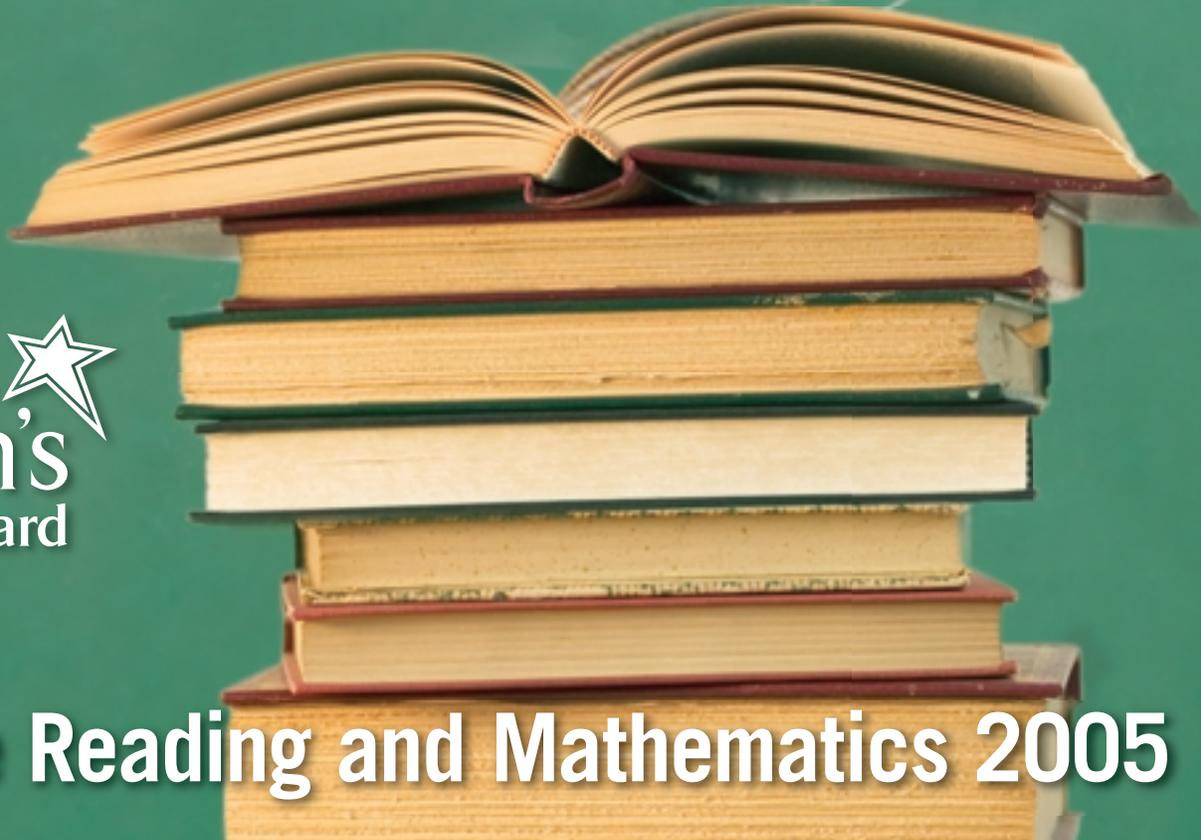
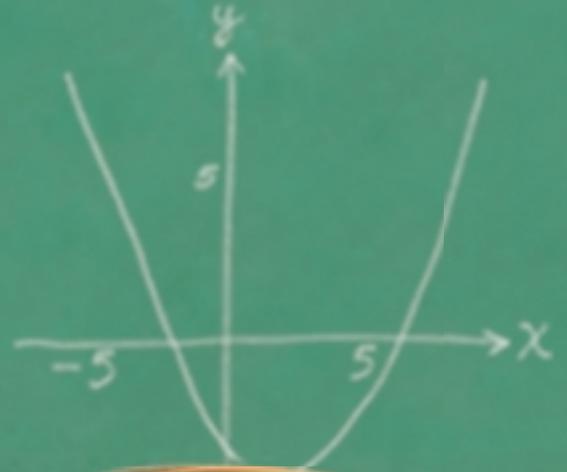


