



This report provides selected results for Illinois' public school students at grade 12 from the National Assessment of Educational Progress (NAEP) assessment in mathematics. Results are reported by average scale scores and by achievement levels (*Basic*, *Proficient*, and *Advanced*).

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

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

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

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

## KEY FINDINGS FOR 2009

### Grade 12:

- In 2009, the average mathematics score for twelfth-grade students in Illinois was 154. This was not significantly different from that of the nation's public schools (152).
- In 2009, the percentage of students in Illinois who performed at or above *Proficient* was 26 percent. This was not significantly different from that for the nation's public schools (25 percent).
- In 2009, the percentage of students in Illinois who performed at or above *Basic* was 67 percent. This was not significantly different from that for the nation's public schools (63 percent).

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

## Introduction

### What Was Assessed?

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

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

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

### Content Areas and Mathematical Complexity

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

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

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

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

### Assessment Design

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

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

### Who Was Assessed?

All 50 states, the District of Columbia, and the Department of Defense Schools participated in the 2009 mathematics assessment at grades 4 and 8. For the first time in 2009, grade 12 mathematics results are also available for the following 11 states that met the reporting criteria: Arkansas, Connecticut, Florida, Idaho, Illinois, Iowa, Massachusetts, New Hampshire, New Jersey, South Dakota, and West Virginia. At grade 12, the national results are based on nationally representative samples of twelfth-graders from 1,670 schools.

The overall participation rates for schools and students must meet guidelines established by the National Center for Education Statistics (NCES) and the National Assessment Governing Board for assessment results to be reported publicly. A participation rate of at least 85 percent for schools in each subject and grade was required. Participation rates for the 2009 mathematics assessment are available on the NAEP website at [http://nationsreportcard.gov/math\\_2009/participation.asp](http://nationsreportcard.gov/math_2009/participation.asp).

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

## How Is Student Mathematics Performance Reported?

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

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

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

- *Basic* denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
- *Proficient* represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and appropriate analytical skills.
- *Advanced* represents superior performance.

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

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

<b>Figure 1</b>	<b>The Nation's Report Card 2009 State Assessment</b>
	<b>Descriptions of twelfth-grade achievement levels for 2009 NAEP mathematics assessment</b>

<b>Basic Level (141)</b>	Twelfth-grade students performing at the <i>Basic</i> level should be able to solve mathematical problems that require the direct application of concepts and procedures in familiar mathematical and real-world settings.
----------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Students performing at the *Basic* level should be able to compute, approximate, and estimate with real numbers, including common irrational numbers. They should be able to order and compare real numbers and be able to perform routine arithmetic calculations with and without a scientific calculator or spreadsheet. They should be able to use rates and proportions to solve numeric and geometric problems.

At this level, students should be able to interpret information about functions presented in various forms, including verbal, graphical, tabular, and symbolic. They should be able to evaluate polynomial functions and recognize the graphs of linear functions. Twelfth-grade students should also understand key aspects of linear functions, such as slope and intercepts.

These students should be able to extrapolate from sample results; calculate, interpret, and use measures of center; and compute simple probabilities.

Students at this level should be able to solve problems involving area and perimeter of plane figures, including regular and irregular polygons, and involving surface area and volume of solid figures. They should also be able to solve problems using the Pythagorean theorem and using scale drawings. Twelfth-graders performing at the *Basic* level should be able to estimate, calculate, and compare measures, as well as to identify and compare properties of two- and three-dimensional figures. They should be able to solve routine problems using two-dimensional coordinate geometry, including calculating slope, distance, and midpoint. They should also be able to perform single translations or reflections of geometric figures in a plane.

<b>Proficient Level (176)</b>	Twelfth-grade students performing at the <i>Proficient</i> level should be able to recognize when particular concepts, procedures, and strategies are appropriate, and to select, integrate, and apply them to solve problems. They should also be able to test and validate geometric and algebraic conjectures using a variety of methods, including deductive reasoning and counterexamples.
---------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Twelfth-grade students performing at the *Proficient* level should be able to compute, approximate, and estimate the values of numeric expressions using exponents (including fractional exponents), absolute value, order of magnitude, and ratios. They should be able to apply proportional reasoning, when necessary, to solve problems in nonroutine settings, and to understand the effects of changes in scale. They should be able to predict how transformations, including changes in scale, of one quantity affect related quantities.

These students should be able to write equivalent forms of algebraic expressions, including rational expressions, and use those forms to solve equations and systems of equations. They should be able to use graphing tools and to construct formulas for spreadsheets; to use function notation; and to evaluate quadratic, rational, piecewise-defined, power, and exponential functions. At this level, students should be able to recognize the graphs and families of graphs of these functions and to recognize and perform transformations on the graphs of these functions. They should be able to use properties of these functions to model and solve problems in mathematical and real-world contexts, and they should understand the benefits and limits of mathematical modeling. Twelfth-graders performing at the *Proficient* level should also be able to translate between representations of functions, including verbal, graphical, tabular, and symbolic representations; to use appropriate representations to solve problems; and to use graphing tools and to construct formulas for spreadsheets.

