEP), a continuing and nationally representative measure of achievement in various subjects over time.

Since 1969, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, U.S. history, civics, geography, and other subjects. NAEP collects and reports information on student performance at the national, state, and local levels, making the assessment an integral part of our nation's evaluation of the condition and progress of education. Only academic achievement data and related background information are collected. The privacy of individual students and their families is protected.

NAEP is a congressionally authorized project of the National Center for Education Statistics (NCES) within the Institute of Education Sciences of the U.S. Department of Education. The Commissioner of Education Statistics is responsible for carrying out the NAEP project. The National Assessment Governing Board oversees and sets policy for NAEP.

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Executive Summary

Results from the 2009 NAEP Trial Urban District Assessment (TUDA) make it possible to compare the performance of students in urban districts to public school students in the nation and large cities (i.e., cities with populations of 250,000 or more). Changes in students' performance over time can also be seen for those districts that participated in earlier assessments.

Scores for most districts higher than in 2003, but few make gains since 2007

Representative samples of fourth- and eighth-grade public school students from 18 urban districts participated in the 2009 assessment. Eleven of the districts also participated in earlier assessment years, and seven districts participated for the first time in 2009. Between 1,800 and 4,300 fourth- and eighth-graders were assessed in each district.

In comparison to 2007, average mathematics scores for students in large cities increased in 2009 at both grades 4 and 8; however, only two participating districts at each grade showed gains. Scores were higher in 2009 for Boston and the District of Columbia at grade 4, and for Austin and San Diego at grade 8. No districts showed a decline in scores at either grade.

In comparison to 2003, scores for students in large cities were higher in 2009 at both grades 4 and 8. Increases in scores were also seen across most urban districts that participated in both years, except in Charlotte at grade 4 and in Cleveland at grades 4 and 8, where there were no significant changes.

Changes in 2009 average mathematics scores since 2003 and 2007

	GRADE 4		GRADE 8	
District	Since 2003	Since 2007	Since 2003	Since 2007
Nation	5*	#	6*	2*
Large city	7*	2*	9*	3*
Atlanta	10*	2	15*	3
Austin	—	#	—	5*
Boston	16*	3*	18*	3
Charlotte	3	1	4*	#
Chicago	8*	2	9*	3
Cleveland	–1	–2	3	–1
District of Columbia (DCPS)	15*	6*	8*	3
Houston	9*	2	13*	3
Los Angeles	6*	1	13*	1
New York City	11*	1	7*	3
San Diego	10*	2	16*	8*

— District did not participate in 2003.
Rounds to zero.
* Significant ($p < .05$) score change.
NOTE: Large city results are representative of all large cities in the nation and not just the participating urban districts. Beginning in 2009, if the results for charter schools are not included in the school district's Adequate Yearly Progress (AYP) report to the U.S. Department of Education under the Elementary and Secondary Education Act, they are excluded from that district's TUDA results.
DCPS = District of Columbia Public Schools.

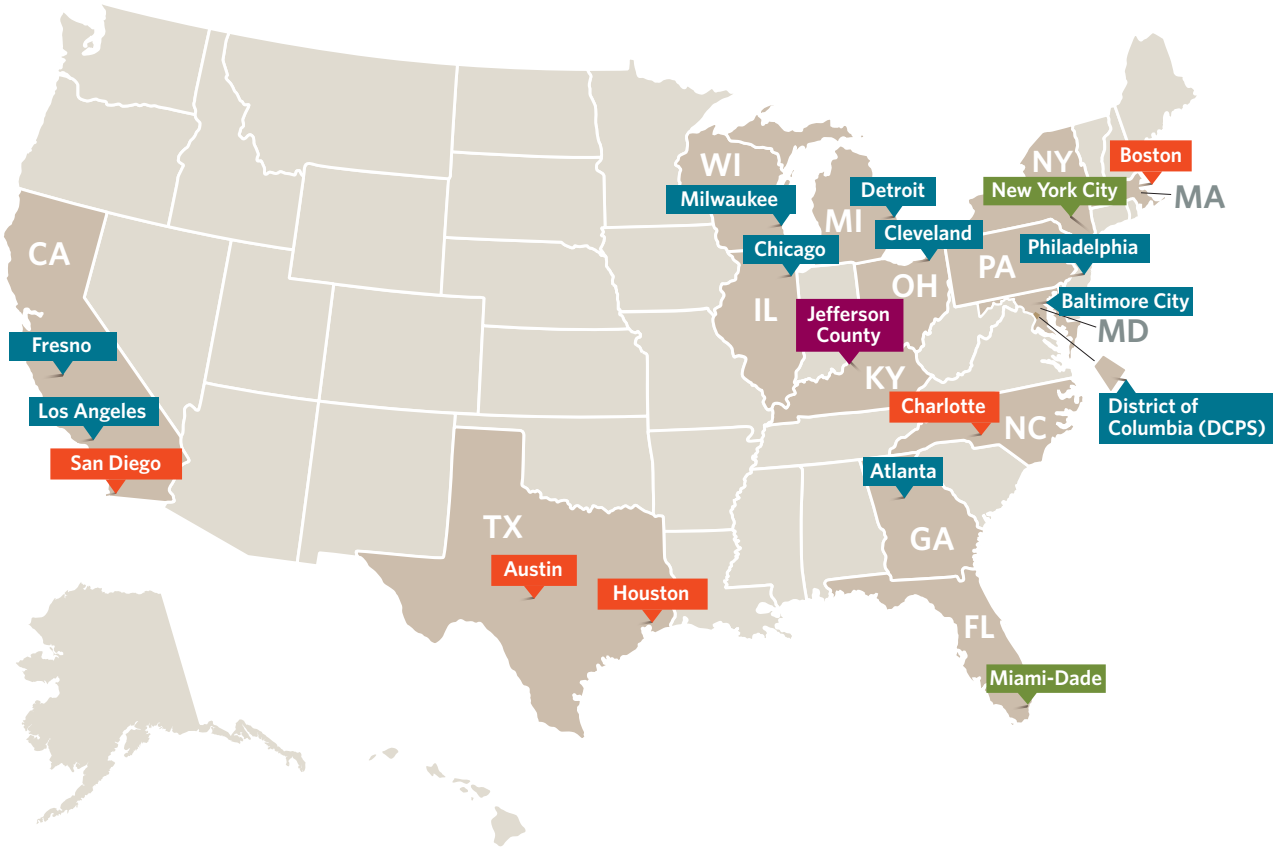
Five districts score above large cities at both grades in 2009

Among the 18 urban districts that participated in the 2009 mathematics assessment, scores for both fourth- and eighth-graders in 10 districts were lower than the scores for public school students attending schools in large cities overall. Scores for five districts, however, were higher than the scores for fourth- and eighth-graders in large cities nationally.

In comparison to the average scores in 2009 for large cities in the nation,

- Austin, Boston, Charlotte, Houston, and San Diego had higher scores at both grades;
- Atlanta, Baltimore City, Chicago, Cleveland, Detroit, the District of Columbia, Fresno, Los Angeles, Milwaukee, and Philadelphia had lower scores at both grades;
- scores in Jefferson County (Louisville, KY) were not significantly different at either grade; and
- scores for Miami-Dade and New York City were higher at grade 4 and not significantly different at grade 8.

Comparison of district and large city average mathematics scores in 2009



NOTE: DCPS = District of Columbia Public Schools.

A Closer Look at District Results Compared to Large Cities

Differences in overall average scores between participating districts and large cities were not always consistent across student groups. In Atlanta, for example, the overall average mathematics score was lower than the score for large cities at both grades. However, the score for Black students in the district (who comprise most of the student population) was not significantly different from the score for Black students in large cities at either grade.

Among the 10 districts where average scores at both grades were lower than the score for large cities, only Cleveland had lower scores for White, Black, and Hispanic students, and for students eligible for school lunch (an indicator of lower family income) in both grades.

Among the five districts where overall scores were higher than the score for large cities at both grades 4 and 8, only Charlotte and Houston also had higher scores for White, Black, and Hispanic students and for lower-income students in both grades.

Comparison of district and large city average mathematics scores in 2009

	GRADE 4					GRADE 8				
		Race/ethnicity					Race/ethnicity			
District	Overall	White	Black	Hispanic	Eligible for school lunch	Overall	White	Black	Hispanic	Eligible for school lunch
Atlanta	▼	▲	◆	◆	▼	▼	‡	◆	‡	▼
Austin	▲	▲	◆	▲	▲	▲	▲	▲	▲	▲
Baltimore City	▼	▼	◆	‡	▼	▼	‡	◆	‡	▼
Boston	▲	◆	▲	▲	▲	▲	▲	▲	▲	▲
Charlotte	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Chicago	▼	▼	▼	◆	▼	▼	◆	◆	◆	◆
Cleveland	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
Detroit	▼	‡	▼	▼	▼	▼	‡	▼	◆	▼
District of Columbia (DCPS)	▼	▲	▼	◆	▼	▼	‡	▼	◆	▼
Fresno	▼	▼	◆	▼	▼	▼	▼	▼	▼	▼
Houston	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Jefferson County (KY)	◆	▼	◆	◆	▼	◆	▼	▼	‡	▼
Los Angeles	▼	◆	▼	▼	▼	▼	◆	▼	▼	▼
Miami-Dade	▲	◆	◆	▲	▲	◆	◆	◆	▲	▲
Milwaukee	▼	▼	▼	◆	▼	▼	▼	▼	◆	▼
New York City	▲	◆	▲	▲	▲	◆	◆	▲	◆	▲
Philadelphia	▼	▼	◆	▼	▼	▼	◆	◆	◆	◆
San Diego	▲	◆	◆	◆	◆	▲	▲	◆	◆	▲

▲ Higher average score than large city.
▼ Lower average score than large city.
◆ No significant difference between the district and large city.
‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

NOTE: DCPS = District of Columbia Public Schools.

Demographics vary among the nation, large cities, and individual urban districts

When comparing the results for urban districts to results for the nation and large cities, it is important to consider how the demographics of the jurisdictions are different. Nationally, the percentages of White students at both grades 4 and 8 were higher than the combined percentages of Black and Hispanic students in 2009, while the opposite was true for large cities and for most participating urban districts.

Large cities and participating urban districts also differed from the nation in the proportion of students eligible for the National School Lunch Program. While the percentages of students eligible for free/reduced-price school lunch in the nation were 48 percent at grade 4 and 43 percent at grade 8, the percentages of eligible students in the districts ranged from 46 to 100 percent in 2009.

More detailed information about the demographic characteristics of fourth- and eighth-graders in the nation, large cities, and participating districts is included in the report.

Introduction

A primary goal of the NAEP Trial Urban District Assessment (TUDA) is to measure what students in the nation's large urban school districts know and can do in academic subjects. Eighteen urban districts participated in the TUDA in mathematics in 2009, seven of them for the first time.

The Mathematics Framework

The National Assessment Governing Board oversees the creation of the NAEP frameworks, which describe the specific knowledge and skills that should be assessed. Frameworks incorporate ideas and input from subject area experts, school administrators, policymakers, teachers, parents, and others. NAEP frameworks also describe the types of questions that should be included and how they should be designed and scored. Collectively, the questions are to span a range of demands on students' thinking. To ensure an appropriate balance of content along with allowing for a variety of ways of knowing and doing mathematics, the *Mathematics Framework for the 2009 National Assessment of Educational Progress* specifies that each question in the assessment measure one of five mathematical content areas.

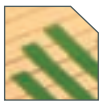
Although the names of the content areas, as well as some of the topics in those areas, have changed over the years, there has been a consistent focus across frameworks on collecting information on students' performance in five areas: number properties and operations; measurement; geometry; data analysis, statistics, and probability; and algebra.

Mathematics Content Areas

Number properties and operations measures students' understanding of ways to represent, calculate, and estimate with numbers.

Measurement assesses students' knowledge of units of measurement for such attributes as capacity, length, area, volume, time, angles, and rates.

Geometry measures students' knowledge and understanding of shapes in two and three dimensions, and relationships between shapes such as symmetry and transformations.



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.

Three levels of mathematical complexity (low, moderate, and high) described in the framework form an ordered description of the demands that questions make on students' thinking. Mathematical complexity involves *what* a question asks students to do and *not how* they might undertake it. The complexity of a question is not directly related to its format, and therefore it is possible for some multiple-choice questions to assess complex mathematics and for some constructed-response questions (i.e., open-ended) to assess routine mathematical ideas.

Levels of Mathematical Complexity

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.

The complete mathematics framework for 2009 is available at http://www.nagb.org/publications/frameworks/math-framework09.pdf.

Reporting NAEP Results

The 2009 mathematics results are reported for public school students in 18 urban districts. The following 11 districts participated in 2009 as well as in earlier assessment years:

Atlanta Public Schools
Austin Independent School District
Boston Public Schools
Charlotte-Mecklenburg Schools
Chicago Public Schools
Cleveland Metropolitan School District
District of Columbia Public Schools
Houston Independent School District
Los Angeles Unified School District
New York City Department of Education
San Diego Unified School District

The following seven districts participated for the first time in 2009:

Baltimore City Public Schools
Detroit Public Schools
Fresno Unified School District
Jefferson County Public Schools (Louisville, KY)
Miami-Dade County Public Schools
Milwaukee Public Schools
School District of Philadelphia

Representative samples of between 900 and 2,200 fourth-graders and between 900 and 2,100 eighth-graders were assessed in each district. Sample sizes are proportionate to district enrollment (see appendix table **A-1** for the number of participating schools and the number of students assessed in each district).

Some charter schools that operate within the geographic boundaries of a school district are independent of the district and are not included in the districts' Adequate Yearly Progress (AYP) report to the U.S. Department of Education under the Elementary and Secondary Education Act. Beginning in 2009, charter schools of this type are no longer included in the results for TUDA districts as they had been in past NAEP assessments. Additional information in this report can be found in the Technical Notes.

Scale scores

NAEP mathematics results for grades 4 and 8 are reported as average scores on a 0–500 scale. Because NAEP scales are developed independently for each subject, scores cannot be compared across subjects.

In addition to reporting on changes in overall mathematics scores for those districts that participated in previous assessment years, references are also made to changes at five percentiles. These results show whether lower-performing students (at the 10th and 25th percentiles), middle-performing students (at the 50th percentile), and higher-performing students (at the 75th and 90th percentiles) are showing the same trends as the district overall.

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 showing what students should know and be able to do. NAEP results are reported as percentages of students performing at or above the *Basic* and *Proficient* levels and at the *Advanced* level.

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.

NAEP Achievement Levels

Basic denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.

Proficient represents solid academic performance. Students reaching this level have demonstrated competency over challenging subject matter.

Advanced represents superior performance.

Interpreting the Results

The performance of students in each urban district is compared to the performance of public school students in the nation and in large cities (i.e., cities with populations of 250,000 or more). The comparison to the nation's large cities is made because students in these cities represent a peer group with characteristics that are most similar to the characteristics of students in the 18 TUDA districts. Comparisons in performance over time are made for those districts that participated in earlier assessment years.

NAEP reports results using widely accepted statistical standards; findings are reported based on a statistical significance level set at .05 with appropriate adjustments for multiple comparisons, as well as adjustments for the part-whole relationship when individual districts are compared to results for large cities or the nation (see the Technical Notes for more information). The symbol (*) is used in tables and figures to indicate that the scores or percentages being compared are significantly different.

When scores significantly increase or decrease from one assessment year to the next, we are confident that student performance has changed. However, NAEP is not designed to identify the causes of these changes. Further, the many factors that may influence average student achievement scores also change across time. These include educational policies and practices, the quality of teachers, available resources, and the demographic characteristics of the student body.

Accommodations and exclusions in NAEP

Many of the same testing accommodations allowed on state and district assessments (e.g., extra testing time or individual rather than group administration) are provided for students with disabilities or English language learners participating in NAEP. Even with the availability of accommodations, some students may still be excluded. Variations in exclusion and accommodation rates, due to differences in policies and practices for identifying and including students with disabilities and English language learners, should be considered when comparing students' performance over time and across districts. Districts also vary in their proportions of special-needs students (especially English language learners). While the effect of exclusion is not precisely known, comparisons of performance results could be affected if exclusion rates are markedly different among districts or vary widely over time. See appendix tables **A-2** through **A-5** for the percentages of students accommodated and excluded in each district.

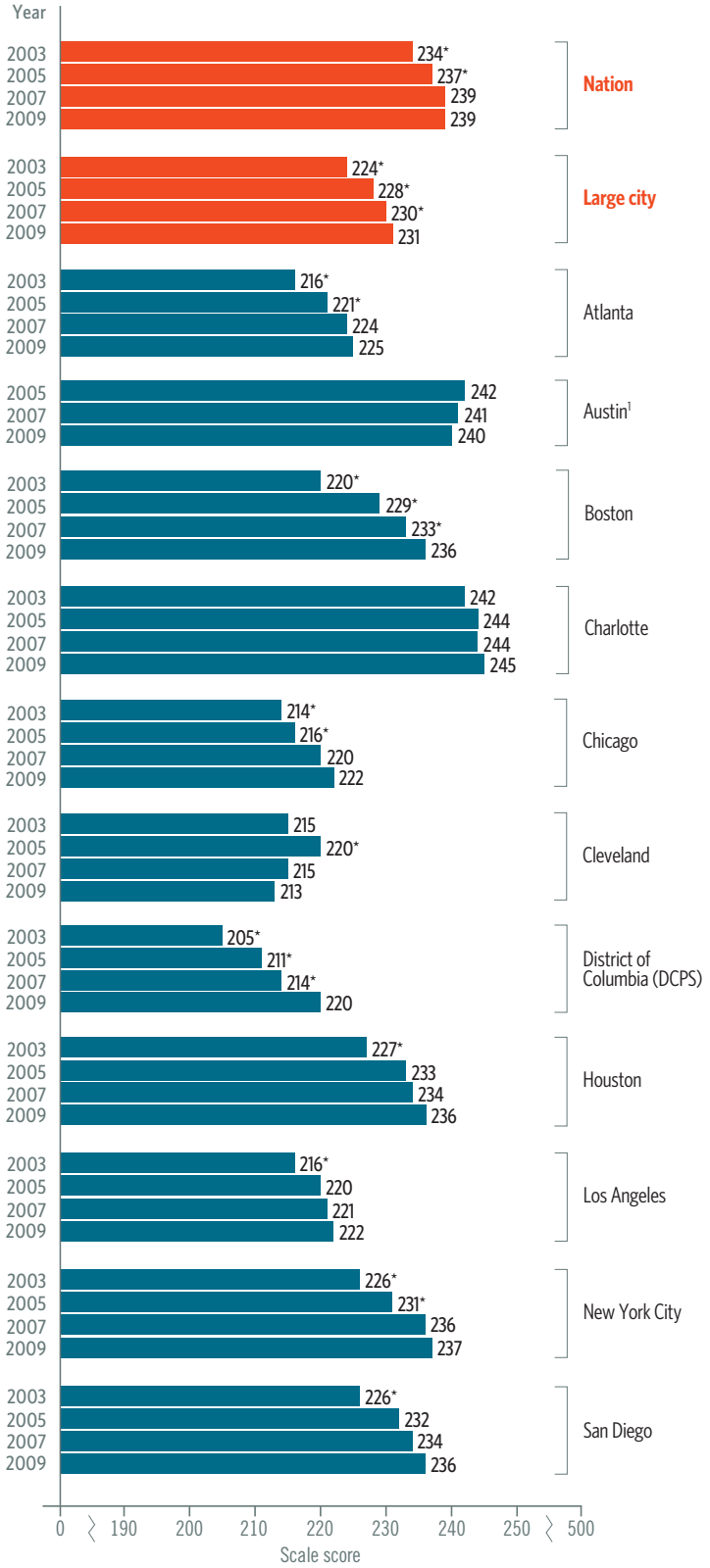
More information about NAEP's policy on the inclusion of special-needs students is available at http://nces.ed.gov/nationsreportcard/about/inclusion.asp.

Grade 4

Scores increase since 2007 for two districts, while the national average shows no change

Although there was no change in the overall average score since 2007 for fourth-graders in the nation, scores did increase for students in large cities and two participating urban districts. In comparison to 2003, scores were higher in 2009 for students in the nation, large cities, and 8 of the 10 districts that participated in both years. Even though overall scores in 2009 were lower for most participating districts than in the nation, districts sometimes showed higher scores for student groups when compared to their peers nationally.

Figure 1. Trend in average scores for fourth-grade public school students in NAEP mathematics, by jurisdiction



* Significantly different ($p < .05$) from 2009.

[1] District did not participate in 2003.

NOTE: Beginning in 2009, if the results for charter schools are not included in the school district's Adequate Yearly Progress (AYP) report to the U.S. Department of Education under the Elementary and Secondary Education Act, they are excluded from that district's TUDA results. DCPS = District of Columbia Public Schools.

Most districts show no significant change since 2007

In comparison to 2007, average mathematics scores were higher in 2009 for fourth-grade public school students in large cities even though there was no significant change in the score for students in the nation (figure **1**). Among the 11 urban districts that participated in 2007 and 2009, scores increased for Boston and the District of Columbia and showed no significant change in the other 9 districts. Gains in Boston were reflected in higher scores for lower-performing students at the 25th percentile, and in the District of Columbia for students at the 25th, 50th, 75th, and 90th percentiles (see appendix table **A-6**).

In comparison to 2003, scores were higher in 2009 for all but 2 of the 10 districts that participated in both years (scores for Charlotte and Cleveland showed no significant change). Scores increased for students across the performance range (i.e., those at the 10th, 25th, 50th, 75th, and 90th percentiles) in Atlanta, Boston, the District of Columbia, Houston, and New York City (see appendix table **A-6**). Scores increased for all students but those at the 10th percentile in Chicago, Los Angeles, and San Diego.

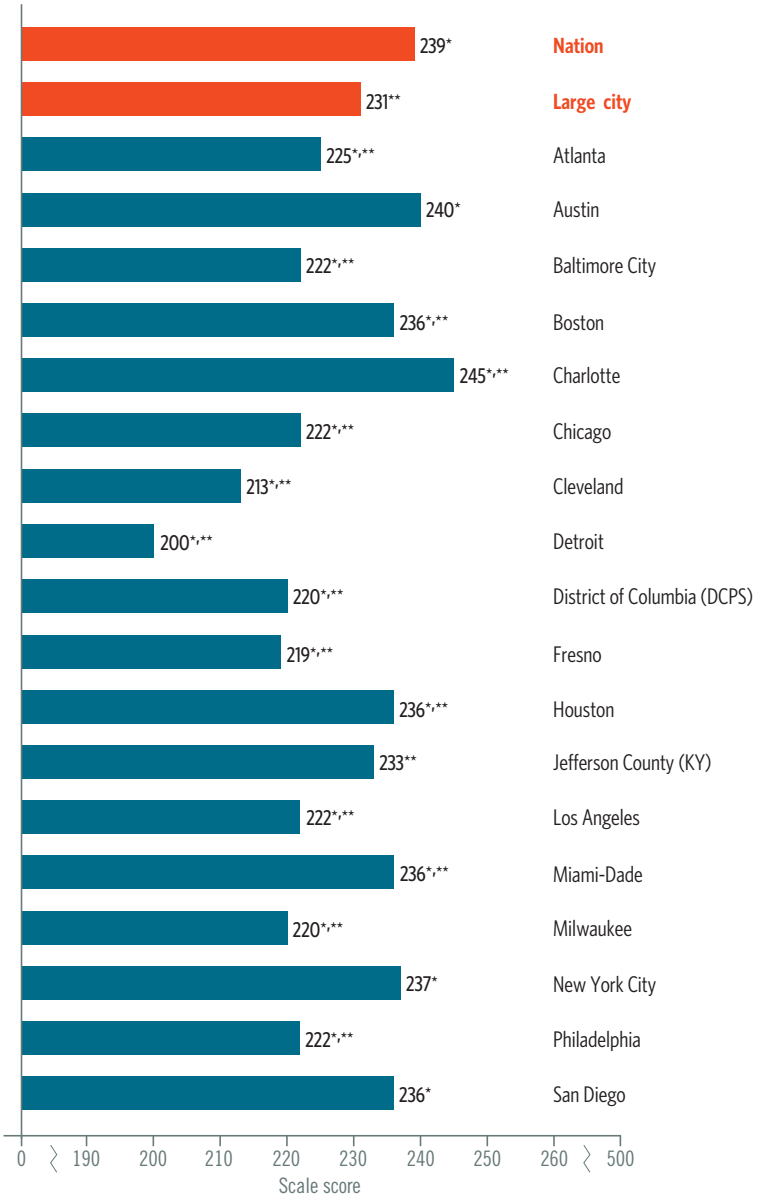
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Seven districts score higher than large cities nationally

In 2009, public school students attending schools in large cities scored 8 points lower on average than public school students in the nation (figure **2**). With few exceptions, scores in most of the participating urban districts were also lower than the score for the nation. Charlotte was the only district to score higher than the national average. Scores in Austin, New York City, and San Diego were not significantly different from the nation, and scores in the remaining 14 districts were lower.

When compared to the average score for large cities nationally, scores were higher in Austin, Boston, Charlotte, Houston, Miami-Dade, New York City, and San Diego. The score for Jefferson County was not significantly different from the score for large cities, and scores for the remaining 10 districts were lower.

Figure 2. Average scores for fourth-grade public school students in NAEP mathematics, by jurisdiction: 2009



* Significantly different ($p < .05$) from large city.
** Significantly different ($p < .05$) from the nation.
NOTE: DCPS = District of Columbia Public Schools.

Explore Additional Results

Additional results for the 18 districts that participated in the 2009 mathematics assessment can be found in the NAEP Data Explorer at http://nces.ed.gov/nationsreportcard/naepdata/.

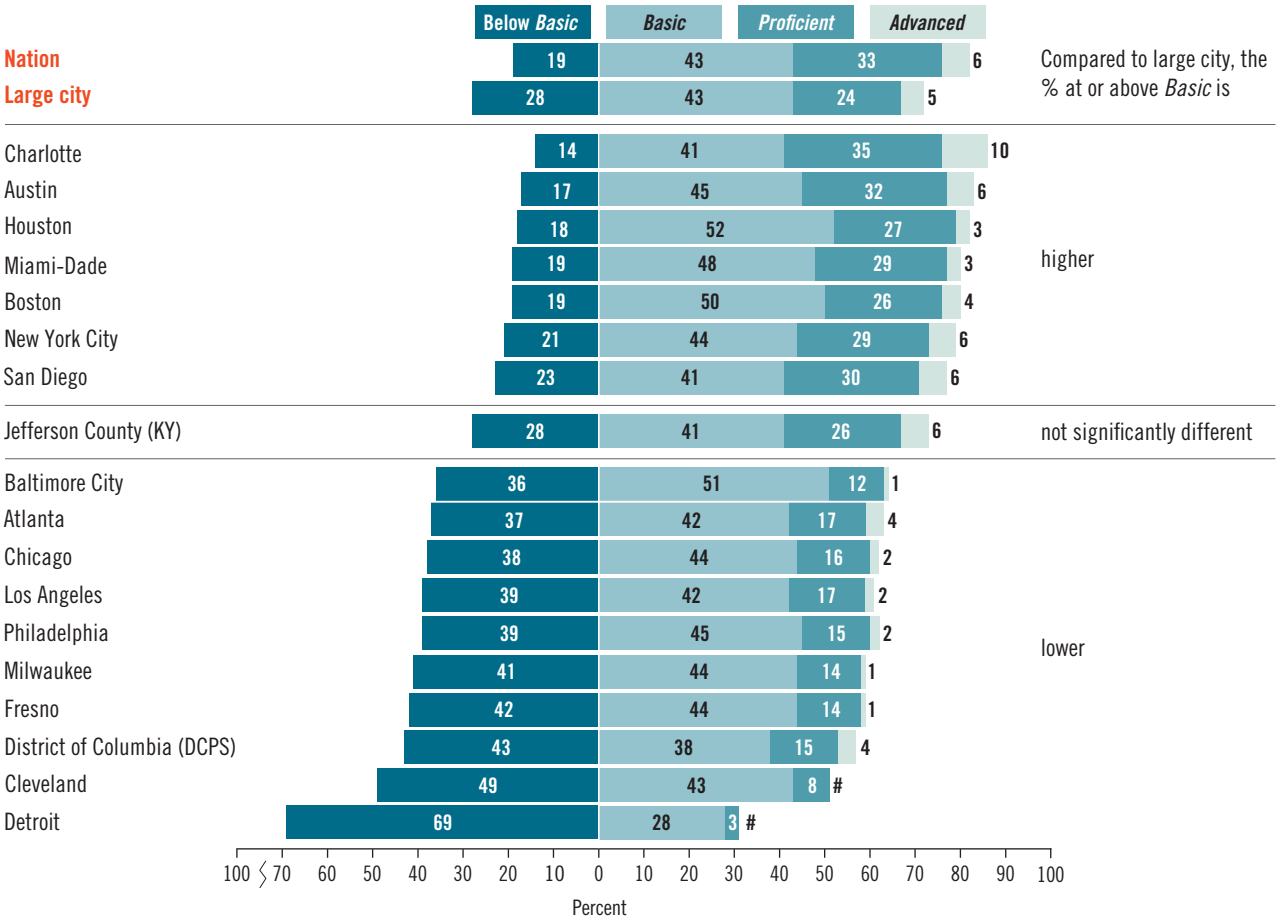
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

Districts show range of knowledge and skills

Across the 18 districts that participated in the 2009 assessment, the percentages of students performing at or above the *Basic* level ranged from 31 percent in Detroit to 86 percent in Charlotte (figure **3**). All the districts had some students performing at or above the *Proficient* level.

The same 7 districts with scores higher than the score for large cities also had higher percentages of students performing at or above *Basic* (Austin, Boston, Charlotte, Houston, Miami-Dade, New York City, and San Diego), and the same 10 districts with scores lower than large cities also had lower percentages at or above *Basic* (Atlanta, Baltimore City, Chicago, Cleveland, Detroit, the District of Columbia, Fresno, Los Angeles, Milwaukee, and Philadelphia).

Figure 3. Achievement-level results for fourth-grade public school students in NAEP mathematics, by jurisdiction: 2009



Rounds to zero.

NOTE: Detail may not sum to totals because of rounding. DCPS = District of Columbia Public Schools.

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

Districts vary in demographic makeup

When comparing the results for urban districts to results for the nation and large cities, it is important to consider the differences in their demographic makeup. In the nation, the percentage of White fourth-graders was higher than the combined percentages of Black and Hispanic students in 2009. However, the opposite was true for large cities and for most of the 18 participating districts. Almost all of the districts had higher combined percentages of Black and Hispanic students than White students (table **1**). Jefferson County was the only district where the percentage of White students was higher.

Large cities and districts also differed from the nation in the proportion of students eligible for the National School Lunch Program. Forty-eight percent of fourth-graders were eligible for free/reduced-price school lunch nationally compared to 71 percent in large cities. Charlotte was the only participating district where the percentage of eligible students was comparable to the nation. The percentages of eligible students in the other districts were all higher than the nation—ranging from 60 percent in Jefferson County to 100 percent in Cleveland, where all students were categorized as eligible.

Large cities in general, and some of the participating districts, were also more likely to have higher percentages of English language learners (ELL). The percentage of identified ELL students in large cities was 20 percent compared to 10 percent in the nation overall. The percentages of ELL students in Austin, Fresno, Houston, Los Angeles, and San Diego were higher than the percentages in both the nation and large cities.

Table 1. Selected characteristics of fourth-grade public school students in NAEP mathematics, by jurisdiction: 2009

			Percentage of students						
Jurisdiction	Number of fourth-graders	Number of students assessed	White	Black	Hispanic	Asian/ Pacific Islander	Eligible for free/ reduced-price school lunch	Identified as students with disabilities	Identified as English language learners
Nation	3,485,000	163,000	54	16	22	5	48	12	10
Large city	570,000	37,800	20	29	42	7	71	11	20
Atlanta	4,000	1,200	13	79	5	1	74	9	2
Austin	6,000	1,500	25	11	60	3	65	12	31
Baltimore City	6,000	1,100	8	87	3	1	84	9	2
Boston	4,000	1,100	14	39	37	8	78	18	17
Charlotte	10,000	1,500	36	39	16	5	47	11	7
Chicago	29,000	1,900	9	45	42	4	87	12	10
Cleveland	3,000	900	15	68	13	1	100[1]	11	6
Detroit	6,000	900	3	84	11	1	81	12	6
District of Columbia (DCPS)	3,000	1,300	9	77	12	2	72	11	7
Fresno	5,000	1,400	14	10	63	12	89	8	30
Houston	15,000	2,200	7	25	64	4	83	5	37
Jefferson County (KY)	7,000	1,400	53	36	5	3	60	13	2
Los Angeles	48,000	2,200	9	7	77	7	84	10	41
Miami-Dade	24,000	2,200	10	25	62	1	68	11	8
Milwaukee	6,000	1,300	13	56	22	5	78	14	11
New York City	71,000	2,200	15	28	40	16	87	18	15
Philadelphia	13,000	1,300	12	61	19	6	87	12	8
San Diego	9,000	1,300	27	12	43	17	61	10	35

[1] In Cleveland, all students were categorized as eligible for the National School Lunch Program.

NOTE: The number of fourth-graders is rounded to the nearest 1,000. The number of students assessed is rounded to the nearest 100. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. The race/ethnicity categories listed do not sum to 100 percent because the percentages for American Indian/Alaska Native and unclassified students are not shown. DCPS = District of Columbia Public Schools.

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

A Closer Look at District Results Compared to the Nation

Even though most participating districts performed below the national average overall, scores for student groups in some districts were higher than the scores for their peers in the nation. Among the 14 districts where overall average scores were lower than the national average, scores were higher for White students in Atlanta and the District of Columbia; for both White and Hispanic students in Miami-Dade; for Black and Hispanic students in Boston; and for White, Black, Hispanic, and Asian/Pacific Islander students in Houston (figure **4**). Scores for lower-income students (i.e., those eligible for free/reduced-price school lunch) in Boston, Houston, and Miami-Dade were higher than the score for lower-income students nationally, even though the overall average scores for these districts were lower than the nation.

Among the three districts where overall scores did not differ significantly from the national average (Austin, New York City , and San Diego), scores for at least one racial/ethnic group were higher than the nation. Results for lower-income students showed higher average scores than the nation in Austin and New York City and a lower score in San Diego.