$$\sqrt{b^2 - 4ac}$$

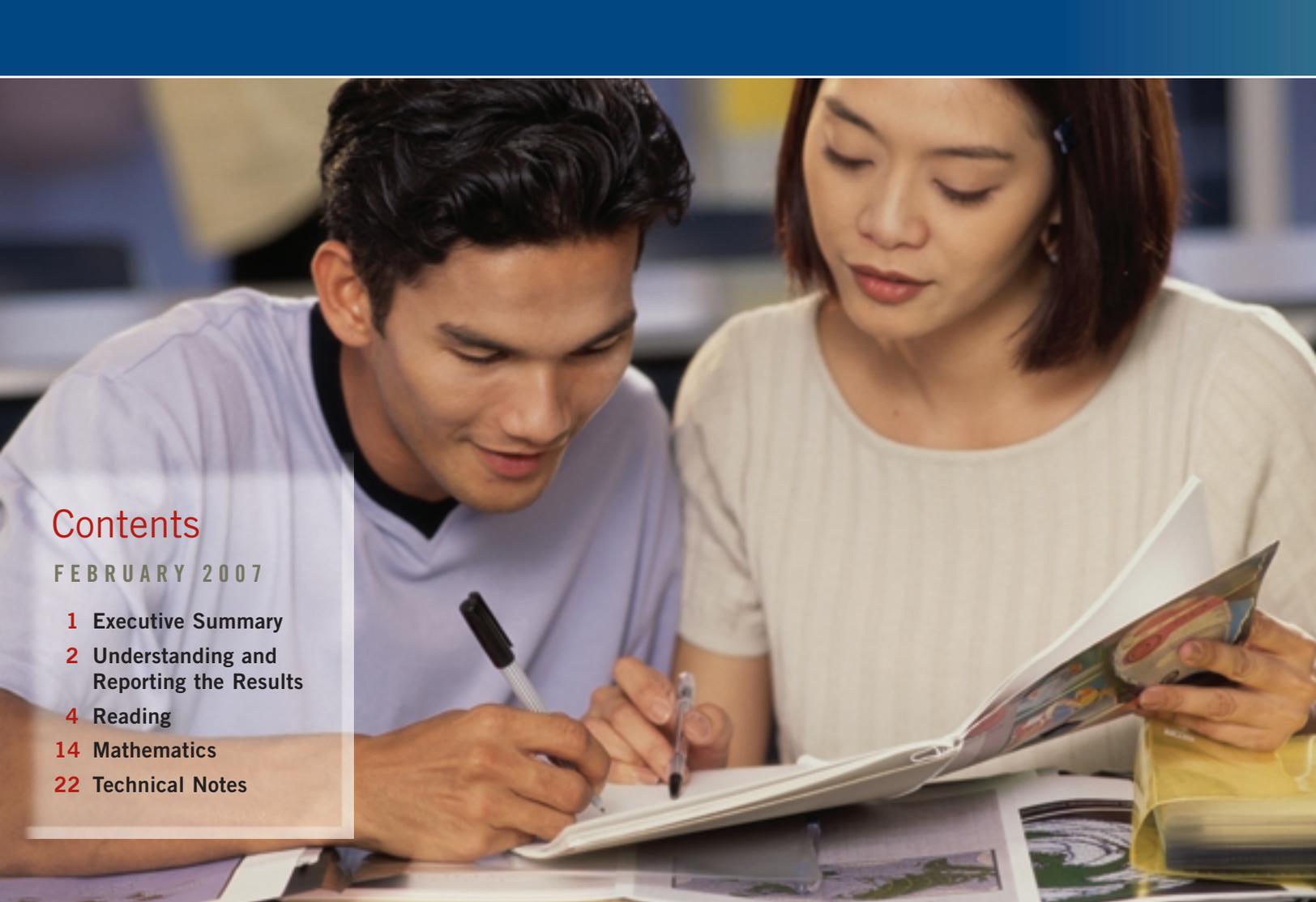


The 
Nation's
Report Card

12th-Grade Reading and Mathematics 2005

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS





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FEBRUARY 2007

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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. The Nation's Report Card™ compares performance among states, urban districts, public and private schools, and student demographic groups.

For over three decades, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other subjects. By making objective information available on student performance at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information associated with academic achievement and related variables is collected.

The privacy of individual students is protected, and the identities of participating schools are not released.

NAEP is a congressionally mandated 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.

Executive Summary

In 2005, a representative sample of over 21,000 high school seniors from 900 schools across the country was assessed in reading and mathematics. This report presents the national results from the 1992, 1994, 1998, 2002, and 2005 reading assessments and from the 2005 mathematics assessment. It also includes sample questions to illustrate the types of skills and knowledge that were assessed in each subject.

Reading performance declines for all but top performers

In 2005, the average reading score for high school seniors was 286 on a 0–500 scale. This overall average was lower than in 1992, although it was not significantly different from the score in 2002. With the exception of the score for students performing at the 90th percentile, declines were seen across most of the performance distribution in 2005 as compared to 1992.

- The percentage of students performing at or above *Basic* decreased from 80 percent in 1992 to 73 percent in 2005, and the percentage of students performing at or above the *Proficient* level decreased from 40 to 35 percent.
- White and Black students were the only racial/ethnic groups to show a statistically significant change in reading performance, scoring lower in 2005 than in 1992.
- The score gaps between White and Black students and White and Hispanic students were relatively unchanged since 1992.

Retrieving information from a highly detailed document is an example of the knowledge and skills demonstrated by students performing at the *Basic* level. Making a critical judgment about a detailed document and explaining their reasoning is an example of the knowledge and skills associated with students' performance at the *Proficient* level.

- Both male and female students' scores declined in comparison to 1992, and the performance gap between the genders widened with female students outscoring male students.