Students performing at this level should be able to use technology to calculate summary statistics for distributions of data. They should be able to recognize and determine a method to select a simple random sample, identify a source of bias in a sample, use measures of center and spread of distributions to make decisions and predictions, describe the impact of linear transformations and outliers on measures of center, calculate combinations and permutations to solve problems, and understand the use of the normal distribution to describe real-world situations. Twelfth-grade students should be able to use theoretical probability to predict experimental outcomes involving multiple events.

These students should be able to solve problems involving right triangle trigonometry, use visualization in three dimensions, and perform successive transformations of a geometric figure in a plane. They should be able to understand the effects of transformations, including changes in scale, on corresponding measures and to apply slope, distance, and midpoint formulas to solve problems.

<b>Advanced</b> Level (216)	Twelfth-grade students performing at the <i>Advanced</i> level should demonstrate in-depth knowledge of and be able to reason about mathematical concepts and procedures. They should be able to integrate this knowledge to solve nonroutine and challenging problems, provide mathematical justifications for their solutions, and make generalizations and provide mathematical justifications for those generalizations. These students should reflect on their reasoning, and they should understand the role of hypotheses, deductive reasoning, and conclusions in geometric proofs and algebraic arguments made by themselves and others. Students should also demonstrate this deep knowledge and level of awareness in solving problems, using appropriate mathematical language and notation.
-----------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Students at this level should be able to reason about functions as mathematical objects. They should be able to evaluate logarithmic and trigonometric functions and recognize the properties and graphs of these functions. They should be able to use properties of functions to analyze relationships and to determine and construct appropriate representations for solving problems, including the use of advanced features of graphing calculators and spreadsheets.

These students should be able to describe the impact of linear transformations and outliers on measures of spread (including standard deviation), analyze predictions based on multiple data sets, and apply probability and statistical reasoning to solve problems involving conditional probability and compound probability.

Twelfth-grade students performing at the *Advanced* level should be able to solve problems and analyze properties of three-dimensional figures. They should be able to describe the effects of transformations of geometric figures in a plane or in three dimensions, to reason about geometric properties using coordinate geometry, and to do computations with vectors and to use vectors to represent magnitude and direction.

---

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

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

### Assessing Students With Disabilities and/or English Language Learners

Testing accommodations, such as extra testing time or individual (rather than group) administration, are provided for students with disabilities (SD) or English language learners (ELL) who could not fairly and accurately demonstrate their abilities without modified test administration procedures. In 1996, administration procedures were introduced at the national level allowing certain accommodations for students requiring such accommodations to participate.

In state NAEP mathematics assessments prior to 2000, no testing accommodations or adaptations were permitted for SD or ELL students. In 2000, NAEP was administered using a split sample of schools—one sample in which accommodations were permitted for special-needs students who normally received them and another sample in which accommodations were not permitted. Therefore, there were two different sets of results available for 2000, and both are shown in the tables in this report. Results for the assessment years where accommodations were not permitted in state NAEP assessments (1990, 1992, 1996) are reported in the same tables as the results where accommodations were permitted (2000, 2003, 2005, 2007, 2009).

Even with the availability of accommodations, however, some students may still be excluded from the NAEP assessment. Due to differences in policies and practices regarding the identification and inclusion of SD and ELL students, variations in exclusion and accommodation rates should be considered when comparing students' performance over time and across states. The types of accommodations used in the 2009 NAEP mathematics assessment are available on the NAEP website at [http://nationsreportcard.gov/math\\_2009/type\\_accomm.asp](http://nationsreportcard.gov/math_2009/type_accomm.asp)



## Interpreting Results

The scores and percentages in this report are estimates based on samples of students rather than on entire populations. In addition, the collection of questions used at each grade level is only a sample of the many questions that could have been asked to assess the skills and abilities described in the NAEP framework. 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. Statistical tests that factor in these standard errors are used to determine whether the differences between average scores or percentages are significant. All differences were tested for statistical significance at the .05 level using unrounded numbers.

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

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

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

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

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

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

### Overall Scale Score Results

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

Table 1 shows the overall performance results of grade 12 public school students in Illinois, the nation (public), and the region. Prior to 2003, the list of states that comprise a given region for NAEP differed from the list used by the U.S. Census Bureau, which has been used in NAEP from 2003 onward. Therefore, the data for the state's region are given only for 2003, 2005, 2007, and 2009. The first column of results presents the average score on the NAEP mathematics scale. The remaining columns show the scores at selected percentiles. Percentiles indicates the percentages of students whose scores fell at or below a particular score. For example, the 25th percentile demarks the cut point for the lowest 25 percent of students within the distribution of scale scores.

### Grade 12 Scale Score Results

- In 2009, the average scale score for students in Illinois was 154. This was not significantly different from that of students across the nation (152).

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

### Table 1

Average scale scores and selected percentile scores in NAEP mathematics for twelfth-grade public school students, by year and jurisdiction: 2009

Year and jurisdiction		Average scale score	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
2009	Nation (public)	152	109	129	153	176	196
	Midwest <sup>1</sup>	156	113	134	157	179	197
	Illinois	154	112	133	155	177	195

<sup>1</sup> Region in which jurisdiction is located.

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300.

