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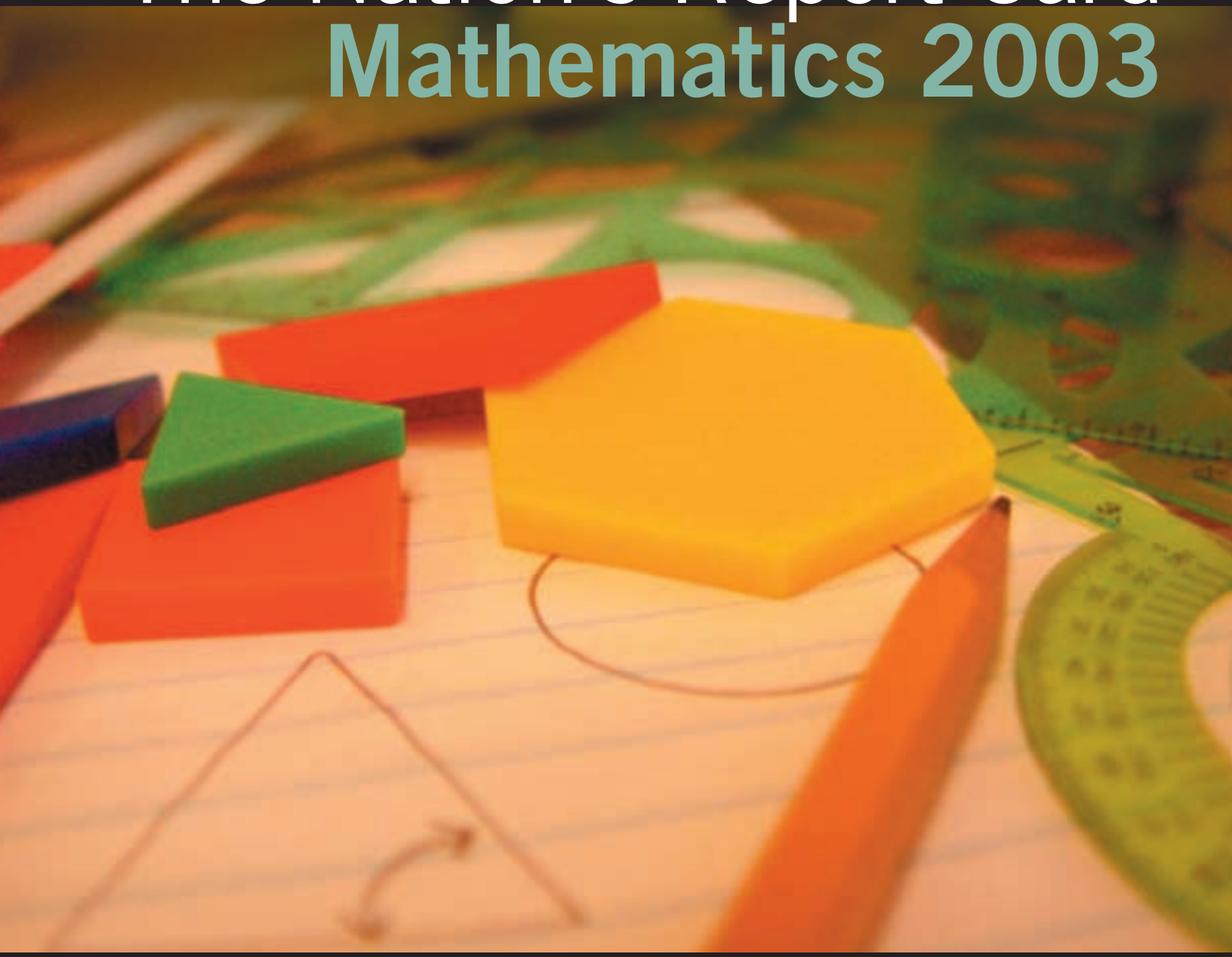
The Nation's Report Card™

Mathematics 2003



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In 1988, Congress established the National Assessment Governing Board (NAGB) to oversee and set policy for NAEP. The Board is responsible for: selecting the subject areas to be assessed; setting appropriate student achievement levels; developing assessment objectives and test specifications; developing a process for the review of the assessment; designing the assessment methodology; developing guidelines for reporting and disseminating NAEP results; developing standards and procedures for interstate, regional, and national comparisons; determining the appropriateness of all assessment items and ensuring the assessment items are free from bias and are secular, neutral, and non-ideological; taking actions to improve the form, content, use, and reporting of results of the National Assessment; and planning and executing the initial public release of NAEP reports.

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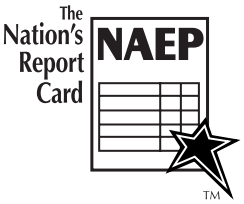

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The Nation's Report Card™

Mathematics 2003

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Executive Summary

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This report presents results of the NAEP 2003 fourth- and eighth-grade mathematics assessments for the nation, for regions of the country, for participating states and other jurisdictions, and for participating urban districts. Assessment results are described in terms of students' average mathematics score on a 0–500 scale and in terms of the percentage of students attaining each of three achievement levels: *Basic, Proficient,* and *Advanced.*

The achievement levels are performance standards adopted by the National Assessment Governing Board (NAGB) as part of its statutory responsibilities. The achievement levels are a collective judgment of what students should know and be able to do for each grade tested. The law requires that the achievement levels are to be used on a trial basis until the Commissioner of Education Statistics determines "that such levels are reasonable, valid, and

informative to the public."[1] Until that determination is made, the law requires the Commissioner and the Board to state clearly the trial status of the achievement levels in all NAEP reports. However, both NCES and NAGB believe these performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials and others as a common yardstick of academic performance.

Approximately 190,000 fourth-graders from 7,500 schools and 153,000 eighth-graders from 6,100 schools were assessed in 2003. The national results reflect the performance of students attending both public and nonpublic schools, while the results for participating states and jurisdictions, and for participating urban districts, reflect the performance of students attending public schools. In addition to providing average scores and achievement-level percentages in mathematics for the nation, states and other jurisdictions, and selected urban districts, this report provides results for subgroups of students defined by various background characteristics.

A summary of major findings from the NAEP 2003 Mathematics Assessment is presented on the following pages. Comparisons are made to results from previous years in which the assessment was administered. In addition to the 2003 results, national results are reported from the 1990, 1992, 1996, and 2000 assessments. Results for states and other jurisdictions are also reported from the 1990 (eighth grade only), 1992, 1996, 2000, and 2003 assessments. Results for participating urban districts are reported for 2003.

The more recent results, from 2000 and 2003, are based on more inclusive samples using administration procedures in which testing accommodations were permitted for students with disabilities and limited-English-proficient students. Accommodations were not permitted in earlier assessments. Comparisons between results from 2003 and those from 2000, in which both types of administration procedures were used, are discussed in this executive summary based on the results when accommodations were permitted.

Changes in student performance across years or differences between groups of students in 2003 are discussed only if they have been determined to be statistically significant at the .05 level based on t-tests adjusted using the False Discovery Rate (FDR) multiple comparison procedure. Beginning with the reading sample in 2002, the NAEP national samples were obtained by aggregating the samples from each state, rather than obtaining an independently selected national sample. As a result, the size of the national sample increased and smaller differences between years or between subgroups of students were found to be statistically significant than would have been detected in previous assessment years.

[1] No Child Left Behind Act of 2001, P. L. 107-110, 115 Stat. 1425 (2002).

Overall Mathematics Results for the Nation, Regions of the Country, and States and Other Jurisdictions

Mathematics Results for the Nation

At grade 4

- The average fourth-grade mathematics score was higher in 2003 than in all the previous assessment years.
- Scores at the 10th, 25th, 50th, 75th, and 90th percentiles were higher in 2003 than in any of the previous assessment years, indicating improvement for lower-, middle-, and higher-performing students. Gains detected between 2000 and 2003 ranged from approximately 5 scale score points for students performing at the 90th percentile to 13 points for students at the 10th percentile.
- In 2003, 32 percent of fourth-graders performed at or above the *Proficient* level. The percentages of fourth-graders performing at or above *Basic*, at or above *Proficient*, and at *Advanced* increased between 2000 and 2003, and were higher in 2003 than in 1990. The percentage at or above *Proficient* increased by approximately 19 points between 1990 and 2003.

At grade 8

- The average eighth-grade mathematics score was higher in 2003 than in all previous assessment years.
- Scores at the 10th, 25th, 50th, 75th, and 90th percentiles were higher in 2003 than in any of the previous assessment years, indicating improvement for lower-, middle-, and higher-performing students. Increases detected between 2000 and 2003 ranged from approximately 3 scale score points at the 90th percentile to 7 points at the 10th percentile.
- In 2003, 29 percent of eighth-graders performed at or above the *Proficient* level. The percentages of eighth-graders performing at or above *Basic* and at or above *Proficient* increased between 2000 and 2003, and were higher in 2003 than in 1990. The percentage at or above *Proficient* increased by approximately 14 points between 1990 and 2003.

Mathematics Results for Regions of the Country

Prior to 2003, NAEP results were reported for four NAEP-defined regions of the nation: Northeast, Southeast, Central, and West. As of 2003, to align NAEP with other federal data collections, NAEP analysis and reports have used the U.S. Census Bureau's definition of "region." The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.

At grade 4

- The average fourth-grade mathematics score was higher for students in the Northeast and Midwest than for students in the South and West. The average score for students in the South was higher than for students in the West.
- The percentages of fourth-graders performing at or above the *Basic* and *Proficient* levels were higher in the Northeast and Midwest than in the South and West. Higher percentages of students performed at or above *Basic* and *Proficient* in the South than in the West.

At grade 8

- The average eighth-grade mathematics score was higher for students in the Northeast and Midwest than for students in the South and West. The average score was higher for students in the South than for students in the West.
- Higher percentages of eighth-grade students performed at or above *Basic* and *Proficient* in the Northeast and Midwest than in the South and West. A higher percentage of eighth-graders performed at or above *Basic* in the South than in the West.

Mathematics Results for the States and Other Jurisdictions

Results from the 2003 assessment are reported for fourth- and eighth-grade students attending public schools only in 50 states and 3 other jurisdictions that participated in the assessment. (Throughout this report, the term "jurisdiction" is used to refer to the states, the District of Columbia, and the two Department of Defense system schools that participated in the NAEP mathematics assessment.)

At grade 4

- All 43 jurisdictions that participated in both the 2000 and 2003 fourth-grade assessments showed increases in average scores. Similarly, each of the 42 jurisdictions that participated in the 1992 and 2003 assessments had a higher average score in 2003.
- Kansas, Massachusetts, Minnesota, New Hampshire, North Carolina, Vermont, and Wyoming were among the jurisdictions with the highest average scores. Average fourth-grade scores in Connecticut and Virginia were lower only in comparison with New Hampshire.
- The percentage of fourth-graders performing at or above *Proficient* was higher in 2003 than in 2000 for all 43 jurisdictions that participated in both years. The percentage of fourth-graders at or above *Proficient* was higher in 2003 than in 1992 for all 42 jurisdictions that participated in both years.

At grade 8

- Of the 42 jurisdictions that participated in both the 2000 and 2003 eighth-grade mathematics assessments, 28 had a higher average score in 2003. Each of the 38 jurisdictions that participated in both the 1990 and 2003 assessments had a higher average score in 2003.
- In 2003, Minnesota had the highest average mathematics score at grade 8. Eighth-graders in Department of Defense Overseas schools, Kansas, Massachusetts, Montana, New Hampshire, North Dakota, South Dakota, and Vermont all had higher average scores than the remaining jurisdictions except Minnesota.
- Among the 42 jurisdictions that participated in both the 2000 and 2003 eighth-grade assessments, 18 showed an increase in the percentage of students performing at or above *Proficient*. The percentage of eighth-graders at or above *Proficient* was higher in 2003 than in 1990 for all 38 jurisdictions that participated in both years.

Mathematics Results for Student Subgroups in the Nation and in the States and Other Jurisdictions

In addition to overall results, NAEP reports on the performance of various subgroups of students. In interpreting these data, readers are reminded that the relationship between contextual variables and student performance is not necessarily causal. There are many factors that play a role in student achievement in a particular subject area.

National Results

Gender

- At both grades 4 and 8, the average scores for both male students and female students were higher in 2003 than in any of the previous assessment years.
- In 2003, male students outperformed female students by 3 points on average at grade 4 and by 2 points on average at grade 8. The male-female gap in 2003 was not measurably different from the gap in any of the previous assessment years since 1990 for either grade.
- At both grades 4 and 8, the percentages of male students and female students performing at or above *Proficient* were higher in 2003 than in any previous assessment year.

Race/Ethnicity

Based on information obtained from school records, students who took the NAEP mathematics assessment were identified as belonging to one of five mutually exclusive racial/ethnic subgroups: White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, or Other.

- At both grades 4 and 8, Asian/Pacific Islander students scored higher on average than White students in 2003. Both White students and Asian/Pacific Islander students had higher average scores than Black, Hispanic, and American Indian/Alaska Native students at both grades. Hispanic students and American Indian/Alaska Native students also scored higher on average than Black students at both grades.
- At grade 4, White, Black, and Hispanic students all had higher average scores in 2003 than in any of the previous assessment years. American Indian/Alaska Native fourth-graders had a higher average score in 2003 than in 2000. The average score for Asian/Pacific Islander fourth-graders was higher in 2003 than in 1990.
- At grade 8, White, Black, and Hispanic students all showed increases in average scores between 2000 and 2003. The average score for Asian/Pacific Islander eighth-graders was higher in 2003 than in 1990.

- At grade 4, the score gap between White students and Black students decreased between 2000 and 2003, and was smaller in 2003 than in 1990. The gap between White fourth-graders and Hispanic fourth-graders also narrowed between 2000 and 2003, but there was no measurable difference between the gap in 2003 and the gap in 1990.
- At grade 8, the score gap between White students and Black students was narrower in 2003 than in 2000, but the gap in 2003 was not measurably different from that in 1990.
- At both grades 4 and 8, the percentage of students performing at or above the *Proficient* level was higher in 2003 than in any of the previous assessment years for White, Black, and Hispanic students. The percentage of Asian/Pacific Islander students performing at or above *Proficient* was higher in 2003 than in 1990.

Eligibility for Free/Reduced-Price School Lunch

NAEP collects data on students' eligibility for free/reduced-price lunch as an indicator of family economic status. Eligibility for free/reduced-price lunch is determined by students' family income in relation to the federally established poverty level. The mathematics results since 1996 are reported for students classified by their eligibility.

- In 2003, the average mathematics scores for fourth- and eighth-graders who were eligible for free/reduced-price lunch were lower than that for students who were not eligible.
- For students who were eligible and those who were not eligible, the average mathematics scores for fourth-grade and eighth-grade students increased between 2000 and 2003 and were higher in 2003 than in 1996.
- At both grades 4 and 8, the percentage of students at or above *Proficient* was higher in 2003 than in 2000 and 1996 for both students who were eligible and those who were not eligible.

Parents' Level of Education

Eighth-grade students who participated in the NAEP mathematics assessment were asked to indicate the highest level of education completed by each parent. Information about parental education was not collected at grade 4. Results are reported based on the highest level of education reported for either parent.

- Overall, in 2003, there was a positive relationship between student-reported parental education and student achievement: the higher the parental education level, the higher the average mathematics score.
- Average scores for eighth-grade students increased from 2000 to 2003 and were higher in 2003 than in 1990 for each level of parental education reported.
- The percentage of eighth-graders performing at or above *Proficient* was higher in 2003 than in 1990 regardless of the level of parental education students reported.

Type of School

The schools that participate in the NAEP assessment are classified as either public or nonpublic. A further distinction is then made between nonpublic schools that are Catholic schools and those that are some other type of nonpublic school.

- In 2003, fourth- and eighth-grade students in nonpublic schools had higher average scores than students in public schools. Eighth-grade students in Catholic schools had lower average scores than eighth-graders in other nonpublic schools.
- At both grades 4 and 8, the average mathematics scores for students in public and nonpublic schools (including Catholic and other nonpublic schools) increased from 2000 to 2003 and were higher in 2003 than in 1990.
- The percentages of fourth- and eighth-graders performing at or above *Proficient* were higher in 2003 than in 1990 for students in public schools, Catholic schools, and other nonpublic schools.

Type of Location

The schools from which NAEP draws its samples of students are classified according to their type of location (central city, rural/small town, or urban fringe/large town). The methods used to identify the type of school location in 2000 and 2003 were different from those used for prior assessment years; therefore, only the data from the 2000 and 2003 assessments are reported.

- In 2003, fourth- and eighth-grade students in schools located in urban fringe/large town and rural/small town locations had higher average mathematics scores than those in central city locations, and students in urban fringe/large town locations scored higher on average than students in rural/small town locations.
- The average mathematics scores in all three location types were higher in 2003 than in 2000 for both grades 4 and 8.
- The percentage of students at or above *Proficient* increased between 2000 and 2003 in all three types of locations at grade 4.

State and Other Jurisdiction Results

Gender

- In 2003, male fourth-graders scored higher on average than female fourth-graders in 24 jurisdictions. At grade 8, the average score for male students was higher than for female students in Massachusetts, South Carolina, and Department of Defense Overseas schools.
- The average scores increased between 1992 and 2003 for both male and female fourth-graders in all 42 of the jurisdictions that participated in both assessments. For the 38 jurisdictions that participated in both the 1990 and 2003 eighth-grade assessments, 36 showed increases for both male and female students and Montana and North Dakota showed increases only for female students.

Race/Ethnicity

- At grade 4, average scores were higher in 2003 than in 1992 for White students in 42 jurisdictions, for Black students in 35 jurisdictions, for Hispanic students in 20 jurisdictions, for Asian/Pacific Islander students in 11 jurisdictions, and for American Indian/Alaska Native students in 3 jurisdictions.
- At grade 8, average scores were higher in 2003 than in 1990 for White students in 37 jurisdictions, for Black students in 25 jurisdictions, for Hispanic students in 12 jurisdictions, for Asian/Pacific Islander students in 7 jurisdictions, and for American Indian/Alaska Native students in 5 jurisdictions.

Eligibility for Free/Reduced-Price School Lunch

- In 2003, students who were eligible for free/reduced-price lunch scored lower on average than students who were not eligible in all 52 jurisdictions for which data are available at grade 4 and in 51 of the 52 jurisdictions for which data are available at grade 8.
- The average fourth-grade mathematics score increased between 1996 and 2003 both for students who were eligible and students who were not eligible for free/reduced-price lunch in 44 jurisdictions and for students who were not eligible in North Dakota. The average eighth-grade mathematics scores increased between 1996 and 2003 for both students who were eligible and students who were not eligible in 22 jurisdictions, for eligible students in Montana, and for students who were not eligible in 10 jurisdictions.

Urban District Results

The 2003 Trial Urban District Assessment (TUDA) included nine urban public-school districts (Atlanta City School District, Boston Public School District, Charlotte-Mecklenburg Schools, City of Chicago School District 299, Cleveland Municipal School District, Houston Independent School District, Los Angeles Unified School District, New York City Public Schools, and San Diego City Unified School District) plus the District of Columbia. Results for the urban districts are compared with results for public schools in the nation and public schools in large central cities.

Overall Mathematics Results for the Urban Districts

At grade 4

- Fourth-graders in all the participating districts except Charlotte scored lower on average than fourth-graders in the nation. Fourth-graders in Charlotte had a higher average score than public school students in the nation, large central cities, and the other participating districts.
- With the exception of Charlotte, fourth-grade scores at the 25th, 50th, 75th, and 90th percentiles were lower in each of the districts than in the nation. Scores at the 10th, 25th, 50th, 75th, and 90th percentiles were higher in Charlotte than in the nation and in large central cities.
- The percentage of fourth-graders in Charlotte performing at or above *Proficient* was higher than the corresponding percentages in both large central cities and the nation.

At grade 8

- Eighth-graders in all the participating districts except Charlotte scored lower on average than eighth-graders in the nation. Eighth-graders in Charlotte had a higher average score than public school students in the nation, large central cities, and the other participating districts.
- Scores at the 25th, 50th, 75th, and 90th percentiles in all the districts except Charlotte were lower than in the nation. In Charlotte, eighth-grade scores at the 10th, 25th, 50th, 75th, and 90th percentiles were higher than the scores in large central cities, and the scores at the 75th and 90th percentiles were higher than the corresponding national scores.
- The percentage of eighth-graders in Charlotte at or above *Proficient* was higher than the corresponding percentages in both large central cities and in the nation.

Results for Student Subgroups in Urban Districts

Gender

- At grade 4, the average scores for both male and female students in Charlotte were higher than those for their counterparts in the nation and in large central cities. Male and female fourth-graders in Atlanta, Boston, Chicago, Cleveland, the District of Columbia, and Los Angeles had lower average scores than their counterparts in large central cities and in the nation.
- At grade 8, the average scores for both male and female students in Charlotte were higher than the corresponding average scores for male and female students in large central cities. Both male and female eighth-graders in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles had lower average scores than their counterparts in large central cities and in the nation.

Race/Ethnicity

- At grade 4, the average scores for White students in Charlotte, the District of Columbia, and Houston; Black students in Boston, Charlotte, Houston, and New York City; and Hispanic students in Charlotte and Houston were higher than the corresponding scores in large central cities. The average scores for fourth-grade White students in Boston, Chicago, and Cleveland; Black students in Chicago and the District of Columbia; and Hispanic students in Boston, the District of Columbia, Los Angeles, and San Diego were lower than the corresponding scores in large central cities.
- At grade 8, the average scores for White students in Atlanta, Charlotte, and Houston; Black students in Charlotte, Houston, and New York City; and Hispanic students in Houston were higher than the corresponding scores in large central cities. The average scores for eighth-grade White students in Cleveland; Black students in Atlanta, the District of Columbia, and Los Angeles; and Hispanic students in the District of Columbia, Los Angeles, and San Diego were lower than the corresponding scores in large central cities.

Eligibility for Free/Reduced-Price Lunch

- At grade 4, the average scores for students eligible for free/reduced-price lunch in Charlotte, Houston, and New York City were higher than the average score in large central cities. The average scores for eligible students in Atlanta, Chicago, the District of Columbia, and Los Angeles were lower than the average score for eligible students in large central cities.
- At grade 8, the average scores for students eligible for free/reduced-price lunch in Boston, Houston, and New York City were higher than the average score in large central cities. The average scores for eligible students in Atlanta, the District of Columbia, and Los Angeles were lower than the average score in large central cities.

Parents' Level of Education

- In 2003, the average score for eighth-graders who indicated that at least one parent graduated from college was lower in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles than the average score for students in the same parental education category in public schools in large central cities and in the nation. The average score for eighth-graders who reported at least one parent graduated from college was higher in Charlotte and San Diego than for students in large central cities.

1 Introduction

Mathematics provides the basic processes for quantifying information. Using quantities is essential everywhere in our society, in every aspect of our daily lives—at home and in school, for commerce, travel, communications, entertainment, and medicine. Even if mathematics were not important as a key to understanding the structure of our world and universe, it would still be one of the key competencies for personal, civic, and economic engagement. Students need to understand and be able to apply mathematical skills and concepts in order to function effectively in daily activities such as understanding financial information and evaluating product pricing.

Great importance has long been placed on ensuring that students acquire mathematical skills and concepts and these skills have increasingly come to be expected of all students. This report presents major results from the National Assessment of Educational Progress (NAEP) 2003 mathematics assessment of the nation's fourth- and eighth-grade students. In addition, the report provides results for fourth- and eighth-grade students in 53 states and other jurisdictions and for the nine urban school districts that participated in the Trial Urban District Assessment. This report is intended to inform educators, policymakers, parents, and the general public about students' achievement in mathematics.

Overview of the 2003 National Assessment of Educational Progress in Mathematics

For more than 30 years, NAEP has regularly collected, analyzed, and reported valid and reliable information about what students know and can do in a variety of subject areas. As authorized by the U.S. Congress, NAEP assesses representative national samples of fourth-, eighth-, and twelfth-grade students. Since 1990, NAEP has also assessed representative samples of fourth- and eighth-grade students in states and other jurisdictions that participate in the NAEP state-by-state assessments. NAEP is administered and overseen by the National Center for Education Statistics (NCES), within the U.S. Department of Education's Institute of Education Sciences.

The content of all NAEP assessments is determined by subject-area frameworks that are developed by the National Assessment Governing Board (NAGB) in a comprehensive process involving a broad spectrum of interested parties, including teachers, curriculum specialists, subject-matter specialists, school administrators, parents, and members of the general public. The framework for the NAEP 2003 mathematics assessment, which was updated in 1996, is essentially the same framework that has guided development of the NAEP mathematics assessments since 1990.

This report describes the results of the NAEP 2003 mathematics assessment at grades 4 and 8. National results for 2003 are compared to those from 1990, 1992, 1996, and 2000. Using the same test as that used nationally, state-level assessments were conducted at grade 4 in 1992, 1996, 2000, and 2003. At grade 8, state-level assessments were conducted in 1990, 1992, 1996, 2000, and 2003. Results for the nine districts that participated in the Trial Urban District Assessment (TUDA) are reported for 2003 only. Comparisons across assessment years are possible because the assessments were developed under the same basic framework and share a common set of mathematics questions.

Prior to 1996, administration procedures for the NAEP mathematics assessments did not permit the use of accommodations (e.g., extra time; individual rather than group administration) for students with special needs who could not participate without them. For the 1996 national assessment, however, administrative procedures were introduced that allowed expanding participation in NAEP through the use of accommodations by students with disabilities (SD) and limited-English-proficient (LEP) students (see appendix A). A split-sample design was used at the national level in 1996 and 2000 and at the state level in 2000, so that both administration procedures could be used during the same assessment, but with different samples of students. This made it possible to report trends in students' mathematics achievement across all the assessment years and, at the same time, examine the effects of including students assessed with accommodations on overall assessment results. Based on an examination of how permitting accommodations affected overall population results, it was decided that, beginning with the 2003 assessment, NAEP would use only one set of procedures—permitting the use of accommodations.

During the period in which accommodations were not permitted, students with special needs could only be included in the assessment if it was determined by school staff that they could be assessed meaningfully without accommodations. The change in administration procedures

makes it possible for more students to be included in the assessments; however, it also represents an important altering of procedures from previous assessments. (See the section on Students with Disabilities and/or Limited-English-Proficient Students in appendix A for a more detailed discussion.) The reader is encouraged to consider the difference in accommodation procedures when interpreting comparisons between the two sets of results.

The charts and tables throughout this report distinguish between results from assessment years in which accommodations were not permitted and results from assessment years in which accommodations were permitted. In the tables and charts that display results across assessment years, all previous assessment results that were found to be significantly different (at the .05 level based on t-tests adjusted using the False Discovery Rate (FDR) multiple comparison procedures) from 2003 results are marked with an asterisk (*). Two sets of results are presented for assessment years in which both administration procedures were used (accommodations not permitted and accommodations permitted). Both sets of results may also be notated, if found to be significantly different from 2003. The text that accompanies these tables and charts indicates which previous assessment results were significantly different from 2003. Comparisons between the 2003 results, when accommodations were permitted, and the 1990 and 1992 results, when they were not permitted, are discussed in the text. However, for previous assessment years with both accommodations-not-permitted results and accommodations-permitted results, the text describes comparisons only between the accommodations-permitted results and 2003.

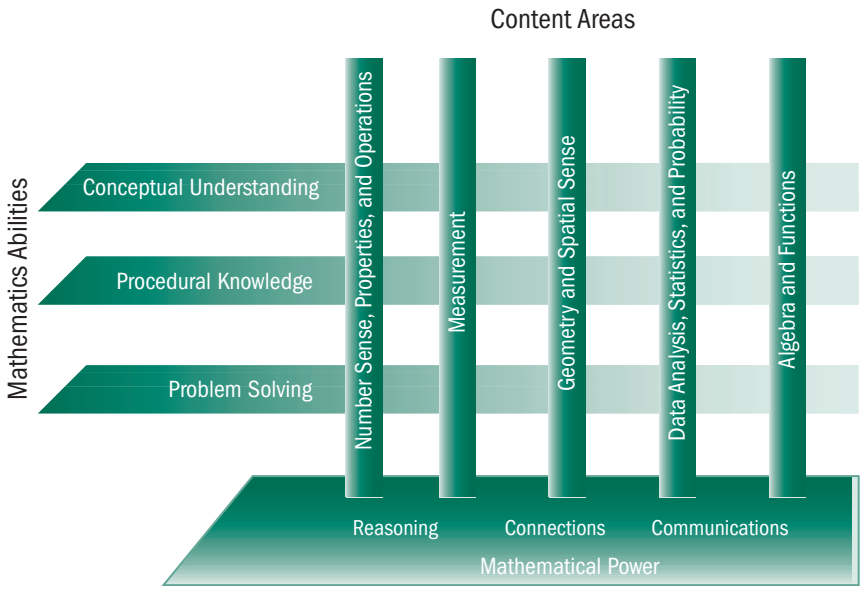
Framework for the 2003 Mathematics Assessment Instrument

The NAEP Mathematics Framework is the blueprint that has specified the content and guided the development of each NAEP mathematics assessment since 1990. The framework resulted from a national process involving many organizations and individuals concerned with mathematics education. This cooperative effort was directed by the National Assessment Governing Board (NAGB) and managed by the Council of Chief State School Officers (CCSSO). In 1996, the framework was refined so that the 1996, 2000, and 2003 assessments could better reflect recent curricular emphases in mathematics, while maintaining the connection to the 1990 and 1992 assessments in order to measure trends in student performance.[1]

The framework calls for questions based on five mathematics content areas: 1) number sense, properties, and operations; 2) measurement; 3) geometry and spatial sense; 4) data analysis, statistics, and probability; and 5) algebra and functions. Questions were categorized according to two additional domains: mathematical abilities and mathematical power. The first domain, mathematical abilities, describes three types of knowledge or processes required for a student to successfully respond to a question: conceptual understanding; procedural knowledge; and problem solving, the ability to synthesize several processes when confronting a mathematical situation. The second domain, mathematical power, reflects the three processes stressed as major goals of the mathematics curriculum: the ability to reason, to communicate, and to make connections between concepts and skills either across the mathematics content areas, or from mathematics to other curricular areas. Figure 1.1 summarizes the structure of the 2003 assessment.

[1] National Assessment Governing Board. (2002). *Mathematics Framework for the 2003 National Assessment of Educational Progress*. Washington, DC: Author.

Figure 1.1 Structure of the NAEP 2003 mathematics assessment



SOURCE: National Assessment Governing Board. (2002). *Mathematics Framework for the 2003 National Assessment of Educational Progress.* Washington, DC: Author.

A breakdown of the percentage of questions in each content area prescribed by the framework for the 1990, 1992, 1996, 2000, and 2003 assessments is provided in appendix A (see table A.1). The framework also incorporates the use of calculators (four-function at grade 4 and scientific at grade 8), rulers (at grades 4 and 8), protractors (at grade 8), and manipulatives such as spinners and geometric shapes (at grades 4 and 8). The use of these ancillary materials and the use of calculators were incorporated into some parts of the assessment, but not all. Calculator use was permitted on approximately one-third of the test questions.

The NAEP 2003 Mathematics Assessment Instrument

The NAEP mathematics assessment is the only federally authorized, ongoing, nationwide assessment of student mathematics achievement. As such, it is necessary for the assessment to reflect the framework and expert perspectives on the measurement of mathematics performance. During the development process, the assessment undergoes stringent review by teachers and other educators, as well as by state officials and measurement specialists. All components of the assessment are evaluated for curricular relevance, developmental appropriateness, and fairness concerns.

The assessment comprised 50 booklets at each grade. Each booklet contained two separately timed 25-minute sections of mathematics questions. The total numbers of test questions used in the 2003 mathematics assessment at grades 4 and 8 were 181 and 197, respectively. Typically, a section, or block, contained approximately 16–20 questions, but there was considerable variation depending on the balance between multiple-choice and constructed-response questions.

The mathematics blocks include both multiple-choice and constructed-response questions designed to assess the framework objectives. Approximately 50 percent of student assessment time is devoted to constructed-response questions. Two types of constructed-response questions are used: 1) short constructed-response questions that require students to provide answers to computation problems or to describe solutions in one or two sentences, and 2) extended constructed-response questions that require students to give more detailed responses or explanations. Additional information about the design of the 2003 mathematics assessment is presented in appendix A.

In order to ensure reliable and valid scoring of constructed-response questions, a unique scoring guide describing the specific criteria for assigning a score level to each student's response is developed for each question. Expert scorers go through extensive training to understand how to apply these scoring criteria fairly and consistently. During the scoring process, scorers are consistently monitored to ensure that scoring standards are being applied appropriately and to ensure a high degree of scorer agreement (i.e., interrater reliability). In addition, for those constructed-response questions that were used in previous assessments, monitoring of scorers includes checking to make sure that scoring standards remain consistent from year to year.

In order to minimize the burden on any individual student, NAEP uses a procedure referred to as matrix sampling in which an individual student is administered only a small portion of the entire assessment at any grade. For example, at grades 4 and 8, each student is given only one of the 50 different grade-specific test booklets, each containing only two 25-minute blocks. Because each block is administered to a representative sample at each grade, the results can then be combined to produce average group and subgroup results based on the entire assessment. In addition to completing the two 25-minute blocks in each student's test booklet, students are asked to complete two sections of background questions that ask about their home or school experiences related to mathematics achievement. The time required for each student to participate in the NAEP mathematics assessment is approximately one hour.

Description of School and Student Samples

The NAEP 2003 mathematics assessment was administered to fourth- and eighth-graders at the national and state levels. At the national level, results are reported for both public and nonpublic school samples. At the state or jurisdiction level, results are reported only for public school students. All 50 states and jurisdictions that participated in the 2003 assessment met the minimum guidelines for reporting their results.

In order to obtain a representative sample of students for reporting national and state or jurisdiction results, approximately 190,000 fourth-graders from 7,500 schools and 153,000 eighth-graders from 6,100 schools were sampled and assessed in 2003. Each selected school that participated in the assessment and each student assessed represents a portion of the population of interest. The national samples for mathematics were larger in 2003 than in previous assessment years because they were based on the combined sample of students assessed in each participating state, plus an additional sample from nonpublic schools. In the 1990–2000 assessments, the national samples were drawn separately from the state samples and were smaller than the samples resulting from aggregating the state samples.

For information on sample sizes and participation rates for the nation and by state or jurisdiction, see tables A.6–A.9 in appendix A.

Results from the 2003 Trial Urban District Assessment (TUDA) are reported for the participating districts for public-school students at grades 4 and 8. The TUDA employed a larger-than-usual sampling rate within the districts, making reliable district-level data possible. The samples were also large enough to provide reliable estimates on subgroups within the districts, such as female students or Hispanic students.

Reporting the Assessment Results

Results from the NAEP mathematics assessment are presented in two ways: as scale scores and as percentages of students attaining the various achievement levels. The scale scores, indicating how much students *know and can do* in mathematics, are presented as average scale scores and as scale scores at selected percentiles. The achievement-level results indicate the degree to which student performance meets the standards set for what they *should know and be able to do*. Results are reported only for groups or subgroups of students; individual student performance cannot be reported based on the NAEP assessment.

Average scale score results are based on the NAEP mathematics scale, which ranges from 0 to 500. To calculate students' average scores on the NAEP mathematics assessment, the first step is to determine the percentage of students responding correctly to each multiple-choice question and the percentage of students responding at each score level for both the short and extended constructed-response questions. The determination of average scale scores entails summarizing the results on separate subscales for each of the five content areas in mathematics and then combining the separate scales to form a single composite scale. (See appendix A for more information on scaling procedures.) Results by separate subscales are accessible through the NAEP Data Tool on the NAEP web site (http://nces.ed.gov/nationsreportcard/naepdata/).

Achievement-level results are presented in terms of mathematics achievement levels as authorized by the NAEP legislation and adopted by NAGB. For each grade assessed, NAGB has adopted three achievement levels: *Basic, Proficient*, and *Advanced*. For reporting purposes, achievement-level cut scores are placed on the mathematics scale, resulting in four ranges: below *Basic, Basic, Proficient*, and *Advanced*. The achievement-level results are then reported as percentages of students scoring within each range, as well as the percentage of students at or above *Basic* and at or above *Proficient*.

The Setting of Achievement Levels

The 1988 NAEP legislation that created the National Assessment Governing Board directed that the Board establish achievement-level goals for all the subjects assessed by NAEP.[2] The NAEP 2001 reauthorization reaffirmed many of the Board's statutory responsibilities, including "developing appropriate student achievement levels for each grade or age in each subject area to be tested. . . ."[3] In order to follow this directive and to achieve the mandate of the original NAEP legislation, NAGB undertook the development of student performance standards (called "achievement levels"). Since 1990,

[2] National Assessment of Educational Progress Improvement Act, P. L. 100–297, 20 U.S.C. § 1221 *et seq.* (1988).

[3] No Child Left Behind Act of 2001, P. L. 107-110, 115 Stat. 1425 (2002).

the Board has adopted achievement levels in mathematics, reading, U.S. history, world geography, science, writing, and civics.

The Board defined three levels for each grade: *Basic, Proficient*, and *Advanced*. The *Basic* level denotes partial mastery of the knowledge and skills that are fundamental for proficient work at a given grade. The *Proficient* level represents solid academic performance. Students reaching this level demonstrate competency over challenging subject matter. The *Advanced* level presumes mastery of both the *Basic* and *Proficient* levels and represents superior performance. Figure 1.2 presents the policy definitions of the achievement levels that apply across grades and subject areas. The policy definitions guided the development of the achievement levels established in all subject areas. Adopting three levels of achievement for each grade signals the importance of looking at more than one standard of performance. In the Board's view, the overall achievement goal for students is performance at the *Proficient* level or higher as measured by NAEP. The *Basic* level is not the desired goal, but represents partial mastery that is a step toward *Proficient*.

Figure 1.2 Policy definitions of the three NAEP achievement levels

Achievement Levels	
Basic	This level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
Proficient	This level 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 analytical skills appropriate to the subject matter.
Advanced	This level signifies superior performance.

SOURCE: National Assessment Governing Board. (2002). *Mathematics Framework for the 2003 National Assessment of Educational Progress.* Washington, DC: Author.

The achievement levels in this report were adopted by the Board based on a standard-setting process designed and conducted under a contract with ACT. To develop these levels, ACT convened a cross-section of educators and interested citizens from across the nation and asked them to judge what students should know and be able to do relative to a body of content reflected in the mathematics framework. This process of setting achievement levels was reviewed by an array of individuals including policymakers, representatives of professional organizations, teachers, parents, and other members of the general public. Prior to adopting these levels of student achievement, NAGB engaged a large number of people to comment on the recommended levels and to review the results.

The results of the achievement-level-setting process, after NAGB's approval, became a set of achievement-level descriptions and a set of achievement-level cut scores on the 0–500 NAEP mathematics scale. The cut scores are the scores that define the boundaries between below *Basic, Basic, Proficient,* and *Advanced* performance levels at each grade.

Mathematics Achievement-Level Descriptions for Each Grade

Specific definitions of the *Basic, Proficient,* and *Advanced* mathematics achievement levels for grades 4 and 8 are presented in figures 1.3 and 1.4. As noted previously, 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 *Proficient* levels. For each achievement level listed in figures 1.3 and 1.4, the scale score that corresponds to the lowest cut score within that level on the NAEP mathematics scale is shown in parentheses. For example, in figure 1.3, the scale score of 249 corresponds to the lowest score in the range defining the grade 4 *Proficient* level of achievement in mathematics.

Figure 1.3 Descriptions of NAEP mathematics achievement levels, grade 4

Grade 4 Achievement Levels	
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 strands.** 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 strands. Students at this level should be able to use — though 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 strands.** 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 strands; 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 strands.** Fourth graders performing at the *Advanced* level should be able to solve complex nonroutine real-world problems in all NAEP content strands. They should display mastery in the use of four-function calculators, rulers, and geometric shapes. These students are expected to draw logical conclusions and justify answers and solution processes by explaining why, as well as how, they were achieved. They should go beyond the obvious in their interpretations and be able to communicate their thoughts clearly and concisely.

NOTE: The scores in parentheses indicate the cut point on the scale at which the achievement-level range begins.
SOURCE: National Assessment Governing Board. (2002). *Mathematics Framework for the 2003 National Assessment of Educational Progress.* Washington, DC: Author.

Figure 1.4 Descriptions of NAEP mathematics achievement levels, grade 8

Grade 8 Achievement Levels	
Basic **(262)**	**Eighth-grade students performing at the *Basic* level should exhibit evidence of conceptual and procedural understanding in the five NAEP content strands. 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 strands 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 strands.** 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 strands.** Eighth graders performing at the *Advanced* level should be able to probe examples and counterexamples in order to shape generalizations from which they can develop models. Eighth graders performing at the *Advanced* level should use number sense and geometric awareness to consider the reasonableness of an answer. They are expected to use abstract thinking to create unique problem-solving techniques and explain the reasoning processes underlying their conclusions.

NOTE: The scores in parentheses indicate the cut point on the scale at which the achievement-level range begins.
SOURCE: National Assessment Governing Board. (2002). *Mathematics Framework for the 2003 National Assessment of Educational Progress.* Washington, DC: Author.

Trial Status of Achievement Levels

The law requires that the achievement levels are to be used on a trial basis until the Commissioner of Education Statistics determines "that such levels are reasonable, valid, and informative to the public."[4] Until that determination is made, the law requires the Commissioner and the Board to state clearly the trial status of the achievement levels in all NAEP reports. In 1993, the first of several congressionally mandated evaluations of the achievement-level-setting process concluded that the procedures used to set the achievement levels were flawed and that the percentage of students at or above any particular achievement-level cut point may be underestimated.[5] Others have critiqued these evaluations, asserting that the weight of the empirical evidence does not support such conclusions.[6]

In response to the evaluations and critiques, NAGB sponsored an additional study of the 1992 reading achievement levels before deciding to use them for reporting NAEP 1994 results.[7] When reviewing the findings of this study, the National Academy of Education (NAE) panel expressed concern about what it saw as a "confirmatory bias" in the study and about the inability of this study to "address the panel's perception that the levels had been set too high."[8] In 1997, the NAE panel summarized its concerns with interpreting NAEP results based on the achievement levels as follows:

> First, the potential instability of the levels may interfere with the accurate portrayal of trends. Second, the perception that few American students are attaining the higher standards we have set for them may deflect attention to the wrong aspects of education reform. The public has indicated its interest in benchmarking against international standards, yet it is noteworthy that when American students performed very well on a 1991 international reading assessment, these results were discounted because they were contradicted by poor performance against the possibly flawed NAEP reading achievement levels in the following year.[9]

NCES and NAGB have sought and continue to seek new and better ways to set performance standards for NAEP.[10]

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4 No Child Left Behind Act of 2001, P. L. 107-110, 115 Stat. 1425 (2002).

5 United States General Accounting Office. (1993). *Education Achievement Standards: NAGB's Approach Yields Misleading Interpretations.* U.S. General Accounting Office Report to Congressional Requestors. Washington, DC: Author.

National Academy of Education. (1993). *Setting Performance Standards for Achievement: A Report of the National Academy of Education Panel on the Evaluations of the NAEP Trial State Assessment: An Evaluation of the 1992 Achievement Levels.* Stanford, CA: Author.

6 Cizek, G. (1993). *Reactions to National Academy of Education Report.* Washington, DC: National Assessment Governing Board.

Kane, M. (1993). *Comments on the NAE Evaluation of the NAGB Achievement Levels.* Washington, DC: National Assessment Governing Board.

7 American College Testing. (1995). *NAEP Reading Revisited: An Evaluation of the 1992 Achievement Level Descriptions.* Washington, DC: National Assessment Governing Board.

8 National Academy of Education. (1996). Reading Achievement Levels. In *Quality and Utility: The 1994 Trial State Assessment in Reading. The Fourth Report of the National Academy of Education Panel on the Evaluation of the NAEP Trial State Assessment.* Stanford, CA: Author.

9 National Academy of Education. (1997). *Assessment in Transition: Monitoring the Nation's Educational Progress,* p. 99. Mountain View, CA: Author.

10 Reckase, M. D. (2000). *The Evolution of the NAEP Achievement Levels Setting Process: A Summary of the Research and Development Efforts Conducted by ACT.* Iowa City, IA: ACT, Inc.

For example, NCES and NAGB jointly sponsored a national conference that explored many issues related to standard setting in large-scale assessments.[11] Although new directions were presented and discussed, a proven alternative to the current process has not yet been identified. NCES and NAGB continue to call on the research community to assist in finding ways to improve standard setting for reporting NAEP results.

The most recent congressionally mandated evaluation conducted by the National Academy of Sciences (NAS) relied on prior studies of achievement levels, rather than carrying out new evaluations, on the grounds that the process has not changed substantially since the initial problems were identified. Instead, the NAS panel studied the development of the 1996 science achievement levels. The NAS panel basically concurred with earlier congressionally mandated studies. The panel concluded that "NAEP's current achievement-level-setting procedures remain fundamentally flawed. The judgment tasks are difficult and confusing; raters' judgments of different item types are internally inconsistent; appropriate validity evidence for the cut scores is lacking; and the process has produced unreasonable results."[12]

The NAS panel accepted the continuing use of achievement levels in reporting NAEP results on a trial basis, until such time as better procedures can be developed. Specifically, the NAS panel concluded that ". . . tracking changes in the percentages of students performing at or above those cut scores (or in fact, any selected cut scores) can be of use in describing changes in student performance over time."[13]

NAGB urges all who are concerned about student performance levels to recognize that the use of these achievement levels is a developing process and is subject to various interpretations. NAGB and NCES believe that the achievement levels are useful for reporting trends in the educational achievement of students.[14] In fact, achievement-level results have been used in reports by the President of the United States, the Secretary of Education, state governors, legislators, and members of Congress. Government leaders in the nation and in more than 40 states use these results in their annual reports. However, based on the congressionally mandated evaluations so far, NCES agrees with the NAS panel's recommendation that caution needs to be exercised in the use of the current achievement levels. NCES has concluded

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11 National Assessment Governing Board and National Center for Education Statistics. (1995). *Proceedings of the Joint Conference on Standard Setting for Large-Scale Assessments of the National Assessment Governing Board (NAGB) and the National Center for Education Statistics (NCES).* Washington, DC: U.S. Government Printing Office.

12 Pellegrino, J. W., Jones, L. R., and Mitchell, K. J. (Eds.). (1998). *Grading the Nation's Report Card: Evaluating NAEP and Transforming the Assessment of Educational Progress.* Committee on the Evaluation of National Assessments of Educational Progress, Board on Testing and Assessment, Commission on Behavioral and Social Sciences and Education, National Research Council. Washington, DC: National Academy Press.

13 Ibid., 176.

14 Forsyth, R. A. (2000). A Description of the Standard-Setting Procedures Used by Three Standardized Test Publishers. In *Student Performance Standards on the National Assessment of Educational Progress: Affirmations and Improvements.* Washington, DC: National Assessment Governing Board.

Nellhaus, J. M. (2000). States with NAEP-Like Performance Standards. In *Student Performance Standards on the National Assessment of Educational Progress: Affirmation and Improvement.* Washington, DC: National Assessment Governing Board.

that these achievement levels should continue to be used on a trial basis and be interpreted with caution.

Interpreting NAEP Results

The average scores and percentages presented in this report are estimates based on samples of students rather than on entire populations. Moreover, the collection of questions used at each grade level is but a sample of the many questions that could have been asked to assess the skills and abilities described in the NAEP mathematics framework. As such, the results are subject to a measure of uncertainty, reflected in the standard error of the estimates—a range of a few points above or below the score—which accounts for potential score or percentage fluctuation due to sampling and measurement error. The estimated standard errors for the estimated scale scores and percentages in this report are accessible through the NAEP Data Tool on the NAEP web site (http://nces.ed.gov/nationsreportcard/naepdata/). Examples of these estimated standard errors are also provided in appendix A, tables A.23 to A.27, of this report.

The differences between scale scores and between percentages discussed in the following chapters take into account the standard errors associated with the estimates. Comparisons are based on statistical tests that consider both the magnitude of the difference between the group average scores or percentages and the standard errors of those statistics. Estimates based on subgroups with smaller sample sizes are likely to have relatively large standard errors. As a consequence, some seemingly large differences may not be statistically significant. That is, it cannot be determined whether these differences are due to the particular makeup of the samples of students who were selected, or to true differences in the population of interest. When this is the case, the term "apparent difference" or "no measurable difference" is used in this report. Differences between scores or between percentages are discussed in this report only when they are significant from a statistical perspective.

Beginning with the reading sample in 2002, the NAEP national samples were obtained by aggregating the samples from each state, rather than obtaining an independently selected national sample. Consquently, the national sample size increased and smaller differences between years or between subgroups of students were found to be statistically significant than would have been detected in previous assessment years. In keeping with past practice, all statistically significant differences are indicated in this report. All differences reported are significant at the .05 level with appropriate adjustments for multiple comparisons. The term "significant" is not intended to imply a judgment about the absolute magnitude or the educational relevance of the differences. It is intended to identify statistically dependable differences in average scores or per-

centages to help inform dialogue among policymakers, educators, and the public.

While the score ranges at each grade in mathematics are identical, the scale was derived independently at each grade. Therefore, average scale scores across grades cannot be compared. For example, equal scale scores on the grade 4 and grade 8 scales do not imply equal levels of mathematics achievement.

Comparisons of performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in NAEP samples. Percentages of students excluded from NAEP may vary considerably across states or districts, as well as across years. Comparisons of achievement results should be interpreted with caution if the exclusion rates vary widely. The percentages of students who were identified and assessed or excluded based on their disability or limited-English-proficient status are presented in appendix A.

The results presented are meant to describe some aspects of the condition of education. They are best viewed as suggesting various ideas to be further examined in light of other data, including state and local data, and in the context of the large research literature elaborating on the many factors contributing to educational achievement.

However, some readers are tempted to make unwarranted causal inferences from simple cross tabulations. At the risk of sounding dogmatic, it is almost never the case that a simple cross tabulation of any variable with a measure of educational achievement is conclusive proof that differences in that variable are a cause of differential educational achievement. The old adage that "correlation is not causation" is a wise precaution to be kept in mind when viewing the results presented here. Experienced researchers routinely formulate multiple hypotheses to take these possibilities into account and readers of this volume are encouraged to do likewise.

Additional NAEP data are available in the NAEP data tool and in restricted-access research databases. Researchers and policy analysts are free to make use of the data (subject to various confidentiality restrictions) as they wish. However, as part of the Institute for Education Sciences, NCES has a responsibility to try to discourage misleading inferences from the data presented and to educate the public on the difficulty of making valid causal inferences in a field as complex as education.

Overview of the Remaining Report

This report describes the mathematics performance of fourth- and eighth-graders in the nation, participating states and other jurisdictions, large central city school districts, and selected urban school districts. Chapter 2 presents overall mathematics scale scores and achievement-level results across years for both the nation and participating states and other jurisdictions. Chapter 3 discusses national results for subgroups of students by gender, race/ethnicity, students' eligibility for free/reduced-price school lunch, parents' highest level of education (for grade 8 only), type of school (public and nonpublic), and school's type of location (central city, urban fringe/large town, rural/small town). State and jurisdiction results are reported by gender, race/ethnicity, and eligibility for free/reduced-price lunch. Overall and subgroup results for selected urban districts that were part of the TUDA are presented in chapter 4.

Chapter 5 presents sample assessment questions and student responses at each grade level, including samples of multiple-

choice and constructed-response questions. A table showing the percentage of students at each achievement level who answered the questions successfully accompanies each sample question. In addition, item maps for each grade level describe the skill or ability needed to answer particular mathematics questions and show the score points at which individual students had a high probability of successfully answering particular questions, thereby indicating the relative difficulty of each question.

The appendices of this report contain information to expand the results presented in chapters 2–5. Appendix A contains an overview of assessment development, sampling, administration, and analysis procedures. Appendix B presents the percentages of students in each of the subgroups reported for the nation, states and other jurisdictions, and other selected urban districts. Appendix C includes tables with additional state-level and district-level subgroup results. Finally, appendix D shows state-level and district-level contextual data from sources other than NAEP.

2 Average Mathematics Scale Score and Achievement-Level Results for the Nation and States

Overview

This chapter presents the NAEP 2003 mathematics results at grades 4 and 8 for public and nonpublic school students in the nation as a whole and by region of the country, and for public school students in participating states and other jurisdictions. The NAEP mathematics composite scale ranges from 0 to 500; the mathematics achievement levels are *Basic, Proficient,* and *Advanced*.

In addition to the results from the 2003 mathematics assessment, national results are presented from 1990, 1992, 1996, and 2000. Results for participating states and other jurisdictions are included for three previous years at grade 4 (1992, 1996, and 2000) and four previous years at grade 8 (1990, 1992, 1996, and 2000). The national sample at each grade in 2003 comprised the combined sample of students assessed in each participating state plus an additional private school sample.

Results presented in the figures and tables throughout this report distinguish between two different reporting samples. The most recent results, based on administration procedures in which testing accommodations were permitted for special-needs students (national results between 1996 and 2003 and state-level samples for 2000 and 2003), are denoted by solid lines or shading. Results from administrations where accommodations were not permitted (national

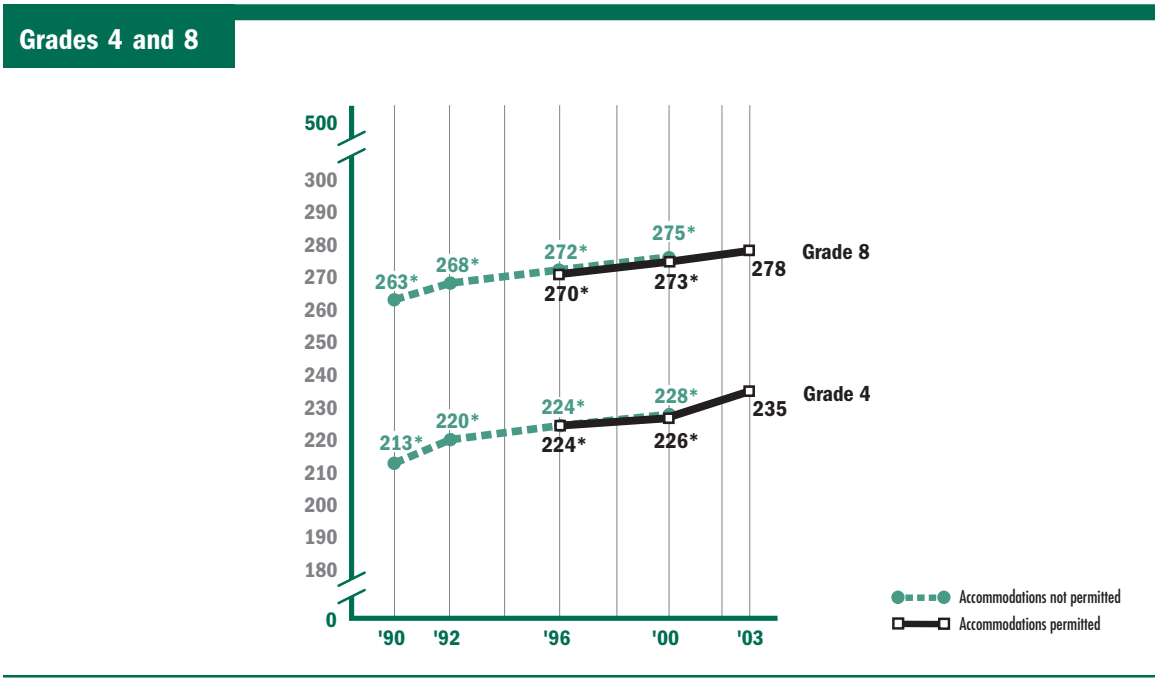
results between 1990 and 2000; state-level results from 1992 to 2000 at grade 4 and 1990 to 2000 at grade 8) are denoted by broken lines or unshaded areas. See chapter 1 for more information on the change in administration procedures.

Both types of administration procedures were used in 1996 and 2000 at the national level and only in 2000 at the state level. Therefore there are two different sets of results in those years. Comparisons with data from 2003 are based on administrations where accommodations were permitted. Comparisons between the two sets of results in the years when both procedures were used are discussed in detail in other NAEP reports.[1]

National Mathematics Scale Score Results

Figure 2.1 displays the average mathematics scores from 1990 to 2003 for fourth- and eighth-grade students. Average mathematics scores were higher in 2003 than in all the previous assessment years at both grades 4 and 8.

Figure 2.1 Average mathematics scale scores, grades 4 and 8: 1990–2003



* Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

[1] Braswell, J. S., Lutkus, A. D., Grigg, W. S., Santapau, S. L., Tay-Lim, B., and Johnson, M. (2001). *The Nation's Report Card: Mathematics 2000* (NCES 2001–517). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics.

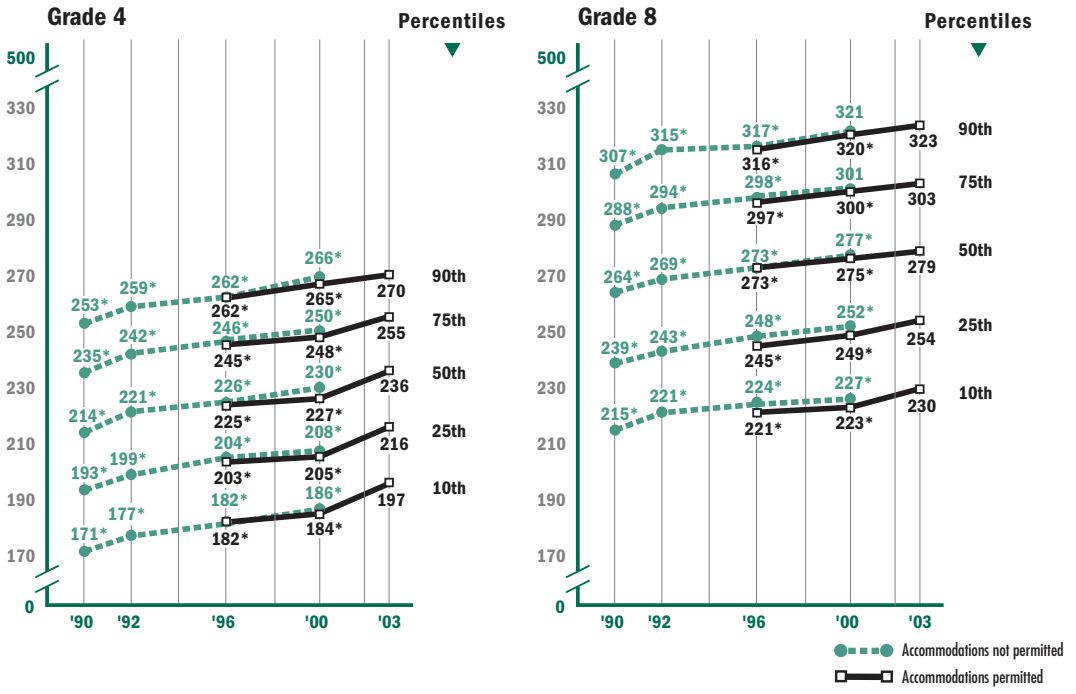
National Mathematics Scale Scores by Percentile

Another way to view students' performance is by looking at how scores have changed across the performance distribution. An examination of scores at different percentiles on the 0–500 mathematics scale at each grade indicates whether or not the changes seen in the overall national average score results are reflected in the performance of lower-, middle-, and higher-performing students. Figure 2.2 shows the average mathematics scale scores for students scoring at the 10th, 25th, 50th, 75th, and 90th percentiles at grades 4 and 8. The percentile indicates the percentage of students whose scores fell below a particular point on the NAEP mathematics scale. For example, the 75th percentile score at grade 4 was 255 in 2003, indicating that 75 percent of fourth-graders scored below 255.

At both grades 4 and 8, scores at the 10th, 25th, 50th, 75th, and 90th percentiles were higher in 2003 than in any of the previous assessment years. At grade 4, gains detected between 2000 and 2003 ranged from approximately 5 scale score points for students performing at the 90th percentile to 13 points for students at the 10th percentile. At grade 8, increases since 2000 ranged from approximately 3 scale score points at the 90th percentile to 7 points at the 10th percentile.

Figure 2.2 Mathematics scale score percentiles, grades 4 and 8: 1990–2003

Grades 4 and 8



* Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

National Mathematics Achievement-Level Results

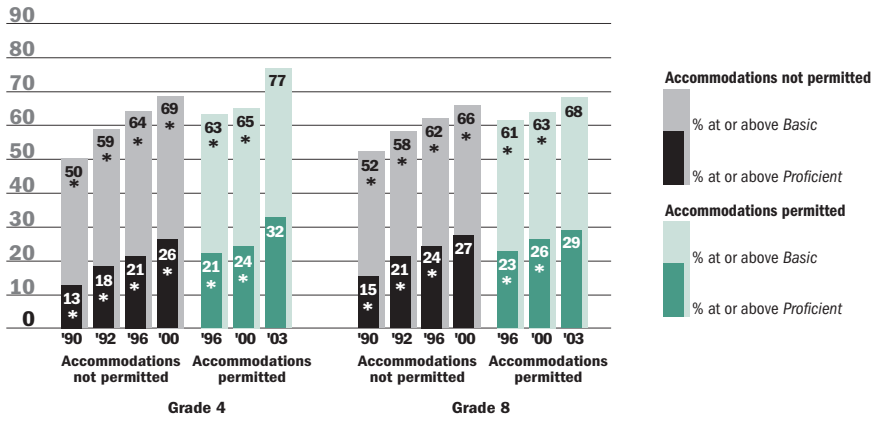
In addition to reporting average mathematics scale scores, NAEP reports mathematics performance by achievement levels. The mathematics achievement levels are *Basic, Proficient,* and *Advanced.* Discussion related to the setting of achievement levels is covered in chapter 1.

Figure 2.3 tracks the percentages of students performing at or above *Basic* and at or above *Proficient*—the level identified by the National Assessment Governing Board (NAGB) as the level at which all students should perform—across assessment years. Table 2.1 presents the achievement-level results in two ways for each grade: as the percentage of students performing within each achievement level and as the percentage of students at or above the *Basic* level and at or above the *Proficient* level. The percentages at or above specific achievement levels are cumulative. Included among the percentage of students performing at or above the *Basic* level are those who have achieved the *Proficient* and *Advanced* levels of performance. Included among students at or above the *Proficient* level are those who have attained the *Advanced* level of performance. Although significant differences in the percentages of students performing within achievement levels are indicated in the table, only the differences at or above *Basic*, at or above *Proficient*, and at *Advanced* are discussed in this section.

In 2003, 32 percent of fourth-graders and 29 percent of eighth-graders performed at or above the *Proficient* level. Table 2.1 shows that the percentages of fourth-grade students performing at or above *Basic,* at or above *Proficient,* and at *Advanced* increased from 2000 to 2003, as did the percentages of eighth-graders performing at or above *Basic* and at or above *Proficient.* Further, the percentages of fourth- and eighth-graders performing at or above *Basic*, at or above *Proficient*, and at *Advanced* were higher in 2003 than in 1990.

Figure 2.3 Percentages of students at or above *Basic* and *Proficient* in mathematics, grades 4 and 8: 1990–2003

Grades 4 and 8



* Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table 2.1 Percentages of students, by mathematics achievement level, grades 4 and 8: 1990–2003

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
Accommodations not permitted	1990	50 *	37 *	12 *	1 *	50 *	13 *
	1992	41 *	41 *	16 *	2 *	59 *	18 *
	1996	36 *	43	19 *	2 *	64 *	21 *
	2000	31 *	43 *	23 *	3 *	69 *	26 *
Accommodations permitted	1996	37 *	43 *	19 *	2 *	63 *	21 *
	2000	35 *	42 *	21 *	3 *	65 *	24 *
	2003	23	45	29	4	77	32
Grade 8							
Accommodations not permitted	1990	48 *	37 *	13 *	2 *	52 *	15 *
	1992	42 *	37 *	18 *	3 *	58 *	21 *
	1996	38 *	39	20 *	4 *	62 *	24 *
	2000	34 *	38	22	5	66 *	27
Accommodations permitted	1996	39 *	38	20 *	4 *	61 *	23 *
	2000	37 *	38 *	21 *	5	63 *	26 *
	2003	32	39	23	5	68	29

* Significantly different from 2003.

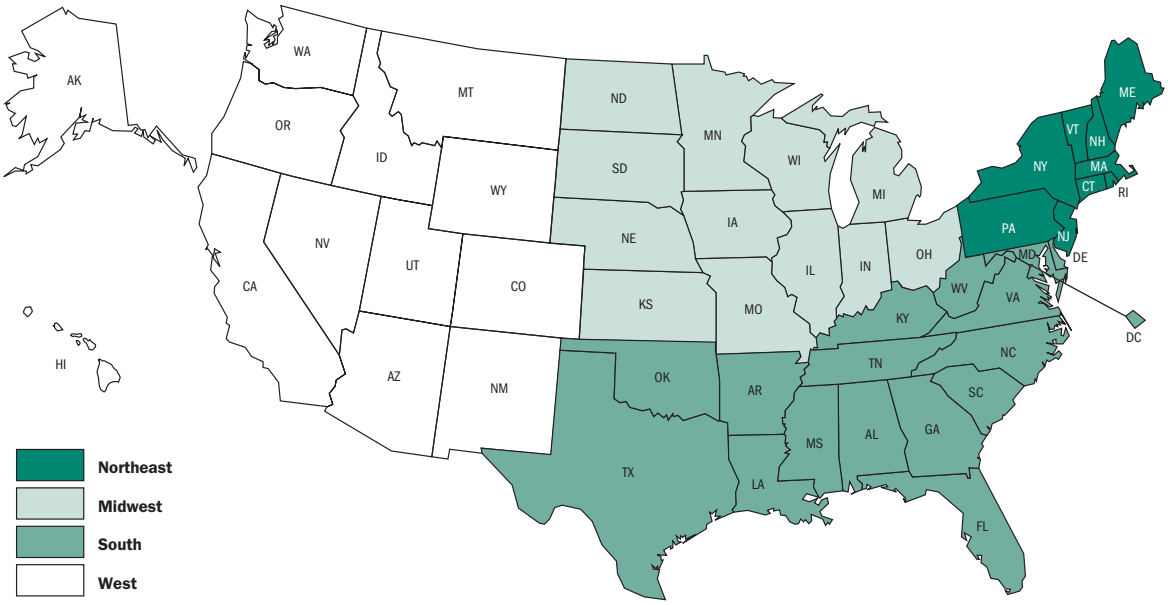
NOTE: Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Mathematics Results by Region of the Country

Prior to 2003, NAEP results were reported for four NAEP-defined regions of the nation: Northeast, Southeast, Central, and West. As of 2003, to align NAEP with other federal data collections, NAEP analysis and reports have used the U.S. Census Bureau's definition of "region." The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West. Figure 2.4 shows how states are subdivided into these regions (the two Department of Defense Educational Activities jurisdictions are not assigned to any region). As a result of this change in the region variable, the following section presents the results by region of the country for the 2003 assessment only. (See figure A.2 in appendix A.)

Figure 2.4 Map of regions of the country according to U.S. Census



SOURCE: U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau.

Average mathematics scale scores by region are shown in table 2.2 for grades 4 and 8. At both grades 4 and 8, average mathematics scores were higher for students in the Northeast and Midwest than for students in the South and West, and no measurable difference was detected between scores for students in the Northeast and Midwest. Average scores for students in the South were higher than for students in the West at both grade levels.

Table 2.2 Average mathematics scale scores, by region of the country, grades 4 and 8: 2003

	2003
Grade 4	
Northeast	238
Midwest	238
South	234
West	231
Grade 8	
Northeast	282
Midwest	283
South	275
West	273

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

Table 2.3 displays achievement-level information by region for fourth- and eighth-graders both as the percentages of students performing within each achievement level and as the percentages of students performing at or above the *Basic* and *Proficient* levels.

At grade 4, the percentages of students performing at or above the *Basic* and *Proficient* and at *Advanced* levels were higher in the Northeast and Midwest than in the South and West. Higher percentages of students performed at or above *Basic* and *Proficient* in the South than in the West.

At grade 8, higher percentages of students performed at or above *Basic* and at or above *Proficient* in the Northeast and Midwest than in the South and West. A higher percentage of eighth-graders performed at or above *Basic* in the South than in the West.

Table 2.3 Percentages of students, by mathematics achievement level and region of the country, grades 4 and 8: 2003

	Below ***Basic***	At ***Basic***	At ***Proficient***	At ***Advanced***	At or above ***Basic***	At or above ***Proficient***
Grade 4						
Northeast	19	44	32	5	81	37
Midwest	20	44	32	5	80	36
South	23	46	27	4	77	31
West	28	44	25	3	72	28
Grade 8						
Northeast	28	39	27	6	72	33
Midwest	26	40	27	6	74	33
South	34	40	21	5	66	25
West	37	37	21	5	63	26

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), 2003 Mathematics Assessment.

Mathematics Results for States and Other Jurisdictions

In addition to the national results, mathematics performance data were collected for fourth- and eighth-grade students attending public schools in 50 states and 3 other jurisdictions that participated in the 2003 assessment.[2] At both fourth and eighth grades, all jurisdictions met NCES participation rate standards. Variation in exclusion rates should be considered when interpreting state results, and is discussed in detail in the section on Students with Disabilities and Limited-English-Proficient Students in appendix A.

Statistically significant changes across years are indicated when examining only one jurisdiction at a time (*), or when using a multiple comparison procedure based on all the jurisdictions that participated (**). Differences discussed in this report are based on statistically significant findings detected using either comparison procedure (see appendix A for a more detailed discussion of comparison procedures).

Mathematics Scale Score Results by State/Jurisdiction

Average mathematics scale scores by jurisdiction are shown in table 2.4 for grade 4, and in table 2.5 for grade 8. Whereas the national and regional results presented in the previous sections of this chapter represent both public and nonpublic schools combined, the national and state average scores shown in the following tables and figures represent the performance of public school students only. The overall national public school results include the results for the District of Columbia, but not the results for the Department of Defense schools.

In 2003, average fourth-grade scores ranged from 205 to 243. Out of the 43 jurisdictions that participated in both the 2000 and 2003 fourth-grade assessments, all showed increases in average scores. Similarly, all 42 of the jurisdictions that participated in the 1992 and 2003 assessments showed average score increases.

Average eighth-grade scores ranged from 243 to 291 in 2003. Of the 42 jurisdictions that participated in both the 2000 and 2003 assessments at grade 8, 28 had higher average scores in 2003. All 38 jurisdictions that participated in both 1990 and 2003 had higher average scores in 2003.

[2] Throughout this chapter the term "jurisdiction" is used to refer to the 50 states, the District of Columbia, and the two Department of Defense school systems that participated in the NAEP mathematics assessments.

Table 2.4 Average mathematics scale scores, grade 4 public schools: By state, 1992–2003

Grade 4	Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003
Nation (public) [1]	219 *	222 *	226 *	224 *	234
Alabama	208 *,**	212 *,**	218 *,**	217 *,**	223
Alaska	–	224 *,**	–	–	233
Arizona	215 *,**	218 *,**	219 *,**	219 *,**	229
Arkansas	210 *,**	216 *,**	217 *,**	216 *,**	229
California	208 *,**	209 *,**	214 *,**	213 *,**	227
Colorado	221 *,**	226 *,**	–	–	235
Connecticut	227 *,**	232 *,**	234 *,**	234 *,**	241
Delaware	218 *,**	215 *,**	–	–	236
Florida	214 *,**	216 *,**	–	–	234
Georgia	216 *,**	215 *,**	220 *,**	219 *,**	230
Hawaii	214 *,**	215 *,**	216 *,**	216 *,**	227
Idaho	222 *,**	–	227 *,**	224 *,**	235
Illinois	–	–	225 *,**	223 *,**	233
Indiana	221 *,**	229 *,**	234 *,**	233 *,**	238
Iowa	230 *,**	229 *,**	233 *,**	231 *,**	238
Kansas	–	–	232 *,**	232 *,**	242
Kentucky	215 *,**	220 *,**	221 *,**	219 *,**	229
Louisiana	204 *,**	209 *,**	218 *,**	218 *,**	226
Maine	232 *,**	232 *,**	231 *,**	230 *,**	238
Maryland	217 *,**	221 *,**	222 *,**	222 *,**	233
Massachusetts	227 *,**	229 *,**	235 *,**	233 *,**	242
Michigan	220 *,**	226 *,**	231 *,**	229 *,**	236
Minnesota	228 *,**	232 *,**	235 *,**	234 *,**	242
Mississippi	202 *,**	208 *,**	211 *,**	211 *,**	223
Missouri	222 *,**	225 *,**	229 *,**	228 *,**	235
Montana	–	228 *,**	230 *,**	228 *,**	236
Nebraska	225 *,**	228 *,**	226 *,**	225 *,**	236
Nevada	–	218 *,**	220 *,**	220 *,**	228
New Hampshire	230 *,**	–	–	–	243
New Jersey	227 *,**	227 *,**	–	–	239
New Mexico	213 *,**	214 *,**	214 *,**	213 *,**	223
New York	218 *,**	223 *,**	227 *,**	225 *,**	236
North Carolina	213 *,**	224 *,**	232 *,**	230 *,**	242
North Dakota	229 *,**	231 *,**	231 *,**	230 *,**	238
Ohio	219 *,**	–	231 *,**	230 *,**	238
Oklahoma	220 *,**	–	225 *,**	224 *,**	229
Oregon	–	223 *,**	227 *,**	224 *,**	236
Pennsylvania	224 *,**	226 *,**	–	–	236
Rhode Island	215 *,**	220 *,**	225 *,**	224 *,**	230
South Carolina	212 *,**	213 *,**	220 *,**	220 *,**	236
South Dakota	–	–	–	–	237
Tennessee	211 *,**	219 *,**	220 *,**	220 *,**	228
Texas	218 *,**	229 *,**	233 *,**	231 *,**	237
Utah	224 *,**	227 *,**	227 *,**	227 *,**	235
Vermont	–	225 *,**	232 *,**	232 *,**	242
Virginia	221 *,**	223 *,**	230 *,**	230 *,**	239
Washington	–	225 *,**	–	–	238
West Virginia	215 *,**	223 *,**	225 *,**	223 *,**	231
Wisconsin	229 *,**	231 *,**	–	–	237
Wyoming	225 *,**	223 *,**	229 *,**	229 *,**	241
Other jurisdictions					
District of Columbia	193 *,**	187 *,**	193 *,**	192 *,**	205
DDESS [2]	–	224 *,**	228 *,**	228 *,**	237
DoDDS [3]	–	223 *,**	228 *,**	226 *,**	237

– Not available. The jurisdiction did not participate or did not meet minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

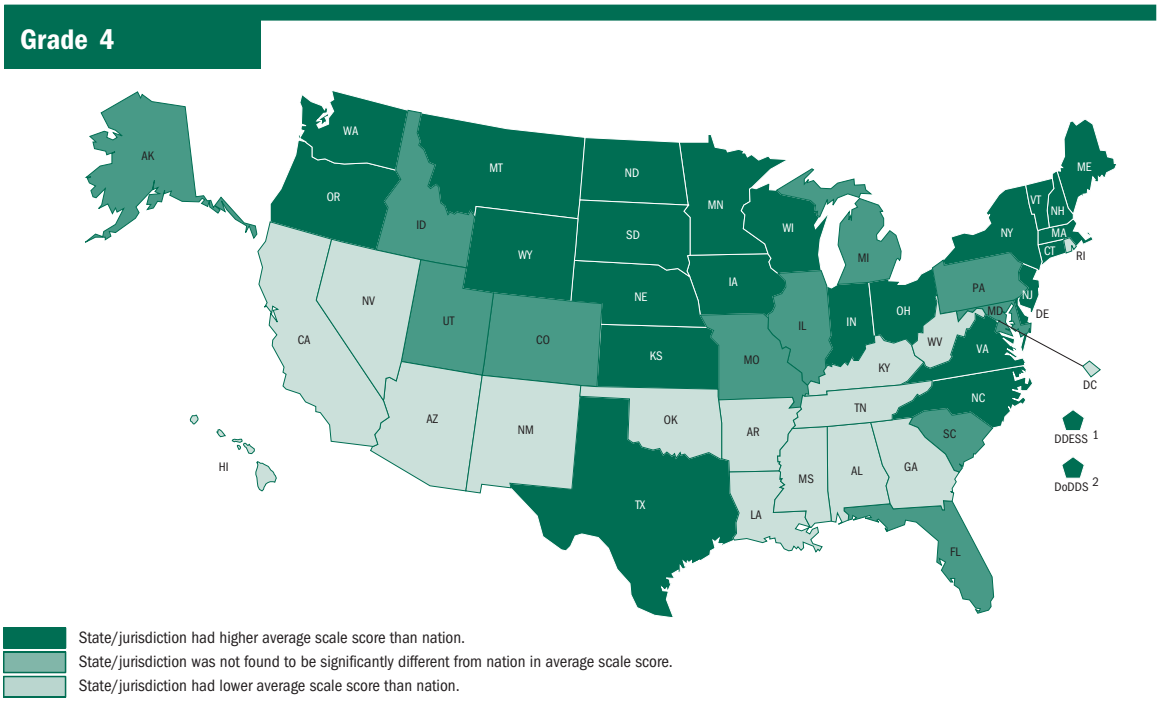
Table 2.5 Average mathematics scale scores, grade 8 public schools: By state, 1990–2003

Grade 8	Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003
Nation (public) [1]	262 *	267 *	271 *	274	272 *	276
Alabama	253 *,**	252 *,**	257 *	262	264	262
Alaska	–	–	278	–	–	279
Arizona	260 *,**	265 *,**	268	271	269	271
Arkansas	256 *,**	256 *,**	262 *	261 *	257 *,**	266
California	256 *,**	261 *,**	263	262 *	260 *,**	267
Colorado	267 *,**	272 *,**	276 *,**	–	–	283
Connecticut	270 *,**	274 *,**	280 *,**	282	281	284
Delaware	261 *,**	263 *,**	267 *,**	–	–	277
Florida	255 *,**	260 *,**	264 *,**	–	–	271
Georgia	259 *,**	259 *,**	262 *,**	266	265 *,**	270
Hawaii	251 *,**	257 *,**	262 *,**	263	262 *	266
Idaho	271 *,**	275 *,**	–	278	277 *	280
Illinois	261 *,**	–	–	277	275	277
Indiana	267 *,**	270 *,**	276 *,**	283	281	281
Iowa	278 *,**	283	284	–	–	284
Kansas	–	–	–	284	283	284
Kentucky	257 *,**	262 *,**	267 *,**	272	270 *,**	274
Louisiana	246 *,**	250 *,**	252 *,**	259 *,**	259 *,**	266
Maine	–	279 *,**	284	284	281	282
Maryland	261 *,**	265 *,**	270 *,**	276	272 *,**	278
Massachusetts	–	273 *,**	278 *,**	283 *	279 *,**	287
Michigan	264 *,**	267 *,**	277	278	277	276
Minnesota	275 *,**	282 *,**	284 *,**	288	287 *	291
Mississippi	–	246 *,**	250 *,**	254 *,**	254 *,**	261
Missouri	–	271 *,**	273 *,**	274 *,**	271 *,**	279
Montana	280 *,**	–	283	287	285	286
Nebraska	276 *,**	278 *,**	283	281	280	282
Nevada	–	–	–	268	265 *,**	268
New Hampshire	273 *,**	278 *,**	–	–	–	286
New Jersey	270 *,**	272 *,**	–	–	–	281
New Mexico	256 *,**	260 *,**	262	260	259 *,**	263
New York	261 *,**	266 *,**	270 *,**	276	271 *,**	280
North Carolina	250 *,**	258 *,**	268 *,**	280	276 *,**	281
North Dakota	281 *,**	283 *,**	284 *,**	283 *,**	282 *,**	287
Ohio	264 *,**	268 *,**	–	283	281	282
Oklahoma	263 *,**	268 *,**	–	272	270	272
Oregon	271 *,**	–	276 *,**	281	280	281
Pennsylvania	266 *,**	271 *,**	–	–	–	279
Rhode Island	260 *,**	266 *,**	269 *,**	273	269 *	272
South Carolina	–	261 *,**	261 *,**	266 *,**	265 *,**	277
South Dakota	–	–	–	–	–	285
Tennessee	–	259 *,**	263 *,**	263	262 *,**	268
Texas	258 *,**	265 *,**	270 *,**	275	273	277
Utah	–	274 *,**	277 *,**	275 *,**	274 *,**	281
Vermont	–	–	279 *,**	283	281 *,**	286
Virginia	264 *,**	268 *,**	270 *,**	277 *	275 *,**	282
Washington	–	–	276 *,**	–	–	281
West Virginia	256 *,**	259 *,**	265 *,**	271	266 *,**	271
Wisconsin	274 *,**	278 *,**	283	–	–	284
Wyoming	272 *,**	275 *,**	275 *,**	277 *,**	276 *,**	284
Other jurisdictions						
District of Columbia	231 *,**	235 *,**	233 *,**	234 *,**	235 *,**	243
DDESS [2]	–	–	269 *,**	277	274 *,**	282
DoDDS [3]	–	–	275 *,**	278 *,**	278 *,**	286

– Not available. The jurisdiction did not participate or did not meet minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

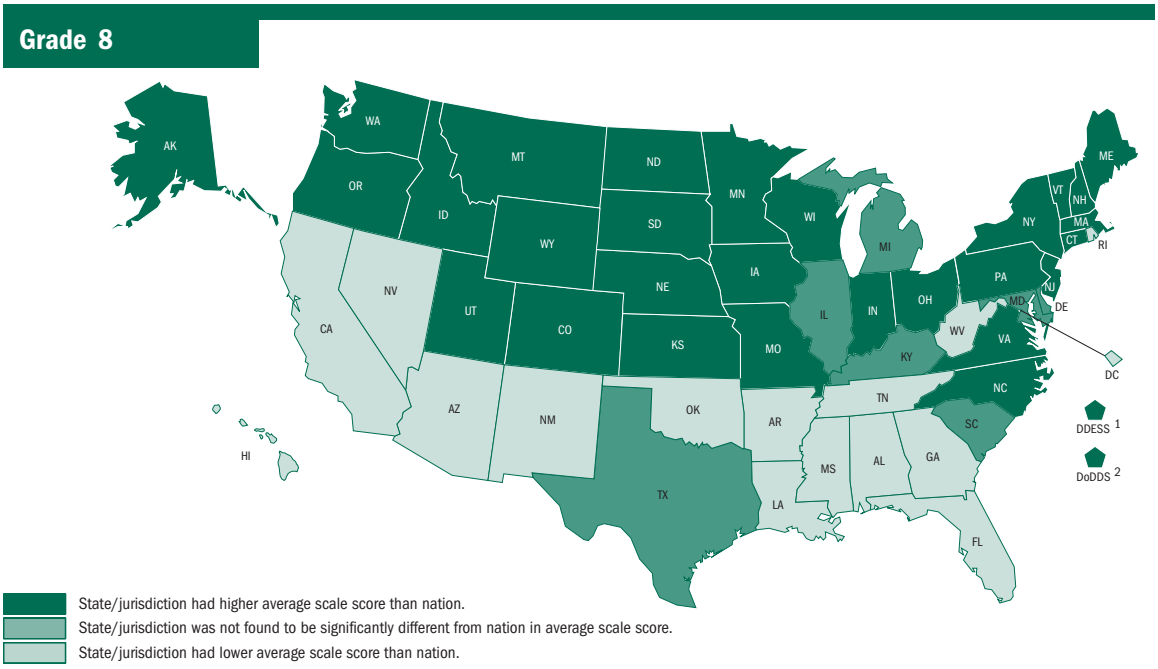
The maps in figures 2.5 and 2.6 compare jurisdictional to national average mathematics scores for public school students in 2003, at grades 4 and 8, respectively. In 2003, 26 of the 53 jurisdictions that participated at grade 4 had average scores that were higher than the national average and 16 had average scores that were lower than the national average. Of the 53 jurisdictions that participated at grade 8, 30 had average scores that were higher than the national average and 16 had average scores that were lower than the national average.

Figure 2.5 Comparison of state and national public school average mathematics scale scores, grade 4: 2003



[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Figure 2.6 Comparison of state and national public school average mathematics scale scores, grade 8: 2003



[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Cross-State/Jurisdiction Mathematics Scale Score Comparisons

Figures 2.7 and 2.8 display the differences in the NAEP 2003 average mathematics scale scores between any two participating jurisdictions at grades 4 and 8, respectively. These figures are set up similarly to mileage charts on travel maps. On the line across the top of the figure, find the name of the target jurisdiction and follow the column below the target jurisdiction to the jurisdiction chosen for comparison. If the cell of the comparison jurisdiction is not shaded, no statistically significant difference between the scale scores of the two jurisdictions was detected. If the cell of the comparison jurisdiction is lightly shaded, the average scale score of that jurisdiction was higher than the average scale score of the target jurisdiction named at the top of the column. Darkly shaded cells indicate that the average scale score of the comparison jurisdiction was lower than that of the target jurisdiction.