Figure 4. Comparison of district and national average scores for fourth-grade public school students in NAEP mathematics, by selected student groups: 2009

		Race/ethnicity				Eligibility for free/reduced-price school lunch	
Jurisdiction	Overall	White	Black	Hispanic	Asian/Pacific Islander	Eligible	Not eligible
Nation	239	248	222	227	255	228	250
Large city	▼	▲	▼	◆	◆	▼	◆
Atlanta	▼	▲	▼	◆	‡	▼	▲
Austin	◆	▲	◆	▲	‡	▲	▲
Baltimore City	▼	▼	◆	‡	‡	▼	▼
Boston	▼	◆	▲	▲	◆	▲	◆
Charlotte	▲	▲	▲	▲	◆	▲	▲
Chicago	▼	◆	▼	◆	◆	▼	◆
Cleveland	▼	▼	▼	▼	‡	▼	‡
Detroit	▼	‡	▼	▼	‡	▼	▼
District of Columbia (DCPS)	▼	▲	▼	◆	‡	▼	▼
Fresno	▼	▼	▼	▼	▼	▼	◆
Houston	▼	▲	▲	▲	▲	▲	◆
Jefferson County (KY)	▼	▼	▼	◆	‡	▼	◆
Los Angeles	▼	◆	▼	▼	▼	▼	◆
Miami-Dade	▼	▲	◆	▲	‡	▲	◆
Milwaukee	▼	◆	▼	◆	▼	▼	▼
New York City	◆	▲	▲	▲	◆	▲	◆
Philadelphia	▼	▼	▼	▼	▼	▼	◆
San Diego	◆	▲	◆	◆	▼	▼	▲

▲ Higher average score than the nation.
▼ Lower average score than the nation.
◆ No significant difference between the district and the nation.
‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. DCPS = District of Columbia Public Schools.

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

A Closer Look at District Results Compared to Large Cities

Differences in overall average scores between participating districts and large cities sometimes varied when results were examined for student groups. Among the 10 districts where average scores were lower than the score for large cities, only Cleveland and Detroit showed lower scores for all the categories of students by race/ethnicity and eligibility for free/reduced-price school lunch with samples large enough to report results (figure **5**). Although the scores for Atlanta and the District of Columbia were lower than the score for large cities overall, the average scores for White students in these districts were higher than the score for White students in large cities.

In all 10 of the districts where overall scores were lower than in large cities, scores for students eligible for the school lunch program were also lower than the score for eligible students in large cities. Of these 10 lower-performing districts, only 3 also had lower scores than large cities for students who were not eligible; scores were not significantly different from large cities in 5 districts and higher in 1 district.

Among the seven districts where overall average scores were higher than the score for large cities, only Houston showed higher scores for all the racial/ethnic groups with samples large enough to report results. Scores for students eligible for the school lunch program were higher than the score for eligible students in large cities for all of the higher-performing districts except San Diego, where there was no significant difference between the scores for the district and large cities.

Figure 5. Comparison of district and large city average scores for fourth-grade public school students in NAEP mathematics, by selected student groups: 2009

		Race/ethnicity				Eligibility for free/reduced-price school lunch	
Jurisdiction	Overall	White	Black	Hispanic	Asian/Pacific Islander	Eligible	Not eligible
Large city	231	250	219	226	253	225	248
Atlanta	▼	▲	♦	♦	‡	▼	▲
Austin	▲	▲	♦	▲	‡	▲	▲
Baltimore City	▼	▼	♦	‡	‡	▼	▼
Boston	▲	♦	▲	▲	♦	▲	♦
Charlotte	▲	▲	▲	▲	♦	▲	▲
Chicago	▼	▼	▼	♦	♦	▼	♦
Cleveland	▼	▼	▼	▼	‡	▼	‡
Detroit	▼	‡	▼	▼	‡	▼	▼
District of Columbia (DCPS)	▼	▲	▼	♦	‡	▼	♦
Fresno	▼	▼	♦	▼	▼	▼	♦
Houston	▲	▲	▲	▲	▲	▲	♦
Jefferson County (KY)	♦	▼	♦	♦	‡	▼	♦
Los Angeles	▼	♦	▼	▼	♦	▼	♦
Miami-Dade	▲	♦	♦	▲	‡	▲	♦
Milwaukee	▼	▼	▼	♦	▼	▼	▼
New York City	▲	♦	▲	▲	♦	▲	♦
Philadelphia	▼	▼	♦	▼	♦	▼	♦
San Diego	▲	♦	♦	♦	♦	♦	▲

▲ Higher average score than large city.
▼ Lower average score than large city.
♦ No significant difference between the district and large city.
‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. DCPS = District of Columbia Public Schools.

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

Assessment Content at Grade 4

To reflect a different emphasis across grade levels, the proportion of the mathematics assessment devoted to each of the five content areas varies by grade.

40%

Number properties and operations

These questions focus on computation with or understanding of whole numbers and common fractions and decimals.

20%

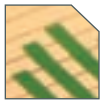
Measurement

These questions focus on customary units such as inch, quart, pound, and hour, and common metric units such as centimeter, liter, and gram, as well as the geometric attribute of length.

15%

Geometry

These questions focus on simple figures and their attributes, including plane figures such as triangles and circles and solid figures such as cubes and spheres.



10%

Data analysis, statistics, and probability

These questions focus on students' understanding of how data are collected and organized, how to read and interpret various representations of data, and basic concepts of probability.

15%

Algebra

These questions measure understanding of algebraic representation, patterns, and rules; graphing points on a line or a grid; and using symbols to represent unknown quantities.

Because the assessment covered a breadth of content and included more questions than any one student could reasonably answer, each student took just a portion of the assessment. The 159 questions that made up the entire fourth-grade assessment were divided into 10 sections, each containing between 15 and 19 questions, depending on the balance between multiple-choice and constructed-response questions. Each student responded to questions in just two 25-minute sections.

Some sections of the assessment incorporated the use of calculators, rulers, geometric shapes, or other manipulatives that were provided. Fourth-graders were provided with a four-function calculator to use on approximately 20 percent of the assessment.

NAEP Mathematics Achievement-Level Descriptions for Grade 4

The policy definitions of achievement levels provided in the Introduction apply to all NAEP subjects. The specific descriptions of what fourth-graders should know and be able to do at the *Basic*, *Proficient*, and *Advanced* mathematics achievement levels are presented below. NAEP 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 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.

Basic (214)

Fourth-grade students performing at the *Basic* level should show some evidence of understanding the mathematical concepts and procedures in the five NAEP content areas.

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 (249)

Fourth-grade students performing at the *Proficient* level should consistently apply integrated procedural knowledge and conceptual understanding to problem solving in the five NAEP content areas.

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 (282)

Fourth-grade students performing at the *Advanced* level should apply integrated procedural knowledge and conceptual understanding to complex and nonroutine real-world problem solving in the five NAEP content areas.

Fourth-graders performing at the *Advanced* level should be able to solve complex 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.

What Fourth-Graders Know and Can Do in Mathematics

The item map below is useful for understanding performance at different levels on the NAEP scale. The scale scores on the left represent the average scores for students who were likely to get the items correct. The cut score at the lower end of the range for each achievement level is boxed. The descriptions of selected assessment questions are listed on the right along with the corresponding mathematics content areas.

For example, the map on this page shows that fourth-graders performing in the middle of the *Basic* range (students with an average score of 230) were likely to be able to use place value to write a number. Students performing in the middle of the *Proficient* range (with an average score of 265) were likely to be able to divide a three-digit number by a one-digit number.

GRADE 4 NAEP MATHEMATICS ITEM MAP

	Scale score	Content area	Question description
	500		
	~		
Advanced	300	**Data analysis, statistics, and probability**	*Find the median price from a table*
	299	**Algebra**	*Identify the expression that models a scenario*
	295	**Geometry**	*Identify parallel and perpendicular lines*
	291	**Number properties and operations**	*Solve a story problem involving remainders*
	288	**Measurement**	Indicate measurements on a ruler
	288	**Number properties and operations**	*Identify the fraction closest to the given value*
	285	**Algebra**	Reason using equivalences to make and explain a conclusion (calculator available)
	282		
Proficient	281	**Number properties and operations**	*Identify a pictorial representation of equivalent fractions*
	277	**Geometry**	Plot points on a grid to satisfy the given conditions (**shown on page 18**)
	273	**Number properties and operations**	Reason about odd and even numbers
	270	**Data analysis, statistics, and probability**	*Read and interpret a line graph*
	265	**Number properties and operations**	*Divide a three-digit number by a one-digit number*
	257	**Measurement**	*Identify the figure with the greatest area on a grid*
	252	**Geometry**	*Identify the shape of a shaded region*
	250	**Data analysis, statistics, and probability**	*Determine the probability of a particular event*
	249		
Basic	246	**Measurement**	*Solve a story problem involving quarts and cups*
	243	**Number properties and operations**	*Subtract a two-digit number from a three-digit number* (**shown on page 17**)
	241	**Algebra**	*Determine the missing shapes in a pattern*
	237	**Number properties and operations**	*Determine a ratio from a diagram*
	233	**Algebra**	Determine the value of an unknown in a number sentence
	230	**Number properties and operations**	Use place value to write a number
	228	**Geometry**	*Determine how many given pieces cover a shape*
	222	**Number properties and operations**	Represent the same whole number in different ways
	222	**Data analysis, statistics, and probability**	Make a pictograph of the given information
	214		
	207	**Number properties and operations**	*Recognize the result of multiplying by 10*
	205	**Number properties and operations**	*Compute the product of a two-digit number and a one-digit number*
	202	**Measurement**	*Identify an appropriate unit for measuring length* (calculator available)
	199	**Algebra**	*Find the unknown in a whole number sentence*
	188	**Number properties and operations**	*Compute a value using multiplication and division* (calculator available)
	183	**Geometry**	*Identify the figure that is not symmetric* (calculator available)
	176	**Measurement**	*Identify the appropriate measuring device*
	~		
	0		

NOTE: Regular type denotes a constructed-response question. *Italic* type denotes a multiple-choice question. The position of a question on the scale represents the average score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. For constructed-response questions, the question description represents students' performance rated as completely correct. Scale score ranges for mathematics achievement levels are referenced on the map.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

Sample Question: Number Properties and Operations

This sample question from the 2009 fourth-grade assessment measures students' performance in the number properties and operations content area. The question asks students to subtract a two-digit number from a three-digit number, which requires regrouping to obtain the correct answer of 226 (Choice A). Students were not permitted to use a calculator to answer this question.

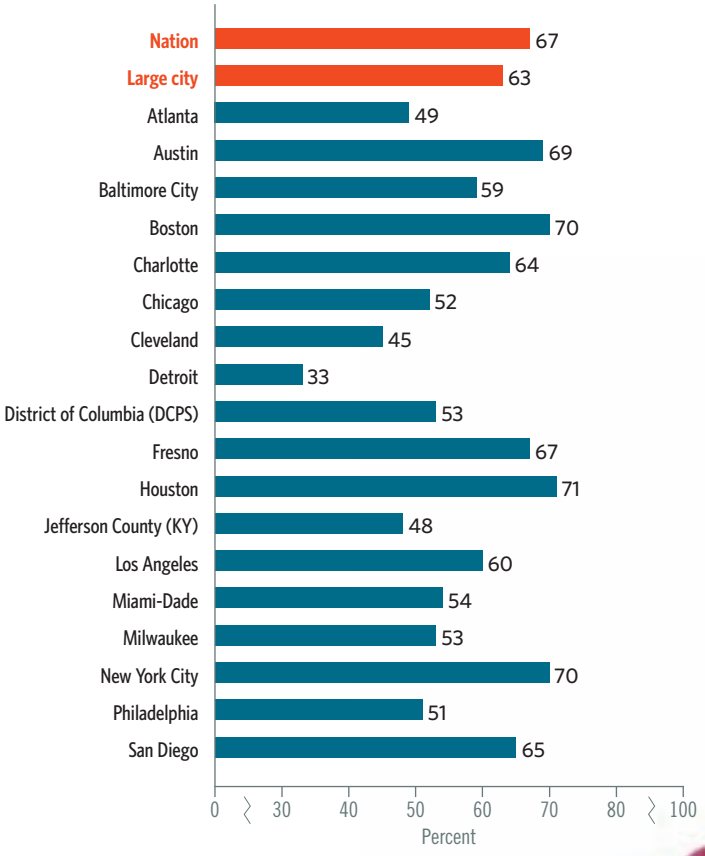
Sixty-seven percent of fourth-grade public school students in the nation selected the correct answer to this question. The percentage of correct responses in each of the districts ranged from 33 percent in Detroit to 71 percent in Houston. The national average score for students likely to select the correct answer was 243 on the item map.

SAMPLE QUESTION:

$$\begin{array}{r} 301 \\ -75 \\ \hline \end{array}$$

(A) 226
(B) 235
(C) 236
(D) 374

Percentage correct for fourth-grade public school students, by jurisdiction: 2009



NOTE: DCPS = District of Columbia Public Schools.

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

Sample Question: Geometry

This sample constructed-response question measures fourth-graders' performance in the geometry content area. It is a multistep problem that requires students to plot and identify points in the plane, and to use visualization skills to determine additional points that could be connected to form a rectangle. Students were not permitted to use a calculator to answer this question.

Student responses to this question were rated using five scoring levels.

Extended responses

- correctly plotted the three given points, (B,1), (B,3), and (D,5),
- correctly plotted three other points that formed a rectangle and gave their coordinates, and
- connected the dots to form a rectangle.

Satisfactory responses met all of the criteria for an extended rating, but contained a minor error or omission.

Partial responses correctly plotted the three given points and partially plotted three other points that formed a rectangle and gave their coordinates.

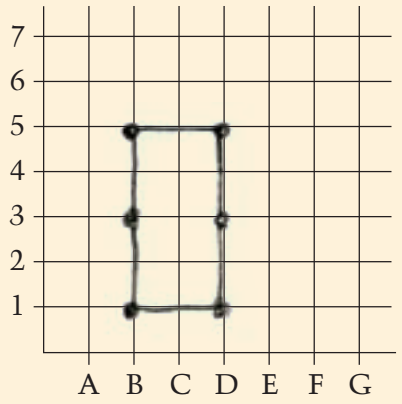
Minimal responses plotted three points clearly (either the given points, the new points, or some combination), or partially met one of the criteria specified for an extended rating.

All other responses were rated as **incorrect**.

The sample student response shown with the question was rated as "Extended" because it correctly answered all parts of the question. Twenty-seven percent of fourth-grade public school students in the nation gave a response rated as "Extended" for this question. The percentages of student responses rated "Satisfactory" and "Extended" are presented below for the nation, large cities, and participating districts. The national average score for students likely to provide "Extended" responses was 277 on the item map.

SAMPLE QUESTION:

On the grid below, plot the points that have coordinates (B, 1), (B, 3), and (D, 5).



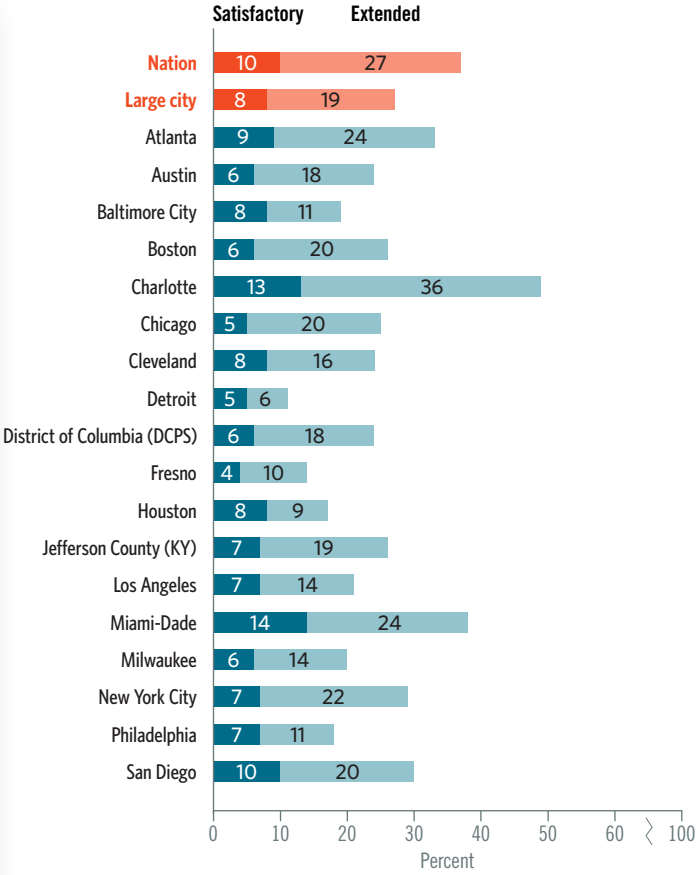
Plot 3 more points on the grid so that when you connect all 6 points you will make a rectangle.

List the coordinates for the 3 new points.

(B,5) (D,3) (D,1)

Connect the 6 points to show your rectangle.

Percentage of answers rated as"Satisfactory" and "Extended" for fourth-grade public school students, by jurisdiction: 2009



NOTE: DCPS = District of Columbia Public Schools.

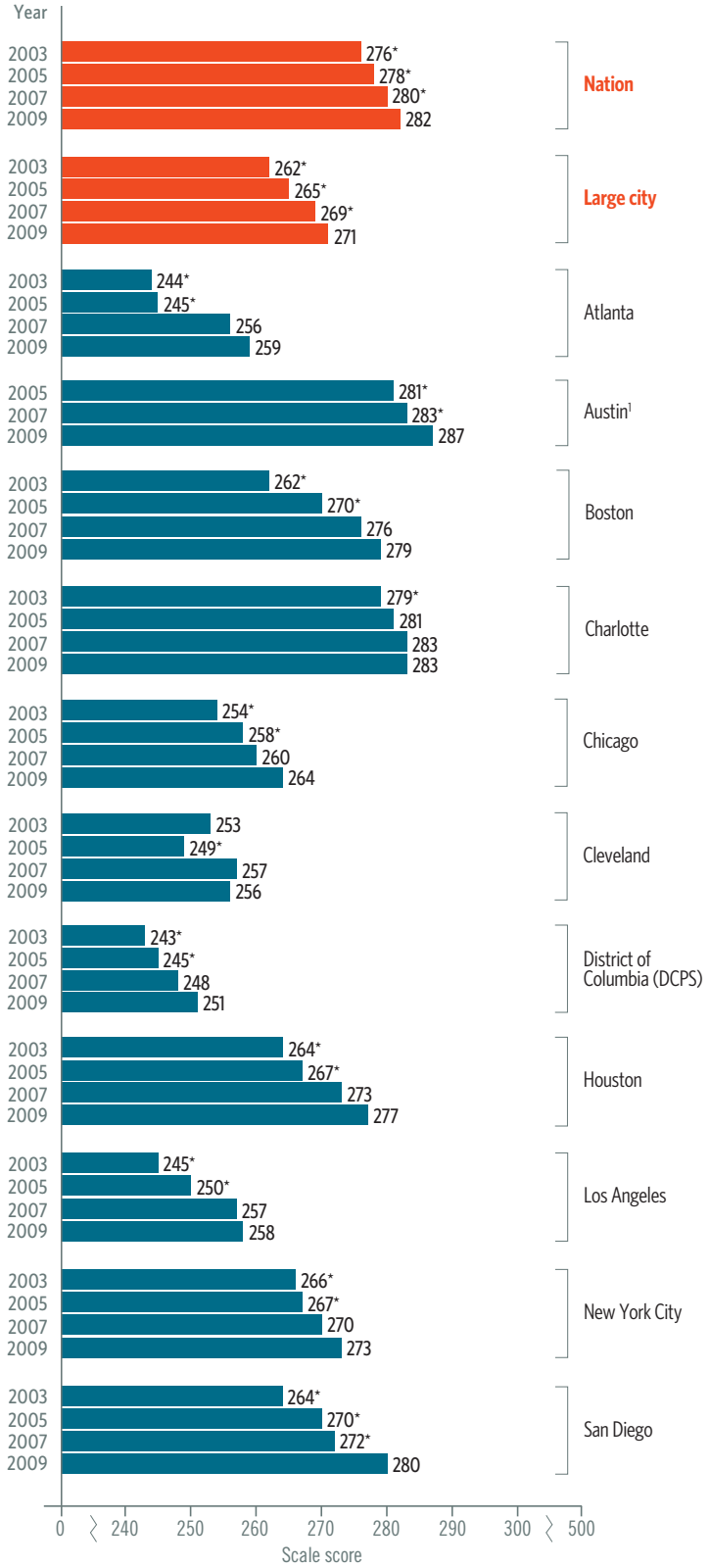
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

Grade 8

Few districts make gains since 2007, but most improve compared to 2003

Average mathematics scores were higher in 2009 than in 2003 for eighth-graders in the nine districts that participated in both assessment years; however, two districts did show gains since 2007. No districts showed a decline in performance since 2007.

Figure 6. Trend in average scores for eighth-grade public school students in NAEP mathematics, by jurisdiction



* Significantly different ($p < .05$) from 2009.

[1] District did not participate in 2003.

NOTE: Beginning in 2009, if the results for charter schools are not included in the school district's Adequate Yearly Progress (AYP) report to the U.S. Department of Education under the Elementary and Secondary Education Act, they are excluded from that district's TUDA results. DCPS = District of Columbia Public Schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Most districts show no significant change since 2007

In comparison to 2007, average mathematics scores were higher in 2009 both for eighth-grade public school students in the nation and in large cities; however, two participating urban districts showed gains. Among the 11 participating districts, scores increased for Austin and San Diego and showed no significant change in the remaining 9 districts (figure **6**). Apparent increases since 2007 for some districts (e.g., Chicago and Houston) were not statistically significant. (Note that charter schools within TUDA district boundaries that the districts exclude from their Adequate Yearly Progress (AYP) reporting to the U.S. Department of Education under the Elementary and Secondary Education Act were excluded from the 2009 sample. See the Technical Notes for more information.)

Gains since 2007 in Austin were reflected in higher scores for middle-performing students at the 50th percentile, and in San Diego for students at the 10th, 25th, and 75th percentiles (see appendix table **A-6**). Although there were no significant changes in the overall scores for the District of Columbia and Houston, scores were higher in 2009 than in 2007 for higher-performing students at the 90th percentile in the District of Columbia, and for students at the 25th and 50th percentiles in Houston.

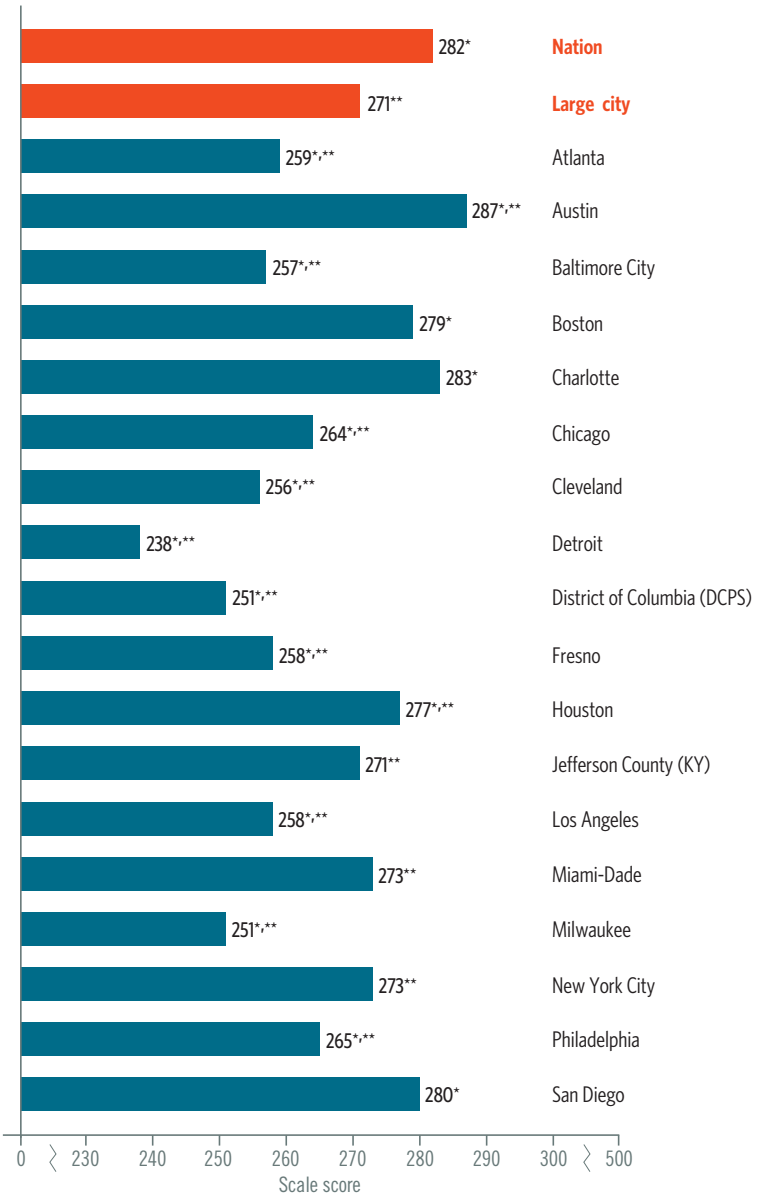
In comparison to 2003, scores were higher in 2009 for 9 of the 10 districts that participated in both years (there was no significant change in the score for Cleveland). Scores increased for students across the performance range (i.e., those at the 10th, 25th, 50th, 75th, and 90th percentiles) in Atlanta, Boston, Chicago, Houston, Los Angeles, and San Diego (see appendix table **A-6**). Scores also increased for students at the 10th percentile in Charlotte; at the 50th, 75th, and 90th percentiles in the District of Columbia; and at the 10th, 25th, 50th, and 90th percentiles in New York City.

Five districts score higher than large cities nationally

In 2009, public school students attending schools in large cities scored 11 points lower on average than public school students in the nation (figure **7**). With few exceptions, scores in most of the participating urban districts were also lower than the score for the nation. Austin was the only district to score higher than the national average. Scores in Boston, Charlotte, and San Diego were not significantly different from the nation, and scores in the remaining 14 districts were lower.

When compared to the average score for large cities nationally, scores were higher in Austin, Boston, Charlotte, Houston, and San Diego. The scores for Jefferson County, Miami-Dade, and New York City were not significantly different from the score for large cities, and scores for the remaining 10 districts were lower.

Figure 7. Average scores for eighth-grade public school students in NAEP mathematics, by jurisdiction: 2009



* Significantly different ($p < .05$) from large city.
** Significantly different ($p < .05$) from the nation.
NOTE: DCPS = District of Columbia Public Schools.

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

Districts show range of knowledge and skills

Among the 18 districts that participated in 2009, the percentages of students performing at or above the *Basic* level ranged from 23 percent in Detroit to 75 percent in Austin (figure **8**). All the districts had some students performing at or above the *Proficient* level.

The same five districts with scores higher than the score for large cities also had higher percentages of students performing at or above *Basic* (Austin, Boston, Charlotte, Houston, and San Diego). In addition, the percentage of students at or above *Basic* in Miami-Dade was higher than in large cities. The percentages of students at or above *Basic* in Jefferson County and New York City were not significantly different from large cities, and the percentages in the remaining 10 districts were lower.

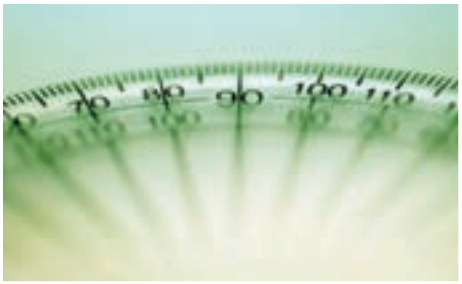
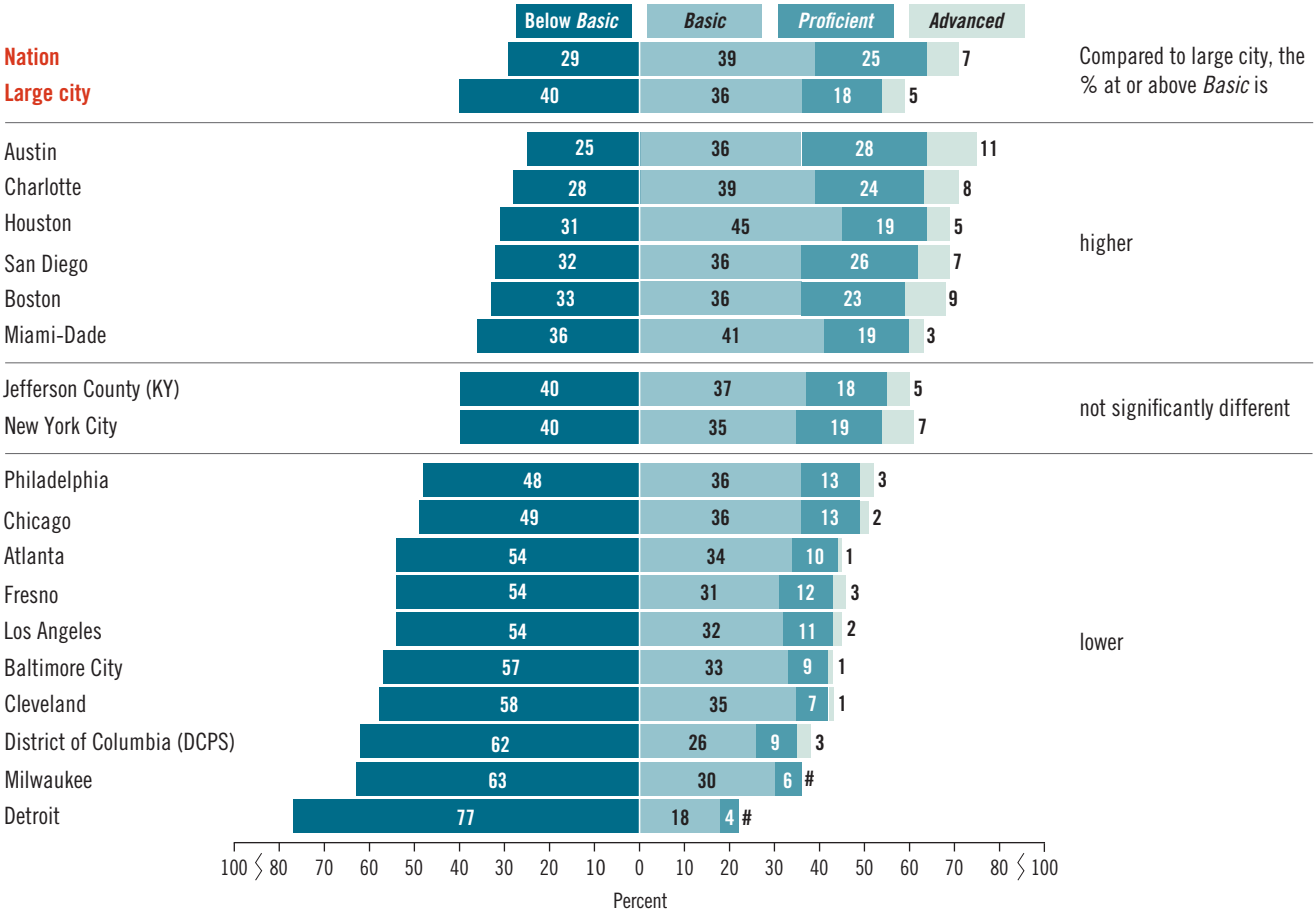


Figure 8. Achievement-level results for eighth-grade public school students in NAEP mathematics, by jurisdiction: 2009



Rounds to zero.
NOTE: Detail may not sum to totals because of rounding. DCPS = District of Columbia Public Schools.

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

Districts vary in demographic makeup

Information about the demographic makeup of eighth-graders in the nation, large cities, and the 18 participating urban districts helps to provide context when making comparisons. In the nation, the percentage of White eighth-graders was higher than the combined percentages of Black and Hispanic students in 2009. However, the opposite was true for large cities and for most districts. Almost all of the districts had higher combined percentages of Black and Hispanic students than White students (table **2**). Jefferson County was the only district where the percentage of White students was higher than the combined percentage of Black and Hispanic students.

Large cities and districts also differed from the nation in the proportion of students eligible for the National School Lunch Program. Forty-three percent of eighth-graders were eligible for free/reduced-price school lunch nationally compared to 66 percent in large cities. The percentages of eligible students in the districts were all higher than the national percentage—ranging from 46 percent in Charlotte to 100 percent in Cleveland where all students were categorized as eligible.

Large cities in general and some of the participating districts were also more likely to have higher percentages of English language learners (ELL). The percentage of identified ELL students in large cities was 12 percent compared to 6 percent in the nation overall. The percentages of ELL students in Austin, Fresno, Los Angeles, and San Diego were higher than the percentages in both the nation and large cities.

Table 2. Selected characteristics of eighth-grade public school students in NAEP mathematics, by jurisdiction: 2009

			Percentage of students						
Jurisdiction	Number of eighth-graders	Number of students assessed	White	Black	Hispanic	Asian/ Pacific Islander	Eligible for free/ reduced-price school lunch	Identified as students with disabilities	Identified as English language learners
Nation	3,504,000	156,200	56	16	21	5	43	10	6
Large city	539,000	34,600	21	27	42	8	66	11	12
Atlanta	3,000	900	7	88	4	#	78	10	1
Austin	5,000	1,300	31	11	55	3	55	11	15
Baltimore City	4,000	900	6	91	2	1	82	8	1
Boston	4,000	1,100	14	40	33	11	73	16	8
Charlotte	9,000	1,300	32	46	15	4	46	9	6
Chicago	28,000	1,800	9	48	40	3	86	14	5
Cleveland	3,000	900	15	71	12	1	100[1]	13	6
Detroit	6,000	1,000	2	89	8	1	70	13	6
District of Columbia (DCPS)	2,000	900	5	82	11	2	75	13	5
Fresno	5,000	1,300	14	11	58	16	86	9	21
Houston	12,000	1,900	8	29	60	3	78	8	10
Jefferson County (KY)	7,000	1,400	55	36	4	3	55	9	2
Los Angeles	48,000	2,000	8	10	75	7	82	10	23
Miami-Dade	23,000	2,000	10	22	65	1	63	11	7
Milwaukee	5,000	1,000	11	62	20	4	78	18	6
New York City	69,000	2,100	16	32	39	14	79	14	9
Philadelphia	11,000	1,200	16	57	18	8	85	12	6
San Diego	8,000	1,000	28	12	41	18	55	8	15

Rounds to zero.

[1] In Cleveland, all students were categorized as eligible for the National School Lunch Program.

NOTE: The number of eighth-graders is rounded to the nearest 1,000. The number of students assessed is rounded to the nearest 100. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. The race/ethnicity categories listed do not sum to 100 percent because the percentages for American Indian/Alaska Native and unclassified students are not shown. DCPS = District of Columbia Public Schools.

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

A Closer Look at Districts Compared to the Nation

Even though most TUDA districts performed below the national average overall, scores for student groups in some districts were higher than the scores for their peers in the nation. Among the 14 districts where overall average scores were lower than the national average, scores were higher for White, Black, and Hispanic students in Houston; for Hispanic students in Miami-Dade; and for Asian/Pacific Islander students in New York City when compared to their peers in the nation (figure **9**). Scores for lower-income students (i.e., those eligible for free/reduced-price school lunch) in Houston and New York City were higher than the score for lower-income students nationally, even though the overall average scores for the districts were lower than the nation.