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

## Overall Achievement-Level Results

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

Table 2 shows the percentage of students at grade 12 who performed below *Basic*, at or above *Basic*, at or above *Proficient*, and at *Advanced*. Because the percentages are cumulative from *Basic* to *Proficient* to *Advanced*, they may sum to more than 100 percent. Only the percentage of students performing at or above *Basic* (which includes the students at *Proficient* and *Advanced*) plus the students below *Basic* will sum to 100 percent.

## Grade 12 Achievement-Level Results

- In 2009, the percentage of Illinois' students who performed at or above *Proficient* was 26 percent. This was not significantly different from the percentage of the nation's public school students who performed at or above *Proficient* (25 percent).
- In 2009, the percentage of Illinois' students who performed at or above *Basic* was 67 percent. This was not significantly different from the percentage of the nation's public school students who performed at or above *Basic* (63 percent).

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

### Table 2

Percentage of twelfth-grade public school students at or above NAEP mathematics achievement levels, by year and jurisdiction: 2009

Year and jurisdiction		Below <i>Basic</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>	At <i>Advanced</i>
2009	Nation (public)	37	63	25	3
	Midwest <sup>1</sup>	32	68	28	3
	Illinois	33	67	26	2

<sup>1</sup> Region in which jurisdiction is located.

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 140 or lower; *Basic*, 141–175; *Proficient*, 176–215; and *Advanced*, 216 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. 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.

## Comparisons Between Illinois, the Nation, and Participating States and Jurisdictions

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

### Comparisons by Average Scale Scores

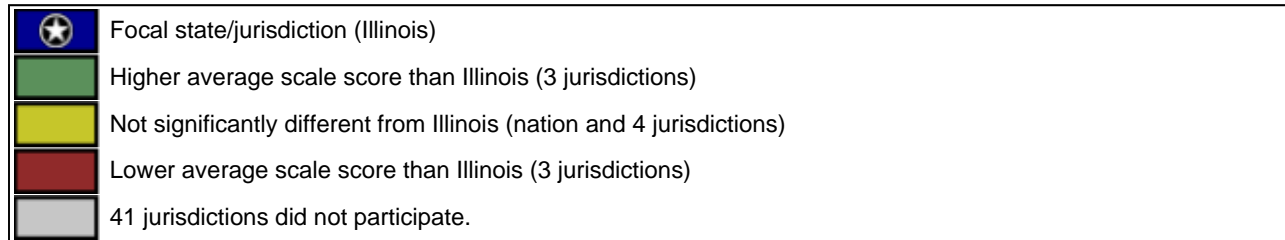
Figure 2 compares Illinois' 2009 overall mathematics scale scores at grade 12 with those of public schools in the nation and all other participating states and jurisdictions. The different shadings indicate whether the average score of the nation (public), a state, or a jurisdiction was found to be higher than, lower than, or not significantly different from that of Illinois in the NAEP 2009 mathematics assessment.

### *Grade 12 Scale Score Comparison Results*

- Students' average score in Illinois was higher than the scores in 3 jurisdictions, not significantly different from those in 4 jurisdictions, and lower than those in 3 jurisdictions.

**Figure 2**

Illinois' average scale score in NAEP mathematics for twelfth-grade public school students compared with scores for the nation and other participating jurisdictions: 2009



<sup>1</sup> Department of Defense Education Activity (domestic and overseas schools).

NOTE: Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.

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

## Comparisons by Achievement Levels

Figure 3 permits comparisons of all jurisdictions (and the nation) participating in the NAEP 2009 mathematics assessment in terms of percentages of grade 12 students performing at or above *Proficient*. The participating states and jurisdictions are grouped into categories reflecting whether the percentage of their students performing at or above *Proficient* (including *Advanced*) was found to be higher than, not significantly different from, or lower than the percentage in Illinois.

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

## Grade 12 Achievement-Level Comparison Results

- The percentage of students performing at or above the *Proficient* level in Illinois was higher than the percentage in 3 jurisdictions, not significantly different from those in 5 jurisdictions, and lower than those in 2 jurisdictions.
- The percentage of students performing at or above the *Basic* level in Illinois was higher than the percentage in 3 jurisdictions, not significantly different from those in 4 jurisdictions, and lower than those in 3 jurisdictions (data not shown).