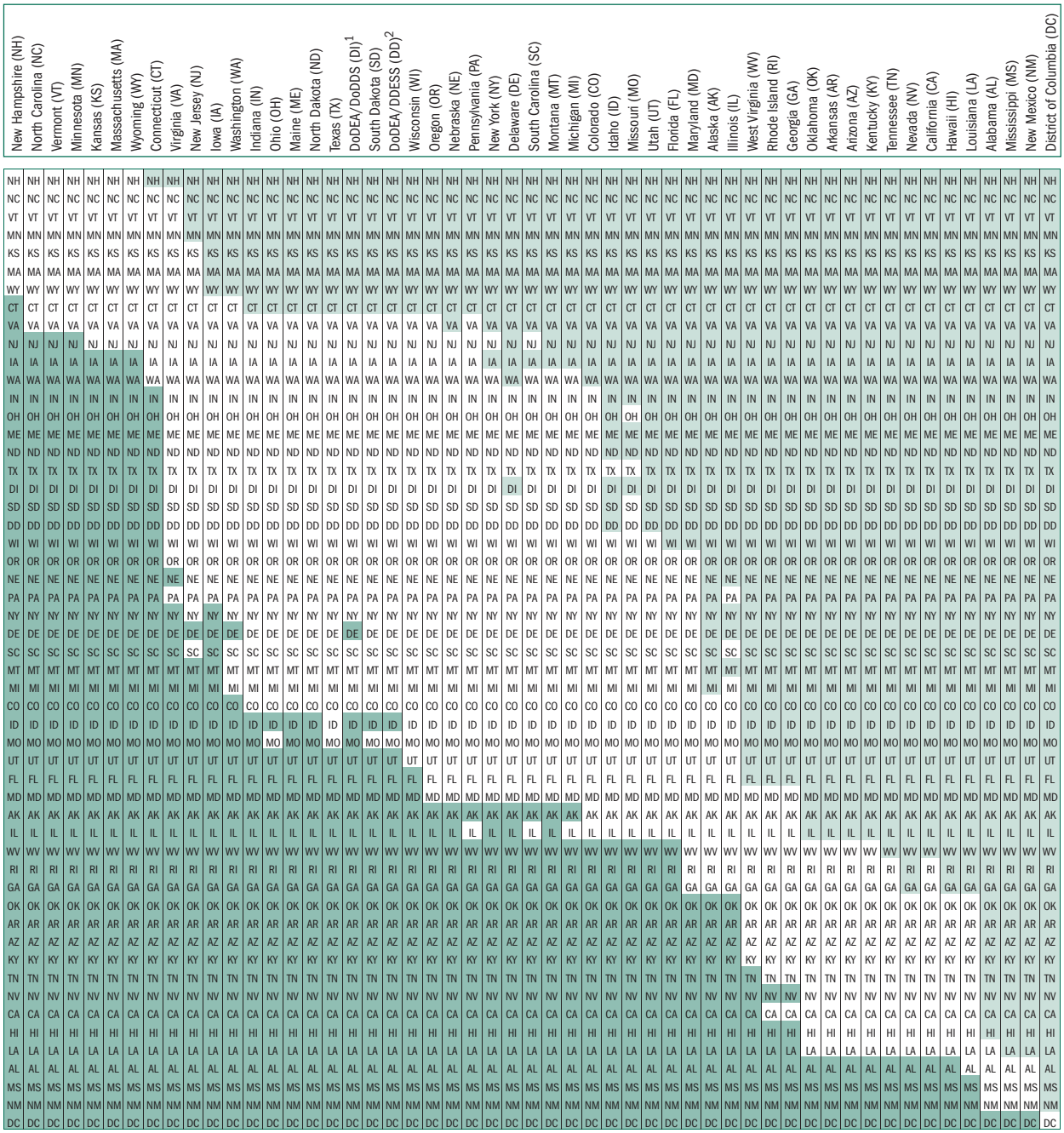
At grade 4, New Hampshire, North Carolina, Vermont, Minnesota, Kansas, Massachusetts, and Wyoming were among the highest performing jurisdictions. Any apparent differences in average scores between the seven top-performing states were not found to be statistically significant. Average fourth-grade scores in Connecticut and Virginia were lower only in comparison with New Hampshire.

At grade 8, Minnesota was the highest performing state. Eighth-graders in North Dakota, Massachusetts, New Hampshire, Montana, Vermont, Department of Defense Overseas schools, South Dakota, and Kansas were outperformed only by their counterparts in Minnesota.

Figure 2.7 Cross-state comparison of average mathematics scale scores, grade 4 public schools: 2003

Grade 4

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the figure. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average mathematics scale score of this jurisdiction was found to be higher than, not significantly different from, or lower than the jurisdiction in the column heading. For example, note the column under Connecticut: Connecticut's score was lower than New Hampshire, not significantly different from all the jurisdictions from North Carolina through Washington, and higher than the remaining jurisdictions down the column.



Jurisdiction had higher average scale score than the jurisdiction listed at the top of the figure.

No significant difference detected from the jurisdiction listed at the top of the figure.

Jurisdiction had lower average scale score than the jurisdiction listed at the top of the figure.

[1] Department of Defense Dependents Schools (Overseas).

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

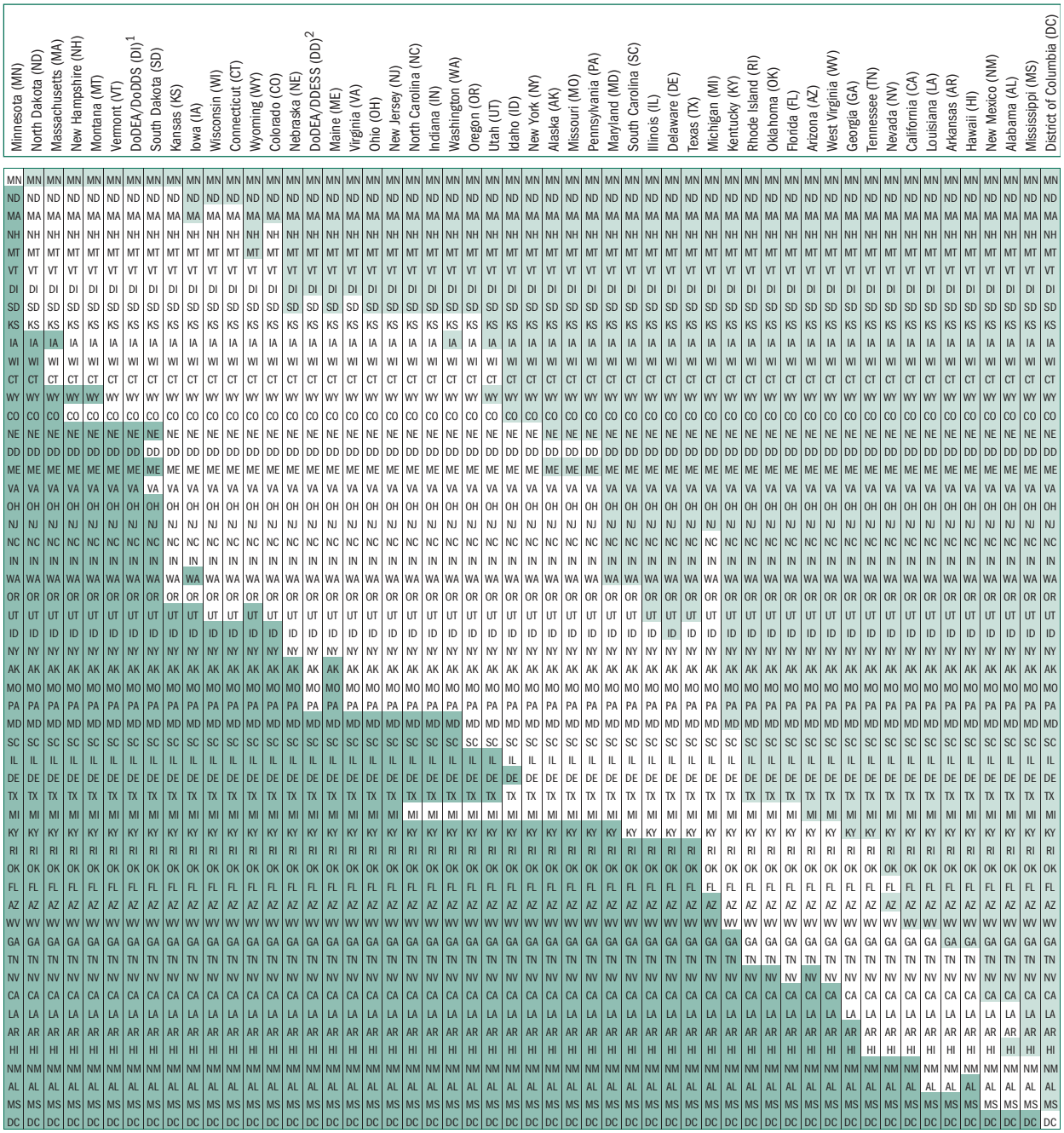
NOTE: The between-jurisdiction comparisons take into account sampling and measurement error and that each jurisdiction is being compared with every other jurisdiction. Significance is determined by an application of a multiple-comparison procedure. See appendix A for more details. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

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

Figure 2.8 Cross-state comparison of average mathematics scale scores, grade 8 public schools: 2003

Grade 8

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the figure. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average mathematics scale score of this jurisdiction was found to be higher than, not significantly different from, or lower than the jurisdiction in the column heading. For example, note the column under Wisconsin: Wisconsin's score was lower than Minnesota and North Dakota, not significantly different from all the jurisdictions from Massachusetts through Utah, and higher than the remaining jurisdictions down the column.



Jurisdiction had higher average scale score than the jurisdiction listed at the top of the figure.

No significant difference detected from the jurisdiction listed at the top of the figure.

Jurisdiction had lower average scale score than the jurisdiction listed at the top of the figure.

[1] Department of Defense Dependents Schools (Overseas).

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

NOTE: The between-jurisdiction comparisons take into account sampling and measurement error and that each jurisdiction is being compared with every other jurisdiction. Significance is determined by an application of a multiple-comparison procedure. See appendix A for more details. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

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

Mathematics Achievement-Level Results by State/Jurisdiction

Achievement-level results for jurisdictions are presented both as the percentage of students scoring within each mathematics achievement-level range and as the percentage of students performing at or above the *Proficient* level. The percentage of students within each mathematics achievement-level range for participating jurisdictions in 2003 is presented in figure 2.9 for grade 4 and in figure 2.10 for grade 8. The shaded bars represent the proportion of students in each of the three achievement levels (*Basic, Proficient,* and *Advanced*), as well as the proportion of students who performed below the *Basic* level. The central vertical line divides the proportion of students who fell below the *Proficient* level (i.e., at *Basic* or below *Basic*) from those who performed at or above the *Proficient* level (i.e., at *Proficient* or at *Advanced*). Scanning down the horizontal bars to the right of the vertical line allows comparison of jurisdictions' percentages of students at or above *Proficient*. Jurisdictions are listed in the figures in three clusters based on statistical comparison of the percentage of students performing at or above *Proficient* in each jurisdiction with the national percentage of public school students performing at or above *Proficient*. The jurisdictions in the top cluster of each figure had a higher percentage of students who performed at or above the *Proficient* level compared to the nation. The percentages of students in jurisdictions clustered in the middle were not found to be measurably different from the national percentage. Jurisdictions in the bottom cluster had percentages lower than the national percentage. Within each cluster, jurisdictions are listed alphabetically.

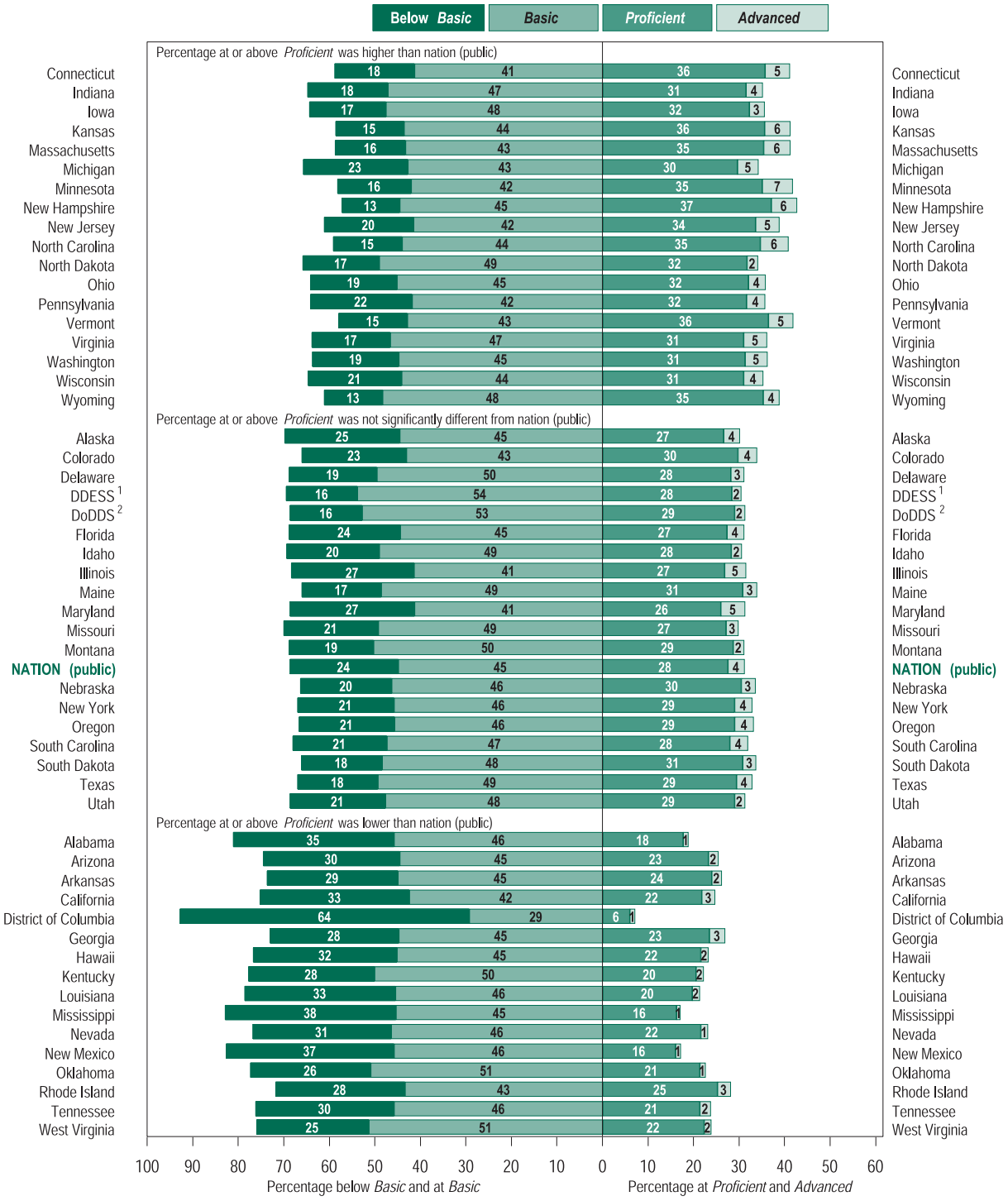
Figure 2.9 shows that, at grade 4, 18 jurisdictions had higher percentages of students performing at or above *Proficient* than the nation and 16 had percentages that were lower than the nation.

In figure 2.10, the results for grade 8 show that 24 jurisdictions had higher percentages of students performing at or above *Proficient* than the nation and 17 had percentages that were lower than the nation.

Figure 2.9 Percentage of students within each mathematics achievement level, grade 4 public schools: By state, 2003

Grade 4

The bars below contain percentages of students in each NAEP mathematics achievement-level range. Each population of students is aligned at the point where the *Proficient* category begins, so that they may be compared at *Proficient* and above. Jurisdictions are listed alphabetically within three groups: the percentage at or above *Proficient* was higher than, not found to be significantly different from, or lower than the nation.

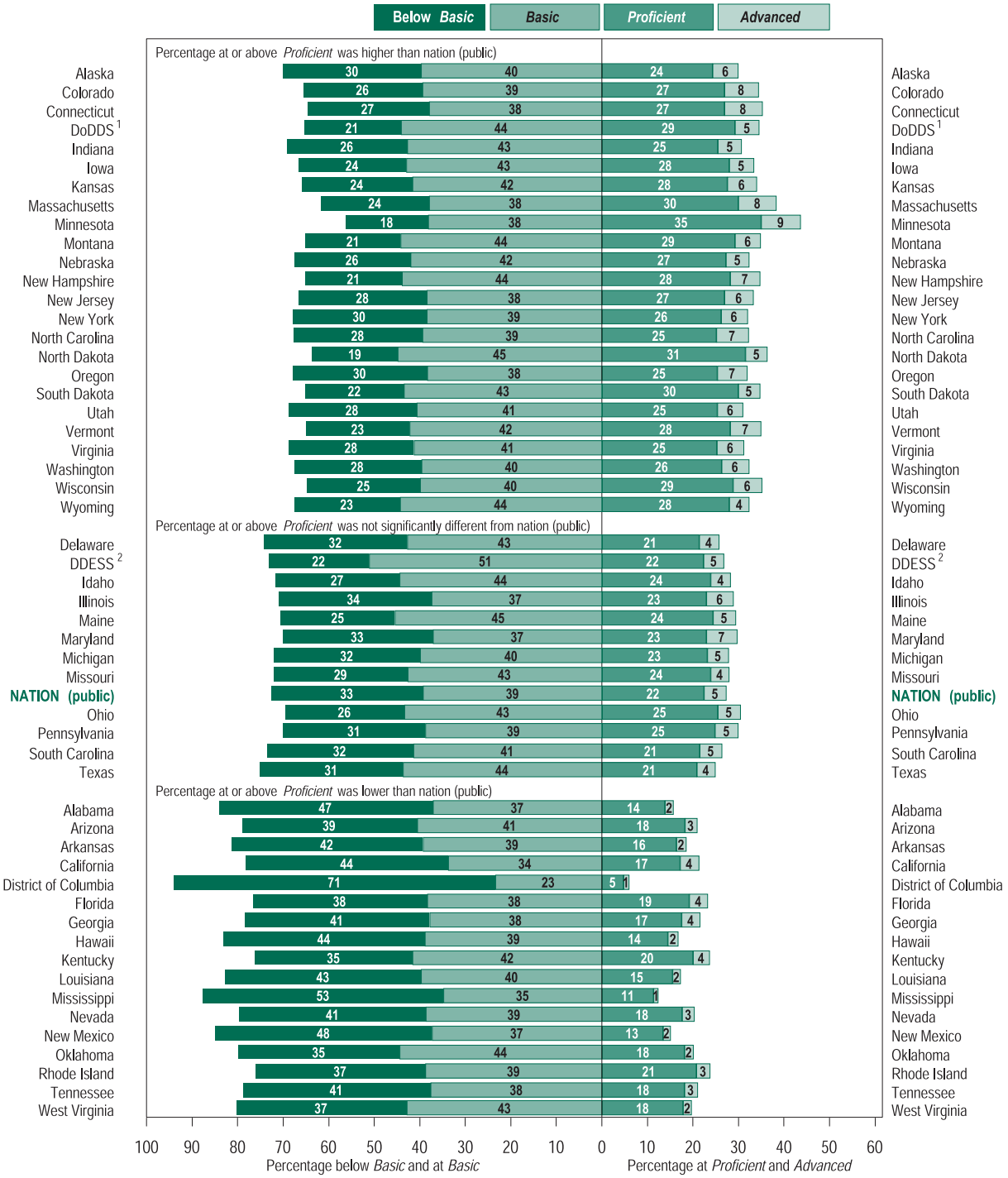


[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Figure 2.10 Percentage of students within each mathematics achievement level, grade 8 public schools: By state, 2003

Grade 8

The bars below contain percentages of students in each NAEP mathematics achievement-level range. Each population of students is aligned at the point where the *Proficient* category begins, so that they may be compared at *Proficient* and above. Jurisdictions are listed alphabetically within three groups: the percentage at or above *Proficient* was higher than, not found to be significantly different from, or lower than the nation.



1 Department of Defense Dependents Schools (Overseas).
2 Department of Defense Domestic Dependent Elementary and Secondary Schools.
NOTE: Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

The percentage of fourth-graders performing at or above the *Proficient* level for each jurisdiction that participated in the 1992, 1996, 2000, and 2003 assessments is presented in table 2.6. The percentage of fourth-graders performing at or above the *Proficient* level was higher in 2003 than in 2000 for all 43 jurisdictions that participated in both years. The percentages also increased from 1992 to 2003 for all 42 jurisdictions that participated in both of those assessment years.

The percentages of eighth-graders performing at or above *Proficient* for jurisdictions that participated in 1990, 1992, 1996, 2000, and 2003 are presented in table 2.7. Among the 42 jurisdictions that participated in both the 2000 and 2003 eighth-grade assessments, 18 showed an increase in the percentages of students performing at or above *Proficient*. The percentage of eighth-graders performing at or above *Proficient* was higher in 2003 than in 1990 for all 38 jurisdictions that participated in both years.

Table 2.6 Percentage of students at or above *Proficient* in mathematics, grade 4 public schools: By state, 1992–2003

Grade 4	Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003
Nation (public) [1]	17 *	20 *	25 *	22 *	31
Alabama	10 *,**	11 *,**	14 *,**	13 *,**	19
Alaska	–	21 *,**	–	–	30
Arizona	13 *,**	15 *,**	17 *,**	16 *,**	25
Arkansas	10 *,**	13 *,**	13 *,**	14 *,**	26
California	12 *,**	11 *,**	15 *,**	13 *,**	25
Colorado	17 *,**	22 *,**	–	–	34
Connecticut	24 *,**	31 *,**	32 *,**	31 *,**	41
Delaware	17 *,**	16 *,**	–	–	31
Florida	13 *,**	15 *,**	–	–	31
Georgia	15 *,**	13 *,**	18 *,**	17 *,**	27
Hawaii	15 *,**	16 *,**	14 *,**	14 *,**	23
Idaho	16 *,**	–	21 *,**	20 *,**	31
Illinois	–	–	21 *,**	20 *,**	32
Indiana	16 *,**	24 *,**	31 *	30 *,**	35
Iowa	26 *,**	22 *,**	28 *,**	26 *,**	36
Kansas	–	–	30 *,**	29 *,**	41
Kentucky	13 *,**	16 *,**	17 *,**	17 *,**	22
Louisiana	8 *,**	8 *,**	14 *,**	14 *,**	21
Maine	27 *,**	27 *,**	25 *,**	23 *,**	34
Maryland	18 *,**	22 *,**	22 *,**	21 *,**	31
Massachusetts	23 *,**	24 *,**	33 *,**	31 *,**	41
Michigan	18 *,**	23 *,**	29 *,**	28 *,**	34
Minnesota	26 *,**	29 *,**	34 *,**	33 *,**	42
Mississippi	6 *,**	8 *,**	9 *,**	9 *,**	17
Missouri	19 *,**	20 *,**	23 *,**	23 *,**	30
Montana	–	22 *,**	25 *,**	24 *,**	31
Nebraska	22 *,**	24 *,**	24 *,**	24 *,**	34
Nevada	–	14 *,**	16 *,**	16 *,**	23
New Hampshire	25 *,**	–	–	–	43
New Jersey	25 *,**	25 *,**	–	–	39
New Mexico	11 *,**	13 *,**	12 *,**	12 *,**	17
New York	17 *,**	20 *,**	22 *,**	21 *,**	33
North Carolina	13 *,**	21 *,**	28 *,**	25 *,**	41
North Dakota	22 *,**	24 *,**	25 *,**	25 *,**	34
Ohio	16 *,**	–	26 *,**	25 *,**	36
Oklahoma	14 *,**	–	16 *,**	16 *,**	23
Oregon	–	21 *,**	23 *,**	23 *,**	33
Pennsylvania	22 *,**	20 *,**	–	–	36
Rhode Island	13 *,**	17 *,**	23 *,**	22 *,**	28
South Carolina	13 *,**	12 *,**	18 *,**	18 *,**	32
South Dakota	–	–	–	–	34
Tennessee	10 *,**	17 *,**	18 *,**	18 *,**	24
Texas	15 *,**	25 *,**	27 *,**	25 *,**	33
Utah	19 *,**	23 *,**	24 *,**	23 *,**	31
Vermont	–	23 *,**	29 *,**	29 *,**	42
Virginia	19 *,**	19 *,**	25 *,**	24 *,**	36
Washington	–	21 *,**	–	–	36
West Virginia	12 *,**	19 *,**	18 *,**	17 *,**	24
Wisconsin	24 *,**	27 *,**	–	–	35
Wyoming	19 *,**	19 *,**	25 *,**	25 *,**	39
Other jurisdictions					
District of Columbia	5 *,**	5 *,**	6	5 *,**	7
DDESS [2]	–	20 *,**	24 *,**	23 *,**	30
DoDDS [3]	–	19 *,**	22 *,**	21 *,**	31

– Not available. The jurisdiction did not participate or did not meet minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table 2.7 Percentage of students at or above *Proficient* in mathematics, grade 8 public schools: By state, 1990–2003

Grade 8	Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003
Nation (public) [1]	15 *	20 *	23 *	26	25 *	27
Alabama	9 *,**	10 *,**	12	16	16	16
Alaska	–	–	30	–	–	30
Arizona	13 *,**	15 *,**	18	21	20	21
Arkansas	9 *,**	10 *,**	13 *,**	14 *,**	13 *,**	19
California	12 *,**	16 *,**	17 *,**	18 *	17 *	22
Colorado	17 *,**	22 *,**	25 *,**	–	–	34
Connecticut	22 *,**	26 *,**	31 *	34	33	35
Delaware	14 *,**	15 *,**	19 *,**	–	–	26
Florida	12 *,**	15 *,**	17 *,**	–	–	23
Georgia	14 *,**	13 *,**	16 *,**	19	19	22
Hawaii	12 *,**	14 *,**	16	16	16	17
Idaho	18 *,**	22 *,**	–	27	26	28
Illinois	15 *,**	–	–	27	26	29
Indiana	17 *,**	20 *,**	24 *,**	31	29	31
Iowa	25 *,**	31	31	–	–	33
Kansas	–	–	–	34	34	34
Kentucky	10 *,**	14 *,**	16 *,**	21	20	24
Louisiana	5 *,**	7 *,**	7 *,**	12 *,**	11 *,**	17
Maine	–	25 *	31	32	30	29
Maryland	17 *,**	20 *,**	24 *	29	27	30
Massachusetts	–	23 *,**	28 *,**	32 *,**	30 *,**	38
Michigan	16 *,**	19 *,**	28	28	28	28
Minnesota	23 *,**	31 *,**	34 *,**	40	39 *	44
Mississippi	–	6 *,**	7 *,**	8 *,**	9 *,**	12
Missouri	–	20 *,**	22 *,**	22 *,**	21 *,**	28
Montana	27 *,**	–	32	37	36	35
Nebraska	24 *,**	26 *,**	31	31	30	32
Nevada	–	–	–	20	18	20
New Hampshire	20 *,**	25 *,**	–	–	–	35
New Jersey	21 *,**	24 *,**	–	–	–	33
New Mexico	10 *,**	11 *,**	14	13	12 *	15
New York	15 *,**	20 *,**	22 *,**	26 *,**	24 *,**	32
North Carolina	9 *,**	12 *,**	20 *,**	30	27 *,**	32
North Dakota	27 *,**	29 *,**	33	31 *,**	30 *,**	36
Ohio	15 *,**	18 *,**	–	31	30	30
Oklahoma	13 *,**	17 *,**	–	19	18	20
Oregon	21 *,**	–	26 *,**	32	31	32
Pennsylvania	17 *,**	21 *,**	–	–	–	30
Rhode Island	15 *,**	16 *,**	20 *	24	22	24
South Carolina	–	15 *,**	14 *,**	18 *,**	17 *,**	26
South Dakota	–	–	–	–	–	35
Tennessee	–	12 *,**	15 *,**	17	16 *	21
Texas	13 *,**	18 *,**	21	24	24	25
Utah	–	22 *,**	24 *,**	26 *,**	25 *,**	31
Vermont	–	–	27 *,**	32	31 *	35
Virginia	17 *,**	19 *,**	21 *,**	26 *,**	25 *,**	31
Washington	–	–	26 *,**	–	–	32
West Virginia	9 *,**	10 *,**	14 *,**	18	17	20
Wisconsin	23 *,**	27 *,**	32	–	–	35
Wyoming	19 *,**	21 *,**	22 *,**	25 *,**	23 *,**	32
Other jurisdictions						
District of Columbia	3 *,**	4	5	6	6	6
DDESS [2]	–	–	21	27	24	27
DoDDS [3]	–	–	23 *,**	27 *,**	27 *,**	35

– Not available. The jurisdiction did not participate or did not meet minimum participation guidelines for reporting.

* Significantly different from 2003 when only one jurisdiction or the nation is being examined.

** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.

[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

[3] Department of Defense Dependents Schools (Overseas).

NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Cross-State/Jurisdiction Mathematics Achievement-Level Comparisons

Figures 2.11 and 2.12 display the same type of cross-state/jurisdiction comparisons that were presented earlier for scale score results, but the performance measure being compared in these figures is the percentage of students performing at or above the *Proficient* level in 2003 for grades 4 and 8, respectively.

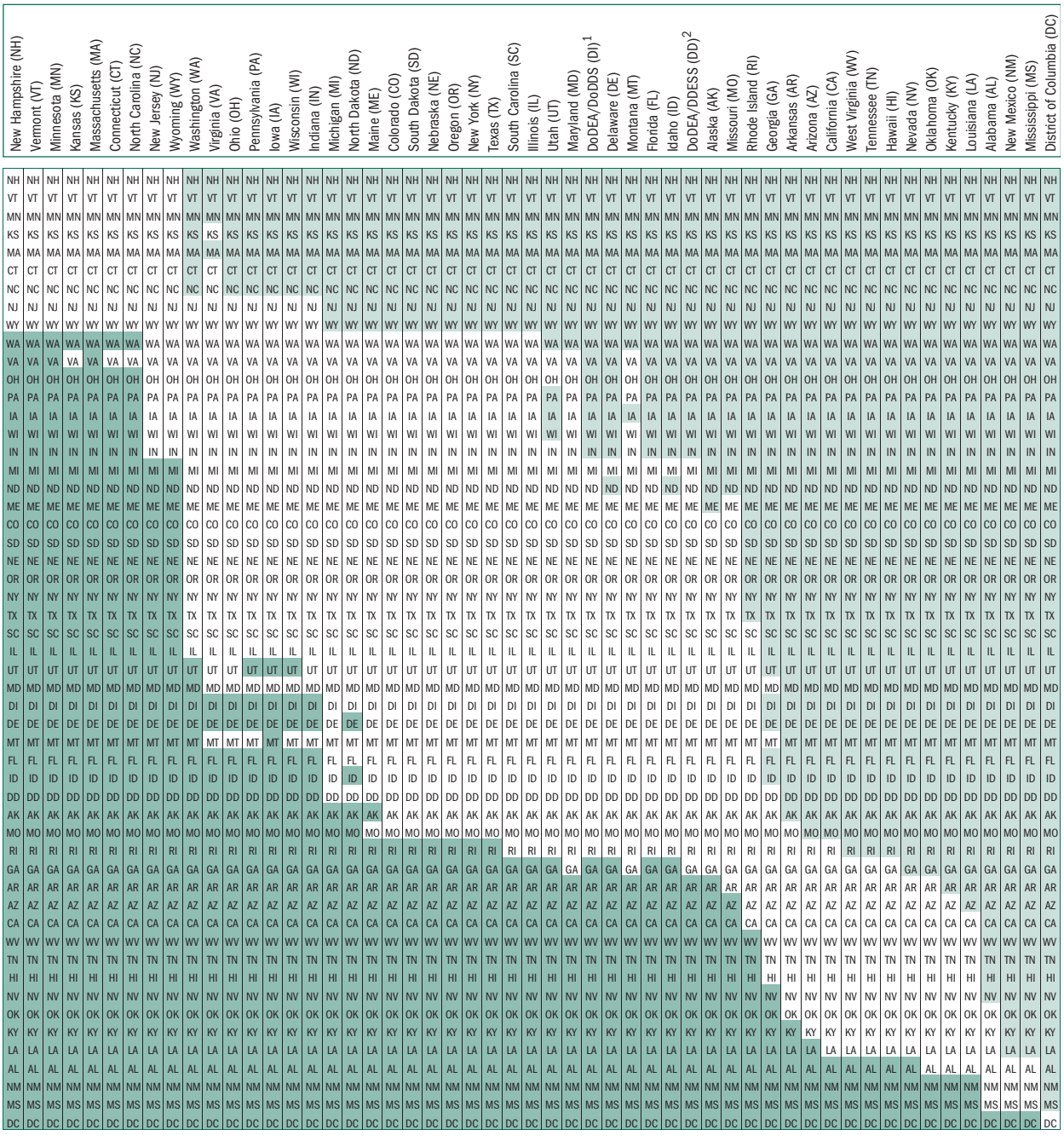
At grade 4, New Hampshire, Vermont, Minnesota, Kansas, Massachusetts, Connecticut, North Carolina, New Jersey, and Wyoming were among the jurisdictions with the highest percentages of students at or above *Proficient*. The percentages of students at or above *Proficient* were not found to differ significantly between the nine jurisdictions.

At grade 8, Minnesota had a higher percentage of students at or above *Proficient* than any other jurisdiction. The percentages of students at or above *Proficient* in Massachusetts, North Dakota, Connecticut, Wisconsin, Vermont, and Montana were not measurably different from each other and were lower only than the percentage in Minnesota.

Figure 2.11 Cross-state comparison of percentage of students at or above *Proficient* in mathematics, grade 4 public schools: 2003

Grade 4

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the figure. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the percentage of students at or above *Proficient* for this jurisdiction was found to be higher than, not significantly different from, or lower than the jurisdiction in the column heading. For example, note the column under Washington: The percentage of students at or above *Proficient* in Washington was lower than New Hampshire, Vermont, Minnesota, Kansas, Massachusetts, Connecticut, and North Carolina, not significantly different from all the jurisdictions from New Jersey through Illinois, and higher than the remaining jurisdictions down the column.



Jurisdiction had higher percentage than the jurisdiction listed at the top of the figure.

No significant difference detected from the jurisdiction listed at the top of the figure.

Jurisdiction had lower percentage than the jurisdiction listed at the top of the figure.

[1] Department of Defense Dependents Schools (Overseas).

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

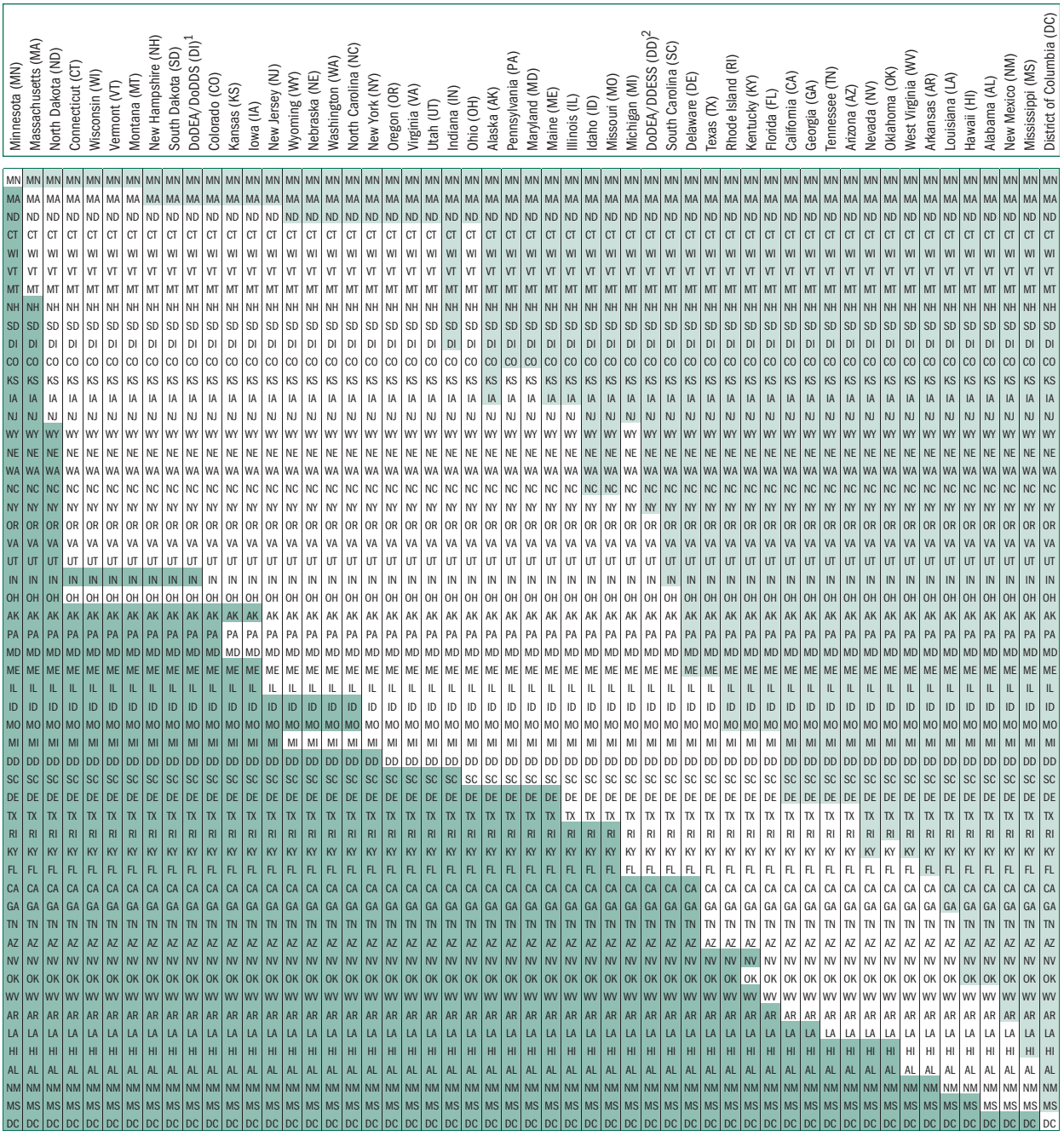
NOTE: The between-jurisdiction comparisons take into account sampling and measurement error and that each jurisdiction is being compared with every other jurisdiction. Significance is determined by an application of a multiple-comparison procedure. See appendix A for more details. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

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

Figure 2.12 Cross-state comparison of percentage of students at or above *Proficient* in mathematics, grade 8 public schools: 2003

Grade 8

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the figure. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the percentage of students at or above *Proficient* for this jurisdiction was found to be higher than, not significantly different from, or lower than the jurisdiction in the column heading. For example, note the column under Colorado: The percentage of students at or above *Proficient* in Colorado was lower than Minnesota and Massachusetts, not significantly different from all the jurisdictions from North Dakota through Ohio, and higher than the remaining jurisdictions down the column.



Jurisdiction had higher percentage than the jurisdiction listed at the top of the figure.

No significant difference detected from the jurisdiction listed at the top of the figure.

Jurisdiction had lower percentage than the jurisdiction listed at the top of the figure.

[1] Department of Defense Dependents Schools (Overseas).

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

NOTE: The between-jurisdiction comparisons take into account sampling and measurement error and that each jurisdiction is being compared with every other jurisdiction. Significance is determined by an application of a multiple-comparison procedure. See appendix A for more details. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

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

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3

Subgroup Results for the Nation and States

In addition to reporting on the performance of all students, NAEP also provides results for a variety of subgroups of students for each grade level assessed. The subgroup results show not only how these groups of students performed in comparison with one another, but also the progress each group has made over time. The information presented in this chapter provides an indication of how well the nation is progressing toward the goal of improving the achievement of all students.

This chapter includes average mathematics scale scores and achievement-level results for subgroups of students in the nation and participating states and jurisdictions at grades 4 and 8. National results are reported by gender, race/ethnicity, students' eligibility for free/reduced-price school lunch, parents' highest level of education, type of school, and type of school location. Results for participating jurisdictions are presented by gender, race/ethnicity, and students' eligibility for free/reduced-price school lunch. The weighted percentage of students corresponding with each subgroup reported in this chapter can be found in appendix B. Tables with additional subgroup results by jurisdiction are presented in appendix C.

Differences in students' performance on the 2003 mathematics assessment between demographic subgroups and across years for a particular subgroup are discussed only if they have been determined to be statistically significant. The reader should bear in mind that the estimated scale score for a subgroup of students does not reflect the entire range of performance within that group. Differences in subgroup performance cannot be ascribed solely to students' subgroup identification. Average student performance is affected by the interaction of a complex set of educational, cultural, and social factors not discussed in this report or addressed by NAEP assessments.

Performance of Selected Subgroups for the Nation

Gender

A substantial body of research indicating that male students tend to outperform female students in mathematics has been documented.[1] A 1998 study of California students showed gender differences in mathematics performance in fourth- and sixth-graders.[2] Another study, based on an international sample, found gender differences at grades 8 and 12 were small but consistently showed higher performance by males.[3] The NAEP 2003 mathematics assessment findings were consistent with other research studies, showing that male students scored higher on average than female students at grades 4 and 8.

As shown in figure 3.1, at grades 4 and 8, the average scores for male and female students were higher in 2003 than in any of the previous assessment years.

[1] Catsambis, S. (1994). The Path to Math: Gender and Racial-Ethnic Differences in Mathematics Participation from Middle School to High School. *Sociology of Education, 67,* 199–215.

Gonzales, P., Guzmán, J. C., Partelow, L., Pahlke, E., Jocelyn, L., Kastberg, D., and Williams, T. (2004). *Highlights From the Trends in International Mathematics and Science Study (TIMSS)* 2003 (NCES 2005–005). Washington, DC: Government Printing Office.

Hyde, J. S., Fennema, E., and Lamon, S. J. (1990). Gender Differences in Mathematics Performance: A Meta-Analysis. *Psychological Bulletin 107*(2), 139–155.

Oakes, J. (1990). *Keeping Track: How Schools Structure Inequality.* New Haven, CT: Yale University Press.

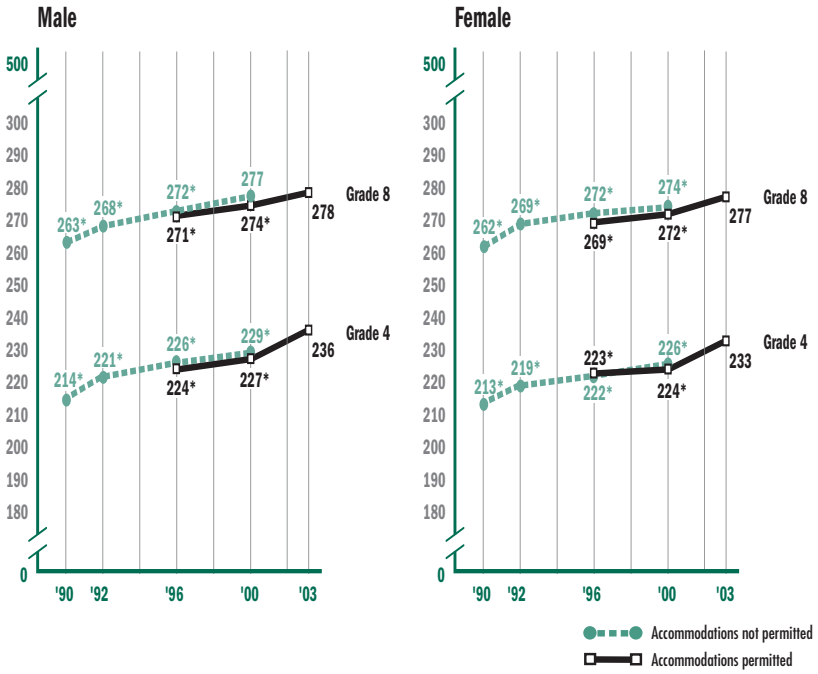
U.S. Department of Education, National Center for Education Statistics. (1998). *Pursuing Excellence: A Study of the U.S. Twelfth-Grade Mathematics and Science Achievement in International Context* (NCES 98–049). Washington, DC: U.S. Government Printing Office.

[2] Bauer, S. C., Park, H. S., and Sullivan, L. M. (1998). Gender Differences Among Top Performing Elementary School Students in Mathematical Ability. *Journal of Research and Development in Education 31*(3), 133–141.

[3] Baker, D. P., and Jones, D. P. (1993). Creating Gender Equality: Cross-National Gender Stratification and Mathematical Performance. *Sociology of Education, 66*(2), 91–103.

Figure 3.1 Average mathematics scale scores, by gender, grades 4 and 8: 1990–2003

Grades 4 and 8



* Significantly different from 2003.

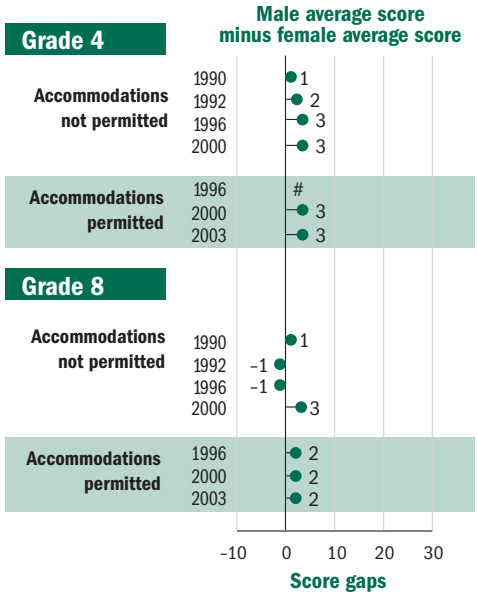
NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Another way to view trends in student performance is to determine whether the score "gap" that exists between subgroups of students has narrowed or widened across assessment years. The scale score gaps between male and female students are presented in figure 3.2.

In 2003, male students outperformed female students by 3 points on average at grade 4 and 2 points on average at grade 8. The gender gap in 2003 was not found to be measurably different from the gap in any of the previous assessment years.

Figure 3.2 Gaps in average mathematics scale scores, by gender, grades 4 and 8: 1990–2003



The estimate rounds to zero.
NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Score gaps are calculated based on differences between unrounded average scale scores. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments. Negative numbers indicate that the average score for male students was lower than the score for female students.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table 3.1 displays achievement-level information for the national sample of fourth- and eighth-graders both as the percentages of male and female students performing within each achievement-level range and as the percentages of male and female students performing below *Basic* and at or above the *Basic* and *Proficient* levels.

Consideration of the differences in performance between male and female students in the fourth and eighth grades in 2003 shows that higher percentages of male students than female students performed at or above *Basic* and *Proficient* and at *Advanced*. At grade 4, the percentages of males and females performing at or above *Basic* and *Proficient* levels were higher in 2003 than in any previous assessment year. At grade 8, the percentages of male and female students performing at or above *Basic* and *Proficient* levels were also higher in 2003 than in all previous assessment years.

Table 3.1 Percentages of students, by mathematics achievement level and gender, grades 4 and 8: 1990–2003

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
Male							
Accommodations not permitted	1990	49 *	38 *	12 *	2 *	51 *	13 *
	1992	40 *	41	17 *	2 *	60 *	19 *
	1996	35 *	41	21 *	3 *	65 *	24 *
	2000	30 *	41	25 *	3 *	70 *	28 *
Accommodations permitted	1996	37 *	42	19 *	3 *	63 *	22 *
	2000	33 *	41 *	22 *	3 *	67 *	26 *
	2003	22	43	30	5	78	35
Female							
Accommodations not permitted	1990	51 *	36 *	12 *	1 *	49 *	12 *
	1992	43 *	41 *	15 *	1 *	57 *	16 *
	1996	37 *	44	17 *	1 *	63 *	19 *
	2000	32 *	44 *	22 *	2 *	68 *	24 *
Accommodations permitted	1996	37 *	43	18 *	2 *	63 *	20 *
	2000	36 *	43 *	20 *	2 *	64 *	22 *
	2003	24	46	27	3	76	30
Grade 8							
Male							
Accommodations not permitted	1990	48 *	35	14 *	2 *	52 *	17 *
	1992	43 *	36 *	18 *	3 *	57 *	21 *
	1996	38 *	37	20 *	4 *	62 *	25 *
	2000	33 *	37	24	6	67 *	29
Accommodations permitted	1996	38 *	37	20 *	4 *	62 *	25 *
	2000	36 *	36	22 *	5	64 *	27 *
	2003	31	38	24	6	69	30
Female							
Accommodations not permitted	1990	48 *	38	12 *	2 *	52 *	14 *
	1992	42 *	37 *	18 *	3 *	58 *	21 *
	1996	37 *	41	19 *	3 *	63 *	23 *
	2000	35 *	40	21	4	65 *	25
Accommodations permitted	1996	40 *	38	19 *	3 *	60 *	22 *
	2000	37 *	39	20 *	4	63 *	24 *
	2003	33	40	22	5	67	27

* Significantly different from 2003.

NOTE: Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Race/Ethnicity

In recent years, a great deal of research documenting differences in academic achievement between students of different racial/ethnic backgrounds has been published. Some efforts to narrow the long-standing performance gaps between these subgroups have met with some success; however, significant performance differences can still be noted for a variety of mathematically related skills.[4]

[4] Bankston, C. L., and Caldas, S. J. (1997). The American School Dilemma: Race and Scholastic Performance. *Sociological Quarterly, 3*, 423–429.

Jencks, C., and Phillips, M. (Eds.). (1998). *The Black-White Test Score Gap*. Washington, DC: Brookings Institution Press.

Based on information obtained from school records, students who participated in the NAEP mathematics assessment were identified as belonging to one of the following mutually exclusive racial/ethnic subgroups: White, Black, Hispanic, Asian/Pacific Islander, American Indian (including Alaska Native), and Other (i.e., students whose race based on school records was "other race," or, if school data were missing, who self-reported their race as "multiracial" but not Hispanic, or did not self-report race/ethnicity information). The results presented here for 1990 through 2000 differ from those presented in earlier mathematics reports in which results were reported for five racial/ethnic subgroups based on student self-identification.

Between 1990 and 2003, the percentage of Hispanic students increased from 6 percent to 18 percent at grade 4, and from 7 percent to 15 percent at grade 8. During the same period, the percentage of White students decreased from 75 percent to 60 percent at grade 4 and from 73 percent to 63 percent at grade 8. The percentage of Black students, which has changed less over the years, was approximately 17 percent in 2003 at grade 4 and 16 percent at grade 8. Students categorized as "Other" made up approximately 1 percent of the students at each grade. (See table B.3 in appendix B.)[5]

Figure 3.3 shows the average mathematics scale scores of students in each of the six categories at grades 4 and 8. Results were not reported in 1990 and 1992 for American Indian/Alaska Native students at grades 4 and 8 and for American Indian/Alaska Native students at grade 8 in 1996 because the sample sizes were insufficient to permit reliable estimates. Further, data for Asian/Pacific Islander students at grade 4 in 2000 and grade 8 in 1996 were not available because special analyses raised concerns about the accuracy and precision of the results. Sample sizes were also insufficient to report results for students whose race/ethnicity was categorized as "Other" in 1990, 1992, and 1996 at grade 4, and in 1990 and 1996 at grade 8.

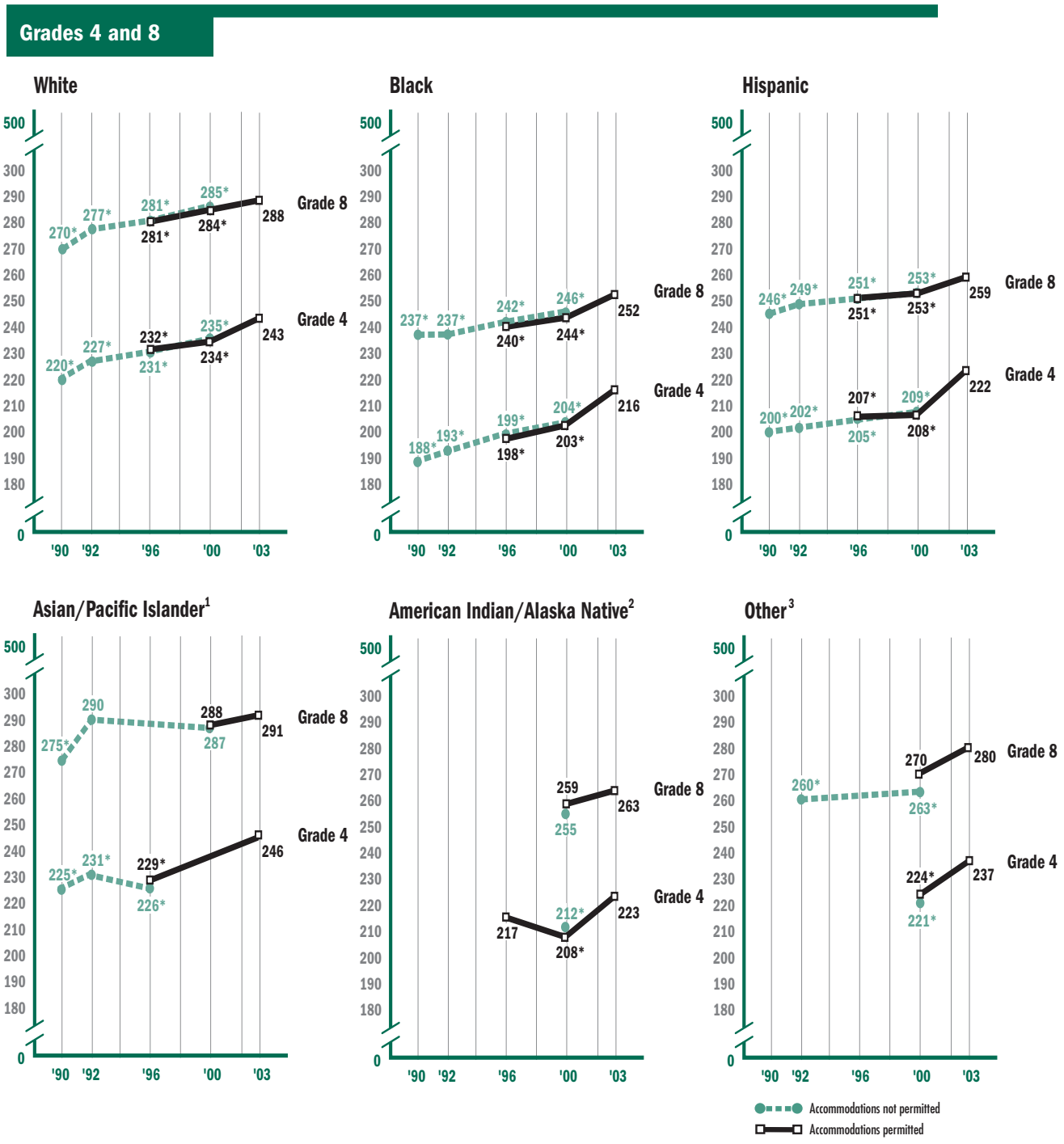
At both grades 4 and 8, Asian/Pacific Islander students scored higher on average in 2003 than White students. Both White students and Asian/Pacific Islander students had higher average scores than Black, Hispanic, and American Indian/Alaska Native students at both grades. Hispanic students and American Indian/Alaska Native students also scored higher on average than Black students at both grades.

At grade 4, White, Black, and Hispanic students all had higher average scores in 2003 than in any of the previous assessment years. American Indian/Alaska Native students had higher average scores in 2003 than in 2000 at grade 4. Average scores for Asian/Pacific Islander students were higher in 2003 than in 1990 for fourth-graders.

White, Black, and Hispanic eighth-grade students all showed increases in average scores between 2000 and 2003. At grade 8, average scores for Asian/Pacific Islander students were higher in 2003 than in 1990.

[5] In addition to reflecting a shift in the racial/ethnic composition of the student population, a portion of the differences may be due to the composition of the accommodated and nonaccommodated samples.

Figure 3.3 Average mathematics scale scores, by race/ethnicity, grades 4 and 8: 1990–2003



* Significantly different from 2003.

[1] Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996 and grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from this report.

[2] Sample size was insufficient to permit a reliable estimate for American Indian/Alaska Native students in 1990 and 1992 at grades 4 and 8, and in 1996 at grade 8.

[3] Sample size was insufficient to permit a reliable estimate for "Other" students in 1990 and 1996 at grades 4 and 8, and in 1992 at grade 4. "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.

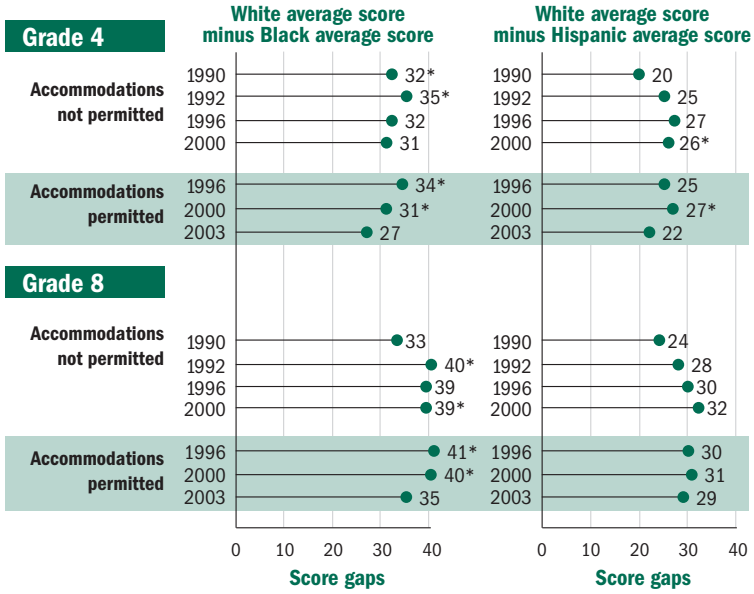
NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Average scale score gaps between White students and Black students and between White students and Hispanic students are presented in figure 3.4. At grade 4, the score gap between White students and Black students decreased between 2000 and 2003, and was smaller in 2003 than in 1990. The gap between White fourth-graders and Hispanic fourth-graders also narrowed between 2000 and 2003, but the gap in 2003 was not found to be measurably different from that in 1990.

At grade 8, the score gap between White students and Black students was narrower in 2003 than in 2000, but the gap in 2003 was not found to be measurably different from 1990. The score gap between White eighth-graders and Hispanic eighth-graders in 2003 was not found to be measurably different from the gap in any of the previous assessment years.

Figure 3.4 Gaps in average mathematics scale scores, by race/ethnicity, grades 4 and 8: 1990–2003



* Significantly different from 2003.

NOTE: Score gaps are calculated based on differences between unrounded average scale scores. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Achievement-level results across assessment years for racial/ethnic subgroups are shown in table 3.2. As with the scale score results, comparison of the performance of racial/ethnic subgroups in 2003 reveals higher percentages of White and Asian/Pacific Islander students performing at or above the *Basic* and *Proficient* levels and at *Advanced* than of Black, Hispanic, and American Indian/Alaska Native students at grades 4 and 8. Higher percentages of Asian/Pacific Islander students than White students performed at or above *Proficient* and at *Advanced* at grades 4 and 8.

At grade 4, the percentages of White, Black, and Hispanic students performing at or above the *Basic* and *Proficient* levels were higher in 2003 than in any of the previous assessment years. The percentages of Asian/Pacific Islander students performing at or above *Basic* and *Proficient* were higher in 2003 than in 1990. The percentage of American Indian/Alaska Native students at or above *Basic* was higher in 2003 than in 2000.

At grade 8, the percentages of White, Black, and Hispanic students performing at or above *Basic* and *Proficient* were higher in 2003 than in any of the previous assessment years. The percentages of Asian/Pacific Islander students performing at or above *Basic* and *Proficient* were higher in 2003 than in 1990.

Table 3.2 Percentages of students, by mathematics achievement level and race/ethnicity, grades 4 and 8: 1990–2003

Grade 4		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
White							
Accommodations not permitted	1990	41 *	43	14 *	2 *	59 *	16 *
	1992	31 *	47	20 *	2 *	69 *	22 *
	1996	26 *	48 *	24 *	3 *	74 *	27 *
	2000	21 *	46	30 *	3 *	79 *	33 *
Accommodations permitted	1996	24 *	49 *	24 *	3 *	76 *	27 *
	2000	22 *	46	28 *	3 *	78 *	31 *
	2003	13	45	37	5	87	43
Black							
Accommodations not permitted	1990	83 *	16 *	1 *	#	17 *	1 *
	1992	78 *	20 *	2 *	#	22 *	2 *
	1996	70 *	26 *	4 *	#	30 *	4 *
	2000	63 *	31 *	5 *	#	37 *	5 *
Accommodations permitted	1996	73 *	24 *	3 *	#	27 *	3 *
	2000	64 *	31 *	4 *	#	36 *	5 *
	2003	46	44	10	#	54	10
Hispanic							
Accommodations not permitted	1990	67 *	28 *	5 *	#	33 *	5 *
	1992	66 *	29 *	5 *	#	34 *	6 *
	1996	61 *	31 *	7 *	#	39 *	7 *
	2000	54 *	37 *	8 *	#	46 *	9 *
Accommodations permitted	1996	60 *	33 *	7 *	#	40 *	7 *
	2000	58 *	34 *	7 *	# *	42 *	7 *
	2003	38	47	15	1	62	16
Asian/Pacific Islander							
Accommodations not permitted	1990	38 *	39	20 *	3	62 *	22 *
	1992	27 *	46	23 *	4 *	73 *	28 *
	1996	35 *	44	17 *	4 *	65 *	21 *
	2000	‡	‡	‡	‡	‡	‡
Accommodations permitted	1996	33 *	40	22 *	5	67 *	27 *
	2000	‡	‡	‡	‡	‡	‡
	2003	13	39	39	10	87	48
American Indian/Alaska Native							
Accommodations not permitted	1990	‡	‡	‡	‡	‡	‡
	1992	‡	‡	‡	‡	‡	‡
	1996	‡	‡	‡	‡	‡	‡
	2000	55	35	11	#	45	11
Accommodations permitted	1996	43	47	10	#	57	10
	2000	60 *	32 *	8	#	40 *	8
	2003	36	47	16	1	64	17
Other [1]							
Accommodations not permitted	1990	‡	‡	‡	‡	‡	‡
	1992	‡	‡	‡	‡	‡	‡
	1996	‡	‡	‡	‡	‡	‡
	2000	39 *	47	11 *	2	61 *	14 *
Accommodations permitted	1996	‡	‡	‡	‡	‡	‡
	2000	35 *	49	15	1	65 *	16 *
	2003	19	48	29	4	81	33

See notes at end of table. ▶

Table 3.2 Percentages of students, by mathematics achievement level and race/ethnicity, grades 4 and 8: 1990–2003—Continued

Grade 8		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
White							
Accommodations not permitted	1990	40 *	42	16 *	2 *	60 *	18 *
	1992	32 *	42	22 *	4 *	68 *	26 *
	1996	27 *	43	25 *	5 *	73 *	30 *
	2000	23 *	42	28 *	6	77 *	34 *
Accommodations permitted	1996	27 *	43	25 *	5 *	73 *	30 *
	2000	24 *	42	28 *	6	76 *	34 *
	2003	20	42	30	7	80	37
Black							
Accommodations not permitted	1990	78 *	17 *	5	#	22 *	5 *
	1992	80 *	18 *	2 *	#	20 *	2 *
	1996	73 *	23 *	4 *	#	27 *	5 *
	2000	69 *	26 *	5 *	#	31 *	5 *
Accommodations permitted	1996	75 *	21 *	4 *	#	25 *	4 *
	2000	69 *	26 *	5 *	#	31 *	5 *
	2003	61	32	7	1	39	7
Hispanic							
Accommodations not permitted	1990	66 *	27	7	1 *	34 *	7 *
	1992	65 *	28 *	6 *	1	35 *	7 *
	1996	61 *	31	8	1	39 *	9
	2000	59 *	32	8	1	41 *	9
Accommodations permitted	1996	61 *	31 *	7 *	1	39 *	8 *
	2000	59 *	33	8 *	#*	41 *	8 *
	2003	52	36	10	1	48	12
Asian/Pacific Islander							
Accommodations not permitted	1990	36 *	36	23	6 *	64 *	29 *
	1992	24	33	30	14	76	43
	1996	‡	‡	‡	‡	‡	‡
	2000	26	33	29	12	74	41
Accommodations permitted	1996	‡	‡	‡	‡	‡	‡
	2000	25	34	29	12	75	41
	2003	22	35	31	13	78	43
American Indian/Alaska Native							
Accommodations not permitted	1990	‡	‡	‡	‡	‡	‡
	1992	‡	‡	‡	‡	‡	‡
	1996	‡	‡	‡	‡	‡	‡
	2000	58	32	8	2	42	9
Accommodations permitted	1996	‡	‡	‡	‡	‡	‡
	2000	53	37	8	2	47	10
	2003	48	37	13	2	52	15
Other [1]							
Accommodations not permitted	1990	‡	‡	‡	‡	‡	‡
	1992	53 *	36	10 *	#	47 *	11 *
	1996	‡	‡	‡	‡	‡	‡
	2000	46 *	36	14	5	54 *	18 *
Accommodations permitted	1996	‡	‡	‡	‡	‡	‡
	2000	44	34	17	4	56	22
	2003	27	44	24	5	73	29

The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate. Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996 and grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from this report.
* Significantly different from 2003.
[1] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

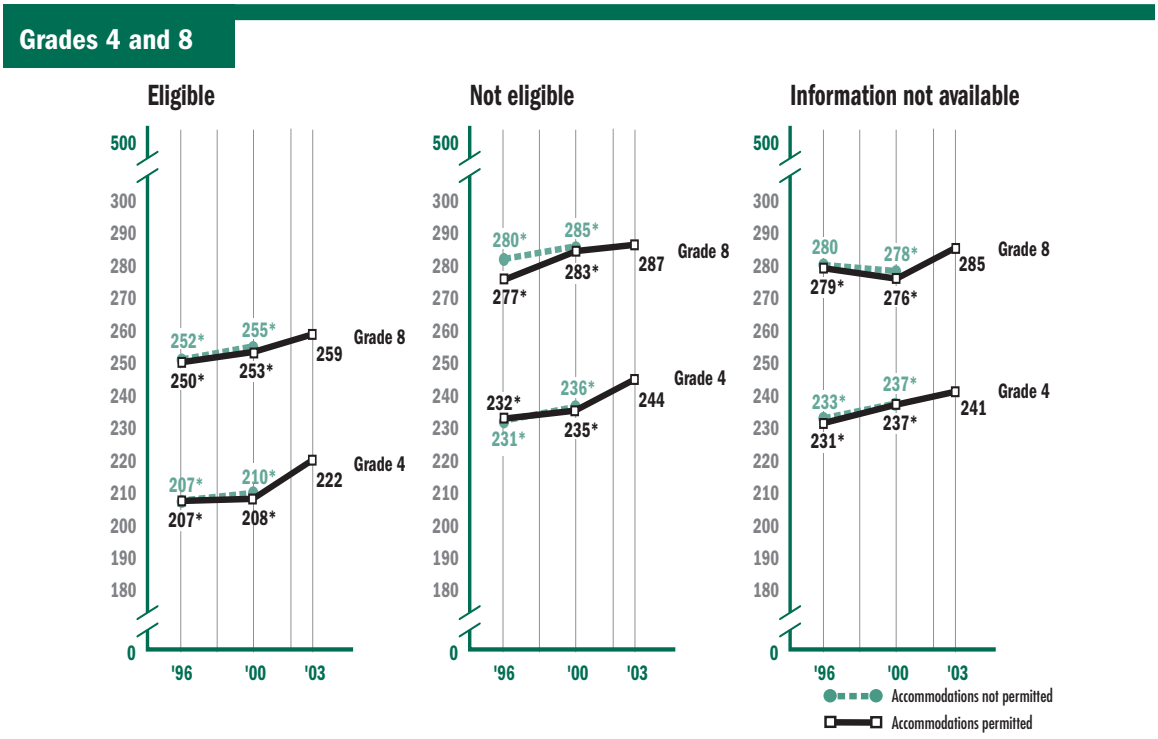
Student Eligibility for Free/Reduced-Price School Lunch

NAEP collects data on students' eligibility for free/reduced-price lunch as an indicator of family economic status. Eligibility for free and reduced-price lunch is determined by students' family income in relation to the federally established poverty level. Free lunch qualification is set at 130 percent of the poverty level, and reduced-price lunch qualification is set at between 130 and 185 percent of the poverty level.

NAEP first began collecting information on student eligibility for this program in 1996; therefore, cross-year comparisons to 1990 and 1992 cannot be made. The percentage of eligible students varied by grade. In 2003, 40 percent of fourth-graders and 33 percent of eighth-graders were eligible for free/reduced-price lunch. Information regarding eligibility was not available for 10 percent of fourth-graders and 11 percent of eighth-graders. (See table B.4 in appendix B.) If school records were not available, the student was classified as "Information not available." If the school did not participate in the program, all students in the school were classified as "Information not available."

As shown in figure 3.5, the average mathematics score in 2003 for students who were eligible for free/reduced-price lunch was lower than that of students who were not eligible at both grades 4 and 8. The average mathematics scores for fourth-grade and eighth-grade students were higher in 2003 than in the 2000 and 1996 assessment years for students who were eligible for free/reduced-price lunch and for those who were not eligible.

Figure 3.5 Average mathematics scale scores, by student eligibility for free/reduced-price school lunch, grades 4 and 8: 1996–2003



* Significantly different from 2003.

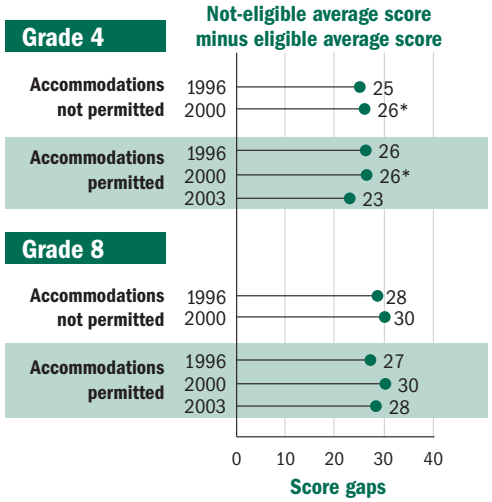
NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Information on students' eligibility in 2003 was not available for 10 percent of fourth-graders and 11 percent of eighth-graders. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

Figure 3.6 shows the scale score gaps between students who were eligible and students who were not eligible for free/reduced-price lunch. At grade 4, the average score gap decreased from 2000 to 2003, but the gap in 2003 was not found to be measurably different from the gap in 1996.

At grade 8, there was no measurable change detected in the gap in 2003 in comparison to any of the previous assessment years.

Figure 3.6 Gaps in average mathematics scale scores, by student eligibility for free/reduced-price school lunch, grades 4 and 8: 1996–2003



* Significantly different from 2003.

NOTE: Score gaps are calculated based on differences between unrounded average scale scores. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

Achievement-level results by students' eligibility for free/reduced-price lunch are presented in table 3.3. The percentages of fourth- and eighth-graders performing at or above *Basic* and *Proficient* were higher in 2003 than in 2000 and 1996 both for students who were eligible and those who were not eligible.

Table 3.3 Percentages of students, by mathematics achievement level and eligibility for free/reduced-price school lunch, grades 4 and 8: 1996–2003

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
Eligible							
Accommodations not permitted	1996	58 *	33 *	8 *	#	42 *	9 *
	2000	54 *	37 *	8 *	# *	46 *	9 *
Accommodations permitted	1996	60 *	33 *	7 *	# *	40 *	8 *
	2000	57 *	35 *	7 *	# *	43 *	8 *
	2003	38	47	14	1	62	15
Not eligible							
Accommodations not permitted	1996	26 *	48 *	23 *	3 *	74 *	26 *
	2000	21 *	46 *	30 *	4 *	79 *	33 *
Accommodations permitted	1996	24 *	49 *	24 *	3 *	76 *	27 *
	2000	22 *	46	28 *	4 *	78 *	32 *
	2003	12	43	39	6	88	45
Information not available							
Accommodations not permitted	1996	25	46	26 *	3	75	30 *
	2000	20	44	32	4 *	80	36
Accommodations permitted	1996	28 *	44	25 *	4	72 *	28 *
	2000	20	44	32	4 *	80	36 *
	2003	16	43	36	6	84	41
Grade 8							
Eligible							
Accommodations not permitted	1996	61 *	31 *	7 *	1	39 *	8 *
	2000	57 *	33	9	1	43 *	10
Accommodations permitted	1996	62 *	30 *	8 *	1	38 *	8 *
	2000	59 *	32 *	9 *	1	41 *	9 *
	2003	52	36	11	1	48	12
Not eligible							
Accommodations not permitted	1996	29 *	42	25 *	5	71 *	30 *
	2000	24 *	41	28	7	76 *	35
Accommodations permitted	1996	31 *	41	24 *	4 *	69 *	28 *
	2000	26 *	41	27 *	7	74 *	34 *
	2003	21	41	30	7	79	37
Information not available							
Accommodations not permitted	1996	29	40	25	6	71	30
	2000	32 *	38	25	5 *	68 *	30 *
Accommodations permitted	1996	30	40	24	6	70	30 *
	2000	33 *	39	23 *	5 *	67 *	29 *
	2003	25	39	28	8	75	36

The estimate rounds to zero.
* Significantly different from 2003.
NOTE: Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

The previous results presented for students within different racial/ethnic subgroups and by eligibility for free/reduced-price lunch are explored in more detail in table 3.4. Average scores for students within different racial/ethnic categories are presented for students who were either eligible or not eligible for free/reduced-price lunch, as well as for students for whom eligibility information was not available. By presenting the data in this manner, it is possible to examine the performance of students in different racial/ethnic subgroups, while controlling for one indicator of socioeconomic status—eligibility for free/reduced-price lunch.

The percentages of students who were eligible for free/reduced-price school lunch in 2003 were higher among Black and Hispanic students than among White and Asian/Pacific Islander students at grades 4 and 8 (see table B.5 in appendix B).

At both grades, White and Asian/Pacific Islander students outperformed Black, Hispanic, and American Indian/Alaska Native students, and average scores for Hispanic students were higher than those of Black students when students were eligible as well as not eligible for free/reduced-price lunch. While overall results for racial/ethnic subgroups show no measurable difference between the average scores of American Indian/Alaska Native students and Hispanic students at either grade 4 or grade 8 in 2003, American Indian/Alaska Native students who were not eligible for free/reduced-price lunch scored higher on average than Hispanic students who were not eligible at both grades. While Asian/Pacific Islander students scored higher on average than White students overall at grade 8, there was no measurable difference detected between these two groups for students who were eligible.

Table 3.4 Average mathematics scale scores, by student eligibility for free/reduced-price school lunch and race/ethnicity, grades 4 and 8: 2003

	Eligible	Not eligible	Information not available
Grade 4			
White	231	247	247
Black	212	226	221
Hispanic	219	232	224
Asian/Pacific Islander	234	254	248
American Indian/Alaska Native	218	237	219
Grade 8			
White	272	291	293
Black	247	262	256
Hispanic	254	269	263
Asian/Pacific Islander	274	300	299
American Indian/Alaska Native	255	276	260

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

Parents' Highest Level of Education

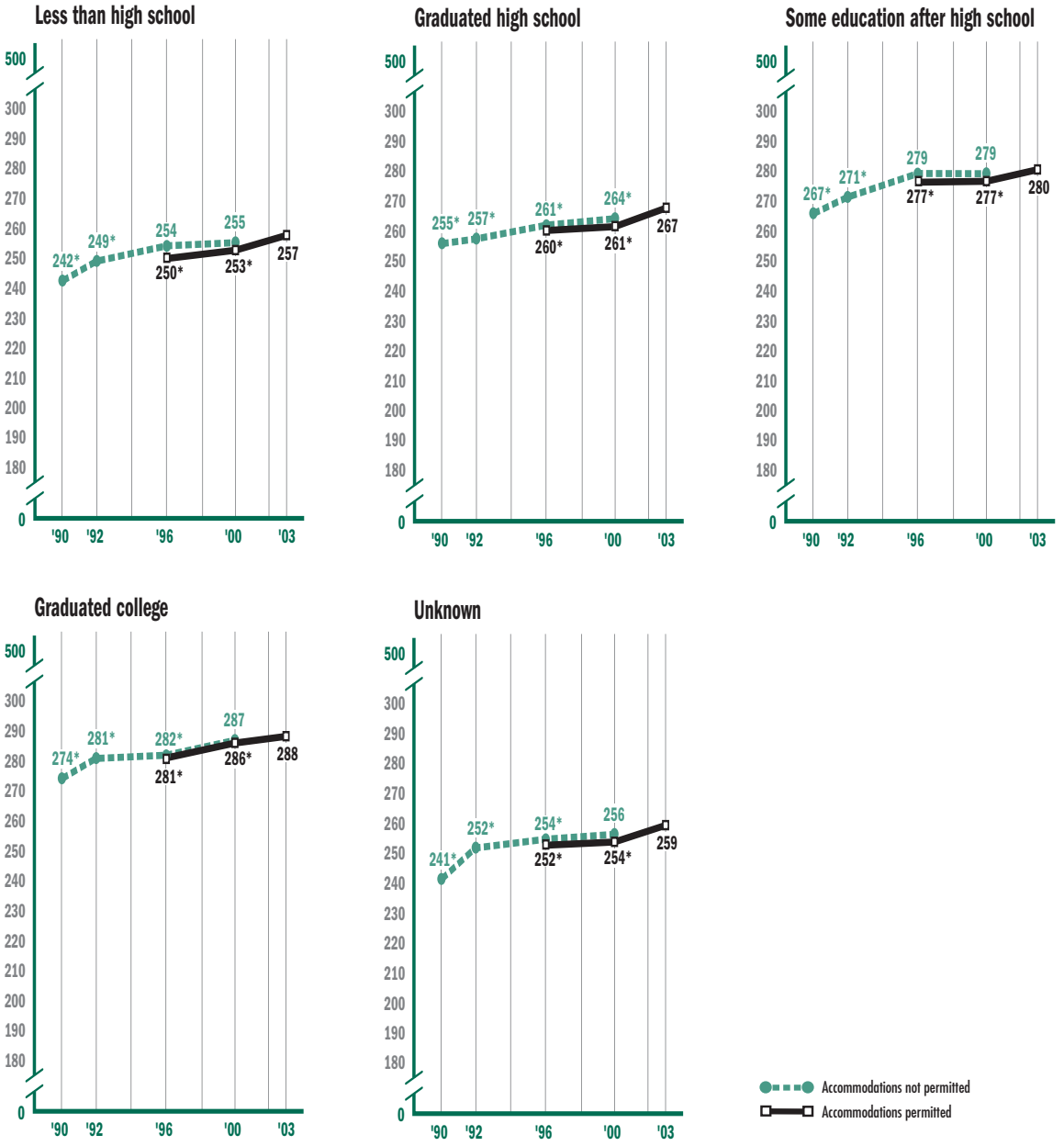
Eighth-grade students who participated in the NAEP 2003 mathematics assessment were asked to indicate the highest level of education they thought their parents had completed. Five response options—did not finish high school, graduated from high school, some education after high school, graduated from college, or "I don't know"—were offered. The highest level of education reported for either parent was used in the analysis of this question. Fourth-graders' replies to this question are not reported because their responses in previous NAEP assessments were highly variable, and a large percentage of them chose the "I don't know" option.

Almost half (48 percent) of the eighth-graders who participated in the 2003 mathematics assessment reported that at least one of their parents had graduated from college, and 7 percent indicated that neither parent had graduated from high school. Eleven percent of the students indicated they did not know their parents' level of education (see table B.6 in appendix B).

Average eighth-grade scores for student-reported parental education levels are shown in figure 3.7. Overall, in 2003, there was a positive relationship between student-reported parental education and student achievement: The higher the parental education level, the higher the average mathematics score. Average scores for eighth-grade students increased from 2000 to 2003 and were higher in 2003 than in 1990 regardless of the level of parental education reported.

Figure 3.7 Average mathematics scale scores, by student-reported parents' highest level of education, grade 8: 1990–2003

Grade 8



* Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Achievement-level results by level of parental education are presented in table 3.5. The percentage of students performing at or above *Basic* was higher in 2003 than in 2000 for eighth-graders who reported that at least one parent had graduated from high school. The percentages of eighth-graders performing at or above *Basic* and *Proficient* in 2003 were higher than in 1990 regardless of the level of parental education students reported. The percentage of students performing at *Advanced* was higher in 2003 than in 1990 for students who reported that at least one parent had graduated from college.

Table 3.5 Percentages of students, by mathematics achievement level and student-reported parents' highest level of education, grade 8: 1990–2003

Grade 8		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Less than high school							
Accommodations not permitted	1990	75 *	21 *	3 *	#	25 *	3 *
	1992	65 *	29 *	6	1	35 *	6
	1996	56	35	8	1	44	8
	2000	55	37	7	1	45	8
Accommodations permitted	1996	61 *	32	7	1	39 *	7
	2000	57	36	7	1	43	8
	2003	55	36	8	1	45	9
Graduated high school							
Accommodations not permitted	1990	58 *	33 *	8 *	#	42 *	9 *
	1992	54 *	36 *	9 *	1	46 *	10 *
	1996	48 *	39	12 *	1	52 *	13 *
	2000	46 *	38 *	14	1	54 *	16
Accommodations permitted	1996	51 *	36	12 *	1	49 *	13 *
	2000	49 *	37 *	14	1	51 *	15
	2003	41	42	15	2	59	17
Some education after high school							
Accommodations not permitted	1990	42 *	43	13 *	2	58 *	16 *
	1992	39 *	41 *	17 *	3	61 *	20 *
	1996	29	45	23	4	71	26
	2000	28	45	23	3	72	27
Accommodations permitted	1996	30	44	23	3	70	26
	2000	30	45	22	3	70	25
	2003	27	45	24	4	73	28
Graduated college							
Accommodations not permitted	1990	34 *	42 *	20 *	4 *	66 *	24 *
	1992	29 *	38	27 *	6 *	71 *	33 *
	1996	27 *	38	28 *	7	73 *	35 *
	2000	23	37	31	9	77	39
Accommodations permitted	1996	28 *	38	27 *	6 *	72 *	34 *
	2000	24	38	30	9	76	38
	2003	22	38	31	9	78	40
Unknown							
Accommodations not permitted	1990	70 *	25 *	5 *	#	30 *	5 *
	1992	61 *	30	8 *	1	39 *	9 *
	1996	58 *	32	9	1	42 *	10
	2000	55	34	10	1	45	11
Accommodations permitted	1996	59 *	32	9	1	41 *	10
	2000	58 *	33	9	1	42 *	10 *
	2003	52	35	11	1	48	12

The estimate rounds to zero.

* Significantly different from 2003.

NOTE: Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Type of School

The schools that participate in the NAEP assessment are classified as either public or nonpublic. A further distinction is then made between nonpublic schools that are Catholic schools and those that are some other type of nonpublic school. Results for additional categories of nonpublic schools are available on the NAEP web site (http://nces.ed.gov/nationsreportcard/naepdata). In 2003, the great majority of students attended public schools (90 percent of fourth-graders, and 91 percent of eighth-graders). The remaining one-tenth of students was almost evenly split between Catholic schools and other nonpublic schools. (See table B.7 in appendix B.) Families who send children to private schools may differ from other families in ways that affect student achievement and may or may not be measured by NAEP.

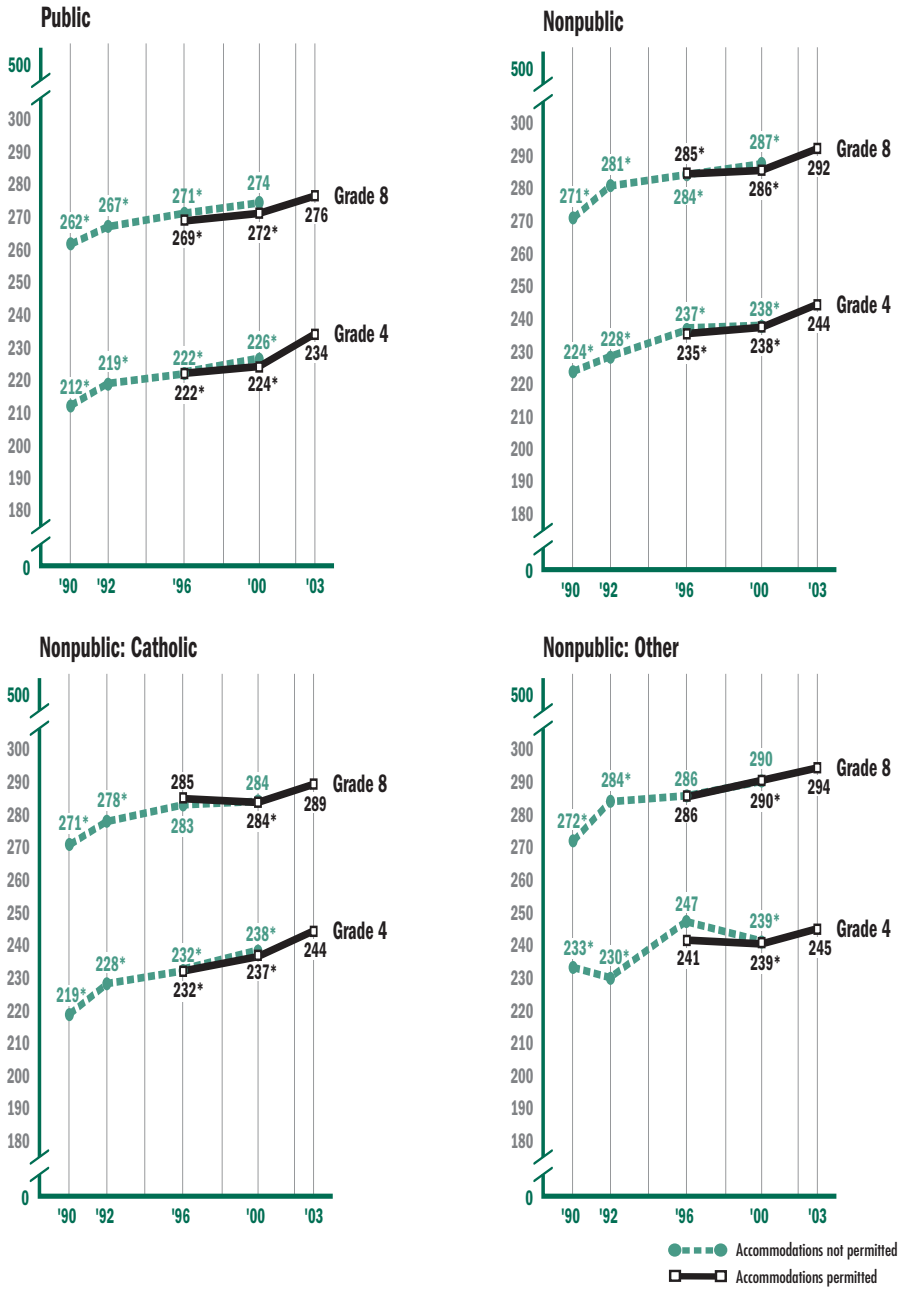
The average mathematics scores of fourth- and eighth-grade students by the type of school they attend are presented in figure 3.8. Performance results in 2003 show that, at grade 4, students who attended nonpublic schools had higher average scores than students who attended public schools.