Among the three districts where overall scores did not differ significantly from the national average (Boston, Charlotte, and San Diego), scores for at least one racial/ethnic group were higher than in the nation.

Figure 9. Comparison of district and national average scores for eighth-grade public school students in NAEP mathematics, by selected student groups: 2009

		Race/ethnicity				Eligibility for free/reduced-price school lunch	
Jurisdiction	Overall	White	Black	Hispanic	Asian/Pacific Islander	Eligible	Not eligible
Nation	282	292	260	266	300	266	293
Large city	▼	◆	▼	◆	◆	▼	▼
Atlanta	▼	‡	▼	‡	‡	▼	▼
Austin	▲	▲	▲	▲	‡	▲	▲
Baltimore City	▼	‡	▼	‡	‡	▼	▼
Boston	◆	▲	▲	◆	▲	▲	▲
Charlotte	◆	▲	▲	▲	‡	◆	◆
Chicago	▼	◆	▼	◆	◆	▼	▼
Cleveland	▼	▼	▼	▼	‡	▼	‡
Detroit	▼	‡	▼	◆	‡	▼	▼
District of Columbia (DCPS)	▼	‡	▼	◆	‡	▼	▼
Fresno	▼	▼	▼	▼	▼	▼	◆
Houston	▼	▲	▲	▲	‡	▲	◆
Jefferson County (KY)	▼	▼	▼	‡	‡	▼	▼
Los Angeles	▼	◆	▼	▼	▼	▼	▼
Miami-Dade	▼	◆	◆	▲	‡	◆	▼
Milwaukee	▼	▼	▼	▼	‡	▼	▼
New York City	▼	◆	◆	▼	▲	▲	◆
Philadelphia	▼	◆	▼	▼	◆	▼	◆
San Diego	◆	▲	◆	◆	▼	◆	◆

▲ Higher average score than the nation.
▼ Lower average score than the nation.
◆ No significant difference between the district and the nation.
‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. DCPS = District of Columbia Public Schools.

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

A Closer Look at District Results Compared to Large Cities

Differences in overall average scores between participating districts and large cities sometimes varied when results were examined for student groups. Among the 10 districts where average scores were lower than the score for large cities, there were no significant differences in scores for White students in 3 districts, for Black students in 4 districts, and for Hispanic students in 5 districts when compared to their peers in large cities (figure **10**). Scores for students who were eligible for free/reduced-price school lunch in Chicago and Philadelphia were also not significantly different from the score for eligible students in large cities.

Among the five districts where overall scores were higher than the score for large cities, Austin, Boston, Charlotte, and Houston also had higher scores for all racial/ethnic groups with samples large enough to report results, and for lower-income students.

Among the three districts where overall average scores did not differ significantly from the score for large cities, district scores were higher for Hispanic students in Miami-Dade and for Black and Asian/Pacific Islander students in New York City, and lower for White and Black students in Jefferson County. In comparison to the score for students eligible for free/reduced-price school lunch in large cities, scores were higher for eligible students in Miami-Dade and New York City and lower in Jefferson County.

Figure 10. Comparison of district and large city average scores for eighth-grade public school students in NAEP mathematics, by selected student groups: 2009

		Race/ethnicity				Eligibility for free/reduced-price school lunch	
Jurisdiction	Overall	White	Black	Hispanic	Asian/Pacific Islander	Eligible	Not eligible
Large city	271	294	256	264	299	262	289
Atlanta	▼	‡	♦	‡	‡	▼	♦
Austin	▲	▲	▲	▲	‡	▲	▲
Baltimore City	▼	‡	♦	‡	‡	▼	▼
Boston	▲	▲	▲	▲	▲	▲	▲
Charlotte	▲	▲	▲	▲	‡	▲	▲
Chicago	▼	♦	♦	♦	♦	♦	♦
Cleveland	▼	▼	▼	▼	‡	▼	‡
Detroit	▼	‡	▼	♦	‡	▼	▼
District of Columbia (DCPS)	▼	‡	▼	♦	‡	▼	▼
Fresno	▼	▼	▼	▼	▼	▼	♦
Houston	▲	▲	▲	▲	‡	▲	♦
Jefferson County (KY)	♦	▼	▼	‡	‡	▼	♦
Los Angeles	▼	♦	▼	▼	♦	▼	♦
Miami-Dade	♦	♦	♦	▲	‡	▲	▼
Milwaukee	▼	▼	▼	♦	‡	▼	▼
New York City	♦	♦	▲	♦	▲	▲	♦
Philadelphia	▼	♦	♦	♦	♦	♦	♦
San Diego	▲	▲	♦	♦	♦	▲	♦

▲ Higher average score than large city.
▼ Lower average score than large city.
♦ No significant difference between the district and large city.
‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. DCPS = District of Columbia Public Schools.

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

Assessment Content at Grade 8

The distribution of items among the five content areas reflects the relative emphasis in each area specified in the mathematics framework for each grade.

20%

Number properties and operations

These questions measure computation with rational and common irrational numbers, and ratios and proportions.

15%

Measurement

These questions focus on the use of square units for measuring area and surface area, cubic units for measuring volume, degrees for measuring angles, and rates.

20%

Geometry

These questions focus on properties of plane figures, especially parallel and perpendicular lines, angle relations in polygons, cross sections of solids, and the Pythagorean theorem.

15%

Data analysis, statistics, and probability

These questions focus on organizing and summarizing data (including tables, charts, and graphs), analyzing statistical claims, and probability.

30%

Algebra

These questions measure understanding of patterns and functions; algebraic expressions, equations, and inequalities; and algebraic representations, including graphs.

The 159 questions that made up the entire eighth-grade mathematics assessment were divided into 10 sections, each containing between 14 and 18 questions, depending on the balance between multiple-choice and constructed-response questions. Each student responded to questions in just two 25-minute sections.

Some sections incorporated the use of a calculator, ruler/protractor, geometric shapes, or other manipulatives that were provided. Eighth-graders were permitted to use their own scientific or graphing calculator or were provided with a scientific calculator to use on approximately 30 percent of the assessment.

NAEP Mathematics Achievement-Level Descriptions for Grade 8

The policy definitions of achievement levels provided in the Introduction apply to all NAEP subjects. The specific descriptions of what eighth-graders should know and be able to do at the *Basic*, *Proficient*, and *Advanced* mathematics achievement levels are presented below. NAEP 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 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.

Basic (262)

Eighth-grade students performing at the *Basic* 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.

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 (299)

Eighth-grade students performing at the *Proficient* level should apply mathematical concepts and procedures consistently to complex problems in the five NAEP content areas.

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 (333)

Eighth-grade students performing at the *Advanced* 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.

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.

What Eighth-Graders Know and Can Do in Mathematics

The item map below illustrates the range of mathematical knowledge and skills demonstrated by eighth-graders. For example, students performing near the middle of the *Basic* range (with an average score of 285) were likely to be able to determine the possible dimensions of a rectangle, given the area. Students performing near the top of the *Proficient* range (with an average score of 332) were likely to be able to set up and solve an algebraic equation.

GRADE 8 NAEP MATHEMATICS ITEM MAP

	Scale score	Content area	Question description
	500		
	~		
Advanced	361	**Data analysis, statistics, and probability**	Determine the complete sample space
	350	**Algebra**	Find the coordinates of collinear points
	347	**Measurement**	*Identify the figures with equivalent areas*
	342	**Geometry**	Use the given pieces to make a shape with certain properties
	339	**Data analysis, statistics, and probability**	*Read and interpret the information in a graph*
	337	**Algebra**	Use an algebraic model to make a prediction (calculator available)
	336	**Algebra**	Find the next term in a geometric sequence
	333		
Proficient	332	**Algebra**	Set up and solve an algebraic equation
	331	**Algebra**	*Find the change in y given the change in x for a linear equation*
	330	**Geometry**	*Find the length of a hypotenuse*
	324	**Measurement**	Solve a problem involving unit conversions (calculator available)
	319	**Geometry**	*Identify the piece used to form a figure*
	312	**Number properties and operations**	Solve a problem using division
	306	**Algebra**	*Represent the length of a rectangle in terms of the width* (**shown on page 30**)
	300	**Number properties and operations**	Determine a number that satisfies the given conditions
	299		
Basic	292	**Geometry**	*Identify the steps in a transformation*
	288	**Number properties and operations**	*Identify the number with the given digit in the hundredths place*
	285	**Measurement**	*Determine the possible dimensions of a rectangle, given the area*
	283	**Geometry**	*Identify the side with the same length in congruent figures*
	281	**Algebra**	*Identify the solution from a graph of linear equations*
	278	**Number properties and operations**	*Determine a quantity based on a given percent*
	267	**Data analysis, statistics, and probability**	*Determine the probability of a particular outcome* (**shown on page 29**)
	264	**Algebra**	Read information from a graph
	262		
	260	**Data analysis, statistics, and probability**	*Recognize misrepresented data*
	259	**Measurement**	*Solve a problem involving rates* (calculator available)
	257	**Geometry**	*Identify the result of combining two shapes*
	253	**Number properties and operations**	*Use estimation to find a difference*
	236	**Number properties and operations**	*Find the greatest number that can be bought* (calculator available)
	233	**Measurement**	*Measure the length of a line segment*
	224	**Algebra**	Determine the value of the unknown in a number sentence
	~		
	0		

NOTE: Regular type denotes a constructed-response question. *Italic* type denotes a multiple-choice question. The position of a question on the scale represents the average score attained by students who had a 65 percent probability of successfully answering a constructed-response question, a 74 percent probability of correctly answering a four-option multiple-choice question, or a 72 percent probability of correctly answering a five-option multiple-choice question. For constructed-response questions, the question description represents students' performance rated as completely correct. Scale score ranges for mathematics achievement levels are referenced on the map.

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

Sample Question: Data Analysis, Statistics, and Probability

This sample question from the 2009 eighth-grade assessment measures students' performance in the data analysis, statistics, and probability content area. It asks students to determine the probability of a simple event. Obtaining the correct answer requires first determining that there is a total of 15 pencils to choose from (6 red plus 4 green plus 5 blue). Since 4 of these pencils are green, the correct answer is 4 out of 15 (Choice D). Students were not permitted to use a calculator to answer this question.

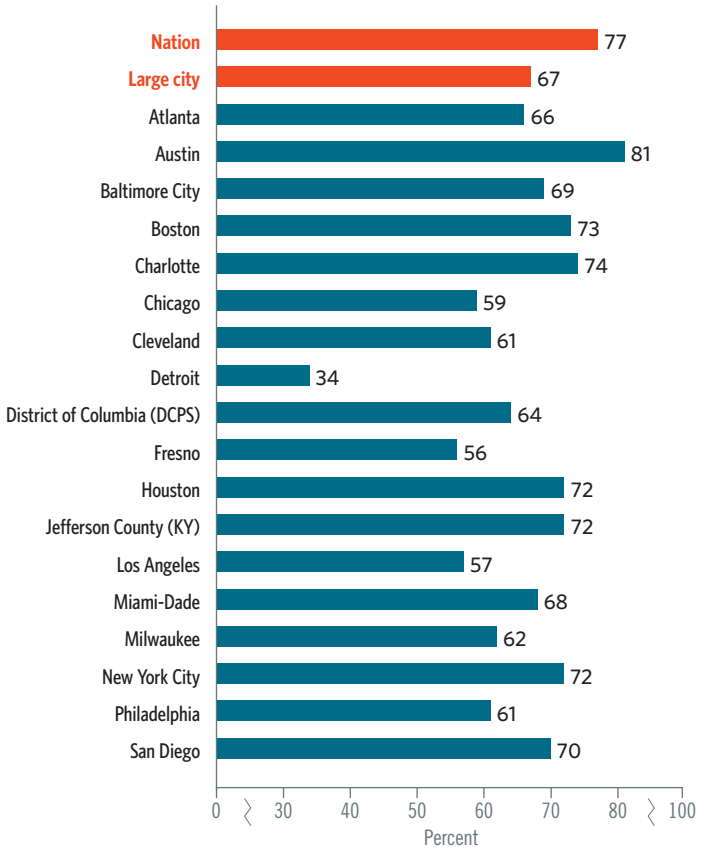
Seventy-seven percent of eighth-grade public school students in the nation selected the correct answer to this question. The percentage of correct responses in each of the districts ranged from 34 percent in Detroit to 81 percent in Austin. The national average score for students who were likely to select the correct answer was 267 on the item map.

SAMPLE QUESTION:

Marty has 6 red pencils, 4 green pencils, and 5 blue pencils.
If he picks out one pencil without looking, what is the probability that the pencil he picks will be green?

(A) 1 out of 3
(B) 1 out of 4
(C) 1 out of 15
(D) 4 out of 15

Percentage correct for eighth-grade public school students, by jurisdiction: 2009



NOTE: DCPS = District of Columbia Public Schools.

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

Sample Question: Algebra

This sample question measures eighth-graders' performance in the algebra content area. The question asks students to identify an algebraic expression that models a relationship that is given in a geometric context. Students were not permitted to use a calculator to answer this question.

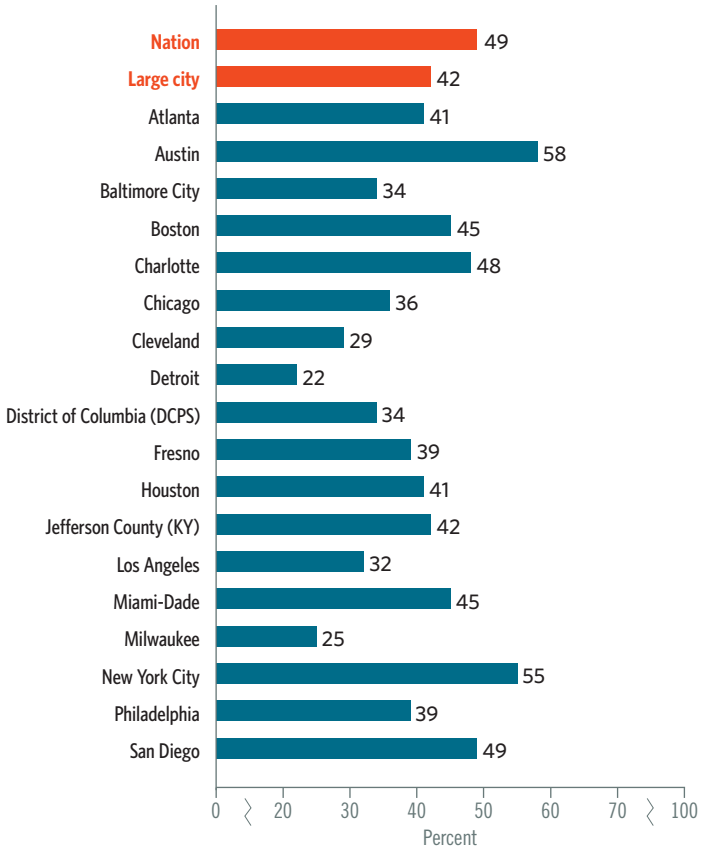
Forty-nine percent of eighth-grade public school students in the nation selected the correct answer (Choice E) to this question. The percentage of correct responses in each of the districts is presented below. The national average score for students who were likely to select the correct answer was 306 on the item map.

SAMPLE QUESTION:

The length of a rectangle is 3 feet less than twice the width, w (in feet). What is the length of the rectangle in terms of w?

(A) $3 - 2w$
(B) $2(w + 3)$
(C) $2(w - 3)$
(D) $2w + 3$
(E) $2w - 3$

Percentage correct for eighth-grade public school students, by jurisdiction: 2009



NOTE: DCPS = District of Columbia Public Schools.

NAEP Questions Tool

Explore other sample questions from the mathematics assessment at http://nces.ed.gov/nationsreportcard/itmrlsx/.

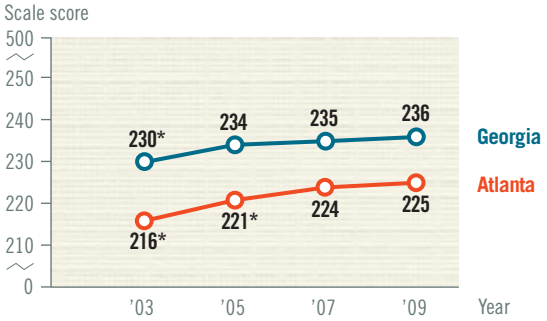
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

District Profiles

Individual district profiles provide a closer look at some key findings for each district, including how districts' scores compare to scores in their home states, how the performance of lower-income students in the districts compares to similar students in the nation, how racial/ethnic groups within the districts compare, and how the performance of students has changed in those districts that participated in earlier assessment years.

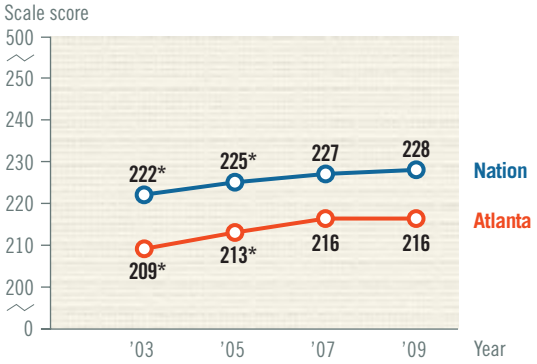
Atlanta, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in Atlanta and Georgia



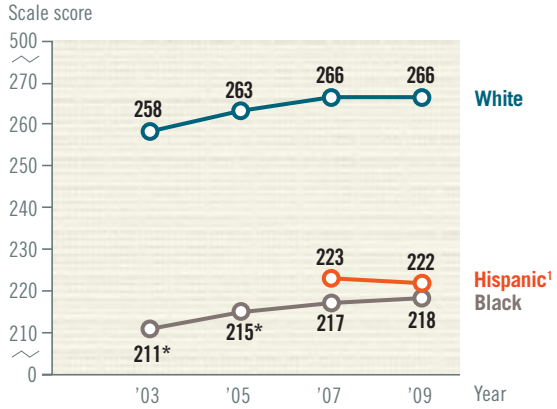
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in Atlanta and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in Atlanta, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
[1] Sample sizes insufficient to permit reliable estimates for Hispanic students in 2003 and 2005.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

For Atlanta fourth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 225 was at the 30th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Georgia.
- no significant change in the gap compared to 2003 and 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a lower average score compared to lower-income students in the nation.

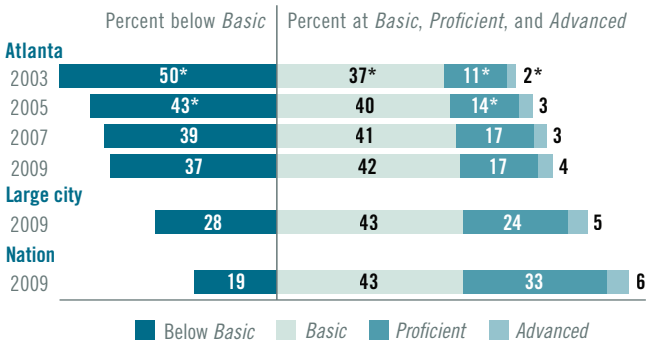
Results for racial/ethnic groups showed

- a higher average score for Black students compared to 2003 but no significant change compared to 2007.
- no significant change in the average score for White students compared to 2003 and 2007.

Achievement-level results showed

- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in Atlanta



* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

Atlanta, Grade 8

For Atlanta eighth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 259 was at the 26th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Georgia.
- a narrowing of the gap compared to 2003 but no significant change compared to 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change since 2007.
- a lower average score compared to lower-income students in the nation.

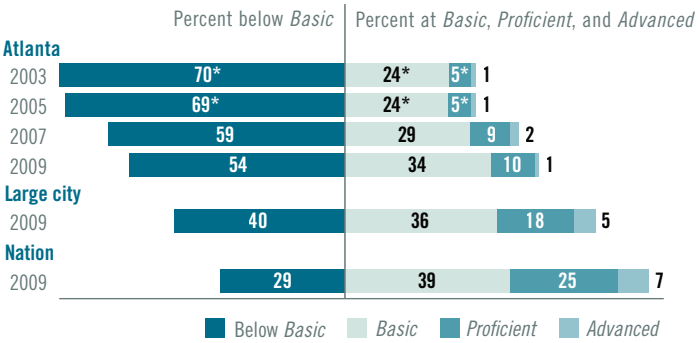
Results for racial/ethnic groups showed

- a higher average score for Black students compared to 2003 but no significant change since 2007.

Achievement-level results showed

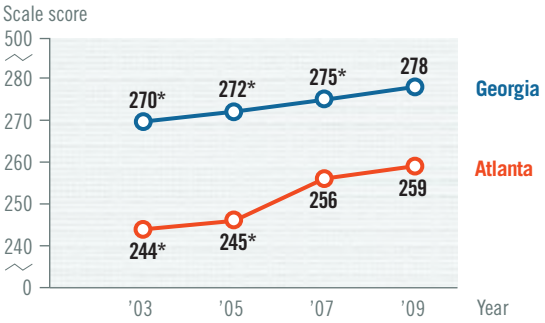
- an increase in the percentage at or above *Basic* compared to 2003 but no significant change since 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change since 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in Atlanta



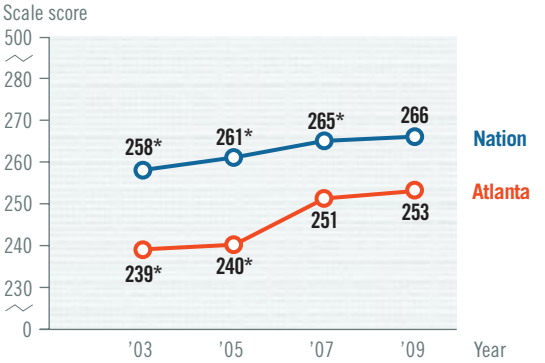
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in Atlanta and Georgia



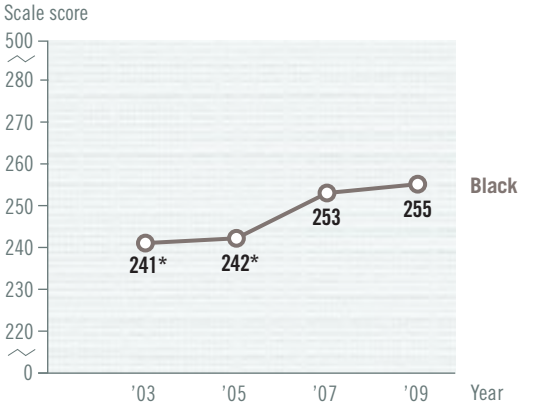
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in Atlanta and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in Atlanta, by race/ethnicity

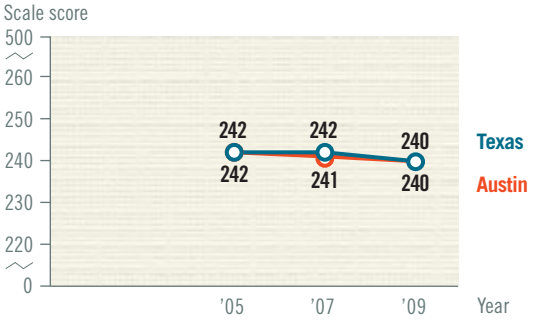


* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American and excludes Hispanic origin.

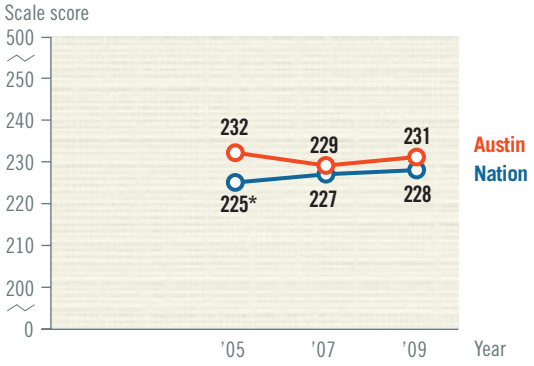
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Austin, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in Austin and Texas

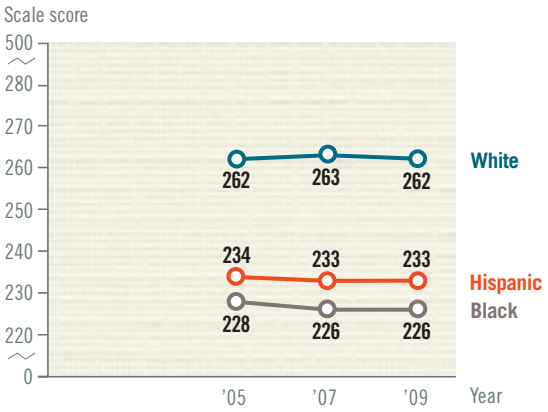


Trend in NAEP mathematics average scores for lower-income fourth-graders in Austin and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in Austin, by race/ethnicity



NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

For Austin fourth-graders in 2009,

- the overall score was not significantly different from 2005 and 2007.
- the average score of 240 was at the 50th percentile for the nation.

The district-to-state comparison showed

- no significant difference from the overall score for Texas.

Results for lower-income students showed

- no significant change in the average score compared to 2005 and 2007.
- a higher average score compared to lower-income students in the nation.

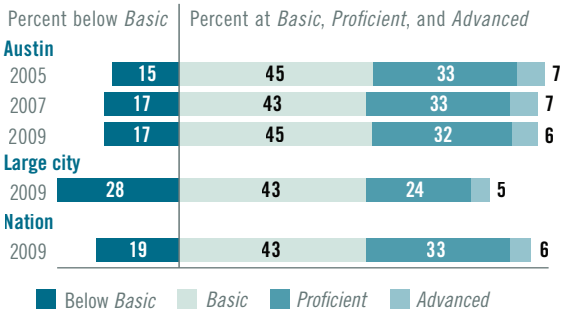
Results for racial/ethnic groups showed

- no significant change in the average scores for White, Black, and Hispanic students compared to 2005 and 2007.

Achievement-level results showed

- no significant change in the percentage at or above *Basic* compared to 2005 and 2007.
- no significant change in the percentage at or above *Proficient* compared to 2005 and 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in Austin



NOTE: 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), 2005, 2007, and 2009 Mathematics Assessments.

Austin, Grade 8

For Austin eighth-graders in 2009,

- the overall score was higher than in 2005 and 2007.
- the average score of 287 was at the 55th percentile for the nation.

The district-to-state comparison showed

- no significant difference from the overall score for Texas.

Results for lower-income students showed

- a higher average score compared to 2005 and 2007.
- a higher average score compared to lower-income students in the nation.

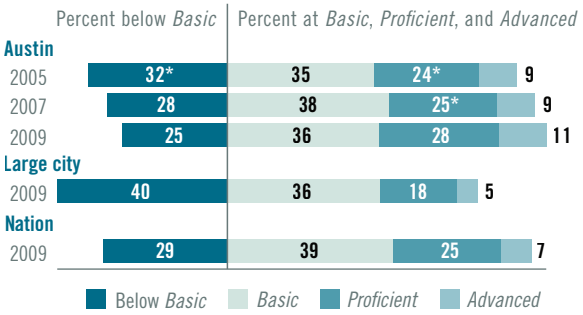
Results for racial/ethnic groups showed

- higher average scores for White, Black, and Hispanic students compared to 2005 but no significant change compared to 2007.

Achievement-level results showed

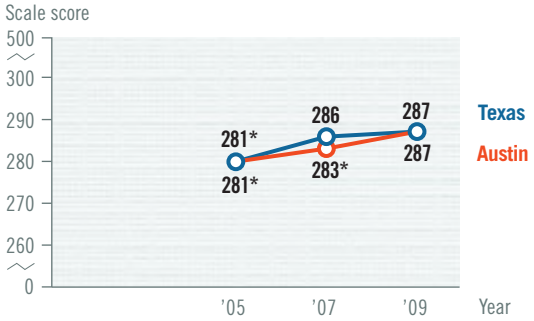
- an increase in the percentage at or above *Basic* compared to 2005 but no significant change since 2007.
- an increase in the percentage at or above *Proficient* compared to 2005 and 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in Austin



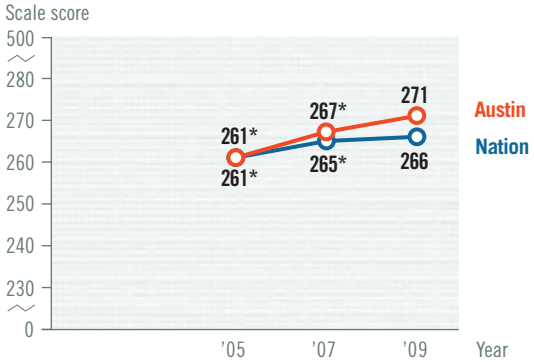
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in Austin and Texas



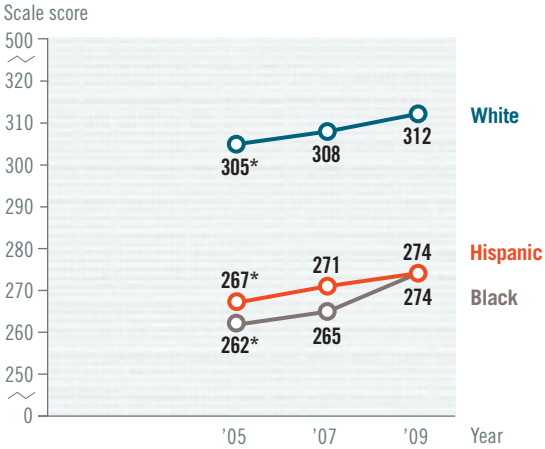
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in Austin and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in Austin, by race/ethnicity

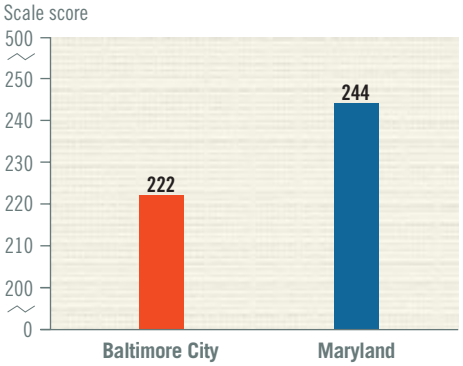


* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

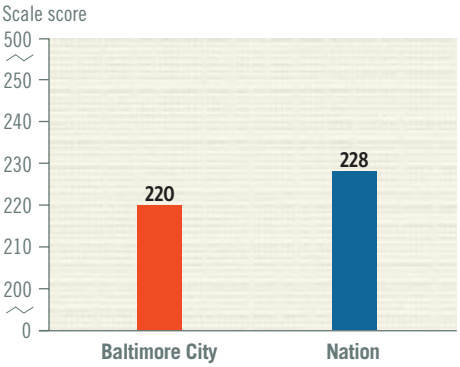
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005, 2007, and 2009 Mathematics Assessments.

Baltimore City, Grade 4

Average scores in NAEP mathematics for fourth-graders in Baltimore City and Maryland: 2009

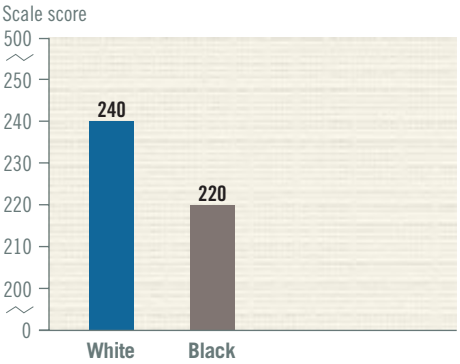


Average scores in NAEP mathematics for lower-income fourth-graders in Baltimore City and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for fourth-graders in Baltimore City, by race/ethnicity: 2009



NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American. Race categories exclude Hispanic origin.

For Baltimore City fourth-graders in 2009,

- the overall average score was 222.
- the average score of 222 was at the 27th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Maryland.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

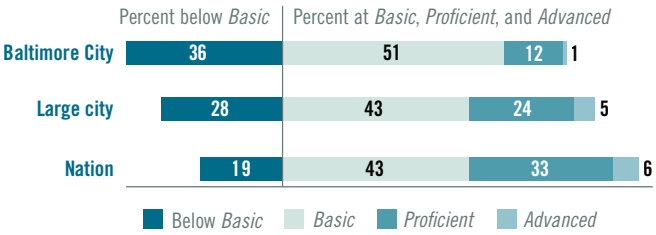
Results for racial/ethnic groups showed

- a White – Black score gap of 20 points.

Achievement-level results showed

- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for fourth-graders in Baltimore City: 2009



NOTE: 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), 2009 Mathematics Assessment.

Baltimore City, Grade 8

For Baltimore City eighth-graders in 2009,

- the overall average score was 257.
- the average score of 257 was at the 24th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Maryland.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

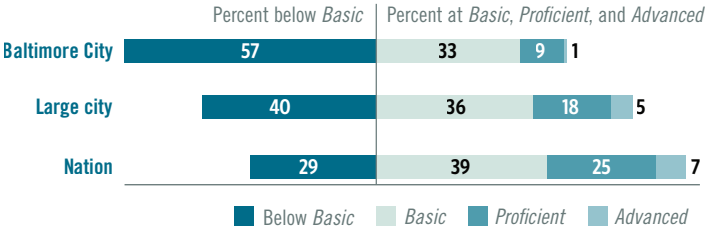
Results for racial/ethnic groups showed

- an average score of 255 for Black students.

Achievement-level results showed

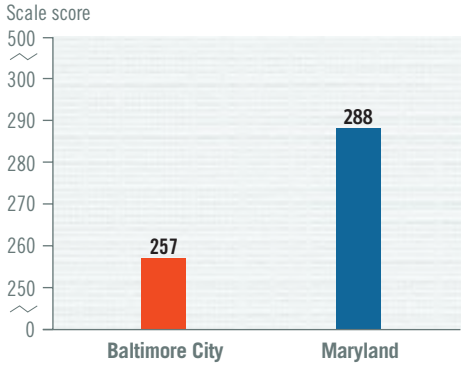
- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for eighth-graders in Baltimore City: 2009

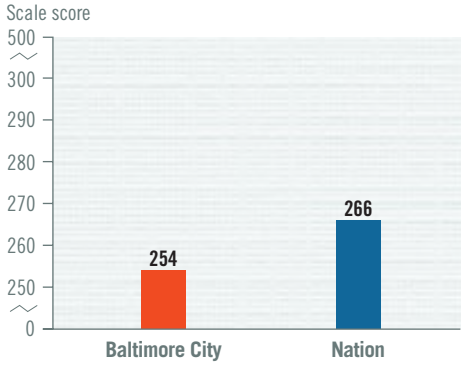


NOTE: Detail may not sum to totals because of rounding.