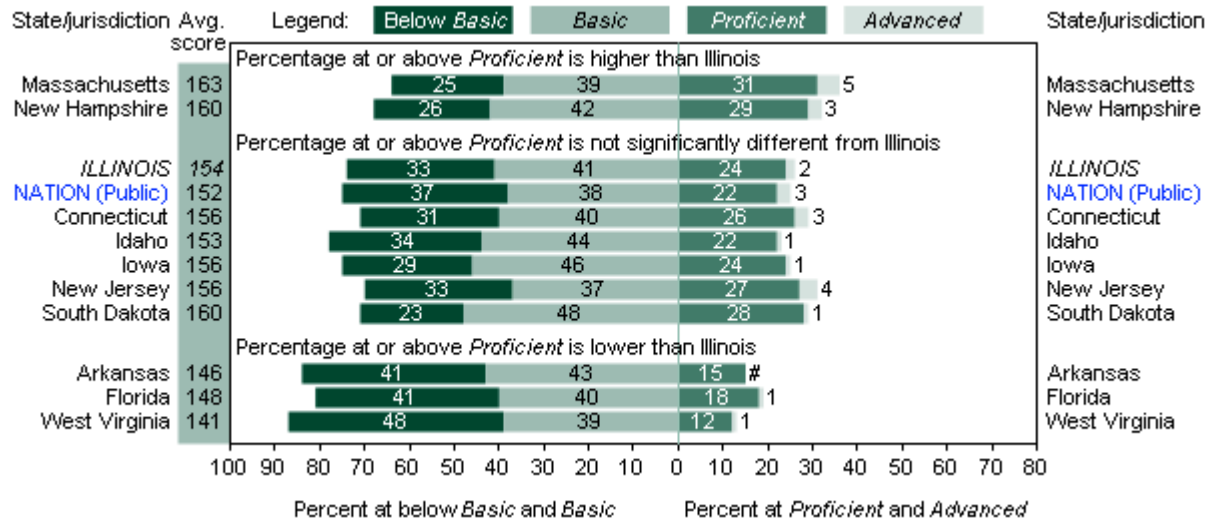


# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

**Figure 3**

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



# Rounds to zero.

NOTE: The bars above contain percentages of students in each NAEP mathematics achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Proficient* category begins, so that they may be compared at *Proficient* and above. Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers. Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.

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

## Mathematics Performance of Selected Student Groups

This section of the report presents trend results for public school students in Illinois and the nation by demographic characteristics. Student performance data are reported for

- race/ethnicity
- gender
- student eligibility for the National School Lunch Program
- type of school location (for 2007 and 2009 only)
- parents' highest level of education

Results for each of the variables are reported in tables that include the percentage of students in each group in the first column, and the average scale score in the second column. The columns to the right show the percentage of students below *Basic* and at or above each achievement level.

Results by students' race/ethnicity and gender include statements about score point differences between student groups (e.g., between White and Black or White and Hispanic students, or between male and female students) in 2009 and in the first assessment year. Because these differences are calculated using unrounded values, they may differ slightly from what would be obtained by subtracting the rounded values that appear in the tables. Statements indicating a narrowing or widening of the gap in students' scores are only made if the change in the gap from the first assessment year to 2009 was found to be statistically significant.

The reader is cautioned against making simple causal inferences about group differences, as a complex mix of educational and socioeconomic factors may affect student performance. NAEP collects information on many additional variables, including school and home factors related to achievement. This information is in an interactive database available on the NAEP website <http://nces.ed.gov/nationsreportcard/naepdata/>.

## Race/Ethnicity

Schools reported the race/ethnicity that best described each student. The six mutually exclusive categories are White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, and Unclassified. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Table 3 shows average scale scores and achievement-level data for public school students at grade 12 in Illinois and the nation, by race/ethnicity.

### **Grade 12 Scale Score Results by Race/Ethnicity**

- In 2009, White students in Illinois had an average scale score that was higher than the scores of Black and Hispanic students, but lower than the score of Asian/Pacific Islander students.
- In Illinois, Black students had an average score that was lower than that of White students by 32 points. In the nation, the average score for Black students was lower than that of White students by 29 points.
- In Illinois, Hispanic students had an average score that was lower than that of White students by 20 points. In the nation, the average score for Hispanic students was lower than that of White students by 23 points.

### **Grade 12 Achievement-Level Results by Race/Ethnicity**

- In Illinois in 2009, the percentage of White students performing at or above *Proficient* was greater than the corresponding percentages of Black and Hispanic students, but smaller than the percentage of Asian/Pacific Islander students.

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

**Table  
3**

Percentage of twelfth-grade public school students, average scale score, and percentage at or above achievement levels in NAEP mathematics, by race/ethnicity, year, and jurisdiction: 2009

Race/ethnicity, year, and jurisdiction		Percentage of students	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
<b>White</b>							
2009	Nation (public)	59	160	26	74	31	3
	Illinois	64	162	24	76	32	2
<b>Black</b>							
2009	Nation (public)	16	131	64	36	6	#
	Illinois	16	130	62	38	6	1
<b>Hispanic</b>							
2009	Nation (public)	18*	137	55	45	10	#
	Illinois	14	141	52	48	13	#
<b>Asian/Pacific Islander</b>							
2009	Nation (public)	6*	175	17	83	52	11
	Illinois	4	171	18	82	46	4
<b>American Indian/Alaska Native</b>							
2009	Nation (public)	1*	145	44	56	12	#
	Illinois	#	‡	‡	‡	‡	‡
<b>Unclassified<sup>1</sup></b>							
2009	Nation (public)	1*	151	36	64	19	3
	Illinois	2	‡	‡	‡	‡	‡

# Rounds to zero.

‡ Reporting standards not met.

\* Value is significantly different ( $p < .05$ ) from the value for the same group in Illinois.

<sup>1</sup> The unclassified category includes students whose school-reported race/ethnicity was "other" or unavailable, or was missing, and whose race/ethnicity category could not be determined from self-reported information.

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 140 or lower; *Basic*, 141–175; *Proficient*, 176–215; and *Advanced*, 216 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. 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.