In 2003, eighth-grade students in nonpublic schools had higher average scores than eighth-graders in public schools. Eighth-grade students in Catholic schools had lower average scores than eighth-graders in other nonpublic schools.

The average fourth-grade and eighth-grade mathematics scores for students in public and nonpublic schools increased from 2000 to 2003 and were higher in 2003 than in 1990. Average scores also increased from 2000 to 2003 for students in both Catholic and other nonpublic schools, and were higher in 2003 than in 1990.

Figure 3.8 **Average mathematics scale scores, by type of school, grades 4 and 8: 1990–2003**

Grades 4 and 8



* Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Achievement-level results by type of school are presented for grades 4 and 8 in table 3.6. In 2003, the percentages of students performing at or above *Basic* and *Proficient* and at *Advanced* were higher at grade 4 for students attending nonpublic schools than those in public schools.

The 2003 results for grade 8 show that public schools had lower percentages of students performing at or above *Basic* and *Proficient* and at *Advanced* than did nonpublic schools. The percentages of students performing at or above *Proficient* and at *Advanced* were lower in Catholic schools than in other nonpublic schools.

At grade 4, the percentages of public, nonpublic, and Catholic school students performing at or above *Basic* and *Proficient* increased between 2000 and 2003 and were higher in 2003 than in 1990. The percentages of other nonpublic school students performing at or above *Proficient* were higher in 2003 than in 2000 and 1990. The percentage of other nonpublic school students performing at or above *Basic* increased between 2000 and 2003.

At grade 8, the percentages of students performing at or above *Basic* and *Proficient* were higher in 2003 than in 1990 for students in public, nonpublic, Catholic, and other nonpublic schools. Since 2000, the percentages of students performing at or above *Basic* increased for public schools only, and the percentage of students performing at or above *Proficient* increased for public, nonpublic, and Catholic schools.

Table 3.6 Percentages of students, by mathematics achievement level and type of school, grades 4 and 8: 1990–2003

Grade 4		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Public							
Accommodations not permitted	1990	52 *	36 *	11 *	1 *	48 *	12 *
	1992	43 *	40 *	16 *	2 *	57 *	17 *
	1996	38 *	42	18 *	2 *	62 *	20 *
	2000	33 *	42 *	22 *	2 *	67 *	25 *
Accommodations permitted	1996	39 *	42 *	17 *	2 *	61 *	19 *
	2000	36 *	41 *	20 *	2 *	64 *	22 *
	2003	24	45	28	4	76	31
Nonpublic							
Accommodations not permitted	1990	35 *	45	18 *	2 *	65 *	20 *
	1992	29 *	48 *	21 *	2 *	71 *	22 *
	1996	20 *	47	29 *	4	80 *	33 *
	2000	17 *	47 *	32 *	4 *	83 *	36 *
Accommodations permitted	1996	21 *	48 *	28 *	3 *	79 *	31 *
	2000	18 *	46 *	31 *	4 *	82 *	35 *
	2003	12	43	38	6	88	44
Nonpublic: Catholic							
Accommodations not permitted	1990	41 *	44	14 *	1 *	59 *	15 *
	1992	30 *	48	20 *	2 *	70 *	22 *
	1996	24 *	50	24 *	2 *	76 *	26 *
	2000	17 *	48 *	31 *	3 *	83 *	34 *
Accommodations permitted	1996	23 *	49	26 *	2 *	77 *	28 *
	2000	19 *	48	30 *	3 *	81 *	33 *
	2003	12	44	38	5	88	43
Nonpublic: Other							
Accommodations not permitted	1990	26	46	26 *	3	74	29 *
	1992	28 *	48	21 *	3 *	72 *	24 *
	1996	11	42	38	8	89	47
	2000	17 *	45	33 *	5	83 *	38 *
Accommodations permitted	1996	15	45	34	6	85	40
	2000	18 *	45	32 *	5	82 *	37 *
	2003	13	42	39	7	87	45

See notes at end of table. ▶

Table 3.6 Percentages of students, by mathematics achievement level and type of school, grades 4 and 8: 1990–2003—Continued

Grade 8		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Public							
Accommodations not permitted	1990	49 *	36 *	13 *	2 *	51 *	15 *
	1992	44 *	36 *	17 *	3 *	56 *	20 *
	1996	39 *	38	19 *	4	61 *	23 *
	2000	35 *	38	21	5	65 *	26
Accommodations permitted	1996	41 *	37 *	19 *	4 *	59 *	22 *
	2000	38 *	37 *	20 *	5	62 *	25 *
	2003	33	39	22	5	67	27
Nonpublic							
Accommodations not permitted	1990	37 *	46	16 *	1 *	63 *	17 *
	1992	29 *	41	26 *	5 *	71 *	31 *
	1996	25 *	42	28 *	6 *	75 *	33 *
	2000	21	42	31	6 *	79	37 *
Accommodations permitted	1996	22	44 *	29	5 *	78	34 *
	2000	21	43 *	30 *	6 *	79	36 *
	2003	18	39	33	10	82	43
Nonpublic: Catholic							
Accommodations not permitted	1990	37 *	47	14 *	1 *	63 *	16 *
	1992	30 *	43	24 *	3 *	70 *	27 *
	1996	25	43	28	4 *	75	32
	2000	23	44	28	5 *	77	33
Accommodations permitted	1996	22	45	29	4 *	78	33
	2000	23	45	27	5 *	77	32 *
	2003	19	42	31	8	81	39
Nonpublic: Other							
Accommodations not permitted	1990	36 *	45	17 *	1	64 *	19 *
	1992	27 *	37	30	7 *	73 *	37
	1996	25	39	27	8	75	36
	2000	19	40	33	8 *	81	42
Accommodations permitted	1996	21	43	29	7	79	36
	2000	19	40	33	8 *	81	41
	2003	17	36	35	12	83	47

* Significantly different from 2003.

NOTE: Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

The results presented for students in public and nonpublic schools and by highest level of parent's education are explored in more detail in table 3.7. Average scores of eighth-graders in public and nonpublic schools are presented for each level of parental education. By presenting the data in this manner, it is possible to examine the performance of students in the two types of schools, while controlling for parental education.

At grade 8, nearly three-quarters (71 percent) of the students attending nonpublic schools reported that at least one parent had graduated from college, while less than one-half (45 percent) of the students attending public schools reported that at least one parent graduated from college. Students who reported each of the other levels of parental education were more likely to attend public than nonpublic schools (see table B.8 in appendix B). The average mathematics score for eighth-grade public school students was lower than the average score for nonpublic school students, regardless of the reported level of parents' education.

Table 3.7 Average mathematics scale scores, by student-reported parents' highest level of education and type of school, grade 8: 2003

Grade 8	Less than high school	Graduated high school	Some education after high school	Graduated college	Unknown
Public	256	267	280	287	258
Nonpublic	270	277	285	297	269

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

Type of Location

The schools from which NAEP draws its samples of students are classified according to their type of location. Based on U.S. Census Bureau definitions of metropolitan statistical areas, including population size and density, the three mutually exclusive categories are central city, urban fringe/large town, and rural/small town. The methods used to identify the type of school location for the 2000 and 2003 assessments were different from those used for prior assessments; therefore, only the data from the 2000 and 2003 assessments are reported. More information on the definitions of location type is given in appendix A.

The average mathematics scores for fourth- and eighth-grade students, by type of location, are presented in figure 3.9. In 2003, at both grades 4 and 8, students in schools in urban fringe/large town and rural/small town locations had higher average mathematics scores than those in central city locations. Students in urban fringe/large town schools had higher average scores than students in rural/small town schools at both grades. Average mathematics scores in all three location types—central city, urban fringe/large town, and rural/small town—were higher in 2003 than in 2000 for both grades 4 and 8.

Figure 3.9 Average mathematics scale scores, by type of location, grades 4 and 8: 2000 and 2003

* Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (2000–2003) differ slightly from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2003 Mathematics Assessments.

Achievement-level results by type of location are presented in table 3.8. In 2003, at grade 4, higher percentages of students performed at or above *Basic* and *Proficient* in urban fringe/large town and rural/small town locations than in central city locations. Also, higher percentages of students performed at or above *Proficient* and at *Advanced* in urban fringe/large town locations than in rural locations. At grade 8, higher percentages of students performed at or above the *Basic* and *Proficient* levels in urban fringe/large town and rural/small town schools than in central city schools; in urban fringe areas, higher percentages of students performed at or above *Proficient* and at the *Advanced* level than in rural/small town areas.

At grade 4, the percentages of students at or above *Basic* and *Proficient* and at *Advanced* were higher in 2003 than in 2000 in central city, urban fringe/large town, and rural/small town locations. At grade 8, the percentage of students at or above *Basic* was higher in 2003 than in 2000 in central city, urban fringe/large town, and rural/small town locations.

Table 3.8 Percentages of students, by mathematics achievement level and type of location, grades 4 and 8: 2000 and 2003

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
Central city							
Accommodations not permitted	2000	39 *	40	19 *	2 *	61 *	21 *
Accommodations permitted	2000	42 *	39 *	17 *	2 *	58 *	19 *
	2003	30	44	23	3	70	26
Urban fringe/large town							
Accommodations not permitted	2000	26 *	42	28 *	4 *	74 *	31 *
Accommodations permitted	2000	30 *	42	25 *	3 *	70 *	28 *
	2003	19	44	32	5	81	37
Rural/small town							
Accommodations not permitted	2000	30 *	47	21 *	2 *	70 *	23 *
Accommodations permitted	2000	33 *	45	20 *	2 *	67 *	21 *
	2003	20	47	29	3	80	33
Grade 8							
Central city							
Accommodations not permitted	2000	44	33	18	5	56	23
Accommodations permitted	2000	46 *	33 *	17	4	54 *	21
	2003	40	36	19	5	60	24
Urban fringe/large town							
Accommodations not permitted	2000	29	40	25	6	71	31
Accommodations permitted	2000	31 *	40	23	5	69 *	29
	2003	28	39	26	6	72	32
Rural/small town							
Accommodations not permitted	2000	33	41	22	4	67	26
Accommodations permitted	2000	34 *	40	22	4	66 *	26
	2003	29	42	24	4	71	29

* Significantly different from 2003.
NOTE: Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations-permitted results (2000–2003) differ slightly from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2003 Mathematics Assessments.

Performance of Selected Subgroups by State

Results for public school students in participating states and jurisdictions are presented in this section by gender, race/ethnicity, and eligibility for free/reduced-price lunch. Additional data for participating jurisdictions by subgroup (including percentages at or above *Basic* and average scale score gaps by gender and race/ethnicity) are included in appendix C. Since results for each jurisdiction are based on the performance of public school students only, the results for the nation that appear in the tables along with data for participating jurisdictions are based on public school students only (unlike the national results presented earlier in the chapter, which reflect the performance of both public and nonpublic school students combined).

In addition to results from the 2003 assessment, results from earlier assessment years in which data are available are presented by these subgroups for participating jurisdictions.

Gender

Tables 3.9 and 3.10 present the average mathematics scores for male and female students in participating jurisdictions at grades 4 and 8, respectively. In 2003, male fourth-graders scored higher on average than female fourth-graders in 24 jurisdictions. At grade 8, average scores were higher for male students than female students in Massachusetts, South Carolina and Department of Defense Overseas Schools.

Between 2000 and 2003, average scores increased for both male and female fourth-graders in all 43 of the jurisdictions that participated in both assessments.

For those jurisdictions that participated in both the 1992 and 2003 fourth-grade mathematics assessments, all 42 showed score increases for both male and female students.

For the 42 jurisdictions that participated in both the 2000 and 2003 eighth-grade assessments, 17 showed increases for both male and female students, 6 showed increases only for male students, and 5 showed increases only for female students. For the 38 jurisdictions that participated at grade 8 in both the 1990 and 2003 assessments, scores increased for both male and female students in 36 of the jurisdictions and increased for female students only in Montana and North Dakota.

Table 3.9 Average mathematics scale scores, by gender, grade 4 public schools: By state, 1992–2003

Grade 4	Male					Female				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public) [1]	220 *	224 *	227 *	225 *	235	218 *	221 *	225 *	223 *	233
Alabama	208 *,**	212 *,**	217 *,**	216 *,**	223	208 *,**	212 *,**	219 *,**	219 *,**	223
Alaska	–	224 *,**	–	–	235	–	224 *,**	–	–	231
Arizona	215 *,**	218 *,**	220 *,**	219 *,**	231	216 *,**	217 *,**	218 *,**	219 *,**	227
Arkansas	211 *,**	216 *,**	217 *,**	216 *,**	228	210 *,**	216 *,**	217 *,**	216 *,**	230
California	209 *,**	211 *,**	213 *,**	212 *,**	229	208 *,**	207 *,**	214 *,**	213 *,**	225
Colorado	222 *,**	227 *,**	–	–	237	220 *,**	224 *,**	–	–	233
Connecticut	228 *,**	234 *,**	235 *,**	235 *,**	243	225 *,**	230 *,**	233 *,**	233 *,**	238
Delaware	219 *,**	216 *,**	–	–	237	217 *,**	215 *,**	–	–	235
Florida	215 *,**	215 *,**	–	–	235	212 *,**	217 *,**	–	–	233
Georgia	215 *,**	216 *,**	220 *,**	220 *,**	231	216 *,**	215 *,**	219 *,**	218 *,**	229
Hawaii	213 *,**	215 *,**	214 *,**	215 *,**	227	215 *,**	215 *,**	217 *,**	217 *,**	226
Idaho	223 *,**	–	227 *,**	224 *,**	237	220 *,**	–	227 *,**	225 *,**	233
Illinois	–	–	227 *,**	224 *,**	234	–	–	222 *,**	222 *,**	232
Indiana	222 *,**	231 *,**	235 *,**	234 *,**	239	220 *,**	228 *,**	233 *,**	232 *,**	237
Iowa	230 *,**	230 *,**	235 *,**	233 *,**	240	229 *,**	228 *,**	231 *,**	230 *,**	236
Kansas	–	–	232 *,**	233 *,**	244	–	–	232 *,**	231 *,**	240
Kentucky	215 *,**	220 *,**	222 *,**	220 *,**	230	215 *,**	220 *,**	220 *,**	219 *,**	227
Louisiana	205 *,**	209 *,**	218 *,**	219 *,**	227	204 *,**	210 *,**	218 *,**	217 *,**	226
Maine	232 *,**	234 *,**	232 *,**	232 *,**	239	231 *,**	231 *,**	229 *,**	227 *,**	236
Maryland	219 *,**	222 *,**	223 *,**	223 *,**	235	216 *,**	220 *,**	221 *,**	220 *,**	232
Massachusetts	228 *,**	230 *,**	237 *,**	235 *,**	244	225 *,**	228 *,**	233 *,**	232 *,**	239
Michigan	222 *,**	227 *,**	232 *,**	230 *,**	238	217 *,**	225 *,**	230	228 *,**	233
Minnesota	229 *,**	234 *,**	237 *,**	236 *,**	244	228 *,**	231 *,**	233 *,**	232 *,**	240
Mississippi	201 *,**	208 *,**	210 *,**	210 *,**	223	203 *,**	209 *,**	211 *,**	211 *,**	223
Missouri	222 *,**	225 *,**	229 *,**	228 *,**	235	223 *,**	224 *,**	228 *,**	228 *,**	235
Montana	–	229 *,**	232	231 *,**	236	–	226 *,**	228 *,**	226 *,**	235
Nebraska	227 *,**	228 *,**	227 *,**	225 *,**	238	224 *,**	227 *,**	225 *,**	225 *,**	235
Nevada	–	220 *,**	222 *,**	221 *,**	229	–	216 *,**	218 *,**	218 *,**	226
New Hampshire	230 *,**	–	–	–	246	229 *,**	–	–	–	240
New Jersey	228 *,**	231 *,**	–	–	240	226 *,**	223 *,**	–	–	237
New Mexico	213 *,**	215 *,**	216 *,**	216 *,**	224	213 *,**	213 *,**	212 *,**	211 *,**	221
New York	222 *,**	224 *,**	228 *,**	227 *,**	237	215 *,**	222 *,**	225 *,**	224 *,**	235
North Carolina	213 *,**	224 *,**	234 *,**	230 *,**	243	213 *,**	224 *,**	231 *,**	230 *,**	241
North Dakota	230 *,**	232 *,**	233 *,**	231 *,**	240	227 *,**	230 *,**	229 *,**	229 *,**	235
Ohio	220 *,**	–	233 *,**	232 *,**	239	217 *,**	–	228 *,**	228 *,**	237
Oklahoma	221 *,**	–	226	225 *,**	230	219 *,**	–	224 *,**	223 *,**	228
Oregon	–	224 *,**	229 *,**	225 *,**	237	–	223 *,**	224 *,**	222 *,**	235
Pennsylvania	225 *,**	227 *,**	–	–	238	223 *,**	226 *,**	–	–	234
Rhode Island	216 *,**	223 *,**	225 *,**	225 *,**	231	215 *,**	218 *,**	224 *,**	223 *,**	229
South Carolina	213 *,**	214 *,**	221 *,**	221 *,**	237	212 *,**	213 *,**	220 *,**	219 *,**	234
South Dakota	–	–	–	–	239	–	–	–	–	235
Tennessee	211 *,**	220 *,**	222 *,**	221 *,**	228	211 *,**	218 *,**	218 *,**	219 *,**	228
Texas	219 *,**	229 *,**	235 *,**	233 *,**	239	217 *,**	228 *,**	231 *,**	230 *,**	236
Utah	224 *,**	228 *,**	227 *,**	227 *,**	236	224 *,**	225 *,**	228 *,**	227 *,**	233
Vermont	–	226 *,**	232 *,**	232 *,**	244	–	224 *,**	231 *,**	231 *,**	240
Virginia	222 *,**	224 *,**	233 *,**	232 *,**	240	219 *,**	221 *,**	228 *,**	227 *,**	239
Washington	–	226 *,**	–	–	240	–	224 *,**	–	–	237
West Virginia	216 *,**	224 *,**	226 *,**	224 *,**	232	214 *,**	223 *,**	223 *,**	223 *,**	230
Wisconsin	230 *,**	233 *,**	–	–	238	227 *,**	230 *,**	–	–	235
Wyoming	227 *,**	224 *,**	230 *,**	230 *,**	242	224 *,**	223 *,**	228 *,**	227 *,**	240
Other jurisdictions										
District of Columbia	193 *,**	187 *,**	193 *,**	191 *,**	204	192 *,**	187 *,**	194 *,**	192 *,**	206
DDESS [2]	–	226 *,**	230 *,**	229 *,**	239	–	222 *,**	226 *,**	226 *,**	235
DoDDS [3]	–	224 *,**	230 *,**	228 *,**	239	–	222 *,**	226 *,**	224 *,**	236

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table 3.10 Average mathematics scale scores, by gender, grade 8 public schools: By state, 1990–2003

Grade 8	Male						Female					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	262 *	266 *	270 *	276	273 *	277	261 *	267 *	271 *	273 *	271 *	275
Alabama	254 *,**	253 *,**	257	262	265	263	252 *,**	251 *,**	256	262	263	261
Alaska	–	–	277	–	–	280	–	–	278	–	–	278
Arizona	262 *,**	266 *,**	271	274	271	271	257 *,**	265 *,**	265 **	268	266	271
Arkansas	257 *,**	257 *,**	261	262	256 *,**	265	255 *,**	256 *,**	262	261 *	259 *,**	267
California	258 *,**	260 *,**	264	262	259 *,**	268	255 *,**	262	261	262	260 *,**	266
Colorado	269 *,**	274 *,**	278 *,**	–	–	284	266 *,**	271 *,**	274 *,**	–	–	283
Connecticut	271 *,**	275 *,**	280 *,**	284	283	285	269 *,**	273 *,**	279	279	278 *,**	283
Delaware	260 *,**	264 *,**	269 *,**	–	–	278	262 *,**	262 *,**	265 *,**	–	–	276
Florida	257 *,**	260 *,**	265 *,**	–	–	273	254 *,**	260 *,**	262 *,**	–	–	269
Georgia	259 *,**	261 *,**	262 *,**	268	265 *,**	270	258 *,**	258 *,**	263 *,**	265	265 *	269
Hawaii	248 *,**	254 *,**	259 *,**	261	260 *,**	265	254 *,**	261 *,**	266	264	265	266
Idaho	272 *,**	277 *,**	–	278	277	281	270 *,**	273 *,**	–	278	277	279
Illinois	261 *,**	–	–	276	272 *,**	278	260 *,**	–	–	278	278	276
Indiana	270 *,**	272 *,**	276 *,**	285	282	282	264 *,**	268 *,**	275 *,**	281	281	280
Iowa	281 *,**	284	283	–	–	285	275 *,**	282	285	–	–	283
Kansas	–	–	–	285	283	284	–	–	–	283	283	284
Kentucky	259 *,**	263 *,**	267 *,**	274	271	275	256 *,**	261 *,**	266 *,**	270	269 *,**	274
Louisiana	248 *,**	252 *,**	252 *,**	261 *	260 *,**	267	245 *,**	248 *,**	253 *,**	258 *,**	257 *,**	266
Maine	–	279 *,**	285	285	282	283	–	279	283	282	281	281
Maryland	261 *,**	266 *,**	271 *,**	276	272 *,**	279	261 *,**	264 *,**	269 *,**	276	272	276
Massachusetts	–	274 *,**	278 *,**	285 *	279 *,**	289	–	272 *,**	277 *,**	281	278 *,**	284
Michigan	265 *,**	270 *,**	279	279	278	277	264 *,**	265 *,**	275	278	277	276
Minnesota	276 *,**	282 *,**	285	288	287	289	275 *,**	283 *,**	283 *,**	288	287	292
Mississippi	–	248 *,**	251 *,**	255 *,**	255 *,**	262	–	245 *,**	250 *,**	253 *,**	253 *,**	260
Missouri	–	272 *,**	274 *,**	276 *	272 *,**	280	–	270 *,**	273 *,**	271 *,**	270 *,**	278
Montana	283	–	283	287	284	286	278 *,**	–	283	286	287	286
Nebraska	277 *,**	278 *,**	283	283	282	284	275 *,**	277 *,**	282	278	277	281
Nevada	–	–	–	269	266	268	–	–	–	267	264 *,**	268
New Hampshire	273 *,**	279 *,**	–	–	–	287	274 *,**	278 *,**	–	–	–	286
New Jersey	271 *,**	275 *,**	–	–	–	282	268 *,**	269 *,**	–	–	–	281
New Mexico	259 *,**	261	262	259	259 *,**	264	254 *,**	258 *,**	262	260	260	263
New York	262 *,**	267 *,**	272 *,**	280	273 *,**	281	259 *,**	266 *,**	269 *,**	273	270 *,**	279
North Carolina	250 *,**	259 *,**	270 *,**	282	277	281	251 *,**	257 *,**	266 *,**	278	275 *,**	282
North Dakota	284	285	285	283 *	282 *,**	287	278 *,**	282 *,**	284	284	282 *,**	287
Ohio	266 *,**	270 *,**	–	283	281	283	261 *,**	267 *,**	–	282	280	281
Oklahoma	266 *,**	269	–	273	271	272	261 *,**	267 *,**	–	270	269	272
Oregon	272 *,**	–	276 *,**	281	282	282	270 *,**	–	277	280	278	280
Pennsylvania	269 *,**	274 *,**	–	–	–	280	263 *,**	269 *,**	–	–	–	277
Rhode Island	262 *,**	266 *,**	271	274	268 **	273	259 *,**	266 *,**	267 *,**	273	270	271
South Carolina	–	261 *,**	262 *,**	266 *,**	264 *,**	280	–	260 *,**	259 *,**	267 *,**	265 *,**	274
South Dakota	–	–	–	–	–	286	–	–	–	–	–	284
Tennessee	–	261 *,**	263	265	263	268	–	257 *,**	263 *,**	261 *	260 *,**	268
Texas	260 *,**	267 *,**	273 *,**	274	272	278	256 *,**	262 *,**	268 *,**	276	275	276
Utah	–	276 *,**	278	275 *	275 *,**	282	–	273 *,**	275 *,**	276 *	272 *,**	280
Vermont	–	–	281 *,**	283	279 *,**	286	–	–	278 *,**	283	282 *	286
Virginia	266 *,**	268 *,**	273 *,**	278 *	276 *,**	283	263 *,**	267 *,**	267 *,**	276	274 *,**	280
Washington	–	–	276 *,**	–	–	282	–	–	277 *,**	–	–	281
West Virginia	256 *,**	260 *,**	264 *,**	270	265 *,**	271	255 *,**	259 *,**	266 *,**	271	268	271
Wisconsin	275 *,**	278 *,**	283	–	–	284	274 *,**	277 *,**	282	–	–	284
Wyoming	274 *,**	275 *,**	276 *,**	277 *,**	276 *,**	284	270 *,**	275 *,**	274 *,**	276 *,**	276 *,**	283
Other jurisdictions												
District of Columbia	230 *,**	234 *,**	231 *,**	234 *,**	235 *,**	242	233 *,**	236 *,**	235 *,**	235 *,**	234 *,**	244
DDESS [2]	–	–	271 *,**	279	275 *,**	284	–	–	267 *,**	275	272 *,**	280
DoDDS [3]	–	–	276 *,**	280 *,**	279 *,**	287	–	–	274 *,**	277 *,**	277 *,**	284

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Tables 3.11 and 3.12 present the percentages of male and female students who performed at or above the *Proficient* level for the participating jurisdictions at grades 4 and 8, respectively. In 2003, higher percentages of male students than female students performed at or above *Proficient* in 31 of the jurisdictions that participated at grade 4, and 10 of the jurisdictions that participated at grade 8.

At grade 4, increases in the percentage of students performing at or above *Proficient* were detected between 2000 and 2003 for both male and female students in 38 jurisdictions, only for male students in Michigan, New Mexico, and Department of Defense domestic schools, and only for female students in Montana. The percentage of students performing at or above *Proficient* in 2003 was higher than in 1992 for both male and female students in 39 of the jurisdictions that participated in both years and for male students only in Maine and New Mexico.

Between 2000 and 2003, 12 jurisdictions showed increases in the percentages of both male and female eighth-graders at or above *Proficient*; Illinois, Maryland, and Rhode Island showed increases only for male students; and North Carolina and Tennessee showed increases only for female students at this performance level. At grade 8, the percentages of both males and females performing at or above *Proficient* increased between 1990 and 2003 in 36 jurisdictions, increased for male students in the District of Columbia, and increased for female students only in Montana.

Table 3.11 Percentage of students at or above *Proficient* in mathematics, by gender, grade 4 public schools: By state, 1992–2003

Grade 4	Male					Female				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public) [1]	19 *	22 *	27 *	25 *	34	16 *	17 *	22 *	20 *	29
Alabama	10 *,**	11 *,**	15	14 *,**	19	10 *,**	10 *,**	13 **	13 *,**	18
Alaska	–	22 *,**	–	–	33	–	20 *,**	–	–	27
Arizona	13 *,**	17 *,**	18 *,**	16 *,**	28	13 *,**	13 *,**	16 *,**	15 *,**	23
Arkansas	10 *,**	14 *,**	14 *,**	14 *,**	27	9 *,**	12 *,**	13 *,**	13 *,**	25
California	13 *,**	12 *,**	14 *,**	13 *,**	28	12 *,**	9 *,**	15 *,**	13 *,**	22
Colorado	19 *,**	24 *,**	–	–	37	16 *,**	20 *,**	–	–	31
Connecticut	26 *,**	34 *,**	34 *,**	33 *,**	45	23 *,**	27 *,**	29 *,**	29 *,**	37
Delaware	18 *,**	17 *,**	–	–	34	15 *,**	15 *,**	–	–	29
Florida	15 *,**	15 *,**	–	–	33	12 *,**	14 *,**	–	–	29
Georgia	16 *,**	15 *,**	19 *,**	19 *,**	29	14 *,**	11 *,**	17 *,**	16 *,**	25
Hawaii	16 *,**	18 *,**	14 *,**	15 *,**	24	14 *,**	15 *,**	14 *,**	14 *,**	22
Idaho	17 *,**	–	23 *,**	20 *,**	34	14 *,**	–	20 *,**	19 *,**	27
Illinois	–	–	25 *,**	23 *,**	34	–	–	17 *,**	17 *,**	29
Indiana	17 *,**	26 *,**	33	31 *,**	37	15 *,**	21 *,**	29	28 *,**	34
Iowa	27 *,**	24 *,**	31 *,**	28 *,**	39	25 *,**	20 *,**	24 *,**	24 *,**	32
Kansas	–	–	32 *,**	31 *,**	44	–	–	28 *,**	26 *,**	39
Kentucky	14 *,**	17 *,**	19 *,**	19 *,**	24	12 *,**	14 *,**	16 *	15 *,**	20
Louisiana	8 *,**	8 *,**	14 *,**	14 *,**	22	7 *,**	7 *,**	14 *,**	13 *,**	20
Maine	28 *,**	29 *,**	27 *,**	25 *,**	37	27	26 *,**	22 *,**	20 *,**	31
Maryland	20 *,**	22 *,**	24 *,**	23 *,**	33	17 *,**	21 *,**	20 *,**	20 *,**	29
Massachusetts	25 *,**	27 *,**	36 *,**	33 *,**	44	21 *,**	22 *,**	31 *,**	29 *,**	38
Michigan	21 *,**	25 *,**	31 *,**	30 *,**	38	15 *,**	21 *,**	28	26	30
Minnesota	28 *,**	32 *,**	38 *,**	36 *,**	45	24 *,**	27 *,**	30 *,**	29 *,**	38
Mississippi	6 *,**	9 *,**	10 *,**	10 *,**	18	6 *,**	7 *,**	8 *,**	8 *,**	16
Missouri	19 *,**	22 *,**	24 *,**	24 *,**	30	18 *,**	18 *,**	23 *,**	22 *,**	29
Montana	–	25 *,**	29	27	33	–	19 *,**	20 *,**	21 *,**	29
Nebraska	24 *,**	26 *,**	25 *,**	25 *,**	36	20 *,**	22 *,**	23 *,**	23 *,**	31
Nevada	–	16 *,**	19 *,**	18 *,**	25	–	12 *,**	13 *,**	13 *,**	21
New Hampshire	27 *,**	–	–	–	46	23 *,**	–	–	–	39
New Jersey	26 *,**	30 *,**	–	–	41	23 *,**	20 *,**	–	–	36
New Mexico	11 *,**	14 *,**	14 *,**	14 *,**	21	11	11	10	10	14
New York	20 *,**	21 *,**	24 *,**	23 *,**	35	13 *,**	18 *,**	20 *,**	18 *,**	31
North Carolina	13 *,**	22 *,**	30 *,**	26 *,**	42	12 *,**	20 *,**	26 *,**	24 *,**	40
North Dakota	24 *,**	26 *,**	29 *,**	27 *,**	38	20 *,**	22 *,**	22 *,**	23 *,**	30
Ohio	18 *,**	–	30	28 *,**	37	14 *,**	–	22 *,**	21 *,**	34
Oklahoma	15 *,**	–	18 *,**	17 *,**	25	13 *,**	–	14 *,**	14 *,**	20
Oregon	–	22 *,**	27 *,**	25 *,**	35	–	20 *,**	20 *,**	20 *,**	31
Pennsylvania	23 *,**	21 *,**	–	–	39	21 *,**	20 *,**	–	–	32
Rhode Island	15 *,**	20 *,**	26	25 *	29	12 *,**	14 *,**	20 *,**	19 *,**	27
South Carolina	14 *,**	13 *,**	20 *,**	20 *,**	34	12 *,**	11 *,**	15 *,**	15 *,**	29
South Dakota	–	–	–	–	37	–	–	–	–	31
Tennessee	10 *,**	18 *,**	20	20 *,**	25	10 *,**	15 *,**	16 *,**	16 *,**	22
Texas	17 *,**	27 *,**	31	28 *,**	35	13 *,**	24 *,**	24 *,**	23 *,**	31
Utah	19 *,**	26 *,**	25 *,**	24 *,**	34	19 *,**	20 *,**	23 *,**	21 *,**	28
Vermont	–	24 *,**	31 *,**	29 *,**	44	–	21 *,**	28 *,**	29 *,**	39
Virginia	20 *,**	21 *,**	29 *,**	26 *,**	38	17 *,**	17 *,**	22 *,**	22 *,**	35
Washington	–	23 *,**	–	–	39	–	18 *,**	–	–	33
West Virginia	14 *,**	20 *,**	21	19 *,**	26	11 *,**	18	15 *,**	15 *,**	22
Wisconsin	26 *,**	30 *,**	–	–	38	23 *,**	25 *,**	–	–	32
Wyoming	21 *,**	20 *,**	27 *,**	27 *,**	41	17 *,**	18 *,**	23 *,**	22 *,**	36
Other jurisdictions										
District of Columbia	6	6	6	6	8	5	4 *,**	5	5	7
DDESS [2]	–	24 *,**	26 *,**	25 *,**	34	–	17 *,**	22	20	27
DoDDS [3]	–	21 *,**	26 *,**	24 *,**	34	–	17 *,**	19 *,**	17 *,**	29

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table 3.12 Percentage of students at or above *Proficient* in mathematics, by gender, grade 8 public schools: By state, 1990–2003

Grade 8	Male						Female					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	17 *	20 *	24 *	29	26 *	29	14 *	20 *	21 *	24	23 *	26
Alabama	10 *,**	11 *,**	14	17	17	18	8 *,**	9 *,**	11	15	15	14
Alaska	–	–	29	–	–	32	–	–	30	–	–	28
Arizona	15 *,**	16 *,**	20	24	22	21	10 *,**	14 *,**	16 *,**	18	18	21
Arkansas	11 *,**	11 *,**	14 *,**	15 *	14 *,**	19	8 *,**	9 *,**	12 *,**	13 *	13 *	18
California	14 *,**	16 *,**	19	19	17	23	11 *,**	17	15 *,**	16	16	21
Colorado	18 *,**	23 *,**	28 *,**	–	–	35	16 *,**	20 *,**	23 *,**	–	–	34
Connecticut	23 *,**	27 *,**	30 *,**	36	36	37	20 *,**	24 *,**	31	31	30	33
Delaware	15 *,**	16 *,**	21 *,**	–	–	27	13 *,**	15 *,**	17 *,**	–	–	25
Florida	14 *,**	15 *,**	18 *,**	–	–	26	10 *,**	14 *,**	16 *	–	–	21
Georgia	15 *,**	14 *,**	17 *,**	20	19	24	13 *,**	11 *,**	14 *	17	18	20
Hawaii	11 *,**	12 *,**	15	17	16	17	12 *,**	15	17	16	16	16
Idaho	20 *,**	24 *,**	–	28	27	30	16 *,**	19 *,**	–	26	25	27
Illinois	15 *,**	–	–	26	24 *	31	14 *,**	–	–	28	28	28
Indiana	19 *,**	22 *,**	24 *,**	35	33	33	14 *,**	18 *,**	23 *	27	26	29
Iowa	29 *,**	33	31	–	–	35	22 *,**	30	32	–	–	31
Kansas	–	–	–	37	35	34	–	–	–	32	32	34
Kentucky	11 *,**	15 *,**	17 *,**	23	22	25	9 *,**	13 *,**	15 *,**	18	18	23
Louisiana	7 *,**	7 *,**	8 *,**	14 *	12 *,**	19	4 *,**	7 *,**	7 *,**	10 *	10 *	15
Maine	–	27	33	34	32	31	–	24	29	30	29	28
Maryland	17 *,**	21 *,**	26	29	27 *	33	16 *,**	19 *,**	23	29	27	27
Massachusetts	–	26 *,**	29 *,**	34 *,**	31 *,**	42	–	21 *,**	26 *,**	30	29 *	35
Michigan	17 *,**	21 *,**	30	30	29	30	15 *,**	17 *,**	27	27	28	26
Minnesota	25 *,**	32 *,**	36 *	40	39	43	22 *,**	31 *,**	33 *,**	39	38	44
Mississippi	–	7 *,**	7 *,**	10 *	10 *	14	–	6 *,**	7 *,**	7 *	7 *	11
Missouri	–	21 *,**	23 *,**	24 *	23 *,**	30	–	18 *,**	21 *,**	20 *	19 *	26
Montana	31	–	33	38	37	36	22 *,**	–	31	37	36	34
Nebraska	26 *,**	28 *,**	32	34	33	35	23 *,**	25	30	27	27	30
Nevada	–	–	–	21	20	21	–	–	–	18	17	19
New Hampshire	20 *,**	26 *,**	–	–	–	36	21 *,**	24 *,**	–	–	–	33
New Jersey	23 *,**	26 *,**	–	–	–	34	20 *,**	21 *,**	–	–	–	33
New Mexico	12 *,**	13	15	14	13	16	8 *,**	9 *,**	14	12	12	15
New York	17 *,**	21 *,**	24 *,**	29	27 *	33	14 *,**	19 *,**	20 *,**	23 *	22 *,**	31
North Carolina	9 *,**	14 *,**	23 *,**	31	28	32	8 *,**	10 *,**	18 *,**	29	26 *	32
North Dakota	30 *,**	31 *,**	34	32	31 *,**	37	24 *,**	28 *,**	32	31	30 *	36
Ohio	17 *,**	19 *,**	–	33	32	32	13 *,**	17 *,**	–	29	29	29
Oklahoma	16 *,**	18	–	21	20	22	11 *,**	15	–	17	17	18
Oregon	23 *,**	–	26 *,**	34	34	33	18 *,**	–	26	29	28	30
Pennsylvania	20 *,**	24 *,**	–	–	–	33	14 *,**	19 *,**	–	–	–	27
Rhode Island	16 *,**	17 *,**	22	24	21 *,**	26	13 *,**	15 *,**	19	23	22	22
South Carolina	–	16 *,**	16 *,**	18 *,**	17 *,**	29	–	14 *,**	12 *,**	18 *	17 *,**	23
South Dakota	–	–	–	–	–	35	–	–	–	–	–	34
Tennessee	–	14 *,**	16 *,**	20	19	22	–	9 *,**	14 *,**	14 *	14 *	20
Texas	14 *,**	21 *,**	23	24	23	27	11 *,**	16 *,**	19	25	25	23
Utah	–	24 *,**	27 *,**	27 *	26 *,**	33	–	21 *,**	22 *,**	25	23 *	29
Vermont	–	–	28 *,**	33	31	35	–	–	26 *,**	32	30	35
Virginia	19 *,**	20 *,**	24 *,**	28 *	28 *	33	15 *,**	18 *,**	18 *,**	23 *	22 *	30
Washington	–	–	27 *,**	–	–	33	–	–	26 *,**	–	–	31
West Virginia	10 *,**	11 *,**	14 *,**	19	17	21	8 *,**	9 *,**	14 *	17	17	18
Wisconsin	24 *,**	28 *,**	33	–	–	36	22 *,**	26 *,**	31	–	–	34
Wyoming	21 *,**	21 *,**	24 *,**	26 *,**	24 *,**	34	16 *,**	21 *,**	20 *,**	24 *	23 *,**	30
Other jurisdictions												
District of Columbia	2 *,**	4	6	6	6	7	4	5	5	6	5	5
DDESS [2]	–	–	24	30	26	31	–	–	18	23	22	22
DoDDS [3]	–	–	25 *,**	28 *,**	28 *,**	37	–	–	21 *,**	25 *	25 *	32

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Race/Ethnicity

The average mathematics scores of the racial/ethnic groups in each participating jurisdiction are presented in table 3.13 for grade 4 and in table 3.14 for grade 8. At grade 4, average scores were higher in 2003 than in 2000 in all 43 jurisdictions with valid data for White students, 29 out of 35 jurisdictions for Black students, 21 out of 24 jurisdictions for Hispanic students, 9 out of 14 jurisdictions for Asian/Pacific Islander students, 1 out of 5 jurisdictions for American Indian/Alaska Native students, and 2 out of 2 jurisdictions for students identified as "Other."

At grade 4, average scores were higher in 2003 than in 1992 for White students in all 42 jurisdictions with valid data, for Black students in all 35 jurisdictions with valid data, for Hispanic students in 20 out of 21 jurisdictions, for Asian/Pacific Islander students in all 11 jurisdictions with valid data, for American Indian/Alaska Native students in 3 out of 5 jurisdictions, and for students identified as "Other" in the 1 jurisdiction with valid data.

Between 2000 and 2003 at grade 8, average scores increased for White students in 25 out of 42 jurisdictions, for Black students in 13 out of 31 jurisdictions, for Hispanic students in 4 out of 22 jurisdictions, for Asian/Pacific Islander students in 2 out of 12 jurisdictions, and for students identified as "Other" in 1 out of 2 jurisdictions.

Between 1990 and 2003 at grade 8, average scores increased for White students in all 37 jurisdictions with valid data, for Black students in 25 out of 29 jurisdictions, for Hispanic students in 12 out of 15 jurisdictions, for Asian/Pacific Islander students in 7 out of 10 jurisdictions, for American Indian/Alaska Native students in 5 out of 7 jurisdictions, and for "Other" students in the 1 jurisdiction with valid data in both years.

Table 3.13 Average mathematics scale scores, by race/ethnicity, grade 4 public schools: By state, 1992–2003

Grade 4	White					Black				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public) [1]	227 *	230 *	234 *	233 *	243	192 *	199 *	204 *	203 *	216
Alabama	218 *,**	221 *,**	228 *	227 *,**	232	188 *,**	193 *,**	203 *,**	203 *,**	208
Alaska	–	232 *,**	–	–	242	–	206 *,**	–	–	221
Arizona	225 *,**	228 *,**	230 *,**	230 *,**	241	199 *,**	197 *,**	207	207	215
Arkansas	217 *,**	223 *,**	225 *,**	225 *,**	237	188 *,**	193 *,**	197 *,**	194 *,**	206
California	221 *,**	223 *,**	229 *,**	228 *,**	243	182 *,**	188 *,**	191 *,**	194 *,**	213
Colorado	227 *,**	232 *,**	–	–	243	199 *,**	196 *,**	–	–	217
Connecticut	235 *,**	240 *,**	242 *,**	242 *,**	250	195 *,**	205 *,**	211 *,**	210 *,**	217
Delaware	226 *,**	225 *,**	–	–	244	197 *,**	194 *,**	–	–	223
Florida	224 *,**	227 *,**	–	–	243	189 *,**	193 *,**	–	–	215
Georgia	228 *,**	224 *,**	231 *,**	230 *,**	241	196 *,**	201 *,**	205 *,**	204 *,**	217
Hawaii	222 *,**	226 *,**	228 *,**	227 *,**	238	204 *,**	208 *,**	207 *,**	211	221
Idaho	223 *,**	–	230 *,**	227 *,**	238	‡	–	‡	‡	‡
Illinois	–	–	236 *,**	235 *,**	244	–	–	203 *,**	202 *,**	210
Indiana	224 *,**	232 *,**	237 *,**	235 *,**	242	196 *,**	205 *,**	211	211	215
Iowa	231 *,**	230 *,**	235 *,**	233 *,**	241	‡	205 *,**	213	216	215
Kansas	–	–	237 *,**	237 *,**	246	–	–	204 *,**	208 *	217
Kentucky	217 *,**	222 *,**	224 *,**	223 *,**	231	200 *,**	203 *,**	199 *,**	196 *,**	214
Louisiana	218 *,**	221 *,**	230 *,**	230 *,**	242	187 *,**	194 *,**	204 *,**	205 *,**	213
Maine	232 *,**	232 *,**	231 *,**	230 *,**	238	‡	‡	‡	‡	‡
Maryland	228 *,**	234 *,**	237 *,**	236 *,**	244	195 *,**	198 *,**	202 *,**	202 *,**	216
Massachusetts	231 *,**	232 *,**	241 *,**	239 *,**	247	195 *,**	206 *,**	210 *,**	213 *,**	222
Michigan	227 *,**	232 *,**	239 *,**	237 *,**	244	185 *,**	198 *,**	199 *,**	199 *,**	209
Minnesota	231 *,**	235 *,**	239 *,**	238 *,**	246	193 *,**	196 *,**	209	208 *	219
Mississippi	219 *,**	221 *,**	224 *,**	222 *,**	236	189 *,**	196 *,**	198 *,**	198 *,**	212
Missouri	227 *,**	230 *,**	235 *,**	233 *,**	240	195 *,**	200 *,**	201 *,**	202 *,**	216
Montana	–	231 *,**	233 *,**	231 *,**	238	–	‡	‡	‡	‡
Nebraska	228 *,**	231 *,**	231 *,**	230 *,**	241	191 *,**	197 *,**	196 *,**	193 *,**	211
Nevada	–	224 *,**	227 *,**	226 *,**	236	–	195 *,**	207 *,**	203 *,**	215
New Hampshire	230 *,**	–	–	–	244	‡	–	–	–	‡
New Jersey	236 *,**	239 *,**	–	–	248	198 *,**	204 *,**	–	–	217
New Mexico	224 *,**	227 *,**	227 *,**	227 *,**	237	202 *,**	‡	‡	‡	216
New York	228 *,**	233 *,**	238 *,**	238 *,**	246	197 *,**	202 *,**	212 *,**	210 *,**	219
North Carolina	223 *,**	233 *,**	240 *,**	238 *,**	251	193 *,**	204 *,**	217 *,**	215 *,**	225
North Dakota	230 *,**	232 *,**	233 *,**	232 *,**	240	‡	‡	‡	‡	‡
Ohio	222 *,**	–	235 *,**	235 *,**	243	194 *,**	–	207 *,**	206 *,**	217
Oklahoma	224 *,**	–	229 *,**	229 *,**	235	201 *,**	–	205	205	211
Oregon	–	226 *,**	230 *,**	227 *,**	240	–	‡	‡	196	223
Pennsylvania	230 *,**	231 *,**	–	–	243	194 *,**	197 *,**	–	–	212
Rhode Island	221 *,**	225 *,**	233 *,**	232 *,**	239	191 *,**	194 *,**	200 *,**	200 *,**	210
South Carolina	225 *,**	224 *,**	233 *,**	233 *,**	246	194 *,**	198 *,**	203 *,**	203 *,**	222
South Dakota	–	–	–	–	241	–	–	–	–	‡
Tennessee	217 *,**	226 *,**	227 *,**	227 *,**	235	191 *,**	197 *,**	198 *,**	198 *,**	208
Texas	230 *,**	240 *,**	243 *,**	241 *,**	248	199 *,**	212 *,**	220 *,**	220 *,**	226
Utah	225 *,**	228 *,**	230 *,**	230 *,**	238	‡	‡	‡	‡	‡
Vermont	–	225 *,**	232 *,**	232 *,**	242	–	‡	‡	‡	‡
Virginia	228 *,**	230 *,**	239 *,**	237 *,**	246	199 *,**	203 *,**	211 *,**	211 *,**	223
Washington	–	229 *,**	–	–	242	–	202 *,**	–	–	222
West Virginia	216 *,**	224 *,**	226 *,**	224 *,**	231	201 *,**	205 *,**	203 *,**	205 *,**	221
Wisconsin	233 *,**	236 *,**	–	–	243	195 *,**	198 *,**	–	–	209
Wyoming	227 *,**	225 *,**	231 *,**	231 *,**	243	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	251 *,**	248 *,**	252 *,**	254 *	262	189 *,**	183 *,**	189 *,**	188 *,**	202
DDESS [2]	–	234 *,**	236 *,**	238 *,**	243	–	210 *,**	216 *,**	216 *,**	225
DoDDS [3]	–	230 *,**	233 *,**	231 *,**	241	–	208 *,**	212 *,**	212 *,**	227

See notes at end of table. ▶

Table 3.13 Average mathematics scale scores, by race/ethnicity, grade 4 public schools: By state, 1992–2003—Continued

Grade 4	Hispanic					Asian/Pacific Islander				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)[1]	201 *	204 *	209 *	207 *	221	231 *	225 *	‡	‡	246
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	‡	–	–	228	–	220 *,**	–	–	230
Arizona	203 *,**	202 *,**	205 *,**	204 *,**	217	‡	‡	231 *,**	‡	244
Arkansas	‡	‡	‡	‡	221	‡	‡	‡	‡	‡
California	190 *,**	196 *,**	200 *,**	201 *,**	216	218 *,**	213 *,**	225 *,**	221 *,**	246
Colorado	204 *,**	208 *,**	–	–	217	223 *,**	224 *,**	–	–	242
Connecticut	200 *,**	201 *,**	210 *,**	210 *,**	223	‡	240	242	239 *,**	249
Delaware	‡	193 *,**	–	–	226	‡	‡	–	–	250
Florida	208 *,**	208 *,**	–	–	232	‡	‡	–	–	249
Georgia	‡	205 *,**	212	217	219	‡	‡	‡	‡	248
Hawaii	206 *,**	210	‡	‡	219	212 *,**	213 *,**	213 *,**	214 *,**	225
Idaho	199 *,**	–	208	207 *,**	217	‡	–	‡	‡	‡
Illinois	–	–	215	211	218	–	–	‡	‡	252
Indiana	‡	‡	‡	‡	226	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	‡	222	‡	‡	‡	‡	‡
Kansas	–	–	215 *,**	213 *,**	230	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	207 *,**	216	216 *,**	216 *,**	227	237 *,**	248	234 *,**	230 *,**	254
Massachusetts	197 *,**	206 *,**	208 *,**	203 *,**	222	229 *,**	236	237	237	248
Michigan	‡	205 *,**	‡	‡	223	‡	‡	‡	‡	248
Minnesota	‡	‡	‡	‡	220	208 *,**	219	232	213 *,**	229
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	220	‡	‡	‡	‡	‡
Montana	–	‡	‡	‡	236	–	‡	‡	‡	‡
Nebraska	203	198 *,**	203 *,**	205 *	213	‡	‡	‡	‡	‡
Nevada	–	204 *,**	208 *,**	207 *,**	216	–	221 *,**	225 *,**	227 *,**	237
New Hampshire	‡	–	–	–	225	‡	–	–	–	‡
New Jersey	204 *,**	206 *,**	–	–	224	241 *,**	243 *,**	–	–	256
New Mexico	203 *,**	204 *,**	208 *,**	207 *,**	217	‡	‡	‡	‡	‡
New York	197 *,**	201 *,**	209 *,**	207 *,**	221	236 *,**	230 *,**	242 *,**	241 *	250
North Carolina	‡	‡	‡	220 *,**	235	‡	‡	‡	‡	255
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	‡	–	‡	‡	225	‡	–	‡	‡	‡
Oklahoma	207 *,**	–	215	211 *,**	220	‡	–	‡	‡	247
Oregon	–	197 *,**	207 *,**	202 *,**	218	–	226 *,**	237	236	245
Pennsylvania	201 *,**	202 *,**	–	–	216	‡	‡	–	–	‡
Rhode Island	186 *,**	191 *,**	194 *,**	197 *,**	207	185 *,**	206 *,**	‡	217	225
South Carolina	‡	‡	‡	‡	232	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	223	–	–	–	–	‡
Tennessee	‡	‡	‡	‡	218	‡	‡	‡	‡	‡
Texas	208 *,**	216 *,**	224 *,**	223 *,**	230	234 *,**	‡	247 *,**	248 *,**	258
Utah	206 *,**	204 *,**	204 *,**	205 *,**	216	‡	‡	217	219	224
Vermont	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Virginia	‡	214 *,**	225	224	230	235 *,**	236 *,**	244	247	255
Washington	–	204 *,**	–	–	223	–	226 *,**	–	–	244
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	208 *,**	211	–	–	221	‡	‡	–	–	230
Wyoming	216 *,**	207 *,**	212 *,**	214 *,**	229	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	195 *,**	196	201	190 *,**	205	‡	‡	‡	‡	‡
DDESS[2]	–	215 *,**	221 *,**	218 *,**	236	–	‡	‡	‡	‡
DoDDS[3]	–	214 *,**	224 *,**	219 *,**	233	–	226 *,**	232 *,**	231 *,**	240

See notes at end of table. ▶

Table 3.13 Average mathematics scale scores, by race/ethnicity, grade 4 public schools: By state, 1992–2003—Continued

Grade 4	American Indian/Alaska Native					Other[4]				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)[1]	‡	‡	‡	207 *	224	‡	‡	‡	‡	236
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	206 *,**	–	–	218	–	‡	–	–	‡
Arizona	190 *,**	197 *,**	192 *,**	203	210	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	–	–	‡	‡	‡	–	–	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	–	–	‡	‡	‡	–	–	‡
Florida	‡	‡	–	–	‡	‡	‡	–	–	247
Georgia	‡	‡	‡	‡	‡	‡	‡	‡	‡	231
Hawaii	‡	‡	‡	‡	‡	212 *,**	213 *,**	216 *,**	217 *,**	227
Idaho	‡	–	‡	‡	‡	‡	–	‡	‡	‡
Illinois	–	–	‡	‡	‡	–	–	‡	‡	‡
Indiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	235
Iowa	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Kansas	–	–	‡	‡	‡	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Montana	–	206 *,**	210	208	217	–	‡	‡	‡	‡
Nebraska	‡	‡	‡	‡	219	‡	‡	‡	‡	‡
Nevada	–	208	‡	‡	215	–	‡	‡	‡	‡
New Hampshire	‡	–	–	–	‡	‡	–	–	–	‡
New Jersey	‡	‡	–	–	‡	‡	‡	–	–	‡
New Mexico	206	194 *,**	193 *,**	197 *,**	210	‡	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	‡	‡	‡	‡	‡	‡	‡	‡	‡	246
North Dakota	210	205	206	205	215	‡	‡	‡	‡	‡
Ohio	‡	–	‡	‡	‡	‡	–	‡	‡	239
Oklahoma	212 *,**	–	223	221	225	‡	–	‡	‡	‡
Oregon	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Pennsylvania	‡	‡	–	–	‡	‡	‡	–	–	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	217	–	–	–	–	‡
Tennessee	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Utah	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Vermont	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Washington	–	215 *,**	–	–	229	–	‡	–	–	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	–	–	224	‡	‡	–	–	‡
Wyoming	205 *,**	‡	‡	‡	221	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
DDESS[2]	–	‡	‡	‡	‡	–	‡	228	226	‡
DoDDS[3]	–	‡	‡	‡	‡	–	224 *,**	227 *,**	226 *,**	242

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
[4] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table 3.14 Average mathematics scale scores, by race/ethnicity, grade 8 public schools: By state, 1990–2003

Grade 8	White						Black					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	269 *	276 *	280 *	284 *	283 *	287	236 *	236 *	241 *	245 *	243 *	252
Alabama	262 *,**	264 *,**	270	274	275	274	232 *,**	230 *,**	232 *,**	238	240	240
Alaska	–	–	285 *,**	–	–	290	–	–	‡	–	–	263
Arizona	270 *,**	274 *,**	277 *,**	283	281	284	245 *,**	253	256	247	244	256
Arkansas	264 *,**	264 *,**	269 *,**	271 *	268 *,**	275	231 *,**	229 *,**	235	233 *	227 *,**	239
California	270 *,**	275 *,**	277 *,**	278	277	283	231 *,**	233 *,**	244	241	235	246
Colorado	273 *,**	278 *,**	282 *,**	–	–	292	238 *,**	242 *,**	255	–	–	255
Connecticut	277 *,**	283 *,**	287 *,**	292	291	293	240 *,**	242 *,**	244 *,**	246 *,**	247 *,**	255
Delaware	268 *,**	272 *,**	275 *,**	–	–	287	241 *,**	241 *,**	244 *,**	–	–	260
Florida	265 *,**	272 *,**	277 *,**	–	–	286	231 *,**	236 *,**	235 *,**	–	–	249
Georgia	270 *,**	270 *,**	276 *,**	279	279 *,**	284	239 *,**	241 *,**	240 *,**	246	244 *,**	250
Hawaii	259 *,**	263 *,**	276	274	274	273	‡	‡	‡	‡	‡	‡
Idaho	273 *,**	277 *,**	–	281	280 *,**	284	‡	‡	–	‡	‡	‡
Illinois	270 *,**	–	–	287	285	289	232 *,**	–	–	256	252	249
Indiana	270 *,**	273 *,**	280 *,**	286	285	286	242	241 *,**	247	260	256	251
Iowa	279 *,**	284	285	–	–	287	‡	‡	256	–	–	257
Kansas	–	–	–	287	287	290	–	–	–	259	245	252
Kentucky	259 *,**	264 *,**	269 *,**	274	272 *,**	277	240 *,**	241 *,**	247	251	250	250
Louisiana	259 *,**	263 *,**	266 *,**	275 *,**	275 *,**	281	229 *,**	232 *,**	235 *,**	239 *,**	239 *,**	250
Maine	–	279 *,**	284	284	281	282	–	270	‡	‡	‡	‡
Maryland	272 *,**	278 *,**	284	290	286	289	236 *,**	239 *,**	241 *,**	249 *,**	244 *,**	256
Massachusetts	–	277 *,**	283 *,**	288 *,**	284 *,**	292	–	243 *,**	250	254	258	260
Michigan	270 *,**	276 *,**	284	286	285	286	231 *,**	233 *,**	245	242	239	245
Minnesota	277 *,**	284 *,**	287 *,**	290 *,**	290 *,**	295	236	‡	248	‡	‡	251
Mississippi	–	262 *,**	265 *,**	268 *,**	268 *,**	275	–	230 *,**	234 *,**	236 *,**	237 *,**	246
Missouri	–	275 *,**	278 *,**	279 *,**	277 *,**	284	–	242 *,**	244	242	238 *,**	250
Montana	282 *,**	–	286 *,**	290	288	289	‡	–	‡	‡	‡	‡
Nebraska	279 *,**	281 *,**	285	285	285	287	234	237	254	246	247	247
Nevada	–	–	–	276	273 *,**	278	–	–	–	250	244	248
New Hampshire	273 *,**	278 *,**	–	–	–	287	‡	‡	–	–	–	‡
New Jersey	279 *,**	283 *,**	–	–	–	292	241 *,**	242 *,**	–	–	–	253
New Mexico	271 *,**	272 *,**	277 *,**	276 *,**	274 *,**	282	‡	‡	‡	‡	‡	254
New York	273 *,**	280 *,**	283 *,**	289	284 *,**	293	234 *,**	233 *,**	243 *,**	255	251	255
North Carolina	261 *,**	266 *,**	277 *,**	290	287 *,**	294	231 *,**	238 *,**	247 *,**	257	252 *,**	260
North Dakota	284 *,**	284 *,**	286 *,**	285 *,**	285 *,**	290	‡	‡	‡	‡	‡	‡
Ohio	268 *,**	274 *,**	–	287	285	287	233 *,**	234 *,**	–	255	251	257
Oklahoma	268 *,**	272 *,**	–	277	274 *,**	278	236 *,**	238 *,**	–	248	245	249
Oregon	273 *,**	–	278 *,**	283	284	284	‡	–	‡	‡	‡	265
Pennsylvania	272 *,**	276 *,**	–	–	–	285	236 *,**	238	–	–	–	247
Rhode Island	265 *,**	271 *,**	275 *,**	279	275 *,**	280	228 *,**	240	237	244	240	244
South Carolina	–	273 *,**	273 *,**	279 *,**	277 *,**	291	–	241 *,**	244 *,**	248 *,**	247 *,**	258
South Dakota	–	–	–	–	–	288	–	–	–	–	–	‡
Tennessee	–	266 *,**	270 *,**	271 *,**	269 *,**	277	–	234 *,**	234	236	235	242
Texas	272 *,**	278 *,**	284 *,**	287	286	290	234 *,**	243 *,**	249 *,**	252	250	260
Utah	–	276 *,**	278 *,**	278 *,**	277 *,**	285	–	‡	‡	‡	‡	‡
Vermont	–	–	280 *,**	284	281 *,**	286	–	–	‡	‡	‡	‡
Virginia	271 *,**	275 *,**	279 *,**	285	283 *,**	290	242 *,**	245 *,**	244 *,**	253 *,**	253 *,**	262
Washington	–	–	281 *,**	–	–	285	–	–	243 *,**	–	–	262
West Virginia	256 *,**	260 *,**	265 *,**	271	267 *	271	234 *,**	242	245	251	247	253
Wisconsin	279 *,**	282 *,**	288	–	–	290	236	245	240	–	–	241
Wyoming	274 *,**	277 *,**	277 *,**	279 *,**	278 *,**	286	‡	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	‡	‡	306	300	‡	229 *,**	232 *,**	230 *,**	231 *,**	231 *,**	240
DDESS [2]	–	–	282 *,**	287	286 *,**	294	–	–	253 *,**	265	258 *	268
DoDDS [3]	–	–	283 *,**	286 *,**	286 *,**	292	–	–	255 *,**	260 *,**	260 *,**	270

See notes at end of table. ▶

Table 3.14 Average mathematics scale scores, by race/ethnicity, grade 8 public schools: By state, 1990–2003—Continued

Grade 8	Hispanic						Asian/Pacific Islander					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	245 *	247 *	250 *	252 *	252 *	258	275 *	290	‡	286	287	289
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	–	‡	–	–	263	–	–	‡	–	–	280
Arizona	241 *,**	247 *,**	248 *,**	250 *	248 *,**	258	‡	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	248	‡	‡	‡	‡	‡	‡
California	236 *,**	239 *,**	245	245	242	250	267 *,**	277	278	282	283	287
Colorado	247 *,**	252 *,**	255	–	–	259	‡	‡	283	–	–	290
Connecticut	235 *,**	239 *,**	251 *,**	251	249 *	259	‡	‡	281	‡	‡	296
Delaware	‡	‡	‡	–	–	257	‡	‡	‡	–	–	‡
Florida	246 *,**	246 *,**	254 *,**	–	–	264	‡	‡	‡	–	–	287
Georgia	‡	‡	‡	‡	‡	262	‡	‡	‡	‡	‡	286
Hawaii	‡	‡	253	‡	‡	263	250 *,**	257 *,**	260 *,**	260 *	260	265
Idaho	250	255	–	249	250	251	‡	‡	–	‡	‡	‡
Illinois	238 *,**	–	–	259	258	259	279 *,**	–	–	‡	‡	302
Indiana	‡	‡	‡	‡	‡	261	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	–	–	255	‡	‡	‡	–	–	‡
Kansas	–	–	–	259	263	263	–	–	–	‡	‡	284
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	254	‡	‡	272	263	262	290	284 *,**	309	299	297	302
Massachusetts	–	239 *,**	239 *,**	253	246	255	–	‡	277 *,**	295	292	304
Michigan	‡	252	‡	‡	‡	267	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	262	267 *,**	‡	277	‡	‡	284
Mississippi	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Missouri	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Montana	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡
Nebraska	‡	256	260	247	242	255	‡	‡	‡	‡	‡	‡
Nevada	–	–	–	250	249	250	–	–	–	278	273	280
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	242 *,**	245 *,**	–	–	–	262	296	299	–	–	–	306
New Mexico	247 *,**	248 *,**	252	251	251	254	‡	‡	‡	‡	‡	‡
New York	238 *,**	241 *,**	244 *,**	257	251 *	262	274 *,**	281	276	287	280	290
North Carolina	‡	‡	‡	‡	‡	263	‡	‡	‡	‡	‡	297
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	‡	‡	–	‡	‡	270	‡	‡	–	‡	‡	‡
Oklahoma	‡	‡	–	255	260	258	‡	‡	–	‡	‡	‡
Oregon	256	–	257	257	248	258	276 *,**	–	288	279	285	292
Pennsylvania	‡	‡	–	–	–	253	‡	‡	–	–	–	‡
Rhode Island	227 *,**	227 *,**	238	245	240	245	‡	‡	263	272	267	265
South Carolina	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	‡	–	–	–	–	–	‡
Tennessee	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Texas	245 *,**	249 *,**	255 *,**	265	262	267	286 *,**	301	281	292	292	303
Utah	–	253	257	246	244	249	–	‡	‡	‡	262 *	275
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	‡	‡	‡	274	263	268	294	280 *,**	279 *,**	301	293	297
Washington	–	–	248 *,**	–	–	263	–	–	272	–	–	285
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	–	–	262	‡	‡	‡	–	–	273
Wyoming	257 *,**	262	256 *	254 *	257	265	‡	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	250	226 *,**	228	236	246	‡	‡	‡	‡	‡	‡
DDESS [2]	–	–	264	270	265	276	–	–	‡	‡	‡	‡
DoDDS [3]	–	–	268 *,**	271 *	270 *	280	–	–	279 *	280 *	278 *,**	288

See notes at end of table. ▶

Table 3.14 Average mathematics scale scores, by race/ethnicity, grade 8 public schools: By state, 1990–2003—Continued

Grade 8	American Indian/Alaska Native						Other[4]					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public)[1]	‡	‡	‡	264	263	265	‡	258 *	‡	‡	‡	276
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	–	255	–	–	259	–	–	‡	–	–	‡
Arizona	235 *,**	251	252	‡	‡	254	‡	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Florida	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Georgia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Hawaii	‡	‡	‡	‡	‡	‡	250 *,**	258	257	264	262	264
Idaho	‡	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡
Illinois	‡	–	–	‡	‡	‡	‡	–	–	‡	‡	‡
Indiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Kansas	–	–	–	‡	‡	‡	–	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Missouri	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Montana	259	–	264	257	257	260	‡	–	‡	‡	‡	‡
Nebraska	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Nevada	–	–	–	‡	252	‡	–	–	–	‡	‡	‡
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Mexico	237 *,**	246	252	241	244	245	‡	‡	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	229 *,**	‡	‡	‡	‡	259	‡	‡	‡	‡	‡	‡
North Dakota	241 *,**	263	253	257	243	261	‡	‡	‡	‡	‡	‡
Ohio	‡	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡
Oklahoma	253 *,**	262	–	267	267	265	‡	‡	–	‡	‡	279
Oregon	‡	–	‡	‡	‡	263	‡	–	‡	‡	‡	‡
Pennsylvania	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	255	–	–	–	–	–	‡
Tennessee	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Utah	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Washington	–	–	257	–	–	264	–	–	‡	–	–	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Wyoming	256	‡	246 *	‡	245	261	275	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
DDESS[2]	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
DoDDS[3]	–	–	‡	‡	‡	‡	–	–	279 *,**	281 *	280 *,**	289

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
[4] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

The percentages of students who performed at or above *Proficient* in the different racial/ethnic subgroups across jurisdictions are presented in tables 3.15 (grade 4) and 3.16 (grade 8). The percentage of fourth-graders performing at or above *Proficient* increased since 2000 for White students in 41 out of 43 jurisdictions, for Black students in 16 out of 35 jurisdictions, for Hispanic students in 12 out of 24 jurisdictions, for Asian/Pacific Islander students in 6 out of 14 jurisdictions, and for students identified as "Other" in the 2 jurisdictions with valid data.

The percentage of fourth-graders performing at or above *Proficient* increased between 1992 and 2003 for White students in 41 of 42 jurisdictions, for Black students in 28 of 35 jurisdictions, for Hispanic students in 14 of 21 jurisdictions, for Asian/Pacific Islander students in 10 of 11 jurisdictions, for American Indian/Alaska Native students in 2 out of 5 jurisdictions, and for students identified as "Other" in the 1 jurisdiction with valid data.

The percentage of eighth-graders performing at or above *Proficient* increased between 2000 and 2003 for White students in 17 out of 42 jurisdictions, for Black students in 5 out of 31 jurisdictions, for Asian/Pacific Islander students in 1 out of 12 jurisdictions, and those classified as "Other" in 1 out of 2 jurisdictions.

The percentage of eighth-grade students performing at or above *Proficient* increased between 1990 and 2003 for White students in all 37 jurisdictions with valid data, for Black students in 14 out of 29 jurisdictions, for Hispanic students in 11 out of 15 jurisdictions, for Asian/Pacific Islander students in 5 out of 10 jurisdictions, and for American Indian/Alaska Native students in 2 out of 7 jurisdictions.

Table 3.15 Percentage of students at or above *Proficient* in mathematics, by race/ethnicity, grade 4 public schools: By state, 1992–2003

Grade 4	White					Black				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)[1]	22 *	25 *	32 *	30 *	42	2 *	4 *	5 *	4 *	10
Alabama	15 *,**	15 *,**	21	20 *,**	27	1 *,**	2 *,**	4	4	5
Alaska	–	27 *,**	–	–	41	–	4 *,**	–	–	15
Arizona	19 *,**	21 *,**	25 *,**	24 *,**	39	4	5	6	6	11
Arkansas	13 *,**	17 *,**	17 *,**	18 *,**	34	1 *,**	2 *,**	2 *	2 *,**	5
California	18 *,**	17 *,**	25 *,**	24 *,**	42	2 *,**	2 *,**	2 *,**	3 *,**	9
Colorado	21 *,**	27 *,**	–	–	44	3 *,**	3 *,**	–	–	12
Connecticut	30 *,**	38 *,**	40 *,**	39 *,**	53	2 *,**	5 *,**	8	7	10
Delaware	22 *,**	21 *,**	–	–	43	3 *,**	4 *,**	–	–	12
Florida	18 *,**	21 *,**	–	–	43	2 *,**	3 *,**	–	–	8
Georgia	23 *,**	19 *,**	28 *,**	27 *,**	40	3 *,**	3 *,**	6 *,**	5 *,**	11
Hawaii	21 *,**	24 *,**	23 *,**	25 *,**	35	5	10	5	6	16
Idaho	17 *,**	–	24 *,**	21 *,**	34	‡	–	‡	‡	‡
Illinois	–	–	32 *,**	30 *,**	44	–	–	4 *	4	7
Indiana	17 *,**	26 *,**	33 *,**	32 *,**	40	1 *,**	4	11	10	7
Iowa	27 *,**	23 *,**	29 *,**	27 *,**	39	‡	5	10	11	9
Kansas	–	–	35 *,**	34 *,**	47	–	–	4 *,**	4 *,**	13
Kentucky	13 *,**	17 *,**	19 *,**	19 *,**	24	3	4	2 *,**	2 *,**	8
Louisiana	13 *,**	13 *,**	22 *,**	22 *,**	39	2 *,**	1 *,**	4	4	6
Maine	27 *,**	28 *,**	25 *,**	23 *,**	34	‡	‡	‡	‡	‡
Maryland	26 *,**	32 *,**	35 *,**	34 *,**	44	3 *,**	4 *,**	6 *,**	6 *,**	11
Massachusetts	26 *,**	27 *,**	39 *,**	36 *,**	49	1 **	6	7	7	13
Michigan	22 *,**	27 *,**	36 *,**	34 *,**	43	2 *,**	3	4	3	7
Minnesota	28 *,**	32 *,**	37 *,**	36 *,**	47	4 *,**	3 *,**	9	12	16
Mississippi	13 *,**	14 *,**	16 *,**	15 *,**	30	1 *,**	2 *,**	2 *,**	2 *,**	6
Missouri	22 *,**	23 *,**	28 *,**	27 *,**	35	1 *,**	2 *,**	4 *,**	4 *,**	9
Montana	–	25 *,**	27	26 *,**	34	–	‡	‡	‡	‡
Nebraska	24 *,**	27 *,**	27 *,**	27 *,**	39	3	5	5	5	7
Nevada	–	18 *,**	21 *,**	21 *,**	32	–	2 *,**	6	4 *,**	10
New Hampshire	25 *,**	–	–	–	43	‡	–	–	–	‡
New Jersey	31 *,**	35 *,**	–	–	51	3 *,**	3 *,**	–	–	11
New Mexico	18 *,**	22 *,**	22 *,**	22 *,**	33	3	‡	‡	‡	10
New York	23 *,**	27 *,**	34 *,**	32 *,**	45	3 *,**	5 *,**	6 *,**	5 *,**	12
North Carolina	18 *,**	29 *,**	37 *,**	34 *,**	55	2 *,**	4 *,**	9 *,**	9 *,**	14
North Dakota	23 *,**	25 *,**	27 *,**	26 *,**	37	‡	‡	‡	‡	‡
Ohio	18 *,**	–	31 *,**	29 *,**	42	3 *,**	–	2 *,**	2 *,**	10
Oklahoma	16 *,**	–	21 *,**	20 *,**	29	2	–	3	4	6
Oregon	–	22 *,**	25 *,**	24 *,**	36	–	‡	‡	6	20
Pennsylvania	26 *,**	24 *,**	–	–	44	2 *,**	2 *,**	–	–	8
Rhode Island	16 *,**	20 *,**	29 *,**	28 *,**	37	2	3	4	3	7
South Carolina	20 *,**	19 *,**	28 *,**	28 *,**	46	2 *,**	2 *,**	4 *,**	4 *,**	13
South Dakota	–	–	–	–	38	–	–	–	–	‡
Tennessee	13 *,**	20 *,**	23 *,**	23 *,**	30	1 *,**	3 *,**	4	4	6
Texas	24 *,**	38 *,**	41	39 *,**	49	3 *,**	7 *,**	11	10	15
Utah	20 *,**	24 *,**	26 *,**	25 *,**	35	‡	‡	‡	‡	‡
Vermont	–	23 *,**	30 *,**	29 *,**	42	–	‡	‡	‡	‡
Virginia	24 *,**	25 *,**	34 *,**	32 *,**	46	4 *,**	4 *,**	5 *,**	5 *,**	13
Washington	–	23 *,**	–	–	40	–	5 *,**	–	–	17
West Virginia	13 *,**	19 *,**	19 *,**	18 *,**	24	1 **	6	5	5	13
Wisconsin	27 *,**	31 *,**	–	–	43	2 *,**	4	–	–	8
Wyoming	20 *,**	20 *,**	27 *,**	27 *,**	42	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	59	55 *,**	57	62	71	2 *,**	2 *,**	2	2 *,**	4
DDESS[2]	–	29 *,**	33	33	40	–	7	11	10	13
DoDDS[3]	–	25 *,**	29 *,**	27 *,**	38	–	6 *,**	7 *,**	7 *,**	15

See notes at end of table. ▶

Table 3.15 Percentage of students at or above *Proficient* in mathematics, by race/ethnicity, grade 4 public schools: By state, 1992–2003—Continued

Grade 4	Hispanic					Asian/Pacific Islander				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)[1]	5 *	7 *	8 *	7 *	15	27 *	20 *	‡	‡	48
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	‡	–	–	24	–	15 *,**	–	–	27
Arizona	4 *,**	5 *,**	6 *,**	5 *,**	11	‡	‡	26	‡	41
Arkansas	‡	‡	‡	‡	15	‡	‡	‡	‡	‡
California	4 *,**	3 *,**	4 *,**	4 *,**	11	18 *,**	16 *,**	23 *,**	19 *,**	49
Colorado	5 *,**	6 *,**	–	–	13	23 *,**	19 *,**	–	–	44
Connecticut	5 *,**	5 *,**	6 *,**	6 *,**	15	‡	42	41	36	52
Delaware	‡	6	–	–	17	‡	‡	–	–	59
Florida	7 *,**	7 *,**	–	–	27	‡	‡	–	–	53
Georgia	‡	3 **	11	12	13	‡	‡	‡	‡	53
Hawaii	6	11	‡	‡	17	13 *,**	15 *,**	12 *,**	12 *,**	21
Idaho	3 *,**	–	6	6	11	‡	–	‡	‡	‡
Illinois	–	–	7 *	6 *,**	13	–	–	‡	‡	58
Indiana	‡	‡	‡	‡	18	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	‡	14	‡	‡	‡	‡	‡
Kansas	–	–	11	13	19	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	7 *,**	16	11	11 *	21	34 *,**	50	31 *,**	27 *,**	58
Massachusetts	4 **	5 **	7	7	13	30	32	39	36	49
Michigan	‡	7	‡	‡	17	‡	‡	‡	‡	47
Minnesota	‡	‡	‡	‡	14	11 *,**	17	30	12 *,**	27
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	14	‡	‡	‡	‡	‡
Montana	–	‡	‡	‡	25	–	‡	‡	‡	‡
Nebraska	6	6	5	4	9	‡	‡	‡	‡	‡
Nevada	–	6 *,**	7	7	10	–	17 *,**	21 *,**	22 *,**	34
New Hampshire	‡	–	–	–	19	‡	–	–	–	‡
New Jersey	5 *,**	5 *,**	–	–	18	40 *,**	41 *,**	–	–	61
New Mexico	5 *,**	5 *,**	6 *,**	6 *,**	10	‡	‡	‡	‡	‡
New York	4 *,**	7 *,**	4 *,**	6 *,**	15	36 *,**	28 *,**	36 *	36	51
North Carolina	‡	‡	‡	12 *,**	30	‡	‡	‡	‡	60
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	‡	–	‡	‡	16	‡	–	‡	‡	‡
Oklahoma	5	–	6	5	11	‡	–	‡	‡	45
Oregon	–	3 *,**	9	10	15	–	22 *,**	34	35	46
Pennsylvania	3	# **	–	–	12	‡	‡	–	–	‡
Rhode Island	1 **	2 **	3 *	3 *,**	6	1 **	11	‡	18	22
South Carolina	‡	‡	‡	‡	26	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	20	–	–	–	–	‡
Tennessee	‡	‡	‡	‡	14	‡	‡	‡	‡	‡
Texas	6 *,**	11 *,**	14 *,**	14 *,**	21	30 *,**	‡	50	47	62
Utah	7	7	7	6	11	‡	‡	13	18	16
Vermont	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Virginia	‡	9 *	17	16	20	26 *,**	34 *,**	46	46	60
Washington	–	8 *,**	–	–	18	–	20 *,**	–	–	44
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	7	5	–	–	13	‡	‡	–	–	26
Wyoming	10 *,**	5 *,**	9 *,**	9 *,**	20	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	3	7	7	6	7	‡	‡	‡	‡	‡
DDESS[2]	–	11 *,**	16	17	27	–	‡	‡	‡	‡
DoDDS[3]	–	10 *,**	15 *	12 *,**	25	–	22 *,**	27 *	26 *,**	38

See notes at end of table. ▶

Table 3.15 Percentage of students at or above *Proficient* in mathematics, by race/ethnicity, grade 4 public schools: By state, 1992–2003—Continued

Grade 4	American Indian/Alaska Native					Other [4]				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public) [1]	‡	‡	‡	8 *	18	‡	‡	‡	‡	32
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	8	–	–	13	–	‡	–	–	‡
Arizona	3	4	2	3	8	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	–	–	‡	‡	‡	–	–	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	–	–	‡	‡	‡	–	–	‡
Florida	‡	‡	–	–	‡	‡	‡	–	–	51
Georgia	‡	‡	‡	‡	‡	‡	‡	‡	‡	19
Hawaii	‡	‡	‡	‡	‡	13 *,**	15 *,**	14 *,**	14 *,**	25
Idaho	‡	–	‡	‡	‡	‡	–	‡	‡	‡
Illinois	–	–	‡	‡	‡	–	–	‡	‡	‡
Indiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	29
Iowa	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Kansas	–	–	‡	‡	‡	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Montana	–	8	7	5	11	–	‡	‡	‡	‡
Nebraska	‡	‡	‡	‡	11	‡	‡	‡	‡	‡
Nevada	–	6	‡	‡	10	–	‡	‡	‡	‡
New Hampshire	‡	–	–	–	‡	‡	–	–	–	‡
New Jersey	‡	‡	–	–	‡	‡	‡	–	–	‡
New Mexico	3	2	3	3	7	‡	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	‡	‡	‡	‡	‡	‡	‡	‡	‡	48
North Dakota	6	5	9	6	9	‡	‡	‡	‡	‡
Ohio	‡	–	‡	‡	‡	‡	–	‡	‡	34
Oklahoma	7 *,**	–	10	10	16	‡	–	‡	‡	‡
Oregon	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Pennsylvania	‡	‡	–	–	‡	‡	‡	–	–	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	9	–	–	–	–	‡
Tennessee	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Utah	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Vermont	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Washington	–	12	–	–	24	–	‡	–	–	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	–	–	17	‡	‡	–	–	‡
Wyoming	3 *,**	‡	‡	‡	16	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
DDESS [2]	–	‡	‡	‡	‡	–	‡	21	19	‡
DoDDS [3]	–	‡	‡	‡	‡	–	19 *,**	21 *,**	19 *,**	37

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
[4] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table 3.16 **Percentage of students at or above *Proficient* in mathematics, by race/ethnicity, grade 8 public schools: By state, 1990–2003**

Grade 8	White						Black					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	18 *	25 *	29 *	33	33 *	36	5	2 *	4 *	5 *	5 *	7
Alabama	12 *,**	15 *,**	18	22	23	23	2	1 *,**	2	3	3	3
Alaska	–	–	36	–	–	41	–	–	‡	–	–	11
Arizona	18 *,**	20 *,**	24 *,**	29	28	32	4	5	6	7	7	7
Arkansas	12 *,**	13 *,**	16 *,**	18 *	18 *,**	24	1 *	2	2	2	2	3
California	18 *,**	23 *,**	26 *,**	26 *	26	34	2	2	7	4	4	6
Colorado	20 *,**	26 *,**	30 *,**	–	–	43	2	4	8	–	–	9
Connecticut	26 *,**	32 *,**	37 *,**	43	42	44	4	3	4	4	4	7
Delaware	18 *,**	20 *,**	24 *,**	–	–	35	4 *,**	3 *,**	3 *,**	–	–	8
Florida	16 *,**	21 *,**	25 *,**	–	–	34	2 *,**	3 *,**	2 *,**	–	–	7
Georgia	19 *,**	18 *,**	24 *,**	28	27	32	3 *,**	3 *,**	3 *,**	4	4	7
Hawaii	16 *,**	16 *,**	24	25	22	25	‡	‡	‡	‡	‡	‡
Idaho	19 *,**	23 *,**	–	29	28	31	‡	‡	–	‡	‡	‡
Illinois	18 *,**	–	–	37	35	40	3	–	–	7	8	6
Indiana	18 *,**	22 *,**	27 *,**	34	32	35	2	3	3	7	7	7
Iowa	26 *,**	32 *	32	–	–	35	‡	‡	11	–	–	11
Kansas	–	–	–	37	36	39	–	–	–	12	10	8
Kentucky	11 *,**	15 *,**	17 *,**	22	22	25	2	4	2	7	6	5
Louisiana	8 *,**	12 *,**	12 *,**	19 *,**	18 *,**	28	1 *,**	1 *,**	2 *,**	2 *	2 *	5
Maine	–	26	31	32	31	30	–	14	‡	‡	‡	‡
Maryland	22 *,**	28 *,**	34	40	38	40	3 *,**	3 *,**	4 *,**	7	6	9
Massachusetts	–	26 *,**	31 *,**	36 *,**	34 *,**	44	–	6	8	9	9	10
Michigan	18 *,**	23 *,**	34	34	34	35	1 *,**	2	5	2	3	4
Minnesota	24 *,**	32 *,**	36 *,**	41 *,**	41 *,**	49	7	‡	5	‡	‡	9
Mississippi	–	12 *,**	13 *,**	14 *,**	14 *,**	22	–	1 *,**	1 *,**	1 *	1 *	3
Missouri	–	22 *,**	24 *,**	25 *,**	25 *,**	32	–	3 *	4	4	3	6
Montana	28 *,**	–	35	40	39	37	‡	–	‡	‡	‡	‡
Nebraska	26 *,**	28 *,**	33	34	33	36	2	2	6	6	6	7
Nevada	–	–	–	25	24	27	–	–	–	6	5	9
New Hampshire	20 *,**	25 *,**	–	–	–	35	‡	‡	–	–	–	‡
New Jersey	26 *,**	30 *,**	–	–	–	42	4	3	–	–	–	7
New Mexico	19 *,**	18 *,**	26	24 *	23 *,**	31	‡	‡	‡	‡	‡	5
New York	21 *,**	27 *,**	30 *,**	35 *,**	33 *,**	44	3 *,**	4 *,**	4 *,**	9	8	10
North Carolina	12 *,**	16 *,**	27 *,**	40 *	37 *,**	44	2 *,**	3 *,**	5 *,**	7 *	7 *	11
North Dakota	29 *,**	30 *,**	35 *	33 *,**	33 *,**	39	‡	‡	‡	‡	‡	‡
Ohio	16 *,**	21 *,**	–	34	34	35	2 *,**	2 *,**	–	7	7	8
Oklahoma	16 *,**	19 *,**	–	22	22	25	# **	2	–	5	5	5
Oregon	21 *,**	–	28 *,**	34	34	35	‡	–	‡	‡	‡	17
Pennsylvania	20 *,**	24 *,**	–	–	–	35	3	4	–	–	–	4
Rhode Island	16 *,**	18 *,**	23 *,**	28	26	29	2	2	6	6	4	5
South Carolina	–	22 *,**	21 *,**	27 *,**	27 *,**	39	–	3 *,**	3 *,**	4 *,**	4 *,**	8
South Dakota	–	–	–	–	–	37	–	–	–	–	–	‡
Tennessee	–	14 *,**	18 *,**	21 *	20 *	26	–	2 *,**	3	3	3	5
Texas	20 *,**	27 *,**	32 *,**	35	35	38	2 *,**	5	4	7	7	8
Utah	–	23 *,**	26 *,**	27 *,**	27 *,**	34	–	‡	‡	‡	‡	‡
Vermont	–	–	28 *,**	33	31 *	35	–	–	‡	‡	‡	‡
Virginia	21 *,**	23 *,**	27 *,**	32 *	32 *	40	4 *,**	5 *,**	3 *,**	6 *	6 *	11
Washington	–	–	29 *,**	–	–	36	–	–	4 *,**	–	–	13
West Virginia	9 *,**	10 *,**	14 *,**	18	18	20	3	3	2	7	7	6
Wisconsin	25 *,**	29 *,**	36	–	–	40	3	7	2	–	–	5
Wyoming	20 *,**	22 *,**	23 *,**	26 *,**	25 *,**	35	‡	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	‡	‡	64	56	‡	1 *,**	2	3	3	3	3
DDESS [2]	–	–	31	36	36	42	–	–	8	15	12	10
DoDDS [3]	–	–	30 *,**	34 *,**	34 *	42	–	–	7 *,**	9 *	10	15

See notes at end of table. ▶

Table 3.16 Percentage of students at or above *Proficient* in mathematics, by race/ethnicity, grade 8 public schools: By state, 1990–2003—Continued

Grade 8	Hispanic						Asian/Pacific Islander					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	7	6 *	8	8	8 *	11	30	43	‡	40	40	42
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	–	‡	–	–	11	–	–	‡	–	–	29
Arizona	3 *,**	5	5 *,**	7	6	9	‡	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	7	‡	‡	‡	‡	‡	‡
California	3 *,**	3 *,**	4 *,**	7	6	8	19 *,**	30	31	34	34	39
Colorado	4 *,**	6 *,**	8	–	–	12	‡	‡	36	–	–	38
Connecticut	2 *,**	3 *,**	7	7	7	11	‡	‡	33	‡	‡	51
Delaware	‡	‡	‡	–	–	11	‡	‡	‡	–	–	‡
Florida	7 *,**	5 *,**	8 *,**	–	–	16	‡	‡	‡	–	–	41
Georgia	‡	‡	‡	‡	‡	14	‡	‡	‡	‡	‡	40
Hawaii	‡	‡	10	‡	‡	16	11 *,**	14	15	15	15	15
Idaho	8	8	–	8	7	7	‡	‡	–	‡	‡	‡
Illinois	3 *,**	–	–	9	11	9	31 *,**	–	–	‡	‡	58
Indiana	‡	‡	‡	‡	‡	9	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	–	–	10	‡	‡	‡	–	–	‡
Kansas	–	–	–	13	12	16	–	–	–	‡	‡	34
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	11	‡	‡	22	20	15	45	37 *	65	52	49	56
Massachusetts	–	3 *,**	3 *	10	8	9	–	‡	28 *,**	50	44	57
Michigan	‡	10	‡	‡	‡	14	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	16	19	‡	31	‡	‡	32
Mississippi	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Missouri	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Montana	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡
Nebraska	‡	10	10	5	5	10	‡	‡	‡	‡	‡	‡
Nevada	–	–	–	8	8	7	–	–	–	29	25	31
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	4 *,**	4 *,**	–	–	–	14	53	52	–	–	–	61
New Mexico	4 *,**	4 *,**	6	6	5	7	‡	‡	‡	‡	‡	‡
New York	5 *,**	4 *,**	5 *,**	11	10	16	26 *	35	31	39	37	41
North Carolina	‡	‡	‡	‡	‡	16	‡	‡	‡	‡	‡	48
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	‡	‡	–	‡	‡	18	‡	‡	–	‡	‡	‡
Oklahoma	‡	‡	–	11	13	9	‡	‡	–	‡	‡	‡
Oregon	12	–	10	11	6	12	29	–	38	34	38	41
Pennsylvania	‡	‡	–	–	–	6	‡	‡	–	–	–	‡
Rhode Island	1 *,**	2 *	3	3	3	5	‡	‡	16	20	20	20
South Carolina	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	‡	–	–	–	–	–	‡
Tennessee	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Texas	4 *,**	6 *,**	7 *,**	13	13	14	34 *,**	58	40	43	44	58
Utah	–	7	8	6	6	7	–	‡	‡	‡	20	25
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	‡	‡	‡	21	16	17	43	32 *	35	49	44	48
Washington	–	–	7 *,**	–	–	17	–	–	27	–	–	37
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	–	–	16	‡	‡	‡	–	–	17
Wyoming	8	11	7	8	8	13	‡	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	11	4	6	5	3	‡	‡	‡	‡	‡	‡
DDESS [2]	–	–	18	18	13	19	–	–	‡	‡	‡	‡
DoDDS [3]	–	–	13 *,**	21	20	29	–	–	24 *,**	27 *	25 *	38

See notes at end of table. ▶

Table 3.16 Percentage of students at or above *Proficient* in mathematics, by race/ethnicity, grade 8 public schools: By state, 1990–2003—Continued

Grade 8	American Indian/Alaska Native						Other[4]					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public)[1]	‡	‡	‡	14	13	16	‡	8 *	‡	‡	‡	24
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	–	11	–	–	12	–	–	‡	–	–	‡
Arizona	#	6	7	‡	‡	7	‡	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Florida	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Georgia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Hawaii	‡	‡	‡	‡	‡	‡	10	13	10	15	14	15
Idaho	‡	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡
Illinois	‡	–	–	‡	‡	‡	‡	–	–	‡	‡	‡
Indiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Kansas	–	–	–	‡	‡	‡	–	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Missouri	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Montana	9	–	17	11	11	15	‡	–	‡	‡	‡	‡
Nebraska	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Nevada	–	–	–	‡	11	‡	–	–	–	‡	‡	‡
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Mexico	2	1	7	5	7	3	‡	‡	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	2 **	‡	‡	‡	‡	13	‡	‡	‡	‡	‡	‡
North Dakota	3	10	7	6	5	11	‡	‡	‡	‡	‡	‡
Ohio	‡	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡
Oklahoma	5 *,**	12	–	11	12	14	‡	‡	–	‡	‡	21
Oregon	‡	–	‡	‡	‡	14	‡	–	‡	‡	‡	‡
Pennsylvania	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	9	–	–	–	–	–	‡
Tennessee	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Utah	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Washington	–	–	8	–	–	17	–	–	‡	–	–	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Wyoming	7	‡	5	‡	3	14	19	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
DDESS[2]	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
DoDDS[3]	–	–	‡	‡	‡	‡	–	–	27 *,**	30 *	29 *	42

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
[4] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Student Eligibility for Free/Reduced-Price School Lunch

NAEP collects data on students' eligibility for federally funded free/reduced-price school lunch as an indicator of family economic status at both the national and jurisdictional levels. Students in Department of Defense overseas schools did not participate in the free/reduced-price lunch program in 2003; therefore, data for that jurisdiction are not available. Tables 3.17 (grade 4) and 3.18 (grade 8) present the 1996–2003 average mathematics score results for participating jurisdictions by students' eligibility for free/reduced-price school lunch.