Average scores in NAEP mathematics for eighth-graders in Baltimore City and Maryland: 2009

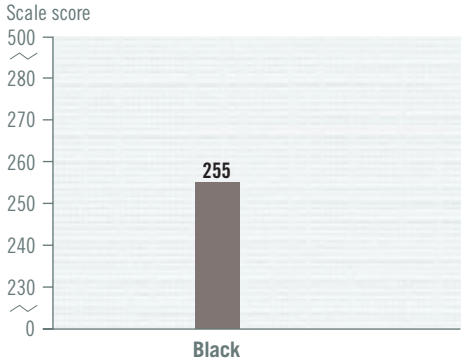


Average scores in NAEP mathematics for lower-income eighth-graders in Baltimore City and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for eighth-graders in Baltimore City, by race/ethnicity: 2009

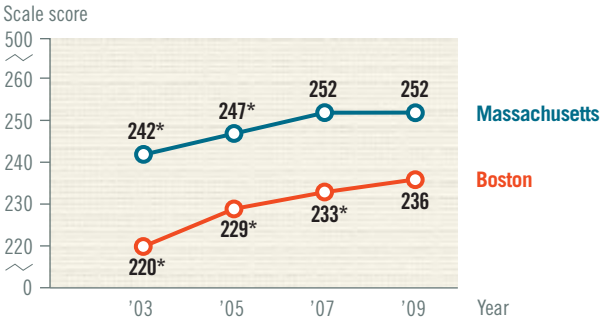


NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American and excludes Hispanic origin.

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

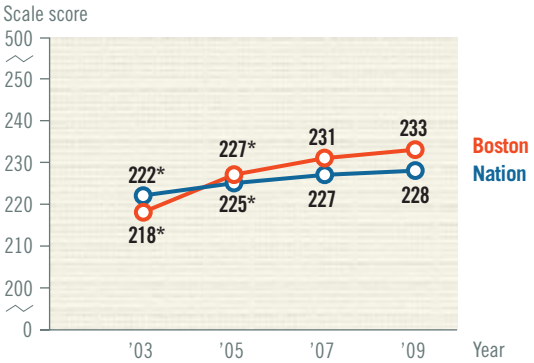
Boston, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in Boston and Massachusetts



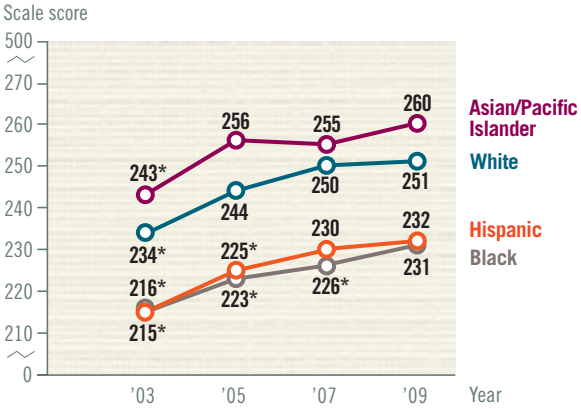
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in Boston and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in Boston, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For Boston fourth-graders in 2009,

- the overall score was higher than in 2003 and 2007.
- the average score of 236 was at the 44th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Massachusetts.
- a narrowing of the gap compared to 2003 and 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a higher average score compared to lower-income students in the nation.

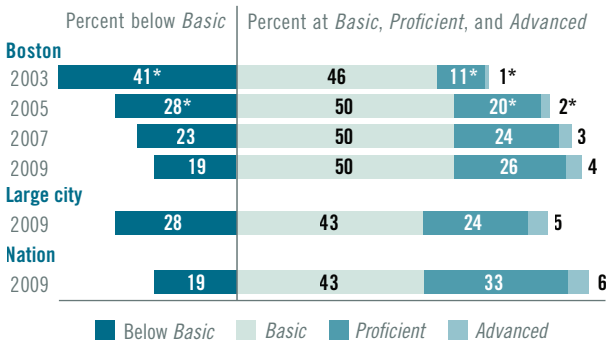
Results for racial/ethnic groups showed

- a higher average score for Black students compared to 2003 and 2007.
- higher average scores for White, Hispanic, and Asian/Pacific Islander students compared to 2003 but no significant change compared to 2007.

Achievement-level results showed

- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in Boston



* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

Boston, Grade 8

For Boston eighth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 279 was at the 46th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Massachusetts.
- a narrowing of the gap compared to 2003 but no significant change compared to 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a higher average score compared to lower-income students in the nation.

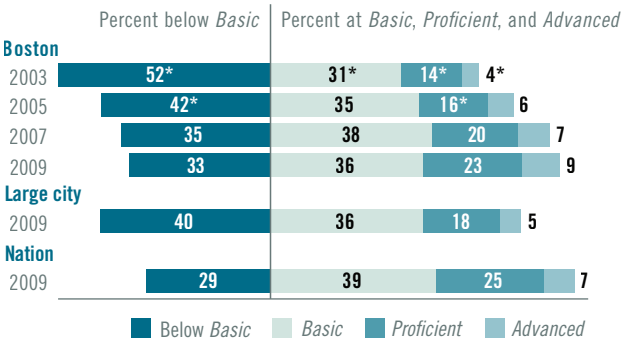
Results for racial/ethnic groups showed

- higher average scores for White, Black, Hispanic, and Asian/Pacific Islander students compared to 2003 but no significant change compared to 2007.

Achievement-level results showed

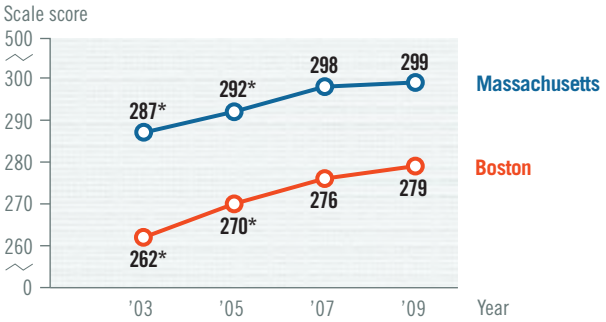
- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 and 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in Boston



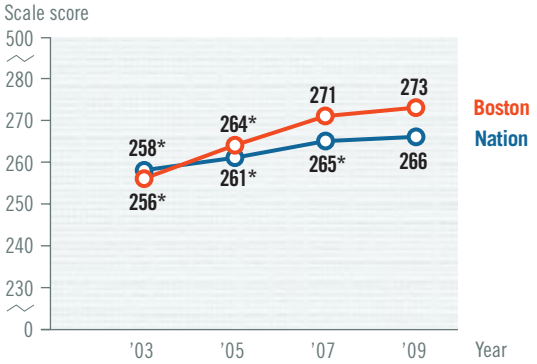
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in Boston and Massachusetts



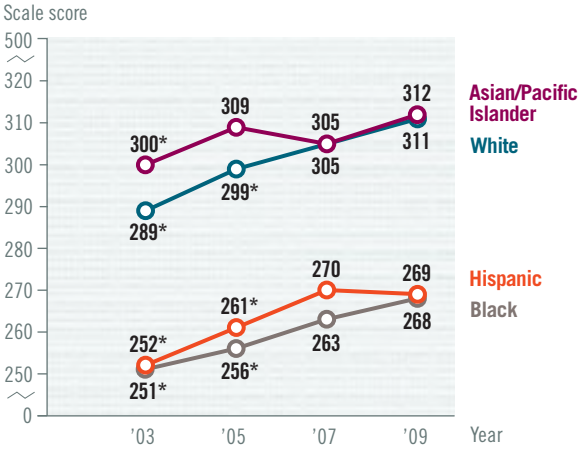
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in Boston and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in Boston, by race/ethnicity

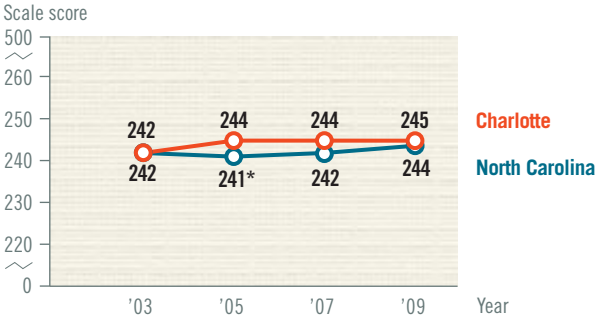


* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

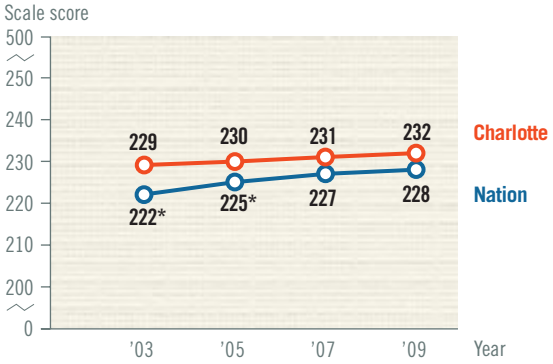
Charlotte, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in Charlotte and North Carolina



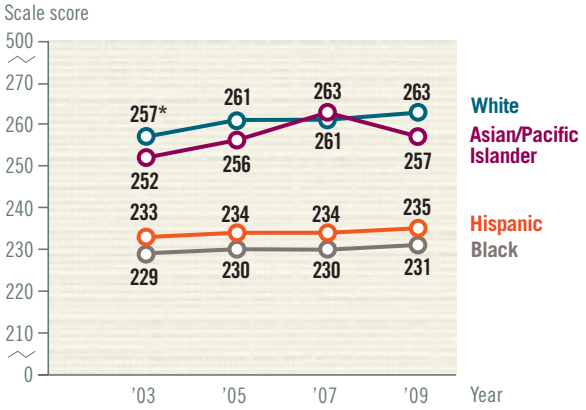
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in Charlotte and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in Charlotte, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For Charlotte fourth-graders in 2009,

- the overall score was not significantly different from 2003 and 2007.
- the average score of 245 was at the 56th percentile for the nation.

The district-to-state comparison showed

- no significant difference from the overall score for North Carolina.

Results for lower-income students showed

- no significant change in the average score compared to 2003 and 2007.
- a higher average score compared to lower-income students in the nation.

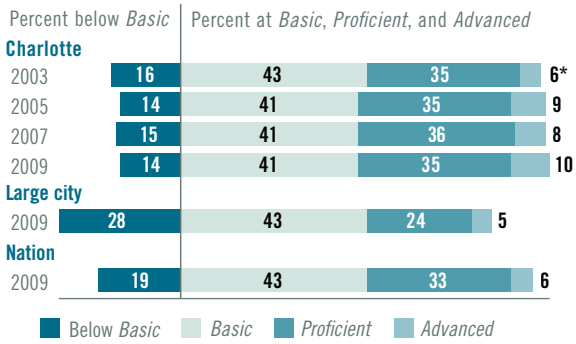
Results for racial/ethnic groups showed

- a higher average score for White students compared to 2003 but no significant change from 2007.
- no significant change in the average scores for Black, Hispanic, and Asian/Pacific Islander students compared to 2003 and 2007.

Achievement-level results showed

- no significant change in the percentage at or above *Basic* compared to 2003 and 2007.
- no significant change in the percentage at or above *Proficient* compared to 2003 and 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in Charlotte



* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

Charlotte, Grade 8

For Charlotte eighth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 283 was at the 50th percentile for the nation.

The district-to-state comparison showed

- no significant difference from the overall score for North Carolina.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- no significant difference in the average score compared to lower-income students in the nation.

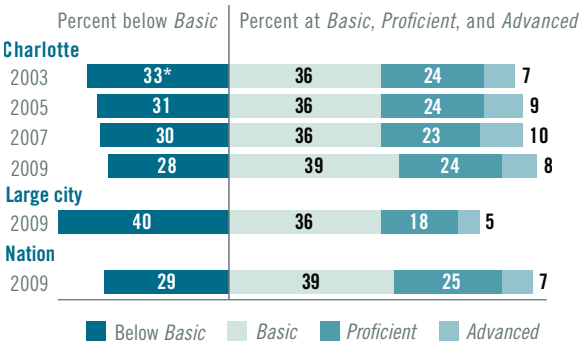
Results for racial/ethnic groups showed

- a higher average score for Black students compared to 2003 but no significant change compared to 2007.
- no significant change in the average scores for White and Hispanic students compared to 2003 and 2007.

Achievement-level results showed

- a higher percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- no significant change in the percentage at or above *Proficient* compared to 2003 and 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in Charlotte

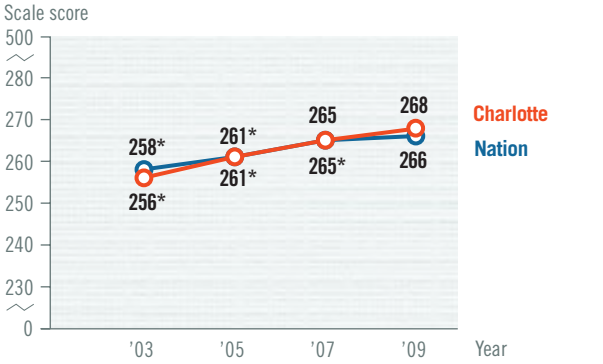


* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in Charlotte and North Carolina

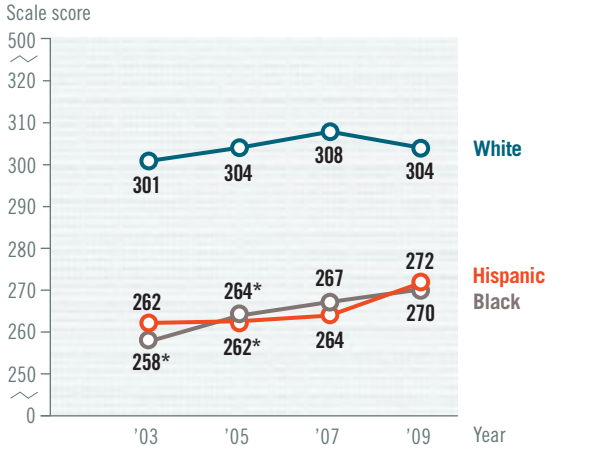
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in Charlotte and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in Charlotte, by race/ethnicity

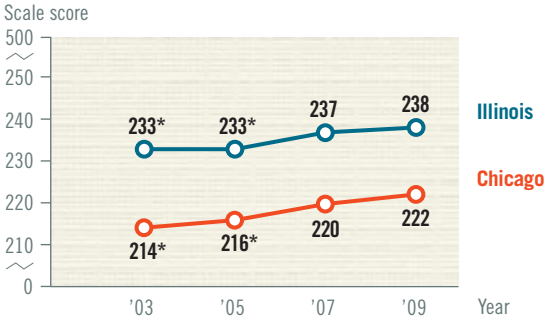


* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

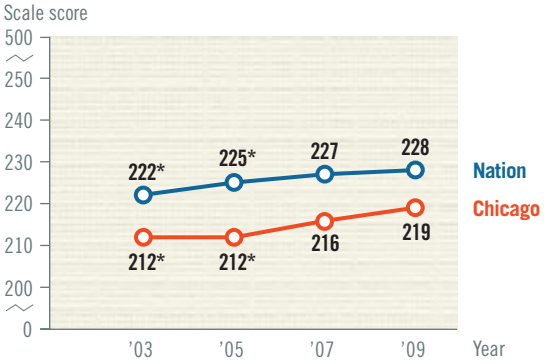
Chicago, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in Chicago and Illinois



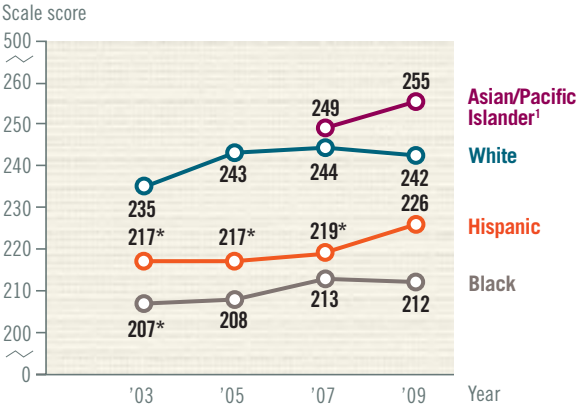
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in Chicago and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in Chicago, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
[1] Sample sizes insufficient to permit reliable estimates for Asian/Pacific Islander students in 2003 and 2005.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For Chicago fourth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 222 was at the 26th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Illinois.
- no significant change in the gap compared to 2003 and 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a lower average score compared to lower-income students in the nation.

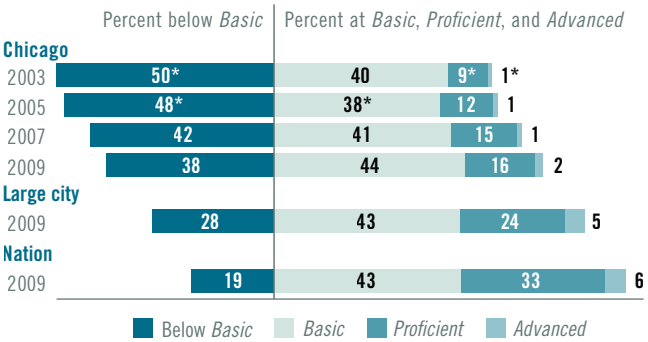
Results for racial/ethnic groups showed

- higher average scores for Black and Hispanic students compared to 2003 and Hispanic students compared to 2007, but no significant change for Black students compared to 2007.
- no significant change in the average scores for White students compared to 2003 and 2007 and for Asian/Pacific Islander students compared to 2007.

Achievement-level results showed

- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in Chicago



* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

Chicago, Grade 8

For Chicago eighth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 264 was at the 30th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Illinois.
- no significant change in the gap compared to 2003 and 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a lower average score compared to lower-income students in the nation.

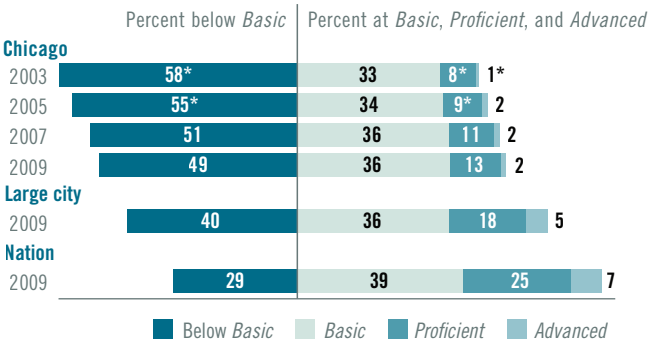
Results for racial/ethnic groups showed

- higher average scores for White, Black, Hispanic, and Asian/Pacific Islander students compared to 2003.
- no significant change in the average scores for White, Black, and Hispanic students compared to 2007.

Achievement-level results showed

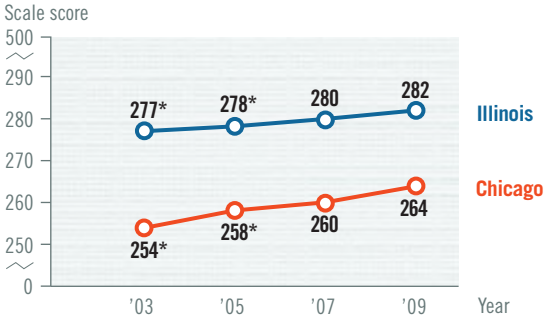
- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in Chicago



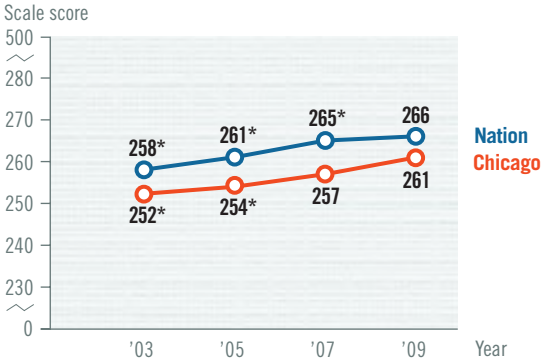
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in Chicago and Illinois



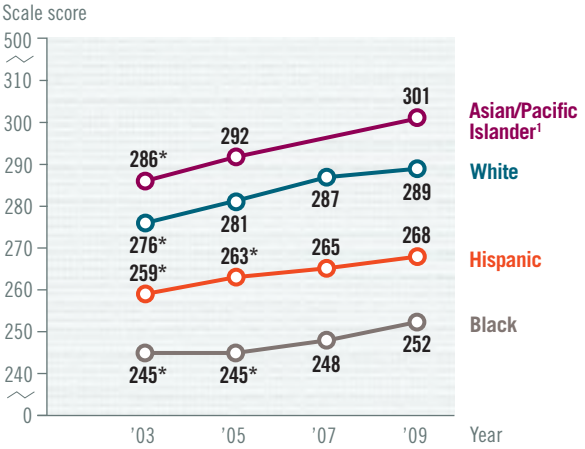
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in Chicago and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in Chicago, by race/ethnicity

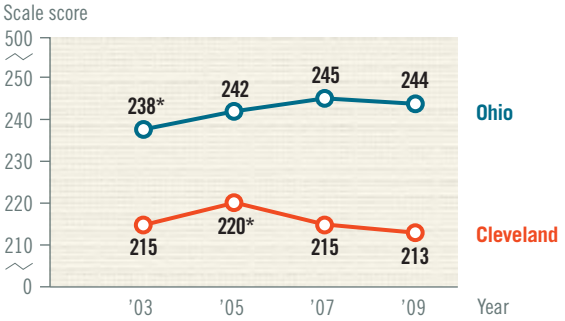


* Significantly different ($p < .05$) from 2009.
[1] Sample size insufficient to permit a reliable estimate for Asian/Pacific Islander students in 2007.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

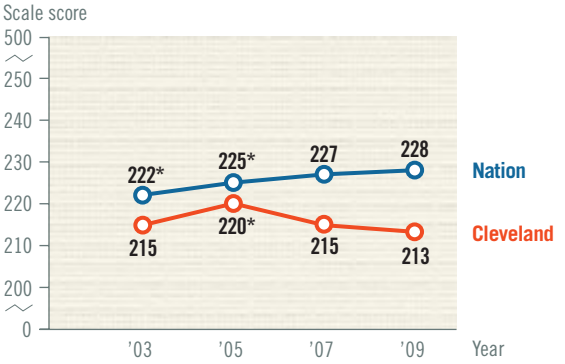
Cleveland, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in Cleveland and Ohio



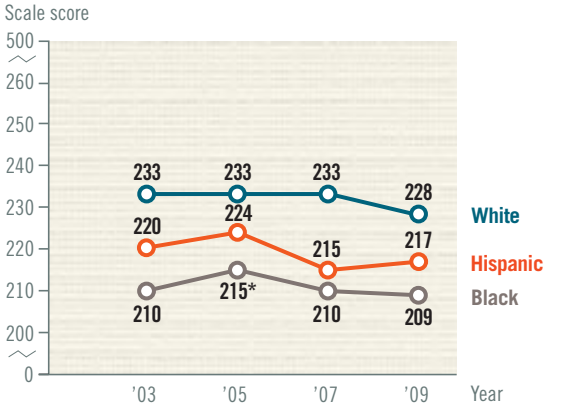
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in Cleveland and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program. In Cleveland, 100 percent of the students were identified as eligible, and thus the results for all students and lower-income students are the same.

Trend in NAEP mathematics average scores for fourth-graders in Cleveland, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

For Cleveland fourth-graders in 2009,

- the overall score was not significantly different from 2003 and 2007.
- the average score of 213 was at the 18th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Ohio.
- a widening of the gap compared to 2003 but no significant change compared to 2007.

Results for lower-income students showed

- no significant change compared to 2003 and 2007.
- a lower average score compared to lower-income students in the nation.

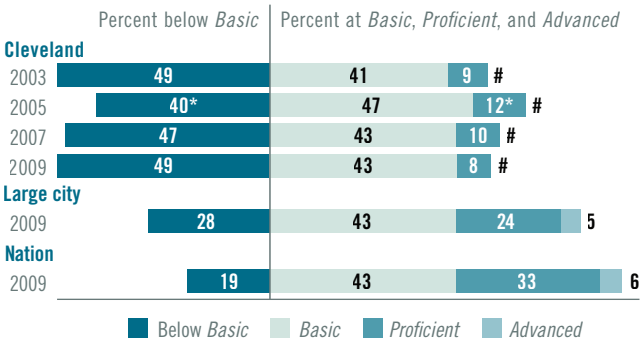
Results for racial/ethnic groups showed

- no significant change in the average scores for White, Black, and Hispanic students compared to 2003 and 2007.

Achievement-level results showed

- no significant change in the percentage at or above *Basic* compared to 2003 and 2007.
- no significant change in the percentage at or above *Proficient* compared to 2003 and 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in Cleveland



\# Rounds to zero.
* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

Cleveland, Grade 8

For Cleveland eighth-graders in 2009,

- the overall score was not significantly different from 2003 and 2007.
- the average score of 256 was at the 23rd percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Ohio.
- no significant change in the gap compared to 2003 and 2007.

Results for lower-income students showed

- no significant change compared to 2003 and 2007.
- a lower average score compared to lower-income students in the nation.

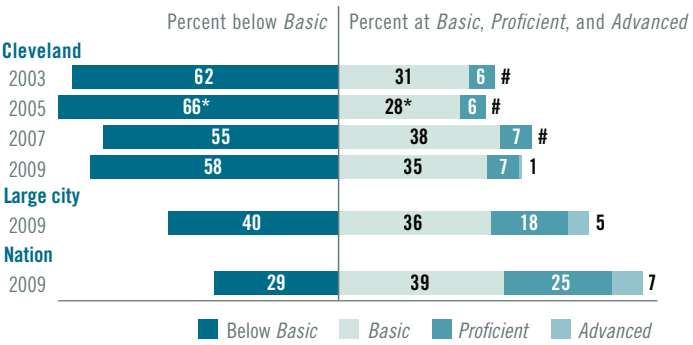
Results for racial/ethnic groups showed

- no significant change in the average scores for White, Black, and Hispanic students compared to 2003 and 2007.

Achievement-level results showed

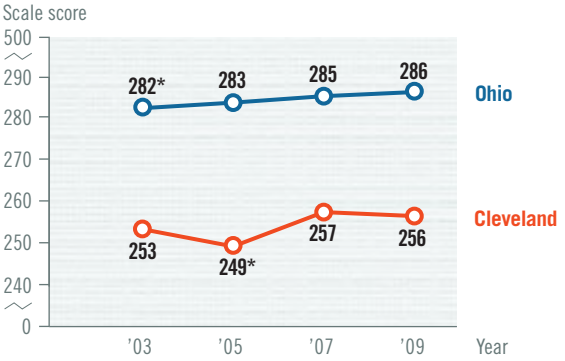
- no significant change in the percentage at or above *Basic* compared to 2003 and 2007.
- no significant change in the percentage at or above *Proficient* compared to 2003 and 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in Cleveland



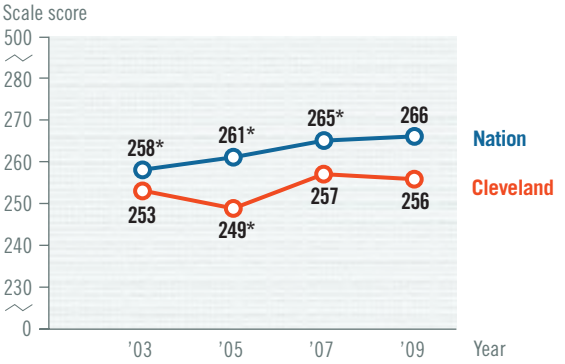
Rounds to zero.
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in Cleveland and Ohio



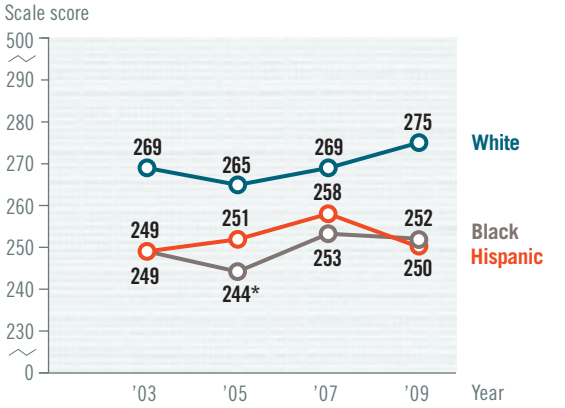
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in Cleveland and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program. In Cleveland, 100 percent of the students were identified as eligible, and thus the results for all students and lower-income students are the same.

Trend in NAEP mathematics average scores for eighth-graders in Cleveland, by race/ethnicity

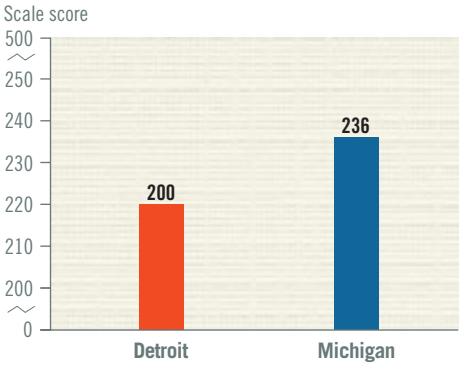


* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

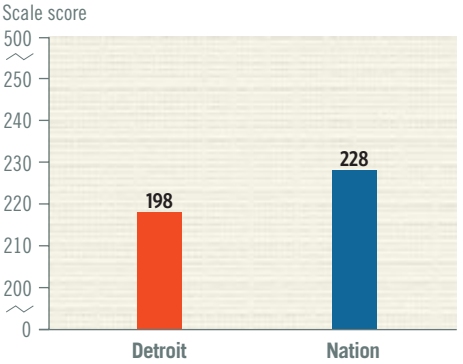
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Detroit, Grade 4

Average scores in NAEP mathematics for fourth-graders in Detroit and Michigan: 2009

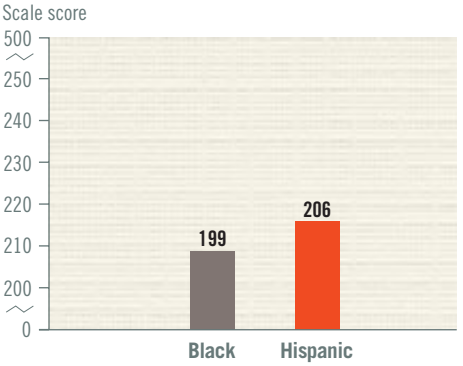


Average scores in NAEP mathematics for lower-income fourth-graders in Detroit and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for fourth-graders in Detroit, by race/ethnicity: 2009



NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

For Detroit fourth-graders in 2009,

- the overall average score was 200.
- the average score of 200 was at the 9th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Michigan.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

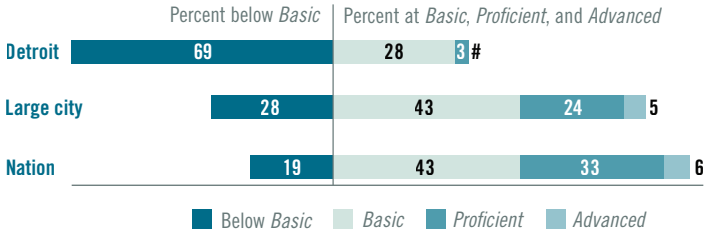
Results for racial/ethnic groups showed

- an average score of 199 for Black students.
- an average score of 206 for Hispanic students.

Achievement-level results showed

- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for fourth-graders in Detroit: 2009



Rounds to zero.
NOTE: 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), 2009 Mathematics Assessment.

Detroit, Grade 8

For Detroit eighth-graders in 2009,

- the overall average score was 238.
- the average score of 238 was at the 12th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Michigan.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

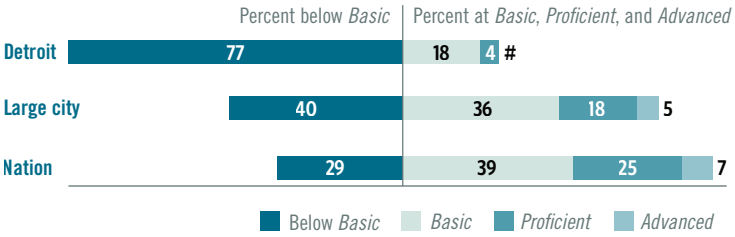
Results for racial/ethnic groups showed

- an average score of 237 for Black students.
- an average score of 255 for Hispanic students.

Achievement-level results showed

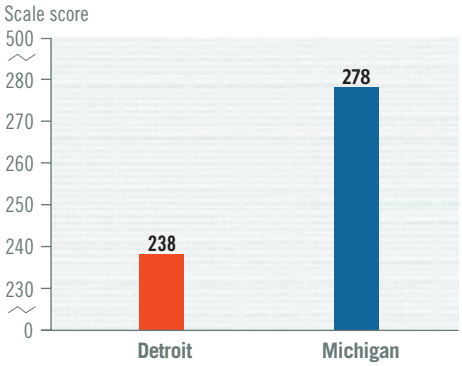
- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for eighth-graders in Detroit: 2009

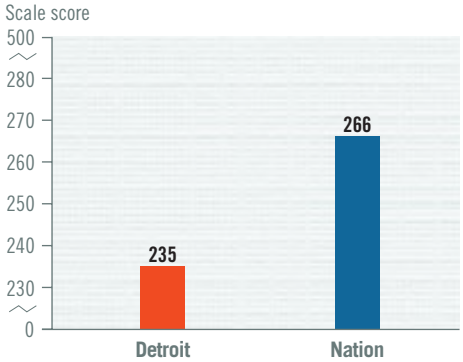


Rounds to zero.
NOTE: Detail may not sum to totals because of rounding.