## Gender

Information on student gender is reported by the student's school when rosters of the students eligible to be assessed are submitted to NAEP.

Table 4 shows average scale scores and achievement-level data for public school students at grade 12 in Illinois and the nation, by gender.

### **Grade 12 Scale Score Results by Gender**

- In Illinois, male students had an average score in mathematics (156) that was not significantly different from that of female students (153). In the nation, male students had an average score in mathematics (154) that was higher than that of female students (151).
- In 2009, male students in Illinois had an average scale score in mathematics (156) that was not significantly different from that of male students in public schools across the nation (154). Similarly, female students in Illinois had an average scale score (153) that was not significantly different from that of female students across the nation (151).

### **Grade 12 Achievement-Level Results by Gender**

- In the 2009 assessment, 29 percent of male students and 24 percent of female students performed at or above *Proficient* in Illinois. The difference between these percentages was not statistically significant.
- The percentage of male students in Illinois' public schools who were at or above *Proficient* in 2009 (29 percent) was not significantly different from that of male students in the nation (27 percent).
- The percentage of female students in Illinois' public schools who were at or above *Proficient* in 2009 (24 percent) was not significantly different from that of female students in the nation (23 percent).

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

**Table  
4**

Percentage of twelfth-grade public school students, average scale score, and percentage at or above achievement levels in NAEP mathematics, by gender, year, and jurisdiction: 2009

Gender, year, and jurisdiction		Percentage of students	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
<b>Male</b>							
2009	Nation (public)	49	154	36	64	27	3
	Illinois	50	156	33	67	29	2
<b>Female</b>							
2009	Nation (public)	51	151	38	62	23	2
	Illinois	50	153	34	66	24	1

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 140 or lower; *Basic*, 141–175; *Proficient*, 176–215; and *Advanced*, 216 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. 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.

## Student Eligibility for the National School Lunch Program

NAEP collects data on eligibility for the federal program providing free or reduced-price school lunches. The free/reduced-price lunch component of the National School Lunch Program (NSLP) offered through the U.S. Department of Agriculture (USDA) is designed to ensure that children near or below the poverty line receive nourishing meals. Eligibility is determined through the USDA's Income Eligibility Guidelines, and results for this category of students are included as an indicator of lower family income. NAEP first collected information on participation in this program in 1996; therefore, cross-year comparisons to assessments prior to 1996 cannot be made.

Table 5 shows average scale scores and achievement-level data for public school students at grade 12 in Illinois and the nation, by student eligibility for the NSLP.

### ***Grade 12 Scale Score Results by Free/Reduced-Price School Lunch Eligibility***

- In 2009, students in Illinois eligible for free/reduced-price lunch had an average mathematics scale score of 136. This was lower than that of students in Illinois not eligible for this program (161).
- In 2009, students in Illinois who were eligible for free/reduced-price school lunch had an average score that was lower than that of students who were not eligible for free/reduced-price school lunch by 25 points. In the nation, the average score for students in 2009 who were eligible for free/reduced-price school lunch was lower than the score of those not eligible by 22 points.
- Students in Illinois eligible for free/reduced-price lunch had an average scale score (136) in 2009 that was not significantly different from that of students in the nation who were eligible (137).

### ***Grade 12 Achievement-Level Results by Free/Reduced-Price School Lunch Eligibility***

- In Illinois, 9 percent of students who were eligible for free/reduced-price lunch and 32 percent of those who were not eligible for this program performed at or above *Proficient* in 2009. These percentages were significantly different from one another.
- For students in Illinois in 2009 who were eligible for free/reduced-price lunch, the percentage at or above *Proficient* (9 percent) was not significantly different from the corresponding percentage for their counterparts around the nation (10 percent).

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

**Table  
5**

Percentage of twelfth-grade public school students, average scale score, and percentage at or above achievement levels in NAEP mathematics, by National School Lunch Program eligibility status, year, and jurisdiction: 2009

Eligibility status, year, and jurisdiction		Percentage of students	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
<b>Eligible</b>							
2009	Nation (public)	30	137	55	45	10	#
	Illinois	27	136	57	43	9	#
<b>Not eligible</b>							
2009	Nation (public)	68 *	159	29 *	71 *	31	3
	Illinois	73	161	25	75	32	3
<b>Information not available</b>							
2009	Nation (public)	2 *	155	36	64	32	6
	Illinois	#	‡	‡	‡	‡	‡

# Rounds to zero.

‡ Reporting standards not met.

\* Value is significantly different ( $p < .05$ ) from the value for the same group in Illinois.

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 140 or lower; *Basic*, 141–175; *Proficient*, 176–215; and *Advanced*, 216 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. 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.



## Type of Location

Schools that participated in the assessment were classified as being located in four mutually exclusive types of communities: city, suburb, town, and rural. These categories indicate the geographic locations of schools. "City" is a geographical term meaning the principal city of a U.S. Census Bureau-defined Core-Based Statistical Area and is not synonymous with "inner city." The criteria for classifying schools with respect to type of location changed for 2007; therefore, only comparisons between 2007 and 2009 are available. More detail on the changes for the classification of type of location is available at [http://nces.ed.gov/ccd/Rural\\_Locales.asp](http://nces.ed.gov/ccd/Rural_Locales.asp).