In 2003, students eligible for free/reduced-price lunch had lower average scores than did students who were not eligible in all 52 jurisdictions for which data are available at grade 4 and in 51 of the 52 jurisdictions for which data are available at grade 8.

Since 2000, fourth-grade average scores increased for both those students who were eligible for free/reduced-price lunch and those who were not eligible in 40 out of 42 jurisdictions with valid data. Average scores increased for eligible students in the District of Columbia and for students who were not eligible in Connecticut over the same time period. At grade 4, average scores increased between 1996 and 2003 for both eligible students and students who were not eligible in 44 out of 45 jurisdictions, and for students who were not eligible in North Dakota.

Eighth-grade average scores increased since 2000 for both eligible students and students who were not eligible in 13 out of 41 jurisdictions, for eligible students in 9 jurisdictions, and for students who were not eligible in 8 jurisdictions. At grade 8, average scores were higher in 2003 than in 1996 for eligible students and for students who were not eligible in 22 out of 42 jurisdictions, higher for eligible students in Montana, and higher for students who were not eligible in 10 jurisdictions.

Table 3.17 Average mathematics scale scores, by eligibility for free/reduced-price school lunch, grade 4 public schools: By state, 1996–2003

Grade 4	Eligible				Not eligible				Information not available			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1996	2000	2000	2003	1996	2000	2000	2003	1996	2000	2000	2003
Nation (public) [1]	207 *	210 *	208 *	222	231 *	236 *	235 *	244	230	235	236	235
Alabama	199 *,**	206 *,**	206 *,**	213	224 *,**	230 *,**	230 *,**	237	214	227	224	‡
Alaska	207 *,**	–	–	220	233 *,**	–	–	241	227	–	–	232
Arizona	202 *,**	205 *,**	206 *,**	217	230 *,**	231 *,**	232 *,**	241	218 *,**	214 *,**	211 *,**	232
Arkansas	204 *,**	206 *,**	205 *,**	221	227 *,**	229 *,**	228 *,**	239	‡	‡	‡	226
California	194 *,**	200 *,**	202 *,**	216	222 *,**	229 *,**	227 *,**	241	216	217	213	224
Colorado	210 *,**	–	–	219	233 *,**	–	–	243	227	–	–	‡
Connecticut	207 *,**	216	216	220	240 *,**	242 *,**	241 *,**	250	‡	225	224 *,**	243
Delaware	199 *,**	–	–	225	227 *,**	–	–	243	211 *,**	–	–	239
Florida	204 *,**	–	–	222	227 *,**	–	–	245	224	–	–	230
Georgia	201 *,**	204 *,**	204 *,**	219	226 *,**	233 *,**	233 *,**	241	226	223 *,**	222 *,**	239
Hawaii	202 *,**	205 *,**	205 *,**	216	224 *,**	226 *,**	227 *,**	237	212	212	216	‡
Idaho	–	217 *,**	214 *,**	227	–	234 *,**	232 *,**	241	–	228 *,**	232	243
Illinois	–	209 *,**	208 *,**	216	–	235 *,**	234 *,**	246	–	231	224	220
Indiana	213 *,**	222	219 *,**	225	236 *,**	240 *,**	240 *,**	245	‡	231	231	‡
Iowa	219 *,**	224	222 *,**	227	234 *,**	236 *,**	235 *,**	244	226	232	230	‡
Kansas	–	217 *,**	218 *,**	231	–	241 *,**	240 *,**	249	–	211	222	‡
Kentucky	209 *,**	210 *,**	207 *,**	220	230 *,**	231 *,**	230 *,**	237	218	226	226	‡
Louisiana	200 *,**	210 *,**	211 *,**	220	224 *,**	233 *,**	232 *,**	242	214	212	215	210
Maine	221 *,**	222 *,**	221 *,**	228	238 *,**	234 *,**	233 *,**	243	239	235	234	‡
Maryland	199 *,**	204 *,**	204 *,**	216	233 *,**	233 *,**	233 *,**	244	204 *,**	214 *,**	215 *,**	230
Massachusetts	213 *,**	213 *,**	210 *,**	226	235 *,**	243 *,**	242 *,**	249	229 *,**	236	234	242
Michigan	210 *,**	211 *,**	210 *,**	220	234 *,**	240 *,**	238 *,**	245	228	218	219	225
Minnesota	218 *,**	220 *	217 *,**	226	238 *,**	240 *,**	240 *,**	248	227	250	240	‡
Mississippi	200 *,**	202 *,**	202 *,**	216	224 *,**	226 *,**	225 *,**	238	‡	213 *,**	214 *,**	233
Missouri	210 *,**	213 *,**	213 *,**	224	233 *,**	237 *,**	236 *,**	243	‡	233	233	239
Montana	217 *,**	217 *,**	216 *,**	227	234 *,**	236 *,**	234 *,**	242	223	233	233	230
Nebraska	213 *,**	210 *,**	210 *,**	222	235 *,**	235 *,**	235 *,**	244	235	231	225	239
Nevada	202 *,**	208 *,**	206 *,**	216	223 *,**	228 *,**	228 *,**	237	219 *,**	218	217 *	230
New Hampshire	–	–	–	229	–	–	–	247	–	–	–	240
New Jersey	206 *,**	–	–	221	238 *,**	–	–	247	‡	–	–	242
New Mexico	203 *,**	205 *,**	206 *,**	217	227 *,**	227 *,**	228 *,**	236	221	217	209 *,**	226
New York	206 *,**	214 *,**	212 *,**	225	236 *,**	239 *,**	238 *,**	247	233	236	229 *,**	247
North Carolina	209 *,**	220 *,**	218 *,**	229	234 *,**	241 *,**	239 *,**	252	217 *,**	237	234 *,**	247
North Dakota	223	221 *,**	219 *,**	228	234 *,**	235 *,**	236 *,**	242	230	230	228	‡
Ohio	–	217 *,**	216 *,**	224	–	239 *,**	238 *,**	246	–	231	231	241
Oklahoma	–	217 *,**	215 *,**	223	–	234 *,**	233 *,**	239	–	225	225	224
Oregon	210 *,**	213 *,**	211 *,**	226	231 *,**	234 *,**	233 *,**	242	222 *,**	232	218 *,**	245
Pennsylvania	211 *,**	–	–	220	235 *,**	–	–	246	226	–	–	239
Rhode Island	204 *,**	206 *,**	207 *,**	217	229 *,**	236 *,**	236 *,**	242	‡	219	212	220
South Carolina	201 *,**	208 *,**	207 *,**	226	226 *,**	235 *,**	234 *,**	247	‡	205	‡	‡
South Dakota	–	–	–	227	–	–	–	244	–	–	–	‡
Tennessee	204 *,**	204 *,**	204 *,**	216	229 *,**	231 *,**	231 *,**	236	217	226	230	234
Texas	215 *,**	222 *,**	222 *,**	229	240 *,**	242 *,**	241 *,**	247	228	232	229 *	246
Utah	216 *,**	215 *,**	214 *,**	225	231 *,**	233 *,**	233 *,**	240	226	233	230	‡
Vermont	210 *,**	216 *,**	216 *,**	229	231 *,**	237 *,**	238 *,**	248	226	237	236	‡
Virginia	206 *,**	214 *,**	215 *,**	225	230 *,**	237 *,**	236 *,**	246	228	239	236	245
Washington	212 *,**	–	–	226	232 *,**	–	–	247	230 *,**	–	–	239
West Virginia	213 *,**	217 *,**	216 *,**	225	232 *,**	232 *,**	231 *,**	237	231	225	223	‡
Wisconsin	215 *,**	–	–	221	237 *,**	–	–	244	234	–	–	242
Wyoming	213 *,**	220 *,**	219 *,**	233	228 *,**	234 *,**	234 *,**	246	224	227	227	227
Other jurisdictions												
District of Columbia	178 *,**	188 *,**	186 *,**	200	213 *,**	219	219	221	206	198 *,**	196 *,**	206
DDESS [2]	218 *,**	224 *,**	225 *,**	233	229 *,**	231 *,**	230 *,**	240	225 *,**	229	226 *	236
DoDDS [3]	220	222	222	–	225	229	227	–	222	229	227	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

Table 3.18 Average mathematics scale scores, by eligibility for free/reduced-price school lunch, grade 8 public schools: By state, 1996–2003

Grade 8	Eligible				Not eligible				Information not available			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1996	2000	2000	2003	1996	2000	2000	2003	1996	2000	2000	2003
Nation (public) [1]	252 *	255 *	253 *	258	279 *	285	283 *	287	278	273	271 *	278
Alabama	237 *,**	243	246	246	270 *	275	275	276	254	270	272	‡
Alaska	257	–	–	260	282	–	–	285	281	–	–	281
Arizona	254	252	251 **	258	277 *,**	280	279	282	264	276	271	274
Arkansas	246 *,**	249 *,**	242 *,**	256	270 *,**	269 *,**	267 *,**	276	262	269	269	248
California	246	242 *,**	240 *,**	251	276	273	269 *,**	281	261	273	275	271
Colorado	259	–	–	262	282 *,**	–	–	292	270	–	–	‡
Connecticut	254	251	250 *,**	260	287 *,**	292	291	292	275	275	273	287
Delaware	247 *,**	–	–	261	274 *,**	–	–	285	265 *,**	–	–	291
Florida	248 *,**	–	–	256	275 *,**	–	–	284	263	–	–	277
Georgia	242 *,**	248 *	246 *,**	253	273 *,**	278 *,**	278 *,**	284	271	265	264	262
Hawaii	249 *,**	251	252	254	269 *,**	270 *	268 *,**	275	253	270	266	‡
Idaho	–	264	265	267	–	284	283 *,**	287	–	282	276	286
Illinois	–	259	255	256	–	285	284 *,**	290	–	278	278	269
Indiana	256 *,**	267	269	266	282 *,**	288	286	288	‡	278	272	285
Iowa	272	–	–	266	287	–	–	290	284	–	–	291
Kansas	–	267	265	270	–	290	289	291	–	285	288	‡
Kentucky	252 *,**	257	255 *,**	261	276 *,**	281	280	284	261	‡	‡	‡
Louisiana	241 *,**	246 *,**	247 *,**	256	265 *,**	276	276	280	250	260	256	267
Maine	272	273	270	268	288	287	285	287	284	283	279	‡
Maryland	243 *,**	251	245 *,**	255	279 *	286	283	285	274 *	270 *	267 *,**	295
Massachusetts	254 *,**	261	257	261	284 *,**	289 *,**	286 *,**	295	269	286	274	291
Michigan	257	256	256	257	284	286	284	285	272	274	274	272
Minnesota	270	274	272	271	288 *,**	291 *,**	291 *,**	297	286	294	295	‡
Mississippi	239 *,**	241 *,**	242 *,**	251	265 *,**	267 *,**	267 *,**	275	248 *	256	254	274
Missouri	259	256 *	250 *,**	263	280 *,**	280 *,**	279 *,**	286	264	277	275	281
Montana	266 **	275	271	273	290	292	290	292	286	287	289	289
Nebraska	269	262	260	265	288	288	287	290	288	‡	‡	275
Nevada	–	248	246 *,**	254	–	275	272	274	–	275	262	274
New Hampshire	–	–	–	268	–	–	–	289	–	–	–	286
New Jersey	–	–	–	256	–	–	–	290	–	–	–	284
New Mexico	251	250	248	252	272	272	271	275	265	258	264	276
New York	253 *,**	261	255	262	282 *,**	286 *,**	284 *,**	293	271 *	281	276	290
North Carolina	250 *,**	261	257 *,**	263	277 *,**	289	286 *,**	291	263 *,**	272 *,**	270 *,**	293
North Dakota	274	271	272	274	288 *,**	287 *,**	288 *,**	292	282	284	275	‡
Ohio	–	262	257	263	–	289	287	289	–	273	277	277
Oklahoma	–	259	258	260	–	280	277 *,**	282	–	275	276	‡
Oregon	262	263	263	266	282	287	286	286	273	285	284	285
Pennsylvania	–	–	–	257	–	–	–	288	–	–	–	278
Rhode Island	250	252	247 *,**	253	277 *,**	283	280 *	284	249	269 *,**	262	248
South Carolina	246 *,**	252 *,**	249 *,**	263	272 *,**	278 *,**	278 *,**	289	‡	‡	‡	‡
South Dakota	–	–	–	272	–	–	–	291	–	–	–	‡
Tennessee	246	244	242 *,**	250	271 *,**	274 *	273 *,**	279	262	262	258	280
Texas	252 *,**	261	260	264	282 *,**	285	284	288	271	276	270	‡
Utah	268	262	255 *,**	266	280 *,**	281 *,**	280 *,**	286	276	269	275	280
Vermont	266	266	261 *	268	283 *,**	288	286 *,**	291	278	283	278	‡
Virginia	246 *,**	258	256 *,**	261	277 *,**	282 *,**	281 *,**	289	277	276	274	281
Washington	258 *,**	–	–	265	282 *,**	–	–	288	276	–	–	283
West Virginia	254 *,**	259	252 *,**	261	271 *,**	278	276	280	274	276	274	‡
Wisconsin	262	–	–	259	289	–	–	292	285	–	–	285
Wyoming	262 *,**	265 *,**	262 *,**	271	277 *,**	281 *,**	281 *,**	288	285	274	269	‡
Other jurisdictions												
District of Columbia	226 *,**	227 *,**	226 *,**	235	245 *,**	261	258	254	234 *,**	230 *,**	234 *,**	252
DDESS [2]	260 *,**	268 *,**	263 *,**	281	276 *	281	279	283	269 *,**	281	277	282
DoDDS [3]	267	271	271	–	276	280	278	–	275	279	281	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

The percentages of students performing at or above the *Proficient* level by students' eligibility for free/reduced-price school lunch are presented for participating jurisdictions in tables 3.19 (grade 4) and 3.20 (grade 8). Since 2000, the percentage of fourth-graders performing at or above *Proficient* has increased both for eligible students and for students who were not eligible in 35 jurisdictions, for eligible students in Tennessee, and for students who were not eligible in 5 jurisdictions. The percentage of fourth-graders performing at or above *Proficient* increased since 1996 both for eligible students and for students who were not eligible in 43 jurisdictions, for eligible students in the District of Columbia, and for students who were not eligible in Wisconsin.

At grade 8, the percentages of students performing at or above *Proficient* increased between 2000 and 2003 both for eligible students and for students who were not eligible in 8 jurisdictions, for eligible students in Nevada, and for students who were not eligible in 7 jurisdictions. The percentage of eighth-graders performing at or above *Proficient* increased since 1996 both for eligible students and for students who were not eligible in 15 jurisdictions, for eligible students in Alabama and Texas, and for students who were not eligible in 10 jurisdictions.

Table 3.19 **Percentage of students at or above *Proficient* in mathematics, by eligibility for free/reduced-price school lunch, grade 4 public schools: By state, 1996–2003**

Grade 4	Eligible				Not eligible				Information not available			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1996	2000	2000	2003	1996	2000	2000	2003	1996	2000	2000	2003
Nation (public) [1]	8 *	9 *	7 *	15	25 *	33 *	32 *	45	28	35	35	34
Alabama	3 *,**	5 *,**	5 *,**	8	18 *,**	24 *,**	23 *,**	33	9	22	18	‡
Alaska	9 *,**	–	–	14	29 *,**	–	–	39	22	–	–	31
Arizona	5 *,**	7 *,**	7 *,**	12	24 *,**	26 *,**	25 *,**	39	14 *,**	12 *,**	9 *,**	29
Arkansas	6 *,**	5 *,**	6 *,**	18	20 *,**	21 *,**	22 *,**	37	‡	‡	‡	22
California	4 *,**	5 *,**	5 *,**	11	17 *,**	25 *,**	23 *,**	41	12	19	15	23
Colorado	9 *,**	–	–	14	28 *,**	–	–	43	21	–	–	‡
Connecticut	7 *,**	11	10	12	38 *,**	40 *,**	39 *,**	54	‡	24	24	41
Delaware	6 *,**	–	–	16	24 *,**	–	–	42	11 *,**	–	–	34
Florida	7 *,**	–	–	16	21 *,**	–	–	46	22	–	–	24
Georgia	3 *,**	5 *,**	5 *,**	12	20 *,**	29 *,**	29 *,**	40	24	21	20 *,**	41
Hawaii	7 *,**	6 *,**	5 *,**	11	23 *,**	22 *,**	23 *,**	34	13	11	12	‡
Idaho	–	13 *,**	12 *,**	20	–	28 *,**	26 *,**	38	–	20 *,**	22 *	43
Illinois	–	7 *,**	6 *,**	11	–	30 *,**	29 *,**	48	–	31	26	15
Indiana	8 *,**	14	13	17	30 *,**	37 *,**	38 *,**	45	‡	31	30	‡
Iowa	13 *,**	17	16	20	27 *,**	32 *,**	31 *,**	43	20	27	24	‡
Kansas	–	13 *,**	13 *,**	24	–	40 *,**	38 *,**	53	–	15	22	‡
Kentucky	7 *,**	7 *,**	6 *,**	12	24 *,**	26 *,**	26 *,**	32	9	28	28	‡
Louisiana	3 *,**	7 *,**	7 *,**	13	15 *,**	27 *,**	25 *,**	41	10	10	10	9
Maine	13 *,**	14 *,**	12 *,**	21	34 *,**	29 *,**	28 *,**	41	35	32	25	‡
Maryland	5 *,**	7	6 *,**	10	31 *,**	31 *,**	31 *,**	44	8 *,**	18	17	26
Massachusetts	8 *,**	9 *,**	8 *,**	17	30 *,**	42 *,**	39 *,**	52	26	41	35	44
Michigan	8 *,**	11	9 *,**	15	30 *,**	38 *,**	37 *,**	45	28	15	13	21
Minnesota	14 *,**	15	13 *,**	20	35 *,**	40 *,**	39 *,**	50	26	55	43	‡
Mississippi	3 *,**	4 *,**	3 *,**	9	17 *,**	18 *,**	19 *,**	34	‡	11 *,**	10 *,**	30
Missouri	7 *,**	9 *,**	10 *,**	15	27 *,**	31 *,**	30 *,**	41	‡	24	27	33
Montana	13 *,**	10 *,**	10 *,**	20	29 *,**	32	31 *,**	39	15	30	28	23
Nebraska	12 *,**	11 *,**	11	17	30 *,**	31 *,**	32 *,**	44	32	27	25	34
Nevada	4 *,**	6 *,**	6 *,**	11	17 *,**	22 *,**	22 *,**	33	15	14	14	22
New Hampshire	–	–	–	24	–	–	–	48	–	–	–	37
New Jersey	5 *,**	–	–	15	35 *,**	–	–	49	‡	–	–	44
New Mexico	5 *,**	5 *,**	5 *,**	11	21 *,**	22 *,**	23 *,**	31	20	14	12	21
New York	7 *,**	8 *,**	8 *,**	18	29 *,**	36 *,**	33 *,**	48	28	29	30	44
North Carolina	7 *,**	12 *,**	11 *,**	21	30 *,**	39 *,**	36 *,**	55	17 *,**	34	31 *	51
North Dakota	15 *,**	16	14 *,**	21	28 *,**	29 *,**	30 *,**	40	21	25	23	‡
Ohio	–	11 *,**	10 *,**	17	–	35 *,**	33 *,**	47	–	24	25	39
Oklahoma	–	8 *,**	8 *,**	14	–	25 *,**	24 *,**	34	–	15	16	20
Oregon	9 *,**	11 *,**	11 *,**	19	27 *,**	30 *,**	30 *,**	40	22 *,**	31	24 *	48
Pennsylvania	7 *,**	–	–	16	29 *,**	–	–	48	17	–	–	42
Rhode Island	5 *,**	7 *,**	7 *,**	13	24 *,**	33 *,**	32 *,**	41	‡	16	13	19
South Carolina	4 *,**	7 *,**	7 *,**	18	20 *,**	31 *,**	31 *,**	48	‡	11	‡	‡
South Dakota	–	–	–	21	–	–	–	42	–	–	–	‡
Tennessee	6 *,**	6 *,**	6 *,**	11	23 *,**	27	27	32	18	23	25	33
Texas	9 *,**	13 *,**	12 *,**	20	39 *,**	40	38 *,**	48	22	27	23	47
Utah	13 *,**	13 *,**	12 *,**	20	27 *,**	29 *,**	28 *,**	37	23	28	24	‡
Vermont	9 *,**	15 *,**	15 *,**	23	28 *,**	34 *,**	35 *,**	50	24	37	35	‡
Virginia	5 *,**	9 *,**	8 *,**	14	25 *,**	32 *,**	31 *,**	46	28	37	33	48
Washington	10 *,**	–	–	20	26 *,**	–	–	48	25	–	–	37
West Virginia	10 *,**	11 *,**	10 *,**	16	27 *,**	25 *,**	25 *,**	33	25	18	15	‡
Wisconsin	13	–	–	17	33 *,**	–	–	44	30	–	–	44
Wyoming	10 *,**	16 *,**	15 *,**	25	23 *,**	30 *,**	30 *,**	47	22	23	21	22
Other jurisdictions												
District of Columbia	1 *,**	2	2	3	19	22	22	20	11	11	11	7
DDESS [2]	14 *,**	18	19	24	26 *,**	28 **	26 *,**	35	21	25	21	27
DoDDS [3]	15	17	16	–	21	24	22	–	18	23	21	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

Table 3.20 Percentage of students at or above *Proficient* in mathematics, by eligibility for free/reduced-price school lunch, grade 8 public schools: By state, 1996–2003

Grade 8	Eligible				Not eligible				Information not available			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1996	2000	2000	2003	1996	2000	2000	2003	1996	2000	2000	2003
Nation (public) [1]	8 *	10	10	11	29 *	35	34	37	29	26	24	29
Alabama	2 *,**	5	6	7	18	23	23	24	7	21	23	‡
Alaska	16	–	–	13	33	–	–	36	32	–	–	31
Arizona	8	9	8	9	24 *,**	27	27	31	16	24	20	22
Arkansas	5 *,**	7 *	6 *,**	12	18 *,**	18 *,**	18 *,**	25	12	20	21	9
California	5	4 *	4 *,**	9	26	24 *	23 *	33	15	26	28	25
Colorado	11	–	–	13	31 *,**	–	–	43	22	–	–	‡
Connecticut	9	7	7	12	36 *,**	42	41	44	34	29	26	38
Delaware	6 *	–	–	10	25 *,**	–	–	32	13 *,**	–	–	42
Florida	6 *,**	–	–	11	25 *,**	–	–	34	19	–	–	25
Georgia	3 *,**	5 *	5 *	8	22 *,**	27 *	27 *	34	22	17	18	12
Hawaii	7	8	8	8	21	21	20	24	8	22	18	‡
Idaho	–	17	16	17	–	32	31	35	–	29	27	32
Illinois	–	12	12	10	–	34	34	41	–	25	23	24
Indiana	8 *,**	13	14	16	28 *,**	36	35	37	‡	26	23	37
Iowa	20	–	–	15	35	–	–	39	31	–	–	39
Kansas	–	17	17	19	–	41	39	41	–	36	37	‡
Kentucky	4 *,**	8	8	11	23 *,**	29	29	33	12	‡	‡	‡
Louisiana	3 *,**	4 *	5 *	8	12 *,**	22	21 *	29	7	10	9	19
Maine	18	20	18	16	35	36	34	35	30	31	28	‡
Maryland	6	7	6	10	31	37	36	36	26	25	22	43
Massachusetts	7 *,**	11	10	13	33 *,**	38 *,**	37 *,**	46	24	35	27	43
Michigan	10	9	9	13	34	35	34	34	28	27	30	25
Minnesota	20	27	24	24	37 *,**	42 *,**	42 *,**	50	41	50	52	‡
Mississippi	2 *	3	3	5	13 *,**	14 *,**	15 *	23	7 *	9 *	8 *	26
Missouri	9	9	8 *	13	27 *,**	26 *,**	27 *,**	35	17	26	24	31
Montana	17	25	22	23	38	43	42	40	34	37	39	38
Nebraska	19	15	13	15	35	36	36	40	34	‡	‡	29
Nevada	–	6	6 *,**	10	–	24	23	25	–	25	17	30
New Hampshire	–	–	–	16	–	–	–	38	–	–	–	36
New Jersey	–	–	–	10	–	–	–	41	–	–	–	37
New Mexico	7	6	5	7	21	21	20	23	17	15	15	29
New York	10 *,**	12	12	16	29 *,**	34 *,**	32 *,**	45	28	32	30	41
North Carolina	6 *,**	13	10	14	28 *,**	38	36 *	42	14 *,**	21 *,**	18 *,**	45
North Dakota	22	21	21	23	38	35 *	35 *,**	41	33	31	27	‡
Ohio	–	10	9	11	–	36	36	38	–	24	26	24
Oklahoma	–	8	9	10	–	26	25	28	–	21	22	‡
Oregon	12	16	14	17	32	37	36	37	23	35	36	35
Pennsylvania	–	–	–	10	–	–	–	38	–	–	–	30
Rhode Island	8	7	6	8	26 *,**	31	30	33	10	18	17	9
South Carolina	5 *,**	6 *,**	6 *,**	12	21 *,**	27 *,**	26 *,**	38	‡	‡	‡	‡
South Dakota	–	–	–	22	–	–	–	41	–	–	–	‡
Tennessee	5	7	5	9	19 *,**	23	23	28	14	12	13	33
Texas	6 *,**	11	11	12	31	34	34	36	18	26	21	‡
Utah	17	15	12 *	18	27 *,**	29 *,**	29 *,**	36	24	24	27	27
Vermont	16	14	13	16	31 *,**	38	36	41	21	32	29	‡
Virginia	5 *,**	8	8	11	26 *,**	31 *,**	31 *,**	38	25	27	26	28
Washington	12	–	–	16	31 *,**	–	–	40	18	–	–	32
West Virginia	6 *	8	7	10	18 *,**	25	25	28	22	22	21	‡
Wisconsin	12	–	–	12	37	–	–	43	33	–	–	35
Wyoming	11 *,**	15	14 *	18	24 *,**	28 *,**	27 *,**	37	34	21	19	‡
Other jurisdictions												
District of Columbia	2	2	2	2	12	18	17	12	4	5	4	7
DDESS [2]	14	16	14	25	27	31	28	27	21	32	30	28
DoDDS [3]	17	18	20	–	23	27	26	–	24	29	31	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

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4 Average Mathematics Scale Scores and Achievement-Level Results for Districts Participating in the Trial Urban District Assessment

This chapter presents the results of the NAEP 2003 Trial Urban District Assessment (TUDA) in mathematics at grades 4 and 8. TUDA, a special project in NAEP, was instituted in 2002. After discussion among the National Center for Education Statistics (NCES), the National Assessment Governing Board (NAGB), and the leadership of the Council of the Great City Schools, Congress appropriated funds for this district-level assessment in 2001. NAGB passed a resolution approving the selection of five urban districts (Atlanta City School District, City of Chicago School District 299, Houston Independent School District, Los Angeles Unified School District, and New York City Public Schools), all of which voluntarily participated first in the NAEP 2002 reading and writing assessments at grades 4 and 8.[1]

In the second year of the TUDA project, the same five districts plus four more voluntarily participated in the NAEP 2003 reading and mathematics assessments at grades 4 and 8. The additional districts

[1] Lutkus, A. D., Weiner, A. W., Daane, M. C., and Jin, Y. (2003). *The Nation's Report Card: Reading 2002, Trial Urban District Assessment* (NCES 2003–523). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

Lutkus, A. D., Daane, M. C., Weiner, A. W., and Jin, Y. (2003). *The Nation's Report Card: Writing 2002, Trial Urban District Assessment* (NCES 2003–530). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

were Boston School District, Charlotte-Mecklenburg Schools, Cleveland Municipal School District, and San Diego City Unified School District.[2] Results are also included for the District of Columbia, which has regularly participated in NAEP state-wide assessments and is also reported in the preceding chapters. All the districts met the minimum participation guidelines for reporting results in 2003.

The TUDA sampled only public school students in both years. This chapter displays results only from 2003, the first year that results of the NAEP mathematics assessment were reported by urban districts. In addition, tables in this chapter display results for public school students in the nation as a whole and for public school students in large central cities.

"Large central city" is a geographical term used by NCES for a central city with a population at or above 250,000. It is not synonymous with "inner city." The Charlotte and Los Angeles districts include schools in locations that do not fit the NCES definition of large central city areas (i.e., urban fringe and rural areas). In those two districts, one-quarter to one-third of the students sampled attended schools that were not in large central cities.[3]

Scale Score Results for Urban Districts

The NAEP mathematics assessment was the same for the districts in the TUDA as for the states. Average mathematics scores are reported on a 0–500 scale. The average scores for the districts that participated in the NAEP mathematics assessment in 2003 are displayed in figure 4.1 for grade 4 and figure 4.2 for grade 8. These figures also show the corresponding results for public school students in the nation and for public school students attending schools located in large central cities. Because the percentage of students excluded from the assessment may vary considerably across districts, comparisons of achievement results should be interpreted with caution. (See tables A.20 and A.21 in appendix A for district exclusion rates.)

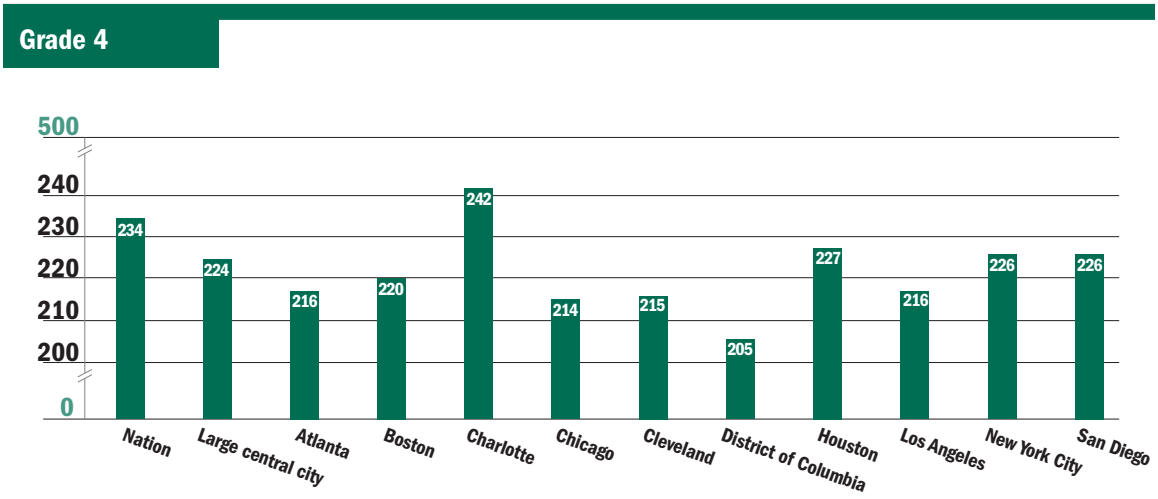
At grades 4 and 8, students in all participating districts except Charlotte scored lower on average than students in the nation. Students in Charlotte had higher average scores than those in the nation, large central cities, and the other participating districts at both grades 4 and 8.

At grade 8, students in Charlotte and New York City scored higher on average than students in large central city public schools.

[2] In the remainder of this chapter, the districts participating in the TUDA are referred to as Atlanta, Boston, Charlotte, Chicago, Cleveland, Houston, Los Angeles, New York City, and San Diego, and statements regarding "the districts" include the District of Columbia.

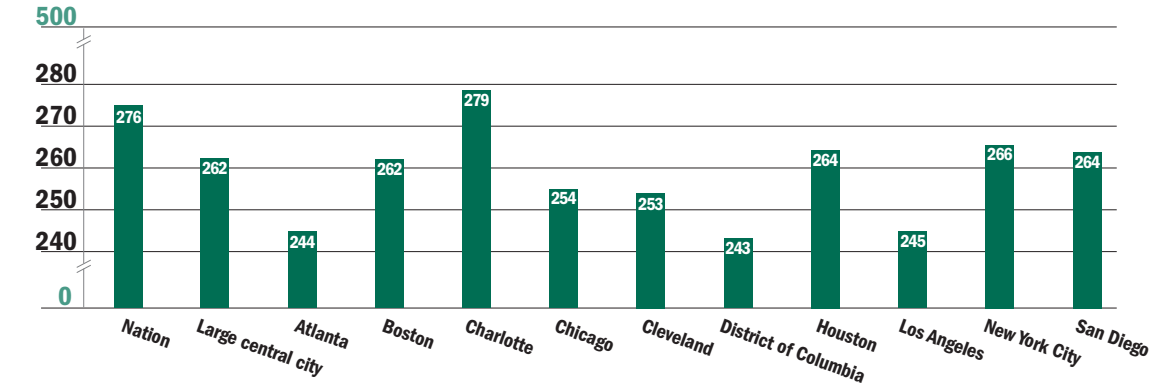
[3] Although "central city" data were reported in the 2002 Trial Urban District Assessment reports, the "central city" category is defined differently from "large central city" here.

Figure 4.1 Average mathematics scale scores, grade 4 public schools: By urban district, 2003



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Figure 4.2 Average mathematics scale scores, grade 8 public schools: By urban district, 2003



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Scale Scores by Percentiles for Urban Districts

An examination of the scores at different percentiles on the 0–500 mathematics scale for each grade can give more detail about the score distribution for districts that participated in 2003, reflecting the performance of lower-, middle-, and higher-performing students.

Table 4.1 shows the 2003 percentile results for participating urban districts at grades 4 and 8. At grade 4, the score in most districts was lower at the 10th percentile than that of public schools in the nation, except for Charlotte, where the score was higher than in the nation, and in Houston, where no measurable difference from the nation was detected. The scores for all of the districts except Charlotte were lower than those of public schools in the nation at the 25th, 50th, 75th, and 90th percentiles.

At grade 4, the scores at the 10th and 25th percentiles were higher in Charlotte, Houston, and New York City than in large central cities and lower in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles than in large central cities. The scores at the 50th, 75th, and 90th percentiles were higher in Charlotte than in large central cities and lower in Boston, Chicago, Cleveland, the District of Columbia, and Los Angeles than in large central cities.

At grade 8, the score at the 10th percentile for most urban districts was lower than in the nation, with the exception of Charlotte and Houston, where the score was not found to be measurably different from the nation. At the 25th, 50th, 75th, and 90th percentiles, the scores for all of the districts except Charlotte were lower than those of public schools in the nation.

At grade 8, the score at the 10th percentile in Charlotte and Houston was higher than in the large central cities; the score in Atlanta, the District of Columbia, and Los Angeles was lower than in the large central cities. The scores at the 75th and 90th percentiles were higher in Charlotte than in large central cities and lower in Atlanta, Chicago, Cleveland, the District of Columbia, Houston, and Los Angeles than in large central cities.

Table 4.1 Mathematics scale score percentiles, grades 4 and 8 public schools: By urban district, 2003

	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
Grade 4					
Nation (public)	196	215	235	254	270
Large central city (public)	186 **	204 **	224 **	245 **	263 **
Atlanta	180 *,**	195 *,**	214 *,**	234 *,**	256 **
Boston	189 **	203 **	219 *,**	236 *,**	252 *,**
Charlotte	207 *,**	223 *,**	242 *,**	261 *,**	276 *,**
Chicago	179 *,**	196 *,**	214 *,**	232 *,**	248 *,**
Cleveland	182 *,**	197 *,**	215 *,**	232 *,**	248 *,**
District of Columbia	168 *,**	185 *,**	204 *,**	224 *,**	243 *,**
Houston	196 *	210 *,**	226 **	243 **	259 **
Los Angeles	180 *,**	196 *,**	215 *,**	235 *,**	253 *,**
New York City	191 *,**	207 *,**	226 **	246 **	262 **
San Diego	190 **	207 *,**	226 **	244 **	262 **
Grade 8					
Nation (public)	228	253	278	301	321
Large central city (public)	214 **	238 **	262 **	288 **	311 **
Atlanta	200 *,**	220 *,**	244 *,**	267 *,**	288 *,**
Boston	214 **	236 **	260 **	287 **	314 **
Charlotte	226 *	252 *	280 *	307 *,**	328 *,**
Chicago	210 **	233 *,**	255 *,**	277 *,**	297 *,**
Cleveland	216 **	233 *,**	252 *,**	272 *,**	290 *,**
District of Columbia	198 *,**	219 *,**	243 *,**	267 *,**	288 *,**
Houston	227 *	244 *,**	263 **	283 *,**	303 *,**
Los Angeles	198 *,**	219 *,**	245 *,**	270 *,**	292 *,**
New York City	215 **	241 **	266 **	293 **	316 **
San Diego	216 **	239 **	265 **	290 **	311 **

* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Achievement-Level Results for Urban Districts

Table 4.2 shows the percentages of students in each participating urban district performing within each achievement level and the percentages of students at or above *Basic* and at or above *Proficient* for grades 4 and 8.

At grade 4, the percentages of students in Charlotte performing at or above *Basic*, at or above *Proficient,* and at *Advanced* were higher than the corresponding percentages in both large central cities and the nation. The percentages of fourth-graders at or above *Basic* in Houston and New York City were higher than the percentages in large central cities.

At grade 8, the percentages of students in Charlotte at or above *Proficient* and at *Advanced* were higher than the corresponding percentages in both large central cities and the nation.

Table 4.2 Percentages of students, by mathematics achievement level, grades 4 and 8 public schools: By urban district, 2003

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
Nation (public)	24	45	28	4	76	31
Large central city (public)	37 **	43 **	18 **	2 **	63 **	21 **
Atlanta	50 *,**	37 *,**	11 *,**	2	50 *,**	13 *,**
Boston	41 **	46	11 *,**	1 *,**	59 **	12 *,**
Charlotte	16 *,**	43	35 *,**	6 *,**	84 *,**	41 *,**
Chicago	50 *,**	40 **	9 *,**	1 *,**	50 *,**	10 *,**
Cleveland	49 *,**	41	9 *,**	# *,**	51 *,**	10 *,**
District of Columbia	64 *,**	29 *,**	6 *,**	1 *,**	36 *,**	7 *,**
Houston	30 *,**	51 *,**	17 **	1 **	70 *,**	18 **
Los Angeles	48 *,**	39 *,**	12 *,**	1 *,**	52 *,**	13 *,**
New York City	33 *,**	46	19 **	2 **	67 *,**	21 **
San Diego	34 **	46 *	18 **	2 **	66 **	20 **
Grade 8						
Nation (public)	33	39	22	5	67	27
Large central city (public)	49 **	34 **	14 **	3 **	51 **	17 **
Atlanta	70 *,**	24 *,**	5 *,**	1 *,**	30 *,**	6 *,**
Boston	52 **	31 *,**	14 **	4	48 **	17 **
Charlotte	33 *	36	24 *	7 *,**	67 *	32 *,**
Chicago	58 *,**	33 **	8 *,**	1 *,**	42 *,**	9 *,**
Cleveland	62 *,**	31 **	6 *,**	#	38 *,**	6 *,**
District of Columbia	71 *,**	23 *,**	5 *,**	1 *,**	29 *,**	6 *,**
Houston	48 **	40 *	11 *,**	2 **	52 **	12 *,**
Los Angeles	68 *,**	25 *,**	6 *,**	1 *,**	32 *,**	7 *,**
New York City	46 **	34 **	17 **	4	54 **	20 *,**
San Diego	47 **	35 **	16 **	2 **	53 **	18 **

The estimate rounds to zero.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Detail may not sum to totals because of rounding. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Performance of Selected Subgroups for Urban Districts

Gender

Average mathematics scale scores for male and female fourth- and eighth-grade students in 2003 are displayed in table 4.3. Male students scored higher on average than female students nationally in both grades.

At grade 4, the average scores for both male and female students in Charlotte were higher than those of their counterparts in the nation and in large central cities. Male and female fourth-graders in Atlanta, Boston, Chicago, Cleveland, the District of Columbia, and Los Angeles had lower average scores than their counterparts in large central cities and in the nation.

At grade 8, the average score for both male and female students in Charlotte was higher than the corresponding average score for large central cities. Both male and female eighth-graders in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles had a lower average score than their counterparts in large central cities and in the nation.

Table 4.3 Average mathematics scale scores, by gender, grades 4 and 8 public schools: By urban district, 2003

	Male	Female
Grade 4		
Nation (public)	235	233
Large central city (public)	225 **	223 **
Atlanta	215 *,**	216 *,**
Boston	221 *,**	219 *,**
Charlotte	242 *,**	241 *,**
Chicago	214 *,**	214 *,**
Cleveland	215 *,**	215 *,**
District of Columbia	204 *,**	206 *,**
Houston	227 **	227 *,**
Los Angeles	219 *,**	213 *,**
New York City	228 **	225 **
San Diego	227 **	225 **
Grade 8		
Nation (public)	277	275
Large central city (public)	263 **	261 **
Atlanta	243 *,**	246 *,**
Boston	260 **	263 **
Charlotte	279 *	278 *
Chicago	255 *,**	253 *,**
Cleveland	254 *,**	252 *,**
District of Columbia	242 *,**	244 *,**
Houston	266 **	263 **
Los Angeles	245 *,**	245 *,**
New York City	266 **	265 **
San Diego	267 **	262 **

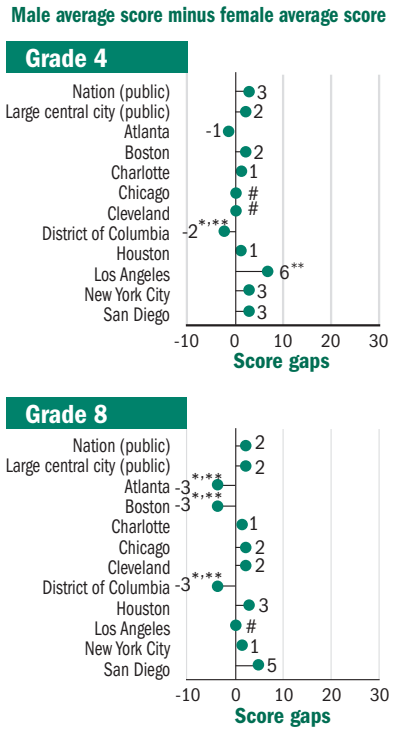
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

The scale score gaps between male and female fourth- and eighth-graders in the participating urban districts are presented in figure 4.3. Numbers marked with asterisks indicate statistically significant differences between the gap recorded in urban districts and those recorded in large central cities and the nation. Note that these marked numbers can represent a narrower or wider gap than those recorded for comparison groups.

In 2003, male public school students in the nation scored higher on average than female students by 3 points at grade 4 and

2 points at grade 8. At grade 4, the score gap between male and female students in the District of Columbia was the reverse of the gap in the nation and large central cities (i.e., female students' average score was apparently higher than that of male students). The score gap between male and female students in Los Angeles was wider than that in the nation. At grade 8, there was also an inversion of the score difference for male and female students in Atlanta, Boston, and the District of Columbia (i.e., female students' average scores were apparently higher than those of male students).

Figure 4.3 Gaps in average mathematics scores, by gender, grades 4 and 8 public schools: By urban district, 2003



The estimate rounds to zero.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Score gaps are calculated based on differences between unrounded average scale scores. Significance tests were performed using unrounded numbers. Negative numbers indicate that the average score for male students was lower than the score for female students.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

The percentages of male and female students performing below *Basic*, at or above *Basic*, at or above *Proficient*, and at *Advanced* at grades 4 and 8 are presented in table 4.4. At grade 4, the percentages of male and female students performing at or above *Proficient* in public schools nationally were higher than the percentages for all districts except Charlotte, where the percentages of both male and female students at or above *Proficient* were higher than for the nation. Compared with male and female students in large central city public schools, higher percentages of male and female fourth-grade students in Charlotte performed at or above *Proficient*.

At grade 8, a higher percentage of male students in Charlotte performed at or above *Proficient* than in public schools nationally and in large central cities. A higher percentage of female eighth-grade students in Charlotte and New York City performed at or above *Proficient* than did students in large central city public schools. The percentages of male and female students at or above *Proficient* were lower in Atlanta, Chicago, Cleveland, the District of Columbia, Houston, and Los Angeles than in large central city public schools.

Table 4.4 Percentages of students, by mathematics achievement level and gender, grades 4 and 8 public schools: By urban district, 2003

	Male				Female			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Grade 4								
Nation (public)	23	77	34	5	25	75	29	3
Large central city (public)	36 **	64 **	22 **	3 **	38 **	62 **	19 **	2 **
Atlanta	51 *,**	49 *,**	13 *,**	3	49 *,**	51 *,**	13 *,**	2
Boston	40 **	60 **	14 *,**	1 *,**	42 **	58 **	11 *,**	1 **
Charlotte	16 *,**	84 *,**	42 *,**	7 *	15 *,**	85 *,**	40 *,**	5 *
Chicago	49 *,**	51 *,**	11 *,**	1 *,**	50 *,**	50 *,**	9 *,**	1 *,**
Cleveland	49 *,**	51 *,**	11 *,**	# *,**	49 *,**	51 *,**	8 *,**	#
District of Columbia	64 *,**	36 *,**	8 *,**	1 *,**	63 *,**	37 *,**	7 *,**	1 *,**
Houston	30 **	70 **	19 **	2 **	31 *,**	69 *,**	17 **	1 **
Los Angeles	43 *,**	57 *,**	15 *,**	1 *,**	53 *,**	47 *,**	11 *,**	1 *,**
New York City	31 *,**	69 *,**	23 **	3	35 **	65 **	19 **	2
San Diego	33 **	67 **	21 **	3	34 **	66 **	19 **	1 **
Grade 8								
Nation (public)	33	67	29	6	34	66	26	4
Large central city (public)	48 **	52 **	18 **	3 **	51 **	49 **	15 **	2 **
Atlanta	71 *,**	29 *,**	6 *,**	1 *,**	69 *,**	31 *,**	5 *,**	1 *,**
Boston	52 *,**	48 *,**	17 **	4	52 **	48 **	18 **	4
Charlotte	32 *	68 *	33 *,**	8 *,**	33 *	67 *	30 *	6 *
Chicago	57 *,**	43 *,**	10 *,**	1 *,**	60 *,**	40 *,**	8 *,**	1 *,**
Cleveland	61 *,**	39 *,**	7 *,**	#	64 *,**	36 *,**	5 *,**	#
District of Columbia	71 *,**	29 *,**	7 *,**	1 *,**	71 *,**	29 *,**	5 *,**	1 *,**
Houston	46 **	54 **	14 *,**	2 **	50 **	50 **	10 *,**	1 *,**
Los Angeles	67 *,**	33 *,**	8 *,**	1 *,**	68 *,**	32 *,**	7 *,**	1 *,**
New York City	46 **	54 **	20 **	4	46 **	54 **	20 *,**	4
San Diego	45 **	55 **	21 **	2 **	50 **	50 **	16 **	2 **

The estimate rounds to zero.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Detail may not sum to totals because of rounding. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Race/Ethnicity

Average scale scores by race/ethnicity for grades 4 and 8 in urban districts are displayed in table 4.5. In each of the urban districts assessed, Black students and/or Hispanic students constitute the majority or the largest racial/ethnic public school sample groups (see table B.17 in appendix B). This distribution differs from that for the national public school sample, in which White students constitute a majority—58 percent of the fourth-grade sample and 62 percent of the eighth-grade sample.

At grade 4, the average scale score for White students in Charlotte, the District of Columbia, and Houston; Black students in Charlotte and Houston; and Hispanic students in Charlotte and Houston was higher than the corresponding scores in large central cities and the nation. The average score for Black students in Boston and New York City was higher than that in large central cities. The average scores for fourth-grade White students in Boston, Chicago, and Cleveland; Black students in Chicago and the District of Columbia; and Hispanic students in Boston, the District

of Columbia, Los Angeles, and San Diego were lower than the corresponding scores in large central cities and in the nation.

At grade 8, the average scale score was higher for White students in Charlotte and Houston; Black students in Charlotte and Houston; and Asian/Pacific Islander students in Boston than the corresponding scores in large central cities and the nation. The average score for eighth-grade White students in Cleveland; Black students in Atlanta, the District of Columbia, and Los Angeles; and Hispanic students in the District of Columbia, Los Angeles, and San Diego was lower than the corresponding scores in large central cities and the nation.

Table 4.5 Average mathematics scale scores, by race/ethnicity, grades 4 and 8 public schools: By urban district, 2003

	White	Black	Hispanic	Asian/ Pacific Islander
Grade 4				
Nation (public)	243	216	221	246
Large central city (public)	243	212 **	220 **	246
Atlanta	258	211 **	‡	‡
Boston	234 *,**	216 *	215 *,**	243
Charlotte	257 *,**	229 *,**	233 *,**	252
Chicago	235 *,**	207 *,**	217 **	‡
Cleveland	233 *,**	210 **	220	‡
District of Columbia	262 *,**	202 *,**	205 *,**	‡
Houston	254 *,**	221 *,**	226 *,**	‡
Los Angeles	241	208 **	211 *,**	241
New York City	244	219 *	220	247
San Diego	243	216	216 *,**	238 **
Grade 8				
Nation (public)	287	252	258	289
Large central city (public)	285	247 **	257	282 **
Atlanta	298 *	241 *,**	‡	‡
Boston	289	251	252 **	300 *,**
Charlotte	301 *,**	258 *,**	262	293 *
Chicago	276 **	245 **	259	286
Cleveland	269 *,**	249	249 **	‡
District of Columbia	‡	240 *,**	246 *,**	‡
Houston	293 *,**	259 *,**	261 *	‡
Los Angeles	277	234 *,**	240 *,**	275 **
New York City	289	253 *	260	286
San Diego	284	252	248 *,**	278 **

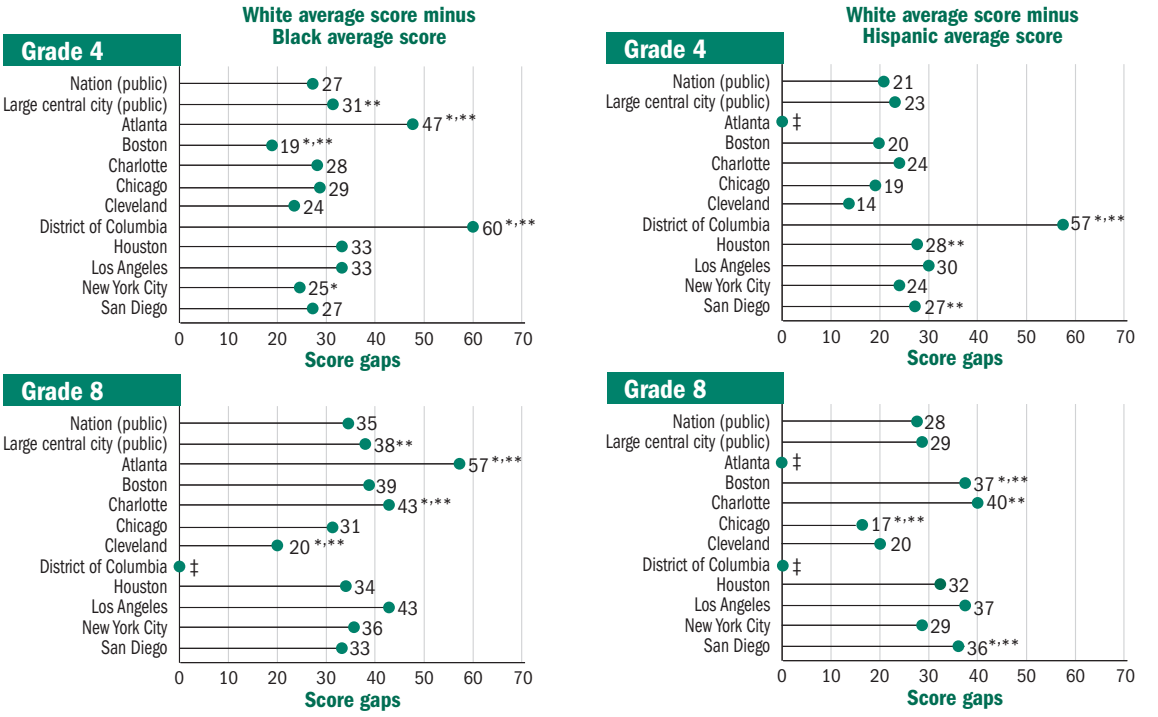
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Significance tests were performed using unrounded numbers. American Indian/Alaska Native and "Other" data are not shown because of insufficient sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

The average score gaps in 2003 between White students and Black students and between White students and Hispanic students are presented in figure 4.4. Numbers marked with asterisks indicate statistical differences between the gaps recorded in urban districts and those recorded in large central cities and the nation. Note that these marked numbers can represent narrower or wider gaps than those recorded for the comparison group.

At grade 4, the gap between White students and Black students in Boston and New York City was narrower than that in large central cities; the gap in Atlanta and the District of Columbia was wider than the gap between White students and Black students in large central cities. The gap between White students and Hispanic students was wider in the District of Columbia than the gap in large central cities.

At grade 8, the gap between White students and Black students in Cleveland was narrower than the gap in large central cities, and the gap in Atlanta and Charlotte was wider than the gap between White students and Black students in large central cities. The gap between White students and Hispanic students for eighth-graders was wider in Boston and San Diego than in large central cities. In Chicago, the gap between White students and Hispanic students was narrower than that in large central cities and the nation; this gap was wider in Charlotte than in the nation.

Figure 4.4 Gaps in average mathematics scores, by race/ethnicity, grades 4 and 8 public schools: By urban district, 2003



‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Score gaps are calculated based on differences between unrounded average scale scores. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Mathematics achievement-level results for racial/ethnic subgroups are presented in table 4.6. At grade 4, the percentage of students performing at or above *Proficient* was higher for White students in Atlanta, Charlotte, the District of Columbia, and Houston; Black students in Charlotte and New York City; and Hispanic students in Charlotte than the corresponding percentage in large central cities. The percentage of fourth-grade students performing at or above *Proficient* was lower for White students in Boston, Chicago, and Cleveland; Black students in Chicago, Cleveland, and the District of Columbia; and Hispanic students in Boston, the District of Columbia, Los Angeles, and San Diego than the corresponding percentage in large central cities.

At grade 8, the percentage of students at or above *Proficient* was higher for White students in Atlanta, Boston, Charlotte, and Houston and for Black students in Charlotte and New York City than that of their counterparts in large central cities. The percentage of eighth-grade students at or above *Proficient* for White students in Cleveland; Black students in Atlanta, the District of Columbia, and Los Angeles; and Hispanic students in Boston, the District of Columbia, Los Angeles, and San Diego was lower than the corresponding percentage in large central cities.

Table 4.6 Percentages of students, by mathematics achievement level and race/ethnicity, grades 4 and 8 public schools: By urban district, 2003

	White				Black			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Grade 4								
Nation (public)	13	87	42	5	46	54	10	#
Large central city (public)	15	85	42	6	53 **	47 **	8 **	#
Atlanta	11	89	70 *,**	20 *,**	55 **	45 **	7 **	#
Boston	23 **	77 **	32 *,**	5	45 *	55 *	6 **	#
Charlotte	4 *,**	96 *,**	66 *,**	12 *,**	27 *,**	73 *,**	20 *,**	1
Chicago	18	82	31 *,**	2 *	61 *,**	39 *,**	4 *,**	#
Cleveland	20	80	27 *,**	2 *,**	56 **	44 **	5 *,**	#
District of Columbia	3 *,**	97 *,**	71 *,**	21 *,**	67 *,**	33 *,**	4 *,**	#
Houston	4 *,**	96 *,**	63 *,**	7	38 *,**	62 *,**	12	#
Los Angeles	17	83	44	4	58	42	6	#
New York City	12	88	42	7	42 *	58 *	12 *	#
San Diego	13	87	41	6	46	54	8	#
Grade 8								
Nation (public)	21	79	36	7	61	39	7	#
Large central city (public)	23 **	77 **	36	7	66 **	34 **	5 **	#
Atlanta	17	83	54 *,**	15	74 *,**	26 *,**	3 *,**	#
Boston	23	77	48 *,**	11	64	36	6	#
Charlotte	9 *,**	91 *,**	55 *,**	15 *,**	53 *,**	47 *,**	11 *,**	1
Chicago	32 **	68 **	25	5	71 **	29 **	4	#
Cleveland	37 *,**	63 *,**	14 *,**	1	68 **	32 **	5 **	#
District of Columbia	‡	‡	‡	‡	74 *,**	26 *,**	3 *,**	#
Houston	20	80	47 *,**	11	53 *,**	47 *,**	7	1
Los Angeles	33 **	67 **	29	7	79 *,**	21 *,**	2 *,**	#
New York City	21	79	40	9	60 *	40 *	9 *	1
San Diego	24	76	35	5	61	39	7	#

See notes at end of table. ▶

Table 4.6 Percentages of students, by mathematics achievement level and race/ethnicity, grades 4 and 8 public schools: By urban district, 2003—Continued

	Hispanic				Asian/Pacific Islander			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Grade 4								
Nation (public)	38	62	15	1	13	87	48	10
Large central city (public)	40	60	13 **	# **	14	86	48	10
Atlanta	‡	‡	‡	‡	‡	‡	‡	‡
Boston	49 *,**	51 *,**	7 *,**	#	13	87	43	4
Charlotte	20 *,**	80 *,**	26 *	1	10	90	60	9
Chicago	45	55	10 **	1	‡	‡	‡	‡
Cleveland	42	58	14	#	‡	‡	‡	‡
District of Columbia	61 *,**	39 *,**	7 *,**	#	‡	‡	‡	‡
Houston	30 *,**	70 *,**	15	1	‡	‡	‡	‡
Los Angeles	54 *,**	46 *,**	7 *,**	# **	14	86	38	4 **
New York City	40	60	13	#	11	89	47	9
San Diego	47 *,**	53 *,**	9 *,**	#	16	84	32 **	4 **
Grade 8								
Nation (public)	53	47	11	1	23	77	42	12
Large central city (public)	56	44	10	1	29 **	71 **	33 **	6 **
Atlanta	‡	‡	‡	‡	‡	‡	‡	‡
Boston	62 **	38 **	7 *,**	#	13 *,**	87 *,**	57 *,**	18 *
Charlotte	54	46	18	1	19	81	43	14
Chicago	52	48	8	# *,**	22	78	36	8
Cleveland	65	35	2	#	‡	‡	‡	‡
District of Columbia	67 *,**	33 *,**	3 *,**	#	‡	‡	‡	‡
Houston	51	49	9 **	# *,**	‡	‡	‡	‡
Los Angeles	74 *,**	26 *,**	3 *,**	#	36 **	64 **	25 **	3 **
New York City	52	48	15	2	26	74	38	10
San Diego	66 *,**	34 *,**	6 *,**	#	31 **	69 **	28 **	3 **

The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years resulting in smaller detectable differences than in previous assessments. Detail may not sum to totals because of rounding. Significance tests were performed using unrounded numbers. American Indian/Alaska Native and "Other" data are not shown because of insufficient sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Students' Eligibility for Free/Reduced-Price School Lunch

Table 4.7 displays the average scale scores for public school students in the nation, large central cities, and the participating urban districts by free/reduced-price lunch eligibility. Note that Cleveland chose to define all of its students as eligible for the lunch program. (See table B.18 in appendix B for the percentages of students by eligibility status.) At grade 4, the average score for students eligible for free/reduced-price lunch in Charlotte was higher than the average score for large central cities and the nation. The average score for eligible students in Houston and New York City was higher than in large central cities. The average score for eligible students in Atlanta, Chicago, the District of Columbia, and Los Angeles was

lower than the average score for eligible students in large central cities and the nation.

At grade 8, the average score for students who were eligible for free/reduced-price lunch in Boston, Houston, and New York City was higher than the average score for large central cities. The average score for eligible students in Atlanta, the District of Columbia, and Los Angeles was lower than the average score in large central cities and the nation.

Table 4.7 Average mathematics scale scores, by eligibility for free/reduced-price school lunch, grades 4 and 8 public schools: By urban district, 2003

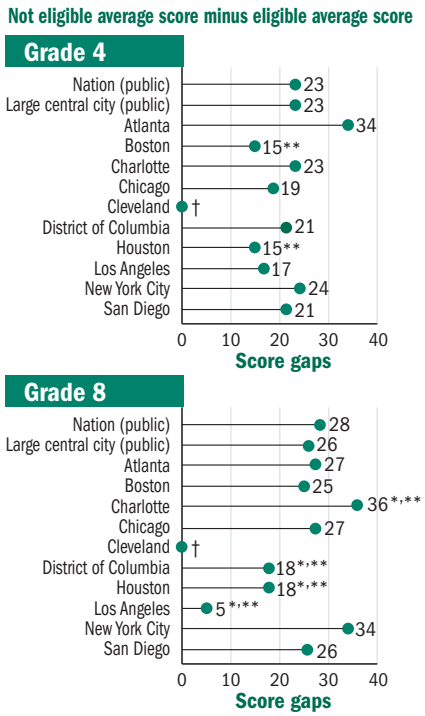
	Eligible	Not eligible	Information not available
Grade 4			
Nation (public)	222	244	235
Large central city (public)	217 **	240 **	233
Atlanta	209 *,**	244	‡
Boston	218 **	233 **	221 *,**
Charlotte	229 *,**	252 *,**	‡
Chicago	212 *,**	230 *,**	227
Cleveland	215 **	†	†
District of Columbia	200 *,**	221 *,**	206 *,**
Houston	223 *	239	‡
Los Angeles	212 *,**	229 *,**	239 *
New York City	224 *	248 *	243
San Diego	217 **	239 **	235
Grade 8			
Nation (public)	258	287	278
Large central city (public)	253 **	279 **	265 **
Atlanta	239 *,**	265 *,**	263 **
Boston	256 *	282	271 **
Charlotte	256	292 *,**	‡
Chicago	252 **	279	264 **
Cleveland	253 **	†	†
District of Columbia	235 *,**	254 *,**	252 *,**
Houston	259 *	276 **	‡
Los Angeles	240 *,**	245 *,**	255 *,**
New York City	261 *	295 *	277
San Diego	252 **	278 **	‡

† Not applicable. In Cleveland, all students were categorized as eligible for the school lunch program.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Figure 4.5 displays the gap in the average scores between students who were eligible for free/reduced-price lunch and those who were not eligible in the urban districts. In 2003, public school students in the nation who were not eligible for free/reduced-price lunch scored higher on average than eligible students by 23 points at grade 4, and by 28 points at grade 8.

At grade 4, the gaps in Boston and Houston were narrower than the nation's. At grade 8, the District of Columbia, Houston, and Los Angeles had narrower score gaps than large central cities and the nation, while Charlotte had a wider gap in the average score than the gaps found in large central cities and in the nation.

Figure 4.5 Gaps in average mathematics scores, by eligibility for free/reduced-price school lunch, grades 4 and 8 public schools: By urban district, 2003



† Not applicable. In Cleveland, all students were categorized as eligible for the school lunch program.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Score gaps are calculated based on differences between unrounded average scale scores. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Achievement-level results by eligibility for free/reduced-price lunch for grades 4 and 8 are shown in table 4.8. At grade 4, the percentage of students eligible for free/reduced-price school lunch who performed at or above *Proficient* was higher in Charlotte and New York City than in large central cities. The percentage of eligible students at or above *Proficient* was lower in Atlanta, Chicago, the District of Columbia, and Los Angeles than in large central cities and the nation.

At grade 8, the percentage of students eligible for free/reduced-price lunch who performed at or above *Proficient* was higher in Boston and New York City than in large central cities, and higher in New York City than in the nation. The percentage of eligible students at or above *Proficient* was lower in Atlanta, Cleveland, the District of Columbia, and Los Angeles than in large central cities and the nation.

Table 4.8 Percentages of students, by mathematics achievement level and eligibility for free/reduced-price school lunch, grades 4 and 8 public schools: By urban district, 2003

	Eligible				Not eligible			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Grade 4								
Nation (public)	38	62	15	1	12	88	45	6
Large central city (public)	45 **	55 **	12 **	1	19 **	81 **	40	7
Atlanta	57 *,**	43 *,**	5 *,**	#	21	79	50	11
Boston	43 **	57 **	10 **	1	24 **	76 **	31 **	3
Charlotte	26 *,**	74 *,**	19 *	2	8 *,**	92 *,**	59 *,**	10
Chicago	53 *,**	47 *,**	8 *,**	# *,**	28 **	72 **	24 *,**	2
Cleveland	49 **	51 **	10 **	#	†	†	†	†
District of Columbia	71 *,**	29 *,**	3 *,**	#	43 *,**	57 *,**	20 *,**	4
Houston	34 *	66 *	13	1	18	82	37	4
Los Angeles	53 *,**	47 *,**	8 *,**	# **	30 *,**	70 *,**	25 *,**	2
New York City	36 *	64 *	18 *	2 *	11 *	89 *	49	9
San Diego	44 **	56 **	10 **	#	18	82	35 **	5
Grade 8								
Nation (public)	53	47	11	1	22	78	37	7
Large central city (public)	60 **	40 **	9 **	1	31 **	69 **	31 **	6 **
Atlanta	76 *,**	24 *,**	2 *,**	#	48 *,**	52 *,**	19 *,**	4
Boston	57 **	43 **	11 *	2	32 **	68 **	35	11
Charlotte	56	44	10	1	19 *	81 *	44 *,**	11 *,**
Chicago	61 **	39 **	7 **	1	30	70	30	5
Cleveland	62 **	38 **	6 *,**	#	†	†	†	†
District of Columbia	79 *,**	21 *,**	2 *,**	# *,**	60 *,**	40 *,**	12 *,**	3 *,**
Houston	54 *	46 *	7 **	# **	35 **	65 **	25 *,**	5
Los Angeles	72 *,**	28 *,**	4 *,**	# *,**	67 *,**	33 *,**	7 *,**	#
New York City	51 *	49 *	15 *,**	2	18 *	82 *	49 *	14 *
San Diego	61 **	39 **	9	#	31 **	69 **	29 **	4 **

See notes at end of table. ▶

Table 4.8 Percentages of students, by mathematics achievement level and eligibility for free/reduced-price school lunch, grades 4 and 8 public schools: By urban district, 2003—Continued

	Information not available			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Grade 4				
Nation (public)	23	77	34	4
Large central city (public)	26	74	31	3
Atlanta	‡	‡	‡	‡
Boston	42 *,**	58 *,**	14 *,**	2
Charlotte	‡	‡	‡	‡
Chicago	31	69	20 **	3
Cleveland	†	†	†	†
District of Columbia	61 *,**	39 *,**	7 *,**	#
Houston	‡	‡	‡	‡
Los Angeles	20	80	41 *	4
New York City	11 *	89 *	41	5
San Diego	20	80	30	4
Grade 8				
Nation (public)	32	68	29	6
Large central city (public)	48 **	52 **	19 **	4
Atlanta	52 **	48 **	22	6
Boston	43 **	57 **	31 *	8
Charlotte	‡	‡	‡	‡
Chicago	49 **	51 **	17 **	3
Cleveland	†	†	†	†
District of Columbia	59 *,**	41 *,**	7 *,**	1
Houston	‡	‡	‡	‡
Los Angeles	58 *,**	42 *,**	14 **	3 **
New York City	35	65	31	11
San Diego	‡	‡	‡	‡

† Not applicable. In Cleveland, all students were categorized as eligible for free/reduced-price school lunch.
# The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Detail may not sum to totals because of rounding. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Student-Reported Highest Level of Parents' Education

Eighth-grade students who participated in the NAEP 2003 mathematics assessment, including those in the TUDA, were asked to indicate, from among five options, the highest level of education completed by each parent. The percentage of eighth-grade public school students who reported at least one parent had graduated from college was 45 percent nationally, 38 percent in large central cities, and ranged from 24 to 55 percent in the participating districts. (See table B.19 in appendix B.)

Table 4.9 displays the average score for eighth-graders who chose each category as the highest level of education for either parent. In 2003, the average score for students who indicated that a parent graduated from college was lower in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles than the average score for students in the same parental education category in public schools in large central cities and the nation. The average score for students who reported that a parent graduated from college was higher in Charlotte and San Diego than for comparable students in large central cities across the nation.

Table 4.9 Average mathematics scale scores, by student-reported parents' highest level of education, grade 8 public schools: By urban district, 2003

Grade 8	Less than high school	Graduated high school	Some education after high school	Graduated college	Unknown
Nation (public)	256	267	280	287	258
Large central city (public)	253 **	255 **	268 **	272 **	252 **
Atlanta	240 *,**	238 *,**	253 *,**	250 *,**	231 *,**
Boston	253	256 **	268 **	273 **	251 **
Charlotte	‡	255 **	281 *	289 *	266 *,**
Chicago	256	250 *,**	262 *,**	257 *,**	249 **
Cleveland	255	252 **	260 *,**	251 *,**	248 **
District of Columbia	236 *,**	235 *,**	252 *,**	250 *,**	239 *,**
Houston	259 *	257 **	270 **	274 **	259 *
Los Angeles	242 *,**	240 *,**	253 *,**	257 *,**	238 *,**
New York City	260	260 **	272 **	275 **	253 **
San Diego	250 **	256 **	270 **	278 *,**	249 **

‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Table 4.10 displays achievement-level results by the student's report of the highest level of education for either parent for eighth-grade students in the urban districts. In 2003, the percentage of students performing at or above *Proficient* who indicated that at least one parent had graduated from high school was not found to be significantly different for Charlotte and New York City than for the nation. The percentage of students at or above *Proficient* in this category was lower for all other urban districts than the percentage for the nation.

Among students who reported that a parent graduated from college, the percentage of students performing at or above *Proficient* was higher in Charlotte and San Diego than for comparable students in large central cities across the nation. In this same category, the percentages of students performing at or above *Proficient* in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles were lower than in large central cities.

Table 4.10 Percentages of students, by mathematics achievement level and student-reported parents' highest level of education, grade 8 public schools: By urban district, 2003

Grade 8	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Less than high school				
Nation (public)	56	44	9	1
Large central city (public)	59 **	41 **	7	1
Atlanta	74 *,**	26 *,**	3	#
Boston	63	37	13	3
Charlotte	‡	‡	‡	‡
Chicago	57	43	10	#
Cleveland	58	42	5	1
District of Columbia	75 *,**	25 *,**	2	#
Houston	54	46	7	#
Los Angeles	72 *,**	28 *,**	5 **	#
New York City	51	49	14	3
San Diego	64	36	6	#
Graduated high school				
Nation (public)	42	58	16	2
Large central city (public)	59 **	41 **	10 **	1
Atlanta	80 *,**	20 *,**	2 *,**	#
Boston	61 **	39 **	11 **	2
Charlotte	59 **	41 **	11	2
Chicago	63 **	37 **	6 *,**	#
Cleveland	63 **	37 **	4 *,**	#
District of Columbia	81 *,**	19 *,**	1 *,**	#
Houston	56 **	44 **	7 **	#
Los Angeles	73 *,**	27 *,**	4 *,**	#
New York City	52 **	48 **	16	2
San Diego	57 **	43 **	9 **	#
Some education after high school				
Nation (public)	27	73	28	4
Large central city (public)	42 **	58 **	19 **	2 **
Atlanta	60 *,**	40 *,**	6 *,**	#
Boston	43 **	57 **	19 **	2
Charlotte	28 *	72 *	29 *	6
Chicago	50 **	50 **	11 *,**	1 **
Cleveland	52 *,**	48 *,**	10 *,**	#
District of Columbia	63 *,**	37 *,**	6 *,**	#
Houston	41 **	59 **	13 **	2 **
Los Angeles	58 *,**	42 *,**	10 *,**	1
New York City	36 **	64 **	23	2
San Diego	39 **	61 **	18 **	1

See notes at end of table. ▶

Table 4.10 Percentages of students, by mathematics achievement level and student-reported parents' highest level of education, grade 8 public schools: By urban district, 2003—Continued

Grade 8	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Graduated college				
Nation (public)	23	77	39	8
Large central city (public)	39 **	61 **	26 **	5 **
Atlanta	65 *,**	35 *,**	10 *,**	2 *,**
Boston	41 **	59 **	26 **	7
Charlotte	24 *	76 *	43 *	11 *
Chicago	57 *,**	43 *,**	12 *,**	2 *,**
Cleveland	67 *,**	33 *,**	6 *,**	#
District of Columbia	64 *,**	36 *,**	11 *,**	3 *,**
Houston	38 **	62 **	23 **	5 **
Los Angeles	54 *,**	46 *,**	15 *,**	3 **
New York City	38 **	62 **	27 **	6
San Diego	33 *,**	67 *,**	32 *,**	5 **
Unknown				
Nation (public)	53	47	12	1
Large central city (public)	61 **	39 **	9 **	1 **
Atlanta	81 *,**	19 *,**	2 *,**	#
Boston	63 **	37 **	10	2
Charlotte	41 *,**	59 *,**	19 *	2
Chicago	63 **	37 **	6 **	#
Cleveland	69 **	31 **	5 **	#
District of Columbia	75 *,**	25 *,**	3 *,**	1
Houston	53 *	47 *	7 **	#
Los Angeles	77 *,**	23 *,**	3 *,**	#
New York City	59 **	41 **	11	1
San Diego	62 **	38 **	7 **	#

The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from large central city public schools.
** Significantly different from nation (public schools).
NOTE: NAEP sample sizes have increased in 2003 compared to previous years, resulting in smaller detectable differences than in previous assessments. Detail may not sum to totals because of rounding. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

5 Sample Assessment Questions and Student Responses

This chapter presents sample questions and examples of student responses from the NAEP 2003 mathematics assessment. Six representative questions, including both multiple-choice and constructed-response questions, are provided for each grade. For each question, the content area and mathematical ability being assessed, as described in the framework, along with a brief commentary and the scale score indicating where the question falls on the NAEP item map, are given at the end of this chapter. For multiple-choice questions, the oval corresponding to the correct answer is filled in. Constructed-response questions are accompanied by scoring guides with the correct answer, a summary of the scoring criteria for each response level, and sample student responses with assigned scores and brief commentary. The student responses presented in this chapter were selected to illustrate how questions were scored. Additional questions, as well as student performance data, detailed scoring guides, and sample student responses from the current and previous NAEP assessments, are available on the NAEP web site (http://nces.ed.gov/nationsreportcard/itmrls).

To indicate how students performed on the sample questions, each question included in this chapter is accompanied by a table presenting two types of performance data: (a) the overall percentage of students who answered successfully and (b) the percentage of students who answered successfully within specific score ranges on the NAEP mathematics scale. The score ranges correspond to the three achievement-level intervals—

Basic, *Proficient*, and *Advanced*—as well as the range below *Basic*.

The sample questions are also marked on the item maps at the end of this chapter. The location of each four-option multiple-choice question on the item map represents the average scale score of students who had a 74 percent probability of answering the question correctly. The location of each five-option multiple-choice question represents the average score of students who had a 72 percent probability of answering the question correctly. The location on the item map of each constructed-response question represents the average scale score of students who had a 65 percent probability of receiving the score level being mapped.

Grade 4 Sample Assessment Questions and Results

Sample questions from the fourth-grade mathematics assessment include four multiple-choice questions, one short constructed-response question, and one extended constructed-response question. Information about the content area and mathematical ability for each question shows where the question fits into the NAEP mathematics framework.

Grade 4

Sample Question 1 (multiple-choice)

In sample question 1, students were asked to add two 3-digit numbers. Students are expected to be able to compute with numbers at each grade level assessed by NAEP. Some questions, such as this one, are administered in a block that does not permit calculator use. For this question, students are instructed to add; however, for other questions, presented in the context of a story problem, students must decide whether to add, subtract, multiply, or divide. Computation exercises are presented in both calculator and noncalculator blocks. This question was easy for the students, with 89 percent of fourth-graders choosing the correct answer. This question appears on the item map at scale score 172.

Add:
$$\begin{array}{r} 238 \\ +\ 462 \\ \hline \end{array}$$

- (A) 600
- (B) 690
- ● 700
- (D) 790

Mathematics Content Area:
Number Sense, Properties, and Operations

Mathematical Ability:
Procedural Knowledge

Table 5.1 Percentage scored correct for multiple-choice sample question 1, by achievement-level range, grade 4: 2003

Grade 4

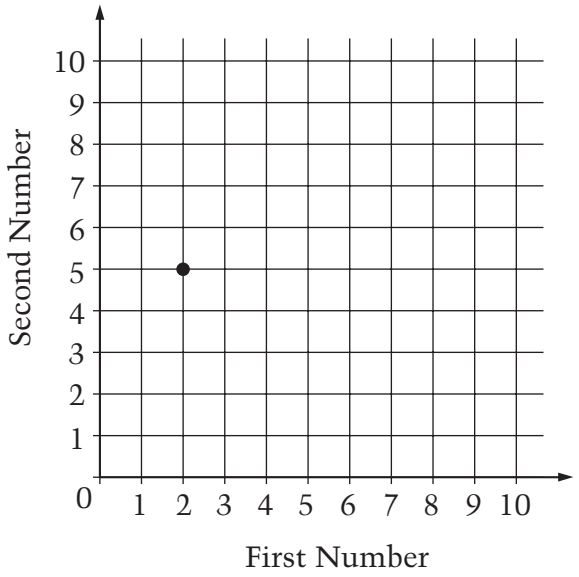
	Percentage correct			
Overall percentage correct	Below ***Basic*** **213 or below[1]**	At ***Basic*** **214–248[1]**	At ***Proficient*** **249–281[1]**	At ***Advanced*** **282 or above[1]**
89	79	91	95	97

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Sample Question 2 (short constructed-response)

In sample question 2, students were asked to locate two points on a coordinate grid. By the fourth grade, students are beginning to learn how to plot points such as (2, 5) on a grid. However, their experience in plotting points is limited and they may need to be reminded that the first number in a pair is plotted along the horizontal axis and the second number is its location along the vertical axis. So, for this question, the location of (2, 5) is given and the student is asked to locate two other points. It is important that students learn how to plot points because, in later years, they will be graphing equations and investigating relationships between numbers in scatterplots. Answers to this question were scored either as "Correct" (both points were located correctly), "Partial" (only one of the two points was located correctly), or "Incorrect." This question was of moderate difficulty for the students, with 71 percent of fourth-grade responses scored as "Partial" or better and 44 percent of fourth-grade responses scored as "Correct." This question appears on the item map at scale score 265 for students whose response was scored as "Correct."