Average scores in NAEP mathematics for eighth-graders in Detroit and Michigan: 2009

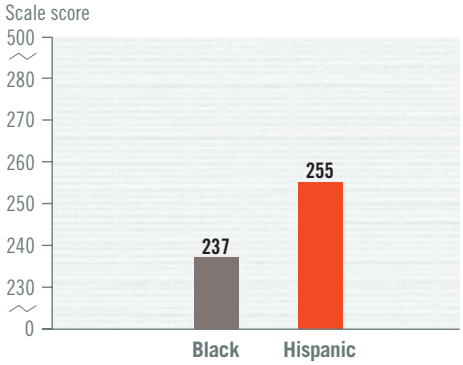


Average scores in NAEP mathematics for lower-income eighth-graders in Detroit and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for eighth-graders in Detroit, by race/ethnicity: 2009



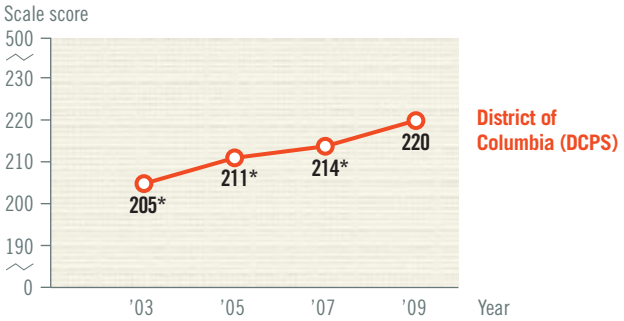
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

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

4

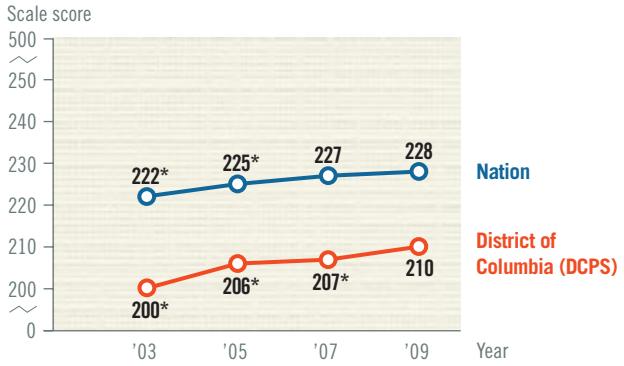
District of Columbia (DCPS), Grade 4

Trend in NAEP mathematics average scores for fourth-graders in the District of Columbia (DCPS)



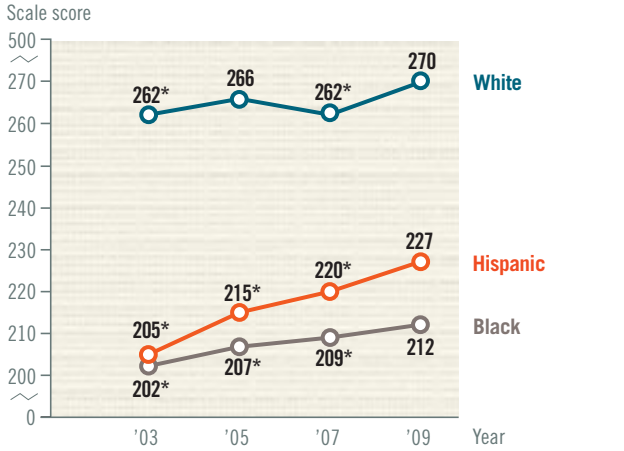
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in the District of Columbia (DCPS) and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in the District of Columbia (DCPS), by race/ethnicity



* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

For District of Columbia (DCPS) fourth-graders in 2009,

- the overall score was higher than in 2003 and 2007.
- the average score of 220 was at the 24th percentile for the nation.

Results for lower-income students showed

- a higher average score compared to 2003 and 2007.
- a lower average score compared to lower-income students in the nation.

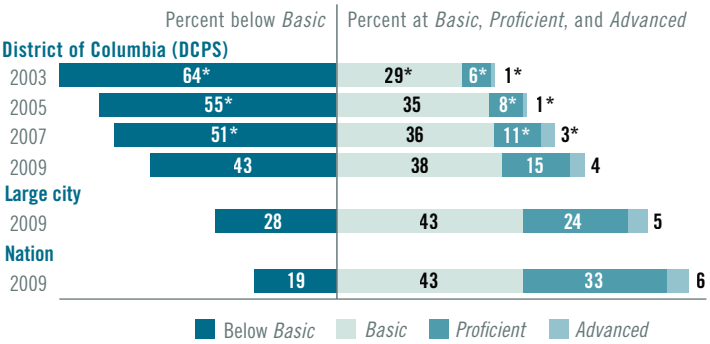
Results for racial/ethnic groups showed

- higher average scores for White, Black, and Hispanic students compared to 2003 and 2007.

Achievement-level results showed

- an increase in the percentage at or above *Basic* compared to 2003 and 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 and 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in the District of Columbia (DCPS)



* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding. DCPS = District of Columbia Public Schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

District of Columbia (DCPS), Grade 8

For District of Columbia (DCPS) eighth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the overall score in 2009 (251) was higher than in 2007 when the 2007 average score is recomputed to exclude charter schools (244) to account for the change in population definition for 2009. See the Technical Notes for more information.
- the average score of 251 was at the 20th percentile for the nation.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a lower average score compared to lower-income students in the nation.

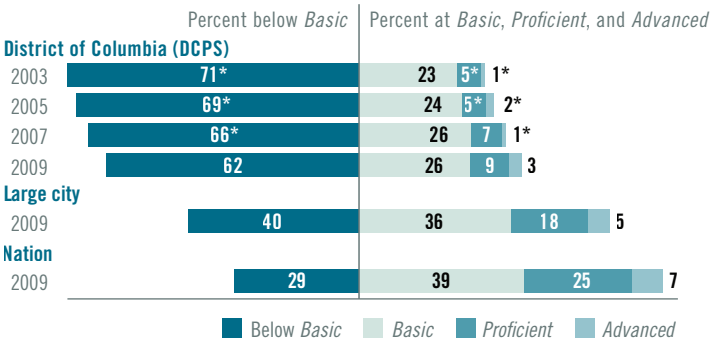
Results for racial/ethnic groups showed

- higher average scores for Black and Hispanic students compared to 2003 but no significant change compared to 2007.

Achievement-level results showed

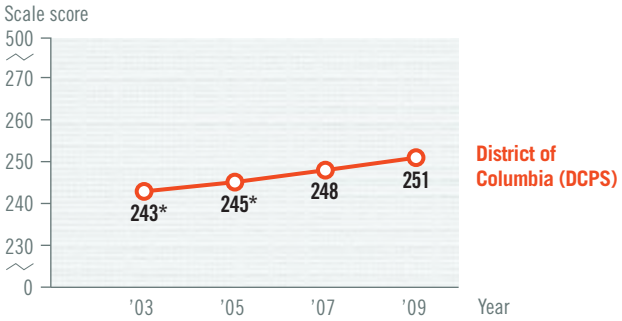
- an increase in the percentage at or above *Basic* compared to 2003 and 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 and 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in the District of Columbia (DCPS)



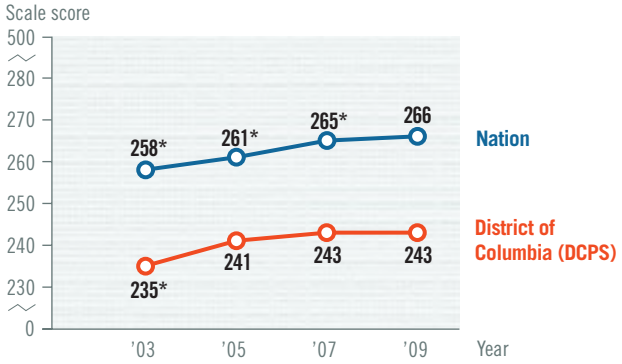
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding. DCPS = District of Columbia Public Schools.

Trend in NAEP mathematics average scores for eighth-graders in the District of Columbia (DCPS)



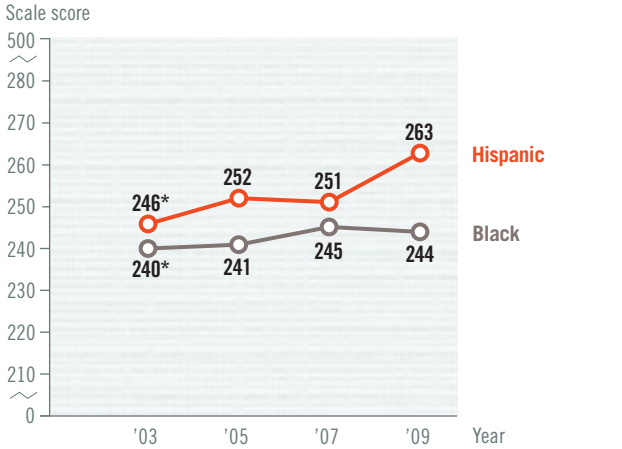
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in the District of Columbia (DCPS) and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in the District of Columbia (DCPS), by race/ethnicity

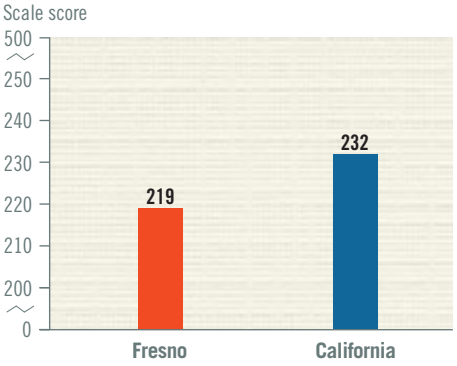


* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

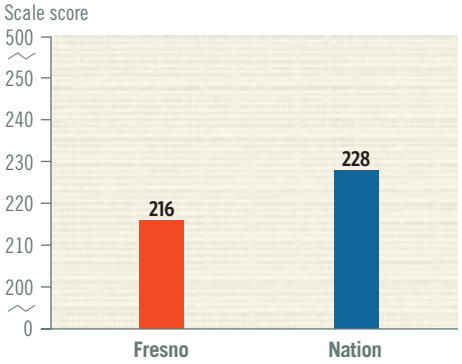
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Fresno, Grade 4

Average scores in NAEP mathematics for fourth-graders in Fresno and California: 2009

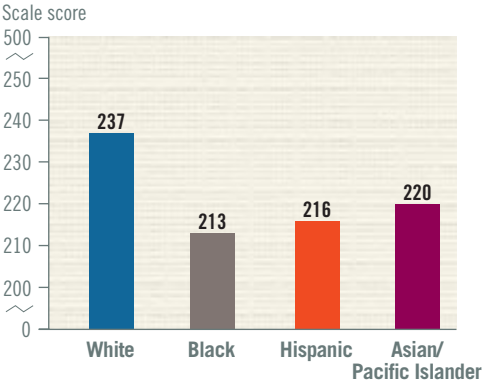


Average scores in NAEP mathematics for lower-income fourth-graders in Fresno and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for fourth-graders in Fresno, by race/ethnicity: 2009



NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For Fresno fourth-graders in 2009,

- the overall average score was 219.
- the average score of 219 was at the 23rd percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for California.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

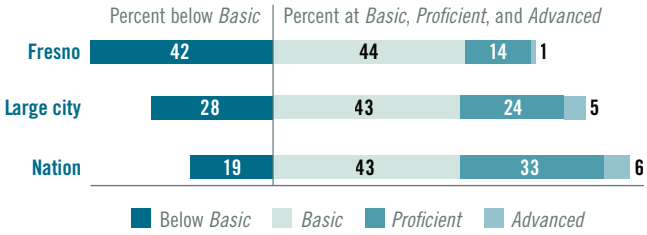
Results for racial/ethnic groups showed

- a White – Black score gap of 24 points.
- a White – Hispanic score gap of 21 points.

Achievement-level results showed

- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for fourth-graders in Fresno: 2009



NOTE: 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), 2009 Mathematics Assessment.

Fresno, Grade 8

For Fresno eighth-graders in 2009,

- the overall average score was 258.
- the average score of 258 was at the 25th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for California.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

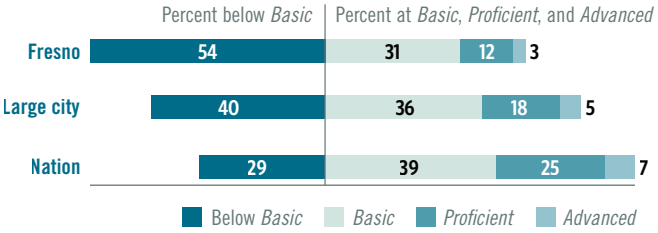
Results for racial/ethnic groups showed

- a White – Black score gap of 36 points.
- a White – Hispanic score gap of 29 points.

Achievement-level results showed

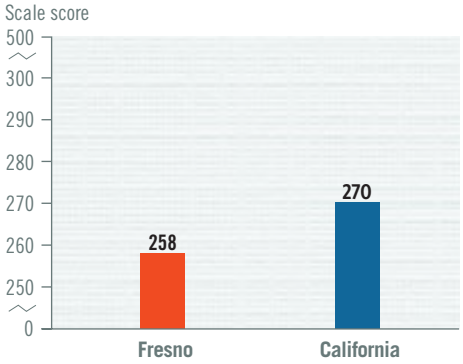
- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for eighth-graders in Fresno: 2009

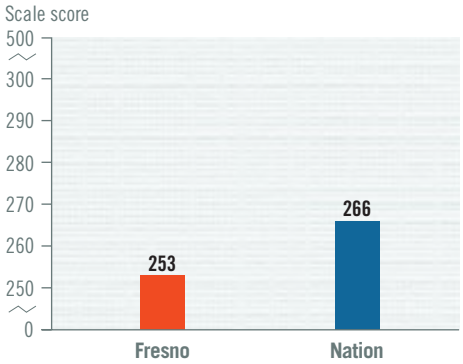


NOTE: Detail may not sum to totals because of rounding.

Average scores in NAEP mathematics for eighth-graders in Fresno and California: 2009

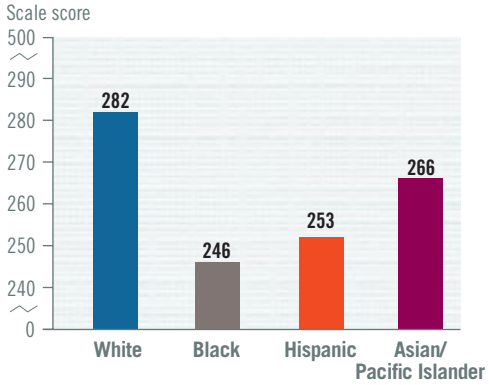


Average scores in NAEP mathematics for lower-income eighth-graders in Fresno and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for eighth-graders in Fresno, by race/ethnicity: 2009

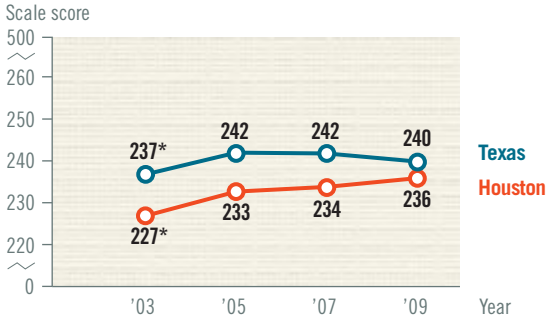


NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

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

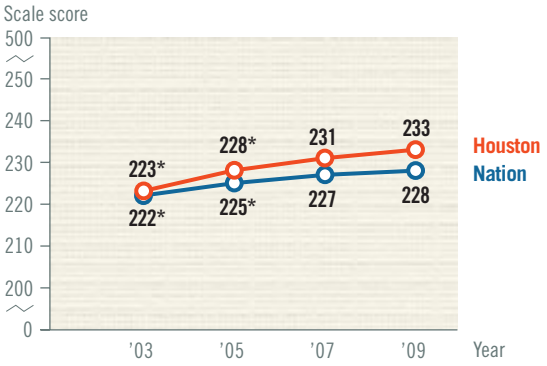
Houston, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in Houston and Texas



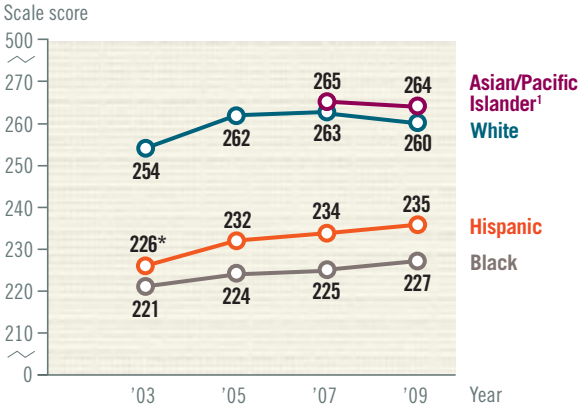
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in Houston and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in Houston, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
[1] Sample sizes insufficient to permit reliable estimates for Asian/Pacific Islander students in 2003 and 2005.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For Houston fourth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 236 was at the 43rd percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Texas.
- a narrowing of the gap compared to 2003 but no significant change compared to 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a higher average score compared to lower-income students in the nation.

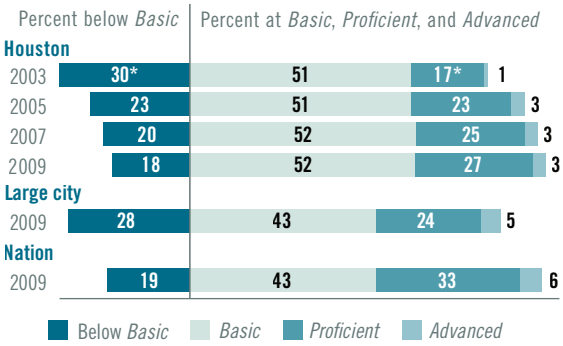
Results for racial/ethnic groups showed

- a higher average score for Hispanic students compared to 2003 but no significant change compared to 2007.
- no significant change in the average scores for White and Black students compared to 2003 and 2007.

Achievement-level results showed

- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in Houston



* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

Houston, Grade 8

For Houston eighth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 277 was at the 44th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Texas.
- no significant change in the gap compared to 2003 and 2007.

Results for lower-income students showed

- a higher average score compared to 2003 and 2007.
- a higher average score compared to lower-income students in the nation.

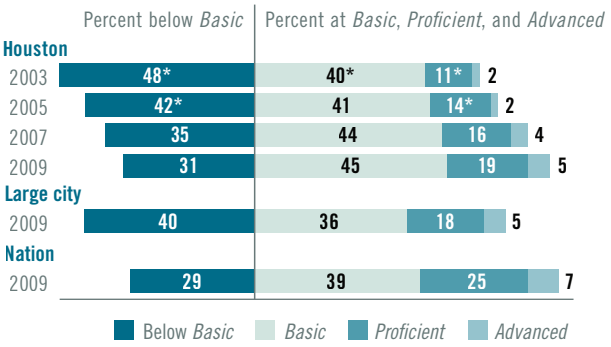
Results for racial/ethnic groups showed

- a higher average score for Hispanic students compared to 2003 and 2007.
- higher average scores for White and Black students compared to 2003 but no significant change compared to 2007.

Achievement-level results showed

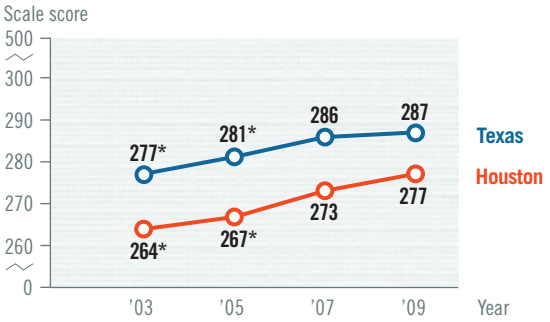
- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in Houston



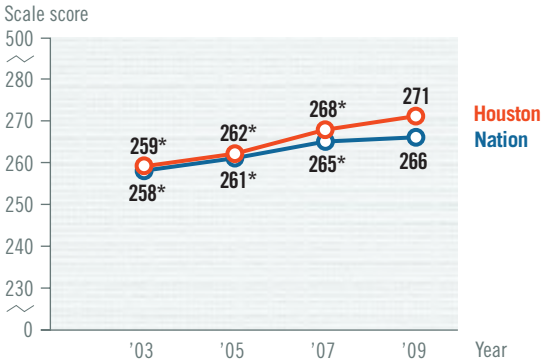
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in Houston and Texas



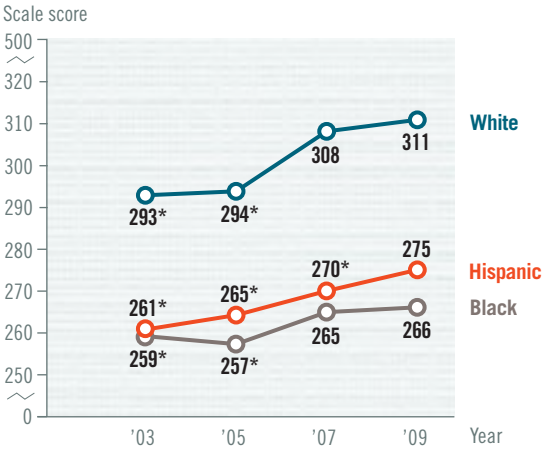
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in Houston and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in Houston, by race/ethnicity



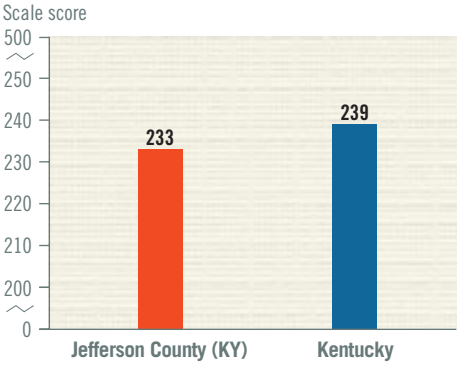
* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

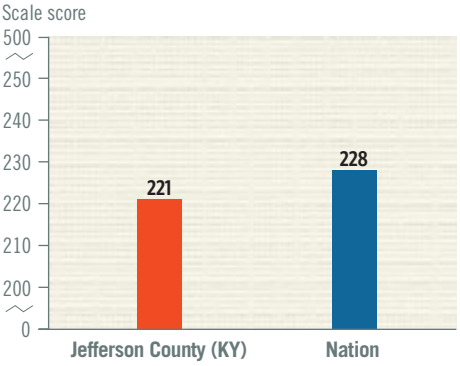
4

Jefferson County (KY), Grade 4

Average scores in NAEP mathematics for fourth-graders in Jefferson County (KY) and Kentucky: 2009

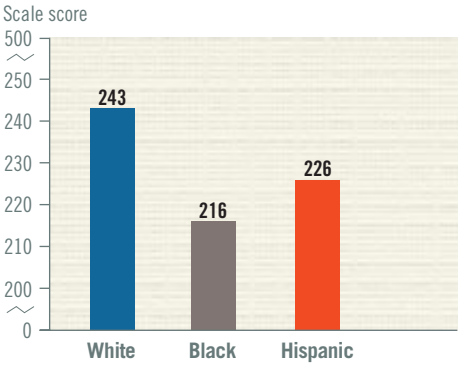


Average scores in NAEP mathematics for lower-income fourth-graders in Jefferson County (KY) and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for fourth-graders in Jefferson County (KY), by race/ethnicity: 2009



NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

For Jefferson County (KY) fourth-graders in 2009,

- the overall average score was 233.
- the average score of 233 was at the 39th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Kentucky.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

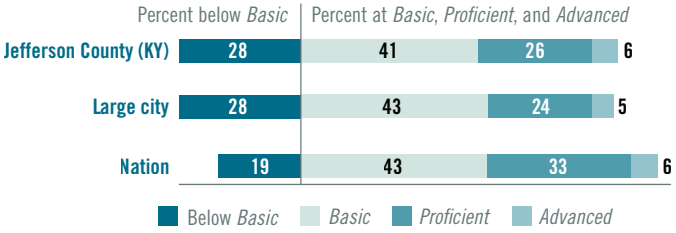
Results for racial/ethnic groups showed

- a White – Black score gap of 27 points.
- a White – Hispanic score gap of 17 points.

Achievement-level results showed

- no significant difference in the percentage at or above *Basic* compared to large cities.
- no significant difference in the percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for fourth-graders in Jefferson County (KY): 2009



NOTE: 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), 2009 Mathematics Assessment.

Jefferson County (KY), Grade 8

For Jefferson County (KY) eighth-graders in 2009,

- the overall average score was 271.
- the average score of 271 was at the 38th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Kentucky.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

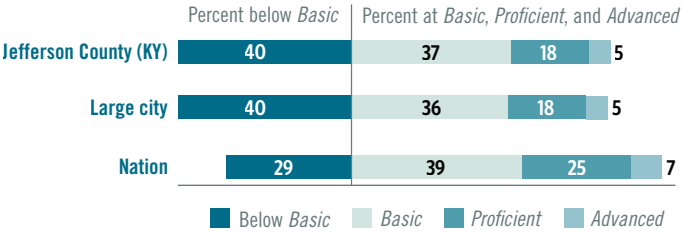
Results for racial/ethnic groups showed

- a White – Black score gap of 32 points.

Achievement-level results showed

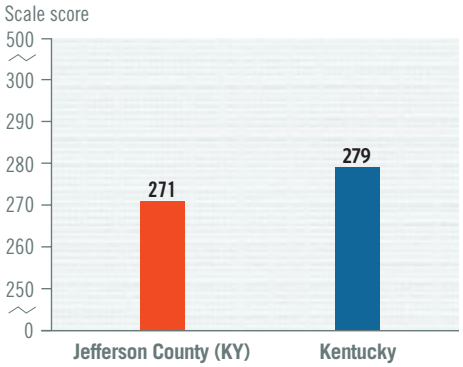
- no significant difference in the percentage at or above *Basic* compared to large cities.
- no significant difference in the percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for eighth-graders in Jefferson County (KY): 2009

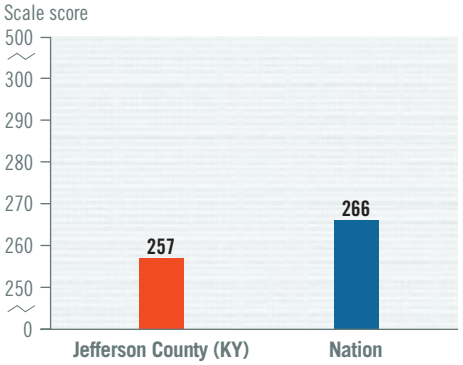


NOTE: Detail may not sum to totals because of rounding.

Average scores in NAEP mathematics for eighth-graders in Jefferson County (KY) and Kentucky: 2009

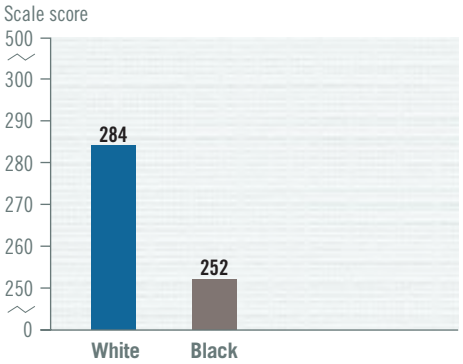


Average scores in NAEP mathematics for lower-income eighth-graders in Jefferson County (KY) and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for eighth-graders in Jefferson County (KY), by race/ethnicity: 2009

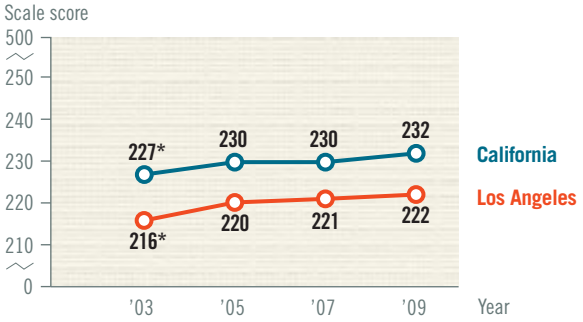


NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American. Race categories exclude Hispanic origin.

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

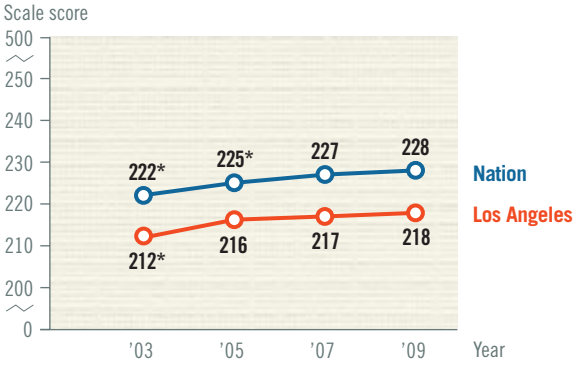
Los Angeles, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in Los Angeles and California



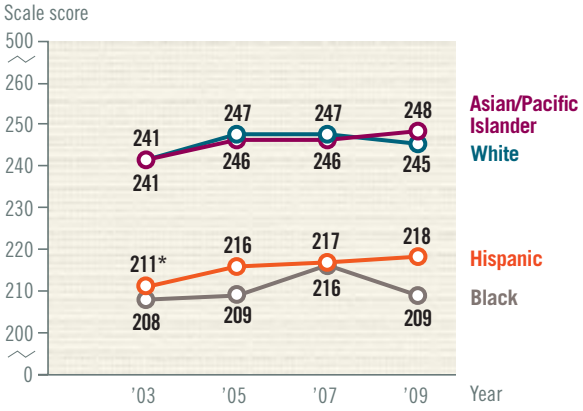
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in Los Angeles and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in Los Angeles, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For Los Angeles fourth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 222 was at the 26th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for California.
- no significant change in the gap compared to 2003 and 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a lower average score compared to lower-income students in the nation.

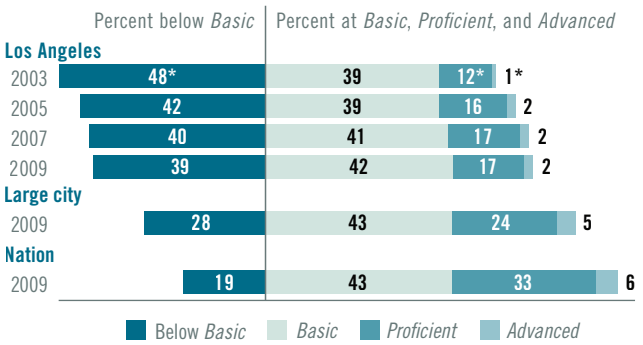
Results for racial/ethnic groups showed

- a higher average score for Hispanic students compared to 2003 but no significant change compared to 2007.
- no significant change in the average scores for White, Black, and Asian/Pacific Islander students compared to 2003 and 2007.

Achievement-level results showed

- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in Los Angeles



* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

Los Angeles, Grade 8

For Los Angeles eighth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 258 was at the 25th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for California.
- a narrowing of the gap compared to 2003 but no significant change compared to 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a lower average score compared to lower-income students in the nation.

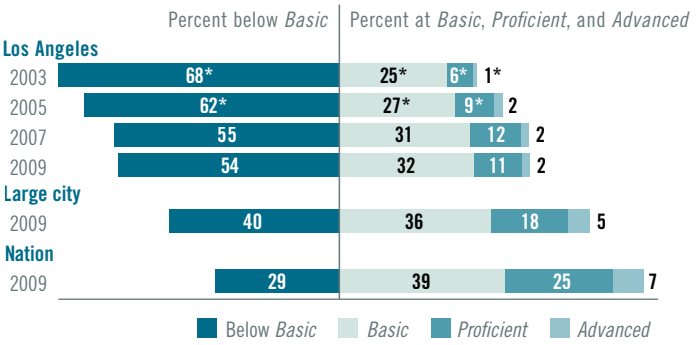
Results for racial/ethnic groups showed

- higher average scores for Black, Hispanic, and Asian/Pacific Islander students compared to 2003 but no significant change compared to 2007.
- no significant change in the average score for White students compared to 2003 and 2007.

Achievement-level results showed

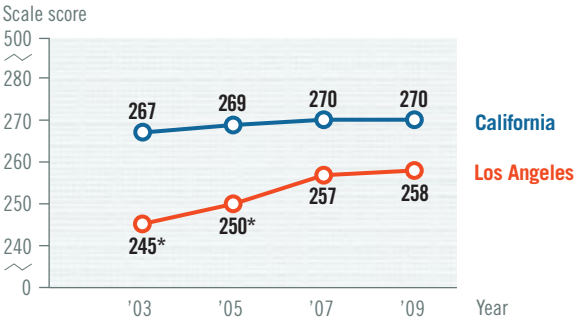
- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in Los Angeles



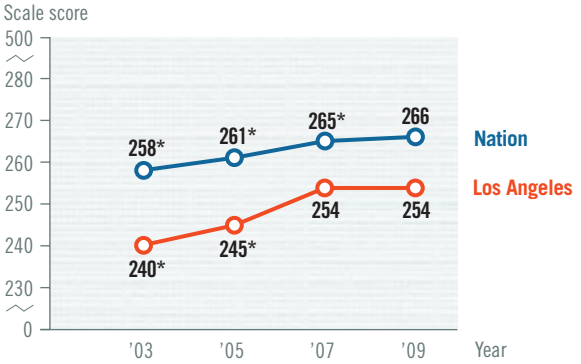
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in Los Angeles and California



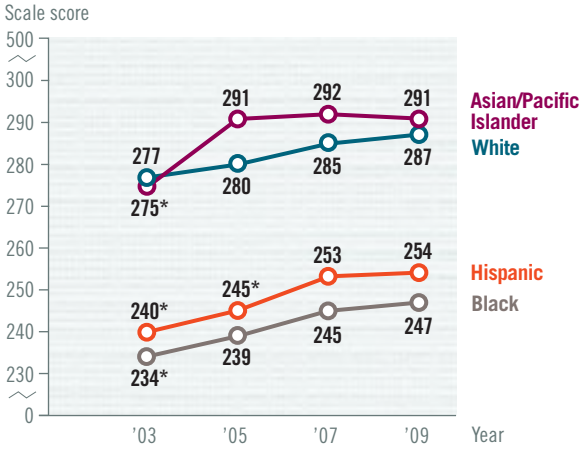
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in Los Angeles and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in Los Angeles, by race/ethnicity

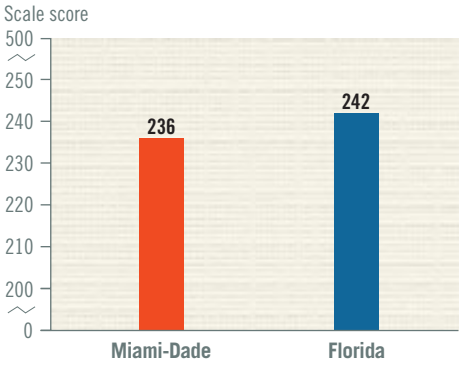


* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

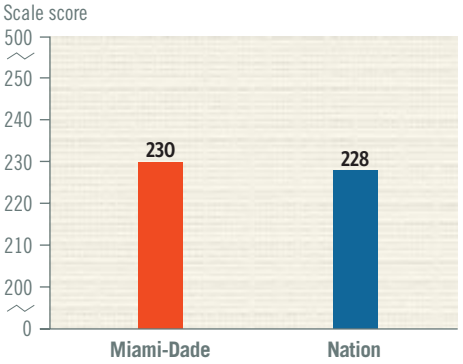
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Miami-Dade, Grade 4

Average scores in NAEP mathematics for fourth-graders in Miami-Dade and Florida: 2009

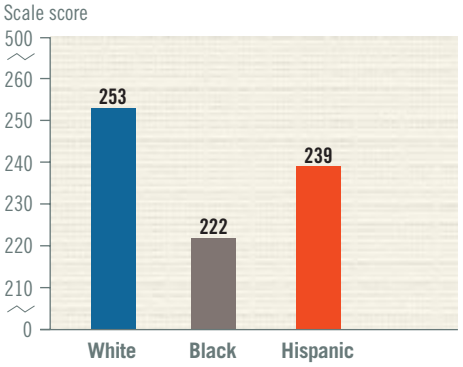


Average scores in NAEP mathematics for lower-income fourth-graders in Miami-Dade and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for fourth-graders in Miami-Dade, by race/ethnicity: 2009



NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

For Miami-Dade fourth-graders in 2009,

- the overall average score was 236.
- the average score of 236 was at the 44th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Florida.