Table 6 shows average scale scores and achievement-level data for public school students at grade 12 in Illinois and the nation, by type of location (for 2007 and 2009 only).

### **Grade 12 Scale Score Results by Type of Location**

- In 2009 in Illinois, the average scale score of students attending public schools in city locations was not significantly different from the scores of students in suburban, town, and rural schools.
- In 2009, students attending public schools in city and suburban locations in Illinois had average scale scores that were not significantly different from the average scale scores of students in city and suburban locations in the nation.
- In 2009, students attending public schools in town and rural locations in Illinois had average scale scores that were higher than the average scale scores of students in town and rural locations in the nation.

### **Grade 12 Achievement-Level Results by Type of Location**

- In 2009, the percentage of students in Illinois' public schools in city locations who performed at or above *Proficient* was not significantly different from the corresponding percentages of students in suburban, town, and rural schools.
- The percentages of students in Illinois' public schools in city, suburban, town, and rural locations who performed at or above *Proficient* in 2009 were not significantly different from those of students in city, suburban, town, and rural locations in the nation.

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

**Table  
6**

Percentage of twelfth-grade public school students, average scale score, and percentage at or above achievement levels in NAEP mathematics, by type of location, year, and jurisdiction: 2009

Type of location, year, and jurisdiction		Percentage of students	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
<b>City</b>							
2009	Nation (public)	28	151	40	60	24	4
	Illinois	27	150	42	58	25	3
<b>Suburb</b>							
2009	Nation (public)	36 *	156	33	67	29	3
	Illinois	51	155	32	68	27	2
<b>Town</b>							
2009	Nation (public)	12	150 *	38 *	62 *	22	1
	Illinois	11	154	31	69	24	1
<b>Rural</b>							
2009	Nation (public)	24 *	150 *	38 *	62 *	20	1
	Illinois	11	159	24	76	26	1

\* Value is significantly different ( $p < .05$ ) from the value for the same group in Illinois.

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 140 or lower; *Basic*, 141–175; *Proficient*, 176–215; and *Advanced*, 216 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. 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.

## Parents' Highest Level of Education

Eighth- and twelfth-grade students who participated in the NAEP 2009 assessment were asked to indicate the highest level of education they thought their father and their mother had completed. Five response options—did not finish high school, graduated from high school, some education after high school, graduated from college, and "I don't know"—were offered. The highest level of education reported for either parent was used in the analysis. Fourth-graders were not asked about their parents' education level because their responses in previous NAEP assessments were not reliable, and a large percentage of them chose the "I don't know" option.

The results by highest level of parental education are shown in table 7.

### ***Grade 12 Scale Score Results by Parents' Highest Level of Education***

- In 2009, students in Illinois who reported that a parent had graduated from college had an average scale score that was higher than the average scores of students with a parent in any of the following education categories: some education after high school, graduated from high school, and did not finish high school.
- In 2009, the average scale scores for students in Illinois who reported that a parent had graduated from college, had some education after high school, had graduated from high school, or had not finished high school were not significantly different from the corresponding scores of students in the nation.

### ***Grade 12 Achievement-Level Results by Parents' Highest Level of Education***

- In 2009, the percentage of students performing at or above *Proficient* in Illinois who reported that a parent had graduated from college was greater than the percentage for students whose parents' highest level of education was in any of the following education categories: some education after high school, graduated from high school, and did not finish high school.
- In 2009 in Illinois, the percentages of students reporting that a parent had graduated from college, had some education after high school, had graduated from high school, or had not finished high school and who performed at or above *Proficient* were not significantly different from the corresponding percentages of students in the nation.

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

**Table  
7**

Percentage of twelfth-grade public school students, average scale score, and percentage at or above achievement levels in NAEP mathematics, by highest parental education level, year, and jurisdiction: 2009

Highest parental education level, year, and jurisdiction	Percentage of students	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
<b>Did not finish high school</b>						
2009 Nation (public)	9	134	60	40	8	#
Illinois	8	134	60	40	7	#
<b>Graduated from high school</b>						
2009 Nation (public)	19	141	49	51	14	1
Illinois	18	144	45	55	15	1
<b>Some education after high school</b>						
2009 Nation (public)	22	150	37	63	19	1
Illinois	23	152	34	66	21	1
<b>Graduated from college</b>						
2009 Nation (public)	47	163	25	75	37	5
Illinois	48	164	22	78	37	3
<b>Unknown</b>						
2009 Nation (public)	3	128	64	36	8	#
Illinois	3	133	58	42	7	#

# Rounds to zero.

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 140 or lower; *Basic*, 141–175; *Proficient*, 176–215; and *Advanced*, 216 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. 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.

## A More Inclusive NAEP: Students With Disabilities and English Language Learners

To ensure that the samples are representative, NAEP has established policies and procedures to maximize the inclusion of all students in the assessment. Every effort is made to ensure that all selected students who are capable of participating meaningfully in the assessment are assessed. While some students with disabilities (SD) and/or English language learners (ELL) can be assessed without any special procedures, others require accommodations to participate in NAEP. Still other SD and/or ELL students selected by NAEP may not be able to participate. Local school staff who are familiar with these students are asked a series of questions to help them decide whether each student should participate in the assessment and whether the student needs accommodations.