A point is shown on the grid below. The coordinates of the point are (2, 5).



On the same grid draw the point with coordinates (4, 7) and the point with coordinates (8, 0).

Mathematics Content Area:
Algebra and Functions

Mathematical Ability:
Procedural Knowledge

Table 5.2a **Percentage scored "Partial" or better for short constructed-response sample question 2, by achievement-level range, grade 4: 2003**

Grade 4

	Percentage "Partial" or better			
Overall percentage "Partial" or better	Below ***Basic*** **213 or below[1]**	At ***Basic*** **214–248[1]**	At ***Proficient*** **249–281[1]**	At ***Advanced*** **282 or above[1]**
71	45	72	87	95

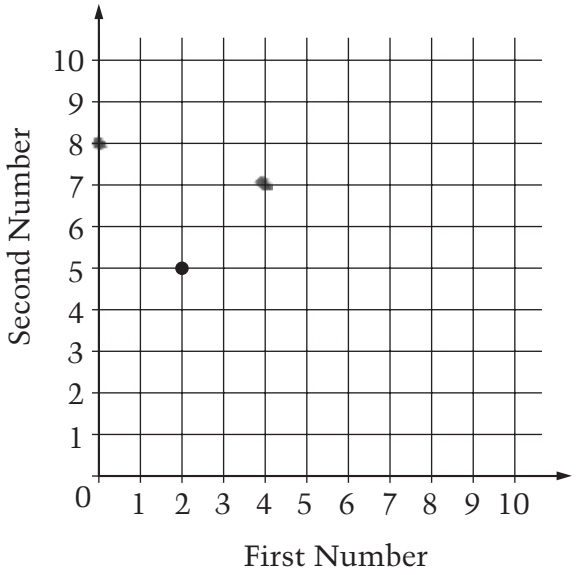
[1] NAEP mathematics composite scale range.

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

Sample "Partial" Response

The following sample response was scored as "Partial" because the point (8, 0) was incorrectly plotted at the position (0, 8). The point (4, 7) was plotted correctly.

A point is shown on the grid below. The coordinates of the point are (2, 5).



On the same grid draw the point with coordinates (4, 7) and the point with coordinates (8, 0).

Table 5.2b **Percentage scored "Correct" for short constructed-response sample question 2, by achievement-level range, grade 4: 2003**

Grade 4

	Percentage "Correct"			
Overall percentage "Correct"	Below ***Basic*** **213 or below**[1]	At ***Basic*** **214–248**[1]	At ***Proficient*** **249–281**[1]	At ***Advanced*** **282 or above**[1]
44	21	41	59	78

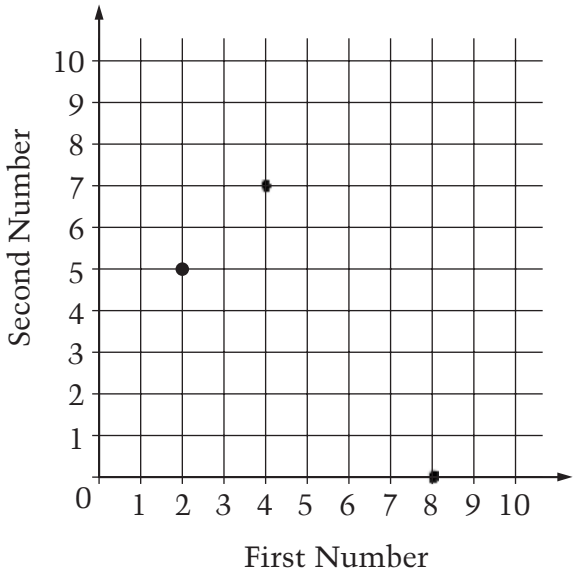
[1] NAEP mathematics composite scale range.

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

Sample "Correct" Response

The following sample response was scored as "Correct" because the points (8, 0) and (4, 7) were both plotted correctly.

A point is shown on the grid below. The coordinates of the point are (2, 5).

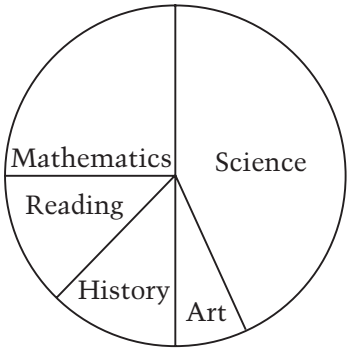


On the same grid draw the point with coordinates (4, 7) and the point with coordinates (8, 0).

Grade 4

Sample Question 3 (multiple-choice)

In sample question 3, students were asked to interpret information presented in a pie chart and use this information to solve a problem. This question required students to bring together reasoning skills and problem-solving strategies. Students at the fourth-grade level have worked with various representations of data, including pictographs, bar graphs, pie charts, and line graphs. For this question, the student first needed to recognize that the two hours spent on mathematics accounted for 1/4 of the time spent on homework. The student then needed to use this information to determine that the total amount of time spent on homework was eight hours. Fourth-grade students could arrive at this answer using informal reasoning skills and knowledge of fractional parts. This question was of moderate difficulty for the students, with 51 percent of fourth-graders choosing the correct answer. This question appears on the item map at scale score 268.



The pie chart above shows the portion of time Pat spent on homework in each subject last week. If Pat spent 2 hours on mathematics, about how many hours did Pat spend on homework altogether?

Ⓐ 4
● 8
Ⓒ 12
Ⓓ 16

Mathematics Content Area:
Data Analysis, Statistics, and Probability

Mathematical Ability:
Problem Solving

Table 5.3 Percentage scored correct for multiple-choice sample question 3, by achievement-level range, grade 4: 2003

Grade 4

	Percentage correct			
Overall percentage correct	Below ***Basic*** **213 or below[1]**	At ***Basic*** **214–248[1]**	At ***Proficient*** **249–281[1]**	At ***Advanced*** **282 or above[1]**
51	28	45	73	92

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Grade 4

Sample Question 4 (multiple-choice)

In sample question 4, students were asked to determine the length of one side of a square given the perimeter. Students at the fourth-grade level have been taught properties of common geometric figures, including how to find the perimeter. To solve this problem, the student needed to know that a square has 4 sides of equal length. In order for the perimeter to be 36 inches, each side must be 36 ÷ 4 = 9 inches long. This question was somewhat difficult for the students, with 47 percent of fourth-graders choosing the correct answer. This question appears on the item map at scale score 273.

The perimeter of a square is 36 inches. What is the length of one side of the square?

Ⓐ 4 inches
Ⓑ 6 inches
● 9 inches
Ⓓ 18 inches

Mathematics Content Area:
Measurement

Mathematical Ability:
Problem Solving

Table 5.4 Percentage scored correct for multiple-choice sample question 4, by achievement-level range, grade 4: 2003

Grade 4

	Percentage correct			
Overall percentage correct	Below ***Basic*** **213 or below[1]**	At ***Basic*** **214–248[1]**	At ***Proficient*** **249–281[1]**	At ***Advanced*** **282 or above[1]**
47	19	40	75	92

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Grade 4

Sample Question 5 (multiple-choice)

In sample question 5, students were asked to solve an inequality involving whole numbers. In the early grades, students begin to have informal experiences with algebraic thinking. For example, there is an emphasis on "completing number sentences" instead of "solving equations." The inequality in this question involves subtraction. Although this increases the difficulty of the question, students could obtain the correct answer by "testing" the values given in the answer choices. In this question, it was important for the student to know that the value 5, for which $8 - \square = 3$, is not part of the correct answer. This question was difficult for the students, with 24 percent of fourth-graders choosing the correct answer. This question appears on the item map at scale score 290.

What are all the whole numbers that make $8 - \square > 3$ true?

Ⓐ 0, 1, 2, 3, 4, 5
● 0, 1, 2, 3, 4
Ⓒ 0, 1, 2
Ⓓ 5

Mathematics Content Area:
Alegebra and Functions

Mathematical Ability:
Conceptual Understanding

Table 5.5 Percentage scored correct for multiple-choice sample question 5, by achievement-level range, grade 4: 2003

Grade 4

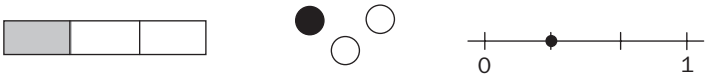
	Percentage correct			
Overall percentage correct	Below ***Basic*** **213 or below**[1]	At ***Basic*** **214–248**[1]	At ***Proficient*** **249–281**[1]	At ***Advanced*** **282 or above**[1]
24	17	19	30	65

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Grade 4

Sample Question 6 (extended constructed-response)

In sample question 6, students were asked to demonstrate an understanding of equivalent fractions in the context of a pictorial representation of the fractions. In the early grades, students begin to develop an understanding of fractions by relating them to various models. For example, each of the models below can be used to represent 1/3.



Shaded-Region Model Discrete Model Number-Line Model

This question uses a shaded-region model in which three rectangular regions of equal length are divided into 6 equal parts, 2 equal parts, and 10 equal parts, respectively. Students are told that the first fraction strip shows 3/6 and are asked what fraction the other strips show. The expected answers are 1/2 and 5/10. By asking, "What do the fractions shown in A, B, and C have in common?" the question assesses students' understanding of equivalent fractions. Students are also asked to shade two other strips to represent different fractions that are equivalent to the ones shown.

Five responses were required for this question: (1) part B, (2) part C, (3) what the fractions have in common, (4) the first fraction strip to be shaded, and (5) the second fraction strip to be shaded. Answers to this question were scored as "Extended" (all five responses were correct), "Satisfactory" (any four responses were correct), "Partial" (any three responses were correct), "Minimal" (any one or two responses were correct), or "Incorrect." This question was difficult for the students, with 30 percent of fourth-grade responses scored as "Satisfactory" or better and only 19 percent of fourth-grade responses scored as "Extended." This question appears on the item map at scale score 293 for students whose response was scored as "Extended."

The shaded part of each strip below shows a fraction.

A.

This fraction strip shows $\frac{3}{6}$.

B.

What fraction does this fraction strip show? _____

C.

What fraction does this fraction strip show? _____

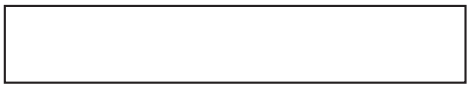
What do the fractions shown in A, B, and C have in common?

_____

_____

_____

Shade in the fraction strips below to show two different fractions that are equivalent to the ones shown in A, B, and C.



Mathematics Context:
Number Sense, Properties, and Operations

Mathematical Ability:
Problem Solving

Table 5.6a **Percentage scored as "Satisfactory" or better for extended constructed-response sample question 6, by achievement-level range, grade 4: 2003**

Grade 4

	Percentage "Satisfactory" or better			
Overall percentage "Satisfactory" or better	Below ***Basic*** **213 or below**[1]	At ***Basic*** **214–248**[1]	At ***Proficient*** **249–281**[1]	At ***Advanced*** **282 or above**[1]
30	2	19	58	89

[1] NAEP mathematics composite scale range.

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

Sample "Satisfactory" Response

The following sample response was scored as "Satisfactory" because credit was not awarded for shading the second fraction strip, which was labeled 2/4 but appears to have 4/8 shaded.

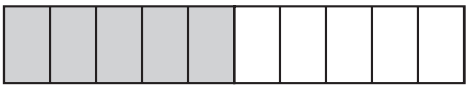
The shaded part of each strip below shows a fraction.

A.

This fraction strip shows $\frac{3}{6}$.

B.

What fraction does this fraction strip show? $\frac{1}{2}$

C. 

What fraction does this fraction strip show? $\frac{5}{10}$

What do the fractions shown in A, B, and C have in common?

The fractions in A, B, and C are all half of the number of spaces in the rectangle.

Shade in the fraction strips below to show two different fractions that are equivalent to the ones shown in A, B, and C.

Table 5.6b **Percentage scored as "Extended" for extended constructed-response sample question 6, by achievement-level range, grade 4: 2003**

Grade 4	Percentage "Extended"			
Overall percentage "Extended"	Below ***Basic*** **213 or below**[1]	At ***Basic*** **214–248**[1]	At ***Proficient*** **249–281**[1]	At ***Advanced*** **282 or above**[1]
19	1	9	40	77

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Sample "Extended" Response

The following sample response was scored as "Extended" because all five required responses were correct.

The shaded part of each strip below shows a fraction.

A.

This fraction strip shows $\frac{3}{6}$.

B.

What fraction does this fraction strip show? $\frac{1}{2}$

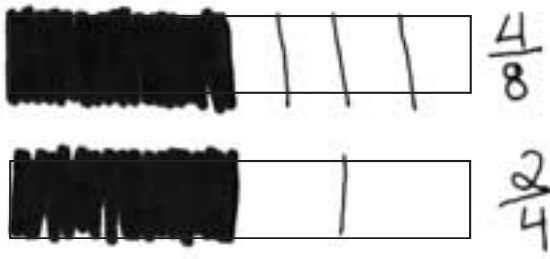
C.

What fraction does this fraction strip show? $\frac{5}{10}$

What do the fractions shown in A, B, and C have in common?

They all equal $\frac{1}{2}$ which means they are equivalent.

Shade in the fraction strips below to show two different fractions that are equivalent to the ones shown in A, B, and C.



Grade 8 Sample Assessment Questions and Results

Sample questions from the eighth-grade mathematics assessment include four multiple-choice questions, one short constructed-response question, and one extended constructed-response question. Information about the content area and mathematical ability for each question shows where the question fits into the NAEP mathematics framework.

Grade 8

Sample Question 7 (short constructed-response)

In sample question 7, students were asked to divide a three-digit number by a two-digit number. Students are expected to be able to compute with numbers at each grade level assessed by NAEP. By the eighth grade, students are expected to be able to carry out long division. This sample question is presented in a constructed-response format because, as a multiple-choice question, students could use the choices and work backwards by multiplying to find the answer. This question was in a block that did not permit calculator use; however, other questions in both calculator and noncalculator blocks require significant computing in problem-solving situations. Unlike this sample question—which does not provide a context and specifies the method of computation to be used—other NAEP exercises involve situations that require the students to determine exactly which computation operations need to be employed to reach a solution. This question was scored as either "Correct" or "Incorrect" and was fairly easy for the students, with 73 percent of eighth-graders providing the correct answer. This question appears on the item map at scale score 252 for students whose response was scored as "Correct."

Divide: $21\overline{)504}$

Answer: _____

Mathematic Content Area:
Number Sense, Properties, and Operations

Mathematical Ability:
Procedural Knowledge

Table 5.7 Percentage scored "Correct" for short constructed-response sample question 7, by achievement-level range, grade 8: 2003

Grade 8

	Percentage "Correct"			
Overall percentage "Correct"	Below ***Basic*** **261 or below[1]**	At ***Basic*** **262–298[1]**	At ***Proficient*** **299–332[1]**	At ***Advanced*** **333 or above[1]**
73	52	78	89	94

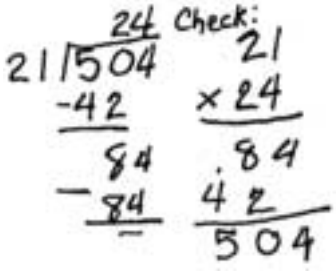
[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Sample "Correct" Response

The following sample response was scored as "Correct" because the correct answer is 24. Although this response contains complete work for the long division and for checking the answer by multiplying, checking the answer was not required for a "Correct" response.

Divide: $21\overline{)504}$

Answer: 24



Grade 8

Sample Question 8 (multiple-choice)

In sample question 8, students were asked to identify a value of x that satisfies a given inequality condition. Algebraic concepts are included in the mathematics curriculum before eighth grade. In fact, more than 50 percent of eighth-grade students are enrolled in algebra or prealgebra at the time they take the NAEP assessment. This sample question uses the variable x in the expression $x + 2$. The student is asked to identify a value of x that would make $x + 2$ less than 12. Of the choices listed, only 8 is a value that satisfies this condition. This question was fairly easy for the students, with 77 percent of eighth-graders choosing the correct answer. This question appears on the item map at scale score 262.

If the value of the expression $x + 2$ is less than 12, which of the following could be a value of x ?

- Ⓐ 16
- Ⓑ 14
- Ⓒ 12
- Ⓓ 10
- ● 8

Mathematic Content Area:
Algebra and Functions

Mathematical Ability:
Procedural Knowledge

Table 5.8 Percentage scored correct for multiple-choice sample question 8, by achievement-level range, grade 8: 2003

Grade 8

	Percentage correct			
Overall percentage correct	Below ***Basic*** **261 or below[1]**	At ***Basic*** **262–298[1]**	At ***Proficient*** **299–332[1]**	At ***Advanced*** **333 or above[1]**
77	52	84	95	99

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Grade 8

Sample Question 9 (multiple-choice)

In sample question 9, students were asked to identify an algebraic expression that represents the average of three different values. This question illustrates how a question can address multiple NAEP content areas—in this case both "Data Analysis, Statistics, and Probability" and "Algebra and Functions." At the eighth-grade level, students begin to have experience with variables and formal algebraic representation. Translating between verbal and symbolic statements is an important skill for further mathematics study. This question was of moderate difficulty for the students, with 58 percent of eighth-graders choosing the correct answer. This question appears on the item map at scale score 292.

Tetsu rides his bicycle x miles the first day, y miles the second day, and z miles the third day. Which of the following expressions represents the average number of miles per day that Tetsu travels?

Ⓐ $x + y + z$

Ⓑ xyz

Ⓒ $3(x + y + z)$

Ⓓ $3(xyz)$

● $\frac{x + y + z}{3}$

Mathematic Content Area:
Algebra and Functions

Mathematical Ability:
Procedural Knowledge

Table 5.9 Percentage scored correct for multiple-choice sample question 9, by achievement-level range, grade 8: 2003

Grade 8

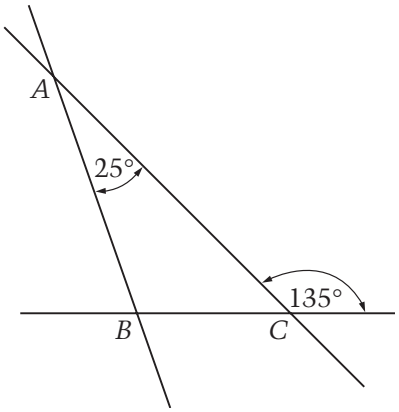
	Percentage correct			
Overall percentage correct	Below ***Basic*** **261 or below**[1]	At ***Basic*** **262–298**[1]	At ***Proficient*** **299–332**[1]	At ***Advanced*** **333 or above**[1]
58	24	58	89	98

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Grade 8

Sample Question 10 (multiple-choice)

In sample question 10, students were asked to use information given in a figure to find the degree measure of $\angle ABC$ in a triangle. The question itself uses few words, but the problem-solving process requires students to use what they know about angles related to a triangle to find a missing angle measure. The expected solution involves finding the measure of $\angle ACB$. This angle measure is 180° – 135°, or 45°. Because the sum of the degree measures of all angles in a triangle is 180°, the measure of $\angle ABC$ is 180° – 25° – 45°, or 110°. Students who have a deeper understanding of geometry may recognize that the measure of the external angle (135°) is the sum of 25° and the measure of the angle of interest. However, eighth-grade students are not expected to know this relationship. This question was difficult for the students, with 33 percent of eighth-graders choosing the correct answer. This question appears on the item map at scale score 334.



In the triangle, what is the degree measure of $\angle ABC$?

- Ⓐ 45
- Ⓑ 100
- ● 110
- Ⓓ 135
- Ⓔ 160

Mathematic Content Area:
Geometry and Spatial Sense

Mathematical Ability:
Problem Solving

Table 5.10 Percentage scored correct for multiple-choice sample question 10, by achievement-level range, grade 8: 2003

Grade 8

	Percentage correct			
Overall percentage correct	Below ***Basic*** **261 or below**[1]	At ***Basic*** **262–298**[1]	At ***Proficient*** **299–332**[1]	At ***Advanced*** **333 or above**[1]
33	19	29	49	77

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Grade 8

Sample Question 11 (multiple-choice)

In sample question 11, students were asked to reason using a scale along a line. To answer this question, the student could observe that there were 4 equal intervals along the line representing a distance of 60 miles, so each interval represented 15 miles. The student could then conclude that the total distance from Bay City to Yardville, which was represented by 7 equal intervals along the line, was 105 miles. Proportional reasoning of this type is an important concept in mathematics. This question was difficult for the students, with 39 percent of eighth-graders choosing the correct answer. This question appears on the item map at scale score 340.

On the road shown above, the distance from Bay City to Exton is 60 miles. What is the distance from Bay City to Yardville?

- Ⓐ 45 miles
- Ⓑ 75 miles
- Ⓒ 90 miles
- ● 105 miles

Mathematic Content Area:
Number Sense, Properties, and Operations

Mathematical Ability:
Problem Solving

Table 5.11 Percentage scored correct for multiple-choice sample question 11, by achievement-level range, grade 8: 2003

Grade 8

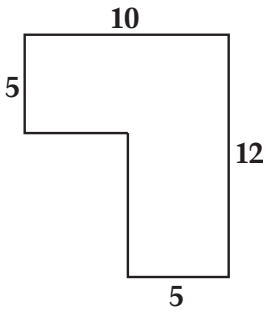
	Percentage correct			
Overall percentage correct	Below ***Basic*** **261 or below[1]**	At ***Basic*** **262–298[1]**	At ***Proficient*** **299–332[1]**	At ***Advanced*** **333 or above[1]**
39	18	39	58	73

[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

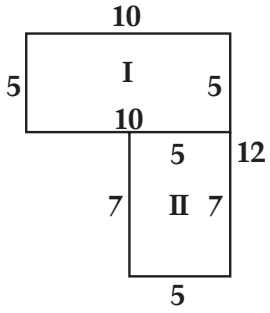
Grade 8

Sample Question 12 (extended constructed-response)

In sample question 12, students were asked to draw and explain three different ways to divide an L-shaped region to determine the area. The areas of some geometric figures cannot be calculated directly, but the figures can be partitioned into simpler figures whose areas can be easily determined. One way to partition the hallway is shown and the corresponding area is 50 + 35 = 85. Students are asked to show 3 other ways the hallway can be divided and, for each of these, to show how the area can be calculated. Although units are not given for this question, other questions specify units such as inches or centimeters. Answers to this question were scored as "Extended" (three figures were divided correctly with no incorrect labels and three correct expressions for area), "Satisfactory" (three figures were divided correctly with no incorrect labels and two correct expressions for area), "Partial" (two figures were divided correctly with no incorrect labels and one or two correct expressions for the area of those figures, or three figures divided correctly with no incorrect labels and one correct expression for area), "Minimal" (one figure divided correctly with no incorrect labels and correct expression for the area of that figure, or two or three figures divided correctly with no incorrect labels and no correct—or missing—expressions for the area of the figures), or "Incorrect." This question was very difficult for the students, with only 10 percent of eighth-grade responses scored as "Satisfactory" or better and only 6 percent of eighth-grade responses scored as "Extended." This question appears on the item map at scale score 417 for students whose responses were scored as "Extended."

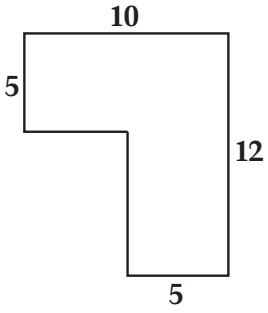


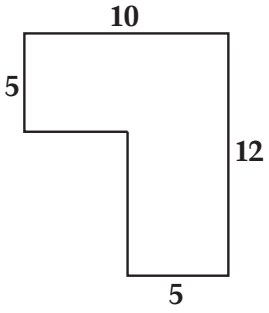
Ted wants to purchase floor covering for the hallway shown above. He knows there are many ways to find the area of the hallway. One way is to divide the hallway into the sections shown below and then add together the area of each section.

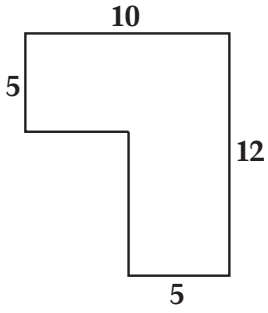


Area of Hallway = Area of Region I + Area of Region II
Area = (5 x 10) + (7 x 5)

Use the figures below to show 3 other ways that Ted can divide the hallway to find its area. Below each figure explain what numbers and operations Ted could use to calculate the area.







Mathematic Content Area:
Measurement

Mathematical Ability:
Problem Solving

Table 5.12a **Percentage scored as "Satisfactory" or better for extended constructed-response sample question 12, by achievement-level range, grade 8: 2003**

Grade 8

	Percentage "Satisfactory" or better			
Overall percentage "Satisfactory" or better	Below ***Basic*** **261 or below**[1]	At ***Basic*** **262–298**[1]	At ***Proficient*** **299–332**[1]	At ***Advanced*** **333 or above**[1]
10	#	2	23	66

The estimate rounds to zero.
[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Sample "Satisfactory" Response

Although most of the work was correct, the following sample response was scored as "Satisfactory" because the expression computing the areas associated with the first figure should have been $5 \times 5 + 12 \times 5$. The three figures were all divided correctly and the expressions for computing the areas associated with the second and third figures were correct.

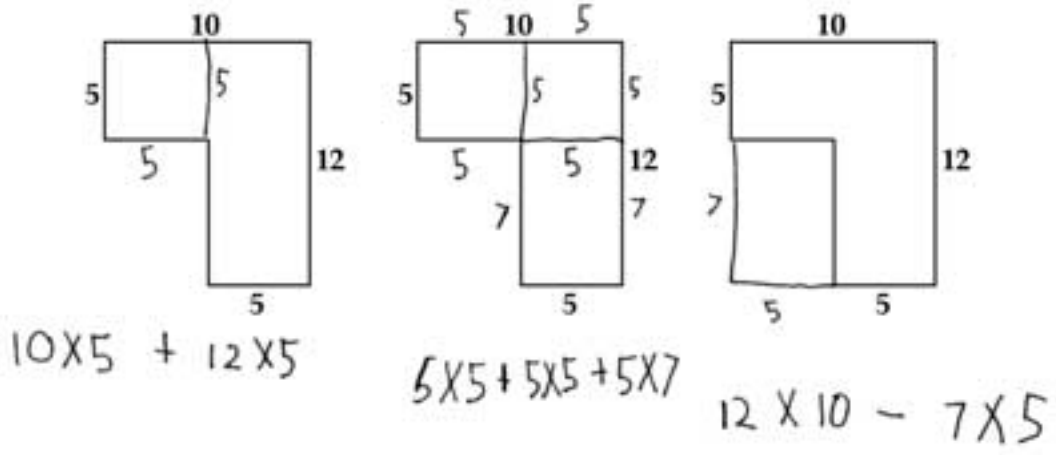


Table 5.12b **Percentage scored as "Extended" for extended constructed-response sample question 12, by achievement-level range, grade 8: 2003**

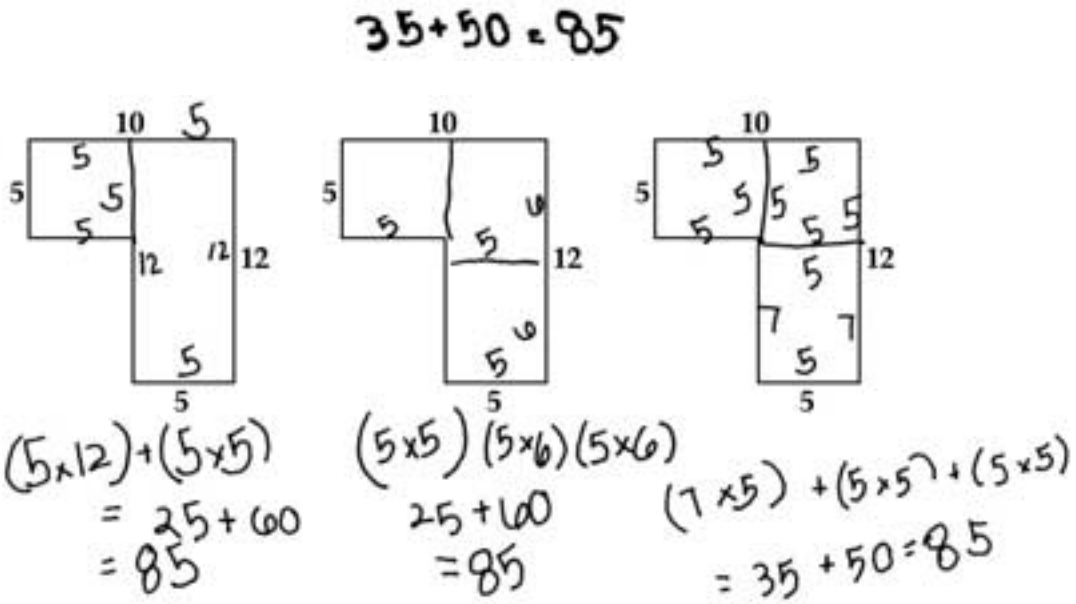
Grade 8

	Percentage "Extended"			
Overall percentage "Extended"	Below ***Basic*** **261 or below**[1]	At ***Basic*** **262–298**[1]	At ***Proficient*** **299–332**[1]	At ***Advanced*** **333 or above**[1]
6	#	1	12	41

[#] The estimate rounds to zero.
[1] NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Sample "Extended" Response

The following sample response was scored as "Extended" because the three figures were divided correctly and the expressions for computing the areas associated with each figure were correct.



Maps of Selected Item Descriptions on the NAEP Mathematics Scale—Grades 4 and 8

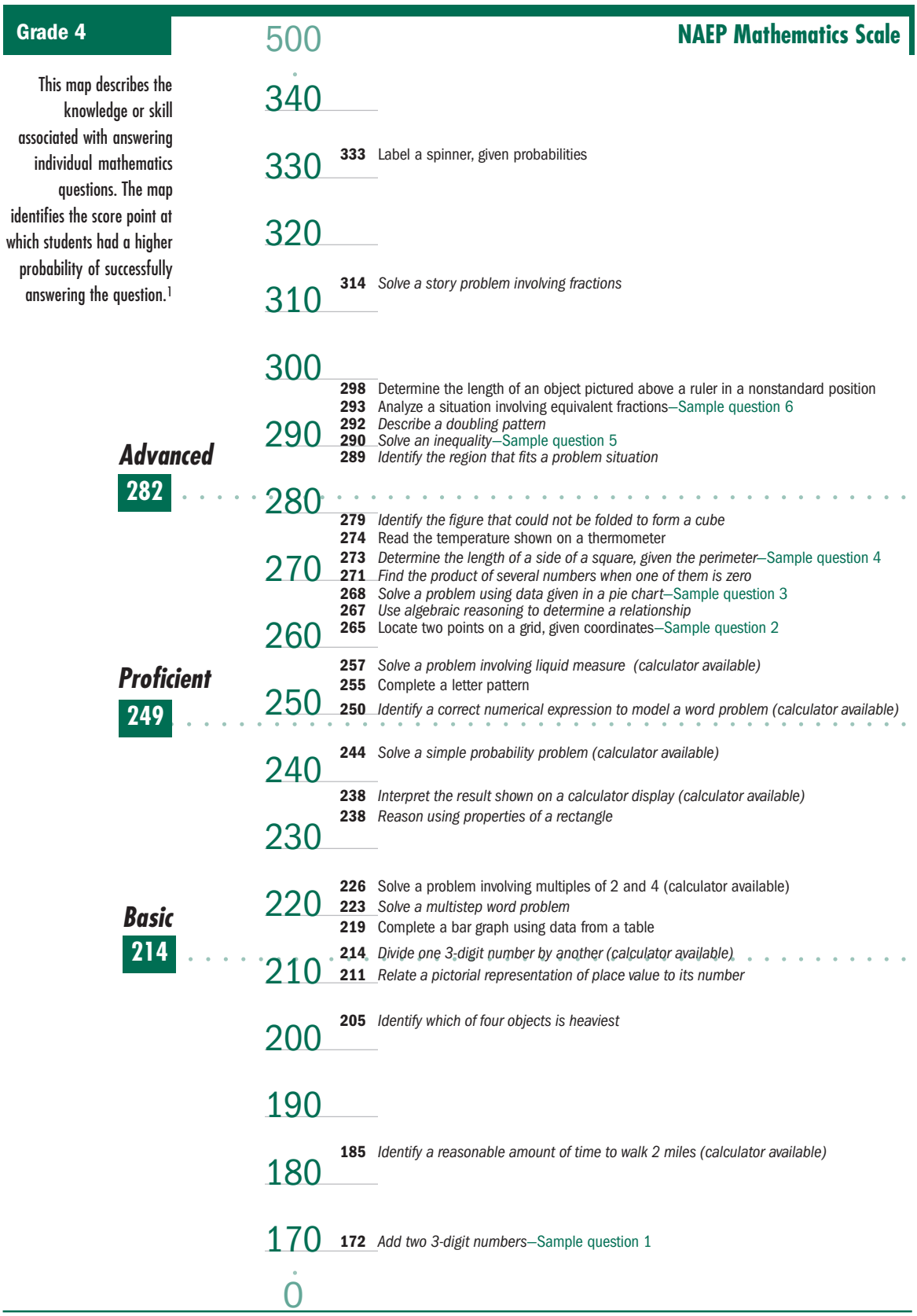
Item maps show particular items at the position along the NAEP mathematics scale where the items are likely to be successfully answered by students who attained that score or higher.[1] The descriptions focus on the mathematics skills or abilities needed to answer the questions. For multiple-choice questions, the description indicates the skill or knowledge demonstrated when students select the correct option. For constructed-response questions, the description reflects the skill or knowledge specified by different levels of the scoring criteria for that question.

For each description on the map, students whose average scale scores fell above the corresponding scale point had a higher probability of successfully answering the question; students whose average scale scores fell below that scale point had a lower probability of successfully answering that question. For the purpose of mapping each question, the probability level was set at 65 percent for constructed-response questions and 74 percent for multiple-choice questions.[2] For example, when a multiple-choice question like the fourth-grade sample question 1 in figure 5.1 maps at 172 on the scale, fourth-grade students with an average score of 172 or more have at least a 74 percent chance of answering this question correctly. In other words, out of a sample of 100 students whose average score was at or above 172, at least 74 would be expected to have answered this question correctly. Students who score above the scale point have a higher probability of successfully answering the question; however, it does not mean that every student at or above 172 always answered this question correctly, nor does it mean that students below 172 always answered the question incorrectly.

[1] For details on the procedures used to develop item maps, see Allen, N. L., Donoghue, J. R., and Schoeps, T. L. (2001). *The NAEP 1998 Technical Report* (NCES 2001–509). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics.

[2] The probability convention is set higher for multiple-choice questions to correct for the possibility of answering correctly by guessing.

Figure 5.1 Map of selected item descriptions on the NAEP mathematics scale, grade 4: 2003

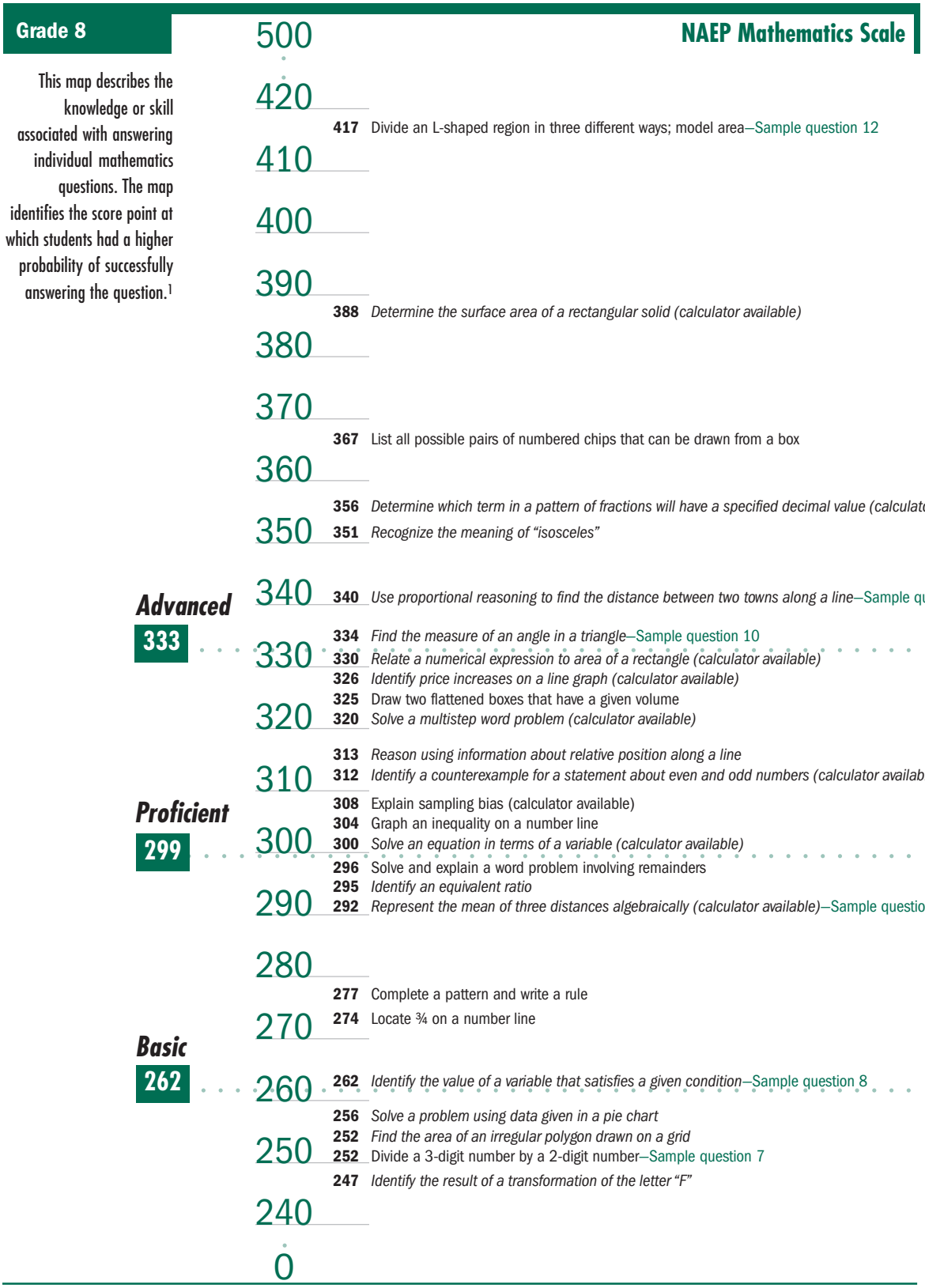


[1] Each grade 4 mathematics question in the 2003 mathematics assessment was mapped onto the NAEP 0–500 mathematics scale. The position of a question on the scale represents the average scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for mathematics achievement levels are referenced on the map. For constructed-response questions, the question description represents students' performance at the scoring criteria level being mapped.

NOTE: Regular type denotes a constructed-response question. Italic type denotes a multiple-choice question.

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

Figure 5.2 Map of selected item descriptions on the NAEP mathematics scale, grade 8: 2003



[1] Each grade 8 mathematics question in the 2003 assessment was mapped onto the NAEP 0–500 mathematics scale. The position of the question on the scale represents the scale 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. Only selected questions are presented. Scale score ranges for mathematics achievement levels are referenced on the map. For constructed-response questions, the question description represents students' performance at the scoring criteria level being mapped.

NOTE: Regular type denotes a constructed-response question. Italic type denotes a multiple-choice question.

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

Appendix A

Overview of Procedures Used for the NAEP 2003 Mathematics Assessment

This appendix provides an overview of the NAEP 2003 mathematics assessment's primary components — framework, development, administration, scoring, and analysis. A more extensive review of the procedures and methods used in the mathematics assessment will be included in the assessment procedure section of the NAEP web site (http://nces.ed.gov/nationsreportcard).

The NAEP 2003 Mathematics Assessment

The National Assessment Governing Board (NAGB), created by Congress in 1988, is responsible for formulating policy for NAEP. NAGB is specifically charged with developing assessment objectives and test specifications. The mathematics framework used for the 2003 assessment had its origins in a framework developed for the 1990 mathematics assessment under contract with the Council of Chief State School Officers (CCSSO). The CCSSO project considered objectives and frameworks for mathematics instruction at the state, district, and school levels. The project also examined curricular frameworks on which previous NAEP assessments were based, consulted with leaders in mathematics education, and considered a draft version of the National Council of Teachers of Mathematics (NCTM) *Curriculum and Evaluation Standards for School Mathematics.*[1] This project resulted in a

[1] National Council of Teachers of Mathematics. (1989). *Curriculum and Evaluation Standards for School Mathematics.* Reston, VA: Author.

"content-by-ability" matrix design used to guide both the NAEP 1990 and 1992 mathematics assessments. The design was reported in *Mathematics Objectives: 1990 Assessment*.[2]

Prior to 1990, mathematics was assessed based on an earlier framework, which also was used to develop NAEP long-term trend assessments. Because the long-term trend assessments all use the same test booklets, it is possible to compare students' performance across many assessment years. However, the NAEP main mathematics assessment that was administered in 2003 is comparable only to the other assessments based on the 1990 framework—1990, 1992, 1996, and 2000.

The 1996 assessment was based on the first update of the NAEP 1990 mathematics framework since the release of the NCTM *Curriculum and Evaluation Standards for School Mathematics* in 1989.[3] This update was conducted by the College Board and reflected refinements in the earlier framework specifications, while ensuring comparability of results across the 1990, 1992, and 1996 assessments. Since the 2003 framework is the same as the 1996 update, the assessment results from 1990 to 2003 can be compared. The refinements that distinguish the framework used in the 1996, 2000, and 2003 assessments from the assessments conducted in 1990 and 1992 include the following:

- moving away from the rigid content-by-ability matrix (forcing items to be classified in cells of a matrix limited the possibility of assessing students' ability to reason in rich problem-solving situations and to make connections among the content areas);
- including the three achievement levels—*Basic*, *Proficient*, and *Advanced*—described in chapter 1 of this report;
- allowing individual questions to be classified in more than one content area (since the option to classify questions in more than one content area provides greater opportunity to measure student ability in content settings that more closely approximate real-world situations);
- including the mathematics ability categories (conceptual understanding, procedural understanding, and problem solving) as well as the process goals (reasoning, communication, and connections) from the NCTM standards;
- including more constructed-response questions in the 1996, 2000, and 2003 assessments than were included in 1990 and 1992; and
- revisiting some of the content areas to make sure they reflect recent curricular emphases.

Figure A.1 describes the five content areas that constitute the NAEP mathematics assessment. These content areas apply to each of the three grades assessed by NAEP. The questions designed to test the various content areas at a particular grade level tend to reflect the expectations normally associated with instruction at that grade level.

[2] National Assessment of Educational Progress. (1988). *Mathematics Objectives: 1990 Assessment*. Princeton, NJ: Author.

[3] National Assessment Governing Board. *Mathematics Framework for the 1996 National Assessment of Educational Progress*. Washington, DC: Author.

Figure A.1 Descriptions of the five NAEP mathematics content areas

Number Sense, Properties, and Operations	This content area focuses on students' understanding of numbers (whole numbers, fractions, decimals, integers, real numbers, and complex numbers), operations, and estimation, and their application to real-world situations. At grade 4, the emphasis is on the development of number sense through connecting various models to their numerical representations, and an understanding of the meaning of addition, subtraction, multiplication, and division. At grade 8, number sense is extended to include positive and negative numbers, as well as properties and operations involving whole numbers, fractions, decimals, integers, and rational numbers.
Measurement	This content area focuses on an understanding of the process of measurement and the use of numbers and measures to describe and compare mathematical and real-world objects. Students are asked to identify attributes, select appropriate units and tools, apply measurement concepts, and communicate measurement-related ideas. At grade 4, the focus is on time, money, temperature, length, perimeter, area, capacity, weight/mass, and angle measure. At grade 8, this content area includes these measurement concepts, but the focus shifts to more complex measurement problems that involve volume or surface area or that require students to combine shapes and to translate and apply measures. Eighth-grade students also solve problems involving proportional thinking (such as scale drawing or map reading) and do applications that involve the use of complex measurement formulas.
Geometry and Spatial Sense	This content area is designed to extend beyond low-level identification of geometric shapes to include transformations and combinations of those shapes. Informal constructions and demonstrations (including drawing representations) along with their justifications take precedence over more traditional types of compass-and-straightedge constructions and proofs. At grade 4, students are asked to model properties of shapes under simple combinations and transformations, and to use mathematical communication skills to draw figures from verbal descriptions. At grade 8, students are asked to expand their understanding to include properties of angles and polygons. They are also asked to apply reasoning skills to make and validate conjectures about transformations and combinations of shapes.
Data Analysis, Statistics, and Probability	This content area emphasizes the appropriate methods for gathering data, the visual exploration of data, various ways of representing data, and the development and evaluation of arguments based on data analysis. At grade 4, students are asked to apply their understanding of numbers and quantities by solving problems that involve data. Fourth graders are asked to interact with a variety of graphs, to make predictions from data and explain their reasoning, to deal informally with measures of central tendency, and to use the basic concepts of chance in meaningful contexts. At grade 8, students are asked to analyze statistical claims and to design experiments, and they are asked to use simulations to model real-world situations. This content area focuses on eighth graders' basic understanding of sampling, their ability to make predictions based on experiments or data, and their ability to use some formal terminology related to probability, data analysis, and statistics.
Algebra and Functions	This content area extends from work with simple patterns at grade 4 to basic algebra concepts at grade 8. The grade 4 assessment involves informal demonstration of students' abilities to generalize from patterns, including the justification of their generalizations. Students are expected to translate between mathematical representations, to use simple equations, and to do basic graphing. At grade 8, the assessment includes more algebraic notation, stressing the meaning of variables and an informal understanding of the use of symbolic representations in problem-solving contexts. Students are asked to use variables to represent a rule underlying a pattern. Eighth graders are asked to demonstrate a beginning understanding of equations and functions and the ability to solve simple equations and inequalities.

SOURCE: National Assessment Governing Board. (2002). *Mathematics Framework for the 2003 National Assessment of Educational Progress.* Washington, DC: Author.

The assessment framework specifies not only the particular areas that should be assessed, but also the percentage of the assessment questions that should be devoted to each of the content areas. The target percentage distribution for content areas as specified in the framework is presented in table A.1. The distribution of items among the content areas is a critical feature of the assessment design, since it reflects the relative importance and value given to each.

The target percentages at eighth grade differ from those at fourth grade because of a shift in curricular emphasis. For example, in grade 4 there is more emphasis on number sense, properties, and operations than on algebra and functions. In grade 8, the percentage of algebra and functions items increases, and the percentage of number sense, properties, and operations items decreases. The actual content of the assessment is close to the targeted distribution.

Table A.1 Target percentage distribution of items, by content area and grade: 1990–2003

Grades 4 and 8	Grade 4		Grade 8	
	1990 and 1992	1996–2003	1990 and 1992	1996–2003
Number sense, properties, and operations	45	40	30	25
Measurement	20	20	15	15
Geometry and spatial sense	15	15	20	20
Data analysis, statistics, and probability	10	10	15	15
Algebra and functions	10	15	20	25

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

The Assessment Design

Each student who participated in the NAEP 2003 mathematics assessment received a booklet containing four sections: two sets of cognitive questions, a set of general background questions, and a set of subject-specific background questions. Assessments for each grade consisted of 10 sets of cognitive questions or "blocks." Some items from the 1990, 1992, 1996, and 2000 assessments were carried forward to 2003 to allow for the measurement of trends across time. Two new blocks were developed for the 2003 assessment as specified by the updated framework.

Three types of questions are used in the assessment: multiple-choice, short constructed-response, and extended constructed-response. Table A.2 shows the distribution of questions administered from 1990 to 2003 by type for each grade level. The total number of questions administered has varied somewhat across the assessment years due to the inclusion of special study blocks in certain years. The number of questions used in the main scaling, however, has remained relatively consistent.

Table A.2 Distribution of questions administered, by question type and grade: 1990–2003

Grades 4 and 8	Grade 4					Grade 8				
	1990	1992	1996	2000	2003	1990	1992	1996	2000	2003
Multiple-choice	102	99	81	87	114	149	118	102	100	129
Short constructed-response	41	59	64	50	59	42	65	69	51	58
Extended constructed-response	†	5	13	8	8	†	6	12	9	10
Total	**143**	**163**	**158**	**145**	**181**	**191**	**189**	**183**	**160**	**197**

† Not applicable. No extended constructed-response questions were included in the 1990 assessment.
NOTE: Short constructed-response questions included in the 1990 and 1992 assessments were scored dichotomously. New short constructed-response questions included in the 1996, 2000, and 2003 assessments were scored to allow for partial credit.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

The assessment design allowed maximum coverage of mathematics abilities at each grade, while minimizing the time burden for any one student. This was accomplished through the use of matrix sampling of items in which representative samples of students took various portions of the entire pool of assessment questions. Individual students are required to take only a small portion of the assessment, but the aggregate results across the entire assessment allow broad reporting of mathematics abilities for the targeted population.

In addition to matrix sampling, the assessment design used a procedure for distributing blocks across booklets that controlled for position and context effects. Students received different blocks of questions in their booklets according to a procedure that assigned blocks of questions balancing the positioning of blocks across booklets and balancing the pairing of blocks within booklets. Also, every block of questions was paired with every other block. The procedure also cycles the booklets for administration so that, typically, only a few students in any assessment session receive the same booklet.

In addition to the student assessment booklets, three other instruments provided data relating to the assessment: a teacher questionnaire, a school questionnaire, and a questionnaire for students with disabilities (SD) and limited-English-proficient (LEP) students. The teacher questionnaire was administered to the mathematics teachers of the fourth- and eighth-grade students participating in the assessment. The questionnaire took approximately 20 minutes to complete and focused on the teacher's general background and experience, the teacher's background related to mathematics, and classroom information about mathematics instruction.

The school questionnaire was given to the principal or other administrator in each participating school and took about 20 minutes to complete. The questions asked about school policies, programs, facilities, and the demographic composition and background of the students and teachers at the school.

The SD/LEP questionnaire was completed by a school staff member knowledgeable about those students selected to participate in the assessment who were identified as having an Individualized Education Program (IEP) or equivalent plan (for reasons other than being gifted

or talented) or having limited English proficiency. An SD/LEP questionnaire was completed for each identified student regardless of whether the student participated in the assessment. Each SD/LEP questionnaire took approximately three minutes to complete and asked about the student and the special-education programs in which he or she participated.

NAEP Samples

National Sample

The national results presented in this report are based on nationally representative probability samples of fourth- and eighth-grade students. The 2003 national sample consisted of the combined sample of public-school students assessed in each state and an additional nonpublic school sample. This represents a change from earlier assessments in which the national and state samples were independent. The combined sample was chosen using a stratified two-stage design that involved sampling students from selected schools (public and nonpublic).

Each selected school that participated in the assessment and each student assessed represents a portion of the population of interest. Sampling weights are needed to make valid inferences between the student samples and the respective populations from which they were drawn. Sampling weights account for disproportionate representation of students from different states and for students who attend nonpublic schools. Sampling weights also account for lower sampling rates for very small schools and are used to adjust for school and student nonresponse.[4]

Unlike the 1996 and 2000 national assessments, which featured the collection of data from samples of students where assessment accommodations for special-needs students were not permitted and from samples of students where accommodations for special-needs students were permitted, the 2003 national assessment has only samples of students where accommodations were permitted. (See page 175 for information on the types of accommodations permitted.) NAEP inclusion rules were applied and accommodations were offered when a student had an Individualized Education Program (IEP) indicating the need for accommodation because of a disability, was protected under Section 504 of the Rehabilitation Act of 1973 because of disability (SD), was identified as being a limited-English-proficient student (LEP), and/or was normally offered accommodations in other assessment situations.[5] All other students were asked to participate in the assessment under standard conditions. Prior to 1996, testing accommodations (e.g., extended time, small group testing) were not permitted for special-needs students selected to participate in the NAEP mathematics assessments.

Table A.3 shows the number of students included in the national samples for the NAEP mathematics assessments at grades 4 and 8. The 2003 mathematics assessment had only one sample of students, for whom accommodations were permitted. For the 1996 and 2000 assessments, the table shows both the number of students in the sample in which accommodations were not permitted and

[4] Additional details regarding the design and structure of the national and state samples will be included in the technical documentation section of the NAEP web site (http://nces.ed.gov/nationsreportcard).

[5] Section 504 of the Rehabilitation Act of 1973 is a civil rights law designed to prohibit discrimination on the basis of disability in programs and activities, including education, that receive federal financial assistance.

the number of students in the sample in which accommodations were permitted. The table shows that the same non-SD/LEP students were included in both samples in 2000; only the SD and/or LEP students differed between the two samples. The 1996 design differed somewhat, in that the two samples did not include all the same non-SD/LEP students. Although there was some overlap, not all of the non-SD/LEP students were included in both samples, as was the case in 2000. The 1990 and 1992 design differed from more recent assessment years in that the SD and/or LEP students were assessed in standard conditions and accommodations were not permitted. The sample sizes and target populations for the 2003 mathematics assessment are listed for the nation and states in table A.4 and for the participating districts in table A.5.

Table A.3 Number of students assessed, by sample type, special needs status, and accommodation option, grades 4 and 8: 1990–2003

	1990	1992	1996		2000		2003
	Accommodations not permitted sample	Accommodations not permitted sample	Accommodations not permitted sample	Accommodations permitted sample	Accommodations not permitted sample	Accommodations permitted sample	Accommodations permitted sample
Grade 4							
Total students assessed	3,423	7,176	6,627	6,915	13,511	13,855	190,147
Non-SD/LEP [1] students assessed	–	6,906	6,351	6,399	12,970[2]		156,886
SD/LEP students assessed without accommodations	–	270	276	286	541	590	16,321
SD/LEP students assessed with accommodations	†	†	†	230	†	295	16,940
Grade 8							
Total students assessed	3,431	7,663	7,146	7,114	15,694	15,930	153,189
Non-SD/LEP [1] students assessed	–	7,364	6,921	6,574	14,778[2]		131,386
SD/LEP students assessed without accommodations	–	299	225	357	916	802	10,747
SD/LEP students assessed with accommodations	†	†	†	183	†	350	11,056

– Not available. Data on participation of SD/LEP students are not available for 1990.
† Not applicable. Accommodations were not permitted in this sample.
[1] SD/LEP = students with disabilities/limited-English-proficient students.
[2] The same non-SD/LEP students were included in both samples in 2000.
NOTE: The sample sizes are larger in 2003 than in previous years because the 2003 national sample was based on the combined sample of students assessed in each participating state, plus an additional sample from nonpublic schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table A.4 National and state sample sizes and target populations, grades 4 and 8: 2003

	Grade 4		Grade 8	
	Sample size	Target population	Sample size	Target population
Combined national	197,291	3,989,000	159,099	3,938,000
Public	191,439	3,603,000	153,488	3,575,000
Nonpublic	4,727	378,000	5,085	360,000
State				
Alabama	3,617	59,000	2,622	55,000
Alaska	2,855	9,000	2,572	9,000
Arizona	4,149	74,000	2,833	72,000
Arkansas	3,351	35,000	2,637	35,000
California	8,815	482,000	5,689	445,000
Colorado	3,545	57,000	2,814	56,000
Connecticut	3,359	44,000	2,822	42,000
Delaware	3,372	9,000	2,730	9,000
Florida	3,751	192,000	2,567	170,000
Georgia	5,464	114,000	4,338	110,000
Hawaii	3,733	14,000	2,941	14,000
Idaho	3,459	18,000	2,730	19,000
Illinois	5,292	150,000	4,373	149,000
Indiana	3,746	81,000	2,727	75,000
Iowa	3,344	35,000	3,006	39,000
Kansas	3,097	32,000	3,031	36,000
Kentucky	3,567	47,000	2,971	50,000
Louisiana	3,008	55,000	2,491	52,000
Maine	2,989	15,000	2,992	17,000
Maryland	3,624	63,000	2,524	64,000
Massachusetts	4,671	73,000	3,958	75,000
Michigan	3,941	130,000	2,793	131,000
Minnesota	3,649	60,000	2,713	65,000
Mississippi	3,446	39,000	2,765	36,000
Missouri	3,628	69,000	2,850	67,000
Montana	2,969	11,000	2,693	12,000
Nebraska	2,837	21,000	2,569	21,000
Nevada	3,488	28,000	2,718	26,000
New Hampshire	3,329	16,000	2,944	17,000
New Jersey	3,511	98,000	2,882	104,000
New Mexico	3,046	25,000	3,317	24,000
New York	4,586	218,000	3,633	218,000
North Carolina	5,128	99,000	4,269	104,000
North Dakota	3,123	8,000	2,726	8,000
Ohio	5,056	145,000	3,792	143,000
Oklahoma	3,326	45,000	2,931	46,000
Oregon	3,463	41,000	2,764	41,000
Pennsylvania	3,560	132,000	2,823	139,000
Rhode Island	3,313	12,000	2,767	12,000
South Carolina	3,679	50,000	2,685	54,000
South Dakota	3,397	9,000	2,893	10,000
Tennessee	3,717	72,000	2,698	68,000
Texas	6,139	314,000	4,780	331,000
Utah	3,841	35,000	2,801	35,000
Vermont	2,970	7,000	2,737	8,000
Virginia	3,741	94,000	2,985	93,000
Washington	3,897	75,000	2,690	75,000
West Virginia	2,897	20,000	2,442	20,000
Wisconsin	3,258	61,000	2,678	65,000
Wyoming	2,813	6,000	2,757	7,000
Other jurisdictions				
District of Columbia	2,883	6,000	2,025	5,000
DDESS [1]	1,339	3,000	725	2,000
DoDDS [2]	2,812	6,000	2,284	5,000

[1]Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2]Department of Defense Dependents Schools (Overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table A.5 District sample sizes and target populations, grades 4 and 8: 2003

	Grade 4		Grade 8	
	Sample size	Target population	Sample size	Target population
Atlanta	1,655	5,000	1,533	4,000
Boston	1,596	5,000	1,363	5,000
Charlotte	1,838	9,000	1,427	8,000
Chicago	2,421	33,000	2,109	29,000
Cleveland	1,902	6,000	1,268	5,000
District of Columbia	2,883	6,000	2,025	5,000
Houston	2,510	17,000	1,845	12,000
Los Angeles	3,073	59,000	1,975	47,000
New York City	2,448	78,000	1,799	74,000
San Diego	1,787	11,000	1,292	10,000

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Table A.6 provides a summary of the 2003 national school and student participation rates for the mathematics assessment sample. Participation rates are presented for public and nonpublic schools, both individually and combined. Four different rates are presented. The first rate is a student-centered, weighted percentage of schools participating in the assessment, before substitution of demographically similar schools.[6] This rate is based only on the schools that were initially selected for the assessment. The numerator of this rate is the estimated number of students represented by the initially selected schools that participated in the assessment. The denominator is the estimated number of students represented by the initially selected schools that had eligible students enrolled.

[6] The initial base sampling weights were used in weighting the percentages of participating schools and students. An attempt was made to preselect one substitute school for each sampled public school, one for each sampled Catholic school, and one for each sampled nonpublic school (other than Catholic). To minimize bias, a substitute school resembled the original selection as much as possible in affiliation, type of location, estimated number of grade-eligible students, and minority composition.

The second school participation rate is a student-centered, weighted participation rate after substitution. The numerator of this rate is the estimated number of students represented by the participating schools, whether originally selected or selected as a substitute for a school that chose not to participate. The denominator is the estimated number of students represented by the initially selected schools that had eligible students enrolled (this is the same as that for the weighted participation rate for the sample of schools before substitution). Because of the common denominators, the weighted participation rate after substitution is at least as great as the weighted participation rate before substitution.

The third school participation rate is a school-centered, weighted percentage of schools participating in the assessment before substitution of demographically similar schools. This rate is based only on the schools that were initially selected for the assessment. The numerator of this rate is the estimated number of schools represented by the initially selected schools that participated in the assessment. The denominator is the estimated number of schools represented by the initially selected schools that had eligible students enrolled.

The fourth school participation rate is a school-centered weighted participation rate after substitution. The numerator is the estimated number of schools represented by the participating schools, whether originally selected or selected as a substitute for a school that did not participate. The denominator is the estimated number of schools, represented by the initially selected schools that had eligible students enrolled.

The student-centered and school-centered school participation rates differ if school participation is associated with the size of the school. If the student-centered rate is higher than the school-centered rate, this indicates that larger schools participated at a higher rate than smaller schools. If the student-centered rate is lower, smaller schools participated at a higher rate than larger schools.

Also presented in table A.6 are weighted student participation rates. Some students sampled for NAEP are not assessed because they cannot meaningfully participate. The numerator of this rate is the estimated number of students who are represented by the students assessed (in either an initial session or a makeup session). The denominator of this rate is the estimated number of students represented by the eligible sampled students in participating schools.

Table A.6 National school and student participation rates, by type of school, grades 4 and 8: 2003

	School participation					Student participation	
	Student-centered weighted		School-centered weighted				
	Percentage before substitution	Percentage after substitution	Percentage before substitution	Percentage after substitution	Number of schools participating	Student weighted percentage	Number of students assessed
Grade 4							
Combined national	98	98	92	93	7,488	94	190,147
Public	100	100	100	100	6,914	94	184,325
Nonpublic	79	80	74	76	539	95	4,718
Grade 8							
Combined national	97	98	90	91	6,095	92	153,189
Public	100	100	100	100	5,527	91	147,600
Nonpublic	74	76	75	78	558	95	5,073

NOTE: The number of schools and students in the combined national total at grades 4 and 8 includes students in the Department of Defense domestic schools located within the U.S. and Bureau of Indian Affairs schools that are not included as part of either the public or nonpublic totals.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

State Samples

The results provided in this report of the 2003 state assessment in mathematics are based on state-level samples of fourth- and eighth-grade public-school students. The samples were selected using a two-stage sample design that first selected schools within each state or other jurisdiction and then selected students within schools. The samples were weighted to allow valid inferences about the populations of interest. Participation rates for the states and other jurisdictions were calculated the same way that rates were computed for the nation. Tables A.7 and A.8 contain the unweighted number of participating schools and students, as well as weighted school and student participation rates for the state samples at grades 4 and 8, respectively.

District Samples

Results from the 2003 mathematics assessments are also reported (on a trial basis) for district-level samples of fourth- and eighth-grade students in the large urban school districts that participated in the Trial Urban District Assessment (TUDA)—Atlanta, Boston, Charlotte, Chicago, Cleveland, Houston, Los Angeles, New York City, and San Diego. The sample of students in the urban school districts represents an augmentation of the sample of students who would usually be selected as part of state samples. These samples allow reliable subgroup reporting in these districts. Furthermore, all students at "lower" geographic sampling levels are assumed to be part of "higher-level" samples. For example, Houston is one of the urban districts included in the TUDA. Data from students tested in the Houston sample were used to report results for Houston, but also contributed to the Texas and national estimates. Participation rates for the urban district samples are presented in table A.9.

Table A.7 School and student participation rates, grade 4 public schools: By state, 2003

Grade 4	School participation					Student participation	
	Student-centered weighted		School-centered weighted				
	Percentage before substitution	Percentage after substitution	Percentage before substitution	Percentage after substitution	Number of schools participating	Student weighted percentage	Number of students assessed
Nation (public)	100	100	100	100	6,914	94	184,325
Alabama	100	100	100	100	112	95	3,559
Alaska	99	99	97	97	154	95	2,825
Arizona	100	100	99	99	121	92	3,952
Arkansas	100	100	100	100	119	95	3,273
California	99	99	99	99	253	94	8,544
Colorado	100	100	100	100	124	96	3,460
Connecticut	99	99	99	99	110	95	3,221
Delaware	99	99	99	99	88	94	3,124
Florida	100	100	100	100	106	93	3,615
Georgia	100	100	100	100	156	95	5,372
Hawaii	100	100	100	100	107	95	3,629
Idaho	100	100	100	100	124	95	3,394
Illinois	100	100	100	100	174	94	5,000
Indiana	100	100	100	100	111	94	3,666
Iowa	100	100	98	98	136	96	3,238
Kansas	100	100	100	100	137	95	3,041
Kentucky	100	100	100	100	121	95	3,451
Louisiana	100	100	100	100	110	96	2,917
Maine	100	100	100	100	150	94	2,879
Maryland	100	100	100	100	108	94	3,470
Massachusetts	100	100	100	100	165	94	4,499
Michigan	100	100	100	100	136	95	3,784
Minnesota	100	100	98	98	113	95	3,551
Mississippi	100	100	100	100	111	94	3,241
Missouri	100	100	100	100	126	94	3,495
Montana	100	100	97	97	180	95	2,912
Nebraska	99	99	97	97	156	94	2,748
Nevada	100	100	100	100	111	93	3,315
New Hampshire	100	100	98	98	122	94	3,218
New Jersey	99	99	100	100	110	95	3,422
New Mexico	99	99	99	99	117	95	2,930
New York	100	100	100	100	149	92	4,308
North Carolina	100	100	100	100	153	95	4,912
North Dakota	100	100	100	100	209	97	3,066
Ohio	100	100	100	100	168	92	4,767
Oklahoma	100	100	100	100	137	96	3,199
Oregon	100	100	98	98	125	93	3,306
Pennsylvania	100	100	100	100	114	95	3,459
Rhode Island	100	100	100	100	114	93	3,201
South Carolina	100	100	100	100	106	95	3,438
South Dakota	100	100	98	98	187	96	3,342
Tennessee	100	100	100	100	116	94	3,615
Texas	100	100	100	100	197	96	5,653
Utah	100	100	98	98	113	94	3,733
Vermont	99	99	99	99	177	93	2,840
Virginia	100	100	100	100	116	95	3,497
Washington	100	100	100	100	109	96	3,769
West Virginia	100	100	100	100	137	94	2,810
Wisconsin	100	100	100	100	127	95	3,136
Wyoming	100	100	99	99	170	95	2,781
Other jurisdictions							
District of Columbia	100	100	100	100	118	94	2,748
DDESS[1]	99	99	98	98	39	96	1,313
DoDDS[2]	99	99	98	98	87	96	2,777

[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table A.8 School and student participation rates, grade 8 public schools: By state, 2003

Grade 8	School participation					Student participation	
	Student-centered weighted		School-centered weighted				
	Percentage before substitution	Percentage after substitution	Percentage before substitution	Percentage after substitution	Number of schools participating	Student weighted percentage	Number of students assessed
Nation (public)	100	100	100	100	5,527	91	147,600
Alabama	100	100	100	100	104	93	2,563
Alaska	99	99	94	94	100	92	2,545
Arizona	100	100	100	100	118	89	2,713
Arkansas	100	100	100	100	109	93	2,582
California	99	99	99	99	188	91	5,512
Colorado	100	100	100	100	114	93	2,757
Connecticut	100	100	100	100	104	91	2,698
Delaware	100	100	100	100	37	89	2,455
Florida	99	99	98	98	97	91	2,483
Georgia	100	100	100	100	117	93	4,246
Hawaii	100	100	99	99	66	93	2,824
Idaho	100	100	100	100	91	92	2,708
Illinois	100	100	100	100	170	93	4,122
Indiana	100	100	100	100	99	93	2,656
Iowa	99	99	97	97	116	95	2,932
Kansas	100	100	100	100	126	94	2,934
Kentucky	100	100	100	100	113	93	2,833
Louisiana	100	100	100	100	96	93	2,370
Maine	100	100	100	100	108	93	2,861
Maryland	92	92	93	93	96	89	2,406
Massachusetts	99	99	99	99	131	91	3,773
Michigan	100	100	100	100	111	91	2,652
Minnesota	100	100	100	100	105	92	2,645
Mississippi	100	100	100	100	108	92	2,625
Missouri	100	100	100	100	116	93	2,735
Montana	98	98	96	96	131	93	2,643
Nebraska	100	100	98	98	126	94	2,469
Nevada	100	100	100	100	67	88	2,646
New Hampshire	100	100	100	100	84	91	2,829
New Jersey	99	99	99	99	107	91	2,810
New Mexico	100	100	100	100	97	92	3,217
New York	100	100	100	100	148	85	3,422
North Carolina	100	100	100	100	132	93	4,093
North Dakota	100	100	100	100	144	96	2,684
Ohio	100	100	100	100	129	90	3,523
Oklahoma	100	100	100	100	129	93	2,855
Oregon	100	100	100	100	109	91	2,671
Pennsylvania	100	100	100	100	103	93	2,776
Rhode Island	100	100	100	100	54	89	2,669
South Carolina	100	100	100	100	98	93	2,471
South Dakota	100	100	100	100	137	95	2,839
Tennessee	100	100	100	100	108	92	2,610
Texas	100	100	100	100	146	92	4,398
Utah	100	100	96	96	94	91	2,726
Vermont	98	98	98	98	104	89	2,650
Virginia	100	100	100	100	107	92	2,776
Washington	100	100	100	100	103	92	2,629
West Virginia	100	100	100	100	95	93	2,365
Wisconsin	100	100	100	100	105	92	2,591
Wyoming	100	100	100	100	89	91	2,720
Other jurisdictions							
District of Columbia	100	100	100	100	38	88	1,888
DDESS[1]	99	99	93	93	14	96	709
DoDDS[2]	99	99	96	96	54	96	2,256

[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table A.9 Weighted school and student participation rates, grades 4 and 8 public schools: By urban district, 2003

	School participation		Student participation	
	Student weighted percentage before substitution	Number of schools participating	Student weighted percentage[1]	Number of students assessed
Grade 4				
Atlanta	100	50	95	1,640
Boston	100	59	95	1,515
Charlotte	100	51	95	1,761
Chicago	100	83	92	2,225
Cleveland	100	56	91	1,749
District of Columbia	100	118	94	2,748
Houston	100	80	93	2,303
Los Angeles	100	83	95	2,978
New York City	100	79	92	2,284
San Diego	100	55	94	1,739
Grade 8				
Atlanta	100	16	92	1,501
Boston	100	34	93	1,264
Charlotte	100	29	92	1,372
Chicago	100	83	93	1,956
Cleveland	100	35	78	1,125
District of Columbia	100	38	88	1,888
Houston	100	38	91	1,684
Los Angeles	100	67	90	1,921
New York City	100	77	80	1,694
San Diego	100	28	90	1,239

[1] The student weighted participation rate is calculated as follows: The numerator of this rate is the estimated number of students who are represented by the students assessed. The denominator of this rate is the estimated number of students represented by the eligible sampled students in participating schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Standards for State Sample Participation and Reporting of Results

In carrying out the 2003 state assessment program, NAEP established participation rate standards that jurisdictions were required to meet in order for their results to be reported. Participation rates before substitution needed to be at least 80 percent for schools and at least 85 percent for students. In the 2003 mathematics assessment, at both the fourth and eighth grades, all jurisdictions met NAEP participation rate standards.

The nonresponse bias analyses for nonpublic schools showed significant differences between responding and nonresponding schools in terms of reporting group, census region, and racial/ethnic composition of the schools. Nonresponse weighting adjustments have completely accounted for differences in reporting group, and largely accounted for differences in census region. These adjustments are unlikely to have fully accounted for differences in race/ethnicity.

Further information on the NCES guidelines used to report results in the state assessments, and the guidelines for notations when there was some risk of nonresponse bias in the reported results prior to the 2003 assessments, can be found in the NAEP 2000 mathematics report card (see appendix A, "Standards for Sample Participation and Reporting of Results").

Students with Disabilities (SD) and/or Limited-English-Proficient (LEP) Students

It is NAEP's intent to assess all selected students from the target population. Therefore, every effort is made to ensure that all selected students who are capable of participating in the assessment are assessed. Some students sampled for participation in NAEP can be excluded from the sample according to carefully defined criteria. These criteria were revised in 1996 to communicate more clearly a presumption of inclusion except under special circumstances. According to these criteria, students who had an Individualized Education Program (IEP) or were protected under Section 504 of the Rehabilitation Act of 1973 were to be included in the NAEP assessment except in the following cases:

- the school's IEP team determined that the student could not participate,
- the student's cognitive functioning was so severely impaired that she or he could not participate,
- the student's IEP required that the student had to be tested with an accommodation or adaptation that NAEP does not allow and the student could not demonstrate his or her knowledge without that accommodation.

All LEP students who received academic instruction in English for three years or more were to be included in the assessment. Those LEP students who received instruction in English for fewer than three years were to be included unless school staff judged them to be incapable of participating in the assessment in English.

Participation of SD/LEP Students in the NAEP Samples

Testing all sampled students is the best way for NAEP to ensure that the statistics generated by the assessment are as representative as possible of the performance of the entire national population and the populations of participating jurisdictions. However, all groups of students include certain proportions that cannot be tested in large-scale assessments (such as students who have profound mental disabilities) or who can only be tested through the use of testing accommodations such as extra time, one-on-one administration, or use of magnifying equipment. Some students with disabilities and some LEP students cannot show on a test what they know and can do unless they are provided with accommodations. When such accommodations are not allowed, students requiring such adjustments are often excluded from large-scale assessments such as NAEP. This phenomenon has become more common in the last decade and gained momentum with the passage of the 1997 Individuals with Disabilities Education Act (IDEA), which led schools and states to identify increasing proportions of students as needing accommodations on assessments in order to best show what they know and can do.[7] Furthermore,

[7] Office of Special Education Programs. (1997). *To Assure the Free Appropriate Public Education of all Children with Disabilities. Nineteenth Annual Report to Congress on the Implementation of the Individuals With Disabilities Education Act.* Archived at the U.S. Department of Education web site: http://www.ed.gov/offices/OSERS/OSEP/Research/OSEP97AnlRpt/index.html

Section 504 of the Rehabilitation Act of 1973 requires that, when students with disabilities are tested, schools must provide them with appropriate accommodations so that the test results accurately reflect students' achievement. In addition, as the proportion of limited-English-proficient students in the population has increased, some states have started offering accommodations such as translations of assessments or the use of bilingual dictionaries as part of assessments.

Before 1996, NAEP did not allow any testing under nonstandard conditions (i.e., accommodations were not permitted). At that time, NAEP samples were able to include almost all sampled students in standard assessment sessions. However, as the influence of IDEA grew more widespread, the failure to provide accommodations led to increasing levels of exclusion in the assessment. Such increases posed two threats to the program: 1) they threatened the stability of trend lines (because excluding more students in one assessment year than in another might lead to apparent rather than real differences) and 2) they made NAEP samples less than optimally representative of target populations.

NAEP reacted to this challenge by adopting a multipart strategy. The program had to move toward allowing the same assessment accommodations that were afforded students in state and district testing programs in order for NAEP samples to be as inclusive as possible. However, allowing accommodations represents a change in testing conditions that may affect measurement of changes over time. Therefore, beginning with the 1996 national assessments and the 1998 state assessments and up to 2000, NAEP assessed a series of parallel samples of students. In one set of samples, testing accommodations were not permitted; this allowed NAEP to maintain the measurement of achievement trends. In addition to the samples where accommodations were not permitted, parallel samples in which accommodations were permitted were also assessed. By having two overlapping samples and two sets of related data points, NAEP could meet two core program goals.[8] First, data trends could be maintained. Second, parallel trend lines could be set in ways that ensure that in future years the program would be able to use the most inclusive practices possible and mirror the procedures used by most state and district assessments. Beginning with the 2002 reading assessment, NAEP has used only the more inclusive procedures, in which assessment accommodations are permitted. In mathematics, national and state data from 1990, 1992, 1996, and 2000 are reported for the sample in which accommodations were not permitted. National and state data for the sample in which accommodations were permitted are reported for 2000 and 2003. National-only data for the accommodated samples are reported for 1996.

In order to make it possible to evaluate both the impact of increasing exclusion rates in some jurisdictions and differences between jurisdictions, complete data on exclusion in all years are in-

[8] The two samples are described as "overlapping" because, in 2000, the same group of non-SD/non-LEP students were included in both samples.

cluded in this appendix. Since the exclusion rates may affect trend measurement within a jurisdiction, readers should consider the magnitude of exclusion rate changes when interpreting score changes in jurisdictions. In addition, different rates of exclusion may influence the meaning of state comparisons. Thus, exclusion data should be reviewed in this context as well.

Percentages of SD/LEP students for the national sample of public and nonpublic schools in which accommodations were not permitted are presented in table A.10. The data in this table include the percentages of students *identified* as SD/LEP, the percentage of SD/LEP students *excluded*, and the percentage of SD/LEP students *assessed*. Tables A.11 and A.12 show similar information by jurisdiction. Percentages of these students in the national sample where accommodations were permitted are presented in table A.13. The state and jurisdiction results where accommodations were permitted are shown in tables A.14 through A.19. The data in these tables include the percentages of students *identified* as SD and/or LEP, the percentage of SD/LEP students *excluded*, the percentage of SD/LEP students *assessed*, the percentage *assessed without accommodations*, (calculated as the percentage of all students sampled minus those who were excluded and those asssessed with accommodations), and the percentage *assessed with accommodations*. Similar information for districts that participated in the Trial Urban District Assessment is presented in table A.20 for grade 4 and table A.21 for grade 8.

In the 2003 national sample, 4 percent of SD/LEP students at grade 4 and 3 percent of SD/LEP students at grade 8 were excluded from the assessment (see table A.13). Across the various jurisdictions that participated in the 2003 state assessment, the percentage of SD/LEP students excluded ranged from 1 to 7 percent at grade 4 (see table A.14) and from 1 to 9 percent at grade 8 (see table A.17). At the district level, between 1 and 8 percent of SD/LEP students were excluded at grade 4 (see table A.20) and between 2 and 9 percent were excluded at grade 8 (see table A.21).

Table A.10 Students with disabilities and/or limited-English-proficient students identified, excluded, and assessed, when accommodations were not permitted, grades 4 and 8 public and nonpublic schools: 1992–2000

	1992[1]		1996		2000	
	Number of students	Weighted percentage of all students sampled	Number of students	Weighted percentage of all students sampled	Number of students	Weighted percentage of all students sampled
Grade 4						
SD[2] and/or LEP[3] students						
Identified	2,020	9	480	14	1,031	15
Excluded	1,750	6	204	6	490	7
Assessed	270	3	276	8	541	8
SD students						
Identified	1,163	7	359	11	672	11
Excluded	990	4	153	5	380	5
Assessed	173	3	206	6	292	5
LEP students						
Identified	939	3	142	3	454	5
Excluded	835	2	67	1	189	2
Assessed	104	1	75	2	265	3
Grade 8						
SD[2] and/or LEP[3] students						
Identified	2,329	9	391	11	1,772	14
Excluded	2,030	6	166	4	856	7
Assessed	299	4	225	6	916	8
SD students						
Identified	1,538	7	310	9	1,316	11
Excluded	1,323	4	149	4	719	6
Assessed	215	3	161	5	597	5
LEP students						
Identified	838	2	106	3	551	4
Excluded	750	2	38	1	210	1
Assessed	88	1	68	2	341	2

[1] In 1992, the identified and excluded students were combined across subject areas. Although their weighted percentages are comparable to 1996 and 2000, the row numbers of students are not.
[2] Students with disabilities.
[3] Limited-English-proficient students.
NOTE: Detail may not sum to totals because of rounding. Within each grade level the combined SD/LEP portion of the table is not a sum of the separate SD and LEP portions because some students were identified as both SD and LEP. Such students would be counted separately in the bottom portions but counted only once in the top portion. SD/LEP information is not available at the national level in 1990.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table A.11 Percentage of students with disabilities and/or limited-English-proficient students identified, excluded, and assessed, when accommodations were not permitted, grade 4 public schools: By state, 1992–2000

Grade 4	SD[1] and/or LEP[2] students								
	1992			1996			2000		
	Identified	Excluded	Assessed	Identified	Excluded	Assessed	Identified	Excluded	Assessed
Nation (public)	10	7	4	16	6	9	16	7	9
Alabama	10	5	6	12	6	5	13	6	7
Alaska	–	–	–	20	4	16	–	–	–
Arizona	15	5	10	21	12	9	25	12	13
Arkansas	12	5	6	10	7	3	14	7	7
California	28	12	16	33	16	17	33	9	24
Colorado	10	5	5	15	8	7	–	–	–
Connecticut	14	7	7	16	8	8	15	10	5
Delaware	12	5	6	14	7	7	–	–	–
Florida	17	8	8	19	10	9	–	–	–
Georgia	10	5	4	13	7	6	11	7	4
Hawaii	13	6	8	14	6	9	19	10	9
Idaho	9	3	6	–	–	–	16	6	10
Illinois	–	–	–	–	–	–	17	10	6
Indiana	7	3	4	11	5	6	11	7	5
Iowa	9	3	6	13	6	7	15	10	5
Kansas	–	–	–	–	–	–	16	7	9
Kentucky	8	3	5	10	6	4	12	8	3
Louisiana	8	4	4	14	8	7	16	8	8
Maine	14	6	8	15	8	7	16	10	6
Maryland	11	4	7	14	8	7	12	9	4
Massachusetts	18	7	11	18	9	9	19	10	9
Michigan	7	5	2	11	6	5	11	8	3
Minnesota	9	3	6	14	6	8	16	6	10
Mississippi	7	5	2	8	6	2	6	4	2
Missouri	12	4	7	14	5	9	15	10	6
Montana	–	–	–	10	5	5	12	5	7
Nebraska	13	4	8	15	5	10	18	8	10
Nevada	–	–	–	16	9	8	20	10	9
New Hampshire	12	4	8	–	–	–	–	–	–
New Jersey	11	6	6	11	6	5	–	–	–
New Mexico	15	7	8	22	12	10	31	12	19
New York	12	5	6	15	8	7	16	12	4
North Carolina	12	4	8	14	7	7	16	13	3
North Dakota	9	2	7	11	4	7	12	6	6
Ohio	10	6	4	–	–	–	12	10	2
Oklahoma	13	7	6	–	–	–	20	10	10
Oregon	–	–	–	19	9	10	18	8	11
Pennsylvania	9	4	5	9	5	4	–	–	–
Rhode Island	15	6	10	18	6	12	23	12	11
South Carolina	10	5	5	12	6	7	17	7	10
Tennessee	12	4	8	13	6	6	11	4	7
Texas	17	8	9	24	10	14	25	15	10
Utah	10	4	6	13	6	7	14	7	7
Vermont	–	–	–	14	6	8	15	11	5
Virginia	11	5	6	14	7	7	16	11	5
Washington	–	–	–	13	5	8	–	–	–
West Virginia	9	4	4	13	8	5	13	10	3
Wisconsin	11	5	5	12	8	4	19	12	8
Wyoming	10	4	7	13	4	9	15	6	9
Other jurisdictions									
District of Columbia	11	9	2	14	11	3	19	9	10
DDESS[3]	–	–	–	9	4	5	11	5	5
DoDDS[4]	–	–	–	10	5	5	11	5	6

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
[1] Students with disabilities.
[2] Limited-English-proficient students.
[3] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[4] Department of Defense Dependents Schools (Overseas).
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), 1992, 1996, and 2000 Mathematics Assessments.