Results for lower-income students showed

- a higher average score compared to lower-income students in the nation.

Results for racial/ethnic groups showed

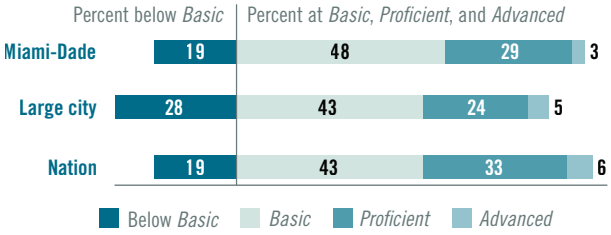
- a White – Black score gap of 32 points.[1]
- a White – Hispanic score gap of 15 points.[1]

Achievement-level results showed

- a higher percentage at or above *Basic* compared to large cities.
- a higher percentage at or above *Proficient* compared to large cities.

[1] The score gap is based on the difference between the unrounded scores as opposed to the rounded scores shown in the figure.

Achievement-level results in NAEP mathematics for fourth-graders in Miami-Dade: 2009



NOTE: 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), 2009 Mathematics Assessment.

Miami-Dade, Grade 8

For Miami-Dade eighth-graders in 2009,

- the overall average score was 273.
- the average score of 273 was at the 39th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Florida.

Results for lower-income students showed

- no significant difference in average score compared to lower-income students in the nation.

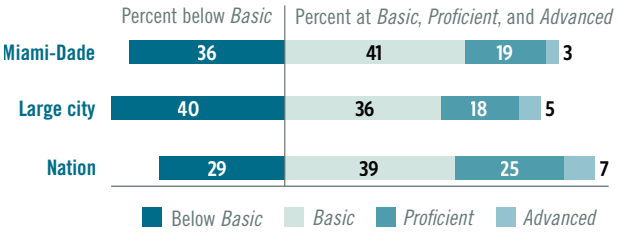
Results for racial/ethnic groups showed

- a White – Black score gap of 31 points.
- a White – Hispanic score gap of 17 points.

Achievement-level results showed

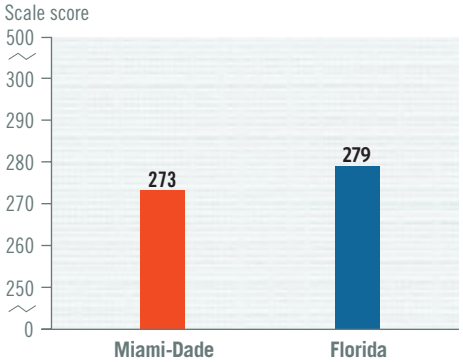
- a higher percentage at or above *Basic* compared to large cities.
- no significant difference in the percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for eighth-graders in Miami-Dade: 2009

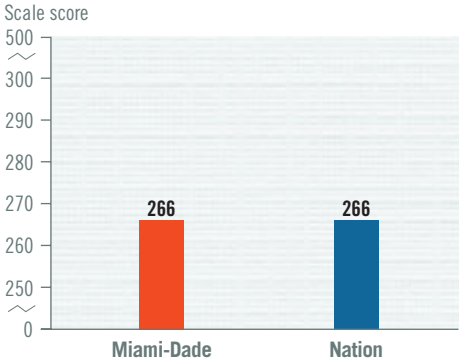


NOTE: Detail may not sum to totals because of rounding.

Average scores in NAEP mathematics for eighth-graders in Miami-Dade and Florida: 2009

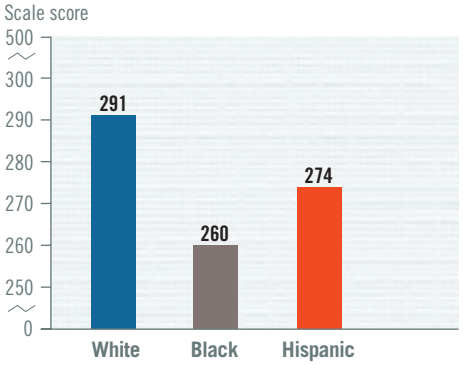


Average scores in NAEP mathematics for lower-income eighth-graders in Miami-Dade and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for eighth-graders in Miami-Dade, by race/ethnicity: 2009

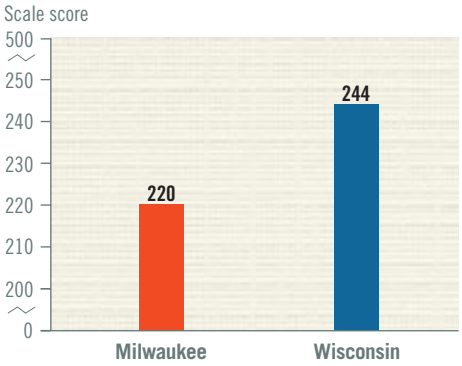


NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

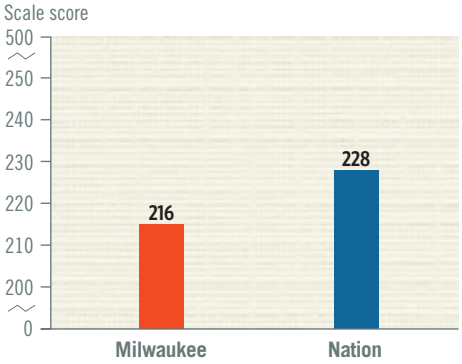
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

Milwaukee, Grade 4

Average scores in NAEP mathematics for fourth-graders in Milwaukee and Wisconsin: 2009

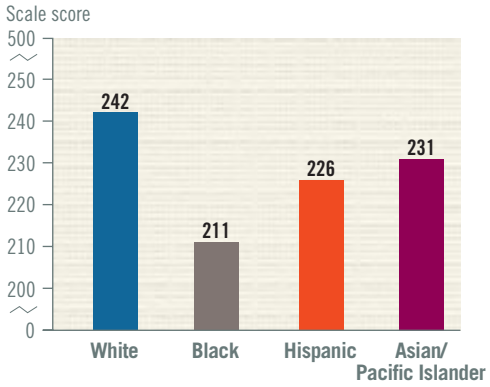


Average scores in NAEP mathematics for lower-income fourth-graders in Milwaukee and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for fourth-graders in Milwaukee, by race/ethnicity: 2009



NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For Milwaukee fourth-graders in 2009,

- the overall average score was 220.
- the average score of 220 was at the 24th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Wisconsin.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

Results for racial/ethnic groups showed

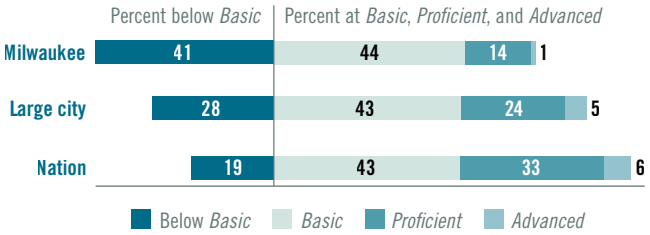
- a White – Black score gap of 32 points.[2]
- a White – Hispanic score gap of 16 points.

Achievement-level results showed

- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

[2] The score gap is based on the difference between the unrounded scores as opposed to the rounded scores shown in the figure.

Achievement-level results in NAEP mathematics for fourth-graders in Milwaukee: 2009



NOTE: 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), 2009 Mathematics Assessment.

Milwaukee, Grade 8

For Milwaukee eighth-graders in 2009,

- the overall average score was 251.
- the average score of 251 was at the 20th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Wisconsin.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

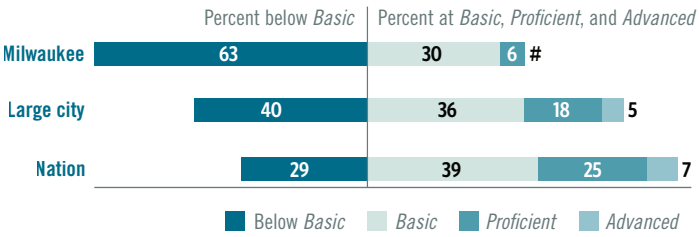
Results for racial/ethnic groups showed

- a White – Black score gap of 27 points.
- a White – Hispanic score gap of 15 points.

Achievement-level results showed

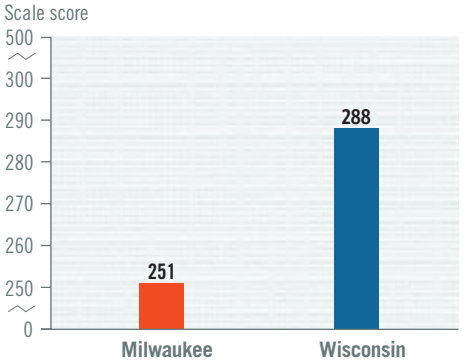
- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for eighth-graders in Milwaukee: 2009

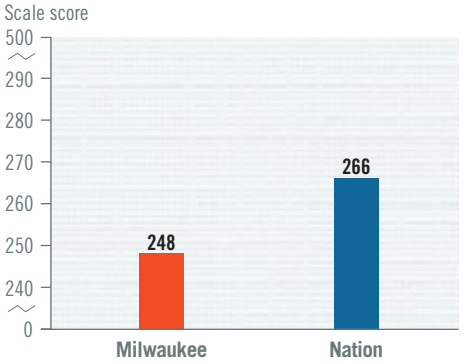


Rounds to zero.
NOTE: Detail may not sum to totals because of rounding.

Average scores in NAEP mathematics for eighth-graders in Milwaukee and Wisconsin: 2009

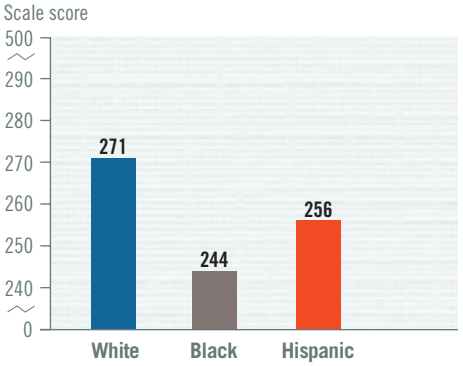


Average scores in NAEP mathematics for lower-income eighth-graders in Milwaukee and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for eighth-graders in Milwaukee, by race/ethnicity: 2009

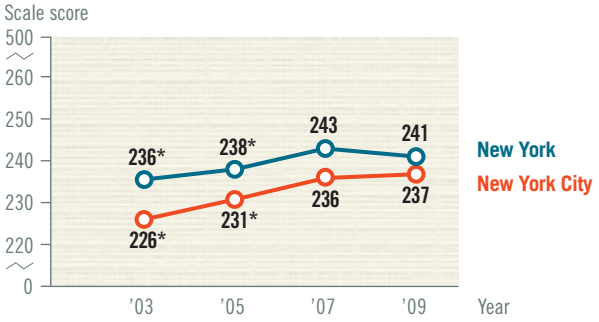


NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin.

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

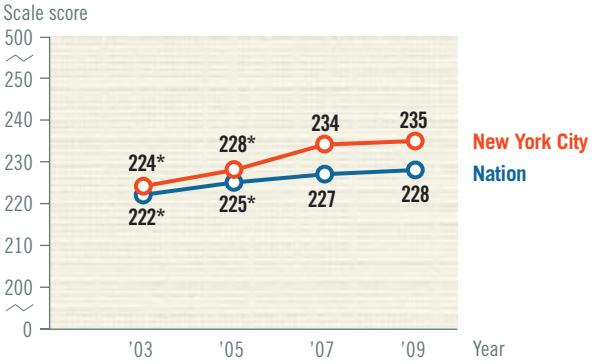
New York City, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in New York City and New York



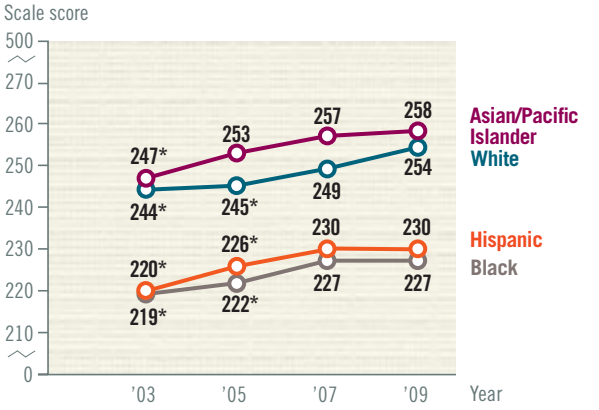
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in New York City and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in New York City, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For New York City fourth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 237 was at the 46th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for New York.
- a narrowing of the gap compared to 2003 and 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a higher average score compared to lower-income students in the nation.

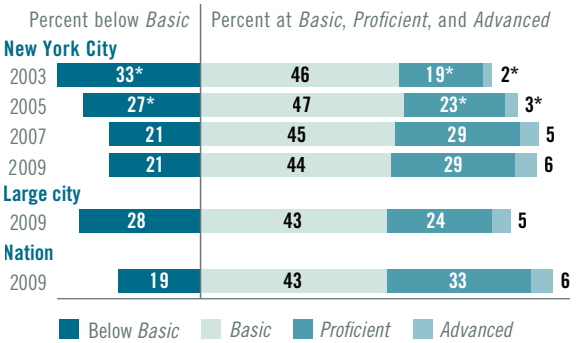
Results for racial/ethnic groups showed

- higher average scores for White, Black, Hispanic, and Asian/Pacific Islander students compared to 2003 but no significant change compared to 2007.

Achievement-level results showed

- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in New York City



* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

New York City, Grade 8

For New York City eighth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 273 was at the 39th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for New York.
- a narrowing of the gap compared to 2003 but no significant change compared to 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a higher average score compared to lower-income students in the nation.

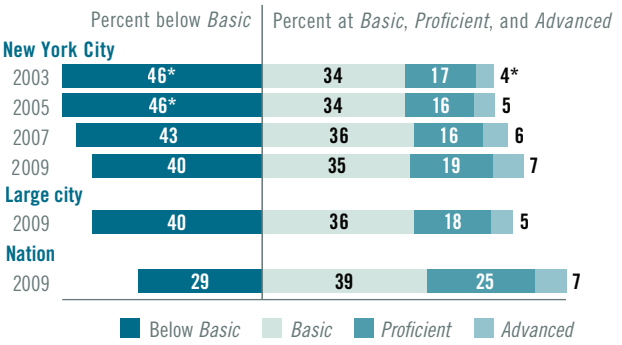
Results for racial/ethnic groups showed

- higher average scores for Black and Asian/Pacific Islander students compared to 2003 but no significant change compared to 2007.
- no significant change in the scores for White and Hispanic students compared to 2003 and 2007.

Achievement-level results showed

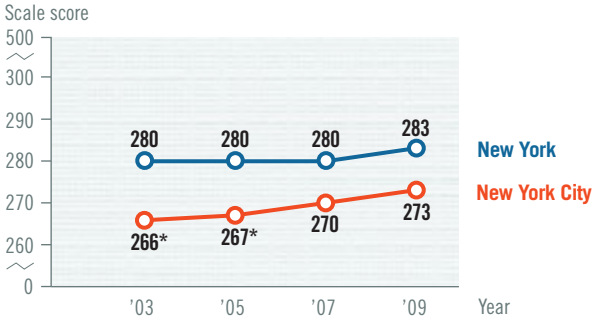
- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in New York City



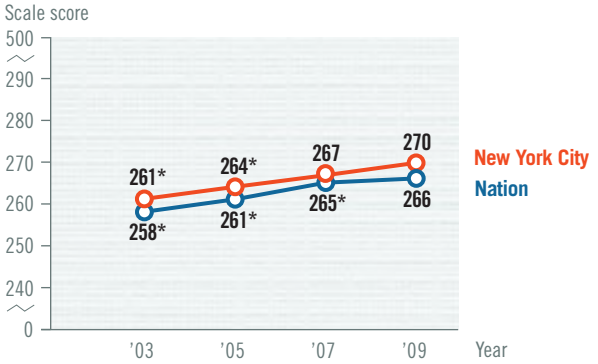
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in New York City and New York



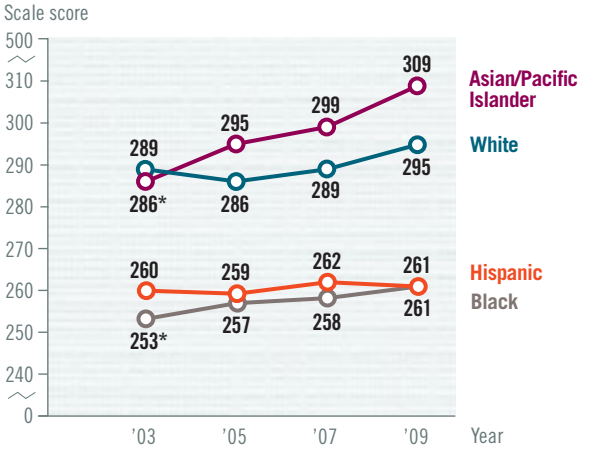
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in New York City and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in New York City, by race/ethnicity

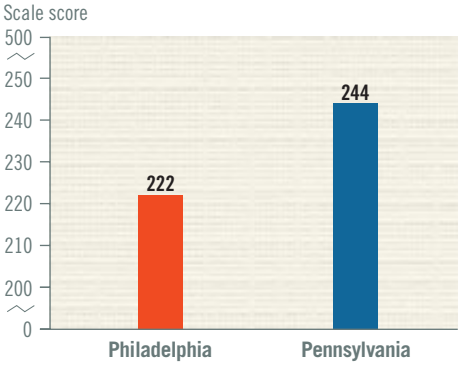


* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

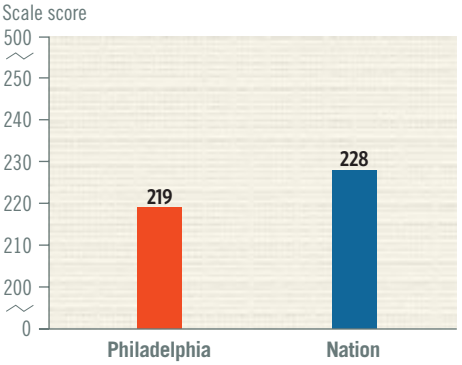
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Philadelphia, Grade 4

Average scores in NAEP mathematics for fourth-graders in Philadelphia and Pennsylvania: 2009

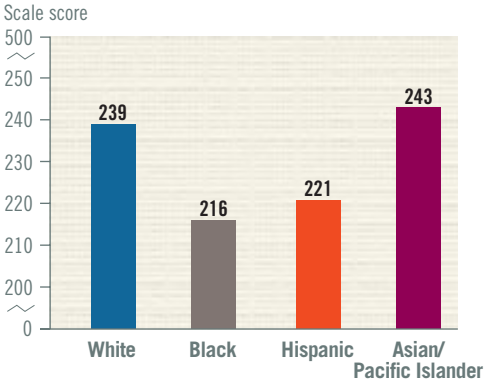


Average scores in NAEP mathematics for lower-income fourth-graders in Philadelphia and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for fourth-graders in Philadelphia, by race/ethnicity: 2009



NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For Philadelphia fourth-graders in 2009,

- the overall average score was 222.
- the average score of 222 was at the 26th percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Pennsylvania.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

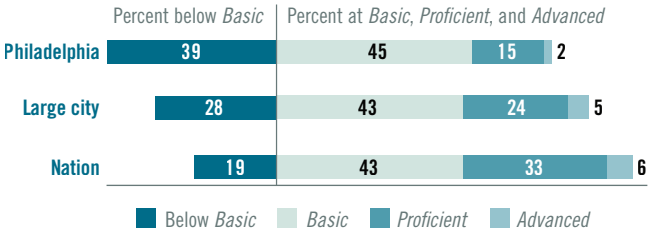
Results for racial/ethnic groups showed

- a White – Black score gap of 23 points.
- a White – Hispanic score gap of 18 points.

Achievement-level results showed

- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

Achievement-level results in NAEP mathematics for fourth-graders in Philadelphia: 2009



NOTE: 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), 2009 Mathematics Assessment.

Philadelphia, Grade 8

For Philadelphia eighth-graders in 2009,

- the overall average score was 265.
- the average score of 265 was at the 31st percentile for the nation.

The district-to-state comparison showed

- a lower overall score than for Pennsylvania.

Results for lower-income students showed

- a lower average score compared to lower-income students in the nation.

Results for racial/ethnic groups showed

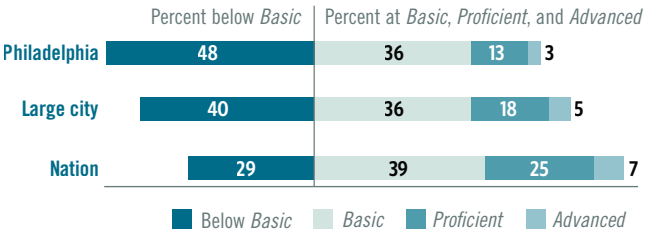
- a White – Black score gap of 28 points.
- a White – Hispanic score gap of 27 points.[3]

Achievement-level results showed

- a lower percentage at or above *Basic* compared to large cities.
- a lower percentage at or above *Proficient* compared to large cities.

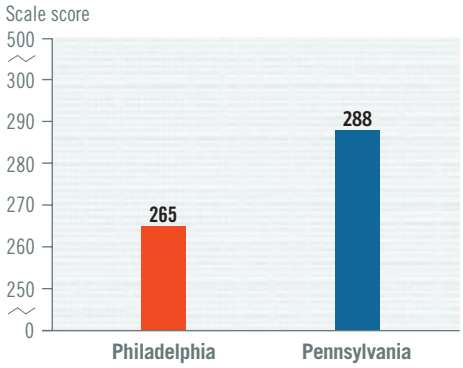
[3] The score gap is based on the difference between the unrounded scores as opposed to the rounded scores shown in the figure.

Achievement-level results in NAEP mathematics for eighth-graders in Philadelphia: 2009

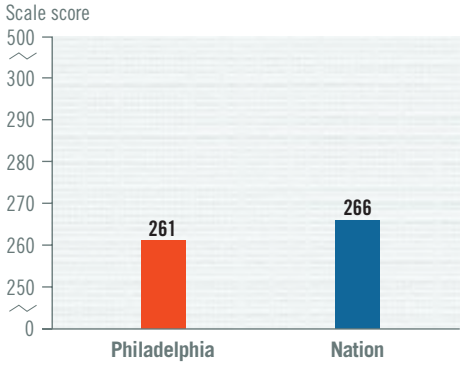


NOTE: Detail may not sum to totals because of rounding.

Average scores in NAEP mathematics for eighth-graders in Philadelphia and Pennsylvania: 2009

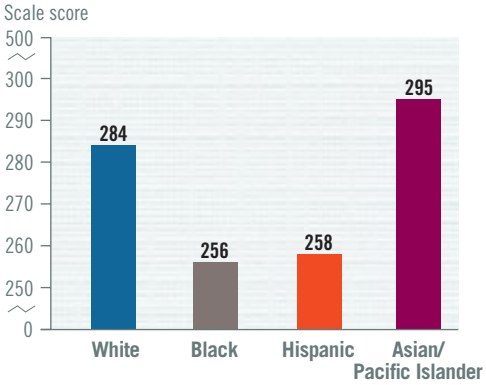


Average scores in NAEP mathematics for lower-income eighth-graders in Philadelphia and the nation: 2009



NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Average scores in NAEP mathematics for eighth-graders in Philadelphia, by race/ethnicity: 2009

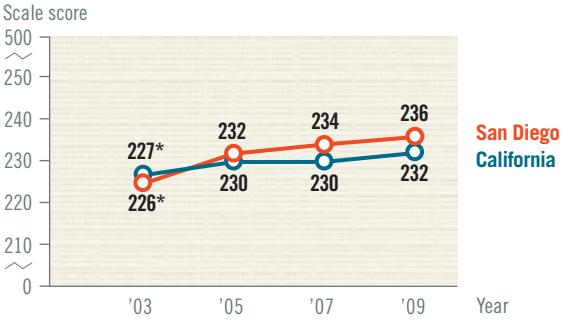


NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

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

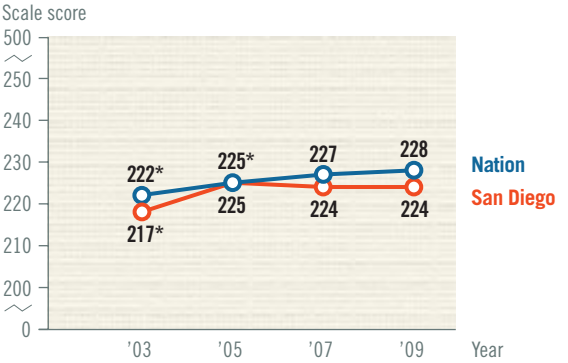
San Diego, Grade 4

Trend in NAEP mathematics average scores for fourth-graders in San Diego and California



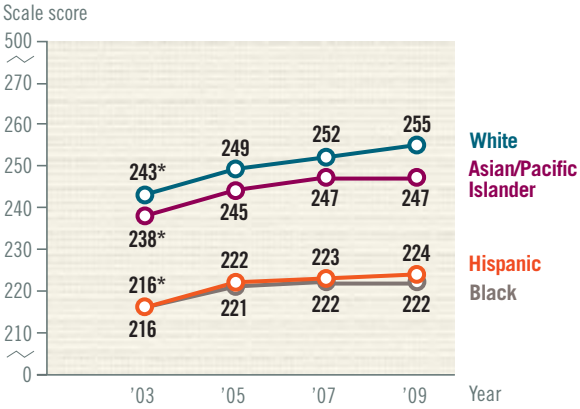
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income fourth-graders in San Diego and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for fourth-graders in San Diego, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

For San Diego fourth-graders in 2009,

- the overall score was higher than in 2003 but not significantly different from 2007.
- the average score of 236 was at the 44th percentile for the nation.

The district-to-state comparison showed

- a higher overall score than for California.
- no significant change in the gap compared to 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- a lower average score compared to lower-income students in the nation.

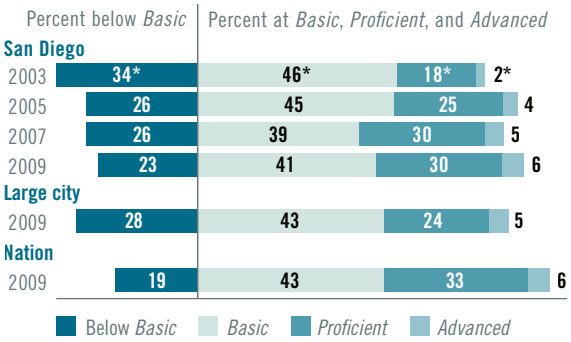
Results for racial/ethnic groups showed

- higher average scores for White, Hispanic, and Asian/Pacific Islander students compared to 2003 but no significant change compared to 2007.
- no significant change in the average score for Black students compared to 2003 and 2007.

Achievement-level results showed

- an increase in the percentage at or above *Basic* compared to 2003 but no significant change compared to 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 but no significant change compared to 2007.

Trend in NAEP mathematics achievement-level results for fourth-graders in San Diego



* Significantly different ($p < .05$) from 2009.
NOTE: 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, 2003–09 Mathematics Assessments.

San Diego, Grade 8

For San Diego eighth-graders in 2009,

- the overall score was higher than in 2003 and 2007.
- the average score of 280 was at the 47th percentile for the nation.

The district-to-state comparison showed

- a higher overall score than for California.
- a widening of the gap compared to 2007.

Results for lower-income students showed

- a higher average score compared to 2003 but no significant change compared to 2007.
- no significant difference in the average score compared to lower-income students in the nation.

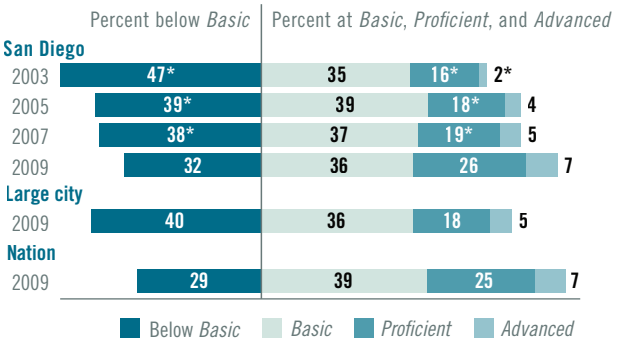
Results for racial/ethnic groups showed

- higher average scores for White, Black, Hispanic, and Asian/Pacific Islander students compared to 2003 but no significant change compared to 2007.

Achievement-level results showed

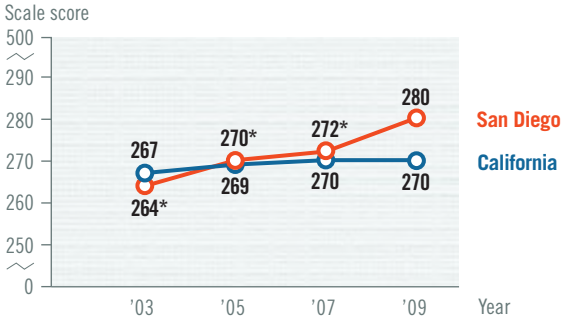
- an increase in the percentage at or above *Basic* compared to 2003 and 2007.
- an increase in the percentage at or above *Proficient* compared to 2003 and 2007.

Trend in NAEP mathematics achievement-level results for eighth-graders in San Diego



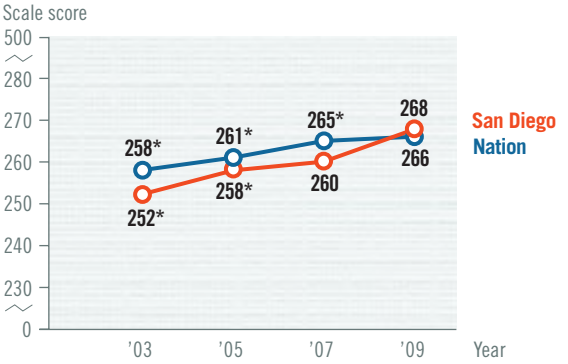
* Significantly different ($p < .05$) from 2009.
NOTE: Detail may not sum to totals because of rounding.

Trend in NAEP mathematics average scores for eighth-graders in San Diego and California



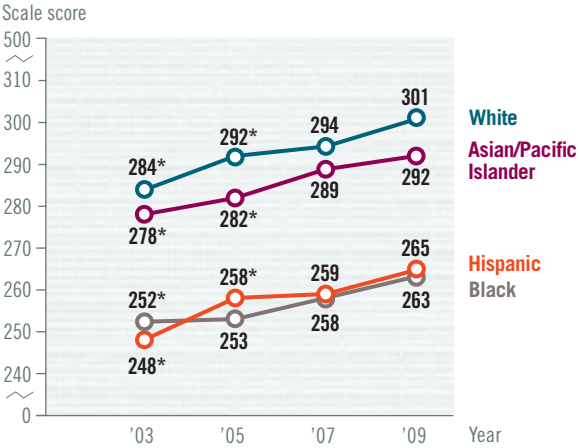
* Significantly different ($p < .05$) from 2009.

Trend in NAEP mathematics average scores for lower-income eighth-graders in San Diego and the nation



* Significantly different ($p < .05$) from 2009.
NOTE: In NAEP, lower-income students are students identified as eligible for the National School Lunch Program.

Trend in NAEP mathematics average scores for eighth-graders in San Diego, by race/ethnicity



* Significantly different ($p < .05$) from 2009.
NOTE: Results are not shown for all race/ethnicity categories because of insufficient sample sizes. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Technical Notes

Sampling and Weighting

The sample of students in the participating TUDA school districts is an extension of the sample of students who would usually be selected by NAEP as part of state and national samples. These extended samples allow reliable reporting of student groups within these districts.

Results for students in the TUDA samples are also included in state and national samples with appropriate weighting. For example, the results reported for Chicago are included as part of the results reported for Illinois and for the nation. Since approximately 20 percent of Illinois' students are in Chicago, the TUDA results for Chicago are weighted to comprise 20 percent of the results for the state.

In the same way that schools and students participating in national NAEP assessments are chosen to be nationally representative, the schools and students participating in TUDA assessments are selected to be representative of their districts. The results from the assessed students are combined to provide accurate estimates of overall district performance. Results are weighted to take into account the fact that schools and students represent different proportions of the overall district population.

Comparability of the 2007 and 2009 Samples

Some charter schools that operate within the geographic boundaries of a school district are independent of the district and are not included in the districts' Adequate Yearly Progress (AYP) report to the U.S. Department of Education under the Elementary and Secondary Education Act. Beginning in 2009, charter schools of this type were no longer included in the results for TUDA districts as they had been in past NAEP assessments.

School districts vary in whether the charter schools within their boundaries are independent of the districts. In 2007, charter schools were included in the TUDA district results if they were listed as part of the district's Local Education Agency in the NCES Common Core of Data. In 2009, charter schools are included in TUDA district results if they contribute to the district's AYP results as part of the Elementary and Secondary Education Act.

This change had little or no impact on the 2007–09 average score differences of the TUDA districts, except for the District of Columbia Public Schools at grade 8. The District of Columbia's 2007 grade 8 sample included 20 charter schools. All charter schools in the District of Columbia are independent of the school district, and none were included in their TUDA sample in 2009. The change in scores for the District of Columbia Public Schools that would have resulted from using comparable sample frames, i.e., excluding charter schools from the NAEP sample in both years, would have resulted in a statistically significant increase from 244 in 2007 to 251 in 2009, rather than the nonsignificant change from 248 to 251 shown in the chart on page 49.

School and Student Participation

To ensure unbiased samples, NAEP statistical standards require that school participation rates for the original district samples be at least 85 percent for results to be reported. In the 2009 mathematics assessment, all participating urban districts met participation rate standards at both grades 4 and 8 (see appendix table **A-1**).

Accommodations and Exclusions in NAEP

It is important to assess all selected students from the target population, including students with disabilities (SD) and English language learners (ELL). To accomplish this goal, students who receive accommodations in their state's assessments, such as extra testing time or individual rather than group administration, are offered most of the same accommodations in NAEP.

Some students identified as SD or ELL who are sampled for NAEP participation may be excluded from the assessment if NAEP does not offer the accommodations given on the student's state assessment. School personnel, guided by the student's Individualized Education Program (IEP) as well as by Section 504 eligibility, decide whether to exclude students with disabilities from the assessment. Based on NAEP's guidelines, they also decide whether to exclude students identified as ELL. The percentages of students excluded from NAEP may vary considerably across districts and over time. Comparisons of achievement results across districts should be interpreted with caution if the exclusion rates vary widely. See appendix tables **A-2** through **A-5** for the exclusion rates in the urban districts.