Within any assessment year, exclusion and accommodation rates may vary across jurisdictions. In addition, exclusion and accommodation rates may increase or decrease between assessment administrations, making it difficult to interpret comparisons over time within jurisdictions. Since SD and/or ELL students tend to score below average on assessments, the exclusion of students from these groups may result in a higher average score than if those students had taken the assessment. On the other hand, providing appropriate testing accommodations (e.g., providing extended time for some SD and/or ELL students to take the assessment) removes barriers that would otherwise prevent them from demonstrating their knowledge and skills.

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

Table 8 displays data for 12<sup>th</sup> grade students in Illinois who were identified as SD and/or ELL, by whether they were excluded, assessed with accommodations, or assessed under standard conditions, as a percent of all 12<sup>th</sup> grade students in the state.

Table 9 shows the percentages of students assessed in Illinois by disability status and their performance on the NAEP assessment in terms of average scale scores and percentages performing below *Basic*, at or above *Basic*, at or above *Proficient*, and at *Advanced* for grade 12 .

Table 10 presents the percentages of students assessed in Illinois by ELL status, their average scale scores, and their performance in terms of the percentages below *Basic*, the percentages at or above *Basic*, at or above *Proficient*, and at *Advanced* for grade 12 .

Table 11 presents the total number of grade 12 students assessed in each of the participating states and the percentage of students sampled who were excluded.

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

### Table 8

Percentage of twelfth-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 students, by assessment year and testing status: 2009

Year and testing status		SD and/or ELL		SD		ELL	
		Illinois	Nation (public)	Illinois	Nation (public)	Illinois	Nation (public)
2009	<b>Identified</b>	<b>14</b>	<b>14</b>	<b>12</b>	<b>11</b>	<b>2</b>	<b>3</b>
	Excluded	4	4	4	3	#	#
	Assessed without accommodations	2	4	2	2	#	2
	Assessed with accommodations	8	6	7	6	1	1

# Rounds to zero.

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.

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

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

**Table  
9**

Percentage of twelfth-grade public school students, average scale score, and percentage at or above achievement levels in NAEP mathematics, by students with disabilities (SD) status, year, and jurisdiction: 2009

SD status, year, and jurisdiction		Percentage of students	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
<b>SD</b>							
2009	Nation (public)	8	118 *	76	24	6 *	#
	Illinois	9	111	82	18	2	#
<b>Not SD</b>							
2009	Nation (public)	92	155	34 *	66 *	26	3
	Illinois	91	158	29	71	28	2

# Rounds to zero.

\* Value is significantly different ( $p < .05$ ) from the value for the same group in Illinois.

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 140 or lower; *Basic*, 141–175; *Proficient*, 176–215; and *Advanced*, 216 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. Performance comparisons may be affected by differences in exclusion rates for students with disabilities in the NAEP samples and by differences in sample sizes. 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.

# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

**Table  
10**

Percentage of twelfth-grade public school students, average scale score, and percentage at or above achievement levels in NAEP mathematics, by English language learner (ELL) status, year, and jurisdiction: 2009

ELL status, year, and jurisdiction		Percentage of students	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
<b>ELL</b>							
2009	Nation (public)	3*	116	81	19	4	#
	Illinois	1	‡	‡	‡	‡	‡
<b>Not ELL</b>							
2009	Nation (public)	97*	153	36	64	25	3
	Illinois	99	155	33	67	26	2

# Rounds to zero.

‡ Reporting standards not met.

\* Value is significantly different ( $p < .05$ ) from the value for the same group in Illinois.

NOTE: The NAEP grade 12 mathematics scale ranges from 0 to 300. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 140 or lower; *Basic*, 141–175; *Proficient*, 176–215; and *Advanced*, 216 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. Performance comparisons may be affected by differences in exclusion rates for English language learners in the NAEP samples and by differences in sample sizes. 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.



# NAEP 2009 Mathematics Report for Illinois

## The Nation's Report Card 2009 State Assessment

### Table 11

Number of twelfth-grade public school students assessed in NAEP mathematics and weighted percentage excluded, by state/jurisdiction: 2009

State/jurisdiction	Number assessed	Weighted percentage excluded
<b>Nation (public)</b>	<b>46,400</b>	<b>4</b>
Arkansas	2,700	3
Connecticut	2,800	3
Florida	3,200	5
Idaho	3,000	2
Illinois	2,700	4
Iowa	2,600	3
Massachusetts	2,900	5
New Hampshire	2,100	3
New Jersey	3,100	3
South Dakota	2,600	2
West Virginia	3,000	2

NOTE: The number of students assessed is rounded to the nearest hundred.

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

## Where to Find More Information

### **The NAEP Mathematics Assessment**

The latest news about the NAEP 2009 mathematics assessment and the national results can be found on the NAEP website at <http://nces.ed.gov/nationsreportcard/mathematics/results/>. The individual snapshot reports for each participating state and other jurisdictions are also available in the state results section of the website at <http://nces.ed.gov/nationsreportcard/states/>.