Table A.12 Percentage of students with disabilities and/or limited-English-proficient students identified, excluded, and assessed, when accommodations were not permitted, grade 8 public schools: By state, 1990–2000

Grade 8	SD[1] and/or LEP[2] students											
	1990			1992			1996			2000		
	Identified	Excluded	Assessed	Identified	Excluded	Assessed	Identified	Excluded	Assessed	Identified	Excluded	Assessed
Nation (public)	–	–	–	10	6	4	11	5	7	15	7	8
Alabama	9	5	4	10	5	5	13	7	6	14	5	9
Alaska	–	–	–	–	–	–	15	5	10	–	–	–
Arizona	12	5	7	12	6	7	17	9	8	19	9	10
Arkansas	11	7	3	11	6	5	11	7	4	14	8	5
California	15	7	8	20	8	12	20	10	10	27	9	18
Colorado	10	4	5	10	4	5	12	4	8	–	–	–
Connecticut	11	6	5	14	7	8	15	8	7	16	10	6
Delaware	9	4	5	10	4	6	13	9	4	–	–	–
Florida	11	6	5	13	6	7	16	10	6	–	–	–
Georgia	7	3	3	8	5	3	10	7	3	11	7	3
Hawaii	10	4	5	13	5	8	12	5	7	20	7	13
Idaho	6	2	4	7	3	4	–	–	–	14	5	9
Illinois	9	5	4	–	–	–	–	–	–	15	8	7
Indiana	7	5	2	9	5	4	12	6	7	12	7	5
Iowa	10	4	6	11	4	6	13	5	7	–	–	–
Kansas	–	–	–	–	–	–	–	–	–	14	6	8
Kentucky	7	5	3	9	5	4	9	5	5	14	9	4
Louisiana	6	4	2	7	4	3	10	6	4	13	6	7
Maine	–	–	–	11	4	6	12	5	7	15	9	6
Maryland	11	4	6	11	5	6	12	7	5	13	11	3
Massachusetts	–	–	–	18	8	9	17	8	9	19	12	7
Michigan	8	4	4	9	6	3	9	5	4	11	7	4
Minnesota	9	3	6	7	3	4	11	3	8	15	5	10
Mississippi	–	–	–	10	7	3	11	7	4	11	7	3
Missouri	–	–	–	11	4	6	12	7	5	15	9	6
Montana	6	2	4	–	–	–	9	3	6	12	5	6
Nebraska	9	3	6	10	4	6	12	4	8	13	3	10
Nevada	–	–	–	–	–	–	16	8	8	16	10	6
New Hampshire	12	4	8	12	5	7	15	4	11	–	–	–
New Jersey	12	7	5	14	7	7	13	7	6	–	–	–
New Mexico	9	6	3	12	5	7	18	8	10	25	12	14
New York	12	6	6	13	8	4	14	8	6	16	13	3
North Carolina	9	3	6	12	3	9	9	4	5	16	14	2
North Dakota	8	3	5	8	2	5	10	3	6	11	4	7
Ohio	8	5	3	10	6	4	–	–	–	11	9	3
Oklahoma	8	5	3	10	6	4	–	–	–	15	9	6
Oregon	8	3	5	–	–	–	12	4	8	17	6	11
Pennsylvania	10	5	5	9	4	5	–	–	–	–	–	–
Rhode Island	14	6	8	14	5	8	17	7	10	20	12	8
South Carolina	–	–	–	10	6	4	10	6	4	13	7	6
Tennessee	–	–	–	10	5	5	11	4	7	13	5	8
Texas	12	6	6	14	7	7	17	9	8	20	10	11
Utah	–	–	–	9	4	5	11	6	5	14	6	8
Vermont	–	–	–	–	–	–	12	4	8	17	10	7
Virginia	9	5	4	12	5	7	13	7	6	15	10	5
Washington	–	–	–	–	–	–	13	6	7	–	–	–
West Virginia	9	5	4	10	6	4	13	8	4	15	11	3
Wisconsin	8	4	4	10	4	6	12	7	5	17	10	7
Wyoming	8	3	5	9	4	5	10	2	8	13	4	9
Other jurisdictions												
District of Columbia	6	5	1	11	10	2	13	10	4	15	9	6
DDESS [3]	–	–	–	–	–	–	12	4	8	13	11	1
DoDDS [4]	–	–	–	–	–	–	7	3	4	8	3	4

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting. SD/LEP information was not available for national public schools in 1990.
[1] Students with disabilities.
[2] Limited-English-proficient students.
[3] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[4] Department of Defense Dependents Schools (Overseas).
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), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table A.13 Students with disabilities and/or limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grades 4 and 8 public and nonpublic schools: 1996–2003

	1996		2000		2003	
	Number of students	Weighted percentage of students sampled	Number of students	Weighted percentage of students sampled	Number of students	Weighted percentage of students sampled
Grade 4						
SD [1] and/or LEP [2] students						
Identified	701	15	1131	18	40,405	21
Excluded	185	4	246	4	7,144	4
Assessed	516	11	885	14	33,261	17
Without accommodations	286	7	590	9	16,321	9
With accommodations	230	5	295	5	16,940	8
SD students						
Identified	424	10	706	12	27,626	13
Excluded	109	3	180	3	5,630	3
Assessed	315	7	526	9	21,996	10
Without accommodations	172	4	310	5	8,004	4
With accommodations	143	4	216	4	13,992	6
LEP students						
Identified	308	6	472	7	16,315	10
Excluded	86	1	87	1	2,473	1
Assessed	222	5	385	6	13,842	8
Without accommodations	114	3	297	4	9,504	6
With accommodations	108	2	88	1	4,338	2
Grade 8						
SD [1] and/or LEP [2] students						
Identified	758	12	1603	13	27,713	17
Excluded	218	3	451	4	5,910	3
Assessed	540	8	1152	10	21,803	14
Without accommodations	357	6	802	7	10,747	7
With accommodations	183	3	350	3	11,056	6
SD students						
Identified	557	9	1206	10	21,969	13
Excluded	183	3	402	3	4,958	3
Assessed	374	6	804	7	17,011	10
Without accommodations	227	4	523	5	7,075	4
With accommodations	147	2	281	2	9,936	6
LEP students						
Identified	226	3	471	4	8,007	6
Excluded	51	1	103	1	1,606	1
Assessed	175	2	368	3	6,401	5
Without accommodations	133	2	290	2	4,484	4
With accommodations	42	#	78	1	1,917	1

The estimate rounds to zero.
[1] Students with disabilities.
[2] Limited-English-proficient students.
NOTE: Detail may not sum to totals because of rounding. Within each grade level the combined SD/LEP portion of the table is not a sum of the separate SD and LEP portions because some students were identified as both SD and LEP. Such students would be counted separately in the bottom portions but counted only once in the top portion. The sample sizes are larger in 2003 than in previous years because the 2003 national sample was based on the combined sample of students assessed in each participating state, plus an additional sample from nonparticipating states as well as a sample of nonpublic schools.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

Table A.14 Percentage of students with disabilities and/or limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grade 4 public schools: By state, 2000 and 2003

Grade 4	2000 SD[1] and/or LEP[2] students					
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations	All students assessed without accommodations
Nation (public)	19	4	15	10	5	91
Alabama	13	3	10	7	3	94
Alaska	–	–	–	–	–	–
Arizona	25	4	21	12	9	87
Arkansas	14	4	10	6	4	92
California	33	6	27	19	8	86
Colorado	–	–	–	–	–	–
Connecticut	14	5	10	5	4	91
Delaware	–	–	–	–	–	–
Florida	–	–	–	–	–	–
Georgia	11	3	8	4	4	93
Hawaii	19	9	11	8	3	89
Idaho	16	2	13	7	7	91
Illinois	17	3	14	5	9	88
Indiana	11	2	9	3	6	91
Iowa	15	2	12	5	7	91
Kansas	16	3	13	9	4	93
Kentucky	12	3	9	4	5	92
Louisiana	16	3	13	2	11	86
Maine	16	5	12	5	7	89
Maryland	12	2	10	4	6	92
Massachusetts	19	3	17	7	10	87
Michigan	11	3	8	3	4	92
Minnesota	16	2	14	7	7	90
Mississippi	6	3	3	1	2	95
Missouri	15	3	13	5	8	90
Montana	12	2	11	5	6	93
Nebraska	18	3	15	10	4	92
Nevada	20	7	13	8	5	88
New Hampshire	–	–	–	–	–	–
New Jersey	–	–	–	–	–	–
New Mexico	31	6	26	16	10	85
New York	16	5	11	2	9	86
North Carolina	16	5	11	3	8	87
North Dakota	12	1	11	7	4	95
Ohio	12	5	7	2	5	90
Oklahoma	20	5	15	11	5	90
Oregon	18	3	16	8	8	90
Pennsylvania	–	–	–	–	–	–
Rhode Island	23	3	20	10	10	87
South Carolina	17	5	12	7	5	90
South Dakota	–	–	–	–	–	–
Tennessee	11	3	9	7	1	96
Texas	25	7	18	12	6	87
Utah	14	3	11	7	4	94
Vermont	15	3	13	4	9	89
Virginia	16	4	12	5	7	89
Washington	–	–	–	–	–	–
West Virginia	13	3	11	3	8	89
Wisconsin	19	5	14	7	8	87
Wyoming	15	2	13	8	6	92
Other jurisdictions						
District of Columbia	19	5	14	7	7	88
DDESS[3]	11	4	7	3	4	92
DoDDS[4]	11	2	9	5	4	94

See notes at end of table. ▶

Table A.14 Percentage of students with disabilities and/or limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grade 4 public schools: By state, 2000 and 2003 —Continued

Grade 4	2003 SD[1] and/or LEP[2] students					
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations	All students assessed without accommodations
Nation (public)	22	4	18	10	8	88
Alabama	12	2	10	8	2	96
Alaska	31	1	30	20	10	89
Arizona	27	5	23	18	5	91
Arkansas	17	2	14	7	8	90
California	38	3	35	31	4	92
Colorado	20	2	17	7	11	87
Connecticut	16	4	12	5	8	89
Delaware	18	7	11	4	7	86
Florida	26	3	23	8	15	82
Georgia	16	2	14	6	7	91
Hawaii	17	3	14	5	8	89
Idaho	18	2	16	9	7	91
Illinois	23	4	18	7	11	85
Indiana	17	2	14	8	7	91
Iowa	18	3	15	4	11	86
Kansas	16	2	14	3	11	87
Kentucky	14	3	11	5	7	90
Louisiana	22	3	19	3	16	81
Maine	18	3	15	4	11	86
Maryland	16	4	12	6	6	90
Massachusetts	22	3	19	4	15	82
Michigan	15	4	11	5	6	90
Minnesota	18	3	16	8	7	90
Mississippi	10	5	5	4	1	93
Missouri	17	4	13	4	10	87
Montana	16	2	14	7	7	91
Nebraska	20	3	17	9	9	88
Nevada	26	4	22	14	8	88
New Hampshire	20	3	17	5	12	85
New Jersey	18	2	16	1	14	83
New Mexico	40	4	36	22	15	82
New York	19	5	14	2	11	83
North Carolina	21	4	17	5	12	84
North Dakota	18	2	16	8	7	91
Ohio	13	4	9	2	7	89
Oklahoma	22	4	18	10	8	88
Oregon	27	4	23	11	11	84
Pennsylvania	15	3	12	3	9	88
Rhode Island	27	3	24	9	15	82
South Carolina	18	6	12	7	4	89
South Dakota	18	1	16	9	7	91
Tennessee	14	3	11	7	5	93
Texas	27	7	20	14	6	87
Utah	21	3	19	11	7	90
Vermont	18	4	14	4	10	86
Virginia	19	6	13	5	8	86
Washington	19	3	16	8	8	89
West Virginia	15	3	12	3	9	88
Wisconsin	20	4	16	4	12	84
Wyoming	18	1	17	6	11	88
Other jurisdictions						
District of Columbia	18	4	14	4	10	86
DDESS[3]	14	2	13	4	9	89
DoDDS[4]	14	1	13	7	6	93

— Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
[1] Students with disabilities.
[2] Limited-English-proficient students.
[3] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[4] Department of Defense Dependents Schools (Overseas).
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), 2000 and 2003 Mathematics Assessments.

Table A.15 Percentage of students with disabilities identified, excluded, and assessed, when accommodations were permitted, grade 4 public schools: By state, 2000 and 2003

Grade 4	2000 SD[1] students				
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
Nation (public)	13	3	9	5	4
Alabama	13	3	9	7	3
Alaska	–	–	–	–	–
Arizona	11	3	8	4	4
Arkansas	12	4	8	5	4
California	8	3	5	4	1
Colorado	–	–	–	–	–
Connecticut	11	3	8	4	4
Delaware	–	–	–	–	–
Florida	–	–	–	–	–
Georgia	9	3	7	3	4
Hawaii	13	6	7	5	2
Idaho	12	1	11	5	6
Illinois	11	2	9	3	6
Indiana	10	2	8	3	5
Iowa	13	1	11	4	7
Kansas	12	3	9	5	4
Kentucky	11	3	8	3	5
Louisiana	15	3	13	2	11
Maine	15	4	11	4	7
Maryland	11	2	9	4	5
Massachusetts	14	1	14	5	9
Michigan	10	3	7	3	4
Minnesota	12	2	10	5	5
Mississippi	6	3	3	1	2
Missouri	14	2	12	5	7
Montana	12	2	10	5	6
Nebraska	15	2	13	9	4
Nevada	10	3	7	3	4
New Hampshire	–	–	–	–	–
New Jersey	–	–	–	–	–
New Mexico	15	5	10	5	5
New York	11	2	8	#	8
North Carolina	14	4	10	3	7
North Dakota	11	1	9	5	4
Ohio	12	4	7	2	5
Oklahoma	16	4	12	7	4
Oregon	14	2	12	6	5
Pennsylvania	–	–	–	–	–
Rhode Island	16	2	14	6	8
South Carolina	17	5	12	7	5
South Dakota	–	–	–	–	–
Tennessee	10	2	8	7	1
Texas	15	6	9	6	3
Utah	9	3	6	4	2
Vermont	15	3	12	4	8
Virginia	13	3	10	4	6
Washington	–	–	–	–	–
West Virginia	13	3	11	3	8
Wisconsin	15	4	10	5	6
Wyoming	14	2	12	6	6
Other jurisdictions					
District of Columbia	13	3	10	5	5
DDESS [2]	8	3	5	1	4
DoDDS [3]	8	1	7	3	4

See notes at end of table. ▶

Table A.15 Percentage of students with disabilities identified, excluded, and assessed, when accommodations were permitted, grade 4 public schools: By state, 2000 and 2003—Continued

Grade 4	2003 SD[1] students				
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
Nation (public)	14	3	11	4	7
Alabama	11	2	10	7	2
Alaska	16	1	15	6	9
Arizona	12	3	9	5	3
Arkansas	14	1	12	5	8
California	10	2	8	6	2
Colorado	12	2	11	3	7
Connecticut	13	3	10	3	6
Delaware	16	6	10	3	7
Florida	18	2	16	4	12
Georgia	12	2	11	4	7
Hawaii	11	2	10	3	6
Idaho	12	1	11	4	7
Illinois	15	3	13	4	9
Indiana	14	2	12	6	6
Iowa	15	2	13	3	10
Kansas	14	1	12	2	10
Kentucky	13	3	11	4	7
Louisiana	21	3	18	3	16
Maine	18	3	14	4	10
Maryland	13	3	10	4	6
Massachusetts	18	2	16	2	14
Michigan	11	3	7	2	5
Minnesota	14	2	11	5	6
Mississippi	10	5	5	3	1
Missouri	15	3	12	3	9
Montana	14	2	12	5	7
Nebraska	16	2	14	6	8
Nevada	13	3	10	5	5
New Hampshire	18	3	16	4	11
New Jersey	14	2	13	1	12
New Mexico	17	2	15	7	9
New York	13	3	10	1	10
North Carolina	17	4	14	3	10
North Dakota	15	2	14	6	7
Ohio	12	4	8	2	7
Oklahoma	17	3	14	6	8
Oregon	17	4	14	7	7
Pennsylvania	13	2	11	2	9
Rhode Island	20	2	18	5	13
South Carolina	17	6	11	6	4
South Dakota	15	1	13	7	6
Tennessee	13	2	11	6	5
Texas	15	7	8	5	3
Utah	12	2	10	5	5
Vermont	17	4	13	4	10
Virginia	13	4	9	3	6
Washington	14	2	12	5	7
West Virginia	15	3	12	3	9
Wisconsin	15	3	12	2	10
Wyoming	15	1	14	3	11
Other jurisdictions					
District of Columbia	13	4	10	2	7
DDESS[2]	12	2	10	2	8
DoDDS[3]	8	1	8	3	5

— Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
[1] Students with disabilities.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
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), 2000 and 2003 Mathematics Assessments.

Table A.16 Percentage of limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grade 4 public schools: By state, 2000 and 2003

Grade 4	2000 LEP[1] students				
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
Nation (public)	7	1	6	5	1
Alabama	#	#	#	#	#
Alaska	–	–	–	–	–
Arizona	16	3	13	8	5
Arkansas	1	#	1	1	#
California	27	3	24	16	7
Colorado	–	–	–	–	–
Connecticut	3	1	2	1	1
Delaware	–	–	–	–	–
Florida	–	–	–	–	–
Georgia	2	1	1	1	#
Hawaii	7	3	4	4	#
Idaho	5	2	4	3	1
Illinois	7	2	5	2	3
Indiana	1	1	1	#	1
Iowa	2	1	1	1	#
Kansas	5	#	5	4	1
Kentucky	1	#	#	#	#
Louisiana	1	#	#	#	#
Maine	1	#	1	1	#
Maryland	2	1	1	1	#
Massachusetts	6	2	4	2	2
Michigan	1	1	#	#	#
Minnesota	5	1	4	2	3
Mississippi	#	#	#	#	#
Missouri	1	1	1	1	#
Montana	#	#	#	#	#
Nebraska	3	1	2	2	#
Nevada	11	4	7	6	1
New Hampshire	–	–	–	–	–
New Jersey	–	–	–	–	–
New Mexico	20	2	18	12	6
New York	6	3	3	1	2
North Carolina	3	1	2	1	1
North Dakota	1	#	1	1	#
Ohio	#	#	#	#	#
Oklahoma	5	1	5	3	1
Oregon	6	1	4	2	2
Pennsylvania	–	–	–	–	–
Rhode Island	7	1	6	4	2
South Carolina	1	1	#	#	#
South Dakota	–	–	–	–	–
Tennessee	1	1	1	1	#
Texas	13	2	11	8	3
Utah	6	1	5	3	2
Vermont	#	#	#	#	#
Virginia	4	2	2	1	1
Washington	–	–	–	–	–
West Virginia	#	#	#	#	#
Wisconsin	5	1	4	2	3
Wyoming	2	#	2	2	#
Other jurisdictions					
District of Columbia	6	2	4	2	2
DDESS[2]	3	1	2	2	#
DoDDS[3]	3	1	2	2	1

See notes at end of table. ▶

Table A.16 Percentage of limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grade 4 public schools: By state, 2000 and 2003—Continued

Grade 4	2003 LEP[1] students				
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
Nation (public)	11	1	9	7	2
Alabama	1	#	1	1	#
Alaska	18	#	18	15	3
Arizona	19	2	17	15	2
Arkansas	4	1	3	2	#
California	33	2	30	27	3
Colorado	9	1	9	4	4
Connecticut	4	1	3	1	2
Delaware	3	1	2	1	1
Florida	11	2	9	5	4
Georgia	4	1	4	3	1
Hawaii	7	2	5	3	2
Idaho	7	1	6	5	2
Illinois	9	2	7	4	3
Indiana	3	#	2	2	1
Iowa	4	1	3	2	1
Kansas	3	#	3	1	1
Kentucky	2	1	1	1	#
Louisiana	2	#	2	#	1
Maine	1	1	1	1	#
Maryland	4	2	2	2	1
Massachusetts	5	1	4	2	2
Michigan	5	1	4	3	1
Minnesota	6	1	5	3	2
Mississippi	1	1	#	#	#
Missouri	2	1	2	#	1
Montana	4	#	4	3	1
Nebraska	5	1	4	3	1
Nevada	17	2	14	11	4
New Hampshire	3	1	2	1	1
New Jersey	4	1	3	1	3
New Mexico	29	2	27	18	9
New York	8	3	4	2	3
North Carolina	5	1	4	2	2
North Dakota	4	#	4	3	1
Ohio	2	1	1	#	1
Oklahoma	7	1	6	5	1
Oregon	12	1	11	6	5
Pennsylvania	3	1	2	1	1
Rhode Island	10	2	7	4	3
South Carolina	2	#	2	1	#
South Dakota	4	#	4	2	2
Tennessee	1	#	1	1	#
Texas	16	2	14	10	4
Utah	12	1	10	8	3
Vermont	2	#	2	1	1
Virginia	8	2	6	2	3
Washington	7	1	6	4	2
West Virginia	#	#	#	#	#
Wisconsin	7	1	6	2	3
Wyoming	4	#	4	3	1
Other jurisdictions					
District of Columbia	7	1	5	2	3
DDESS[2]	4	1	3	2	1
DoDDS[3]	7	1	6	5	2

— Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
[1] Limited-English-proficient students.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
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), 2000 and 2003 Mathematics Assessments.

Table A.17 Percentage of students with disabilities and/or limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grade 8 public schools: By state, 2000 and 2003

Grade 8	2000 SD[1] and/or LEP[2] students					
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations	All students assessed without accommodations
Nation (public)	14	4	10	7	3	93
Alabama	14	6	8	7	1	93
Alaska	–	–	–	–	–	–
Arizona	19	3	16	11	4	92
Arkansas	14	2	11	8	4	94
California	27	4	22	17	5	91
Colorado	–	–	–	–	–	–
Connecticut	16	6	10	6	4	90
Delaware	–	–	–	–	–	–
Florida	–	–	–	–	–	–
Georgia	11	5	6	3	3	93
Hawaii	20	5	15	13	2	93
Idaho	14	2	12	8	4	94
Illinois	15	5	11	7	3	92
Indiana	12	3	9	6	3	94
Iowa	–	–	–	–	–	–
Kansas	14	3	10	8	3	94
Kentucky	14	4	9	5	4	91
Louisiana	13	3	10	4	6	91
Maine	15	3	12	7	5	93
Maryland	13	3	11	7	4	94
Massachusetts	19	3	17	8	9	88
Michigan	11	4	7	5	2	94
Minnesota	15	2	13	11	3	96
Mississippi	11	5	5	4	1	93
Missouri	15	3	12	5	7	90
Montana	12	2	9	6	3	94
Nebraska	13	4	10	7	2	94
Nevada	16	4	12	8	5	92
New Hampshire	–	–	–	–	–	–
New Jersey	–	–	–	–	–	–
New Mexico	25	7	18	14	4	89
New York	16	4	12	5	7	89
North Carolina	16	5	11	4	7	88
North Dakota	11	2	9	8	2	96
Ohio	11	4	7	4	3	93
Oklahoma	15	4	11	8	3	93
Oregon	17	3	14	8	6	91
Pennsylvania	–	–	–	–	–	–
Rhode Island	20	3	16	12	4	92
South Carolina	13	4	9	7	2	94
South Dakota	–	–	–	–	–	–
Tennessee	13	2	10	9	1	97
Texas	20	8	12	10	2	90
Utah	14	3	11	8	3	95
Vermont	17	3	14	10	4	93
Virginia	15	6	9	5	4	90
Washington	–	–	–	–	–	–
West Virginia	15	3	12	4	8	90
Wisconsin	17	4	13	6	6	90
Wyoming	13	1	12	9	3	96
Other jurisdictions						
District of Columbia	15	6	9	3	6	88
DDESS[3]	13	3	10	7	3	94
DoDDS[4]	8	1	7	5	1	98

See notes at end of table. ▶

Table A.17 Percentage of students with disabilities and/or limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grade 8 public schools: By state, 2000 and 2003 —Continued

Grade 8	2003 SD[1] and/or LEP[2] students					
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations	All students assessed without accommodations
Nation (public)	19	4	15	8	7	89
Alabama	14	2	11	9	3	95
Alaska	23	1	22	14	8	91
Arizona	24	4	20	15	6	91
Arkansas	17	2	15	7	8	90
California	27	3	25	22	3	95
Colorado	15	2	14	5	8	90
Connecticut	17	4	13	5	8	88
Delaware	18	9	9	3	6	85
Florida	19	3	16	5	11	86
Georgia	13	2	11	5	6	92
Hawaii	20	4	17	8	9	88
Idaho	15	1	14	9	5	95
Illinois	18	4	14	4	9	86
Indiana	15	2	13	6	7	91
Iowa	17	2	15	6	9	88
Kansas	16	3	13	4	9	88
Kentucky	14	4	9	4	5	91
Louisiana	16	5	12	2	10	86
Maine	17	4	13	5	8	89
Maryland	16	4	12	7	5	91
Massachusetts	18	3	15	4	11	86
Michigan	15	5	10	4	6	89
Minnesota	16	2	14	8	6	92
Mississippi	9	5	4	3	2	93
Missouri	16	4	12	3	9	87
Montana	14	2	12	5	6	92
Nebraska	16	4	13	7	5	91
Nevada	18	2	16	9	6	91
New Hampshire	20	3	16	6	10	87
New Jersey	18	2	16	2	14	84
New Mexico	32	2	30	16	14	83
New York	20	5	15	3	12	83
North Carolina	18	4	15	3	12	85
North Dakota	16	1	14	7	7	92
Ohio	13	5	8	3	5	90
Oklahoma	19	2	17	10	7	91
Oregon	20	3	16	11	6	91
Pennsylvania	15	2	14	3	11	88
Rhode Island	23	4	20	7	13	84
South Carolina	15	7	8	5	4	89
South Dakota	13	2	11	6	6	93
Tennessee	16	3	13	12	1	96
Texas	20	7	13	11	2	91
Utah	16	3	14	9	5	92
Vermont	18	3	15	7	7	90
Virginia	17	7	10	4	6	87
Washington	16	2	14	10	5	93
West Virginia	16	3	14	5	9	89
Wisconsin	17	3	14	3	11	86
Wyoming	17	1	15	6	10	89
Other jurisdictions						
District of Columbia	20	6	14	5	9	85
DDESS[3]	18	2	16	4	12	86
DoDDS[4]	9	1	8	3	5	94

— Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
[1] Students with disabilities.
[2] Limited-English-proficient students.
[3] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[4] Department of Defense Dependents Schools (Overseas).
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), 2000 and 2003 Mathematics Assessments.

Table A.18 **Percentage of students with disabilities identified, excluded, and assessed, when accommodations were permitted, grade 8 public schools: By state, 2000 and 2003**

Grade 8	2000 SD[1] students				
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
Nation (public)	11	3	7	5	2
Alabama	14	6	7	7	1
Alaska	–	–	–	–	–
Arizona	11	2	9	6	2
Arkansas	13	2	11	7	4
California	10	3	7	5	3
Colorado	–	–	–	–	–
Connecticut	14	5	9	6	3
Delaware	–	–	–	–	–
Florida	–	–	–	–	–
Georgia	9	4	6	3	3
Hawaii	15	4	11	10	2
Idaho	11	2	9	6	3
Illinois	11	3	8	5	3
Indiana	11	3	8	5	3
Iowa	–	–	–	–	–
Kansas	12	3	9	6	3
Kentucky	12	4	8	4	4
Louisiana	12	2	10	4	6
Maine	14	3	12	7	4
Maryland	12	2	10	7	4
Massachusetts	16	2	15	7	8
Michigan	10	4	7	5	2
Minnesota	12	1	11	9	2
Mississippi	10	5	5	4	1
Missouri	14	3	12	5	7
Montana	12	2	9	6	3
Nebraska	11	3	8	6	2
Nevada	12	3	9	5	4
New Hampshire	–	–	–	–	–
New Jersey	–	–	–	–	–
New Mexico	17	7	10	8	3
New York	12	3	9	2	6
North Carolina	14	4	10	3	7
North Dakota	11	2	9	7	2
Ohio	11	4	7	4	3
Oklahoma	13	4	9	7	3
Oregon	13	2	11	6	5
Pennsylvania	–	–	–	–	–
Rhode Island	16	3	14	10	4
South Carolina	13	4	9	7	2
South Dakota	–	–	–	–	–
Tennessee	11	2	9	9	1
Texas	14	7	7	5	1
Utah	10	2	8	6	2
Vermont	16	3	13	9	4
Virginia	13	5	7	4	4
Washington	–	–	–	–	–
West Virginia	14	3	12	4	8
Wisconsin	15	4	12	6	6
Wyoming	12	1	11	8	3
Other jurisdictions					
District of Columbia	11	5	7	2	4
DDESS [2]	8	2	6	3	3
DoDDS [3]	6	1	5	4	1

See notes at end of table. ▶

Table A.18 Percentage of students with disabilities identified, excluded, and assessed, when accommodations were permitted, grade 8 public schools: By state, 2000 and 2003—Continued

Grade 8	2003 SD[1] students				
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
Nation (public)	14	3	11	5	6
Alabama	13	2	11	8	3
Alaska	15	1	14	6	8
Arizona	11	3	9	4	4
Arkansas	15	1	13	6	7
California	11	1	9	7	2
Colorado	12	1	10	4	7
Connecticut	14	3	11	4	7
Delaware	16	8	8	3	5
Florida	14	2	12	3	9
Georgia	11	2	10	4	6
Hawaii	16	3	13	5	8
Idaho	10	1	10	6	4
Illinois	15	4	12	3	8
Indiana	14	2	11	5	6
Iowa	16	2	14	5	9
Kansas	13	2	11	3	8
Kentucky	13	4	9	4	5
Louisiana	16	4	11	2	9
Maine	16	4	12	5	7
Maryland	14	3	10	6	5
Massachusetts	16	2	14	4	10
Michigan	13	4	8	3	5
Minnesota	13	2	11	6	5
Mississippi	9	5	4	2	2
Missouri	15	4	12	3	9
Montana	12	2	10	5	6
Nebraska	14	3	11	6	5
Nevada	12	2	10	5	5
New Hampshire	19	3	15	6	9
New Jersey	15	1	14	2	12
New Mexico	20	2	18	8	10
New York	16	4	12	2	10
North Carolina	16	3	12	2	10
North Dakota	14	1	13	6	7
Ohio	13	5	8	3	5
Oklahoma	16	2	14	8	6
Oregon	14	3	12	7	4
Pennsylvania	14	1	13	2	10
Rhode Island	20	3	17	5	12
South Carolina	15	7	8	4	4
South Dakota	11	2	9	4	5
Tennessee	14	3	12	11	1
Texas	15	6	9	8	2
Utah	11	2	9	5	4
Vermont	17	3	15	7	7
Virginia	15	6	9	3	6
Washington	13	2	11	7	4
West Virginia	16	3	13	5	9
Wisconsin	15	3	13	2	10
Wyoming	15	1	14	4	9
Other jurisdictions					
District of Columbia	16	5	11	3	8
DDESS [2]	12	1	11	1	10
DoDDS [3]	6	1	6	1	4

— Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
[1] Students with disabilities.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
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), 2000 and 2003 Mathematics Assessments.

Table A.19 Percentage of limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grade 8 public schools: By state, 2000 and 2003

Grade 8	2000 LEP[1] students				
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
Nation (public)	4	1	3	3	1
Alabama	1	#	#	#	#
Alaska	–	–	–	–	–
Arizona	10	1	8	6	2
Arkansas	1	#	#	#	#
California	19	2	17	13	4
Colorado	–	–	–	–	–
Connecticut	2	2	1	#	1
Delaware	–	–	–	–	–
Florida	–	–	–	–	–
Georgia	2	1	#	#	#
Hawaii	6	1	4	4	#
Idaho	4	1	4	3	1
Illinois	5	2	3	3	#
Indiana	1	#	1	1	#
Iowa	–	–	–	–	–
Kansas	1	#	1	1	#
Kentucky	1	1	1	1	#
Louisiana	1	#	1	#	#
Maine	#	#	#	#	#
Maryland	2	1	1	1	#
Massachusetts	4	2	2	1	1
Michigan	#	#	#	#	#
Minnesota	3	1	3	2	#
Mississippi	#	#	#	#	#
Missouri	#	#	#	#	#
Montana	#	#	#	#	#
Nebraska	2	1	1	1	#
Nevada	5	1	4	3	#
New Hampshire	–	–	–	–	–
New Jersey	–	–	–	–	–
New Mexico	11	2	9	7	2
New York	6	2	4	3	1
North Carolina	2	1	1	1	#
North Dakota	1	#	1	1	#
Ohio	2	1	1	#	#
Oklahoma	2	#	1	1	#
Oregon	5	1	4	3	1
Pennsylvania	–	–	–	–	–
Rhode Island	4	1	3	2	1
South Carolina	1	#	#	#	#
South Dakota	–	–	–	–	–
Tennessee	1	1	1	1	#
Texas	8	2	6	5	1
Utah	4	#	3	3	1
Vermont	1	1	1	#	#
Virginia	3	1	2	1	1
Washington	–	–	–	–	–
West Virginia	#	#	#	#	#
Wisconsin	2	1	1	1	1
Wyoming	2	#	2	2	#
Other jurisdictions					
District of Columbia	4	2	2	1	2
DDESS [2]	6	2	4	4	#
DoDDS [3]	2	#	1	1	#

See notes at end of table. ▶

Table A.19 Percentage of limited-English-proficient students identified, excluded, and assessed, when accommodations were permitted, grade 8 public schools: By state, 2000 and 2003—Continued

Grade 8	2003 LEP[1] students				
	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
Nation (public)	6	1	5	4	1
Alabama	1	#	1	1	#
Alaska	11	#	11	10	1
Arizona	16	2	14	12	2
Arkansas	3	1	2	1	1
California	20	2	19	17	1
Colorado	5	1	4	2	2
Connecticut	4	1	3	1	1
Delaware	2	1	1	1	1
Florida	7	1	5	3	3
Georgia	2	1	2	1	1
Hawaii	6	1	5	3	2
Idaho	6	#	5	4	1
Illinois	4	1	3	1	2
Indiana	3	#	2	1	1
Iowa	2	#	2	1	1
Kansas	4	1	3	1	2
Kentucky	1	1	1	1	#
Louisiana	1	1	1	#	#
Maine	1	#	1	#	#
Maryland	3	1	2	2	#
Massachusetts	3	1	2	1	1
Michigan	3	1	2	1	1
Minnesota	4	1	3	2	1
Mississippi	1	#	#	#	#
Missouri	1	#	1	#	1
Montana	3	#	2	1	1
Nebraska	3	1	2	1	#
Nevada	7	1	6	5	2
New Hampshire	1	#	1	#	1
New Jersey	3	1	2	#	2
New Mexico	20	1	19	11	7
New York	6	2	4	1	3
North Carolina	4	1	3	1	2
North Dakota	2	#	2	1	1
Ohio	1	#	1	#	#
Oklahoma	5	1	5	3	1
Oregon	7	1	6	4	2
Pennsylvania	2	#	2	1	1
Rhode Island	5	2	4	2	2
South Carolina	1	#	1	1	#
South Dakota	3	#	3	2	1
Tennessee	3	1	2	2	#
Texas	8	2	6	5	1
Utah	7	1	6	5	2
Vermont	1	#	1	1	#
Virginia	4	2	2	1	1
Washington	5	1	4	3	1
West Virginia	1	#	#	#	#
Wisconsin	3	1	2	1	1
Wyoming	3	#	3	2	1
Other jurisdictions					
District of Columbia	5	1	4	2	2
DDESS[2]	7	1	5	3	3
DoDDS[3]	4	1	3	2	1

— Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
[1] Limited-English-proficient students.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
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), 2000 and 2003 Mathematics Assessments.

Table A.20 Percentage of students with disabilities and limited-English-proficient students identified, excluded, and assessed, grade 4 public schools: By urban district, 2003

Grade 4	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
SD [1] and/or LEP [2] students					
Nation (public)	22	4	18	10	8
Large central city (public)	30	5	25	16	9
Atlanta	9	1	8	4	4
Boston	33	5	28	11	17
Charlotte	21	4	17	5	12
Chicago	31	8	23	16	7
Cleveland	15	7	8	3	5
District of Columbia	18	4	14	4	10
Houston	45	8	37	19	18
Los Angeles	60	3	56	48	8
New York City	22	6	16	4	12
San Diego	41	2	38	34	4
SD students only					
Nation (public)	14	3	11	4	7
Large central city (public)	13	3	9	4	6
Atlanta	8	1	7	3	4
Boston	20	3	16	4	12
Charlotte	17	3	14	3	10
Chicago	15	5	10	4	6
Cleveland	12	5	6	2	5
District of Columbia	13	4	10	2	7
Houston	18	7	11	8	3
Los Angeles	11	2	9	5	4
New York City	12	1	12	1	10
San Diego	11	1	10	7	3
LEP students only					
Nation (public)	11	1	9	7	2
Large central city (public)	21	3	18	14	4
Atlanta	2	#	2	1	#
Boston	18	3	15	8	7
Charlotte	8	2	6	2	4
Chicago	20	5	15	13	2
Cleveland	4	1	2	1	1
District of Columbia	7	1	5	2	3
Houston	35	4	31	14	17
Los Angeles	56	2	53	47	6
New York City	13	6	7	3	4
San Diego	34	2	32	30	2

The estimate rounds to zero.
[1] Students with disabilities.
[2] Limited-English-proficient students.
NOTE: The combined SD/LEP portion of the table is not a sum of the separate SD and LEP portions because some students were identified as both SD and LEP.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Table A.21 Percentage of students with disabilities and limited-English-proficient students identified, excluded, and assessed, grade 8 public schools: By urban district, 2003

Grade 8	Identified	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
SD [1] and/or LEP [2] students					
Nation (public)	19	4	15	8	7
Large central city (public)	24	5	19	12	7
Atlanta	11	2	9	4	5
Boston	31	7	24	9	15
Charlotte	18	3	14	5	9
Chicago	22	7	15	8	7
Cleveland	21	9	12	2	9
District of Columbia	20	6	14	5	9
Houston	26	8	18	16	3
Los Angeles	37	2	35	29	6
New York City	24	5	19	6	14
San Diego	29	4	26	22	4
SD students only					
Nation (public)	14	3	11	5	6
Large central city (public)	14	4	11	5	5
Atlanta	10	1	9	4	5
Boston	24	4	20	7	13
Charlotte	14	3	12	4	8
Chicago	17	5	12	6	7
Cleveland	17	9	8	1	6
District of Columbia	16	5	11	3	8
Houston	16	7	10	9	#
Los Angeles	12	2	10	5	5
New York City	15	2	13	3	10
San Diego	11	1	10	7	3
LEP students only					
Nation (public)	6	1	5	4	1
Large central city (public)	13	2	11	8	3
Atlanta	2	1	1	1	#
Boston	13	5	8	4	4
Charlotte	7	1	6	3	3
Chicago	8	3	5	3	2
Cleveland	5	1	4	1	3
District of Columbia	5	1	4	2	2
Houston	16	5	11	9	2
Los Angeles	33	2	31	27	4
New York City	13	4	9	3	6
San Diego	23	3	20	18	2

The estimate rounds to zero.
[1] Students with disabilities.
[2] Limited-English-proficient students.
NOTE: The combined SD/LEP portion of the table is not a sum of the separate SD and LEP portions because some students were identified as both SD and LEP.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Investigating the Potential Effects of Exclusion Rates on Assessment Results

Variation in the rates of exclusion of students with disabilities and limited-English-proficient students introduces validity concerns for comparisons over time or between jurisdictions. The essential problem is the differential representativeness of samples, which could impact the comparability of cross-state comparisons within a given year and state trends across years. Since students with disabilities or limited-English-proficient students tend to score below average on assessments, excluding students with special needs may increase a jurisdiction's scores. Conversely, including more of these students might depress score gains. In 2003, exclusion rates varied among jurisdictions. In addition, cases of both increases and decreases in exclusion rates occurred between 2000 and 2003, making comparisons over time within jurisdictions complex to interpret. Tables A.14 to A.17 on the preceding pages display the rates of exclusion in 2000 and 2003 in each jurisdiction for grade 4 and grade 8, respectively.

As shown in table A.14, of the 53 jurisdictions that assessed mathematics at grade 4 in 2003, four jurisdictions had exclusion rates of 6 percent or greater, while the majority had exclusion rates of less than 6 percent. Table A.17 displays the corresponding data for grade 8. Of the 53 jurisdictions that assessed mathematics at grade 8 in 2003, five jurisdictions had exclusion rates of 6 percent or above, and one of these had an exclusion rate of 9 percent.

One factor that contributed to the variability in exclusion rates across states is that the percentage of students who are *identified* as having disabilities or limited English proficiency varies across jurisdictions. Reasons for the variation include 1) lack of standardized criteria for defining students as having specific disabilities or as being limited in their English proficiency; 2) changes or differences in policy and practices regarding implementation of the Individuals with Disabilities Education Act (IDEA); and 3) differences in the percentage of students classified as limited English proficient and, to a lesser extent, as students with disabilities.

With regard to cross-state comparisons, the correlations between rates of exclusion and average 2003 mathematics scores were not found to be significant at either grade 4 (-.003) or grade 8 (-.05). In other words, higher exclusion rates were not associated with higher average scores in 2003. With regard to state trends, the correlations between changes in the rate of exclusion of students with special needs and changes in average mathematics scale scores from 2000 to 2003 were not found to be significant at grade 4 (-.01) and were detected to be significant at grade 8 (-.31).

Because the representativeness of samples is ultimately a validity issue, NCES has commissioned studies of the impact of assessment accommodations on overall scores. NCES has also investigated scenarios for estimating what the average scores might have been had the excluded students been assessed. Two alternative

statistical scenarios have been proposed, based on different hypotheses about how excluded students might have performed. Combined with the actual performance of students who were assessed, these scenarios produce results for the full population (that is, including estimates for excluded students) in each jurisdiction and each assessment year. These techniques provide some indication as to which statements about trend gains or losses *might* be changed if exclusion rates were zero in both assessment years and if the hypotheses about the performance of missing students are correct.

One scenario was developed by Donald McLaughlin of American Institutes for Research, and predicts what the performance of excluded SD/LEP students might have been had these students been tested. The basic assumption underlying this approach is that these students would have performed as well as included SD/LEP students with similar disabilities, level of English proficiency, and background characteristics.[9]

The other scenario was developed by Al Beaton of Boston College and similarly makes an assumption about what the performance of excluded SD/LEP students might have been had they been tested. The idea of Beaton's scenario is to calculate median rather than average scores. A "median" is the score reached or exceeded by fifty percent of the student population. This statistic is not influenced by extreme values. Beaton's assumption is that all SD/LEP students would score below *Basic* or below the median of the group being analyzed. This assumption lowers the median score for every group.

The methods used to construct the scenarios are still under development. NCES is continuing research into different procedures for reducing the percentages of students excluded from NAEP. In addition, NCES will continue to evaluate the potential impact of changes in exclusion rates on score gains.

Types of Accommodations Permitted

Table A.22 displays the percentages of SD/LEP students assessed with the variety of available accommodations. It should be noted that students assessed with accommodations typically received some combination of accommodations. The percentages presented in the table reflect only the primary accommodation provided. For example, students assessed in small groups (as compared with standard NAEP sessions of about 30 students) usually received extended time. In one-on-one administrations, students often received assistance in recording answers (e.g., use of a scribe or computer) and were afforded extra time. Extended time was considered the primary accommodation only when it was the sole accommodation provided.

[9] Because students with very severe levels of disability and students with little or no proficiency in English are not assessed in NAEP, ability estimates for students with those characteristics may be overestimated.

Table A.22 Students with disabilities and/or limited-English-proficient students assessed with accommodations, by type of primary accommodation, grades 4 and 8 public and nonpublic schools: 1996–2003

	Weighted percentage of all assessed students					
	Grade 4			Grade 8		
	1996	2000	2003	1996	2000	2003
SD[1] and/or LEP[2] students						
Bilingual book	1.39	0.78	0.77	0.41	0.45	0.26
Large-print book	#	0.03	0.05	0.04	#	0.03
Extended time	0.82	0.62	0.94	0.66	0.53	1.53
Read aloud	0.37	0.35	0.67	0.14	0.24	0.29
Small group	1.62	2.43	5.15	1.01	1.62	4.17
One-on-one	0.87	0.43	0.32	0.36	0.10	0.15
Scribe/computer	†	0.04	0.17	†	#	0.07
Other	0.02	#	0.08	0.08	0.08	0.07
SD students						
Bilingual book	0.03	#	0.06	#	#	0.02
Large-print book	#	0.03	0.05	0.04	#	0.03
Extended time	0.82	0.58	0.73	0.66	0.44	1.39
Read aloud	0.37	0.33	0.50	0.14	0.23	0.27
Small group	1.62	2.26	4.69	1.01	1.57	3.93
One-on-one	0.87	0.41	0.32	0.36	0.09	0.14
Scribe/computer	†	0.04	0.17	†	#	0.06
Other	0.02	#	0.07	0.08	0.07	0.06
LEP students						
Bilingual book	1.39	0.78	0.77	0.41	0.45	0.26
Large-print book	#	#	#	#	#	#
Extended time	0.10	0.06	0.30	0.01	0.10	0.27
Read aloud	0.03	0.02	0.22	0.06	0.03	0.05
Small group	0.15	0.31	0.91	#	0.09	0.47
One-on-one	0.09	0.02	0.04	0.01	0.01	0.01
Scribe/computer	†	#	0.01	†	#	#
Other	#	#	0.01	#	0.01	0.01

† Not applicable. There was no separate scribe/computer accommodation type category in 1996.
# The estimate rounds to less than 0.01.
[1] Students with disabilities.
[2] Limited-English-proficient students.
NOTE: The combined SD/LEP portion of the table is not a sum of the separate SD and LEP portions because some students were identified as both SD and LEP. Such students would be counted separately in the SD or LEP portions but counted only once in the SD and/or LEP portion.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

Data Collection and Scoring

The NAEP 2003 mathematics assessment was conducted from January to March 2003 by contractors to the U.S. Department of Education. Trained field staff from Westat conducted the data collection. Materials from the 2003 assessment were shipped to Pearson, where trained staff evaluated the responses to the constructed-response questions using scoring rubrics or guides prepared by Educational Testing Service (ETS). Each constructed-response question had a unique scoring guide that defined the criteria used to evaluate students' responses. The extended constructed-response questions were evaluated with four- and five-level guides, and many of the short constructed-response questions were rated according to three-level guides that permitted partial credit. Other short constructed-response questions were scored as either correct or incorrect.

For the 2003 mathematics assessment, 4,719,464 constructed responses were scored. This number includes rescoring to monitor interrater reliability. The

within-year average percentage of exact agreement for the 2003 national reliability sample was 95 percent at both the fourth and eighth grades.

Data Analysis and IRT Scaling

After the professional scoring, all information was transcribed into the NAEP database at ETS. Each processing activity was conducted with rigorous quality control. After the assessment information was compiled in the database, the data were weighted according to the population structure. The weighting for the national and state samples reflected the probability of selection for each student as a result of the sampling design, adjusted for nonresponse.[10]

Analyses were then conducted to determine the percentages of students who gave various responses to each cognitive and background question. In determining these percentages for the cognitive questions, a distinction was made between missing responses at the end of a block (i.e., missing responses after the last question the student answered) and missing responses before the last observed response. Missing responses before the last observed response were considered intentional omissions. In analysis, omitted responses to multiple-choice items were scored as fractionally correct.[11] Omitted responses for constructed-response items were placed into the lowest score category. Missing responses after the last observed response were considered "not reached" and treated as if the questions had not been presented to the student. In calculating response percentages for each question, only students classified as having been presented the question were included in the denominator of the statistic.

It is standard NAEP practice to treat all nonrespondents to the last question in a block as if they had not reached the question. For multiple-choice and short constructed-response questions, this practice produces a reasonable pattern of results in that the proportion reaching the last question is not dramatically smaller than the proportion reaching the next-to-last question. However, for mathematics blocks that ended with extended constructed-response questions, there may be extremely large drops in the proportion of students attempting some of the final questions. Therefore, for blocks ending with an extended constructed-response question, students who answered the next-to-last question, but did not respond to the extended constructed-response question, were classified as having intentionally omitted the last question.

Item Response Theory (IRT) was used to estimate average mathematics scale scores for the nation and for various subgroups of interest within the nation. IRT models the probability of answering a question in a certain way as a mathematical function of proficiency or skill. The main purpose of IRT analysis is to provide a common scale on which performance can be compared among groups, such as those defined by characteristics, including gender and race/ethnicity, even when students receive different blocks of items. One desirable feature of IRT is that it locates items and students on this

[10] Weighting procedures are described more fully in the "Weighting and Variance Estimation" section found later in this document. Additional information about the use of weighting procedures will be included in the technical documentation section of the NAEP web site (http://nces.ed.gov/nationsreportcard).

[11] Lord, F. M. (1980). *Applications of Item Response Theory to Practical Testing Problems,* p. 229. Hillsdale, NJ: Lawrence Erlbaum Associates.

common scale. In contrast to classical test theory, IRT does not rely solely on the total number of correct item responses, but uses the particular patterns of student responses to items in determining the student location on the scale. As a result, adding items that function at a particular point on the scale to the assessment does not change the location of the students on the scale, even though students may respond correctly to more items. It does increase the relative precision with which students are measured, particularly those students whose scale locations are close to the additional items.

The results for 1990, 1992, 1996, 2000, and 2003 are presented on the NAEP mathematics composite scale. For the NAEP mathematics assessment, a scale ranging from 0 to 500 was used to report performance in each of the five mathematics content areas at each grade: number sense, properties, and operations; measurement; geometry and spatial sense; data analysis, statistics, and probability; and algebra and functions. The scales summarize student performance across all three types of questions in the assessment (multiple-choice, short constructed-response, and extended constructed-response).

In producing these content-area scales, three distinct IRT models were used. Multiple-choice questions were scaled using the three-parameter logistic (3PL) model; short constructed-response questions rated as acceptable or unacceptable were scaled using the two-parameter logistic (2PL) model; and short constructed-response questions rated according to a three-level guide, as well as extended constructed-response questions rated on a four- or five-level guide, were scaled using a generalized partial-credit (GPC) model.[12] Developed by ETS and first used in 1992, the GPC model permits the scaling of questions scored according to multipoint rating schemes. The model takes full advantage of the information available from each of the student response categories used for these more complex constructed-response questions.[13]

The scales are composed of three types of questions: multiple-choice, short constructed-response (scored either dichotomously or allowing for partial credit), and extended constructed-response (scored according to a partial-credit model). Unfortunately, the question of how much information different types of questions contribute to a scale has no simple answer. The information provided by a given question is determined by the IRT model used to scale the question. It is a function of the item parameters and varies by level of mathematics proficiency.[14] Thus, the answer to the query "How much information do the different types of questions provide?" will differ for each level of mathematics performance. When considering the composite mathematics scale, the answer is even more complicated. The mathematics data are scaled separately by the content areas. The composite scale is a weighted combination of these subscales. IRT information functions are only strictly

[12] Muraki, E. (1992). A Generalized Partial Credit Model: Application of an EM Algorithm. *Applied Psychological Measurement, 16*(2), 159–176.

[13] More detailed information regarding the IRT analyses used in NAEP will be included in the technical documentation section of the NAEP web site (http://nces.ed.gov/nationsreportcard).

[14] Donoghue, J. R. (1994). An Empirical Examination of the IRT Information of Polytomously Scored Mathematics Items Under the Generalized Partial Credit Model. *Journal of Educational Measurement, 31*(4), 295–311.

comparable when they are derived from the same calibration. Because the composite scale is based on five separate calibrations, there is no direct way to compare the information provided by the questions on the composite scale.

Because the NAEP design gives each student a small proportion of the pool of assessment items, the assessment cannot provide reliable information about individual performance. Traditional test scores for individual students, even those based on IRT, would result in misleading estimates of population characteristics, such as subgroup means and percentages of students at or above a certain scale-score level. However, it is NAEP's goal to estimate these population characteristics. NAEP's objectives can be achieved with methodologies that produce estimates of the population-level parameters directly, without the intermediary computation of estimates of individuals. This is accomplished using marginal estimation scaling model techniques for latent variables.[15] Under the assumptions of the scaling models, these population estimates will be consistent in the sense that the estimates approach the model-based population values as the sample size increases. This would not be the case for population estimates obtained by aggregating optimal estimates of individual performance.[16]

Item-Mapping Procedures

The mathematics performance of fourth- and eighth-graders can be illustrated by "item maps," which position question or "item" descriptions along the NAEP mathematics scale at each grade. Each question shown is placed at the point on the scale where students are more likely to give successful responses to it. The descriptions used on these item maps focus on the mathematics knowledge or skill needed to respond successfully to the question. For multiple-choice questions, the description indicates the knowledge or skill demonstrated by selection of the correct option; for constructed-response questions, the description takes into account the knowledge or skill specified by the different levels of scoring criteria for that question.

To map questions to particular points on the NAEP mathematics scale, a response-probability convention was adopted to divide those who had a higher probability of success from those who had a lower probability. Choosing a response-probability convention has an impact on the mapping of the test questions onto the mathematics scale. A lower boundary convention maps the mathematics questions at lower points along the scale, and a higher boundary convention maps the same questions at higher points on the scale. The underlying distribution of mathematics skills in the population does not change, but the choice of a response-probability convention does have an impact on the proportion of the student population that is reported as "able to do" the questions on the mathematics scales.

There is no obvious choice of a point along the probability scale that is clearly superior to any other point. If the convention were set with a boundary at 50 percent, those above the boundary would be more likely to get a question right than get it wrong, while those below the

[15] Mislevy, R. J., and Sheehan, K. M. (1987). Marginal Estimation Procedures. In A. E. Beaton (Ed.) *Implementing the New Design: The NAEP 1983–1984 Technical Report* (Technical Rep. No. 15-TR-20), pp. 293–260. Princeton, NJ: Educational Testing Service.

[16] For theoretical and empirical justification of the procedures employed, see Mislevy, R. J. (1988). Randomization-Based Inferences About Latent Variables From Complex Samples. *Psychometrika, 56*(2), 177–196.

boundary would be more likely to get the question wrong than right. Although this convention has some intuitive appeal, it was rejected on the grounds that having a 50:50 chance of getting the question right shows an insufficient degree of mastery. If the convention were set with a boundary at 80 percent, students above the criterion would have a high probability of responding successfully to a question. However, many students below this criterion show some level of mathematics ability that would be ignored by such a stringent criterion. In particular, those in the range between 50 and 80 percent correct would be more likely to get the question right, yet would not be in the group described as "able to do" the question.

In a compromise between the 50 percent and the 80 percent conventions, NAEP has adopted two related response-probability conventions for all its subjects: 65 percent for constructed-response questions (where guessing is not a factor), and 74 percent for multiple-choice questions with four response options (to adjust for the possibility of answering correctly by guessing) or 72 percent for five response options (to correct for the possibility of answering correctly by guessing, with slightly less correction applied when students were presented with five rather than four options). These response-probability conventions were established, in part, based on an intuitive judgment that they would provide the best picture of students' mathematics skills.

Some additional support for the dual conventions adopted by NAEP was provided by Huynh.[17] He examined the IRT information provided by items, according to the IRT model used in scaling NAEP questions. Following Bock, Huynh decomposed the item information into that provided by a correct response $[P(\Theta)\ I(\Theta)]$ and that provided by an incorrect response $[(1- P(\Theta))\ I(\Theta)]$.[18] Huynh showed that the item information provided by a correct response to a constructed-response item is maximized at the point along the mathematics scale at which the probability of a correct response is 0.65 (for multiple-choice items, the information provided by a correct response is maximized at the point at which the probability of getting the item correct is 0.72 or 0.74). It should be noted, however, that maximizing the item information $I(\Theta)$, rather than the information provided by a correct response $[P(\Theta)\ I(\Theta)]$, would imply an item-mapping criterion closer to 50 percent.

The NAEP mathematics achievement results are presented in terms of the composite mathematics scale. However, the mathematics assessment was scaled separately for the five content areas at grades 4 and 8. The composite scale is a weighted combination of the five subscales for the five content areas. To obtain item map information, a procedure developed by Donoghue was used.[19] This method models the relationship between the item response function for the subscale and the subscale structure to derive the relationship between the item

[17] Huynh, H. (1995). Some Technical Aspects of Standard Setting. In *Proceedings of the Joint Conference on Standard-Setting for Large-Scale Assessments of the National Assessment Governing Board (NAGB) and the National Center for Education Statistics (NCES), Volume II* (pp.75–93). Washington, DC: U.S. Government Printing Office.

[18] Bock, R. D. (1972). Estimating Item Parameters and Latent Ability When Responses are Scored in Two or More Latent Categories. *Psychometrika, 37,* 29–51.

[19] Donoghue, J. R. (1997, March). *Item Mapping to a Weighted Composite Scale.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

score and the composite scale (i.e., an item response function for the composite scale). This item response function is then used to derive the probability used in the mapping.

Weighting and Variance Estimation

A complex sampling design was used to select the students who were assessed. The properties of a sample selected through such a design can be very different from those of a simple random sample in which every student in the target population has an equal chance of selection and in which the observations from different sampled students can be considered to be statistically independent of one another. Therefore, the properties of the sample for the data collection design were taken into account during the analysis of the assessment data.

One way that the properties of the sample design were addressed was by using sampling weights to account for the fact that the probabilities of selection were not identical for all students. All population and subpopulation characteristics based on the assessment data were estimated using sampling weights. These weights included adjustments for school and student nonresponse.

Prior to 2003, the national samples used weights that had been poststratified to the census or Current Population Survey (CPS) totals for the populations being assessed. Due to concerns about the availability of appropriate targets for poststratification as a result of changes in the reporting of race in the 2000 census, nonpoststratified weights have been used in the analysis of national samples since 2003. The state NAEP samples have always been analyzed using nonpoststratified weights, since there were no targets available from CPS to use in poststratification.

Not only must appropriate estimates of population characteristics be derived, but appropriate measures of the degree of uncertainty must be obtained for those statistics. Two components of uncertainty are accounted for in the variability of statistics based on student ability: 1) the uncertainty due to sampling only a relatively small number of students, and 2) the uncertainty due to sampling only a portion of the cognitive domain of interest. The first component accounts for the variability associated with the estimated percentages of students who had certain background characteristics or who answered a certain cognitive question correctly.

Because NAEP uses complex sampling procedures, conventional formulas for estimating sampling variability that assume simple random sampling are inappropriate. NAEP uses a jackknife replication procedure to estimate standard errors. The jackknife standard error provides a reasonable measure of uncertainty for any student information that can be observed without error. However, because each student typically responds to only a few questions within any mathematics content area, the scale score for any single student would be imprecise. In this case, NAEP's marginal estimation methodology can be used to describe the performance of groups and subgroups of students. The estimate of the variance of the students' posterior scale score distributions (which reflect the imprecision due to lack of measurement accuracy) is computed. This component of variability is then included in the standard errors of NAEP scale scores.[20]

[20] For further details, see Johnson, E. G., and Rust, K. F. (1992). Population Inferences and Variance Estimation for NAEP Data. *Journal of Educational Statistics, 17*(2), 175–190.

Typically, when the standard error is based on a small number of students or when the group of students is enrolled in a small number of schools, the amount of uncertainty associated with the estimation of standard errors may be quite large. Estimates of standard errors subject to a large degree of uncertainty are followed by the "!" symbol to indicate that the nature of the sample does not allow accurate determination of the variability of the statistic (see for example table A.25). In such cases, the standard errors—and any confidence intervals or significance tests involving these standard errors—should be interpreted cautiously.

The reader is reminded that, as with findings from all surveys, NAEP results are subject to other kinds of error, including the effects of imperfect adjustment for student and school nonresponse and unknowable effects associated with the particular instrumentation and data collection methods. Nonsampling errors can be attributed to a number of sources—inability to obtain complete information about all selected schools in the sample (some students or schools refused to participate, or students participated but answered only certain questions); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct background information; mistakes in recording, coding, or scoring data; and other errors in collecting, processing, sampling, and estimating missing data. The extent of nonsampling errors is difficult to estimate and, because of their nature, the impact of such errors cannot be reflected in the data-based estimates of uncertainty provided in NAEP reports.

Drawing Inferences from the Results

The reported statistics are estimates and are therefore subject to a measure of uncertainty. There are two sources of such uncertainty. First, NAEP uses a sample of students rather than testing all students. Second, all assessments have some amount of uncertainty related to the fact that they cannot ask all questions that might be asked in a content area. The magnitude of this uncertainty is reflected in the standard error of each of the estimates. When the percentages or average scale scores of certain groups are compared, the estimated standard error should be taken into account. Therefore, the comparisons are based on statistical tests that consider the estimated standard errors of those statistics and the magnitude of the difference among the averages or percentages.

For the data in this report, all the estimates have corresponding estimated standard errors of the estimates. For example, tables A.23 and A.24 show the average national scale score for the NAEP 1990–2003 national assessments and the percentage of students within each achievement-level range and at or above achievement levels. In both tables, estimated standard errors appear in parentheses next to each estimated scale score or percentage. Additional examples of estimated standard errors corresponding with results included in this report are presented in tables A.25 through A.27. For the estimated standard errors corresponding to other data from this report, the reader can go to the Data Tool on the NCES web site (http://nces.ed.gov/nationsreportcard/naepdata/).

Table A.23 Average mathematics scale scores and standard errors, grades 4 and 8: 1990–2003

	Accommodations not permitted				Accommodations permitted		
	1990	1992	1996	2000	1996	2000	2003
Grade 4							
	213 (0.9) *	220 (0.7) *	224 (0.9) *	228 (0.9) *	224 (1.0) *	226 (0.9) *	235 (0.2)
Grade 8							
	263 (1.3) *	268 (0.9) *	272 (1.1) *	275 (0.8) *	270 (0.9) *	273 (0.8) *	278 (0.3)

* Significantly different from 2003.
NOTE: Standard errors of the estimated scale scores appear in parentheses. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table A.24 Percentages of students and standard errors, by mathematics achievement level, grades 4 and 8: 1990–2003

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
Accommodations not permitted	1990	50 (1.4) *	37 (1.5) *	12 (1.1) *	1 (0.4) *	50 (1.4) *	13 (1.2) *
	1992	41 (1.0) *	41 (1.0) *	16 (1.0) *	2 (0.3) *	59 (1.0) *	18 (1.0) *
	1996	36 (1.2) *	43 (0.9)	19 (0.8) *	2 (0.3) *	64 (1.2) *	21 (0.9) *
	2000	31 (1.1) *	43 (0.8) *	23 (0.9) *	3 (0.3) *	69 (1.1) *	26 (1.1) *
Accommodations permitted	1996	37 (1.3) *	43 (1.0) *	19 (0.9) *	2 (0.3) *	63 (1.3) *	21 (1.1) *
	2000	35 (1.3) *	42 (1.1) *	21 (0.9) *	3 (0.3) *	65 (1.3) *	24 (1.0) *
	2003	23 (0.3)	45 (0.3)	29 (0.3)	4 (0.1)	77 (0.3)	32 (0.3)
Grade 8							
Accommodations not permitted	1990	48 (1.4) *	37 (1.1) *	13 (1.0) *	2 (0.3) *	52 (1.4) *	15 (1.1) *
	1992	42 (1.1) *	37 (0.8) *	18 (0.8) *	3 (0.4) *	58 (1.1) *	21 (1.0) *
	1996	38 (1.1) *	39 (1.0)	20 (0.8) *	4 (0.5) *	62 (1.1) *	24 (1.1) *
	2000	34 (0.8) *	38 (0.8)	22 (0.7)	5 (0.5)	66 (0.8) *	27 (0.9)
Accommodations permitted	1996	39 (1.0) *	38 (0.9)	20 (0.9) *	4 (0.4) *	61 (1.0) *	23 (1.0) *
	2000	37 (0.9) *	38 (0.7) *	21 (0.6) *	5 (0.4)	63 (0.9) *	26 (0.8) *
	2003	32 (0.3)	39 (0.2)	23 (0.2)	5 (0.1)	68 (0.3)	29 (0.3)

* Significantly different from 2003.
NOTE: Standard errors of the estimated percentages appear in parentheses. Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table A.25 Average mathematics scale scores and standard errors, by student eligibility for free/reduced-price school lunch and race/ethnicity, grades 4 and 8: 2003

	Eligible	Not eligible	Information not available
Grade 4			
White	231 (0.3)	247 (0.2)	247 (0.6)
Black	212 (0.4)	226 (0.6)	221 (1.3)
Hispanic	219 (0.4)	232 (0.9)	224 (2.1)
Asian/Pacific Islander	234 (1.2)	254 (1.6)	248 (2.1)
American Indian/Alaska Native	218 (0.9)	237 (1.7)	219 (4.6) !
Grade 8			
White	272 (0.6)	291 (0.3)	293 (0.9)
Black	247 (0.6)	262 (0.7)	256 (1.8)
Hispanic	254 (0.8)	269 (1.1)	263 (1.4)
Asian/Pacific Islander	274 (1.5)	300 (1.6)	299 (2.3)
American Indian/Alaska Native	255 (2.2)	276 (2.1)	260 (5.0) !

! Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.
NOTE: Standard errors of the estimated scale scores appear in parentheses.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table A.26 Average mathematics scale scores and standard errors, grade 8 public schools: By state, 1990–2003

Grade 8	Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003
Nation (public)[1]	262 (1.4)*	267 (1.0)*	271 (1.2)*	274 (0.8)	272 (0.9)*	276 (0.3)
Alabama	253 (1.1)*,**	252 (1.7)*,**	257 (2.1)*	262 (1.8)	264 (1.8)	262 (1.5)
Alaska	–	–	278 (1.8)	–	–	279 (0.9)
Arizona	260 (1.3)*,**	265 (1.3)*,**	268 (1.6)	271 (1.5)	269 (1.8)	271 (1.2)
Arkansas	256 (0.9)*,**	256 (1.2)*,**	262 (1.5)*	261 (1.4)*	257 (1.5)*,**	266 (1.2)
California	256 (1.3)*,**	261 (1.7)*,**	263 (1.9)	262 (2.0)*	260 (2.1)*,**	267 (1.2)
Colorado	267 (0.9)*,**	272 (1.0)*,**	276 (1.1)*,**	–	–	283 (1.1)
Connecticut	270 (1.0)*,**	274 (1.1)*,**	280 (1.1)*,**	282 (1.4)	281 (1.3)	284 (1.2)
Delaware	261 (0.9)*,**	263 (1.0)*,**	267 (0.9)*,**	–	–	277 (0.7)
Florida	255 (1.2)*,**	260 (1.5)*,**	264 (1.8)*,**	–	–	271 (1.5)
Georgia	259 (1.3)*,**	259 (1.2)*,**	262 (1.6)*,**	266 (1.3)	265 (1.2)*,**	270 (1.2)
Hawaii	251 (0.8)*,**	257 (0.9)*,**	262 (1.0)*,**	263 (1.3)	262 (1.4)*	266 (0.8)
Idaho	271 (0.8)*,**	275 (0.7)*,**	–	278 (1.3)	277 (1.0)*	280 (0.9)
Illinois	261 (1.7)*,**	–	–	277 (1.6)	275 (1.7)	277 (1.2)
Indiana	267 (1.2)*,**	270 (1.1)*,**	276 (1.4)*,**	283 (1.4)	281 (1.4)	281 (1.1)
Iowa	278 (1.1)*,**	283 (1.0)	284 (1.3)	–	–	284 (0.8)
Kansas	–	–	–	284 (1.4)	283 (1.7)	284 (1.3)
Kentucky	257 (1.2)*,**	262 (1.1)*,**	267 (1.1)*,**	272 (1.4)	270 (1.3)*,**	274 (1.2)
Louisiana	246 (1.2)*,**	250 (1.7)*,**	252 (1.6)*,**	259 (1.5)*,**	259 (1.5)*,**	266 (1.5)
Maine	–	279 (1.0)*,**	284 (1.3)	284 (1.2)	281 (1.1)	282 (0.9)
Maryland	261 (1.4)*,**	265 (1.3)*,**	270 (2.1)*,**	276 (1.4)	272 (1.7)*,**	278 (1.0)
Massachusetts	–	273 (1.0)*,**	278 (1.7)*,**	283 (1.3)*	279 (1.5)*,**	287 (0.9)
Michigan	264 (1.2)*,**	267 (1.4)*,**	277 (1.8)	278 (1.6)	277 (1.9)	276 (2.0)
Minnesota	275 (0.9)*,**	282 (1.0)*,**	284 (1.3)*,**	288 (1.4)	287 (1.4)*	291 (1.1)
Mississippi	–	246 (1.2)*,**	250 (1.2)*,**	254 (1.3)*,**	254 (1.1)*,**	261 (1.1)
Missouri	–	271 (1.2)*,**	273 (1.4)*,**	274 (1.5)*,**	271 (1.5)*,**	279 (1.1)
Montana	280 (0.9)*,**	–	283 (1.3)	287 (1.2)	285 (1.4)	286 (0.8)
Nebraska	276 (1.0)*,**	278 (1.1)*,**	283 (1.0)	281 (1.1)	280 (1.2)	282 (0.9)
Nevada	–	–	–	268 (0.9)	265 (0.8)*,**	268 (0.8)
New Hampshire	273 (0.9)*,**	278 (1.0)*,**	–	–	–	286 (0.8)
New Jersey	270 (1.1)*,**	272 (1.6)*,**	–	–	–	281 (1.1)
New Mexico	256 (0.7)*,**	260 (0.9)*,**	262 (1.2)	260 (1.7)	259 (1.3)*,**	263 (1.0)
NewYork	261 (1.4)*,**	266 (2.1)*,**	270 (1.7)*,**	276 (2.1)	271 (2.2)*,**	280 (1.1)
North Carolina	250 (1.1)*,**	258 (1.2)*,**	268 (1.4)*,**	280 (1.1)	276 (1.3)*,**	281 (1.0)
North Dakota	281 (1.2)*,**	283 (1.1)*,**	284 (0.9)*,**	283 (1.1)*,**	282 (1.1)*,**	287 (0.8)
Ohio	264 (1.0)*,**	268 (1.5)*,**	–	283 (1.5)	281 (1.6)	282 (1.3)
Oklahoma	263 (1.3)*,**	268 (1.1)*,**	–	272 (1.5)	270 (1.3)	272 (1.1)
Oregon	271 (1.0)*,**	–	276 (1.5)*,**	281 (1.6)	280 (1.5)	281 (1.3)
Pennsylvania	266 (1.6)*,**	271 (1.5)*,**	–	–	–	279 (1.1)
Rhode Island	260 (0.6)*,**	266 (0.7)*,**	269 (0.9)*,**	273 (1.1)	269 (1.3)*	272 (0.7)
South Carolina	–	261 (1.0)*,**	261 (1.5)*,**	266 (1.4)*,**	265 (1.5)*,**	277 (1.3)
South Dakota	–	–	–	–	–	285 (0.8)
Tennessee	–	259 (1.4)*,**	263 (1.4)*,**	263 (1.7)	262 (1.5)*,**	268 (1.8)
Texas	258 (1.4)*,**	265 (1.3)*,**	270 (1.4)*,**	275 (1.5)	273 (1.6)	277 (1.1)
Utah	–	274 (0.7)*,**	277 (1.0)*,**	275 (1.2)*,**	274 (1.2)*,**	281 (1.0)
Vermont	–	–	279 (1.0)*,**	283 (1.1)	281 (1.5)*,**	286 (0.8)
Virginia	264 (1.5)*,**	268 (1.2)*,**	270 (1.6)*,**	277 (1.5)*	275 (1.3)*,**	282 (1.3)
Washington	–	–	276 (1.3)*,**	–	–	281 (0.9)
West Virginia	256 (1.0)*,**	259 (1.0)*,**	265 (1.0)*,**	271 (1.0)	266 (1.2)*,**	271 (1.2)
Wisconsin	274 (1.3)*,**	278 (1.5)*,**	283 (1.5)	–	–	284 (1.3)
Wyoming	272 (0.7)*,**	275 (0.9)*,**	275 (0.9)*,**	277 (1.2)*,**	276 (1.0)*,**	284 (0.7)
Other jurisdictions						
District of Columbia	231 (0.9)*,**	235 (0.9)*,**	233 (1.3)*,**	234 (2.2)*,**	235 (1.1)*,**	243 (0.8)
DDESS[2]	–	–	269 (2.3)*,**	277 (2.3)	274 (1.8)*,**	282 (1.5)
DoDDS[3]	–	–	275 (0.9)*,**	278 (1.0)*,**	278 (1.1)*,**	286 (0.7)

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Standard errors of the estimated scale scores appear in parentheses. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table A.27 Percentage of students at or above *Proficient* and standard errors, by race/ethnicity, grade 8 public schools: By state, 1990–2003

Grade 8	White						Black					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	18(1.4) *	25(1.2) *	29(1.5) *	33(1.3)	33(1.1) *	36(0.4)	5(1.1)	2(0.7) *	4(0.9) *	5(0.6) *	5(0.7) *	7(0.3)
Alabama	12(0.9) *,**	15(1.3) *,**	18(2.7)	22(2.0)	23(1.9)	23(1.9)	2(0.6)	1(0.4) *,**	2(0.4)	3(0.9)	3(0.9)	3(0.6)
Alaska	–	–	36(1.9)	–	–	41(1.6)	–	–	‡	–	–	11(3.7)
Arizona	18(1.2) *,**	20(1.7) *,**	24(1.5) *,**	29(2.2)	28(2.0)	32(1.6)	4(2.0)	5(3.1)	6(2.8)	7(3.0)	7(3.1)	7(3.2)
Arkansas	12(0.9) *,**	13(0.9) *,**	16(1.2) *,**	18(1.5) *	18(1.0) *,**	24(1.4)	1(0.3) *	2(0.8)	2(1.0)	2(0.6)	2(0.6)	3(1.0)
California	18(1.9) *,**	23(2.0) *,**	26(2.2) *,**	26(2.0) *	26(2.4)	34(1.8)	2(1.1)	2(1.4)	7(4.4)	4(1.7)	4(2.1)	6(1.5)
Colorado	20(1.2) *,**	26(1.3) *,**	30(1.3) *,**	–	–	43(1.6)	2(1.2) !	4(2.7)	8(3.2)	–	–	9(3.4)
Connecticut	26(1.1) *,**	32(1.2) *,**	37(1.6) *,**	43(1.9)	42(1.5)	44(1.7)	4(1.6)	3(1.2)	4(1.1)	4(1.2)	4(1.2)	7(1.9)
Delaware	18(1.0) *,**	20(1.2) *,**	24(1.3) *,**	–	–	35(1.2)	4(1.0) *,**	3(1.1) *,**	3(1.1) *,**	–	–	8(1.6)
Florida	16(1.3) *,**	21(1.6) *,**	25(1.8) *,**	–	–	34(2.0)	2(0.8) *,**	3(0.8) *,**	2(1.0) *,**	–	–	7(1.3)
Georgia	19(1.6) *,**	18(1.4) *,**	24(2.6) *,**	28(1.5)	27(1.7)	32(1.8)	3(0.7) *,**	3(0.6) *,**	3(0.7) *,**	4(0.9)	4(0.8)	7(0.9)
Hawaii	16(2.7) *,**	16(2.0) *,**	24(3.5)	25(2.8)	22(2.4)	25(2.6)	‡	‡	‡	‡	‡	‡
Idaho	19(1.2) *,**	23(1.2) *,**	–	29(1.8)	28(1.4)	31(1.1)	‡	‡	–	‡	‡	‡
Illinois	18(1.6) *,**	–	–	37(1.8)	35(2.2)	40(2.0)	3(1.1)	–	–	7(2.0)	8(1.9)	6(1.5)
Indiana	18(1.1) *,**	22(1.3) *,**	27(1.7) *,**	34(1.8)	32(2.0)	35(1.2)	2(0.9)	3(1.4)	3(1.0)	7(3.5) !	7(2.7) !	7(2.9)
Iowa	26(1.5) *,**	32(1.3) *	32(1.8)	–	–	35(1.3)	‡	‡	11(4.1) !	–	–	11(3.9)
Kansas	–	–	–	37(2.2)	36(2.0)	39(1.6)	–	–	–	12(4.7)	10(5.1)	8(1.9)
Kentucky	11(0.9) *,**	15(1.1) *,**	17(1.3) *,**	22(1.5)	22(1.5)	25(1.4)	2(0.9)	4(1.7)	2(‡)	7(2.6)	6(1.8)	5(1.9)
Louisiana	8(1.1) *,**	12(1.5) *,**	12(1.5) *,**	19(1.9) *,**	18(1.8) *,**	28(1.9)	1(0.4) *,**	1(0.4) *,**	2(0.6) *,**	2(0.7) *	2(0.8) *	5(1.0)
Maine	–	26(1.6)	31(1.7)	32(1.4)	31(1.6)	30(1.3)	–	14(3.5) !	‡	‡	‡	‡
Maryland	22(1.4) *,**	28(1.7) *,**	34(2.8)	40(1.8)	38(1.7)	40(1.6)	3(0.8) *,**	3(0.9) *,**	4(0.9) *,**	7(1.1)	6(1.1)	9(1.4)
Massachusetts	–	26(1.4) *,**	31(2.1) *,**	36(1.3) *,**	34(1.4) *,**	44(1.3)	–	6(2.2)	8(2.9)	9(3.8)	9(3.5)	10(1.7)
Michigan	18(1.2) *,**	23(1.8) *,**	34(1.8)	34(2.0)	34(2.2)	35(1.8)	1(0.6) *,**	2(0.5)	5(2.0)	2(0.9)	3(1.2)	4(1.1)
Minnesota	24(1.2) *,**	32(1.2) *,**	36(1.9) *,**	41(1.5) *,**	41(1.6) *,**	49(1.5)	7(2.9) !	‡	5(3.3)	‡	‡	9(2.4)
Mississippi	–	12(1.2) *,**	13(1.5) *,**	14(1.2) *,**	14(1.4) *,**	22(2.0)	–	1(0.4) *,**	1(0.3) *,**	1(0.4) *	1(0.5) *	3(0.7)
Missouri	–	22(1.3) *,**	24(1.6) *,**	25(1.5) *,**	25(1.4) *,**	32(1.3)	–	3(0.9) *	4(1.7)	4(1.4)	3(1.6)	6(1.5)
Montana	28(1.5) *,**	–	35(1.4)	40(1.7)	39(1.6)	37(1.3)	‡	–	‡	‡	‡	‡
Nebraska	26(1.3) *,**	28(1.7) *,**	33(1.5)	34(1.6)	33(1.8)	36(1.6)	2(‡)	2(1.3)	6(3.0)	6(3.2)	6(2.4)	7(2.8)
Nevada	–	–	–	25(1.2)	24(1.1)	27(1.1)	–	–	–	6(2.2)	5(1.4)	9(2.3)
New Hampshire	20(1.1) *,**	25(1.3) *,**	–	–	–	35(1.2)	‡	‡	–	–	–	‡
New Jersey	26(1.5) *,**	30(1.8) *,**	–	–	–	42(1.7)	4(1.3)	3(1.0)	–	–	–	7(1.6)
New Mexico	19(1.9) *,**	18(1.4) *,**	26(1.8)	24(1.9) *	23(2.0) *,**	31(1.7)	‡	‡	‡	‡	‡	5(2.6)
New York	21(1.4) *,**	27(1.6) *,**	30(1.8) *,**	35(2.1) *,**	33(2.4) *,**	44(2.0)	3(0.9) *,**	4(1.4) *,**	4(1.6) *,**	9(2.9)	8(2.9)	10(1.3)
North Carolina	12(1.0) *,**	16(1.2) *,**	27(1.6) *,**	40(1.5) *	37(1.8) *,**	44(1.4)	2(0.7) *,**	3(0.8) *,**	5(0.9) *,**	7(1.1) *	7(1.2) *	11(1.4)
North Dakota	29(1.7) *,**	30(1.7) *,**	35(1.5) *	33(1.6) *,**	33(1.4) *,**	39(1.1)	‡	‡	‡	‡	‡	‡
Ohio	16(1.2) *,**	21(1.5) *,**	–	34(1.7)	34(1.4)	35(1.9)	2(1.1) *,**	2(0.7) *,**	–	7(2.2)	7(2.6)	8(1.5)
Oklahoma	16(1.4) *,**	19(1.3) *,**	–	22(1.3)	22(1.4)	25(1.3)	#(‡) **	2(1.0)	–	5(1.9)	5(2.0)	5(1.2)
Oregon	21(1.2) *,**	–	28(1.7) *,**	34(2.0)	34(1.9)	35(1.6)	‡	–	‡	‡	‡	17(4.7)
Pennsylvania	20(1.3) *,**	24(1.5) *,**	–	–	–	35(1.7)	3(1.2) !	4(2.4)	–	–	–	4(1.4)
Rhode Island	16(0.8) *,**	18(1.2) *,**	23(1.5) *,**	28(1.3)	26(1.3)	29(1.3)	2(1.1)	2(‡)	6(3.4)	6(2.5)	4(2.0)	5(1.6)
South Carolina	–	22(1.5) *,**	21(1.9) *,**	27(1.7) *,**	27(1.8) *,**	39(1.7)	–	3(0.6) *,**	3(0.7) *,**	4(0.9) *,**	4(0.8) *,**	8(0.9)
South Dakota	–	–	–	–	–	37(1.1)	–	–	–	–	–	‡
Tennessee	–	14(1.2) *,**	18(1.5) *,**	21(1.6) *	20(1.5) *	26(1.4)	–	2(0.7) *,**	3(1.2)	3(1.3)	3(1.0)	5(1.0)
Texas	20(1.6) *,**	27(1.7) *,**	32(1.8) *,**	35(2.0)	35(2.7)	38(2.0)	2(1.0) *,**	5(1.3)	4(1.6)	7(2.2)	7(2.1)	8(1.5)
Utah	–	23(1.2) *,**	26(1.3) *,**	27(1.2) *,**	27(1.2) *,**	34(1.5)	–	‡	‡	‡	‡	‡
Vermont	–	–	28(1.4) *,**	33(1.5)	31(1.5) *	35(1.1)	–	–	‡	‡	‡	‡
Virginia	21(1.9) *,**	23(1.2) *,**	27(1.4) *,**	32(1.7) *	32(1.5) *	40(2.4)	4(1.1) *,**	5(1.1) *,**	3(0.9) *,**	6(1.2) *	6(1.0) *	11(1.5)
Washington	–	–	29(1.4) *,**	–	–	36(1.6)	–	–	4(2.3) *,**	–	–	13(3.1)
West Virginia	9(0.8) *,**	10(0.8) *,**	14(0.9) *,**	18(0.9)	18(1.1)	20(1.3)	3(‡)	3(1.9)	2(1.6) !	7(3.1)	7(4.0)	6(3.5)
Wisconsin	25(1.5) *,**	29(1.4) *,**	36(1.9)	–	–	40(1.6)	3(1.6)	7(‡)	2(‡)	–	–	5(2.0)
Wyoming	20(1.1) *,**	22(1.1) *,**	23(1.0) *,**	26(1.2) *,**	25(1.1) *,**	35(1.1)	‡	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	‡	‡	64(8.6)	56(5.1)	‡	1(0.4) *,**	2(0.6)	3(0.7)	3(0.7)	3(0.6)	3(0.5)
DDESS [2]	–	–	31(4.9)	36(3.8)	36(3.2)	42(3.5)	–	–	8(3.0)	15(3.2)	12(3.5)	10(2.7)
DoDDS [3]	–	–	30(1.7) *,**	34(1.6) *,**	34(2.3) *	42(2.1)	–	–	7(1.5) *,**	9(1.7) *	10(2.8)	15(1.9)

See notes at end of table. ▶

Table A.27 Percentage of students at or above *Proficient* and standard errors, by race/ethnicity, grade 8 public schools: By state, 1990–2003 —Continued

Grade 8	Hispanic						Asian/Pacific Islander					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	7 (2.1)	6 (1.0) *	8 (1.7)	8 (1.1)	8 (1.0) *	11 (0.5)	30 (6.8) !	43 (8.0)	‡	40 (4.4)	40 (4.8)	42 (1.4)
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	–	‡	–	–	11 (4.1)	–	–	‡	–	–	29 (3.9)
Arizona	3 (1.0) *,**	5 (1.9)	5 (1.0) *,**	7 (1.6)	6 (1.1)	9 (0.9)	‡	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	7 (3.5) !	‡	‡	‡	‡	‡	‡
California	3 (0.7) *,**	3 (1.0) *,**	4 (0.8) *,**	7 (2.6)	6 (2.4)	8 (1.2)	19 (3.0) *,**	30 (3.7)	31 (4.2)	34 (6.2)	34 (4.6)	39 (4.0)
Colorado	4 (1.0) *,**	6 (1.3) *,**	8 (1.5)	–	–	12 (1.8)	‡	‡	36 (9.0)	–	–	38 (5.8)
Connecticut	2 (1.1) *,**	3 (1.3) *,**	7 (2.3)	7 (2.0)	7 (1.9)	11 (2.2)	‡	‡	33 (7.3)	‡	‡	51 (7.4)
Delaware	‡	‡	‡	–	–	11 (3.3)	‡	‡	‡	–	–	‡
Florida	7 (2.1) *,**	5 (1.6) *,**	8 (2.1) *,**	–	–	16 (2.2)	‡	‡	‡	–	–	41 (7.7)
Georgia	‡	‡	‡	‡	‡	14 (3.7)	‡	‡	‡	‡	‡	40 (8.7)
Hawaii	‡	‡	10 (3.9)	‡	‡	16 (4.7)	11 (0.8) *,**	14 (0.8)	15 (1.1)	15 (1.2)	15 (1.2)	15 (1.1)
Idaho	8 (3.0)	8 (2.7)	–	8 (2.6)	7 (2.0)	7 (2.0)	‡	‡	–	‡	‡	‡
Illinois	3 (1.4) *,**	–	–	9 (3.0)	11 (3.4)	9 (2.0)	31 (5.4) !*,**	–	–	‡	‡	58 (6.2)
Indiana	‡	‡	‡	‡	‡	9 (4.0)	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	–	–	10 (3.4)	‡	‡	‡	–	–	‡
Kansas	–	–	–	13 (4.1)	12 (3.3)	16 (3.1)	–	–	–	‡	‡	34 (8.3)
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	11 (3.8)	‡	‡	22 (7.6)	20 (7.0)	15 (3.6)	45 (6.7)	37 (6.4) *	65 (5.8) !	52 (5.7)	49 (7.0) !	56 (5.7)
Massachusetts	–	3 (1.8) !*,**	3 (1.8) *	10 (3.4)	8 (3.1)	9 (1.9)	–	‡	28 (6.1) *,**	50 (6.0)	44 (6.7)	57 (6.2)
Michigan	‡	10 (4.8) !	‡	‡	‡	14 (5.6) !	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	16 (5.4)	19 (5.5)	‡	31 (6.0) !	‡	‡	32 (4.8)
Mississippi	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Missouri	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Montana	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡
Nebraska	‡	10 (3.4) !	10 (4.5)	5 (2.3)	5 (2.2)	10 (2.6)	‡	‡	‡	‡	‡	‡
Nevada	–	–	–	8 (1.3)	8 (1.3)	7 (1.1)	–	–	–	29 (3.6)	25 (3.9)	31 (5.1)
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	4 (1.3) *,**	4 (1.4) *,**	–	–	–	14 (2.4)	53 (7.0)	52 (6.2)	–	–	–	61 (4.4)
New Mexico	4 (0.7) *,**	4 (0.7) *,**	6 (1.3)	6 (1.1)	5 (0.9)	7 (0.7)	‡	‡	‡	‡	‡	‡
New York	5 (1.6) *,**	4 (1.8) *,**	5 (1.5) *,**	11 (2.3)	10 (2.6)	16 (2.7)	26 (6.0) !*	35 (8.5)	31 (6.8) !	39 (6.1) !	37 (7.9) !	41 (3.8)
North Carolina	‡	‡	‡	‡	‡	16 (4.2)	‡	‡	‡	‡	‡	48 (6.0)
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	‡	‡	–	‡	‡	18 (7.1)	‡	‡	–	‡	‡	‡
Oklahoma	‡	‡	–	11 (3.9) !	13 (3.7)	9 (3.1)	‡	‡	–	‡	‡	‡
Oregon	12 (4.0)	–	10 (4.3)	11 (6.9)	6 (2.1)	12 (2.8)	29 (6.8)	–	38 (5.8)	34 (7.6)	38 (8.2)	41 (6.5)
Pennsylvania	‡	‡	–	–	–	6 (3.2)	‡	‡	–	–	–	‡
Rhode Island	1 (0.8) *,**	2 (1.0) *	3 (1.6)	3 (1.9)	3 (1.4)	5 (1.5)	‡	‡	16 (5.7)	20 (6.9)	20 (4.4)	20 (5.4)
South Carolina	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	‡	–	–	–	–	–	‡
Tennessee	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Texas	4 (0.9) *,**	6 (1.1) *,**	7 (1.3) *,**	13 (1.7)	13 (1.8)	14 (1.4)	34 (6.6) !*,**	58 (6.9)	40 (18.5) !	43 (8.4)	44 (7.7)	58 (7.6) !
Utah	–	7 (2.5)	8 (3.3)	6 (2.3)	6 (2.5)	7 (2.1)	–	‡	‡	‡	20 (5.3)	25 (5.2)
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	‡	‡	‡	21 (5.6)	16 (4.3)	17 (3.7)	43 (6.1)	32 (5.3) *	35 (6.0)	49 (10.1)	44 (7.7)	48 (5.0)
Washington	–	–	7 (2.7) *,**	–	–	17 (3.0)	–	–	27 (4.1)	–	–	37 (3.7)
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	–	–	16 (4.1)	‡	‡	‡	–	–	17 (4.9)
Wyoming	8 (3.2)	11 (3.5)	7 (2.6)	8 (3.1)	8 (3.4)	13 (3.2)	‡	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	11 (5.4)	4 (2.3)	6 (2.2)	5 (3.2)	3 (1.7)	‡	‡	‡	‡	‡	‡
DDESS [2]	–	–	18 (5.9)	18 (4.1)	13 (4.2)	19 (4.0)	–	–	‡	‡	‡	‡
DoDDS [3]	–	–	13 (3.6) *,**	21 (3.7)	20 (5.5)	29 (4.2)	–	–	24 (4.7) *,**	27 (4.0) *	25 (4.8) *	38 (3.2)

See notes at end of table. ▶

Table A.27 Percentage of students at or above *Proficient* and standard errors, by race/ethnicity, grade 8 public schools: By state, 1990–2003 —Continued

Grade 8	American Indian/Alaska Native						Other[4]					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public)[1]	‡	‡	‡	14 (4.7) !	13 (7.9) !	16 (1.3)	‡	8 (4.0) !*	‡	‡	‡	24 (2.5)
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	–	11 (2.9)	–	–	12 (1.3)	–	–	‡	–	–	‡
Arizona	# (‡) !	6 (2.9) !	7 (‡) !	‡	‡	7 (2.6)	‡	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Florida	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Georgia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Hawaii	‡	‡	‡	‡	‡	‡	10 (2.4)	13 (2.9)	10 (2.4)	15 (3.8)	14 (3.8)	15 (2.8)
Idaho	‡	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡
Illinois	‡	–	–	‡	‡	‡	‡	–	–	‡	‡	‡
Indiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Kansas	–	–	–	‡	‡	‡	–	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Missouri	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Montana	9 (2.8)	–	17 (3.4)	11 (3.3) !	11 (3.4) !	15 (3.2)	‡	–	‡	‡	‡	‡
Nebraska	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Nevada	–	–	–	‡	11 (6.1)	‡	–	–	–	‡	‡	‡
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Mexico	2 (0.9)	1 (‡)	7 (1.8)	5 (1.7) !	7 (1.8) !	3 (1.0)	‡	‡	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	2 (‡) !**	‡	‡	‡	‡	13 (2.9) !	‡	‡	‡	‡	‡	‡
North Dakota	3 (‡) !	10 (4.6) !	7 (4.6) !	6 (4.0)	5 (1.8) !	11 (2.6)	‡	‡	‡	‡	‡	‡
Ohio	‡	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡
Oklahoma	5 (2.0) *,**	12 (3.3)	–	11 (2.1)	12 (2.4)	14 (2.1)	‡	‡	–	‡	‡	21 (6.6) !
Oregon	‡	–	‡	‡	‡	14 (5.8) !	‡	–	‡	‡	‡	‡
Pennsylvania	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	9 (2.3)	–	–	–	–	–	‡
Tennessee	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Utah	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Washington	–	–	8 (3.5) !	–	–	17 (5.4)	–	–	‡	–	–	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Wyoming	7 (3.6)	‡	5 (2.9)	‡	3 (‡) !	14 (4.2)	19 (7.8)	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
DDESS[2]	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
DoDDS[3]	–	–	‡	‡	‡	‡	–	–	27 (2.8) *,**	30 (3.4) *	29 (3.3) *	42 (4.3)

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
! Interpret data with caution. The nature of the sample does not allow accurate determination of the variability of the statistic.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
(‡) Reporting standards not met. Standard error estimates cannot be accurately determined.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
[4] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self report racial/ethnic information.