Less than one-quarter perform at or above *Proficient* in mathematics

The 2005 mathematics assessment is based on a new framework. The assessment includes more questions on algebra, data analysis, and probability to reflect changes in high school mathematics standards and coursework. Even though many questions were repeated, results could not be placed on the old NAEP scale and could not be directly compared to previous years. The 12th-grade average in 2005 was set at 150 on a 0–300 point scale.

- Sixty-one percent of high school seniors performed at or above the *Basic* level, and 23 percent performed at or above *Proficient*.
- Asian/Pacific Islander students scored higher than students from other racial/ethnic groups, and White students scored higher than their Black and Hispanic counterparts.
- Male students scored higher on average than female students overall and in the “number properties and operations” and “measurement and geometry” content areas.

Demonstrating the ability to use the Pythagorean Theorem to determine the length of a hypotenuse is an example of the skills and knowledge associated with performance at the *Basic* level. An example of the knowledge and skills associated with the *Proficient* level is using trigonometric ratios to determine length.

For more information, visit:
<http://nationsreportcard.gov>

Understanding and Reporting the Results

The students who are selected to take the NAEP assessment are representative of all 12th-grade students across the U.S. By participating, they play an important role in helping us understand how our nation's students and schools are performing. These valuable data can only be obtained with the cooperation of schools, teachers, and students nationwide.

The results presented in this report are based on representative samples of more than 21,000 grade 12 students from 900 schools (including public schools, private schools, and Department of Defense schools). Results are reported for the nation and by region of the country. Results for states are not available at grade 12. Over 12,000 students were assessed in reading, and more than 9,000 were assessed in mathematics. Students' performance is reported in two ways: scale scores and achievement levels.

Scale scores

NAEP reading results are reported on a 0–500 scale, and mathematics results are reported on a 0–300 scale. Because NAEP score scales are developed independently for each subject, scores cannot be used to make comparisons across subjects.

In addition to reporting an overall composite score in each subject, scores are reported at different percentiles (showing trends in performance for lower-, middle-, and higher-performing students) and by subject subscales (showing performance in specific content areas).

Achievement levels

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 three achievement levels: *Basic*, *Proficient*, and *Advanced*. Percentages below *Basic* are also reported.

The achievement levels for each subject in this report were set by the National Assessment Governing Board based on a standard-setting process that included input from a cross section of policymakers, educators, and members of the general public. The process resulted in a set of cut scores that defines the boundaries between *Basic*, *Proficient*, and *Advanced* performance, as well as descriptions of what students should know and be able to do in each subject and grade level. Abbreviated descriptions of the NAEP subject-specific achievement levels for grade 12 can be found in the reading and mathematics sections of this report. More detailed descriptions of NAEP achievement levels can be found in the subject frameworks on the Governing Board website at <http://www.nagb.org/pubs/pubs.html>.

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. However, NCES and the Governing Board have affirmed the usefulness of these performance standards for understanding trends in achievement. NAEP achievement levels have been widely used by national and state officials.

The three NAEP achievement levels, from lowest to highest, are

BASIC — denotes partial mastery of the knowledge and skills that are fundamental for proficient work at a given grade.

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

ADVANCED — signifies superior performance.



A more inclusive NAEP

No testing accommodations were provided in the NAEP reading assessments prior to 1998, resulting in the exclusion of students with disabilities and English language learners who could not be meaningfully assessed without accommodations. The transition to a more inclusive NAEP began in 1998 when administration procedures were introduced that allowed the use of accommodations (e.g., extra time, individual rather than group administration) for a subsample of students in the reading assessment.

During this transition period, reading results in 1998 were reported for two separate samples—one in which accommodations were not permitted and one in which accommodations were permitted. Beginning in 2002, accommodations were permitted for all reading administrations. In 2005, accommodations were available for both reading and mathematics assessments.

Interpreting results

NAEP uses widely accepted statistical standards in analyzing data. The text of this report discusses only findings that are statistically significant at the .05 level with adjustments for multiple comparisons. In the tables and charts of this report, the symbol (*) is used to indicate that prior scores or percentages are significantly different from current scores or percentages.

Scales have been established for overall achievement in reading and mathematics. In addition, subscales have been established for three contexts for reading and for four content areas in mathematics. (See pages 10 and 19 for more information about the reading and mathematics frameworks.) Because subscales for each subject were developed separately, direct comparisons cannot be made from one subscale to another.

In addition to overall results, performance is presented for students categorized by different demographic characteristics (for example, by gender or highest level of parents' education). These simple breakdowns cannot be used to establish a cause-and-effect relationship between background characteristics and achievement. A complex mix of educational and socioeconomic factors may interact to affect student performance.

Not all of the results discussed in the text are presented in corresponding tables or graphics (e.g., achievement-level data for student groups), but can be found on the NAEP website at <http://nces.ed.gov/nationsreportcard/nde/>.

For additional information, see the Technical Notes on page 22 or <http://nationsreportcard.gov>.