*The Nation's Report Card: Mathematics 2009* may be ordered or downloaded at the NAEP website.

The *Mathematics Framework for the 2009 National Assessment of Educational Progress*, on which this assessment is based, is available at the National Assessment Governing Board website at <http://www.nagb.org/publications/frameworks/math-framework09.pdf>

### **The NAEP Data Explorer (NDE)**

The interactive database at <http://nces.ed.gov/nationsreportcard/naepdata/> includes student, teacher, and school variables for all participating states and other jurisdictions, the nation, and the four regions. Data tables are also available for each jurisdiction, with all background questions cross-tabulated with the major demographic variables. Users can design and create tables and can perform tests of statistical significance at this website.

### **Technical Documentation on the Web (TDW)**

Technical documentation section of the NAEP website <http://nces.ed.gov/nationsreportcard/tdw/> contains information about the technical procedures and methods of NAEP. The TDW site is organized by topic (from Item Development through Analysis and Scaling) with subtopics, including information specific to a particular assessment. The content is written for researchers and assumes knowledge of educational measurement and testing.

### **Publications on the inclusion of students with disabilities and English language learners**

References for a variety of research publications related to the assessment of students with special needs may be found at <http://nces.ed.gov/nationsreportcard/about/inclusion.asp#research>.

### **To order publications**

Recent NAEP publications related to mathematics are listed on the mathematics page of the NAEP website and are available electronically. Publications can also be ordered from

Education Publications Center (ED Pubs)  
U.S. Department of Education  
P.O. Box 22207  
Alexandria, VA 22304x

Call toll free: 1-877-4ED-Pubs (1-877-433-7827)  
TTY/TDD: 1-877-576-7734  
FAX: 1-301-470-1244  
Order online at: <http://www.edpubs.org>.

<p>The NAEP State Report Generator was developed for the NAEP 2009 reports by Phillip Leung, Bobby Rampey, Rebecca Moran, Gloria Dion, Rick Hasney, and Ming Kuang.</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## 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, the arts, 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.

## U.S. Department of Education

### Arne Duncan

Secretary  
U.S. Department  
of Education

### John Q. Easton

Director  
Institute of  
Education Sciences

### Stuart Kerachsky

Acting Commissioner  
National Center for  
Education Statistics

### Peggy Carr

Associate Commissioner  
National Center for  
Education Statistics

## The National Assessment Governing Board

### Honorable David P. Driscoll, Chair

Former Commissioner of Education  
Melrose, Massachusetts

### Amanda P. Avallone, Vice Chair

Assistant Principal and Eighth-Grade  
Teacher  
Summit Middle School  
Boulder, Colorado

### David J. Alukonis

Former Chairman  
Hudson School Board  
Hudson, New Hampshire

### Louis M. Fabrizio

Director, Accountability Policy and  
Communications  
North Carolina Department of Public  
Instruction  
Raleigh, North Carolina

### Honorable Anitere Flores

Member  
Florida House of Representatives  
Miami, Florida

### Alan J. Friedman

Consultant  
Museum Development and Science  
Communication  
New York, New York

### David W. Gordon

County Superintendent of Schools  
Sacramento County Office of Education  
Sacramento, California

### Doris R. Hicks

Principal and Chief Executive Officer  
Dr. Martin Luther King, Jr. Charter School  
for Science and Technology  
New Orleans, Louisiana

### Kathi M. King

Twelfth-Grade Teacher  
Messalonskee High School  
Oakland, Maine

### Kim Kozbial-Hess

Fourth-Grade Teacher and  
Educational Technology Trainer  
Toledo, Ohio

### Henry Kranendonk

Mathematics Curriculum Specialist  
Milwaukee Public Schools  
Milwaukee, Wisconsin

### Tonya Miles

General Public Representative  
Mitchellville, Maryland

### Honorable Steven L. Paine

State Superintendent of Schools  
West Virginia Department of Education  
Charleston, West Virginia

### Honorable Sonny Perdue

Governor of Georgia  
Atlanta, Georgia

### Susan Pimentel

Educational Consultant  
Hanover, New Hampshire

### W. James Popham

Professor Emeritus  
Graduate School of Education and  
Information Studies  
University of California, Los Angeles  
Wilsonville, Oregon

### Andrew C. Porter

Dean  
Graduate School of Education  
University of Pennsylvania  
Philadelphia, Pennsylvania

### Warren T. Smith

Vice President  
Washington State Board of Education  
Olympia, Washington

### Mary Frances Taymans

Sisters of Notre Dame  
National Education Office  
Bethesda, Maryland

### Oscar A. Troncoso

Principal  
Anthony High School  
Anthony Independent School District  
Anthony, Texas

### Honorable Leticia Van de Putte

Senator  
Texas State Senate  
San Antonio, Texas

### Eileen L. Weiser

General Public Representative  
Ann Arbor, Michigan

### Darvin M. Winick

President  
Winick & Associates  
Austin, Texas

### John Q. Easton (Ex officio)

Director  
Institute of Education Sciences  
U.S. Department of Education  
Washington, D.C.

---

### Cornelia S. Orr

Executive Director  
National Assessment Governing Board  
Washington, D.C.