NOTE: Standard errors of the estimated scale scores appear in parentheses. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Using confidence intervals based on the standard errors provides a way to take into account the uncertainty associated with sample estimates and to make inferences about the population averages and percentages in a manner that reflects that uncertainty. An estimated sample average scale score plus or minus 1.96 standard errors approximates a 95 percent confidence interval for the corresponding population quantity. This statement means that one can conclude with an approximately 95 percent level of confidence that the average performance of the entire population of interest (e.g., all fourth-grade students in public and nonpublic schools) is within plus or minus 1.96 standard errors of the sample average.

For example, suppose that the average mathematics scale score of the students in a particular group was 256 with an estimated standard error of 1.2. An approximately 95 percent confidence interval for the population quantity would be as follows:

$$\text{Average} \pm 1.96 \text{ standard errors}$$

$$256 \pm 1.96 \times 1.2$$

$$256 \pm 2.4$$

$$(253.6,\ 258.4)$$

Thus, one can conclude with a 95 percent level of confidence that the average scale score for the entire population of students in that group is between 253.6 and 258.4. It should be noted that this example and the examples in the following sections are illustrative. More precise estimates carried out to one or more decimal places are used in the actual analyses.

Similar confidence intervals can be constructed for percentages, if the percentages are not extremely large or extremely small. Extreme percentages should be interpreted with caution. Adding or subtracting the standard errors associated with extreme percentages could cause the confidence interval to exceed 100 percent or fall below 0 percent, resulting in numbers that are not meaningful.

Analyzing Group Differences in Averages and Percentages

Statistical tests determine whether, based on the data from the groups in the sample, there is strong enough evidence to conclude that the averages or percentages are actually different for those groups in the population. If the evidence is strong (i.e., the difference is statistically significant), the report describes the group averages or percentages as being different (e.g., one group performed higher or lower than another group), regardless of whether the sample averages or percentages appear to be approximately the same. The reader is cautioned to rely on the results of the statistical tests rather than on the apparent magnitude of the difference between sample averages or percentages when determining whether the sample differences are likely to represent actual differences among the groups in the population.

To determine whether a real difference exists between the average scale scores (or percentages of a certain attribute) for two groups in the population, one needs to obtain an estimate of the degree of uncertainty associated with the difference between the averages (or percentages) of these groups for the sample. This estimate of the degree of uncertainty, called the "standard error of the difference" between the groups, is obtained by taking the square of each group's standard error, summing the squared standard errors, and taking the square root of that sum.

Standard Error of the Difference =

$$SE_{A-B} = \sqrt{(SE_A^2 + SE_B^2)}$$

The standard error of the difference can be used, just like the standard error for an individual group average or percentage, to help determine whether differences among groups in the population are real. The difference between the averages or percentages of the two groups plus or minus 1.96 standard errors of the difference represents an approximately 95 percent confidence interval. If the resulting interval includes zero, there is insufficient evidence to claim a real difference between the groups in the population. If the interval does not contain zero, the difference between the groups is statistically significant at the .05 level.

The following example of comparing groups addresses the problem of determining whether the average mathematics scale score of group A is higher than that of group B. The sample estimates of the average scale scores and estimated standard errors are as follows:

Group	Average Scale Score	Standard Error
A	218	0.9
B	216	1.1

The difference between the estimates of the average scale scores of groups A and B is two points (218–216). The standard error of this difference is

$$\sqrt{(0.9^2 + 1.1^2)} = 1.4$$

Thus, an approximately 95 percent confidence interval for this difference is plus or minus 1.96 standard errors of the difference:

$$2 \pm 1.96 \times 1.4$$

$$2 \pm 2.7$$

$$(-0.7, 4.7)$$

The value zero is within the confidence interval; therefore, there is insufficient evidence to conclude that group A outperformed group B.

The procedure above is appropriate to use when it is reasonable to assume that the groups being compared have been independently sampled for the assessment. Such an assumption is clearly warranted when comparing results across assessment years (e.g., comparing the 2000 and 2003 results for a particular state or subgroup) or when comparing results for one state with another. This is the approach used for NAEP reports when comparisons involving independent groups are made. The assumption of independence is violated to some degree when comparing group results for the nation or a particular state (e.g., comparing national 2003 results for males and females), since these samples of students have been drawn from the same schools. When the groups being compared do not share students (as is the case, for example, comparing males and females) the impact of this violation of the independence assumption on the outcome of the statistical tests is assumed to be small, and NAEP, by convention, has, for computational convenience, routinely applied the procedures described above to those cases as well.

When making comparisons of results for groups that share a considerable proportion of students in common, it is not appropriate to ignore such dependencies. In such cases, NAEP has used procedures appropriate to comparing dependent groups. When the dependence in group results is due to the overlap in samples (e.g., when a subgroup is being compared to a total group), a simple modification of the usual standard error of the difference formula can be used. The formula for such cases is

$$SE_{Total-Subgroup} = \sqrt{(SE^2_{Total} + SE^2_{Subgroup} - 2pSE^2_{Subgroup})}$$

where p is the proportion of the total group contained in the subgroup.[21] This formula was used for this report when a state or district was compared to the aggregate nation.

Conducting Multiple Tests

The procedures used to determine whether group differences in the samples represent actual differences among the groups in the population and the certainty ascribed to intervals (e.g., a 95 percent confidence interval) are based on statistical theory that assumes that only one confidence interval or test of statistical significance is being performed. However, there are times when many different groups are being compared (i.e., multiple sets of confidence intervals are being analyzed). In sets of confidence intervals, statistical theory indicates that the certainty associated with the entire set of intervals is less than that attributable to each individual comparison from the set. To hold the significance level for the set of comparisons at a particular level (e.g., .05), the standard methods must be adjusted by multiple comparison procedures.[22] One such procedure, the Benjamini-Hochberg False Discovery Rate (FDR) procedure, was used to control the certainty level.[23]

Unlike other multiple comparison procedures that control the familywise error rate (i.e., the probability of making even one false rejection in the set of comparisons), the FDR procedure controls the expected proportion of falsely rejected hypotheses. Furthermore, the FDR procedure used in NAEP is considered appropriately less conservative than familywise procedures for large families of comparisons.[24] Therefore, the FDR procedure is more suitable for multiple comparisons in NAEP than are other procedures.

To illustrate how the FDR procedure is used, consider the comparisons of current and previous years' average scale scores for the five groups presented in table A.28. The test statistic shown is the difference in average scale scores divided by the estimated standard error of the difference. (Rounding of the data occurs after the test is done.)

[21] This is a special form of the common formula for standard error of dependent samples. The standard formula can be found, for example, in Kish, L. (1995). *Survey Sampling.* New York: John Wiley and Sons, Inc.

[22] Miller, R. G. (1981). *Simultaneous Statistical Inference* (2nd ed.). New York: Springer-Verlag.

[23] Benjamini, Y., and Hochberg, Y. (1995). Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing. *Journal of the Royal Statistical Society,* Series B, no. 1, 289–300.

[24] Williams, V. S. L., Jones, L. V., and Tukey, J. W. (1999). Controlling Error in Multiple Comparisons with Examples From State-to-State Differences in Educational Achievement. *Journal of Educational and Behavioral Statistics, 24*(1), 42–69.

Table A.28 Example of False Discovery Rate comparisons of average scale scores for different groups of students

	Previous year		Current year		Previous year and current year			
	Average scale score	Standard error	Average scale score	Standard error	Differences in averages	Standard error of differences	Test statistic	Percent confidence[1]
Group 1	224	1.3	226	1.0	2.08	1.62	1.29	20
Group 2	187	1.7	193	1.7	6.31	2.36	2.68	1
Group 3	191	2.6	197	1.7	6.63	3.08	2.15	4
Group 4	229	4.4	232	4.6	3.24	6.35	0.51	62
Group 5	201	3.4	196	4.7	-5.51	5.81	-0.95	35

[1]The percent confidence is 2(1-F(x)) where F(x) is the cumulative distribution of the t-distribution with the degrees of freedom adjusted to reflect the complexities of the sample design.

The difference in average scale scores and its estimated standard error can be used to find an approximately 95 percent confidence interval or they can be used to identify a confidence percentage. The confidence percentage for the test statistics is identified from statistical tables. The significance level from the statistical tables can be directly compared to 100 − 95 = 5 percent.

If the comparison of average scale scores across two years was made for only one of the five groups, there would be a significant difference between the average scale scores for the two years at a significance level of less than 5 percent. However, because we are interested in the difference in average scale scores across the two years for all five of the groups, comparing each of the significance levels to 5 percent is not adequate. Groups of students defined by shared characteristics, such as racial/ethnic groups, are treated as sets or families when making comparisons. However, comparisons of average scale scores for each pair of years were treated separately. The steps described in this example would be replicated for the comparison of other current and previous year average scale scores.

Using the FDR procedure to take into account that all comparisons are of interest to us, the percents of confidence in the example are ordered from largest to smallest: 62, 35, 20, 4, and 1. In the FDR procedure, 62 percent confidence for the group 4 comparison would be compared to 5 percent, 35 percent for the group 5 comparison would be compared to $0.05 \times (5-1)/5 = 0.04 = 4$ percent,[25] 20 percent for the group 1 comparison would be compared to $0.05 \times (5-2)/5 = 0.03 = 3$ percent, 4 percent for the group 3 comparison would be compared to $0.05 \times (5-3)/5 = 0.02 = 2$ percent, and 1 percent for the group 2 comparison (actually slightly smaller than 1 prior to rounding) would be compared to $0.05 \times (5-4)/5 = 0.01 = 1$ percent. The procedure stops with the first contrast found to be significant. The last of these comparisons is the only one for which the percent confidence is smaller than the FDR procedure value. The difference between the current year's and previous years' average scale scores for the group 2 students is significant; for all of the other groups, average scale scores for current and previous year are not significantly different from one another. In practice, a very small number

[25] The level of confidence times the number of comparisons minus one divided by the number of comparisons is $0.05 \times (5-1)/5 = 0.04 = 4$ percent.

of counterintuitive results occur when the FDR procedures are used to examine between-year differences in subgroup results by jurisdiction. In those cases, results were not included in this report.

Understanding NAEP Reporting Groups

NAEP results are provided for groups of students defined by shared characteristics—gender, race/ethnicity, parental education, region of the country, type of school, school's type of location, and eligibility for free/reduced-price school lunch. Based on participation rate criteria, results are reported for subpopulations only when sufficient numbers of students and adequate school representation are present. The minimum requirement is at least 62 students in a particular subgroup from at least five primary sampling units (PSUs).[26] However, the data for all students, regardless of whether their subgroup was reported separately, were included in computing overall results. Definitions of the subpopulations are presented below.

Gender: Results are reported separately for male students and female students.

Race/Ethnicity: In all NAEP assessments, data about student race/ethnicity is collected from two sources: school records and student self-reports. Prior to 2002, NAEP used students' self-reported race as the primary race/ethnicity reporting variable. As of 2002, the race/ethnicity variable presented in NAEP reports is based on the race reported by the school. When school-recorded information is missing, student-reported data are used to determine race/ethnicity. The mutually exclusive racial/ethnic categories are White, Black, Hispanic, Asian/Pacific Islander, American Indian (including Alaska Native), and Other. Information based on student self-reported race/ethnicity is available on the NAEP Data Tool (http://nces.ed.gov/nationsreportcard/naepdata/).

Parental Education: Eighth-graders were asked the following two questions, the responses to which were combined to derive the parental education variable.

How far in school did your mother go?

- She did not finish high school.
- She graduated from high school.
- She had some education after high school.
- She graduated from college.
- I don't know.

Students were also asked

How far in school did your father go?

- He did not finish high school.
- He graduated from high school.
- He had some education after high school.
- He graduated from college.
- I don't know.

The information was combined into one parental education reporting variable in the following way: if a student indicated the extent of education for only one parent, that level was included in the data. If a student indicated the extent of education for both parents, the higher of the two levels was included in the data. If a student responded "I don't know" for both parents, or responded "I don't know" for one parent and did not

[26] For the NAEP national assessments prior to 2002, a PSU is a selected geographic region (a county, group of counties, or metropolitan statistical area). Since 2002, the first-stage sampling units are schools (public and nonpublic) in the selection of the combined sample. Further details about the procedure for determining minimum sample size will appear in the technical documentation section of the NAEP web site (http://nces.ed.gov/nationsreportcard).

respond for the other, the parental education level was classified as "I don't know." If the student did not respond for either parent, the student was recorded as having provided no response.

Region of the Country: Prior to 2003, NAEP results were reported for four NAEP-defined regions of the nation: Northeast, Southeast, Central, and West. As of 2003, to align NAEP with other federal data collections, NAEP analysis and reports have used the U.S. Census Bureau's definition of "region". The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest and West. The Midwest region defined by the Census includes the same states as the NAEP-defined Central region. The Northeast region defined by the Census is made up of the same states in the NAEP-defined region minus Delaware, the District of Columbia, Maryland, and the section of Virginia in the Washington, DC metropolitan area. The Census-defined West region includes the same states as the NAEP-defined West region except Oklahoma and Texas. The Census-defined South region includes all those states previously defined by NAEP as the Southeast region plus Delaware, the District of Columbia, Maryland, Oklahoma, Texas, and the section of Virginia in the Washington, DC metropolitan area. Due to this change in the region variable, no trend data for each region were provided in this report. Figure A.2 shows how states are subdivided into these census regions. All 50 states and the District of Columbia are listed. Other jurisdictions, including the two Department of Defense Educational Activities jurisdictions, are not assigned to any region.

Figure A.2 States within regions of the country defined by the U.S. Census Bureau

Northeast	South	Midwest	West
Connecticut	Alabama	Illinois	Alaska
Maine	Arkansas	Indiana	Arizona
Massachusetts	Delaware	Iowa	California
New Hampshire	District of Columbia	Kansas	Colorado
New Jersey	Florida	Michigan	Hawaii
New York	Georgia	Minnesota	Idaho
Pennsylvania	Kentucky	Missouri	Montana
Rhode Island	Louisiana	Nebraska	Nevada
Vermont	Maryland	North Dakota	New Mexico
	Mississippi	Ohio	Oregon
	North Carolina	South Dakota	Utah
	Oklahoma	Wisconsin	Washington
	South Carolina		Wyoming
	Tennessee		
	Texas		
	Virginia		
	West Virginia		

SOURCE: U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau.

Type of School: Results are reported by the type of school that the student attends—public or nonpublic. Nonpublic schools include Catholic and other private schools.[27] Because they are funded by federal authorities (not state/local governments), Bureau of Indian Affairs (BIA) schools and Department of Defense Domestic Dependent Elementary and Secondary Schools (DDESS) are not included in either the public or nonpublic categories; they are included in the overall national results.

Type of Location: Results from the 2003 assessment are reported for students attending schools in three mutually exclusive location types: central city, urban fringe/large town, and rural/small town.

Central city: Following standard definitions established by the Federal Office of Management and Budget, the U.S. Census Bureau (see http://www.census.gov/) defines "central city" as the largest city of a Metropolitan Statistical Area (MSA) or a Consolidated Metropolitan Statistical Area (CMSA). Typically, an MSA contains a city with a population of at least 50,000 and includes its adjacent areas. An MSA becomes a CMSA if it meets the requirements to qualify as a Metropolitan Statistical Area, has a population of 1,000,000 or more, its component parts are recognized as primary metropolitan statistical areas, and local opinion favors the designation. In the NCES Common Core of Data (CCD), locale codes are assigned to schools. For the definition of central city used in this report, two locale codes of the survey are combined. The definition of each school's type of location is determined by the size of the place where the school is located and whether or not it is in an MSA or CMSA. School locale codes are assigned by the U.S. Census Bureau. For the definition of central city, NAEP reporting uses data from two CCD locale codes: large city (a central city of an MSA or CMSA with the city having a population greater than or equal to 25,000) and midsize city (a central city of an MSA or CMSA having a population less than 25,000). Central city is a geographical term and is not synonymous with "inner city."

Urban fringe/large town: The urban fringe category includes any incorporated place, census designated place, or nonplace territory within a CMSA or MSA of a large or mid-sized city and defined as urban by the U.S. Census Bureau, but which does not qualify as a central city. A large town is defined as a place outside a CMSA or MSA with a population greater than or equal to 25,000.

Rural/small town: Rural includes all places and areas with populations of less than 2,500 that are classified as rural by the U.S. Census Bureau. A small town is defined as a place outside a CMSA or MSA with a population of less than 25,000, but greater than or equal to 2,500. Results for each type of location are only compared across years 2000 and after. This is due to new methods used by NCES to identify the type of location assigned to each school in the Common Core of Data (CCD). The new methods were put into place by NCES in order to improve the quality of the assignments, and they take into account more information about the exact physical location of the school. The variable was revised in NAEP beginning with the 2000 assessments.

[27] A more detailed breakdown of nonpublic school results is available on the NAEP web site (http://nces.ed.gov/nationsreportcard/naepdata/).

Eligibility for Free/Reduced-Price School Lunch: As part of the Department of Agriculture's National School Lunch Program, schools can receive cash subsidies and donated commodities in turn for offering free or reduced-price lunches to eligible children. Based on available school records, students were classified as either currently eligible for free/reduced-price school lunch or not eligible. Eligibility for the program is determined by students' family income in relation to the federally established poverty level. Free lunch qualification is set at 130 percent of the poverty level, and reduced-price lunch qualification is set at between 130 and 185 percent of the poverty level. Additional information on eligibility may be found at the Department of Agriculture web site (http://www.fns.usda.gov/cnd/lunch/). The classification applies only to the school year when the assessment was administered (i.e., the 2002–2003 school year) and is not based on eligibility in previous years. If school records were not available, the student was classified as "Information not available." If the school did not participate in the program, all students in that school were classified as "Information not available."

Caution in Interpretations

As previously stated, the NAEP mathematics scale makes it possible to examine relationships between students' performance and various background factors measured by NAEP. However, a relationship that exists between achievement and another variable does not reveal its underlying cause, which may be influenced by a number of other variables. Similarly, the assessments do not reflect the influence of unmeasured variables. The results are most useful when they are considered in combination with other knowledge about the student population and the educational system, such as trends in instruction, changes in the school-age population, and societal demands and expectations. A caution is also warranted for some small population group estimates. At times in this report, smaller population groups show very large increases or decreases across years in average scores; however, it is necessary to interpret such score gains with extreme caution. The effects of exclusion-rate changes may be more marked for small subgroups than they are for the whole population. Another reason for caution is that the standard errors are often quite large around the score estimates for small groups, which in turn means the standard error around the gain is also large.

B Appendix B

Subgroup Percentage Appendix

Appendix B presents the percentages of students in each of the subgroups reported for the nation, states, and other jurisdictions, and other selected urban districts. There has been a shift in race/ethnicity composition of the student population and students participating in NAEP. The percentage of Hispanic students increased from 6 percent in 1990 to 18 percent in 2003 at grade 4, and from 7 percent to 15 percent at grade 8. The percentages of White students decreased from 75 percent in 1990 to 60 percent in 2003 at grade 4, and from 73 percent to 63 percent at grade 8. The percentage of Black students, which has changed less over the years, was approximately 17 percent in 2003 at grade 4 and 16 percent at grade 8.

Table B.1 Weighted percentage of students, by region of the country, grades 4 and 8: 2003

		2003
Grade 4		
	Northeast	18
	Midwest	23
	South	36
	West	24
Grade 8		
	Northeast	18
	Midwest	23
	South	36
	West	23

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), 2003 Mathematics Assessment.

Table B.2 Weighted percentage of students, by gender, grades 4 and 8: 1990–2003

		Accommodations not permitted				Accommodations permitted		
		1990	1992	1996	2000	1996	2000	2003
Grade 4								
	Male	52	50	51	51	50	51	51
	Female	48	50	49	49	50	49	49
Grade 8								
	Male	51	51	52	51	51	50	50
	Female	49	49	48	49	49	50	50

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), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table B.3 Weighted percentage of students, by race/ethnicity, grades 4 and 8: 1990–2003

	Accommodations not permitted				Accommodations permitted		
	1990	1992	1996	2000	1996	2000	2003
Grade 4							
White	75	73	72	69	66	64	60
Black	18	17	16	16	16	16	17
Hispanic	6	6	8	10	11	15	18
Asian/Pacific Islander	1	2	3	‡	5	‡	4
American Indian/Alaska Native	1	1	1	1	1	1	1
Other[1]	#	1	1	1	1	1	1
Grade 8							
White	73	73	71	70	69	65	63
Black	16	16	15	14	17	16	16
Hispanic	7	8	9	11	10	13	15
Asian/Pacific Islander	2	2	‡	4	‡	4	4
American Indian/Alaska Native	1	1	1	1	1	2	1
Other[1]	#	1	#	1	#	1	1

The estimate rounds to zero.
‡ Reporting standards not met. Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996 and grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from this report.
[1] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
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), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table B.4 Weighted percentage of students, by eligibility for free/reduced-price school lunch, grades 4 and 8: 1996–2003

	Accommodations not permitted		Accommodations permitted		
	1996	2000	1996	2000	2003
Grade 4					
Eligible	31	32	34	36	40
Not eligible	53	49	51	47	50
Information not available	16	18	15	16	10
Grade 8					
Eligible	27	26	27	29	33
Not eligible	55	53	54	51	55
Information not available	17	21	19	20	11

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), 1996, 2000, and 2003 Mathematics Assessments.

Table B.5 Weighted percentages of students, by eligibility for free/reduced-price school lunch and race/ethnicity, grades 4 and 8: 2003

	Eligible	Not eligible	Information not available
Grade 4			
White	23	65	12
Black	70	24	6
Hispanic	71	23	7
Asian/Pacific Islander	35	53	12
American Indian/Alaska Native	65	28	7
Grade 8			
White	19	69	12
Black	61	31	8
Hispanic	64	27	9
Asian/Pacific Islander	34	51	15
American Indian/Alaska Native	56	37	7

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), 2003 Mathematics Assessment.

Table B.6 Weighted percentage of students, by student-reported parents' highest level of education, grade 8: 1990–2003

	Accommodations not permitted				Accommodations permitted		
	1990	1992	1996	2000	1996	2000	2003
Grade 8							
Less than high school	9	8	7	7	7	7	7
Graduated high school	24	24	22	20	23	20	17
Some education after high school	17	18	19	18	18	18	17
Graduated college	41	42	42	45	42	43	48
Unknown	9	9	11	11	10	12	11

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), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table B.7 Weighted percentage of students, by type of school, grades 4 and 8: 1990–2003

	Accommodations not permitted				Accommodations permitted		
	1990	1992	1996	2000	1996	2000	2003
Grade 4							
Public	89	88	89	89	89	90	90
Nonpublic	11	12	11	11	11	10	10
Catholic	7	8	7	6	8	5	5
Other	4	4	4	5	3	5	5
Grade 8							
Public	92	89	89	90	90	91	91
Nonpublic	8	11	11	10	10	9	9
Catholic	5	6	6	5	7	5	5
Other	3	5	4	4	3	4	4

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), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table B.8 Weighted percentages of students, by parents' highest level of education and type of school, grade 8: 2003

	Less than high school	Graduated high school	Some education after high school	Graduated college	Unknown
Grade 8					
Public	7	18	18	45	11
Nonpublic	1	9	13	71	5

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), 2003 Mathematics Assessments.

Table B.9 Weighted percentage of students, by type of location, grades 4 and 8: 2000–2003

	Accommodations not permitted	Accommodations permitted	
	2000	2000	2003
Grade 4			
Central city	31	32	31
Urban fringe/large town	46	46	41
Rural/small town	23	22	28
Grade 8			
Central city	30	31	29
Urban fringe/large town	45	44	42
Rural/small town	25	25	29

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), 2000 and 2003 Mathematics Assessments.

Table B.10 Weighted percentage of students, by gender, grade 4 public schools: By state, 1992–2003

Grade 4	Male					Female				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)	50	51	51	51	51	50	49	49	49	49
Alabama	51	50	50	51	51	49	50	50	49	49
Alaska	–	50	–	–	52	–	50	–	–	48
Arizona	51	51	52	53	50	49	49	48	47	50
Arkansas	53	50	51	51	51	47	50	49	49	49
California	52	51	50	51	51	48	49	50	49	49
Colorado	50	51	–	–	51	50	49	–	–	49
Connecticut	49	50	51	52	51	51	50	49	48	49
Delaware	51	50	–	–	50	49	50	–	–	50
Florida	48	52	–	–	52	52	48	–	–	48
Georgia	51	50	48	49	51	49	50	52	51	49
Hawaii	49	53	49	49	50	51	47	51	51	50
Idaho	49	–	50	50	51	51	–	50	50	49
Illinois	–	–	50	52	52	–	–	50	48	48
Indiana	50	49	50	51	50	50	51	50	49	50
Iowa	51	51	50	52	52	49	49	50	48	48
Kansas	–	–	51	51	52	–	–	49	49	48
Kentucky	49	52	49	50	52	51	48	51	50	48
Louisiana	52	50	51	51	50	48	50	49	49	50
Maine	49	50	50	51	51	51	50	50	49	49
Maryland	50	50	49	51	51	50	50	51	49	49
Massachusetts	51	52	50	50	51	49	48	50	50	49
Michigan	52	51	50	51	52	48	49	50	49	48
Minnesota	50	51	49	50	53	50	49	51	50	47
Mississippi	52	50	48	48	48	48	50	52	52	52
Missouri	52	50	49	50	50	48	50	51	50	50
Montana	–	53	51	52	52	–	47	49	48	48
Nebraska	51	52	49	49	51	49	48	51	51	49
Nevada	–	50	51	51	52	–	50	49	49	48
New Hampshire	50	–	–	–	52	50	–	–	–	48
New Jersey	51	49	–	–	52	49	51	–	–	48
New Mexico	47	48	50	50	51	53	52	50	50	49
New York	52	50	48	49	50	48	50	52	51	50
North Carolina	51	50	49	50	50	49	50	51	50	50
North Dakota	53	50	51	51	52	47	50	49	49	48
Ohio	51	–	50	50	51	49	–	50	50	49
Oklahoma	51	–	48	50	50	49	–	52	50	50
Oregon	–	50	50	51	52	–	50	50	49	48
Pennsylvania	53	51	–	–	50	47	49	–	–	50
Rhode Island	51	52	50	51	50	49	48	50	49	50
South Carolina	50	50	52	52	50	50	50	48	48	50
South Dakota	–	–	–	–	51	–	–	–	–	49
Tennessee	52	51	50	51	51	48	49	50	49	49
Texas	49	51	47	49	51	51	49	53	51	49
Utah	51	50	52	52	52	49	50	48	48	48
Vermont	–	51	49	50	50	–	49	51	50	50
Virginia	51	50	49	50	51	49	50	51	50	49
Washington	–	52	–	–	51	–	48	–	–	49
West Virginia	49	52	50	51	52	51	48	50	49	48
Wisconsin	51	51	–	–	52	49	49	–	–	48
Wyoming	50	50	53	53	52	50	50	47	47	48
Other jurisdictions										
District of Columbia	48	49	48	49	50	52	51	52	51	50
DDESS [1]	–	50	52	52	52	–	50	48	48	48
DoDDS [2]	–	50	50	51	51	–	50	50	49	49

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: State-level data were not collected in 1990. 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), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table B.11 Weighted percentage of students, by gender, grade 8 public schools: By state, 1990–2003

Grade 8	Male						Female					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public)	51	52	52	50	50	50	49	48	48	50	50	50
Alabama	50	52	49	50	51	51	50	48	51	50	49	49
Alaska	–	–	52	–	–	51	–	–	48	–	–	49
Arizona	50	51	48	50	51	51	50	49	52	50	49	49
Arkansas	50	51	50	50	51	52	50	49	50	50	49	48
California	51	49	49	51	51	51	49	51	51	49	49	49
Colorado	51	51	51	–	–	51	49	49	49	–	–	49
Connecticut	48	50	51	52	53	49	52	50	49	48	47	51
Delaware	52	50	49	–	–	51	48	50	51	–	–	49
Florida	51	49	47	–	–	51	49	51	53	–	–	49
Georgia	51	48	50	48	50	50	49	52	50	52	50	50
Hawaii	53	52	52	51	52	50	47	48	48	49	48	50
Idaho	52	51	–	52	53	51	48	49	–	48	47	49
Illinois	52	–	–	51	52	50	48	–	–	49	48	50
Indiana	51	51	51	48	50	50	49	49	49	52	50	50
Iowa	50	52	52	–	–	52	50	48	48	–	–	48
Kansas	–	–	–	49	51	51	–	–	–	51	49	49
Kentucky	51	50	51	49	51	50	49	50	49	51	49	50
Louisiana	50	47	48	46	47	49	50	53	52	54	53	51
Maine	–	51	50	50	51	50	–	49	50	50	49	50
Maryland	51	50	50	50	52	50	49	50	50	50	48	50
Massachusetts	–	50	52	51	52	51	–	50	48	49	48	49
Michigan	52	48	50	49	50	49	48	52	50	51	50	51
Minnesota	50	49	51	50	50	50	50	51	49	50	50	50
Mississippi	–	48	48	51	51	49	–	52	52	49	49	51
Missouri	–	52	49	51	52	49	–	48	51	49	48	51
Montana	51	–	49	52	52	51	49	–	51	48	48	49
Nebraska	52	53	51	53	53	52	48	47	49	47	47	48
Nevada	–	–	–	49	50	49	–	–	–	51	50	51
New Hampshire	53	50	–	–	–	51	47	50	–	–	–	49
New Jersey	51	49	–	–	–	51	49	51	–	–	–	49
New Mexico	50	50	48	50	50	49	50	50	52	50	50	51
New York	49	49	50	46	48	51	51	51	50	54	52	49
North Carolina	51	50	48	49	51	50	49	50	52	51	49	50
North Dakota	51	51	51	52	52	53	49	49	49	48	48	47
Ohio	53	50	–	50	51	50	47	50	–	50	49	50
Oklahoma	50	50	–	51	52	52	50	50	–	49	48	48
Oregon	52	–	51	52	52	50	48	–	49	48	48	50
Pennsylvania	51	50	–	–	–	50	49	50	–	–	–	50
Rhode Island	50	50	49	51	52	52	50	50	51	49	48	48
South Carolina	–	50	47	49	50	51	–	50	53	51	50	49
South Dakota	–	–	–	–	–	51	–	–	–	–	–	49
Tennessee	–	50	50	49	50	51	–	50	50	51	50	49
Texas	50	49	47	51	51	51	50	51	53	49	49	49
Utah	–	52	50	49	49	52	–	48	50	51	51	48
Vermont	–	–	51	51	51	51	–	–	49	49	49	49
Virginia	49	50	50	49	50	50	51	50	50	51	50	50
Washington	–	–	51	–	–	50	–	–	49	–	–	50
West Virginia	52	49	50	51	52	51	48	51	50	49	48	49
Wisconsin	50	51	51	–	–	52	50	49	49	–	–	48
Wyoming	51	50	51	50	51	53	49	50	49	50	49	47
Other jurisdictions												
District of Columbia	47	49	47	47	47	47	53	51	53	53	53	53
DDESS [1]	–	–	52	50	51	51	–	–	48	50	49	49
DoDDS [2]	–	–	52	50	50	50	–	–	48	50	50	50

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
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), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table B.12 Weighted percentage of students, by race/ethnicity, grade 4 public schools: By state, 1992–2003

Grade 4	White					Black				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)	72	71	67	62	58	18	17	17	17	17
Alabama	65	65	58	58	61	34	34	39	39	36
Alaska	–	66	–	–	56	–	4	–	–	5
Arizona	62	62	56	55	50	4	4	4	4	4
Arkansas	75	76	70	69	69	24	23	26	28	25
California	50	44	38	37	32	7	9	10	10	7
Colorado	73	74	–	–	65	6	4	–	–	5
Connecticut	76	76	72	72	67	11	12	14	14	14
Delaware	70	66	–	–	56	25	28	–	–	33
Florida	63	59	–	–	50	24	24	–	–	25
Georgia	60	59	52	52	50	38	36	41	41	39
Hawaii	23	18	17	18	16	3	3	2	2	3
Idaho	92	–	84	85	83	#	–	1	1	1
Illinois	–	–	57	56	59	–	–	22	22	20
Indiana	87	88	88	87	80	11	9	8	9	12
Iowa	95	93	90	91	87	2	3	4	3	5
Kansas	–	–	79	79	78	–	–	9	8	11
Kentucky	90	89	87	86	85	9	10	11	12	12
Louisiana	53	52	53	53	44	45	44	44	44	53
Maine	98	98	97	96	97	#	1	1	1	1
Maryland	62	57	52	51	51	32	37	39	39	37
Massachusetts	83	82	78	77	73	8	7	7	7	11
Michigan	79	79	77	77	70	16	15	17	17	21
Minnesota	91	87	82	82	81	3	5	6	6	8
Mississippi	42	47	49	49	44	58	51	50	49	55
Missouri	83	80	79	80	77	15	17	17	17	18
Montana	–	85	86	87	86	–	#	#	#	1
Nebraska	90	88	83	81	80	6	7	6	6	7
Nevada	–	66	60	59	53	–	9	10	11	10
New Hampshire	96	–	–	–	94	1	–	–	–	2
New Jersey	69	60	–	–	58	16	23	–	–	18
New Mexico	45	45	38	37	31	4	3	2	2	3
New York	63	62	52	52	54	15	18	22	21	19
North Carolina	65	68	62	61	58	31	28	32	31	30
North Dakota	95	93	91	90	88	#	1	1	2	1
Ohio	86	–	80	80	77	12	–	17	17	19
Oklahoma	77	–	67	65	59	9	–	10	10	12
Oregon	–	85	81	81	75	–	2	3	3	3
Pennsylvania	81	83	–	–	74	14	11	–	–	20
Rhode Island	82	82	75	75	70	7	5	8	8	9
South Carolina	58	57	56	55	55	41	41	42	42	40
South Dakota	–	–	–	–	84	–	–	–	–	1
Tennessee	73	75	74	74	71	25	22	23	24	26
Texas	49	53	44	43	40	14	14	16	15	13
Utah	93	91	86	84	82	1	1	1	1	1
Vermont	–	97	97	98	95	–	1	1	#	2
Virginia	71	69	63	64	62	25	25	29	28	26
Washington	–	79	–	–	71	–	5	–	–	6
West Virginia	96	95	94	94	95	2	4	4	5	4
Wisconsin	87	84	–	–	76	6	10	–	–	12
Wyoming	90	89	89	89	86	1	2	1	1	1
Other jurisdictions										
District of Columbia	5	5	5	5	4	91	89	87	87	87
DDESS [1]	–	51	46	45	47	–	28	26	26	25
DoDDS [2]	–	49	47	48	48	–	20	18	18	22

See notes at end of table. ▶

Table B.12 Weighted percentage of students, by race/ethnicity, grade 4 public schools: By state, 1992–2003—Continued

Grade 4	Hispanic					Asian/Pacific Islander				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)	7	9	11	16	19	3	3	‡	‡	4
Alabama	#	#	1	1	1	#	#	1	1	1
Alaska	–	3	–	–	5	–	5	–	–	7
Arizona	23	24	27	33	38	1	2	3	3	2
Arkansas	#	1	3	3	4	1	#	1	1	1
California	30	34	37	40	49	12	11	12	10	11
Colorado	17	16	–	–	25	2	3	–	–	3
Connecticut	10	8	11	11	15	2	2	3	3	3
Delaware	2	4	–	–	7	1	2	–	–	3
Florida	12	16	–	–	21	1	1	–	–	2
Georgia	1	3	3	3	7	1	2	2	2	2
Hawaii	2	3	2	2	3	62	63	67	67	67
Idaho	6	–	11	11	13	1	–	1	1	1
Illinois	–	–	17	20	18	–	–	3	2	2
Indiana	2	2	2	3	4	1	#	1	1	1
Iowa	1	3	3	3	5	2	1	2	2	2
Kansas	–	–	8	9	8	–	–	1	1	2
Kentucky	#	#	1	1	1	#	#	1	1	1
Louisiana	1	2	1	2	1	2	1	1	1	1
Maine	#	1	#	#	1	1	1	1	2	1
Maryland	2	3	4	5	6	3	3	4	4	6
Massachusetts	4	7	9	10	12	4	3	4	4	4
Michigan	3	3	3	3	4	1	2	1	1	2
Minnesota	2	2	3	2	4	3	3	5	7	5
Mississippi	#	#	1	1	1	#	1	1	1	1
Missouri	1	1	1	2	3	1	1	1	1	1
Montana	–	2	2	2	2	–	1	1	1	1
Nebraska	3	3	7	9	9	#	1	1	1	1
Nevada	–	16	21	21	30	–	4	7	6	5
New Hampshire	1	–	–	–	3	1	–	–	–	1
New Jersey	11	11	–	–	16	5	5	–	–	7
New Mexico	45	42	47	50	53	1	1	1	1	1
New York	17	15	20	21	20	4	5	5	5	6
North Carolina	1	1	3	3	6	1	2	1	1	2
North Dakota	1	1	1	1	1	1	1	1	1	1
Ohio	1	–	2	2	2	1	–	1	1	1
Oklahoma	3	–	6	7	7	#	–	1	1	2
Oregon	–	6	9	9	14	–	5	4	4	4
Pennsylvania	3	4	–	–	5	2	2	–	–	2
Rhode Island	7	8	14	14	16	4	4	3	3	4
South Carolina	#	1	1	2	3	1	1	1	1	1
South Dakota	–	–	–	–	2	–	–	–	–	1
Tennessee	#	1	1	2	2	1	1	1	1	1
Texas	34	30	35	38	44	2	2	3	3	3
Utah	4	5	7	9	11	2	2	3	3	4
Vermont	–	#	1	#	1	–	1	1	1	2
Virginia	2	3	4	4	7	3	3	4	4	5
Washington	–	6	–	–	12	–	7	–	–	7
West Virginia	#	1	1	1	1	#	1	#	#	1
Wisconsin	2	3	–	–	8	2	2	–	–	3
Wyoming	6	6	8	7	8	1	1	1	1	1
Other jurisdictions										
District of Columbia	3	4	7	8	8	1	1	1	1	1
DDESS [1]	–	13	13	14	19	–	2	4	4	3
DoDDS [2]	–	7	5	6	11	–	8	9	8	10

See notes at end of table. ▶

Table B.12 Weighted percentage of students, by race/ethnicity, grade 4 public schools: By state, 1992–2003—Continued

Grade 4	American Indian/Alaska Native					Other[3]				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)	1	1	1	1	1	#	1	1	1	1
Alabama	1	1	#	#	1	#	#	#	#	#
Alaska	–	22	–	–	26	–	#	–	–	1
Arizona	10	8	9	5	6	#	1	#	#	#
Arkansas	#	#	#	#	#	#	#	#	#	#
California	1	1	1	1	#	1	1	2	2	#
Colorado	1	1	–	–	1	1	1	–	–	#
Connecticut	#	1	#	#	#	#	1	1	#	1
Delaware	#	#	–	–	#	#	#	–	–	#
Florida	#	#	–	–	#	#	#	–	–	2
Georgia	#	#	#	#	#	1	1	1	1	2
Hawaii	#	#	#	#	1	10	12	11	11	11
Idaho	1	–	1	1	1	#	–	2	1	#
Illinois	–	–	#	#	#	–	–	1	#	#
Indiana	#	#	#	#	#	#	#	1	1	2
Iowa	#	#	1	#	1	#	#	1	1	#
Kansas	–	–	2	1	1	–	–	2	2	#
Kentucky	#	#	#	#	#	#	#	1	1	1
Louisiana	#	2	#	#	1	#	#	#	#	#
Maine	#	#	1	1	#	#	#	#	#	#
Maryland	#	#	#	#	#	#	#	#	#	1
Massachusetts	#	#	#	#	#	#	1	1	1	#
Michigan	1	2	1	1	1	#	1	2	2	1
Minnesota	1	2	4	3	2	1	#	#	#	#
Mississippi	#	#	#	#	#	#	#	#	#	#
Missouri	#	1	#	#	#	#	#	1	1	#
Montana	–	12	11	10	10	–	#	#	#	#
Nebraska	1	#	3	3	2	#	#	#	#	#
Nevada	–	4	2	2	2	–	#	#	#	#
New Hampshire	#	–	–	–	#	1	–	–	–	#
New Jersey	#	#	–	–	1	#	1	–	–	#
New Mexico	4	8	11	9	11	1	1	1	1	1
New York	#	#	#	#	1	1	#	1	1	#
North Carolina	2	1	2	2	1	#	#	1	1	2
North Dakota	3	4	5	6	8	#	#	#	#	1
Ohio	#	–	#	#	#	#	–	1	1	2
Oklahoma	9	–	16	16	18	1	–	#	#	2
Oregon	–	2	1	1	2	–	1	1	1	2
Pennsylvania	#	#	–	–	#	#	1	–	–	1
Rhode Island	#	#	#	#	1	#	1	#	#	#
South Carolina	#	#	#	#	#	#	#	#	#	#
South Dakota	–	–	–	–	12	–	–	–	–	#
Tennessee	#	#	#	#	#	#	#	#	#	#
Texas	#	1	1	1	#	1	#	#	#	#
Utah	1	1	2	1	1	#	#	#	#	#
Vermont	–	#	#	#	#	–	#	#	#	#
Virginia	#	#	#	#	#	#	#	#	#	1
Washington	–	3	–	–	3	–	#	–	–	1
West Virginia	#	#	#	#	#	#	#	#	#	#
Wisconsin	2	2	–	–	2	#	#	–	–	#
Wyoming	2	2	1	3	3	#	#	#	#	#
Other jurisdictions										
District of Columbia	#	#	#	#	#	#	#	#	#	#
DDESS[1]	–	#	#	#	1	–	5	11	11	4
DoDDS[2]	–	1	1	1	1	–	16	20	19	9

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
[3] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: State-level data were not collected in 1990. 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), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table B.13 Weighted percentage of students, by race/ethnicity, grade 8 public schools: By state, 1990–2003

Grade 8	White						Black					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public)	73	72	70	69	63	62	16	17	16	14	17	17
Alabama	67	64	61	65	66	62	32	35	36	33	33	36
Alaska	–	–	72	–	–	58	–	–	4	–	–	5
Arizona	62	64	64	59	58	50	3	4	3	5	4	4
Arkansas	75	75	77	72	71	72	24	23	21	24	26	24
California	49	50	43	38	37	37	7	7	9	8	9	9
Colorado	77	78	74	–	–	70	5	4	6	–	–	5
Connecticut	79	75	78	74	74	71	11	12	10	13	13	13
Delaware	70	68	69	–	–	60	26	28	26	–	–	31
Florida	64	59	57	–	–	50	22	25	24	–	–	27
Georgia	62	60	59	57	57	53	36	37	37	38	39	39
Hawaii	20	21	16	17	17	15	2	2	2	2	2	2
Idaho	93	92	–	88	88	85	#	#	–	1	1	1
Illinois	70	–	–	61	61	62	19	–	–	19	20	20
Indiana	87	89	86	85	85	82	9	9	10	9	10	12
Iowa	95	95	95	–	–	90	2	2	2	–	–	4
Kansas	–	–	–	85	84	79	–	–	–	6	7	9
Kentucky	90	90	89	87	87	88	9	9	9	11	11	9
Louisiana	57	55	54	53	52	51	40	42	42	44	44	46
Maine	–	97	98	97	97	97	–	1	1	1	1	1
Maryland	62	63	57	57	57	58	31	31	35	33	33	31
Massachusetts	–	85	82	79	79	77	–	5	7	8	7	8
Michigan	82	76	79	79	79	70	14	19	16	14	14	22
Minnesota	93	94	88	89	88	83	2	2	4	4	4	6
Mississippi	–	51	50	55	55	49	–	49	49	43	43	48
Missouri	–	85	85	82	83	82	–	13	13	14	15	15
Montana	91	–	87	89	90	87	#	–	#	#	#	1
Nebraska	92	90	90	87	87	84	5	5	5	4	4	5
Nevada	–	–	–	62	60	57	–	–	–	8	9	9
New Hampshire	98	96	–	–	–	95	#	1	–	–	–	1
New Jersey	69	64	–	–	–	61	17	19	–	–	–	18
New Mexico	42	47	40	38	38	34	2	2	3	2	2	3
New York	61	64	62	56	56	56	19	19	18	24	23	20
North Carolina	63	70	66	65	65	59	32	28	29	28	29	30
North Dakota	93	96	94	92	91	90	#	#	1	1	1	1
Ohio	84	82	–	85	85	79	12	15	–	12	13	17
Oklahoma	77	78	–	69	69	63	11	8	–	9	9	10
Oregon	91	–	87	84	82	79	2	–	2	2	2	3
Pennsylvania	82	85	–	–	–	80	14	11	–	–	–	15
Rhode Island	86	85	82	81	79	76	5	6	5	6	7	7
South Carolina	–	60	55	58	57	56	–	39	43	40	41	40
South Dakota	–	–	–	–	–	89	–	–	–	–	–	1
Tennessee	–	77	80	76	75	74	–	22	18	22	22	23
Texas	50	51	51	48	48	44	14	12	13	13	12	16
Utah	–	93	92	90	88	86	–	1	1	1	1	1
Vermont	–	–	96	97	96	97	–	–	1	1	1	1
Virginia	70	72	69	66	66	64	25	23	25	26	25	27
Washington	–	–	81	–	–	75	–	–	4	–	–	5
West Virginia	96	95	96	95	95	96	3	5	3	4	4	4
Wisconsin	88	88	86	–	–	84	9	7	7	–	–	8
Wyoming	86	91	90	91	90	89	1	1	1	1	1	1
Other jurisdictions												
District of Columbia	3	3	4	4	4	3	93	92	89	87	87	87
DDESS [1]	–	–	44	47	44	39	–	–	31	22	22	22
DoDDS [2]	–	–	47	47	47	48	–	–	21	20	20	21

See notes at end of table. ▶

Table B.13 Weighted percentage of students, by race/ethnicity, grade 8 public schools: By state, 1990–2003—Continued

Grade 8	Hispanic						Asian/Pacific Islander					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public)	7	8	9	11	14	15	2	2	‡	4	4	4
Alabama	#	#	#	1	1	1	1	#	1	#	#	1
Alaska	–	–	2	–	–	3	–	–	5	–	–	7
Arizona	26	24	25	30	32	37	2	1	2	3	2	2
Arkansas	1	1	1	3	2	3	1	#	1	1	1	1
California	30	32	34	40	41	39	12	10	11	12	12	13
Colorado	15	15	16	–	–	21	2	2	2	–	–	4
Connecticut	8	10	9	10	10	12	2	2	2	2	2	3
Delaware	2	3	3	–	–	6	1	2	2	–	–	2
Florida	12	14	16	–	–	19	2	2	2	–	–	2
Georgia	1	1	1	1	2	4	1	1	2	2	2	3
Hawaii	2	3	3	2	2	3	67	66	67	68	67	69
Idaho	4	5	–	9	8	11	1	1	–	1	1	1
Illinois	8	–	–	16	15	15	2	–	–	3	3	3
Indiana	2	1	3	4	3	3	1	1	1	1	1	1
Iowa	1	1	1	–	–	4	1	1	1	–	–	1
Kansas	–	–	–	6	5	9	–	–	–	2	2	2
Kentucky	#	#	1	#	1	1	1	1	1	1	1	1
Louisiana	1	1	1	2	2	2	1	1	1	1	1	1
Maine	–	#	#	1	1	1	–	1	1	1	1	1
Maryland	2	2	2	4	4	6	4	3	5	6	6	5
Massachusetts	–	7	7	7	8	10	–	2	4	4	4	4
Michigan	2	3	2	3	3	3	2	1	2	1	2	2
Minnesota	#	1	1	3	4	3	3	2	5	3	4	5
Mississippi	–	#	#	1	1	1	–	#	1	1	1	1
Missouri	–	1	1	1	1	2	–	1	1	1	1	1
Montana	1	–	1	1	1	2	1	–	1	1	1	1
Nebraska	2	3	4	5	6	7	1	1	1	1	1	2
Nevada	–	–	–	21	21	25	–	–	–	6	6	7
New Hampshire	1	1	–	–	–	2	1	1	–	–	–	1
New Jersey	9	11	–	–	–	14	4	5	–	–	–	6
New Mexico	42	45	45	46	48	51	2	1	1	1	2	1
New York	13	11	12	14	14	17	4	3	6	5	6	6
North Carolina	1	1	2	2	2	5	1	1	2	2	2	2
North Dakota	1	1	1	1	1	1	1	1	1	1	1	1
Ohio	1	1	–	1	1	2	1	1	–	1	1	1
Oklahoma	2	3	–	5	5	6	1	1	–	1	2	1
Oregon	3	–	4	6	8	10	3	–	3	4	4	4
Pennsylvania	2	2	–	–	–	3	1	1	–	–	–	2
Rhode Island	5	6	8	9	10	13	2	3	3	4	3	3
South Carolina	–	#	1	1	1	2	–	1	1	1	1	1
South Dakota	–	–	–	–	–	1	–	–	–	–	–	1
Tennessee	–	#	1	1	1	2	–	#	1	2	1	1
Texas	33	33	32	35	36	38	2	3	4	3	3	3
Utah	–	4	4	6	6	9	–	2	2	2	3	3
Vermont	–	–	1	1	1	#	–	–	1	1	1	1
Virginia	2	2	2	3	4	5	3	3	3	4	4	4
Washington	–	–	6	–	–	9	–	–	6	–	–	8
West Virginia	#	#	#	#	#	#	1	#	#	1	1	#
Wisconsin	1	2	3	–	–	4	2	1	2	–	–	4
Wyoming	6	5	5	6	5	7	1	#	1	1	1	1
Other jurisdictions												
District of Columbia	3	4	6	8	7	9	1	1	1	2	2	1
DDESS [1]	–	–	19	17	20	27	–	–	3	4	4	7
DoDDS [2]	–	–	8	7	7	10	–	–	8	9	9	11

See notes at end of table. ▶

Table B.13 Weighted percentage of students, by race/ethnicity, grade 8 public schools: By state, 1990–2003—Continued

Grade 8	American Indian/Alaska Native						Other[3]					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public)	1	1	1	1	1	1	#	1	#	#	1	1
Alabama	#	#	2	1	1	#	#	#	#	#	#	#
Alaska	–	–	16	–	–	25	–	–	#	–	–	2
Arizona	7	6	6	3	3	7	#	#	#	#	#	#
Arkansas	#	#	#	#	#	#	#	#	#	#	#	#
California	1	#	1	1	#	1	1	1	2	1	1	1
Colorado	1	1	1	–	–	1	#	1	#	–	–	#
Connecticut	#	#	#	#	#	#	1	1	#	1	1	1
Delaware	#	#	#	–	–	#	#	#	#	–	–	#
Florida	#	#	1	–	–	#	#	#	#	–	–	1
Georgia	#	#	#	#	#	#	#	1	#	1	1	1
Hawaii	#	#	#	1	1	#	9	8	12	10	10	11
Idaho	1	1	–	1	1	1	#	#	–	#	1	#
Illinois	#	–	–	#	#	#	#	–	–	1	1	#
Indiana	#	#	#	#	#	#	1	#	#	1	1	2
Iowa	#	#	#	–	–	#	#	#	#	–	–	#
Kansas	–	–	–	1	1	1	–	–	–	#	#	#
Kentucky	#	#	#	#	#	#	#	#	#	#	#	1
Louisiana	#	#	1	1	1	#	#	#	#	#	#	#
Maine	–	1	#	#	#	#	–	#	#	#	#	#
Maryland	#	#	#	#	#	#	#	#	#	#	#	#
Massachusetts	–	#	#	#	#	#	–	#	#	1	1	#
Michigan	1	1	1	1	1	2	#	1	1	1	1	#
Minnesota	2	1	2	1	#	2	#	#	#	#	#	#
Mississippi	–	#	#	#	#	#	–	#	#	#	#	#
Missouri	–	#	#	#	#	#	–	#	#	#	#	#
Montana	7	–	10	9	8	9	#	–	#	#	#	#
Nebraska	#	1	1	2	2	2	#	#	#	#	#	#
Nevada	–	–	–	2	3	1	–	–	–	#	#	#
New Hampshire	#	#	–	–	–	#	#	2	–	–	–	#
New Jersey	#	#	–	–	–	#	1	1	–	–	–	#
New Mexico	11	4	9	12	10	10	1	1	2	1	1	1
New York	1	#	#	#	#	1	1	2	1	#	#	#
North Carolina	2	1	2	2	2	2	1	#	#	1	1	1
North Dakota	5	3	3	5	7	7	#	#	#	#	#	1
Ohio	#	1	–	#	#	#	1	1	–	1	1	1
Oklahoma	9	10	–	15	15	17	#	1	–	1	#	2
Oregon	2	–	3	2	2	2	#	–	1	1	2	1
Pennsylvania	#	#	–	–	–	#	1	#	–	–	–	#
Rhode Island	#	#	#	#	#	#	1	1	1	#	#	#
South Carolina	–	#	#	#	#	#	–	#	#	#	#	#
South Dakota	–	–	–	–	–	8	–	–	–	–	–	#
Tennessee	–	#	#	#	#	#	–	#	#	#	#	#
Texas	#	#	#	#	1	#	#	#	#	#	#	#
Utah	–	1	1	1	2	1	–	#	#	#	#	#
Vermont	–	–	1	#	#	1	–	–	#	1	1	#
Virginia	#	#	1	#	#	#	#	#	#	#	#	1
Washington	–	–	3	–	–	2	–	–	#	–	–	1
West Virginia	#	#	#	#	#	#	#	#	#	#	#	#
Wisconsin	1	1	1	–	–	1	#	#	#	–	–	#
Wyoming	2	3	3	2	3	3	3	#	#	#	#	#
Other jurisdictions												
District of Columbia	#	#	#	#	#	#	#	#	1	#	#	#
DDESS[1]	–	–	#	1	1	1	–	–	2	9	8	3
DoDDS[2]	–	–	1	#	1	1	–	–	16	17	17	9

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
[3] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
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), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table B.14 Weighted percentage of students, by eligibility for free/reduced-price school lunch, grade 4 public schools: By state, 1996–2003

Grade 4	Eligible				Not eligible				Information not available			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1996	2000	2000	2003	1996	2000	2000	2003	1996	2000	2000	2003
Nation (public)	34	35	40	44	52	52	49	52	13	13	11	4
Alabama	49	51	52	57	48	44	42	43	3	6	6	#
Alaska	25	–	–	33	30	–	–	59	45	–	–	8
Arizona	36	40	41	47	44	49	47	42	20	11	12	11
Arkansas	45	51	51	54	52	47	46	43	3	2	2	3
California	44	49	52	52	40	40	38	44	16	12	10	4
Colorado	29	–	–	31	66	–	–	68	5	–	–	1
Connecticut	25	24	24	30	72	67	68	66	3	9	9	4
Delaware	30	–	–	38	47	–	–	53	23	–	–	9
Florida	47	–	–	49	48	–	–	48	5	–	–	3
Georgia	44	42	43	48	49	45	45	46	7	13	13	6
Hawaii	40	46	46	49	57	49	49	51	3	5	4	#
Idaho	–	41	42	43	–	52	52	50	–	7	6	6
Illinois	–	37	38	41	–	52	49	55	–	12	12	4
Indiana	29	25	28	34	69	65	63	65	2	10	9	1
Iowa	31	26	29	33	64	69	67	66	5	5	5	1
Kansas	–	34	35	40	–	62	62	59	–	4	4	1
Kentucky	47	47	47	51	51	48	48	47	3	5	5	2
Louisiana	58	53	54	65	32	32	32	31	10	14	13	3
Maine	32	31	32	34	62	64	63	64	6	5	6	2
Maryland	32	32	34	36	64	58	57	60	4	10	9	4
Massachusetts	24	26	26	29	66	67	67	63	11	7	7	8
Michigan	31	27	29	36	62	68	67	63	7	4	4	1
Minnesota	22	27	26	27	65	68	67	73	13	6	7	#
Mississippi	64	58	59	69	35	32	32	26	1	10	9	5
Missouri	36	34	35	42	63	62	60	53	1	5	5	5
Montana	35	31	31	38	60	53	53	57	5	16	16	5
Nebraska	33	34	37	36	57	61	57	59	10	6	6	5
Nevada	15	34	36	42	28	60	58	52	57	6	7	6
New Hampshire	–	–	–	17	–	–	–	73	–	–	–	9
New Jersey	33	–	–	29	65	–	–	63	2	–	–	8
New Mexico	50	54	52	65	37	34	31	25	13	12	17	9
New York	44	49	49	50	49	48	47	46	7	4	4	3
North Carolina	34	40	42	42	58	55	54	52	8	5	4	7
North Dakota	24	24	26	31	65	58	55	67	11	18	18	2
Ohio	–	34	35	35	–	57	57	56	–	9	8	9
Oklahoma	–	49	51	57	–	45	44	41	–	5	5	3
Oregon	31	35	35	36	60	58	56	61	9	8	9	4
Pennsylvania	33	–	–	37	58	–	–	60	9	–	–	3
Rhode Island	34	35	35	40	65	60	59	52	1	4	5	8
South Carolina	52	50	52	53	48	46	46	46	#	4	2	1
South Dakota	–	–	–	37	–	–	–	62	–	–	–	1
Tennessee	36	41	42	40	59	57	56	55	5	2	2	4
Texas	43	43	45	54	52	48	47	44	6	9	9	2
Utah	27	31	32	34	60	64	62	65	13	6	7	1
Vermont	26	26	28	29	65	66	64	69	9	8	9	2
Virginia	31	30	30	32	65	61	61	66	4	10	9	2
Washington	32	–	–	38	62	–	–	52	6	–	–	10
West Virginia	46	47	49	53	49	49	46	45	5	5	5	1
Wisconsin	25	–	–	32	64	–	–	65	10	–	–	4
Wyoming	33	32	33	35	64	60	59	63	3	8	8	2
Other jurisdictions												
District of Columbia	74	71	72	71	21	11	12	24	5	18	16	5
DDESS [1]	35	38	37	37	38	49	49	53	27	13	14	9
DoDDS [2]	12	20	21	–	36	49	49	–	52	30	30	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
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), 1996, 2000, and 2003 Mathematics Assessments.

Table B.15 Weighted percentage of students, by eligibility for free/reduced-price school lunch, grade 8 public schools: By state, 1996–2003

Grade 8	Eligible				Not eligible				Information not available			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1996	2000	2000	2003	1996	2000	2000	2003	1996	2000	2000	2003
Nation (public)	30	28	31	36	56	55	54	58	14	16	15	6
Alabama	39	39	37	47	59	52	53	53	2	9	10	#
Alaska	15	–	–	24	33	–	–	67	51	–	–	9
Arizona	27	31	32	41	50	54	52	47	23	15	16	12
Arkansas	32	38	40	46	60	55	53	49	7	7	7	5
California	36	35	35	41	47	49	52	46	17	16	13	13
Colorado	24	–	–	26	65	–	–	72	11	–	–	1
Connecticut	21	19	18	26	74	68	68	71	5	13	13	3
Delaware	20	–	–	33	59	–	–	58	21	–	–	9
Florida	39	–	–	43	53	–	–	52	8	–	–	5
Georgia	32	29	30	43	54	49	48	52	14	22	21	5
Hawaii	30	38	35	43	65	52	54	56	5	10	11	1
Idaho	–	29	29	35	–	62	61	56	–	9	10	9
Illinois	–	30	31	37	–	65	63	60	–	5	5	3
Indiana	23	18	18	29	77	71	70	67	1	11	12	3
Iowa	19	–	–	25	74	–	–	72	6	–	–	3
Kansas	–	24	23	32	–	64	66	66	–	11	11	2
Kentucky	34	40	41	42	58	58	57	55	8	1	1	2
Louisiana	48	50	49	50	44	37	36	38	8	14	15	12
Maine	22	23	23	28	73	71	71	70	6	6	5	2
Maryland	25	22	23	26	70	63	62	67	5	15	15	7
Massachusetts	18	20	22	23	75	74	71	65	7	6	7	12
Michigan	20	21	21	26	66	68	69	66	14	11	9	8
Minnesota	20	21	22	22	65	72	71	77	15	7	7	1
Mississippi	53	46	45	57	42	43	43	39	5	12	12	4
Missouri	26	27	28	31	66	65	65	66	8	8	8	3
Montana	25	25	26	30	59	55	55	65	16	20	19	5
Nebraska	27	28	29	28	69	69	68	68	5	3	3	4
Nevada	–	26	27	32	–	71	69	64	–	3	4	4
New Hampshire	–	–	–	13	–	–	–	79	–	–	–	8
New Jersey	–	–	–	24	–	–	–	68	–	–	–	8
New Mexico	42	40	43	51	43	35	35	40	15	25	22	9
New York	37	34	36	44	54	42	40	51	9	23	23	5
North Carolina	31	28	29	37	62	66	64	51	7	6	6	12
North Dakota	24	23	23	27	67	62	60	73	9	15	17	1
Ohio	–	16	18	23	–	74	74	65	–	10	8	12
Oklahoma	–	39	39	44	–	53	53	54	–	8	7	2
Oregon	22	24	24	26	62	60	60	68	16	16	16	6
Pennsylvania	–	–	–	28	–	–	–	69	–	–	–	3
Rhode Island	26	28	31	29	70	66	64	63	4	5	5	8
South Carolina	44	42	44	45	55	55	54	53	1	2	2	2
South Dakota	–	–	–	32	–	–	–	68	–	–	–	1
Tennessee	27	33	35	37	64	63	61	60	8	4	4	3
Texas	37	41	41	45	57	53	52	53	6	6	7	2
Utah	20	22	24	27	70	67	67	70	10	10	9	4
Vermont	19	19	20	25	73	71	70	75	8	9	9	1
Virginia	23	21	23	25	67	71	69	71	10	8	8	4
Washington	25	–	–	27	72	–	–	59	3	–	–	14
West Virginia	36	38	41	47	61	56	53	53	4	7	7	#
Wisconsin	20	–	–	22	67	–	–	68	14	–	–	10
Wyoming	21	24	26	27	73	72	70	72	6	4	5	1
Other jurisdictions												
District of Columbia	55	60	61	57	30	21	22	31	15	19	17	13
DDESS [1]	29	31	31	24	40	48	49	57	31	21	21	19
DoDDS [2]	8	15	15	–	47	51	53	–	44	34	32	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
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), 1996, 2000, and 2003 Mathematics Assessments.

Table B.16 Weighted percentage of students, by gender, grades 4 and 8 public schools: By urban district, 2003

	Male	Female
Grade 4		
Nation (public)	51	49
Large central city (public)	50	50
Atlanta	50	50
Boston	51	49
Charlotte	52	48
Chicago	50	50
Cleveland	49	51
District of Columbia	50	50
Houston	49	51
Los Angeles	51	49
New York City	50	50
San Diego	48	52
Grade 8		
Nation (public)	50	50
Large central city (public)	50	50
Atlanta	49	51
Boston	48	52
Charlotte	51	49
Chicago	50	50
Cleveland	50	50
District of Columbia	47	53
Houston	49	51
Los Angeles	51	49
New York City	50	50
San Diego	49	51

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), 2003 Trial Urban District Mathematics Assessment.

Table B.17 **Weighted percentage of students, by race/ethnicity, grades 4 and 8 public schools: By urban district, 2003**

	White	Black	Hispanic	Asian/ Pacific Islander	American Indian/Alaska Native	Other[1]
Grade 4						
Nation (public)	58	17	19	4	1	1
Large central city (public)	22	34	35	7	1	#
Atlanta	10	87	2	#	#	#
Boston	12	46	33	8	1	#
Charlotte	41	46	7	4	1	2
Chicago	11	52	34	3	#	#
Cleveland	16	76	6	1	1	1
District of Columbia	4	87	8	1	#	#
Houston	7	35	56	2	#	#
Los Angeles	11	10	73	6	#	#
New York City	15	35	37	12	1	#
San Diego	23	17	42	18	#	#
Grade 8						
Nation (public)	62	17	15	4	1	1
Large central city (public)	24	35	32	8	1	#
Atlanta	5	93	1	#	#	#
Boston	16	46	28	9	#	#
Charlotte	42	46	6	5	1	1
Chicago	10	51	36	4	#	#
Cleveland	15	72	11	1	#	1
District of Columbia	3	87	9	1	#	#
Houston	8	33	55	3	#	#
Los Angeles	10	12	71	7	#	#
New York City	16	36	34	14	#	#
San Diego	27	16	38	19	#	#

The estimate rounds to zero.
1 "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
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), 2003 Trial Urban District Mathematics Assessment.

Table B.18 **Weighted percentage of students, by eligibility for free/reduced-price school lunch, grades 4 and 8 public schools: By urban district, 2003**

	Eligible	Not eligible	Information not available
Grade 4			
Nation (public)	44	52	4
Large central city (public)	69	28	3
Atlanta	81	18	1
Boston	83	8	9
Charlotte	45	55	#
Chicago	85	7	8
Cleveland	100	0	0
District of Columbia	71	24	5
Houston	76	21	2
Los Angeles	83	5	12
New York City	88	10	2
San Diego	58	36	6
Grade 8			
Nation (public)	36	58	6
Large central city (public)	60	33	7
Atlanta	78	15	7
Boston	71	10	19
Charlotte	36	63	#
Chicago	88	6	6
Cleveland	100	0	0
District of Columbia	57	31	13
Houston	69	31	#
Los Angeles	65	6	29
New York City	83	14	4
San Diego	52	44	4

The estimate rounds to zero.
NOTE: Detail may not sum to totals because of rounding. In Cleveland, all students were categorized as eligible for the school lunch program.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment.

Table B.19 Weighted percentage of students, by student-reported parents' highest level of education, grade 8 public schools: By urban district, 2003

	Less than high school	Graduated high school	Some education after high school	Graduated college	Unknown
Nation (public)	7	18	18	45	11
Large central city (public)	11	18	17	38	17
Atlanta	6	24	19	40	11
Boston	10	18	19	36	18
Charlotte	4	15	17	55	10
Chicago	11	20	20	30	19
Cleveland	11	23	20	32	14
District of Columbia	7	23	18	37	15
Houston	20	17	14	28	21
Los Angeles	19	15	15	24	27
New York City	9	17	13	43	19
San Diego	12	14	16	38	21

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), 2003 Trial Urban District Mathematics Assessment.

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C Appendix C

State and Urban District Subgroup Appendix

Appendix C includes tables with additional state-level and district-level subgroup results.