Interpreting Statistical Significance

Comparisons over time or between groups are based on statistical tests that consider both the size of the differences and the standard errors of the two statistics being compared. Standard errors are margins of error, and estimates based on smaller groups are likely to have larger margins of error. The size of the standard errors may also be influenced by other factors such as how representative the assessed students are of the entire population.

When an estimate has a large standard error, a numerical difference that seems large may not be statistically significant. Differences of the same magnitude may or may not be statistically significant depending upon the size of the standard errors of the estimates. For example, a 1-point change in the average score for large cities may be statistically significant, while a 1-point change for a district may not be. Standard errors for the estimates presented in this report are available at http://nces.ed.gov/nationsreportcard/naepdata/.

To ensure that significant differences in NAEP data reflect actual differences and not mere chance, error rates need to be controlled when making multiple simultaneous comparisons. The more comparisons that are made (e.g., comparing the performance of White, Black, Hispanic, and Asian/Pacific Islander students), the higher the probability of finding significant differences by chance. In NAEP, the Benjamini-Hochberg False Discovery Rate (FDR) procedure is used to control the expected proportion of falsely rejected hypotheses relative to the number of comparisons that are conducted. A detailed explanation of this procedure can be found at http://nces.ed.gov/nationsreportcard/tdw/analysis/infer.asp. NAEP employs a number of rules to determine the number of comparisons conducted, which in most cases is simply the number of possible statistical tests. However, when comparing multiple years, the number of years do not count toward the number of comparisons.

A part-whole relationship exists between the district samples and the state and national samples because each district is part of its home state sample as well as the national public school sample. Therefore, when individual district results are compared to results for a state or the nation, the significance tests appropriately reflect this dependency.

National School Lunch Program

NAEP first began collecting data in 1996 on student eligibility for the National School Lunch Program (NSLP) as an indicator of low income. Under the guidelines of NSLP, children from families with incomes below 130 percent of the poverty level are eligible for free meals. Those from families with incomes between 130 and 185 percent of the poverty level are eligible for reduced-price meals. (For the period July 1, 2008 through June 30, 2009, for a family of four, 130 percent of the poverty level was $27,560, and 185 percent was $39,220.)

Some schools provide free meals to all students irrespective of individual eligibility, using their own funds to cover the costs of non-eligible students. Under special provisions of the National School Lunch Act intended to reduce the administrative burden of determining student eligibility every year, schools can be reimbursed based on eligibility data for a single base year. Participating schools might have high percentages of eligible students and report all students as eligible for free lunch. For more information on NSLP, visit http://www.fns.usda.gov/cnd/lunch/.

Large City

Just as the national public sample is used as a benchmark for comparing results for states, results for urban districts are compared to results from large cities nationwide. Referred to as "large central cities" in previous TUDA reports, results for large cities are for public schools located in the urbanized areas of cities with populations of 250,000 or more. Large city is not synonymous with "inner city." Schools in participating TUDA districts are also included in the results for large cities, even though some districts (Atlanta, Austin, Charlotte, Cleveland, Fresno, Houston, Jefferson County, Los Angeles, and Miami-Dade) include some schools not classified as large city schools.

Further comparisons of urban district data with large city data are available from the online Data Explorer on the NAEP website (http://nces.ed.gov/nationsreportcard/naepdata/). Selecting "Large city" as a jurisdiction when making statistical comparisons with selected urban districts will allow comparisons to the appropriate large city data and will permit the user to replicate results in this report and to explore additional comparisons.

Appendix Tables

Table **A-1.** Public school and student participation rates for Trial Urban District Assessment in mathematics, by grade and district: 2009

Grade and district	School participation		Student participation	
	Student-weighted percent	Number of schools participating	Student-weighted percent	Number of students assessed
Grade 4				
Atlanta	100	60	96	1,200
Austin	100	70	95	1,500
Baltimore City	100	80	94	1,100
Boston	100	80	95	1,100
Charlotte	100	60	94	1,500
Chicago	100	110	95	1,900
Cleveland	100	80	90	900
Detroit	100	60	91	900
District of Columbia (DCPS)	100	80	95	1,300
Fresno	100	50	95	1,400
Houston	100	90	95	2,200
Jefferson County (KY)	100	70	94	1,400
Los Angeles	100	80	95	2,200
Miami-Dade	100	90	95	2,200
Milwaukee	100	90	94	1,300
New York City	100	90	94	2,200
Philadelphia	100	70	94	1,300
San Diego	100	60	95	1,300
Grade 8				
Atlanta	100	20	93	900
Austin	100	20	89	1,300
Baltimore City	100	40	91	900
Boston	100	30	92	1,100
Charlotte	100	30	89	1,300
Chicago	100	110	94	1,800
Cleveland	100	80	89	900
Detroit	100	50	85	1,000
District of Columbia (DCPS)	100	20	84	900
Fresno	100	20	93	1,300
Houston	100	40	92	1,900
Jefferson County (KY)	100	30	92	1,400
Los Angeles	100	70	91	2,000
Miami-Dade	100	60	92	2,000
Milwaukee	100	60	87	1,000
New York City	100	90	89	2,100
Philadelphia	100	60	92	1,200
San Diego	100	30	94	1,000

NOTE: The number of schools is rounded to the nearest ten. The number of students is rounded to the nearest hundred. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

Table **A-2.** Percentage of fourth-grade public school students with disabilities (SD) and/or English language learners (ELL) identified, excluded, and assessed in NAEP mathematics, as a percentage of all students, by SD/ELL category and jurisdiction: Various years, 2003–09

SD/ELL category and jurisdiction	Identified				Excluded				Assessed without accommodations				Assessed with accommodations			
	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
SD and/or ELL																
Nation	22	23	23	23	4	3	3	2	10	10	10	9	8	10	10	11
Large city	31	32	33	31	5	4	4	3	17	17	17	14	9	11	12	14
Atlanta	9	11	12	12	1	1	2	1	4	3	4	4	4	6	7	7
Austin	—	37	40	44	—	10	5	5	—	12	17	20	—	14	18	19
Baltimore City	—	—	—	19	—	—	—	9	—	—	—	1	—	—	—	9
Boston	33	33	47	35	5	6	5	6	11	11	25	13	17	15	17	16
Charlotte	21	22	22	19	4	3	3	2	5	7	7	4	12	12	12	13
Chicago	31	29	32	24	8	4	5	4	16	15	17	7	7	9	10	13
Cleveland	15	17	23	25	7	6	13	10	3	2	1	2	5	9	8	13
Detroit	—	—	—	20	—	—	—	3	—	—	—	7	—	—	—	10
District of Columbia (DCPS)	18	20	20	21	4	6	6	5	4	4	2	3	10	10	13	14
Fresno	—	—	—	38	—	—	—	3	—	—	—	29	—	—	—	5
Houston	45	46	45	43	8	7	4	3	19	17	23	22	18	21	18	17
Jefferson County (KY)	—	—	—	19	—	—	—	3	—	—	—	5	—	—	—	10
Los Angeles	60	59	53	46	3	5	1	1	48	47	44	37	8	7	8	7
Miami-Dade	—	—	—	21	—	—	—	3	—	—	—	2	—	—	—	16
Milwaukee	—	—	—	30	—	—	—	7	—	—	—	2	—	—	—	20
New York City	22	24	29	31	6	4	2	2	4	2	2	1	12	17	25	28
Philadelphia	—	—	—	22	—	—	—	4	—	—	—	2	—	—	—	15
San Diego	41	43	46	43	2	4	3	3	34	33	36	32	4	6	7	7
SD																
Nation	14	14	14	13	3	3	3	2	4	4	3	3	7	8	8	8
Large city	13	13	13	13	3	3	3	2	4	3	3	2	6	7	7	9
Atlanta	8	9	10	10	1	1	2	1	3	2	4	3	4	6	5	6
Austin	—	15	13	16	—	7	4	4	—	2	2	2	—	6	7	10
Baltimore City	—	—	—	17	—	—	—	8	—	—	—	1	—	—	—	8
Boston	20	22	22	22	3	5	4	5	4	3	3	3	12	14	15	15
Charlotte	17	13	12	12	3	2	2	2	3	3	2	2	10	8	8	9
Chicago	15	13	14	14	5	4	4	3	4	3	4	3	6	7	6	8
Cleveland	12	13	17	20	5	5	13	10	2	1	#	#	5	8	4	10
Detroit	—	—	—	15	—	—	—	3	—	—	—	3	—	—	—	8
District of Columbia (DCPS)	13	16	14	15	4	5	5	4	2	2	1	2	7	8	8	9
Fresno	—	—	—	11	—	—	—	3	—	—	—	3	—	—	—	5
Houston	18	12	10	7	7	5	3	2	8	3	2	1	3	4	4	4
Jefferson County (KY)	—	—	—	15	—	—	—	3	—	—	—	5	—	—	—	8
Los Angeles	11	11	11	10	2	3	1	1	5	3	4	3	4	5	5	7
Miami-Dade	—	—	—	13	—	—	—	2	—	—	—	1	—	—	—	10
Milwaukee	—	—	—	19	—	—	—	6	—	—	—	1	—	—	—	12
New York City	12	14	16	19	1	2	1	1	1	1	1	1	10	11	14	17
Philadelphia	—	—	—	15	—	—	—	4	—	—	—	2	—	—	—	9
San Diego	11	11	12	13	1	2	2	3	7	4	4	4	3	4	5	6

See notes at end of table.

Table **A-2.** Percentage of fourth-grade public school students with disabilities (SD) and/or English language learners (ELL) identified, excluded, and assessed in NAEP mathematics, as a percentage of all students, by SD/ELL category and jurisdiction: Various years, 2003–09—Continued

SD/ELL category and jurisdiction	Identified				Excluded				Assessed without accommodations				Assessed with accommodations			
	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
ELL																
Nation	11	10	11	10	1	1	1	1	7	7	7	6	2	3	3	4
Large city	21	21	22	20	3	2	1	1	14	14	14	12	4	5	6	7
Atlanta	2	2	3	2	#	#	#	#	1	1	#	#	#	1	2	2
Austin	—	25	29	32	—	5	2	2	—	11	15	18	—	9	12	12
Baltimore City	—	—	—	2	—	—	—	#	—	—	—	#	—	—	—	2
Boston	18	15	31	18	3	3	2	2	8	9	22	11	7	3	6	4
Charlotte	8	10	11	8	2	1	2	1	2	4	5	2	4	4	5	5
Chicago	20	18	20	12	5	2	2	2	13	12	13	4	2	4	5	6
Cleveland	4	4	7	7	1	1	1	2	1	2	1	1	1	2	4	4
Detroit	—	—	—	6	—	—	—	#	—	—	—	4	—	—	—	2
District of Columbia (DCPS)	7	5	8	8	1	1	2	1	2	1	1	1	3	2	5	6
Fresno	—	—	—	30	—	—	—	1	—	—	—	27	—	—	—	1
Houston	35	37	38	38	4	4	2	2	14	15	21	21	17	18	15	15
Jefferson County (KY)	—	—	—	4	—	—	—	1	—	—	—	1	—	—	—	2
Los Angeles	56	54	48	41	2	4	1	1	47	45	42	36	6	5	5	4
Miami-Dade	—	—	—	9	—	—	—	1	—	—	—	1	—	—	—	7
Milwaukee	—	—	—	12	—	—	—	2	—	—	—	1	—	—	—	9
New York City	13	12	17	16	6	3	2	1	3	1	1	1	4	8	13	14
Philadelphia	—	—	—	8	—	—	—	1	—	—	—	#	—	—	—	7
San Diego	34	36	40	35	2	3	1	1	30	30	34	30	2	3	4	4

— Not available. District did not participate.
Rounds to zero.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. Students identified as both SD and ELL were counted only once under the combined SD and/or ELL category, but were counted separately under the SD and ELL categories. Detail may not sum to totals because of rounding. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-3.** Percentage of fourth-grade public school students identified as students with disabilities (SD) and/or English language learners (ELL) excluded and assessed in NAEP mathematics, as a percentage of all identified SD and/or ELL students, by jurisdiction: 2009

	Percentage of identified SD and/or ELL students											
	SD and/or ELL				SD				ELL			
Jurisdiction	Excluded	Assessed	Assessed without accom-modations	Assessed with accom-modations	Excluded	Assessed	Assessed without accom-modations	Assessed with accom-modations	Excluded	Assessed	Assessed without accom-modations	Assessed with accom-modations
Nation	10	90	40	50	16	84	22	62	6	94	59	35
Large city	9	91	46	45	18	82	17	65	5	95	60	34
Atlanta	9	91	30	61	10	90	31	59	3	97	22	75
Austin	11	89	45	44	24	76	14	62	7	93	56	37
Baltimore City	45	55	7	48	49	51	6	44	14	86	12	75
Boston	16	84	38	46	21	79	13	66	11	89	63	25
Charlotte	11	89	21	68	14	86	17	69	10	90	25	65
Chicago	16	84	29	55	18	82	23	59	17	83	32	51
Cleveland	40	60	8	52	49	51	2	49	23	77	22	55
Detroit	16	84	37	47	22	78	23	55	4	96	70	26
District of Columbia (DCPS)	22	78	13	65	30	70	12	58	11	89	11	78
Fresno	9	91	78	13	29	71	24	47	4	96	92	4
Houston	7	93	52	41	30	70	19	51	4	96	57	39
Jefferson County (KY)	18	82	29	53	17	83	30	54	33	67	23	44
Los Angeles	2	98	82	16	8	92	28	64	2	98	88	10
Miami-Dade	13	87	10	77	13	87	11	76	15	85	7	78
Milwaukee	23	77	8	68	30	70	8	62	15	85	9	76
New York City	5	95	5	90	5	95	5	91	6	94	4	90
Philadelphia	18	82	11	71	24	76	15	61	8	92	4	88
San Diego	8	92	75	17	23	77	30	47	4	96	84	12

NOTE: Students identified as both SD and ELL were counted only once under the combined SD and/or ELL category, but were counted separately under the SD and ELL categories. Detail may not sum to totals because of rounding. DCPS = District of Columbia Public Schools.

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

Table **A-4.** Percentage of eighth-grade public school students with disabilities (SD) and/or English language learners (ELL) identified, excluded, and assessed in NAEP mathematics, as a percentage of all students, by SD/ELL category and jurisdiction: Various years, 2003–09

SD/ELL category and jurisdiction	Identified				Excluded				Assessed without accommodations				Assessed with accommodations			
	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
SD and/or ELL																
Nation	19	19	18	18	4	4	4	3	8	7	6	5	7	8	8	10
Large city	24	24	23	23	5	4	4	3	13	12	10	9	7	8	9	11
Atlanta	11	12	11	12	2	1	3	1	4	3	2	1	5	8	6	9
Austin	—	26	29	29	—	10	5	7	—	12	16	13	—	4	8	9
Baltimore City	—	—	—	19	—	—	—	11	—	—	—	1	—	—	—	6
Boston	31	25	27	30	7	9	8	9	9	7	6	5	15	9	12	16
Charlotte	18	18	20	17	3	3	3	3	5	5	6	5	9	10	12	10
Chicago	22	21	23	21	7	3	6	4	8	5	5	3	7	12	12	13
Cleveland	21	20	24	28	9	9	13	11	2	3	2	2	9	9	9	15
Detroit	—	—	—	23	—	—	—	5	—	—	—	7	—	—	—	11
District of Columbia (DCPS)	20	19	21	23	6	6	10	7	5	2	3	3	9	11	8	14
Fresno	—	—	—	29	—	—	—	2	—	—	—	20	—	—	—	7
Houston	26	24	22	22	8	6	6	5	16	14	10	9	3	4	6	8
Jefferson County (KY)	—	—	—	15	—	—	—	4	—	—	—	4	—	—	—	7
Los Angeles	37	39	33	29	2	3	2	2	29	30	25	19	6	6	6	8
Miami-Dade	—	—	—	20	—	—	—	3	—	—	—	1	—	—	—	16
Milwaukee	—	—	—	26	—	—	—	4	—	—	—	2	—	—	—	20
New York City	24	20	22	23	5	2	2	2	6	2	1	1	14	16	19	20
Philadelphia	—	—	—	22	—	—	—	6	—	—	—	2	—	—	—	14
San Diego	29	28	28	25	4	4	4	5	22	17	19	15	4	7	5	5
SD																
Nation	14	13	13	13	3	3	4	3	5	3	2	2	6	7	6	8
Large city	14	13	13	13	3	3	4	3	5	3	3	2	5	6	6	9
Atlanta	10	11	11	11	1	1	3	1	4	3	2	1	5	7	5	9
Austin	—	14	16	17	—	8	4	6	—	5	7	3	—	2	5	7
Baltimore City	—	—	—	18	—	—	—	11	—	—	—	1	—	—	—	5
Boston	24	18	19	22	4	7	7	7	7	3	3	3	13	8	9	12
Charlotte	14	12	13	11	3	2	2	2	4	2	2	1	8	8	10	7
Chicago	17	16	17	16	5	2	5	3	6	3	3	1	7	11	10	11
Cleveland	17	18	20	23	9	8	13	11	1	3	1	1	6	7	6	11
Detroit	—	—	—	17	—	—	—	4	—	—	—	2	—	—	—	10
District of Columbia (DCPS)	16	17	17	19	5	5	9	6	3	2	2	1	8	10	6	11
Fresno	—	—	—	11	—	—	—	2	—	—	—	2	—	—	—	6
Houston	16	11	13	12	7	4	5	5	9	5	4	2	#	2	4	6
Jefferson County (KY)	—	—	—	12	—	—	—	3	—	—	—	3	—	—	—	6
Los Angeles	12	12	10	11	2	2	2	2	5	5	3	3	5	5	5	7
Miami-Dade	—	—	—	12	—	—	—	2	—	—	—	#	—	—	—	10
Milwaukee	—	—	—	21	—	—	—	3	—	—	—	1	—	—	—	16
New York City	15	12	13	15	2	1	1	1	3	1	1	#	10	10	11	13
Philadelphia	—	—	—	17	—	—	—	5	—	—	—	1	—	—	—	10
San Diego	11	11	11	12	1	3	4	5	7	4	3	2	3	4	4	5

See notes at end of table.

Table **A-4.** Percentage of eighth-grade public school students with disabilities (SD) and/or English language learners (ELL) identified, excluded, and assessed in NAEP mathematics, as a percentage of all students, by SD/ELL category and jurisdiction: Various years, 2003–09—Continued

SD/ELL category and jurisdiction	Identified				Excluded				Assessed without accommodations				Assessed with accommodations			
	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
ELL																
Nation	6	6	7	6	1	1	1	#	4	4	4	3	1	1	2	2
Large city	13	13	13	12	2	2	1	1	9	9	7	7	3	3	4	4
Atlanta	2	1	1	1	1	#	#	#	1	#	#	#	#	1	1	#
Austin	—	14	16	16	—	4	2	2	—	8	10	10	—	2	3	4
Baltimore City	—	—	—	1	—	—	—	#	—	—	—	#	—	—	—	1
Boston	13	10	9	11	5	4	2	4	4	5	4	2	4	1	3	5
Charlotte	7	7	9	7	1	1	1	1	3	4	4	3	3	2	3	3
Chicago	8	6	7	7	3	2	2	2	3	2	2	2	2	2	3	3
Cleveland	5	3	5	6	1	1	1	1	1	#	1	1	3	2	3	4
Detroit	—	—	—	6	—	—	—	#	—	—	—	5	—	—	—	1
District of Columbia (DCPS)	5	4	4	6	1	1	1	2	2	1	1	2	2	2	2	2
Fresno	—	—	—	22	—	—	—	1	—	—	—	19	—	—	—	2
Houston	16	15	12	12	5	3	2	2	9	10	7	7	2	3	2	3
Jefferson County (KY)	—	—	—	3	—	—	—	1	—	—	—	1	—	—	—	2
Los Angeles	33	34	28	23	2	2	1	1	27	28	23	18	4	4	4	4
Miami-Dade	—	—	—	8	—	—	—	1	—	—	—	#	—	—	—	6
Milwaukee	—	—	—	7	—	—	—	1	—	—	—	1	—	—	—	4
New York City	13	10	11	10	4	2	1	1	3	2	1	#	6	7	9	9
Philadelphia	—	—	—	6	—	—	—	#	—	—	—	1	—	—	—	5
San Diego	23	21	21	16	3	3	2	1	18	14	17	13	2	4	3	2

— Not available. District did not participate.

Rounds to zero.

NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. Students identified as both SD and ELL were counted only once under the combined SD and/or ELL category, but were counted separately under the SD and ELL categories. Detail may not sum to totals because of rounding. DCPS = District of Columbia Public Schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-5.** Percentage of eighth-grade public school students identified as students with disabilities (SD) and/or English language learners (ELL) excluded and assessed in NAEP mathematics, as a percentage of all identified SD and/or ELL students, by jurisdiction: 2009

	Percentage of identified SD and/or ELL students											
	SD and/or ELL				SD				ELL			
Jurisdiction	Excluded	Assessed	Assessed without accom-modations	Assessed with accom-modations	Excluded	Assessed	Assessed without accom-modations	Assessed with accom-modations	Excluded	Assessed	Assessed without accom-modations	Assessed with accom-modations
Nation	17	83	29	54	22	78	15	63	8	92	58	34
Large city	15	85	38	48	21	79	14	65	8	92	60	31
Atlanta	11	89	11	77	11	89	10	78	13	87	30	57
Austin	23	77	45	32	38	62	20	42	11	89	65	24
Baltimore City	60	40	8	33	62	38	7	30	25	75	10	65
Boston	32	68	17	52	34	66	13	53	33	67	20	46
Charlotte	16	84	27	58	20	80	12	68	10	90	48	42
Chicago	21	79	16	63	21	79	9	70	26	74	30	45
Cleveland	40	60	5	54	48	52	3	49	14	86	15	72
Detroit	20	80	31	49	26	74	14	60	5	95	80	15
District of Columbia (DCPS)	30	70	11	58	34	66	5	61	29	71	29	42
Fresno	8	92	69	23	19	81	23	57	5	95	85	10
Houston	25	75	39	36	40	60	14	46	17	83	58	25
Jefferson County (KY)	25	75	25	50	27	73	26	48	19	81	21	59
Los Angeles	7	93	67	27	13	87	23	64	6	94	78	17
Miami-Dade	14	86	3	83	14	86	4	82	18	82	2	80
Milwaukee	16	84	9	75	17	83	6	78	16	84	18	66
New York City	10	90	3	87	9	91	3	89	13	87	5	83
Philadelphia	25	75	11	64	33	67	7	60	7	93	23	70
San Diego	19	81	60	20	39	61	20	41	7	93	83	10

NOTE: Students identified as both SD and ELL were counted only once under the combined SD and/or ELL category, but were counted separately under the SD and ELL categories. Detail may not sum to totals because of rounding. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

Table **A-6.** Selected percentile scores for public school students in NAEP mathematics, by grade and jurisdiction: Various years, 2003–09

Jurisdiction	Grade 4				Grade 8			
	2003	2005	2007	2009	2003	2005	2007	2009
	10th percentile				**10th percentile**			
Nation	196***	199***	201	201*	228***	230***	234	235*
Large city	186***	188***	189***	191**	214***	216***	220	222**
Atlanta	180***	185	187	189**	200***	200***	215	219**
Austin	—	208	204	206*,**	—	230***	235	239*,**
Baltimore City	—	—	—	192**	—	—	—	217**
Boston	189***	196***	198	203*	214***	220***	230	230*
Charlotte	207	208	208	208*,**	226***	230	233	237*
Chicago	179	178	182	184*,**	210***	215	215	219**
Cleveland	182	187***	181	177*,**	216	208	218	216*,**
Detroit	—	—	—	165*,**	—	—	—	196*,**
District of Columbia (DCPS)	168***	175	172	177*,**	198	200	203	198*,**
Fresno	—	—	—	181*,**	—	—	—	210*,**
Houston	196***	200	202	205*	227***	224***	231	234*
Jefferson County (KY)	—	—	—	192**	—	—	—	223**
Los Angeles	180	180	179	182*,**	198***	201***	209	213**
Miami-Dade	—	—	—	202*	—	—	—	229*,**
Milwaukee	—	—	—	183*,**	—	—	—	212*,**
New York City	191***	194	199	199*,**	215***	219	221	223**
Philadelphia	—	—	—	186**	—	—	—	220**
San Diego	190	194	189	195	216***	221***	223***	232*
	25th percentile				**25th percentile**			
Nation	215***	219***	221	221*	253***	254***	257***	258*
Large city	204***	207***	209***	211**	237***	240***	243	246**
Atlanta	195***	200***	202	205*,**	220***	221***	234	237*,**
Austin	—	224	221	222*	—	255***	259	262*,**
Baltimore City	—	—	—	206*,**	—	—	—	236*,**
Boston	203***	212***	216***	219*	236***	243***	251	253*,**
Charlotte	223	225	225	226*,**	252	254	256	258*
Chicago	196***	195***	200	203*,**	233***	236***	238	241*,**
Cleveland	197	202***	198	196*,**	233	228***	237	237*,**
Detroit	—	—	—	182*,**	—	—	—	216*,**
District of Columbia (DCPS)	185***	192***	192***	197*,**	219	222	225	223*,**
Fresno	—	—	—	200*,**	—	—	—	233*,**
Houston	210***	216***	218	220*	244***	246***	252***	256*
Jefferson County (KY)	—	—	—	211**	—	—	—	246**
Los Angeles	196***	198***	200	202*,**	219***	225***	232	234*,**
Miami-Dade	—	—	—	219*	—	—	—	250*,**
Milwaukee	—	—	—	202*,**	—	—	—	231*,**
New York City	207***	212***	218	218*	241***	241***	244	246**
Philadelphia	—	—	—	203*,**	—	—	—	241*,**
San Diego	207***	213	213	217	239***	247***	248***	255*
	50th percentile				**50th percentile**			
Nation	235***	239***	241	241*	278***	279***	281***	283*
Large city	224***	228***	231	232**	262***	265***	269	271**
Atlanta	214***	219***	222	223*,**	244***	245***	254	259*,**
Austin	—	242	241	240*	—	281***	282***	288*,**
Baltimore City	—	—	—	223*,**	—	—	—	256*,**
Boston	219***	230***	233	236*,**	260***	270***	276	280*
Charlotte	242	245	245	245*,**	280	282	283	282*
Chicago	214***	215***	220	223*,**	255***	258***	261	263*,**
Cleveland	215	221***	216	215*,**	252	251***	258	256*,**
Detroit	—	—	—	200*,**	—	—	—	238*,**
District of Columbia (DCPS)	204***	210***	213***	219*,**	243***	244***	248	250*,**
Fresno	—	—	—	220*,**	—	—	—	258*,**
Houston	226***	233	235	236*,**	263***	268***	274***	277*,**
Jefferson County (KY)	—	—	—	234**	—	—	—	271**
Los Angeles	215***	221	222	223*,**	245***	250***	257	258*,**
Miami-Dade	—	—	—	237*,**	—	—	—	274**
Milwaukee	—	—	—	220*,**	—	—	—	251*,**
New York City	226***	231***	237	238*,**	266***	266***	268	272**
Philadelphia	—	—	—	222*,**	—	—	—	264*,**
San Diego	226***	234	237	238	265***	272	273	281

See notes at end of table.

Table **A-6.** Selected percentile scores for public school students in NAEP mathematics, by grade and jurisdiction: Various years, 2003–09—Continued

Jurisdiction	Grade 4				Grade 8			
	2003	2005	2007	2009	2003	2005	2007	2009
	75th percentile				**75th percentile**			
Nation	254***	257***	259	259*	301***	303***	305***	307*
Large city	244***	248***	252	252**	287***	291***	295***	297**
Atlanta	234***	240***	244	245*,**	267***	268***	277	281*,**
Austin	—	260	261	260*	—	308***	310	314*,**
Baltimore City	—	—	—	238*,**	—	—	—	278*,**
Boston	236***	247***	251	253**	287***	296***	301	307*
Charlotte	261	265	264	266*,**	307	308	309	307*
Chicago	232***	236***	240	242*,**	277***	281***	283	287*,**
Cleveland	232	237***	234	232*,**	272	270***	277	276*,**
Detroit	—	—	—	218*,**	—	—	—	260*,**
District of Columbia (DCPS)	224***	230***	234***	241*,**	267***	267***	271	277*,**
Fresno	—	—	—	238*,**	—	—	—	284*,**
Houston	243***	250	251	253**	283***	289***	294	299**
Jefferson County (KY)	—	—	—	254	—	—	—	296**
Los Angeles	235***	242	243	243*,**	270***	275***	282	282*,**
Miami-Dade	—	—	—	255**	—	—	—	296**
Milwaukee	—	—	—	239*,**	—	—	—	273*,**
New York City	246***	250***	256	258*	293	292	295	300**
Philadelphia	—	—	—	240*,**	—	—	—	287*,**
San Diego	244***	252***	258	259*	290***	295***	298***	307*
	90th percentile				**90th percentile**			
Nation	270***	272***	274	275*	321***	323***	325***	328*
Large city	262***	266***	269	270**	311***	315***	318	321**
Atlanta	256***	260***	264	266**	288***	290***	302	302*,**
Austin	—	276	276	276*	—	331	331	335*,**
Baltimore City	—	—	—	252*,**	—	—	—	299*,**
Boston	252***	263***	267	269**	314***	323	325	330*
Charlotte	276***	281	279	282*,**	328	330	333	329*
Chicago	248***	254	257	259*,**	297***	301	304	308*,**
Cleveland	248	252	249	247*,**	290	291	294	294*,**
Detroit	—	—	—	232*,**	—	—	—	281*,**
District of Columbia (DCPS)	243***	248***	256***	264**	288***	291***	294***	303*,**
Fresno	—	—	—	254*,**	—	—	—	308*,**
Houston	259***	266	265	266**	303***	309***	317	320
Jefferson County (KY)	—	—	—	272	—	—	—	318**
Los Angeles	253***	260	261	261*,**	292***	300	307	305*,**
Miami-Dade	—	—	—	270**	—	—	—	316*,**
Milwaukee	—	—	—	256*,**	—	—	—	293*,**
New York City	262***	266***	272	275*	316***	317***	320	324
Philadelphia	—	—	—	257*,**	—	—	—	312
San Diego	262***	269***	273	276*	311***	317	321	327

— Not available. District did not participate.
* Significantly different ($p < .05$) from large city in 2009.
** Significantly different ($p < .05$) from nation in 2009.
*** Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table A-7. Achievement-level results for fourth-grade public school students in NAEP mathematics, by jurisdiction: Various years, 2003–09

	Percentage of students											
	At or above *Basic*				At or above *Proficient*				At *Advanced*			
Jurisdiction	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
Nation	76***	79***	81	81*	31***	35***	39	38*	4***	5***	5	6*
Large city	63***	68***	70***	72**	20***	24***	28	29**	2***	3***	4	5**
Atlanta	50***	57***	61	63*,**	13***	17***	20	21*,**	2***	3	3	4**
Austin	—	85	83	83*	—	40	40	38*	—	7	7	6
Baltimore City	—	—	—	64*,**	—	—	—	13*,**	—	—	—	1*,**
Boston	59***	72***	77	81*	12***	22***	27	31**	1***	2***	3	4
Charlotte	84	86	85	86*,**	41	44	44	45*,**	6***	9	8	10*,**
Chicago	50***	52***	58	62*,**	10***	13	16	18*,**	1***	1	1	2*,**
Cleveland	51	60***	53	51*,**	10	13***	10	8*,**	#	#	#	#*,**
Detroit	—	—	—	31*,**	—	—	—	3*,**	—	—	—	#
District of Columbia (DCPS)	36***	45***	49***	57*,**	7***	10***	14***	19*,**	1***	1***	3***	4**
Fresno	—	—	—	58*,**	—	—	—	14*,**	—	—	—	1*,**
Houston	70***	77	80	82*	18***	26	28	30**	1	3	3	3*,**
Jefferson County (KY)	—	—	—	72**	—	—	—	31**	—	—	—	6
Los Angeles	52***	58	60	61*,**	13***	18	19	19*,**	1***	2	2	2*,**
Miami-Dade	—	—	—	81*	—	—	—	33**	—	—	—	3**
Milwaukee	—	—	—	59*,**	—	—	—	15*,**	—	—	—	1*,**
New York City	67***	73***	79	79*	21***	26***	34	35*	2***	3***	5	6*
Philadelphia	—	—	—	61*,**	—	—	—	16*,**	—	—	—	2*,**
San Diego	66***	74	74	77*	20***	29***	35	36*	2***	4	5	6

— Not available. District did not participate.
Rounds to zero.
* Significantly different ($p < .05$) from large city in 2009.
** Significantly different ($p < .05$) from nation in 2009.
*** Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table A-8. Achievement-level results for eighth-grade public school students in NAEP mathematics, by jurisdiction: Various years, 2003–09

	Percentage of students											
	At or above *Basic*				At or above *Proficient*				At *Advanced*			
Jurisdiction	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
Nation	67***	68***	70***	71*	27***	28***	31***	33*	5***	6***	7***	7*
Large city	50***	53***	57***	60**	16***	19***	22***	24**	3***	4***	5	5**
Atlanta	30***	31***	41	46*,**	6***	7***	11	11*,**	1	1	2	1*,**
Austin	—	68***	72	75*,**	—	33***	34***	39*,**	—	9	9	11*,**
Baltimore City	—	—	—	43*,**	—	—	—	10*,**	—	—	—	1*,**
Boston	48***	58***	65	67*,**	17***	23***	27***	31*	4***	6	7	9*
Charlotte	67***	69	70	72*	32	33	34	33*	7	9	10	8*
Chicago	42***	45***	49	51*,**	9***	11***	13	15*,**	1***	2	2	2*,**
Cleveland	38	34***	45	42*,**	6	6	7	8*,**	#	#	#	1*,**
Detroit	—	—	—	23*,**	—	—	—	4*,**	—	—	—	#
District of Columbia (DCPS)	29***	31***	34***	38*,**	6***	7***	8***	12*,**	1***	2***	1***	3*,**
Fresno	—	—	—	46*,**	—	—	—	15*,**	—	—	—	3*,**
Houston	52***	58***	65	69*	12***	16***	21	24**	2	2	4	5
Jefferson County (KY)	—	—	—	60**	—	—	—	22**	—	—	—	5**
Los Angeles	32***	38***	45	46*,**	7***	11***	14	13*,**	1***	2	2	2*,**
Miami-Dade	—	—	—	64*,**	—	—	—	22**	—	—	—	3*,**
Milwaukee	—	—	—	37*,**	—	—	—	7*,**	—	—	—	#*,**
New York City	54***	54***	57	60**	20***	20	22	26**	4***	5	6	7
Philadelphia	—	—	—	52*,**	—	—	—	17*,**	—	—	—	3**
San Diego	53***	61***	62***	68*	18***	22***	24***	32*	2***	4	5	7

— Not available. District did not participate.
Rounds to zero.
* Significantly different ($p < .05$) from large city in 2009.
** Significantly different ($p < .05$) from nation in 2009.
*** Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-9.** Average scores and achievement-level results for fourth-grade public school students in NAEP mathematics, by selected race/ethnicity categories and jurisdiction: Various years, 2003–09

	Average scale score				Percentage of students							
					At or above *Basic*				At or above *Proficient*			
Race/ethnicity and jurisdiction	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
White												
Nation	243***	246***	248	248*	87***	89***	91	90	42***	47***	51	50
Large city	243***	247***	249	250**	86***	88	90	90	42***	50	54	55
Atlanta	258	263	266	266*,**	89	96	99	98*,**	70	72	81	79*,**
Austin	—	262	263	262*,**	—	99	98	97*,**	—	75	76	74*,**
Baltimore City	—	—	—	240*,**	—	—	—	84	—	—	—	34*,**
Boston	234***	244	250	251	77***	88	93	92	32***	43	52	52
Charlotte	257***	261	261	263*,**	96	97	98	97*,**	66	70	72	72*,**
Chicago	235	243	244	242*	82	88	84	83	31	43	47	44
Cleveland	233	233	233	228*,**	80	81	80	73*,**	27	25	25	17*,**
Detroit	—	—	—	‡	—	—	—	‡	—	—	—	‡
District of Columbia (DCPS)	262***	266	262***	270*,**	97	99	91	99	71	78	73	81*,**
Fresno	—	—	—	237*,**	—	—	—	79*,**	—	—	—	36*,**
Houston	254	262	263	260*,**	96	97	96	99	63	73	76	71*,**
Jefferson County (KY)	—	—	—	243*,**	—	—	—	84*,**	—	—	—	44*
Los Angeles	241	247	247	245	83	87	90	87	44	49	50	45
Miami-Dade	—	—	—	253**	—	—	—	96*,**	—	—	—	61**
Milwaukee	—	—	—	242*	—	—	—	86	—	—	—	42
New York City	244***	245***	249	254**	88***	87	91	94*,**	42***	46	53	58
Philadelphia	—	—	—	239*,**	—	—	—	80*,**	—	—	—	37*,**
San Diego	243***	249	252	255**	87***	94	90	94	41***	50	59	62**
Black												
Nation	216***	220***	222	222*	54***	60***	63	63*	10***	13***	15	15
Large city	212***	217***	219	219**	47***	55***	58	59**	8***	11***	13	14
Atlanta	211***	215***	217	218**	45***	51	55	57**	7***	9	11	11**
Austin	—	228	226	226	—	74	68	71*	—	18	17	13
Baltimore City	—	—	—	220	—	—	—	61	—	—	—	10*,**
Boston	216***	223***	226***	231*,**	55***	65***	71	78*,**	6***	13***	18	23*,**
Charlotte	229	230	230	231*,**	73	74	75	75*,**	20	21	23	24*,**
Chicago	207***	208	213	212*,**	39***	41	48	48*,**	4***	6	8	9*,**
Cleveland	210	215***	210	209*,**	44	52	45	44*,**	5	8	5	5*,**
Detroit	—	—	—	199*,**	—	—	—	29*,**	—	—	—	3*,**
District of Columbia (DCPS)	202***	207***	209***	212*,**	33***	41***	45	49*,**	4***	5***	8	9*,**
Fresno	—	—	—	213**	—	—	—	46*,**	—	—	—	12
Houston	221	224	225	227*,**	62***	67	69	72*,**	12	14	16	17
Jefferson County (KY)	—	—	—	216**	—	—	—	54**	—	—	—	11
Los Angeles	208	209	216	209*,**	42	42	54	41*,**	6	9	13	10
Miami-Dade	—	—	—	222	—	—	—	64	—	—	—	12
Milwaukee	—	—	—	211*,**	—	—	—	46*,**	—	—	—	7*,**
New York City	219***	222***	227	227*,**	58***	63	72	70*,**	12***	14	20	21*,**
Philadelphia	—	—	—	216**	—	—	—	54**	—	—	—	10**
San Diego	216	221	222	222	54	60	65	64	8	15	21	15

See notes at end of table.

Table **A-9.** Average scores and achievement-level results for fourth-grade public school students in NAEP mathematics, by selected race/ethnicity categories and jurisdiction: Various years, 2003–09—Continued

	Average scale score				Percentage of students							
					At or above *Basic*				At or above *Proficient*			
Race/ethnicity and jurisdiction	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
Hispanic												
Nation	221***	225***	227	227	62***	67***	69	70	15***	19***	22	21
Large city	219***	223***	224	226	59***	64***	66	69	13***	17***	21	21
Atlanta	‡	‡	223	222	‡	‡	60	66	‡	‡	16	16
Austin	—	234	233	233*,**	—	80	78	79*,**	—	27	26	25
Baltimore City	—	—	—	‡	—	—	—	‡	—	—	—	‡
Boston	215***	225***	230	232*,**	51***	70	76	77*,**	7***	14***	23	24
Charlotte	233	234	234	235*,**	80	81	80	82*,**	26	27	26	27
Chicago	217***	217***	219***	226	55***	55***	60***	70	10***	13	16	18
Cleveland	220	224	215	217*,**	58	68	53	56*,**	14	18	10	13**
Detroit	—	—	—	206*,**	—	—	—	39*,**	—	—	—	5*,**
District of Columbia (DCPS)	205***	215***	220***	227	39***	51***	57	69	7***	11***	19	25
Fresno	—	—	—	216*,**	—	—	—	55*,**	—	—	—	10*,**
Houston	226***	232	234	235*,**	70***	78	82	83*,**	15***	23	25	28*,**
Jefferson County (KY)	—	—	—	226	—	—	—	65	—	—	—	23
Los Angeles	211***	216	217	218*,**	46***	53	55	58*,**	7***	13	14	14*,**
Miami-Dade	—	—	—	239*,**	—	—	—	84*,**	—	—	—	35*,**
Milwaukee	—	—	—	226	—	—	—	71	—	—	—	16
New York City	220***	226***	230	230*,**	60***	70	74	74*,**	13***	18	26	24
Philadelphia	—	—	—	221*,**	—	—	—	60**	—	—	—	15
San Diego	216***	222	223	224	53***	63	64	66	9***	16	21	19
Asian/Pacific Islander												
Nation	246***	251***	254	255	87***	89***	91	91	48***	54***	59	61
Large city	246	247***	251	253	86	87	89	90	47	49***	57	58
Atlanta	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Austin	—	‡	268	‡	—	‡	99	‡	—	‡	83	‡
Baltimore City	—	—	—	‡	—	—	—	‡	—	—	—	‡
Boston	243***	256	255	260	87	98	91	94	43***	65	61	65
Charlotte	252	256	263	257	90	96	98	91	60	62	75	63
Chicago	‡	‡	249	255	‡	‡	92	96	‡	‡	53	60
Cleveland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Detroit	—	—	—	‡	—	—	—	‡	—	—	—	‡
District of Columbia (DCPS)	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Fresno	—	—	—	220*,**	—	—	—	59*,**	—	—	—	16*,**
Houston	‡	‡	265	264*,**	‡	‡	100	98*,**	‡	‡	75	78*
Jefferson County (KY)	—	—	—	‡	—	—	—	‡	—	—	—	‡
Los Angeles	241	246	246	248**	86	88	92	87	38	45	49	50
Miami-Dade	—	—	—	‡	—	—	—	‡	—	—	—	‡
Milwaukee	—	—	—	231*,**	—	—	—	77	—	—	—	28*,**
New York City	247***	253	257	258	89	92	93	93	47***	60	65	68
Philadelphia	—	—	—	243**	—	—	—	87	—	—	—	40
San Diego	238***	245	247	247**	84	87	88	86	32***	46	50	50

— Not available. District did not participate.
‡ Reporting standards not met.
* Significantly different ($p < .05$) from large city in 2009.
** Significantly different ($p < .05$) from nation in 2009.
*** Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-10.** Average scores and achievement-level results for eighth-grade public school students in NAEP mathematics, by selected race/ethnicity categories and jurisdiction: Various years, 2003–09

	Average scale score				Percentage of students							
					At or above *Basic*				At or above *Proficient*			
Race/ethnicity and jurisdiction	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
White												
Nation	287***	288***	290***	292	79***	79***	81***	82	36***	37***	41***	43*
Large city	285***	288***	292	294	77***	78***	81	81	36***	39***	44	46**
Atlanta	298	‡	‡	‡	83	‡	‡	‡	54	‡	‡	‡
Austin	—	305***	308	312*,**	—	90	91	94*,**	—	61***	65	70*,**
Baltimore City	—	—	—	‡	—	—	—	‡	—	—	—	‡
Boston	289***	299***	305	311*,**	77***	83***	89	93*,**	48***	54	58	67*,**
Charlotte	301	304	308	304*,**	91	90	90	91*,**	55	60	62	58*,**
Chicago	276***	281	287	289	68	71	79	76	25	33	35	39
Cleveland	269	265	269	275*,**	63	54	64	67*,**	14	17	12	21*,**
Detroit	—	—	—	‡	—	—	—	‡	—	—	—	‡
District of Columbia (DCPS)	‡	317	‡	‡	‡	94	‡	‡	‡	69	‡	‡
Fresno	—	—	—	282*,**	—	—	—	70*,**	—	—	—	38
Houston	293***	294***	308	311*,**	80***	85***	94	94*,**	47***	50***	63	67*,**
Jefferson County (KY)	—	—	—	284*,**	—	—	—	75*,**	—	—	—	33*,**
Los Angeles	277	280	285	287	67	68	73	74	29	32	40	41
Miami-Dade	—	—	—	291	—	—	—	84	—	—	—	40
Milwaukee	—	—	—	271*,**	—	—	—	61*,**	—	—	—	20*,**
New York City	289	286	289	295	79	77	77	84	40	38	39	47
Philadelphia	—	—	—	284	—	—	—	71**	—	—	—	35
San Diego	284***	292***	294	301*,**	76***	83	85	89*,**	35***	42	42	55**
Black												
Nation	252***	254***	259	260*	39***	41***	47***	49*	7***	8***	11	12*
Large city	247***	250***	254	256**	34***	36***	41	44**	5***	7***	9	10**
Atlanta	241***	242***	253	255**	26***	28***	38	42**	3***	4***	8	7**
Austin	—	262***	265	274*,**	—	52	57	62*,**	—	12	14	21*,**
Baltimore City	—	—	—	255**	—	—	—	41**	—	—	—	7**
Boston	251***	256***	263	268*,**	36***	45***	51	57*,**	6***	9***	12	18*,**
Charlotte	258***	264***	267	270*,**	47***	54	58	60*,**	11***	14	15	17*,**
Chicago	245***	245***	248	252**	29	28	35	38**	4	3***	6	7**
Cleveland	249	244***	253	252*,**	32	29***	41	38*,**	5	3	5	5*,**
Detroit	—	—	—	237*,**	—	—	—	21*,**	—	—	—	4*,**
District of Columbia (DCPS)	240***	241	245	244*,**	26***	27***	31	32*,**	3***	4	6	6*,**
Fresno	—	—	—	246*,**	—	—	—	32*,**	—	—	—	7
Houston	259***	257***	265	266*,**	47***	47***	58	59*,**	7***	7***	13	13
Jefferson County (KY)	—	—	—	252*,**	—	—	—	38*,**	—	—	—	7**
Los Angeles	234***	239	245	247*,**	21	29	28	34**	2	7	7	5
Miami-Dade	—	—	—	260	—	—	—	48	—	—	—	12
Milwaukee	—	—	—	244*,**	—	—	—	28*,**	—	—	—	3*,**
New York City	253***	257	258	261*	40	44	45	49	9	10	10	12
Philadelphia	—	—	—	256**	—	—	—	43**	—	—	—	8**
San Diego	252***	253	258	263	39	40	48	50	7	8	11	16

See notes at end of table.

Table **A-10.** Average scores and achievement-level results for eighth-grade public school students in NAEP mathematics, by selected race/ethnicity categories and jurisdiction: Various years, 2003–09—Continued

Race/ethnicity and jurisdiction	Average scale score				Percentage of students: At or above *Basic*				Percentage of students: At or above *Proficient*			
	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
Hispanic												
Nation	258***	261***	264	266	47***	50***	54	56	11***	13***	15	17
Large city	256***	258***	261	264	43***	46***	50	54	10***	11***	13	16
Atlanta	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Austin	—	267***	271	274*,**	—	56***	64	65*,**	—	17	19	22*,**
Baltimore City	—	—	—	‡	—	—	—	‡	—	—	—	‡
Boston	252***	261***	270	269*	38***	51***	60	61	7***	12***	20	20
Charlotte	262	262***	264	272*,**	46	53	50	63	18	15	19	21
Chicago	259***	263***	265	268	48	52	55	59	8***	11***	12	18
Cleveland	249	251	258	250*,**	35	33	44	35*,**	2	7	6	4*,**
Detroit	—	—	—	255	—	—	—	44	—	—	—	8
District of Columbia (DCPS)	246***	252	251	263	33***	39***	38***	56	3***	9	9	17
Fresno	—	—	—	253*,**	—	—	—	40*,**	—	—	—	10*,**
Houston	261***	265***	270***	275*,**	49***	56***	62***	70*,**	9***	12***	15	21
Jefferson County (KY)	—	—	—	‡	—	—	—	‡	—	—	—	‡
Los Angeles	240***	245***	253	254*,**	26***	32***	40	41*,**	3***	6***	9	8*,**
Miami-Dade	—	—	—	274*,**	—	—	—	65*,**	—	—	—	23*,**
Milwaukee	—	—	—	256**	—	—	—	43	—	—	—	8*,**
New York City	260	259	262	261**	48	47	52	50	15	12	14	14
Philadelphia	—	—	—	258**	—	—	—	48	—	—	—	12
San Diego	248***	258***	259	265	34***	49	48	54	6***	11	13	14
Asian/Pacific Islander												
Nation	289***	294***	296	300	77***	81***	82	84	42***	46***	49	53
Large city	281***	289***	291***	299	71***	76***	78	83	33***	40***	44	52
Atlanta	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Austin	—	‡	‡	‡	—	‡	‡	‡	—	‡	‡	‡
Baltimore City	—	—	—	‡	—	—	—	‡	—	—	—	‡
Boston	300***	309	305	312*,**	87	92	91	92*	57	61	57	68*,**
Charlotte	293	‡	305	‡	81	‡	88	‡	43	‡	56	‡
Chicago	286***	292	‡	301	78	83	‡	88	36	38	‡	54
Cleveland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Detroit	—	—	—	‡	—	—	—	‡	—	—	—	‡
District of Columbia (DCPS)	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Fresno	—	—	—	266*,**	—	—	—	54*,**	—	—	—	17*,**
Houston	‡	299	310	‡	‡	85	87	‡	‡	55	63	‡
Jefferson County (KY)	—	—	—	‡	—	—	—	‡	—	—	—	‡
Los Angeles	275***	291	292	291**	64	82	82	78	25***	43	45	44
Miami-Dade	—	—	—	‡	—	—	—	‡	—	—	—	‡
Milwaukee	—	—	—	‡	—	—	—	‡	—	—	—	‡
New York City	286***	295	299	309*,**	74***	79	83	89*	38***	50	53	64*,**
Philadelphia	—	—	—	295	—	—	—	85	—	—	—	46
San Diego	278***	282***	289	292**	69***	74	77	81	28***	31***	40	48

— Not available. District did not participate.
‡ Reporting standards not met.
* Significantly different ($p < .05$) from large city in 2009.
** Significantly different ($p < .05$) from nation in 2009.
*** Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-11.** Average score gaps for fourth-grade public school students in NAEP mathematics, by selected racial/ethnic comparison groups and jurisdiction: Various years, 2003–09

Comparison group and jurisdiction	Score gap 2003	2005	2007	2009
White – Black				
Nation	27	26	26	26
Large city	31	31	31	31
Atlanta	47	48	49	48
Austin	—	34	38	36
Baltimore City	—	—	—	20
Boston	19	21	24	20
Charlotte	28	32	30	32
Chicago	29	35	31	31
Cleveland	24	18	23	19
Detroit	—	—	—	‡
District of Columbia (DCPS)	60	58	54	58
Fresno	—	—	—	24
Houston	33	38	38	32
Jefferson County (KY)	—	—	—	27
Los Angeles	33	38	32	35
Miami-Dade	—	—	—	32
Milwaukee	—	—	—	32
New York City	25	23	22	26
Philadelphia	—	—	—	23
San Diego	27	29	30	33
White – Hispanic				
Nation	21	21	21	21
Large city	24	24	25	24
Atlanta	‡	‡	43	45
Austin	—	28	31	28
Baltimore City	—	—	—	‡
Boston	20	19	19	19
Charlotte	24	28	27	28
Chicago	19	26	25	17
Cleveland	14	9	18	11
Detroit	—	—	—	‡
District of Columbia (DCPS)	57*	51	42	43
Fresno	—	—	—	21
Houston	28	30	29	25
Jefferson County (KY)	—	—	—	17
Los Angeles	30	30	31	26
Miami-Dade	—	—	—	15
Milwaukee	—	—	—	16
New York City	24	18	18	23
Philadelphia	—	—	—	18
San Diego	27	27	29	31

— Not available. District did not participate.
‡ Reporting standards not met.
* Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin. Score gaps are calculated based on differences between unrounded average scores. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-12.** Average score gaps for eighth-grade public school students in NAEP mathematics, by selected racial/ethnic comparison groups and jurisdiction: Various years, 2003–09

Comparison group and jurisdiction	Score gap 2003	2005	2007	2009
White – Black				
Nation	35*	33*	31	32
Large city	38	38	38	37
Atlanta	57	‡	‡	‡
Austin	—	43	44	38
Baltimore City	—	—	—	‡
Boston	39	43	42	43
Charlotte	43*	41*	41*	35
Chicago	31	36	39	36
Cleveland	20	21	16	22
Detroit	—	—	—	‡
District of Columbia (DCPS)	‡	76	‡	‡
Fresno	—	—	—	36
Houston	34*	37	43	45
Jefferson County (KY)	—	—	—	32
Los Angeles	43	41	40	40
Miami-Dade	—	—	—	31
Milwaukee	—	—	—	27
New York City	36	29	30	34
Philadelphia	—	—	—	28
San Diego	33	39	36	38
White – Hispanic				
Nation	28*	26	26	26
Large city	30	30	31	30
Atlanta	‡	‡	‡	‡
Austin	—	38	37	38
Baltimore City	—	—	—	‡
Boston	37	38	34	42
Charlotte	40	42*	44*	32
Chicago	17	19	22	20
Cleveland	20	14	11	24
Detroit	—	—	—	‡
District of Columbia (DCPS)	‡	65	‡	‡
Fresno	—	—	—	29
Houston	32	29	38	36
Jefferson County (KY)	—	—	—	‡
Los Angeles	37	35	32	33
Miami-Dade	—	—	—	17
Milwaukee	—	—	—	15
New York City	29	27	26	35
Philadelphia	—	—	—	27
San Diego	36	34	35	36

— Not available. District did not participate.
‡ Reporting standards not met.
* Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin. Score gaps are calculated based on differences between unrounded average scores. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-13.** Average scores and achievement-level results for fourth-grade public school students in NAEP mathematics, by eligibility for National School Lunch Program and jurisdiction: Various years, 2003–09

Eligibility status and jurisdiction	Average scale score				Percentage of students: At or above *Basic*				Percentage of students: At or above *Proficient*			
	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
Eligible												
Nation	222***	225***	227	228*	62***	67***	70	71*	15***	19***	22	22*
Large city	217***	221***	223***	225**	55***	60***	64***	66**	12***	15***	19	20**
Atlanta	209***	213***	216	216*,**	43***	48	52	54*,**	5***	6	10	9*,**
Austin	—	232	229	231*,**	—	77	74	76*,**	—	23	22	22
Baltimore City	—	—	—	220*,**	—	—	—	62*,**	—	—	—	9*,**
Boston	218***	227***	231	233*,**	57***	71***	75	78*,**	10***	19***	24	25*,**
Charlotte	229	230	231	232*,**	74	75	77	77*,**	19	20	23	24*
Chicago	212***	212***	216	219*,**	47***	48***	54	59*,**	8***	9***	12	14*,**
Cleveland	215	220***	215	213*,**	51	61***	53	51*,**	10	13***	10	8*,**
Detroit	—	—	—	198*,**	—	—	—	28*,**	—	—	—	2*,**
District of Columbia (DCPS)	200***	206***	207***	210*,**	29***	38***	43	47*,**	3***	5***	7	8*,**
Fresno	—	—	—	216*,**	—	—	—	54*,**	—	—	—	11*,**
Houston	223***	228***	231	233*,**	66***	73***	77	80*,**	13***	18***	22	24*
Jefferson County (KY)	—	—	—	221*,**	—	—	—	60*,**	—	—	—	16**
Los Angeles	212***	216	217	218*,**	47***	53	55	57*,**	8***	13	15	15*,**
Miami-Dade	—	—	—	230*,**	—	—	—	75*,**	—	—	—	23
Milwaukee	—	—	—	216*,**	—	—	—	54*,**	—	—	—	11*,**
New York City	224***	228***	234	235*,**	64***	70***	77	77*,**	18***	22***	31	32*,**
Philadelphia	—	—	—	219*,**	—	—	—	58*,**	—	—	—	13*,**
San Diego	217***	225	224	224**	56***	66	65	66	10***	19	22	19
Not eligible												
Nation	244***	248***	249	250	88***	90***	91	91*	45***	50***	53	54
Large city	240***	246	246	248	81***	86	87	87**	40***	47	50	51
Atlanta	244	247***	252	254*,**	79	84***	92	92	50	49***	57	59
Austin	—	260	259	259*,**	—	98	96	96*,**	—	70	69	68*,**
Baltimore City	—	—	—	233*,**	—	—	—	75*,**	—	—	—	30*,**
Boston	233***	244	243	249	76***	86	86	91	31***	45	43	51
Charlotte	252	256	256	257*,**	92	94	94	94*	59	63	64	63*,**
Chicago	230***	237	239	244	72	78	78	84	24***	40	42	46
Cleveland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Detroit	—	—	—	208*,**	—	—	—	41*,**	—	—	—	6*,**
District of Columbia (DCPS)	221***	229***	228***	245**	57***	68***	64***	83**	20***	27***	27***	46**
Fresno	—	—	—	244	—	—	—	88	—	—	—	42
Houston	239***	251	252	251	82***	91	93	92	37***	55	57	58
Jefferson County (KY)	—	—	—	250	—	—	—	90	—	—	—	54
Los Angeles	229***	248	235***	245	70***	88	76***	86	25	51	35	48
Miami-Dade	—	—	—	249	—	—	—	92*	—	—	—	54
Milwaukee	—	—	—	234*,**	—	—	—	77*,**	—	—	—	31*,**
New York City	248	243***	251	253	89	87	92	91	49	42***	56	57
Philadelphia	—	—	—	241	—	—	—	83	—	—	—	38
San Diego	239***	246***	251	255*,**	82***	89	91	94*	35***	47***	57	62*

— Not available. District did not participate.
‡ Reporting standards not met.
* Significantly different ($p < .05$) from large city in 2009.
** Significantly different ($p < .05$) from nation in 2009.
*** Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-14.** Average scores and achievement-level results for eighth-grade public school students in NAEP mathematics, by eligibility for National School Lunch Program and jurisdiction: Various years, 2003–09

Eligibility status and jurisdiction	Average scale score				Percentage of students: At or above *Basic*				Percentage of students: At or above *Proficient*			
	2003	2005	2007	2009	2003	2005	2007	2009	2003	2005	2007	2009
Eligible												
Nation	258***	261***	265***	266*	47***	51***	55***	57*	11***	13***	15***	17*
Large city	252***	256***	260	262**	40***	43***	49	51**	9***	11***	14	15**
Atlanta	239***	240***	251	253*,**	24***	26***	35	38*,**	2***	3	7	5*,**
Austin	—	261***	267***	271*,**	—	49***	60	61*,**	—	13***	15***	19*
Baltimore City	—	—	—	254*,**	—	—	—	40*,**	—	—	—	8*,**
Boston	256***	264***	271	273*,**	43***	53***	60	62*,**	11***	17***	21	23*,**
Charlotte	256***	261***	265	268*	44***	51	54	58*	10***	12***	14	17
Chicago	252***	254***	257	261**	39***	40***	45	48**	7***	8***	10	13**
Cleveland	253	249***	257	256*,**	38	34***	45	42*,**	6	6	7	8*,**
Detroit	—	—	—	235*,**	—	—	—	19*,**	—	—	—	3*,**
District of Columbia (DCPS)	235***	241	243	243*,**	21***	26	28	31*,**	2***	4***	4	6*,**
Fresno	—	—	—	253*,**	—	—	—	40*,**	—	—	—	9*,**
Houston	259***	262***	268***	271*,**	46***	53***	60	65*,**	7***	10***	14	18
Jefferson County (KY)	—	—	—	257*,**	—	—	—	44*,**	—	—	—	10*,**
Los Angeles	240***	245***	254	254*,**	28***	32***	41	41*,**	4***	6***	10	9*,**
Miami-Dade	—	—	—	266*	—	—	—	56*	—	—	—	16
Milwaukee	—	—	—	248*,**	—	—	—	33*,**	—	—	—	5*,**
New York City	261***	264***	267	270*,**	49***	51***	54	59*	15***	18	19	23*,**
Philadelphia	—	—	—	261**	—	—	—	49**	—	—	—	13
San Diego	252***	258***	260	268*	39***	49***	49	58*	9***	10***	13	19
Not eligible												
Nation	287***	288***	291***	293*	78***	79***	81***	83*	37***	39***	42***	45*
Large city	279***	282***	285***	289**	69***	71***	74	77**	31***	34***	37	41**
Atlanta	265***	266***	277	283**	52***	52***	64	75	19***	22***	28	34**
Austin	—	301***	302***	308*,**	—	88	87***	92*,**	—	54***	56***	63*,**
Baltimore City	—	—	—	271*,**	—	—	—	60**	—	—	—	19*,**
Boston	282***	288***	290***	299*,**	68***	73	75	81	35***	41***	41***	53*,**
Charlotte	292***	297	300	296*	81	84	85	85*	44	51	53	47*
Chicago	279	275	280	282**	70	65	72	73**	30	27	29	32**
Cleveland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Detroit	—	—	—	245*,**	—	—	—	31*,**	—	—	—	7*,**
District of Columbia (DCPS)	254***	261***	259***	276*,**	40***	46***	45***	61*,**	12***	16***	15***	29*,**
Fresno	—	—	—	293	—	—	—	79	—	—	—	48
Houston	276***	279***	293	296	65***	69***	80	83*	25***	30***	43	47
Jefferson County (KY)	—	—	—	288**	—	—	—	78**	—	—	—	37**
Los Angeles	245***	270***	270***	281**	33***	59***	58	70**	7***	25	25	34**
Miami-Dade	—	—	—	284*,**	—	—	—	77**	—	—	—	33*,**
Milwaukee	—	—	—	262*,**	—	—	—	49*,**	—	—	—	12*,**
New York City	295	286	293	285	82***	74	83***	69**	49	39	41	40
Philadelphia	—	—	—	284	—	—	—	71	—	—	—	34
San Diego	278***	285***	290	295	69***	76	80	81	29***	36***	41	49

— Not available. District did not participate.
‡ Reporting standards not met.
* Significantly different ($p < .05$) from large city in 2009.
** Significantly different ($p < .05$) from nation in 2009.
*** Significantly different ($p < .05$) from 2009.
NOTE: Beginning in 2009, results for charter schools not under the jurisdiction of a district are excluded from NAEP district results. DCPS = District of Columbia Public Schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2003–09 Mathematics Assessments.

Table **A-15.** Average scores and achievement-level results for public school students with disabilities (SD) who could be assessed in NAEP mathematics, by grade and jurisdiction: 2009

Grade and jurisdiction	SD			Not SD		
		Percentage of students			Percentage of students	
	Average scale score	At or above *Basic*	At or above *Proficient*	Average scale score	At or above *Basic*	At or above *Proficient*
Grade 4						
Nation	220*	59*	19*	242*	84*	41*
Large city	210**	45**	12**	234**	75**	31**
Atlanta	202*,**	34*,**	9**	228*,**	66*,**	23*,**
Austin	222*	60*	17	243*	87*	41*
Baltimore City	212	46	9**	223*,**	66*,**	13*,**
Boston	219*	57*	10**	240*	86*	35*,**
Charlotte	226*	67*	21	247*,**	88*,**	48*,**
Chicago	200*,**	33*,**	7**	225*,**	66*,**	19*,**
Cleveland	193*,**	24*,**	4	216*,**	54*,**	9*,**
Detroit	176*,**	5*,**	1	203*,**	34*,**	3*,**
District of Columbia (DCPS)	194*,**	25*,**	5**	223*,**	61*,**	20*,**
Fresno	190*,**	26*,**	4**	221*,**	61*,**	15*,**
Houston	209**	44**	9**	237*,**	84*	31**
Jefferson County (KY)	213	46**	15	236**	76**	34**
Los Angeles	191*,**	24*,**	5**	225*,**	65*,**	21*,**
Miami-Dade	217*	55*	13**	239*	84*	35**
Milwaukee	199*,**	31*,**	4**	223*,**	64*,**	17*,**
New York City	218*	57*	13**	242*	84*	41*
Philadelphia	200*,**	29*,**	4**	225*,**	65*,**	18*,**
San Diego	205**	43**	8**	240*	81*	40*
Grade 8						
Nation	249*	36*	9*	285*	76*	35*
Large city	238**	24**	6**	275**	64**	26**
Atlanta	228*,**	16**	1	263*,**	49*,**	13*,**
Austin	259*,**	47*,**	13	291*,**	78*,**	42*,**
Baltimore City	232**	18**	2	259*,**	45*,**	11*,**
Boston	247*	32	5	286*	74*	36*
Charlotte	247*	29	5	286*	76*	35*
Chicago	235**	20**	4**	268*,**	56*,**	17*,**
Cleveland	227*,**	14**	#	260*,**	47*,**	9*,**
Detroit	207*,**	3*,**	1	243*,**	26*,**	5*,**
District of Columbia (DCPS)	204*,**	2	1	258*,**	44*,**	14*,**
Fresno	222*,**	13**	3	262*,**	49*,**	16*,**
Houston	231**	19**	2	281*,**	74*	26**
Jefferson County (KY)	241**	26	3	274**	63**	24**
Los Angeles	225*,**	13*,**	2**	262*,**	49*,**	15*,**
Miami-Dade	244	30	3**	276**	68*,**	25**
Milwaukee	220*,**	6*,**	1	258*,**	43*,**	8*,**
New York City	242**	28	7	278**	66**	29**
Philadelphia	232**	17**	3**	269*,**	57*,**	19*,**
San Diego	246	32	10	283*	71*	34*

Rounds to zero.

* Significantly different ($p < .05$) from large city in 2009.

** Significantly different ($p < .05$) from nation in 2009.

NOTE: The results for students with disabilities are based on students who were assessed and cannot be generalized to the total population of such students. DCPS = District of Columbia Public Schools.

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

Table **A-16.** Average scores and achievement-level results for public school English language learners (ELL) who could be assessed in NAEP mathematics, by grade and jurisdiction: 2009

Grade and jurisdiction	ELL			Not ELL		
		Percentage of students			Percentage of students	
	Average scale score	At or above *Basic*	At or above *Proficient*	Average scale score	At or above *Basic*	At or above *Proficient*
Grade 4						
Nation	218	57	12	242*	84*	41*
Large city	216	55	11	235**	76**	33**
Atlanta	‡	‡	‡	226*,**	64*,**	22*,**
Austin	229*,**	74*,**	20*,**	246*,**	88*	46*,**
Baltimore City	‡	‡	‡	222*,**	64*,**	13*,**
Boston	222*,**	65*,**	13	239*,**	84*	34**
Charlotte	228*,**	75*,**	17	246*,**	87*,**	47*,**
Chicago	209*,**	44**	7	223*,**	64*,**	19*,**
Cleveland	‡	‡	‡	214*,**	51*,**	9*,**
Detroit	‡	‡	‡	200*,**	31*,**	3*,**
District of Columbia (DCPS)	217	56	15	220*,**	57*,**	19*,**
Fresno	207*,**	41*,**	3*,**	224*,**	65*,**	19*,**
Houston	231*,**	78*,**	22*,**	239*	84*	35**
Jefferson County (KY)	‡	‡	‡	233**	73**	32**
Los Angeles	206*,**	40*,**	4*,**	233**	76**	29**
Miami-Dade	216	55	13	238*,**	83*	34**
Milwaukee	223*	67	15	220*,**	58*,**	15*,**
New York City	219	59	13	241*	83*	39*
Philadelphia	211	43**	10	222*,**	62*,**	17*,**
San Diego	217	57	13	247*,**	89*,**	49*,**
Grade 8						
Nation	243*	28*	5	284*	74*	34*
Large city	238**	23**	4	275**	64**	26**
Atlanta	‡	‡	‡	260*,**	46*,**	12*,**
Austin	249*,**	32	5	294*,**	83*,**	45*,**
Baltimore City	‡	‡	‡	257*,**	43*,**	10*,**
Boston	238	22	6	283*	71*	33*
Charlotte	256*,**	45*	12	284*	73*	34*
Chicago	241	22	2	265*,**	53*,**	16*,**
Cleveland	‡	‡	‡	256*,**	43*,**	8*,**
Detroit	253	42	6	237*,**	21*,**	4*,**
District of Columbia (DCPS)	‡	‡	‡	251*,**	39*,**	12*,**
Fresno	234**	18**	1	265*,**	53*,**	18*,**
Houston	247*	30	4	280*,**	74*	27**
Jefferson County (KY)	‡	‡	‡	272*,**	61*,**	23*,**
Los Angeles	227*,**	10*,**	1*,**	267*,**	56*,**	17*,**
Miami-Dade	236	22	1	275**	67**	24**
Milwaukee	245	27	3	252*,**	37*,**	7*,**
New York City	230**	19**	3	277**	65**	28**
Philadelphia	249	37	13	266*,**	53*,**	17*,**
San Diego	244	24	5	287*	76*	37*

‡ Reporting standards not met.
* Significantly different ($p < .05$) from large city in 2009.
** Significantly different ($p < .05$) from nation in 2009.
NOTE: The results for English language learners are based on students who were assessed and cannot be generalized to the total population of such students. DCPS = District of Columbia Public Schools.
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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