Table C.1 Gaps in average mathematics scale scores, by gender, grade 4 public schools: By state, 1992–2003

Grade 4	Male average score minus female average score				
	Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003
Nation (public) [1]	2	3	3	2	3
Alabama	#	#	−2	−3	#
Alaska	–	1	–	–	3
Arizona	−1	1	2	1	4
Arkansas	1	−1	#	#	−1
California	1	3	−2	−1	4
Colorado	2	3	–	–	4
Connecticut	3	5	2	2	5
Delaware	2	1	–	–	2
Florida	3	−3	–	–	2
Georgia	−1	1	2	3	2
Hawaii	−3	#	−3	−2	1
Idaho	3	–	1	#	3
Illinois	–	–	5	2	3
Indiana	3	4	2	1	2
Iowa	1	2	3	3	4
Kansas	–	–	1	2	4
Kentucky	#	1	2	2	3
Louisiana	1	−1	1	1	1
Maine	1	3	4	4	3
Maryland	4	2	2	3	3
Massachusetts	3	2	4	4	5
Michigan	5	2	3	2	5
Minnesota	1	3	4	4	3
Mississippi	−2	#	−1	−2	#
Missouri	−1	1	1	1	#
Montana	–	3	4	4	1
Nebraska	3	#	2	#	3
Nevada	–	4	4	2	2
New Hampshire	1	–	–	–	5
New Jersey	2	8	–	–	3
New Mexico	#	2	5	6	3
New York	7	2	4	3	3
North Carolina	−1	#	2	#	1
North Dakota	3	2	4	2	4
Ohio	3	–	5	5	2
Oklahoma	2	–	3	2	2
Oregon	–	#	5	3	2
Pennsylvania	2	1	–	–	4
Rhode Island	2	5	1	3	2
South Carolina	1	1	2	2	3
South Dakota	–	–	–	–	4
Tennessee	#	2	4	2	#
Texas	2	1	4	3	3
Utah	#	3	−2	#	3
Vermont	–	2	1	2	3
Virginia	2	3	6	4	1
Washington	–	3	–	–	3
West Virginia	2	1	3	1	2
Wisconsin	3	3	–	–	3
Wyoming	3	1	2	4	3
Other jurisdictions					
District of Columbia	1	#	−1	−2	−2
DDESS [2]	–	5	4	3	3
DoDDS [3]	–	2	4	4	3

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Score gaps are calculated based on differences between unrounded average scale scores. State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Negative numbers indicate that the average score for male students was lower than the score for female students.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table C.2 Gaps in average mathematics scale scores, by gender, grade 8 public schools: By state, 1990–2003

Grade 8	Male average score minus female average score					
	Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003
Nation (public)[1]	1	−1	#	3	2	2
Alabama	2	3	1	1	2	1
Alaska	–	–	−1	–	–	2
Arizona	6	1	5	6 *	5	#
Arkansas	2	1	−1	#	−4	−2
California	3	−2	3	#	−1	2
Colorado	4	3	4	–	–	1
Connecticut	3	2	#	5	5	2
Delaware	−2	1	4	–	–	3
Florida	3	1	3	–	–	4
Georgia	1	3	−1	3	#	1
Hawaii	−6 *	−6 *	−7 *	−3	−5	−1
Idaho	2	4	–	1	#	1
Illinois	#	–	–	−1	−6 *	2
Indiana	5	4	1	4	1	2
Iowa	5	2	−1	–	–	3
Kansas	–	–	–	2	#	#
Kentucky	3	2	#	4	3	#
Louisiana	3	4	−1	3	2	2
Maine	–	#	2	3	1	2
Maryland	#	2	2	1	#	3
Massachusetts	–	2	2	4	1	6
Michigan	1	5	4	1	1	1
Minnesota	1	#	3	#	#	−3
Mississippi	–	3	1	2	2	2
Missouri	–	2	1	4	1	3
Montana	6 *	–	#	#	−2	#
Nebraska	2	2	1	6	5	3
Nevada	–	–	–	2	1	#
New Hampshire	−1	1	–	–	–	1
New Jersey	3	7	–	–	–	1
New Mexico	6	3	#	−1	−1	1
New York	3	2	3	6	3	2
North Carolina	−1	2	3	3	2	−1
North Dakota	6 *	3	1	−1	#	#
Ohio	5	3	–	2	1	2
Oklahoma	5	3	–	4	2	1
Oregon	2	–	−1	2	3	2
Pennsylvania	6	5	–	–	–	4
Rhode Island	3	#	4	1	−3	1
South Carolina	–	1	3	−1 *	−1 *	6
South Dakota	–	–	–	–	–	2
Tennessee	–	5	1	4	3	#
Texas	4	5	5	−3	−2	2
Utah	–	2	3	−1	2	2
Vermont	–	–	3	#	−3	#
Virginia	3	1	6	2	2	3
Washington	–	–	−1	–	–	1
West Virginia	1	1	−2	−1	−3	#
Wisconsin	2	1	1	–	–	1
Wyoming	5 *	#	2	1	#	1
Other jurisdictions						
District of Columbia	−3	−2	−4	#	#	−3
DDESS[2]	–	–	4	4	4	4
DoDDS[3]	–	–	2	3	1	3

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Score gaps are calculated based on differences between unrounded average scale scores. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments. Negative numbers indicate that the average score for male students was lower than the score for female students.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table C.3 Percentages of students, by gender and mathematics achievement level, grade 4 public schools: By state, 2003

Grade 4	Male				Female			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	23	77	34	5	25	75	29	3
Alabama	35	65	19	2	36	64	18	1
Alaska	24	76	33	4	26	74	27	3
Arizona	28	72	28	2	32	68	23	2
Arkansas	30	70	27	2	27	73	25	2
California	31	69	28	4	35	65	22	2
Colorado	22	78	37	5	24	76	31	3
Connecticut	15	85	45	6	20	80	37	4
Delaware	20	80	34	4	19	81	29	2
Florida	24	76	33	5	25	75	29	3
Georgia	28	72	29	4	29	71	25	3
Hawaii	32	68	24	2	32	68	22	1
Idaho	19	81	34	3	22	78	27	2
Illinois	26	74	34	5	28	72	29	4
Indiana	17	83	37	4	18	82	34	3
Iowa	15	85	39	4	19	81	32	3
Kansas	14	86	44	7	17	83	39	4
Kentucky	26	74	24	2	30	70	20	1
Louisiana	33	67	22	2	33	67	20	1
Maine	16	84	37	4	19	81	31	3
Maryland	26	74	33	6	29	71	29	4
Massachusetts	14	86	44	7	18	82	38	4
Michigan	21	79	38	5	25	75	30	4
Minnesota	15	85	45	8	17	83	38	5
Mississippi	38	62	18	1	37	63	16	1
Missouri	22	78	30	3	20	80	29	2
Montana	19	81	33	3	19	81	29	1
Nebraska	19	81	36	3	22	78	31	3
Nevada	30	70	25	2	31	69	21	1
New Hampshire	11	89	46	7	15	85	39	4
New Jersey	19	81	41	6	20	80	36	4
New Mexico	36	64	21	1	39	61	14	1
New York	21	79	35	5	22	78	31	3
North Carolina	15	85	42	7	15	85	40	5
North Dakota	16	84	38	3	18	82	30	2
Ohio	19	81	37	4	19	81	34	3
Oklahoma	26	74	25	2	27	73	20	1
Oregon	20	80	35	5	22	78	31	3
Pennsylvania	21	79	39	6	23	77	32	3
Rhode Island	27	73	29	3	30	70	27	3
South Carolina	18	82	34	5	23	77	29	3
South Dakota	16	84	37	4	20	80	31	2
Tennessee	31	69	25	3	30	70	22	2
Texas	17	83	35	5	18	82	31	2
Utah	20	80	34	3	22	78	28	2
Vermont	14	86	44	7	17	83	39	4
Virginia	18	82	38	6	17	83	35	4
Washington	18	82	39	6	20	80	33	4
West Virginia	24	76	26	2	25	75	22	1
Wisconsin	20	80	38	5	21	79	32	3
Wyoming	12	88	41	4	14	86	36	2
Other jurisdictions								
District of Columbia	64	36	8	1	63	37	7	1
DDESS[1]	15	85	34	3	16	84	27	1
DoDDS[2]	14	86	34	3	18	82	29	1

[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table C.4 Percentages of students, by gender and mathematics achievement level, grade 8 public schools: By state, 2003

Grade 8	Male				Female			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	33	67	29	6	34	66	26	4
Alabama	45	55	18	2	49	51	14	2
Alaska	29	71	32	7	31	69	28	5
Arizona	39	61	21	3	38	62	21	3
Arkansas	43	57	19	3	41	59	18	2
California	43	57	23	5	45	55	21	4
Colorado	26	74	35	8	26	74	34	7
Connecticut	27	73	37	10	27	73	33	7
Delaware	30	70	27	5	33	67	25	4
Florida	36	64	26	5	41	59	21	3
Georgia	40	60	24	5	41	59	20	3
Hawaii	44	56	17	3	45	55	16	2
Idaho	27	73	30	5	28	72	27	3
Illinois	33	67	31	7	34	66	28	5
Indiana	25	75	33	6	28	72	29	4
Iowa	23	77	35	6	24	76	31	5
Kansas	25	75	34	7	24	76	34	5
Kentucky	35	65	25	4	34	66	23	3
Louisiana	42	58	19	3	44	56	15	1
Maine	24	76	31	6	26	74	28	4
Maryland	32	68	33	7	34	66	27	6
Massachusetts	22	78	42	10	26	74	35	7
Michigan	33	67	30	5	32	68	26	4
Minnesota	20	80	43	9	16	84	44	8
Mississippi	51	49	14	1	55	45	11	1
Missouri	29	71	30	5	30	70	26	4
Montana	21	79	36	6	20	80	34	6
Nebraska	25	75	35	6	27	73	30	4
Nevada	41	59	21	3	41	59	19	3
New Hampshire	21	79	36	7	22	78	33	6
New Jersey	28	72	34	7	29	71	33	6
New Mexico	47	53	16	2	49	51	15	1
New York	29	71	33	6	30	70	31	5
North Carolina	29	71	32	7	28	72	32	7
North Dakota	19	81	37	5	19	81	36	4
Ohio	25	75	32	6	27	73	29	4
Oklahoma	36	64	22	3	35	65	18	1
Oregon	29	71	33	8	30	70	30	6
Pennsylvania	30	70	33	6	32	68	27	4
Rhode Island	37	63	26	3	38	62	22	3
South Carolina	30	70	29	6	35	65	23	4
South Dakota	21	79	35	5	23	77	34	4
Tennessee	42	58	22	3	41	59	20	2
Texas	31	69	27	5	32	68	23	3
Utah	28	72	33	7	28	72	29	4
Vermont	23	77	35	7	22	78	35	6
Virginia	26	74	33	7	29	71	30	5
Washington	28	72	33	7	29	71	31	5
West Virginia	38	62	21	2	37	63	18	1
Wisconsin	25	75	36	7	24	76	34	6
Wyoming	24	76	34	5	22	78	30	3
Other jurisdictions								
District of Columbia	71	29	7	1	71	29	5	1
DDESS[1]	21	79	31	6	23	77	22	3
DoDDS[2]	20	80	37	7	22	78	32	4

[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table C.5 Percentage of students at or above *Basic* in mathematics, by gender, grade 4 public schools: By state, 1992–2003

Grade 4	Male					Female				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public) [1]	59 *	63 *	68 *	65 *	77	56 *	61 *	66 *	62 *	75
Alabama	44 *,**	48 *,**	56 *,**	53 *,**	65	42 *,**	47 *,**	57 *,**	58 *,**	64
Alaska	–	64 *,**	–	–	76	–	65 *,**	–	–	74
Arizona	53 *,**	57 *,**	59 *,**	57 *,**	72	54 *,**	56 *,**	58 *,**	57 *,**	68
Arkansas	48 *,**	54 *,**	56 *,**	55 *,**	70	46 *,**	54 *,**	55 *,**	54 *,**	73
California	47 *,**	47 *,**	51 *,**	49 *,**	69	46 *,**	44 *,**	53 *,**	50 *,**	65
Colorado	63 *,**	68 *,**	–	–	78	59 *,**	66 *,**	–	–	76
Connecticut	69 *,**	76 *,**	77 *,**	77 *,**	85	66 *,**	73 *,**	77	76	80
Delaware	56 *,**	54 *,**	–	–	80	53 *,**	53 *,**	–	–	81
Florida	53 *,**	53 *,**	–	–	76	50 *,**	56 *,**	–	–	75
Georgia	52 *,**	53 *,**	59 *,**	59 *,**	72	54 *,**	52 *,**	57 *,**	55 *,**	71
Hawaii	50 *,**	52 *,**	53 *,**	54 *,**	68	54 *,**	53 *,**	56 *,**	55 *,**	68
Idaho	65 *,**	–	71 *,**	67 *,**	81	60 *,**	–	70 *,**	68 *,**	78
Illinois	–	–	68	64 *,**	74	–	–	63 *,**	61 *,**	72
Indiana	63 *,**	75 *,**	80	77 *,**	83	57 *,**	70 *,**	77 **	76 *,**	82
Iowa	73 *,**	74 *,**	79 *,**	77 *,**	85	72 *,**	73 *,**	76	74 *,**	81
Kansas	–	–	75 *,**	76 *,**	86	–	–	76 *,**	75 *,**	83
Kentucky	51 *,**	60 *,**	62 *,**	60 *,**	74	51 *,**	60 *,**	59 *,**	58 *,**	70
Louisiana	40 *,**	44 *,**	57 *,**	57 *,**	67	38 *,**	44 *,**	57 *,**	56 *,**	67
Maine	75 *,**	76 *,**	77 *,**	76 *,**	84	75 *,**	75 *,**	72 *,**	71 *,**	81
Maryland	57 *,**	59 *,**	61 *,**	62 *,**	74	53 *,**	58 *,**	61 *,**	59 *,**	71
Massachusetts	70 *,**	73 *,**	80 *,**	78 *,**	86	67 *,**	70 *,**	77 *,**	75 *,**	82
Michigan	64 *,**	69 *,**	74	72 *,**	79	57 *,**	67 *,**	71	70	75
Minnesota	71 *,**	76 *,**	79 *,**	78 *,**	85	70 *,**	75 *,**	77 *,**	75 *,**	83
Mississippi	34 *,**	42 *,**	44 *,**	44 *,**	62	38 *,**	42 *,**	46 *,**	46 *,**	63
Missouri	61 *,**	65 *,**	73 *	72 *,**	78	63 *,**	67 *,**	72 *,**	71 *,**	80
Montana	–	72 *,**	75	74 *,**	81	–	69 *,**	71 *,**	70 *,**	81
Nebraska	67 *,**	70 *,**	68 *,**	65 *,**	81	66 *,**	70 *,**	66 *,**	65 *,**	78
Nevada	–	59 *,**	63 *,**	61 *,**	70	–	55 *,**	59 *,**	59 *,**	69
New Hampshire	72 *,**	–	–	–	89	73 *,**	–	–	–	85
New Jersey	69 *,**	72 *,**	–	–	81	67 *,**	64 *,**	–	–	80
New Mexico	50 *,**	52 *,**	55 *,**	54 *,**	64	49 *,**	50 *,**	47 *,**	46 *,**	61
New York	61 *,**	66 *,**	70 *,**	67 *,**	79	53 *,**	63 *,**	65 *,**	65 *,**	78
North Carolina	50 *,**	64 *,**	76 *,**	73 *,**	85	51 *,**	65 *,**	75 *,**	74 *,**	85
North Dakota	73 *,**	76 *,**	77 *,**	73 *,**	84	72 *,**	75 *,**	74 *,**	73 *,**	82
Ohio	59 *,**	–	76	75 *,**	81	55 *,**	–	71 *,**	71 *,**	81
Oklahoma	62 *,**	–	71	68 *,**	74	57 *,**	–	67 **	66 *,**	73
Oregon	–	65 *,**	70 *,**	66 *,**	80	–	65 *,**	65 *,**	64 *,**	78
Pennsylvania	66 *,**	69 *,**	–	–	79	64 *,**	68 *,**	–	–	77
Rhode Island	55 *,**	63 *,**	67 *,**	66 *,**	73	53 *,**	59 *,**	67	65	70
South Carolina	48 *,**	49 *,**	60 *,**	59 *,**	82	47 *,**	47 *,**	59 *,**	58 *,**	77
South Dakota	–	–	–	–	84	–	–	–	–	80
Tennessee	47 *,**	59 *,**	62 *,**	60 *,**	69	48 *,**	58 *,**	57 *,**	58 *,**	70
Texas	57 *,**	69 *,**	79	77 *,**	83	55 *,**	70 *,**	75 *,**	75 *,**	82
Utah	65 *,**	69 *,**	68 *,**	68 *,**	80	66 *,**	68 *,**	72 *,**	70 *,**	78
Vermont	–	68 *,**	74 *,**	74 *,**	86	–	66 *,**	73 *,**	72 *,**	83
Virginia	60 *,**	64 *,**	76 *,**	74 *,**	82	57 *,**	60 *,**	70 *,**	69 *,**	83
Washington	–	68 *,**	–	–	82	–	66 *,**	–	–	80
West Virginia	54 *,**	64 *,**	69 *,**	64 *,**	76	51 *,**	62 *,**	67 *,**	65 *,**	75
Wisconsin	72 *,**	75 *,**	–	–	80	70 *,**	73 *,**	–	–	79
Wyoming	70 *,**	64 *,**	75 *,**	73 *,**	88	67 *,**	64 *,**	71 *,**	70 *,**	86
Other jurisdictions										
District of Columbia	23 *,**	21 *,**	24 *,**	24 *,**	36	23 *,**	19 *,**	25 *,**	25 *,**	37
DDESS [2]	–	66 *,**	72 *,**	72 *,**	85	–	61 *,**	67 *,**	68 *,**	84
DoDDS [3]	–	65 *,**	72 *,**	70 *,**	86	–	63 *,**	68 *,**	66 *,**	82

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table C.6 Percentage of students at or above *Basic* in mathematics, by gender, grade 8 public schools: By state, 1990–2003

Grade 8	Male						Female					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	51 *	55 *	60 *	66	62 *	67	51 *	56 *	61 *	64	62 *	66
Alabama	41 *,**	40 *,**	46 *	52	53	55	40 *,**	37 *,**	44 *	51	53	51
Alaska	–	–	67	–	–	71	–	–	69	–	–	69
Arizona	51 *,**	55	61	65	63	61	44 *,**	54 *,**	54	59	57	62
Arkansas	45 *,**	45 *,**	51	52	47 *,**	57	43 *,**	44 *,**	53	52	50 *,**	59
California	46 *,**	50 *,**	52	53	50	57	44 *,**	51	51	51	50	55
Colorado	59 *,**	66 *,**	69 *	–	–	74	56 *,**	62 *,**	64 *,**	–	–	74
Connecticut	61 *,**	65 *,**	72	74	72	73	59 *,**	64 *,**	69	70	68	73
Delaware	47 *,**	53 *,**	58 *,**	–	–	70	49 *,**	50 *,**	53 *,**	–	–	67
Florida	44 *,**	48 *,**	55 *,**	–	–	64	41 *,**	49 *,**	52 *	–	–	59
Georgia	48 *,**	50 *,**	51 *,**	57	55	60	47 *,**	46 *,**	51 *,**	54	54	59
Hawaii	37 *,**	42 *,**	48 *,**	50	50 *,**	56	44 *,**	50 *,**	55	54	53	55
Idaho	64 *,**	70	–	71	69	73	62 *,**	66 *,**	–	72	72	72
Illinois	50 *,**	–	–	67	65	67	51 *,**	–	–	69	69	66
Indiana	59 *,**	63 *,**	68 *,**	78	73	75	54 *,**	57 *,**	68	74	75	72
Iowa	72 *,**	76	78	–	–	77	69 *,**	76	78	–	–	76
Kansas	–	–	–	79	76	75	–	–	–	76	77	76
Kentucky	44 *,**	52 *,**	57 *,**	65	61	65	42 *,**	51 *,**	56 *,**	61	59	66
Louisiana	32 *,**	39 *,**	39 *,**	50 *	50 *,**	58	31 *,**	35 *,**	38 *,**	46 *,**	46 *,**	56
Maine	–	71 **	78	77	73	76	–	72	77	76	73	74
Maryland	50 *,**	55 *,**	59 *,**	65	62 *	68	50 *,**	53 *,**	56 *,**	65	62	66
Massachusetts	–	63 *,**	69 *,**	77	70 *,**	78	–	62 *,**	68 *	74	70	74
Michigan	54 *,**	60 *,**	69	70	67	67	53 *,**	56 *,**	65	69	68	68
Minnesota	67 *,**	74 *,**	76	78	79	80	68 *,**	75 *,**	74 *,**	81	81	84
Mississippi	–	35 *,**	37 *,**	43 *	43 *	49	–	32 *,**	34 *,**	39 *	40 *	45
Missouri	–	63 *,**	64 *,**	69	65 *,**	71	–	62 *,**	63 *	64	62 *,**	70
Montana	76	–	74	79	77	79	73 *,**	–	76	80	81	80
Nebraska	69 *,**	71 **	76	76	76	75	67 *,**	69	76	70	71	73
Nevada	–	–	–	59	55	59	–	–	–	57	54	59
New Hampshire	64 *,**	72 *,**	–	–	–	79	65 *,**	71 *,**	–	–	–	78
New Jersey	60 *,**	66 *,**	–	–	–	72	57 *,**	59 *,**	–	–	–	71
New Mexico	47 *,**	50	50	49	48	53	40 *,**	45 *,**	51	50	48	51
New York	51 *,**	59 *,**	63 *,**	72	65	71	49 *,**	56 *,**	59 *,**	65	61 *,**	70
North Carolina	38 *,**	48 *,**	59 *,**	73	68	71	38 *,**	46 *,**	54 *,**	68	65 *,**	72
North Dakota	78	79	77	77	75 *,**	81	73 *,**	77	78	78	77	81
Ohio	55 *,**	60 *,**	–	75	72	75	50 *,**	58 *,**	–	75	74	73
Oklahoma	55 *,**	61	–	66	63	64	49 *,**	58 *,**	–	62	61	65
Oregon	61 *,**	–	67	72	73	71	62 *,**	–	67	71	69	70
Pennsylvania	59 *,**	65	–	–	–	70	53 *,**	59 *,**	–	–	–	68
Rhode Island	50 *,**	56 *,**	62	65	59	63	48 *,**	57 *,**	58	63	60	62
South Carolina	–	48 *,**	50 *,**	54 *,**	51 *,**	70	–	47 *,**	47 *,**	56 *,**	55 *,**	65
South Dakota	–	–	–	–	–	79	–	–	–	–	–	77
Tennessee	–	50 *,**	53	56	54	58	–	44 *,**	53	51 *	50 *,**	59
Texas	48 *,**	55 *,**	63 *,**	67	66	69	43 *,**	50 *,**	57 *,**	69	67	68
Utah	–	68	71	67	66	72	–	65 *,**	69	69	66 *,**	72
Vermont	–	–	73	75	71	77	–	–	71 *,**	76	74	78
Virginia	53 *,**	58 *,**	61 *,**	69	65 *,**	74	51 *,**	56 *,**	56 *,**	66	65 *	71
Washington	–	–	66 *,**	–	–	72	–	–	68	–	–	71
West Virginia	43 *,**	48 *,**	52 *,**	61	56 *	62	41 *,**	46 *,**	55 *,**	62	59	63
Wisconsin	66 *,**	72	74	–	–	75	65 *,**	70 **	76	–	–	76
Wyoming	66 *,**	66 *,**	69 *,**	70 *	68 *,**	76	61 *,**	68 *,**	68 *,**	69 *,**	69 *,**	78
Other jurisdictions												
District of Columbia	15 *,**	21 *,**	18 *,**	24	23 *,**	29	18 *,**	22 *,**	21 *,**	23 *	22 *,**	29
DDESS [2]	–	–	58 *,**	67 *,**	63 *	79	–	–	56 *,**	66	61 *,**	77
DoDDS [3]	–	–	66 *,**	72 *,**	70 *,**	80	–	–	65 *,**	70 *,**	69 *,**	78

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table C.7 Gaps in average mathematics scale scores, by race/ethnicity, grade 4 public schools: By state, 1992–2003

Grade 4	White average score minus Black average score					White average score minus Hispanic average score				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)[1]	35 *	31	30	30 *	27	26 *	26	25	26 *	21
Alabama	30 *	29	25	24	24	‡	‡	‡	‡	‡
Alaska	–	25	–	–	20	–	‡	–	–	14
Arizona	26	31	23	22	26	22	26	25	26	23
Arkansas	29	30	27	31	31	‡	‡	‡	‡	16
California	39 *	34	38	33	30	31	27	29	27	27
Colorado	28	35	–	–	26	23	23	–	–	26
Connecticut	40 *	35	31	32	32	34 *	39 *	32	32	27
Delaware	30 *	31 *	–	–	22	‡	31 *	–	–	19
Florida	34 *	33	–	–	28	16	19 *	–	–	11
Georgia	32 *	23	26	26	24	‡	19	19	13	22
Hawaii	18	18	21	15	16	16	16	‡	‡	18
Idaho	‡	–	‡	‡	‡	24	–	21	20	21
Illinois	–	–	33	33	34	–	–	21	24	27
Indiana	29	27	25	25	27	‡	‡	‡	‡	16
Iowa	‡	25	21	16	26	‡	‡	‡	‡	18
Kansas	–	–	34	29	29	–	–	22	24	16
Kentucky	17	19	25 *	27 *	16	‡	‡	‡	‡	‡
Louisiana	31	27	26	25	28	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	34 *	35 *	35 *	34 *	27	21	17	21	20	17
Massachusetts	36 *	26	31	27	26	34 *	27	32	36	25
Michigan	42	34	39	37	35	‡	28	‡	‡	21
Minnesota	38 *	40 *	29	30	28	‡	‡	‡	‡	26
Mississippi	30 *	25	26	24	24	‡	‡	‡	‡	‡
Missouri	32 *	29	34 *	31 *	24	‡	‡	‡	‡	20
Montana	–	‡	‡	‡	‡	–	‡	‡	‡	2
Nebraska	38 *	34	35	38	31	25	33	28	25	29
Nevada	–	29 *	19	23	21	–	21	19	20	20
New Hampshire	‡	–	–	–	‡	‡	–	–	–	19
New Jersey	38 *	35	–	–	31	32 *	33 *	–	–	23
New Mexico	22	‡	‡	‡	20	21	23	18	20	20
New York	31	31	27	27	26	32 *	33 *	30	30	25
North Carolina	30 *	30	23	23	26	‡	‡	‡	18	17
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	28	–	28	29	26	‡	–	‡	‡	18
Oklahoma	23	–	25	24	24	17	–	14	18	15
Oregon	–	‡	‡	31	17	–	29	23	25	22
Pennsylvania	36	34	–	–	31	29	29	–	–	27
Rhode Island	30	32	33	32	29	35	34	39 *	35	32
South Carolina	31 *	26	31 *	30 *	23	‡	‡	‡	‡	13
South Dakota	–	–	–	–	‡	–	–	–	–	18
Tennessee	26	28	29	29	27	‡	‡	‡	‡	17
Texas	31 *	29 *	23	22	22	22	24 *	19	19	18
Utah	‡	‡	‡	‡	‡	20	24	26	25	22
Vermont	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Virginia	29 *	27	28 *	26	23	‡	15	14	13	16
Washington	–	27	–	–	19	–	25	–	–	19
West Virginia	15	19	23 *	20	10	‡	‡	‡	‡	‡
Wisconsin	37	38	–	–	35	25	25	–	–	22
Wyoming	‡	‡	‡	‡	‡	11	18	19	17	14
Other jurisdictions										
District of Columbia	62	65	63	66	60	56	51	51	64	57
DDESS[2]	–	24	20	22	17	–	18 *	15 *	19 *	7
DoDDS[3]	–	22 *	21 *	20 *	14	–	16 *	10	12	8

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).

NOTE: Score gaps are calculated based on differences between unrounded average scale scores. State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table C.8 Gaps in average mathematics scale scores, by race/ethnicity, grade 8 public schools: By state, 1990–2003

Grade 8	White average score minus Black average score						White average score minus Hispanic average score					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	33	40 *	39	39 *	40 *	35	24	29	30	32	31	28
Alabama	30	34	38	36	35	34	‡	‡	‡	‡	‡	‡
Alaska	–	–	‡	–	–	27	–	–	‡	–	–	27
Arizona	26	22	22	36	37	28	29	28	29	33	33 *	26
Arkansas	34	35	35	38	41	36	‡	‡	‡	‡	‡	27
California	38	42	33	36	42	37	34	36	32	33	35	33
Colorado	36	36	26 *	–	–	37	27 *	26 *	27	–	–	33
Connecticut	37	41	43	46 *	45	38	42 *	44 *	36	41	42	34
Delaware	27	30	31	–	–	26	‡	‡	‡	–	–	30
Florida	34	36	42	–	–	37	19	26	23	–	–	22
Georgia	32	30	35	33	34	34	‡	‡	‡	‡	‡	21
Hawaii	‡	‡	‡	‡	‡	‡	‡	‡	23	‡	‡	9
Idaho	‡	‡	–	‡	‡	‡	23 *	22 *	–	33	30	33
Illinois	38	–	–	31 *	33	40	33	–	–	28	27	30
Indiana	28	32	33	26 *	29	35	‡	‡	‡	‡	‡	26
Iowa	‡	‡	29	–	–	30	‡	‡	‡	–	–	32
Kansas	–	–	–	28	43	38	–	–	–	28	24	27
Kentucky	18 *	24	21	24	22	27	‡	‡	‡	‡	‡	‡
Louisiana	30	31	31	36	36	31	‡	‡	‡	‡	‡	‡
Maine	–	9	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	35	39 *	43 *	41 *	42 *	33	18	‡	‡	18	23	27
Massachusetts	–	34	33	34	26	33	–	38	44	35	37	37
Michigan	39	44	39	44	45	41	‡	25	‡	‡	‡	19
Minnesota	41	‡	39	‡	‡	44	‡	‡	‡	‡	‡	33
Mississippi	–	33	31	31	30	29	–	‡	‡	‡	‡	‡
Missouri	–	34	34	37	39	34	–	‡	‡	‡	‡	‡
Montana	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡
Nebraska	45	44	32	39	37	41	‡	25	26	37	43	33
Nevada	–	–	–	26	29	30	–	–	–	26	24	29
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	38	41	–	–	–	39	37	37	–	–	–	30
New Mexico	‡	‡	‡	‡	‡	28	24	24	25	26	22	28
New York	39	46	40	33	33	37	35	39	39	32	34	31
North Carolina	30	28 *	30	34	35	34	‡	‡	‡	‡	‡	30
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	35	41 *	–	32	34	30	‡	‡	–	‡	‡	17
Oklahoma	32	34	–	29	29	29	‡	‡	–	22	14	21
Oregon	‡	–	‡	‡	‡	20	16	–	21	27	36	26
Pennsylvania	36	39	–	–	–	38	‡	‡	–	–	–	32
Rhode Island	37	30	38	34	35	36	38	43	36	34	36	35
South Carolina	–	33	29	30	30	33	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	‡	–	–	–	–	–	‡
Tennessee	–	32	35	35	34	35	–	‡	‡	‡	‡	‡
Texas	38 *	35	35	35	37	30	28	29 *	29 *	22	24	23
Utah	–	‡	‡	‡	‡	‡	–	22 *	21 *	32	33	36
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	29	30	35	32	30	28	‡	‡	‡	11	20	22
Washington	–	–	38 *	–	–	22	–	–	33 *	–	–	22
West Virginia	23	17	21	21	20	18	‡	‡	‡	‡	‡	‡
Wisconsin	42	37	48	–	–	49	‡	‡	‡	–	–	28
Wyoming	‡	‡	‡	‡	‡	‡	16	15	20	25	21	20
Other jurisdictions												
District of Columbia	‡	‡	‡	74	69	‡	‡	‡	‡	78	64	‡
DDESS [2]	–	–	29	22	28	27	–	–	18	18	21	19
DoDDS [3]	–	–	28	26	26	22	–	–	14	15	16	12

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
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[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).

NOTE: Score gaps are calculated based on differences between unrounded average scale scores. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table C.9 Percentages of students, by race/ethnicity and mathematics achievement level, grade 4 public schools: By state, 2003

Grade 4	White				Black			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	13	87	42	5	46	54	10	#
Alabama	22	78	27	2	59	41	5	#
Alaska	14	86	41	5	36	64	15	1
Arizona	15	85	39	4	48	52	11	#
Arkansas	17	83	34	3	61	39	5	#
California	14	86	42	5	49	51	9	#
Colorado	12	88	44	6	46	54	12	1
Connecticut	8	92	53	7	45	55	10	#
Delaware	9	91	43	4	34	66	12	#
Florida	13	87	43	5	48	52	8	#
Georgia	16	84	40	6	44	56	11	#
Hawaii	18	82	35	3	36	64	16	#
Idaho	16	84	34	3	‡	‡	‡	‡
Illinois	13	87	44	7	56	44	7	#
Indiana	13	87	40	4	46	54	7	#
Iowa	14	86	39	4	50	50	9	1
Kansas	10	90	47	7	45	55	13	#
Kentucky	25	75	24	2	47	53	8	#
Louisiana	12	88	39	3	51	49	6	#
Maine	17	83	34	3	‡	‡	‡	‡
Maryland	15	85	44	8	47	53	11	#
Massachusetts	9	91	49	7	38	62	13	#
Michigan	12	88	43	6	58	42	7	#
Minnesota	11	89	47	8	46	54	16	1
Mississippi	17	83	30	2	54	46	6	#
Missouri	14	86	35	3	47	53	9	#
Montana	16	84	34	3	‡	‡	‡	‡
Nebraska	13	87	39	4	56	44	7	#
Nevada	19	81	32	2	48	52	10	#
New Hampshire	12	88	43	6	‡	‡	‡	‡
New Jersey	10	90	51	7	45	55	11	1
New Mexico	18	82	33	3	44	56	10	1
New York	9	91	45	6	42	58	12	#
North Carolina	6	94	55	9	32	68	14	#
North Dakota	13	87	37	3	‡	‡	‡	‡
Ohio	13	87	42	5	46	54	10	#
Oklahoma	18	82	29	2	53	47	6	#
Oregon	16	84	36	5	39	61	20	2
Pennsylvania	13	87	44	5	52	48	8	#
Rhode Island	17	83	37	4	55	45	7	#
South Carolina	10	90	46	6	35	65	13	1
South Dakota	13	87	38	3	‡	‡	‡	‡
Tennessee	20	80	30	3	59	41	6	#
Texas	8	92	49	7	29	71	15	1
Utah	16	84	35	3	‡	‡	‡	‡
Vermont	15	85	42	6	‡	‡	‡	‡
Virginia	10	90	46	7	34	66	13	#
Washington	14	86	40	5	38	62	17	1
West Virginia	24	76	24	2	38	62	13	#
Wisconsin	12	88	43	5	59	41	8	1
Wyoming	11	89	42	4	‡	‡	‡	‡
Other jurisdictions								
District of Columbia	3	97	71	21	67	33	4	#
DDESS [1]	9	91	40	3	29	71	13	1
DoDDS [2]	12	88	38	3	25	75	15	#

See notes at end of table. ▶

Table C.9 Percentages of students, by race/ethnicity and mathematics achievement level, grade 4 public schools: By state, 2003—Continued

Grade 4	Hispanic				Asian/Pacific Islander			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	38	62	15	1	13	87	48	10
Alabama	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	32	68	24	2	27	73	27	2
Arizona	44	56	11	1	11	89	41	7
Arkansas	38	62	15	1	‡	‡	‡	‡
California	47	53	11	#	13	87	49	9
Colorado	46	54	13	1	19	81	44	9
Connecticut	36	64	15	1	8	92	52	10
Delaware	31	69	17	1	13	87	59	10
Florida	26	74	27	3	10	90	53	12
Georgia	40	60	13	2	13	87	53	11
Hawaii	45	55	17	1	34	66	21	1
Idaho	45	55	11	1	‡	‡	‡	‡
Illinois	45	55	13	#	8	92	58	9
Indiana	31	69	18	1	‡	‡	‡	‡
Iowa	38	62	14	#	‡	‡	‡	‡
Kansas	22	78	19	1	‡	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	32	68	21	2	10	90	58	18
Massachusetts	37	63	13	1	11	89	49	13
Michigan	39	61	17	#	14	86	47	15
Minnesota	40	60	14	1	32	68	27	5
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	43	57	14	#	‡	‡	‡	‡
Montana	17	83	25	5	‡	‡	‡	‡
Nebraska	49	51	9	#	‡	‡	‡	‡
Nevada	47	53	10	#	18	82	34	3
New Hampshire	35	65	19	2	‡	‡	‡	‡
New Jersey	33	67	18	1	5	95	61	15
New Mexico	45	55	10	#	‡	‡	‡	‡
New York	38	62	15	1	9	91	51	10
North Carolina	21	79	30	2	7	93	60	13
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	34	66	16	1	‡	‡	‡	‡
Oklahoma	39	61	11	#	9	91	45	8
Oregon	46	54	15	1	12	88	46	9
Pennsylvania	48	52	12	#	‡	‡	‡	‡
Rhode Island	58	42	6	#	37	63	22	4
South Carolina	22	78	26	2	‡	‡	‡	‡
South Dakota	37	63	20	2	‡	‡	‡	‡
Tennessee	43	57	14	1	‡	‡	‡	‡
Texas	24	76	21	1	2	98	62	16
Utah	48	52	11	#	34	66	16	2
Vermont	‡	‡	‡	‡	‡	‡	‡	‡
Virginia	25	75	20	2	6	94	60	14
Washington	39	61	18	1	15	85	44	10
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	37	63	13	1	28	72	26	3
Wyoming	24	76	20	1	‡	‡	‡	‡
Other jurisdictions								
District of Columbia	61	39	7	#	‡	‡	‡	‡
DDESS [1]	15	85	27	1	‡	‡	‡	‡
DoDDS [2]	21	79	25	1	14	86	38	2

See notes at end of table. ▶

Table C.9 Percentages of students, by race/ethnicity and mathematics achievement level, grade 4 public schools: By state, 2003—Continued

Grade 4	American Indian/Alaska Native				Other[3]			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	35	65	18	1	20	80	32	3
Alabama	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	46	54	13	1	‡	‡	‡	‡
Arizona	56	44	8	1	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	‡	‡	‡	‡	‡	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	‡	‡	‡	‡	‡	‡
Florida	‡	‡	‡	‡	10	90	51	6
Georgia	‡	‡	‡	‡	20	80	19	3
Hawaii	‡	‡	‡	‡	31	69	25	2
Idaho	‡	‡	‡	‡	‡	‡	‡	‡
Illinois	‡	‡	‡	‡	‡	‡	‡	‡
Indiana	‡	‡	‡	‡	18	82	29	2
Iowa	‡	‡	‡	‡	‡	‡	‡	‡
Kansas	‡	‡	‡	‡	‡	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	‡	‡	‡	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	‡	‡	‡	‡
Montana	45	55	11	#	‡	‡	‡	‡
Nebraska	39	61	11	#	‡	‡	‡	‡
Nevada	45	55	10	#	‡	‡	‡	‡
New Hampshire	‡	‡	‡	‡	‡	‡	‡	‡
New Jersey	‡	‡	‡	‡	‡	‡	‡	‡
New Mexico	55	45	7	#	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	‡	‡	‡	‡	9	91	48	4
North Dakota	48	52	9	#	‡	‡	‡	‡
Ohio	‡	‡	‡	‡	13	87	34	2
Oklahoma	32	68	16	#	‡	‡	‡	‡
Oregon	‡	‡	‡	‡	‡	‡	‡	‡
Pennsylvania	‡	‡	‡	‡	‡	‡	‡	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	‡	‡	‡	‡	‡	‡	‡	‡
South Dakota	46	54	9	#	‡	‡	‡	‡
Tennessee	‡	‡	‡	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡
Utah	‡	‡	‡	‡	‡	‡	‡	‡
Vermont	‡	‡	‡	‡	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡
Washington	31	69	24	2	‡	‡	‡	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	41	59	17	1	‡	‡	‡	‡
Wyoming	37	63	16	2	‡	‡	‡	‡
Other jurisdictions								
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡
DDESS[1]	‡	‡	‡	‡	‡	‡	‡	‡
DoDDS[2]	‡	‡	‡	‡	10	90	37	3

The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
1 Department of Defense Domestic Dependent Elementary and Secondary Schools.
2 Department of Defense Dependents Schools (Overseas).
3 "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: Detail may not sum to totals because of rounding. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table C.10 **Percentages of students, by race/ethnicity and mathematics achievement level, grade 8 public schools: By state, 2003**

Grade 8	White				Black			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	21	79	36	7	61	39	7	#
Alabama	32	68	23	3	73	27	3	#
Alaska	19	81	41	9	44	56	11	1
Arizona	22	78	32	4	55	45	7	1
Arkansas	31	69	24	3	74	26	3	#
California	26	74	34	7	65	35	6	1
Colorado	16	84	43	10	60	40	9	1
Connecticut	17	83	44	11	58	42	7	1
Delaware	19	81	35	6	52	48	8	#
Florida	22	78	34	7	64	36	7	1
Georgia	23	77	32	6	64	36	7	#
Hawaii	36	64	25	3	‡	‡	‡	‡
Idaho	23	77	31	5	‡	‡	‡	‡
Illinois	20	80	40	8	66	34	6	#
Indiana	21	79	35	6	60	40	7	#
Iowa	20	80	35	6	58	42	11	1
Kansas	17	83	39	8	65	35	8	#
Kentucky	32	68	25	4	62	38	5	#
Louisiana	25	75	28	3	64	36	5	#
Maine	25	75	30	5	‡	‡	‡	‡
Maryland	21	79	40	10	56	44	9	1
Massachusetts	17	83	44	9	52	48	10	1
Michigan	21	79	35	6	68	32	4	#
Minnesota	13	87	49	10	57	43	9	1
Mississippi	33	67	22	2	73	27	3	#
Missouri	23	77	32	5	65	35	6	1
Montana	17	83	37	6	‡	‡	‡	‡
Nebraska	20	80	36	6	65	35	7	#
Nevada	29	71	27	4	65	35	9	#
New Hampshire	20	80	35	7	‡	‡	‡	‡
New Jersey	16	84	42	8	59	41	7	#
New Mexico	24	76	31	4	60	40	5	1
New York	14	86	44	8	57	43	10	1
North Carolina	15	85	44	10	51	49	11	1
North Dakota	15	85	39	5	‡	‡	‡	‡
Ohio	20	80	35	6	55	45	8	#
Oklahoma	27	73	25	3	63	37	5	#
Oregon	25	75	35	7	47	53	17	2
Pennsylvania	24	76	35	6	68	32	4	#
Rhode Island	28	72	29	4	71	29	5	#
South Carolina	16	84	39	8	54	46	8	1
South Dakota	18	82	37	5	‡	‡	‡	‡
Tennessee	31	69	26	4	72	28	5	#
Texas	16	84	38	7	53	47	8	#
Utah	23	77	34	6	‡	‡	‡	‡
Vermont	22	78	35	7	‡	‡	‡	‡
Virginia	18	82	40	8	51	49	11	1
Washington	24	76	36	6	46	54	13	1
West Virginia	37	63	20	2	61	39	6	#
Wisconsin	18	82	40	7	76	24	5	#
Wyoming	20	80	35	5	‡	‡	‡	‡
Other jurisdictions								
District of Columbia	‡	‡	‡	‡	74	26	3	#
DDESS[1]	10	90	42	8	39	61	10	1
DoDDS[2]	14	86	42	8	37	63	15	1

See notes at end of table. ▶

Table C.10 Percentages of students, by race/ethnicity and mathematics achievement level, grade 8 public schools: By state, 2003—Continued

Grade 8	Hispanic				Asian/Pacific Islander			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	53	47	11	1	23	77	42	12
Alabama	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	49	51	11	2	30	70	29	5
Arizona	55	45	9	#	‡	‡	‡	‡
Arkansas	63	37	7	1	‡	‡	‡	‡
California	63	37	8	1	26	74	39	11
Colorado	52	48	12	1	20	80	38	10
Connecticut	52	48	11	1	21	79	51	19
Delaware	53	47	11	2	‡	‡	‡	‡
Florida	47	53	16	3	25	75	41	5
Georgia	51	49	14	2	27	73	40	13
Hawaii	52	48	16	2	46	54	15	2
Idaho	61	39	7	1	‡	‡	‡	‡
Illinois	52	48	9	#	11	89	58	15
Indiana	51	49	9	#	‡	‡	‡	‡
Iowa	56	44	10	1	‡	‡	‡	‡
Kansas	51	49	16	3	21	79	34	5
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	51	49	15	3	10	90	56	18
Massachusetts	59	41	9	1	12	88	57	20
Michigan	43	57	14	2	‡	‡	‡	‡
Minnesota	52	48	16	3	25	75	32	11
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	‡	‡	‡	‡
Montana	‡	‡	‡	‡	‡	‡	‡	‡
Nebraska	60	40	10	1	‡	‡	‡	‡
Nevada	63	37	7	1	27	73	31	4
New Hampshire	‡	‡	‡	‡	‡	‡	‡	‡
New Jersey	50	50	14	2	10	90	61	21
New Mexico	59	41	7	#	‡	‡	‡	‡
New York	50	50	16	2	21	79	41	11
North Carolina	45	55	16	1	13	87	48	15
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	42	58	18	6	‡	‡	‡	‡
Oklahoma	53	47	9	1	‡	‡	‡	‡
Oregon	58	42	12	2	22	78	41	17
Pennsylvania	58	42	6	#	‡	‡	‡	‡
Rhode Island	71	29	5	#	46	54	20	2
South Carolina	‡	‡	‡	‡	‡	‡	‡	‡
South Dakota	‡	‡	‡	‡	‡	‡	‡	‡
Tennessee	‡	‡	‡	‡	‡	‡	‡	‡
Texas	42	58	14	1	9	91	58	17
Utah	65	35	7	1	34	66	25	6
Vermont	‡	‡	‡	‡	‡	‡	‡	‡
Virginia	41	59	17	4	14	86	48	14
Washington	50	50	17	3	28	72	37	11
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	50	50	16	1	33	67	17	3
Wyoming	46	54	13	1	‡	‡	‡	‡
Other jurisdictions								
District of Columbia	67	33	3	#	‡	‡	‡	‡
DDESS [1]	28	72	19	2	‡	‡	‡	‡
DoDDS [2]	28	72	29	3	18	82	38	5

See notes at end of table. ▶

Table C.10 Percentages of students, by race/ethnicity and mathematics achievement level, grade 8 public schools: By state, 2003—Continued

Grade 8	American Indian/Alaska Native				Other[3]			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	46	54	16	2	30	70	24	3
Alabama	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	51	49	12	1	‡	‡	‡	‡
Arizona	61	39	7	#	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	‡	‡	‡	‡	‡	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	‡	‡	‡	‡	‡	‡
Florida	‡	‡	‡	‡	‡	‡	‡	‡
Georgia	‡	‡	‡	‡	‡	‡	‡	‡
Hawaii	‡	‡	‡	‡	44	56	15	2
Idaho	‡	‡	‡	‡	‡	‡	‡	‡
Illinois	‡	‡	‡	‡	‡	‡	‡	‡
Indiana	‡	‡	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	‡	‡	‡	‡	‡
Kansas	‡	‡	‡	‡	‡	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	‡	‡	‡	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	‡	‡	‡	‡
Montana	52	48	15	1	‡	‡	‡	‡
Nebraska	‡	‡	‡	‡	‡	‡	‡	‡
Nevada	‡	‡	‡	‡	‡	‡	‡	‡
New Hampshire	‡	‡	‡	‡	‡	‡	‡	‡
New Jersey	‡	‡	‡	‡	‡	‡	‡	‡
New Mexico	70	30	3	#	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	52	48	13	#	‡	‡	‡	‡
North Dakota	50	50	11	#	‡	‡	‡	‡
Ohio	‡	‡	‡	‡	‡	‡	‡	‡
Oklahoma	44	56	14	1	26	74	21	4
Oregon	50	50	14	2	‡	‡	‡	‡
Pennsylvania	‡	‡	‡	‡	‡	‡	‡	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	‡	‡	‡	‡	‡	‡	‡	‡
South Dakota	57	43	9	1	‡	‡	‡	‡
Tennessee	‡	‡	‡	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡
Utah	‡	‡	‡	‡	‡	‡	‡	‡
Vermont	‡	‡	‡	‡	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡
Washington	44	56	17	1	‡	‡	‡	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	‡	‡	‡	‡	‡
Wyoming	52	48	14	1	‡	‡	‡	‡
Other jurisdictions								
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡
DDESS[1]	‡	‡	‡	‡	‡	‡	‡	‡
DoDDS[2]	‡	‡	‡	‡	19	81	42	7

The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
[3] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: Detail may not sum to totals because of rounding. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table C.11 Percentage of students at or above *Basic* in mathematics, by race/ethnicity, grade 4 public schools: By state, 1992–2003

Grade 4	White					Black				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public) [1]	68 *	73 *	78 *	76 *	87	22 *	30 *	36 *	35 *	54
Alabama	56 *,**	62 *,**	73 *	70 *,**	78	16 *,**	20 *,**	34 *,**	33 *,**	41
Alaska	–	75 *,**	–	–	86	–	40 *,**	–	–	64
Arizona	67 *,**	71 *,**	74 *,**	72 *,**	85	27 *,**	24 *,**	38	36	52
Arkansas	56 *,**	64 *,**	67 *,**	68 *,**	83	18 *,**	21 *,**	27 *,**	24 *,**	39
California	60 *,**	64 *,**	72 *,**	72 *,**	86	20 *,**	18 *,**	23 *,**	25 *,**	51
Colorado	68 *,**	74 *,**	–	–	88	29 *,**	28 *,**	–	–	54
Connecticut	78 *,**	86 *,**	88 *,**	87 *,**	92	24 *,**	38 *,**	43 *,**	42 *,**	55
Delaware	66 *,**	66 *,**	–	–	91	25 *,**	27 *,**	–	–	66
Florida	65 *,**	70 *,**	–	–	87	20 *,**	24 *,**	–	–	52
Georgia	71 *,**	65 *,**	74 *,**	73 *,**	84	25 *,**	32 *,**	37 *,**	36 *,**	56
Hawaii	64 *,**	68 *,**	71 *,**	70 *,**	82	39 *,**	40 *,**	43	49	64
Idaho	65 *,**	–	75 *,**	71 *,**	84	‡	–	‡	‡	‡
Illinois	–	–	80	80 *,**	87	–	–	34 *,**	31 *,**	44
Indiana	65 *,**	77 *,**	82 *,**	80 *,**	87	22 *,**	35 *,**	46	46	54
Iowa	74 *,**	76 *,**	80 *,**	78 *,**	86	‡	37	49	50	50
Kansas	–	–	82 *,**	83 *,**	90	–	–	39	45	55
Kentucky	53 *,**	63 *,**	65 *,**	64 *,**	75	29 *,**	37 *,**	28 *,**	27 *,**	53
Louisiana	57 *,**	62 *,**	75 *,**	75 *,**	88	17 *,**	22 *,**	35 *,**	35 *,**	49
Maine	75 *,**	76 *,**	75 *,**	74 *,**	83	‡	‡	‡	‡	‡
Maryland	69 *,**	76 *,**	80 **	79 *,**	85	26 *,**	29 *,**	34 *,**	35 *,**	53
Massachusetts	75 *,**	77 *,**	86 *,**	85 *,**	91	25 *,**	35 *,**	45 *,**	51	62
Michigan	69 *,**	77 *,**	82 *,**	81 *,**	88	17 *,**	28 *,**	31 *,**	30 *,**	42
Minnesota	74 *,**	80 *,**	83 *,**	82 *,**	89	24 *,**	28 *,**	43	42	54
Mississippi	58 *,**	62 *,**	65 *,**	64 *,**	83	19 *,**	23 *,**	25 *,**	26 *,**	46
Missouri	69 *,**	73 *,**	81 *,**	79 *,**	86	25 *,**	31 *,**	33 *,**	34 *,**	53
Montana	–	75 *,**	78 *,**	75 *,**	84	–	‡	‡	‡	‡
Nebraska	71 *,**	75 *,**	73 *,**	73 *,**	87	18 *,**	28 *,**	21 *,**	22 *,**	44
Nevada	–	67 *,**	70 *,**	70 *,**	81	–	28 *,**	42	39 *,**	52
New Hampshire	73 *,**	–	–	–	88	‡	–	–	–	‡
New Jersey	81 *,**	84 *,**	–	–	90	28 *,**	35 *,**	–	–	55
New Mexico	65 *,**	69 *,**	69 *,**	69 *,**	82	33	‡	‡	‡	56
New York	71 *,**	79 *,**	85	85 *,**	91	28 *,**	36 *,**	45 *,**	44 *,**	58
North Carolina	64 *,**	77 *,**	86 *,**	84 *,**	94	23 *,**	36 *,**	56 *,**	52 *,**	68
North Dakota	74 *,**	77 *,**	78 *,**	77 *,**	87	‡	‡	‡	‡	‡
Ohio	62 *,**	–	81 *,**	80 *,**	87	21 *,**	–	38 *,**	38 *,**	54
Oklahoma	65 *,**	–	76 *,**	74 *,**	82	29 *,**	–	37	38	47
Oregon	–	68 *,**	72 *,**	69 *,**	84	–	‡	‡	32	61
Pennsylvania	73 *,**	76 *,**	–	–	87	23 *,**	25 *,**	–	–	48
Rhode Island	62 *,**	68 *,**	78 *,**	76 *,**	83	22 *,**	26 *,**	36	33 *	45
South Carolina	65 *,**	65 *,**	77 *,**	77 *,**	90	22 *,**	26 *,**	35 *,**	35 *,**	65
South Dakota	–	–	–	–	87	–	–	–	–	‡
Tennessee	56 *,**	67 *,**	69 *,**	69 *,**	80	20 *,**	28 *,**	31	29 *,**	41
Texas	72 *,**	84 *,**	89	88	92	29 *,**	46 *,**	61	61	71
Utah	68 *,**	71 *,**	74 *,**	74 *,**	84	‡	‡	‡	‡	‡
Vermont	–	67 *,**	74 *,**	74 *,**	85	–	‡	‡	‡	‡
Virginia	69 *,**	72 *,**	85	82 *,**	90	26 *,**	32 *,**	44 *,**	44 *,**	66
Washington	–	71 *,**	–	–	86	–	35 *,**	–	–	62
West Virginia	53 *,**	64 *,**	69 *,**	66 *,**	76	35 *,**	36 *,**	35 *,**	35 *,**	62
Wisconsin	76 *,**	81 *,**	–	–	88	24 *,**	26 *,**	–	–	41
Wyoming	71 *,**	66 *,**	76 *,**	75 *,**	89	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	88 **	86 **	91	92	97	19 *,**	15 *,**	20 *,**	20 *,**	33
DDESS [2]	–	77 *,**	79 *,**	82 *,**	91	–	43 *,**	54 *,**	55 *,**	71
DoDDS [3]	–	74 *,**	78 *,**	75 *,**	88	–	43 *,**	48 *,**	48 *,**	75

See notes at end of table. ▶

Table C.11 **Percentage of students at or above *Basic* in mathematics, by race/ethnicity, grade 4 public schools: By state, 1992–2003—Continued**

Grade 4	Hispanic					Asian/Pacific Islander				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)[1]	32 *	37 *	45 *	41 *	62	74 *	65 *	‡	‡	87
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	‡	–	–	68	–	59	–	–	73
Arizona	36 *,**	34 *,**	40 *,**	35 *,**	56	‡	‡	74	‡	89
Arkansas	‡	‡	‡	‡	62	‡	‡	‡	‡	‡
California	25 *,**	27 *,**	34 *,**	32 *,**	53	57 *,**	51 *,**	68 *	62 *,**	87
Colorado	38 *,**	45 *,**	–	–	54	66	65	–	–	81
Connecticut	29 *,**	35 *,**	46 *,**	45 *,**	64	‡	78	87	85	92
Delaware	‡	28 *,**	–	–	69	‡	‡	–	–	87
Florida	40 *,**	44 *,**	–	–	74	‡	‡	–	–	90
Georgia	‡	38 *,**	53	58	60	‡	‡	‡	‡	87
Hawaii	40	47	‡	‡	55	49 *,**	50 *,**	51 *,**	51 *,**	66
Idaho	29 *,**	–	43	43	55	‡	–	‡	‡	‡
Illinois	–	–	54	47	55	–	–	‡	‡	92
Indiana	‡	‡	‡	‡	69	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	‡	62	‡	‡	‡	‡	‡
Kansas	–	–	52 *,**	52 *,**	78	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	43 *,**	51	53	53	68	80	84	75	70 *	90
Massachusetts	28 *,**	38 *,**	42 *,**	36 *,**	63	65 *,**	75	78	77	89
Michigan	‡	40	‡	‡	61	‡	‡	‡	‡	86
Minnesota	‡	‡	‡	‡	60	44 *	59	74	53	68
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	57	‡	‡	‡	‡	‡
Montana	–	‡	‡	‡	83	–	‡	‡	‡	‡
Nebraska	38	32 *,**	38	40	51	‡	‡	‡	‡	‡
Nevada	–	37 *,**	43 *,**	40 *,**	53	–	61 *,**	63 *,**	69	82
New Hampshire	‡	–	–	–	65	‡	–	–	–	‡
New Jersey	39 *,**	38 *,**	–	–	67	84	88	–	–	95
New Mexico	36 *,**	37 *,**	42 *,**	41 *,**	55	‡	‡	‡	‡	‡
New York	29 *,**	35 *,**	41 *,**	39 *,**	62	77 *,**	72 *,**	88	87	91
North Carolina	‡	‡	‡	65	79	‡	‡	‡	‡	93
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	‡	–	‡	‡	66	‡	–	‡	‡	‡
Oklahoma	40 *,**	–	54	46	61	‡	–	‡	‡	91
Oregon	–	29 *,**	40 *,**	39	54	–	68 *,**	74 *	77	88
Pennsylvania	31 *,**	29 *,**	–	–	52	‡	‡	–	–	‡
Rhode Island	15 *,**	23 *,**	28 *,**	29 *,**	42	16 *,**	39 *,**	‡	52	63
South Carolina	‡	‡	‡	‡	78	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	63	–	–	–	–	‡
Tennessee	‡	‡	‡	‡	57	‡	‡	‡	‡	‡
Texas	41 *,**	54 *,**	68 **	66 *,**	76	77 *,**	‡	89	91	98
Utah	41	39 *	40 *,**	39 *,**	52	‡	‡	54	58	66
Vermont	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Virginia	‡	52	66	66	75	77 *,**	77 *,**	92	95	94
Washington	–	37 *,**	–	–	61	–	68 *,**	–	–	85
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	45 *,**	45	–	–	63	‡	‡	–	–	72
Wyoming	55 *,**	41 *,**	51 *,**	50 *,**	76	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	26	30	36	33	39	‡	‡	‡	‡	‡
DDESS[2]	–	52 *,**	62 *,**	57 *,**	85	–	‡	‡	‡	‡
DoDDS[3]	–	51 *,**	68	63 *,**	79	–	66 *,**	74 *,**	74 *,**	86

See notes at end of table. ▶

Table C.11 **Percentage of students at or above *Basic* in mathematics, by race/ethnicity, grade 4 public schools: By state, 1992–2003—Continued**

Grade 4	American Indian/Alaska Native					Other[4]				
	Accommodations not permitted			Accommodations permitted		Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003	1992	1996	2000	2000	2003
Nation (public)[1]	‡	‡	‡	39 *	65	‡	‡	‡	‡	80
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	40 *,**	–	–	54	–	‡	–	–	‡
Arizona	20 *,**	28	21 *,**	37	44	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	–	–	‡	‡	‡	–	–	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	–	–	‡	‡	‡	–	–	‡
Florida	‡	‡	–	–	‡	‡	‡	–	–	90
Georgia	‡	‡	‡	‡	‡	‡	‡	‡	‡	80
Hawaii	‡	‡	‡	‡	‡	51 *,**	52 *,**	58 *,**	55 *,**	69
Idaho	‡	–	‡	‡	‡	‡	–	‡	‡	‡
Illinois	–	–	‡	‡	‡	–	–	‡	‡	‡
Indiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	82
Iowa	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Kansas	–	–	‡	‡	‡	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Montana	–	38 *,**	42	43	55	–	‡	‡	‡	‡
Nebraska	‡	‡	‡	‡	61	‡	‡	‡	‡	‡
Nevada	–	39	‡	‡	55	–	‡	‡	‡	‡
New Hampshire	‡	–	–	–	‡	‡	–	–	–	‡
New Jersey	‡	‡	–	–	‡	‡	‡	–	–	‡
New Mexico	37	23 *,**	26 *,**	24 *,**	45	‡	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	‡	‡	‡	‡	‡	‡	‡	‡	‡	91
North Dakota	42	42	38	37	52	‡	‡	‡	‡	‡
Ohio	‡	–	‡	‡	‡	‡	–	‡	‡	87
Oklahoma	47 *,**	–	68	64	68	‡	–	‡	‡	‡
Oregon	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Pennsylvania	‡	‡	–	–	‡	‡	‡	–	–	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	54	–	–	–	–	‡
Tennessee	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Utah	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Vermont	–	‡	‡	‡	‡	–	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Washington	–	56	–	–	69	–	‡	–	–	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	–	–	59	‡	‡	–	–	‡
Wyoming	37 *,**	‡	‡	‡	63	‡	‡	‡	‡	‡
Other jurisdictions										
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
DDESS[2]	–	‡	‡	‡	‡	–	‡	72	69	‡
DoDDS[3]	–	‡	‡	‡	‡	–	66 *,**	71 *,**	70 *,**	90

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
[4] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table C.12 **Percentage of students at or above *Basic* in mathematics, by race/ethnicity, grade 8 public schools: By state, 1990–2003**

Grade 8	White						Black					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	59 *	66 *	72 *	76 *	75 *	79	21 *	19 *	26 *	30 *	30 *	39
Alabama	51 *,**	52 *,**	62	66	66	68	17 *,**	14 *,**	17 *,**	24	25	27
Alaska	–	–	76	–	–	81	–	–	‡	–	–	56
Arizona	60 *,**	66 *,**	70 *,**	77	75	78	30	32	36	36	33	45
Arkansas	54 *,**	54 *,**	61 *,**	64 *	60 *,**	69	13 *,**	14 *,**	17 *,**	17 *	15 *,**	26
California	60 *,**	67 *,**	70	70	70	74	19 *,**	20 *,**	31	25	25	35
Colorado	65 *,**	71 *,**	75 *,**	–	–	84	22 *,**	26	40	–	–	40
Connecticut	68 *,**	76 *,**	79	85	83	83	28 *,**	26 *,**	29 *,**	29 *	29 *	42
Delaware	56 *,**	62 *,**	65 *,**	–	–	81	26 *,**	25 *,**	27 *,**	–	–	48
Florida	53 *,**	63 *,**	70 *,**	–	–	78	17 *,**	21 *,**	20 *,**	–	–	36
Georgia	61 *,**	63 *,**	68 *,**	72	71 *	77	24 *,**	23 *,**	24 *,**	30	28 *	36
Hawaii	49 *,**	52 *,**	66	67	67	64	‡	‡	‡	‡	‡	‡
Idaho	65 *,**	70 *,**	–	75	74	77	‡	‡	–	‡	‡	‡
Illinois	61 *,**	–	–	80	78	80	19 *,**	–	–	42	41	34
Indiana	60 *,**	63 *,**	73 *,**	80	77	79	23 *,**	26 *,**	31	49	47	40
Iowa	71 *,**	78	79	–	–	80	‡	‡	43	–	–	42
Kansas	–	–	–	82	81	83	–	–	–	46	38	35
Kentucky	45 *,**	54 *,**	59 *,**	66	64	68	23 *,**	23 *,**	30	37	35	38
Louisiana	45 *,**	52 *,**	55 *,**	69 *	69 *	75	13 *,**	16 *,**	16 *,**	22 *,**	22 *,**	36
Maine	–	72 *	78	77	74	75	–	64	‡	‡	‡	‡
Maryland	63 *,**	69 *,**	75	81	77	79	21 *,**	24 *,**	26 *,**	35 *	32 *,**	44
Massachusetts	–	68 *,**	75 *,**	82	76 *,**	83	–	28 *,**	35	45	43	48
Michigan	60 *,**	69 *,**	76	79	77	79	12 *,**	18 *,**	28	24	22	32
Minnesota	69 *,**	76 *,**	79 *,**	83 *	83 *	87	19 *,**	‡	32	‡	‡	43
Mississippi	–	52 *,**	55 *,**	59 *,**	58 *,**	67	–	14 *,**	15 *,**	19 *,**	20 *,**	27
Missouri	–	68 *,**	69 *,**	74	71 *,**	77	–	25 *,**	26	27	24 *	35
Montana	77 *,**	–	78 *,**	83	81	83	‡	–	‡	‡	‡	‡
Nebraska	72 *,**	74 *,**	79	78	79	80	19 *,**	19	38	30	32	35
Nevada	–	–	–	69	65 *,**	71	–	–	–	34	29	35
New Hampshire	65 *,**	71 *,**	–	–	–	80	‡	‡	–	–	–	‡
New Jersey	70 *,**	76 *,**	–	–	–	84	23 *,**	26 *,**	–	–	–	41
New Mexico	62 *,**	65 *,**	69 *,**	70	65 *,**	76	‡	‡	‡	‡	‡	40
New York	64 *,**	72 *,**	77 *,**	83	77 *,**	86	19 *,**	22 *,**	29 *,**	42	40	43
North Carolina	49 *,**	56 *,**	68 *,**	82	79 *,**	85	17 *,**	23 *,**	31 *,**	43	40 *,**	49
North Dakota	79 *,**	79 *,**	79 *,**	80 *	80 *	85	‡	‡	‡	‡	‡	‡
Ohio	58 *,**	66 *,**	–	80	78	80	17 *,**	19 *,**	–	41	39	45
Oklahoma	58 *,**	65 *,**	–	70	67 *,**	73	19 *,**	22 **	–	33	34	37
Oregon	63 *,**	–	69 *,**	74	75	75	‡	–	‡	‡	‡	53
Pennsylvania	63 *,**	68 *,**	–	–	–	76	19 *,**	23	–	–	–	32
Rhode Island	54 *,**	62 *,**	66 *,**	71	67	72	14 *,**	28	22	27	23	29
South Carolina	–	63 *,**	64 *,**	71 *,**	70 *,**	84	–	23 *,**	28 *,**	32 *,**	30 *,**	46
South Dakota	–	–	–	–	–	82	–	–	–	–	–	‡
Tennessee	–	56 *,**	61 *,**	62 *,**	61 *,**	69	–	16 *,**	19 *	23	22	28
Texas	63 *,**	70 *,**	78 *,**	82	82	84	17 *,**	27 *,**	31 *,**	40	36	47
Utah	–	69 *,**	72 *,**	71 *,**	71 *,**	77	–	‡	‡	‡	‡	‡
Vermont	–	–	73 *,**	75	73 *	78	–	–	‡	‡	‡	‡
Virginia	60 *,**	65 *,**	70 *,**	78	76 *	82	26 *,**	29 *,**	25 *,**	39 *	37 *,**	49
Washington	–	–	73	–	–	76	–	–	25 *,**	–	–	54
West Virginia	42 *,**	48 *,**	55 *,**	63	58	63	16 *,**	25	29	36	34	39
Wisconsin	71 *,**	75 *,**	81	–	–	82	19	31	20	–	–	24
Wyoming	66 *,**	70 *,**	71 *,**	72 *,**	72 *,**	80	‡	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	‡	‡	87	83	‡	14 *,**	19 *,**	17 *,**	20	19 *,**	26
DDESS [2]	–	–	71 *,**	78 *,**	76 *,**	90	–	–	40 *,**	52	46 *	61
DoDDS [3]	–	–	76 *,**	80 *	79 *	86	–	–	39 *,**	48 *,**	47 *,**	63

See notes at end of table. ▶

Table C.12 Percentage of students at or above *Basic* in mathematics, by race/ethnicity, grade 8 public schools: By state, 1990–2003—Continued

Grade 8	Hispanic						Asian/Pacific Islander					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public) [1]	33 *	33 *	38 *	40 *	40 *	47	64 *	75	‡	73	73	77
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	–	‡	–	–	51	–	–	‡	–	–	70
Arizona	27 *,**	31 *,**	32 *,**	38	36	45	‡	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	37	‡	‡	‡	‡	‡	‡
California	22 *,**	26 *,**	30	32	30	37	55 *,**	66	65	72	73	74
Colorado	33 *,**	38 *,**	40	–	–	48	‡	‡	73	–	–	80
Connecticut	20 *,**	24 *,**	35 *,**	36 *	32 *	48	‡	‡	72	‡	‡	79
Delaware	‡	‡	‡	–	–	47	‡	‡	‡	–	–	‡
Florida	30 *,**	33 *,**	40 *,**	–	–	53	‡	‡	‡	–	–	75
Georgia	‡	‡	‡	‡	‡	49	‡	‡	‡	‡	‡	73
Hawaii	‡	‡	36	‡	‡	48	38 *,**	45 *,**	49 **	49 *	48 *,**	54
Idaho	36	41	–	34	39	39	‡	‡	–	‡	‡	‡
Illinois	24 *,**	–	–	49	51	48	68 *,**	–	–	‡	‡	89
Indiana	‡	‡	‡	‡	‡	49	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	–	–	44	‡	‡	‡	–	–	‡
Kansas	–	–	–	48	49	49	–	–	–	‡	‡	79
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	41	‡	‡	61	53	49	78	74 *,**	88	87	83	90
Massachusetts	–	22 *,**	24 *,**	42	34	41	–	‡	65 *,**	81	79	88
Michigan	‡	37	‡	‡	‡	57	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	48	57	‡	61	‡	‡	75
Mississippi	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Missouri	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Montana	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡
Nebraska	‡	41	49	36	34	40	‡	‡	‡	‡	‡	‡
Nevada	–	–	–	36	35	37	–	–	–	69	63	73
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	25 *,**	31 *,**	–	–	–	50	84	87	–	–	–	90
New Mexico	31 *,**	32 *,**	38	38	37	41	‡	‡	‡	‡	‡	‡
New York	25 *,**	28 *,**	28 *,**	47	40	50	63 *,**	67	68	78	70	79
North Carolina	‡	‡	‡	‡	‡	55	‡	‡	‡	‡	‡	87
North Dakota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Ohio	‡	‡	–	‡	‡	58	‡	‡	–	‡	‡	‡
Oklahoma	‡	‡	–	44	50	47	‡	‡	–	‡	‡	‡
Oregon	40	–	42	46	36	42	68	–	79	69	75	78
Pennsylvania	‡	‡	–	–	–	42	‡	‡	–	–	–	‡
Rhode Island	13 *,**	15 *,**	26	30	26	29	‡	‡	52	64	54	54
South Carolina	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	‡	–	–	–	–	–	‡
Tennessee	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Texas	29 *,**	33 *,**	41 *,**	58	55	58	79	82	66	85	82	91
Utah	–	41	46	34	31	35	–	‡	‡	‡	47	66
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	‡	‡	‡	65	52	59	79	71 *,**	68 *	92	79	86
Washington	–	–	32 *,**	–	–	50	–	–	61	–	–	72
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	–	–	50	‡	‡	‡	–	–	67
Wyoming	42	49	46	42	46	54	‡	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	38	19	26	28	33	‡	‡	‡	‡	‡	‡
DDESS [2]	–	–	52 *	61	53	72	–	–	‡	‡	‡	‡
DoDDS [3]	–	–	59 *	63	58	72	–	–	70 *	73	72	82

See notes at end of table. ▶

Table C.12 Percentage of students at or above *Basic* in mathematics, by race/ethnicity, grade 8 public schools: By state, 1990–2003—Continued

Grade 8	American Indian/Alaska Native						Other[4]					
	Accommodations not permitted				Accommodations permitted		Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003	1990	1992	1996	2000	2000	2003
Nation (public)[1]	‡	‡	‡	53	53	54	‡	45 *	‡	‡	‡	70
Alabama	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Alaska	–	–	43	–	–	49	–	–	‡	–	–	‡
Arizona	17 *,**	38	36	‡	‡	39	‡	‡	‡	‡	‡	‡
Arkansas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
California	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Colorado	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Connecticut	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Delaware	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Florida	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Georgia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Hawaii	‡	‡	‡	‡	‡	‡	39 *,**	50	48	52	50	56
Idaho	‡	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡
Illinois	‡	–	–	‡	‡	‡	‡	–	–	‡	‡	‡
Indiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Iowa	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Kansas	–	–	–	‡	‡	‡	–	–	–	‡	‡	‡
Kentucky	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Louisiana	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Maine	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Maryland	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Massachusetts	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Michigan	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Minnesota	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mississippi	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Missouri	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Montana	43	–	53	47	49	48	‡	–	‡	‡	‡	‡
Nebraska	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Nevada	–	–	–	‡	44	‡	–	–	–	‡	‡	‡
New Hampshire	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Jersey	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
New Mexico	20 *,**	27	36	30	32	30	‡	‡	‡	‡	‡	‡
New York	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
North Carolina	14 *,**	‡	‡	‡	‡	48	‡	‡	‡	‡	‡	‡
North Dakota	26 *,**	47	38	44	32	50	‡	‡	‡	‡	‡	‡
Ohio	‡	‡	–	‡	‡	‡	‡	‡	–	‡	‡	‡
Oklahoma	40 *,**	52	–	61	60	56	‡	‡	–	‡	‡	74
Oregon	‡	–	‡	‡	‡	50	‡	–	‡	‡	‡	‡
Pennsylvania	‡	‡	–	–	–	‡	‡	‡	–	–	–	‡
Rhode Island	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
South Carolina	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
South Dakota	–	–	–	–	–	43	–	–	–	–	–	‡
Tennessee	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Texas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Utah	–	‡	‡	‡	‡	‡	–	‡	‡	‡	‡	‡
Vermont	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Washington	–	–	46	–	–	56	–	–	‡	–	–	‡
West Virginia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Wisconsin	‡	‡	‡	–	–	‡	‡	‡	‡	–	–	‡
Wyoming	43	‡	30	‡	27	48	72	‡	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
DDESS[2]	–	–	‡	‡	‡	‡	–	–	‡	‡	‡	‡
DoDDS[3]	–	–	‡	‡	‡	‡	–	–	71 *,**	74	72	81

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
[4] "Other" comprises students whose race based on school records was "other race" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Table C.13 Percentages of students, by eligibility for free/reduced-price school lunch and mathematics achievement level, grade 4 public schools: By state, 2003

Grade 4	Eligible				Not eligible				Information not available			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	38	62	15	1	12	88	45	6	23	77	34	4
Alabama	50	50	8	#	16	84	33	2	‡	‡	‡	‡
Alaska	41	59	14	1	16	84	39	5	27	73	31	3
Arizona	45	55	12	1	14	86	39	4	28	72	29	3
Arkansas	39	61	18	1	16	84	37	4	35	65	22	2
California	46	54	11	1	16	84	41	6	40	60	23	2
Colorado	42	58	14	1	14	86	43	6	‡	‡	‡	‡
Connecticut	40	60	12	#	8	92	54	8	14	86	41	6
Delaware	31	69	16	1	12	88	42	5	14	86	34	3
Florida	37	63	16	1	12	88	46	7	27	73	24	#
Georgia	41	59	12	1	16	84	40	6	21	79	41	6
Hawaii	46	54	11	#	18	82	34	3	‡	‡	‡	‡
Idaho	31	69	20	1	13	87	38	3	12	88	43	3
Illinois	48	52	11	1	11	89	48	8	41	59	15	2
Indiana	31	69	17	1	10	90	45	5	‡	‡	‡	‡
Iowa	30	70	20	1	11	89	43	4	‡	‡	‡	‡
Kansas	25	75	24	2	9	91	53	8	‡	‡	‡	‡
Kentucky	38	62	12	#	17	83	32	3	‡	‡	‡	‡
Louisiana	41	59	13	#	15	85	41	4	57	43	9	1
Maine	29	71	21	1	11	89	41	4	‡	‡	‡	‡
Maryland	48	52	10	1	15	85	44	8	27	73	26	4
Massachusetts	31	69	17	1	9	91	52	8	16	84	44	4
Michigan	41	59	15	1	12	88	45	7	35	65	21	1
Minnesota	33	67	20	2	10	90	50	9	‡	‡	‡	‡
Mississippi	47	53	9	#	16	84	34	2	23	77	30	3
Missouri	32	68	15	1	12	88	41	4	14	86	33	3
Montana	29	71	20	1	11	89	39	3	26	74	23	2
Nebraska	37	63	17	1	10	90	44	4	15	85	34	5
Nevada	47	53	11	#	18	82	33	3	26	74	22	1
New Hampshire	28	72	24	2	9	91	48	6	16	84	37	6
New Jersey	40	60	15	1	11	89	49	7	18	82	44	5
New Mexico	45	55	11	#	19	81	31	3	33	67	21	2
New York	34	66	18	2	9	91	48	6	5	95	44	5
North Carolina	27	73	21	1	6	94	55	10	11	89	51	7
North Dakota	28	72	21	1	12	88	40	3	‡	‡	‡	‡
Ohio	36	64	17	1	9	91	47	5	13	87	39	4
Oklahoma	35	65	14	#	14	86	34	2	37	63	20	1
Oregon	32	68	19	1	15	85	40	6	17	83	48	9
Pennsylvania	40	60	16	1	12	88	48	6	20	80	42	10
Rhode Island	45	55	13	1	14	86	41	5	41	59	19	2
South Carolina	31	69	18	1	9	91	48	7	‡	‡	‡	‡
South Dakota	30	70	21	1	10	90	42	4	‡	‡	‡	‡
Tennessee	46	54	11	1	20	80	32	3	24	76	33	3
Texas	25	75	20	1	9	91	48	6	12	88	47	10
Utah	33	67	20	1	15	85	37	3	‡	‡	‡	‡
Vermont	29	71	23	2	9	91	50	7	‡	‡	‡	‡
Virginia	32	68	14	1	10	90	46	7	12	88	48	5
Washington	32	68	20	1	10	90	48	8	16	84	37	4
West Virginia	32	68	16	1	17	83	33	3	‡	‡	‡	‡
Wisconsin	39	61	17	1	12	88	44	6	21	79	44	7
Wyoming	20	80	25	2	8	92	47	5	31	69	22	3
Other jurisdictions												
District of Columbia	71	29	3	#	43	57	20	4	61	39	7	#
DDESS [1]	20	80	24	1	13	87	35	3	14	86	27	2
DoDDS [2]	–	–	–	–	–	–	–	–	–	–	–	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
1 Department of Defense Domestic Dependent Elementary and Secondary Schools.
2 Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table C.14 Percentages of students, by eligibility for free/reduced-price school lunch and mathematics achievement level, grade 8 public schools: By state, 2003

Grade 8	Eligible				Not eligible				Information not available			
	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Nation (public)	53	47	11	1	22	78	37	7	32	68	29	6
Alabama	65	35	7	1	32	68	24	3	‡	‡	‡	‡
Alaska	49	51	13	1	24	76	36	7	29	71	31	6
Arizona	55	45	9	1	25	75	31	4	36	64	22	3
Arkansas	53	47	12	1	30	70	25	3	63	37	9	#
California	62	38	9	1	30	70	33	7	41	59	25	5
Colorado	50	50	13	2	17	83	43	10	‡	‡	‡	‡
Connecticut	50	50	12	1	18	82	44	11	21	79	38	9
Delaware	50	50	10	1	23	77	32	6	21	79	42	10
Florida	55	45	11	1	25	75	34	7	30	70	25	3
Georgia	61	39	8	1	23	77	34	7	48	52	12	1
Hawaii	58	42	8	1	34	66	24	4	‡	‡	‡	‡
Idaho	40	60	17	1	20	80	35	6	20	80	32	7
Illinois	57	43	10	1	19	81	41	9	43	57	24	4
Indiana	42	58	16	1	20	80	37	7	25	75	37	10
Iowa	43	57	15	1	17	83	39	7	17	83	39	7
Kansas	39	61	19	3	17	83	41	8	‡	‡	‡	‡
Kentucky	49	51	11	1	24	76	33	6	‡	‡	‡	‡
Louisiana	55	45	8	1	28	72	29	3	43	57	19	2
Maine	40	60	16	1	19	81	35	6	‡	‡	‡	‡
Maryland	58	42	10	1	25	75	36	8	19	81	43	16
Massachusetts	51	49	13	1	15	85	46	10	21	79	43	12
Michigan	53	47	13	1	23	77	34	6	39	61	25	4
Minnesota	36	64	24	3	13	87	50	11	‡	‡	‡	‡
Mississippi	67	33	5	#	34	66	23	2	35	65	26	1
Missouri	47	53	13	1	21	79	35	6	26	74	31	2
Montana	35	65	23	2	15	85	40	7	16	84	38	5
Nebraska	45	55	15	2	17	83	40	7	35	65	29	1
Nevada	57	43	10	1	33	67	25	4	37	63	30	3
New Hampshire	42	58	16	2	18	82	38	7	22	78	36	6
New Jersey	56	44	10	1	19	81	41	8	26	74	37	7
New Mexico	61	39	7	#	33	67	23	3	36	64	29	6
New York	48	52	16	1	15	85	45	9	19	81	41	12
North Carolina	47	53	14	2	18	82	42	10	17	83	45	12
North Dakota	33	67	23	2	13	87	41	6	‡	‡	‡	‡
Ohio	46	54	11	1	19	81	38	7	28	72	24	3
Oklahoma	50	50	10	#	24	76	28	3	‡	‡	‡	‡
Oregon	45	55	17	2	24	76	37	8	24	76	35	8
Pennsylvania	55	45	10	1	21	79	38	7	34	66	30	9
Rhode Island	59	41	8	1	23	77	33	5	66	34	9	1
South Carolina	49	51	12	1	19	81	38	8	‡	‡	‡	‡
South Dakota	37	63	22	2	15	85	41	6	‡	‡	‡	‡
Tennessee	61	39	9	1	30	70	28	4	33	67	33	9
Texas	46	54	12	1	19	81	36	7	‡	‡	‡	‡
Utah	44	56	18	2	22	78	36	7	27	73	27	3
Vermont	41	59	16	2	16	84	41	8	‡	‡	‡	‡
Virginia	51	49	11	1	19	81	38	8	29	71	28	5
Washington	44	56	16	1	21	79	40	8	25	75	32	6
West Virginia	49	51	10	1	27	73	28	3	‡	‡	‡	‡
Wisconsin	52	48	12	1	16	84	43	8	22	78	35	6
Wyoming	38	62	18	1	18	82	37	5	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	79	21	2	#	60	40	12	3	59	41	7	1
DDESS [1]	24	76	25	4	21	79	27	5	22	78	28	4
DoDDS [2]	–	–	–	–	–	–	–	–	–	–	–	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
1 Department of Defense Domestic Dependent Elementary and Secondary Schools.
2 Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table C.15 Percentage of students at or above *Basic* in mathematics, by student eligibility for free/reduced-price school lunch, grade 4 public schools: By state, 1996–2003

Grade 4	Eligible				Not eligible				Information not available			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1996	2000	2000	2003	1996	2000	2000	2003	1996	2000	2000	2003
Nation (public) [1]	41 *	46 *	43 *	62	73 *	79 *	77 *	88	72	77	78	77
Alabama	30 *,**	39 *,**	38 *,**	50	66 *,**	76 *,**	75 *,**	84	51	69	64	‡
Alaska	43 *,**	–	–	59	76 *,**	–	–	84	69	–	–	73
Arizona	34 *,**	40 *,**	38 *,**	55	75 *,**	75 *,**	75 *,**	86	58	53	46 *,**	72
Arkansas	37 *,**	41 *,**	39 *,**	61	70 *,**	73 *,**	72 *,**	84	‡	‡	‡	65
California	26 *,**	35 *,**	35 *,**	54	63 *,**	72 *,**	70 *,**	84	54	54	50	60
Colorado	45 *,**	–	–	58	77 *,**	–	–	86	71	–	–	‡
Connecticut	42 *,**	53	53	60	85 *,**	87 *,**	86 *,**	92	‡	63	61 *,**	86
Delaware	33 *,**	–	–	69	69 *,**	–	–	88	49 *,**	–	–	86
Florida	38 *,**	–	–	63	70 *,**	–	–	88	63	–	–	73
Georgia	33 *,**	37 *,**	36 *,**	59	68 *,**	77 *,**	77 *,**	84	66	60 *,**	59 *	79
Hawaii	37 *,**	40 *,**	39 *,**	54	64 *,**	70 *,**	70 *,**	82	48	51	55	‡
Idaho	–	59 *,**	55 *,**	69	–	80 *,**	77 *,**	87	–	74	78	88
Illinois	–	43 *,**	40 *,**	52	–	80 *,**	79 *,**	89	–	71	65	59
Indiana	49 *,**	64	59 *,**	69	82 *,**	85 *,**	85 *,**	90	‡	70	73	‡
Iowa	59 *,**	66	63	70	81 *,**	82 *,**	81 *,**	89	70	76	70	‡
Kansas	–	57 *,**	58 *,**	75	–	87 *	87 *,**	91	–	50	59	‡
Kentucky	46 *,**	46 *,**	44 *,**	62	73 *,**	74 *,**	72 *,**	83	58	69	71	‡
Louisiana	31 *,**	45 *,**	45 *,**	59	66 *,**	79	78	85	47	49	51	43
Maine	61 *,**	64	62 *,**	71	82 *,**	79 *,**	78 *,**	89	82	80	82	‡
Maryland	32 *,**	37 *,**	38 *,**	52	73 *,**	75 *,**	75 *,**	85	37 *,**	51	53	73
Massachusetts	50 *,**	51 *,**	47 *,**	69	79 *,**	90	89	91	70	75	74	84
Michigan	47 *,**	48 *,**	46 *,**	59	79 *,**	83 *,**	82 *,**	88	67	59	57	65
Minnesota	59	60	58 *,**	67	82 *,**	85 *,**	83 *,**	90	70	89	78	‡
Mississippi	28 *,**	33 *,**	33 *,**	53	67 *,**	67 *,**	67 *,**	84	‡	49 *,**	50 *,**	77
Missouri	45 *,**	51 *,**	51 *,**	68	78 *,**	83 *,**	82 *,**	88	‡	83	81	86
Montana	57 *,**	58 *,**	57 *,**	71	79 *,**	81 *,**	79 *,**	89	67	77	78	74
Nebraska	52 *,**	45 *,**	45 *,**	63	79 *,**	79 *,**	79 *,**	90	80	74	68	85
Nevada	35 *,**	43 *,**	41 *,**	53	64 *,**	71 *,**	72 *,**	82	59 *	55	56	74
New Hampshire	–	–	–	72	–	–	–	91	–	–	–	84
New Jersey	40 *,**	–	–	60	81 *,**	–	–	89	‡	–	–	82
New Mexico	35 *,**	38 *,**	40 *,**	55	70 *,**	71 *,**	72 *,**	81	59	53	44 *,**	67
New York	41 *,**	49 *,**	48 *,**	66	83 *,**	85	85 *,**	91	80	82	74 *,**	95
North Carolina	45 *,**	61 *,**	59 *,**	73	77 *,**	86 *,**	84 *,**	94	57 *,**	81	79	89
North Dakota	65	63	59 *,**	72	79 *,**	81 *,**	81 *,**	88	76	74	70	‡
Ohio	–	55	54	64	–	84 *,**	84 *,**	91	–	76	75	87
Oklahoma	–	57 **	54 *,**	65	–	83	81 *,**	86	–	67	68	63
Oregon	47 *,**	51 *,**	50 *,**	68	74 *,**	77 *,**	76 *,**	85	62 *,**	72	59 *,**	83
Pennsylvania	47 *,**	–	–	60	81 *,**	–	–	88	68	–	–	80
Rhode Island	40 *,**	44 *,**	43 *,**	55	72 *,**	82 *,**	81 *,**	86	‡	57	49	59
South Carolina	31 *,**	44 *,**	43 *,**	69	68 *,**	78 *,**	78 *,**	91	‡	43	‡	‡
South Dakota	–	–	–	70	–	–	–	90	–	–	–	‡
Tennessee	38 *,**	40 *,**	38 *,**	54	72 *,**	74 *,**	74	80	52	65	74	76
Texas	52 *,**	66 *,**	65 *,**	75	84 *,**	87	87	91	71	74	71	88
Utah	55 *,**	53 *,**	52 *,**	67	75 *,**	77 *,**	78 *,**	85	68	77	77	‡
Vermont	50 *,**	54 *,**	54 *,**	71	74 *,**	80 *,**	81 *,**	91	66	79	78	‡
Virginia	39 *,**	50 *,**	50 *,**	68	72 *,**	83 *,**	81 *,**	90	69	82	79	88
Washington	49 *,**	–	–	68	75 *,**	–	–	90	74	–	–	84
West Virginia	49 *,**	57 *,**	54 *,**	68	76 *,**	77 *,**	75 *,**	83	74	73	68	‡
Wisconsin	53 *,**	–	–	61	82 *,**	–	–	88	79	–	–	79
Wyoming	50 *,**	62 *,**	59 *,**	80	71 *,**	79 *,**	78 *,**	92	65	71	70	69
Other jurisdictions												
District of Columbia	11 *,**	18 *,**	18 *,**	29	49 *,**	58	57	57	34	30	29	39
DDESS [2]	56 *,**	65 *,**	67 *,**	80	69 *,**	73 *,**	72 *,**	87	66 *,**	72	69 *,**	86
DoDDS [3]	60	63	62	–	66	72	71	–	64	71	68	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

Table C.16 Percentage of students at or above *Basic* in mathematics, by student eligibility for free/reduced-price school lunch, grade 8 public schools: By state, 1996–2003

Grade 8	Eligible				Not eligible				Information not available			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1996	2000	2000	2003	1996	2000	2000	2003	1996	2000	2000	2003
Nation (public) [1]	39 *	44	41 *	47	71 *	76	74 *	78	69	63	62	68
Alabama	22 *,**	30	32	35	60 *,**	66	66	68	43	60	62	‡
Alaska	44	–	–	51	72	–	–	76	72	–	–	71
Arizona	37	40	38	45	70	73	72	75	54	69	62	64
Arkansas	33 *,**	37 *	34 *,**	47	62 *,**	61 *,**	58 *,**	70	51	59	59	37
California	32	30 *	28 *,**	38	67	64	60	70	49	64	68	59
Colorado	46	–	–	50	75 *,**	–	–	83	60	–	–	‡
Connecticut	40	36 *	33 *,**	50	79	83	82	82	66	64	61	79
Delaware	33 *,**	–	–	50	64 *,**	–	–	77	52 *,**	–	–	79
Florida	35 *,**	–	–	45	67 *,**	–	–	75	55	–	–	70
Georgia	26 *,**	32 *	30 *,**	39	64 *,**	69 *	70 *,**	77	60	55	53	52
Hawaii	35 *	38	38	42	59 *,**	60 *	59 *,**	66	42	62	56	‡
Idaho	–	54	56	60	–	78	77	80	–	77	69	80
Illinois	–	47	45	43	–	77	77	81	–	70	70	57
Indiana	42 *,**	58	60	58	76 *	81	79	80	‡	71	65	75
Iowa	64	–	–	57	81	–	–	83	76	–	–	83
Kansas	–	58	56	61	–	84	83	83	–	78	80	‡
Kentucky	38 *,**	45	42 *,**	51	68 *,**	75	73	76	50	‡	‡	‡
Louisiana	24 *,**	32 *,**	32 *,**	45	54 *,**	69	69	72	36	48	45	57
Maine	64	65	62	60	81	80	77	81	80	78	74	‡
Maryland	28 *,**	39	35	42	68 *,**	76	73	75	60	57 *	55 *	81
Massachusetts	41	52	45	49	76 *,**	82	78 *,**	85	59	78	64	79
Michigan	45	45	45	47	75	79	76	77	60	60	61	61
Minnesota	60	65	64	64	80 *,**	84	85	87	72	80	83	‡
Mississippi	20 *,**	26 *	27 *,**	33	55 *,**	57 *	57 *,**	66	32	43	42	65
Missouri	46	46	40 *,**	53	72 *,**	74	73 *	79	55	70	68	74
Montana	55	68	65	65	82	84	83	85	79	81	83	84
Nebraska	60	53	52	55	81	82	82	83	84	‡	‡	65
Nevada	–	35	33 *	43	–	66	63	67	–	65	55	63
New Hampshire	–	–	–	58	–	–	–	82	–	–	–	78
New Jersey	–	–	–	44	–	–	–	81	–	–	–	74
New Mexico	36	38	35	39	64	64	61	67	53	48	52	64
New York	42 *,**	50	45	52	75 *,**	81	77 *,**	85	58 *,**	72	66	81
North Carolina	36 *,**	49	45 *	53	66 *,**	80	77 *,**	82	50 *,**	61 *,**	63	83
North Dakota	67	64	64	67	82 *,**	82	83	87	75	77	69	‡
Ohio	–	50	46	54	–	83	80	81	–	64	70	72
Oklahoma	–	49	48	50	–	74	71 *	76	–	71	71	‡
Oregon	50	51	52	55	74	78	78	76	64	77	76	76
Pennsylvania	–	–	–	45	–	–	–	79	–	–	–	66
Rhode Island	38	39	34	41	70 *,**	75	72	77	34	60 *,**	51	34
South Carolina	30 *,**	36 *,**	33 *,**	51	63 *,**	70 *,**	70 *,**	81	‡	‡	‡	‡
South Dakota	–	–	–	63	–	–	–	85	–	–	–	‡
Tennessee	32	33	30	39	63 *,**	64	64	70	46	51	52	67
Texas	36 *,**	53	53	54	74 *,**	79	78	81	66	70	67	‡
Utah	58	51	45 *,**	56	74	74	74 *	78	67	62	65	73
Vermont	55	58	52	59	76 *,**	80	79 *,**	84	75	75	70	‡
Virginia	29 *,**	46	42	49	67 *,**	74 *	73 *,**	81	67	66	62	71
Washington	45 *,**	–	–	56	74	–	–	79	73	–	–	75
West Virginia	39 *,**	48	41 *,**	51	62 *,**	70	69	73	62	67	67	‡
Wisconsin	51	–	–	48	82	–	–	84	77	–	–	78
Wyoming	54 *	56	54 *	62	72 *,**	75 *,**	75 *,**	82	78	67	60	‡
Other jurisdictions												
District of Columbia	14 *,**	16 *	15 *,**	21	30 *,**	47	44	40	21 *,**	21 *,**	22 *,**	41
DDESS [2]	48 *,**	59 *,**	53 *,**	76	64 *,**	71	66	79	56 *,**	69	66	78
DoDDS [3]	56	62	61	–	66	73	70	–	67	71	73	–

– Not available. The jurisdiction did not participate or did not meet the minimum participation guidelines for reporting.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
* Significantly different from 2003 when only one jurisdiction or the nation is being examined.
** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.
[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. See appendix A for more details. Significance tests were performed using unrounded numbers. NAEP sample sizes have increased in 2003, compared to previous years, resulting in smaller detectable differences than in previous assessments.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996, 2000, and 2003 Mathematics Assessments.

Table C.17 Average mathematics scale scores and achievement-level results, by students with and without disabilities and limited English proficiency, grade 4 public schools: By state, 2003

Grade 4	Students with disabilities										
	YES					NO					
	Weighted percentage of students assessed	Average scale scores	Percentage of students			Weighted percentage of students assessed	Average scale scores	Percentage of students			Weighted percentage of students excluded
			Below *Basic*	At or above *Basic*	At or above *Proficient*			Below *Basic*	At or above *Basic*	At or above *Proficient*	
Nation (public)	11	214	50	50	12	89	236	21	79	34	3
Alabama	10	192	78	22	3	90	227	31	69	20	2
Alaska	16	212	54	46	11	84	237	20	80	34	1
Arizona	9	210	56	44	8	91	231	27	73	27	3
Arkansas	13	202	65	35	6	87	233	24	76	29	1
California	8	208	59	41	12	92	229	30	70	26	2
Colorado	11	209	57	43	9	89	238	19	81	37	2
Connecticut	10	219	44	56	17	90	243	15	85	44	3
Delaware	10	215	50	50	11	90	238	16	84	33	6
Florida	17	214	50	50	13	83	238	19	81	35	2
Georgia	11	209	57	43	11	89	233	25	75	29	2
Hawaii	10	197	73	27	5	90	230	27	73	25	2
Idaho	11	208	59	41	7	89	238	16	84	33	1
Illinois	13	215	49	51	14	87	236	24	76	34	3
Indiana	13	221	42	58	17	87	240	14	86	38	2
Iowa	13	213	54	46	7	87	242	11	89	40	2
Kansas	12	219	43	57	13	88	245	11	89	45	1
Kentucky	11	208	60	40	8	89	231	24	76	24	3
Louisiana	19	208	60	40	6	81	230	27	73	25	3
Maine	15	215	51	49	10	85	242	12	88	38	3
Maryland	10	215	51	49	13	90	235	25	75	33	3
Massachusetts	16	224	35	65	19	84	245	12	88	46	2
Michigan	7	219	41	59	14	93	237	21	79	36	3
Minnesota	12	220	43	57	17	88	245	13	87	45	2
Mississippi	5	212	53	47	12	95	223	37	63	17	5
Missouri	13	222	39	61	15	87	237	18	82	32	3
Montana	12	212	53	47	6	88	239	14	86	35	2
Nebraska	14	220	40	60	15	86	239	17	83	37	2
Nevada	11	206	60	40	9	89	230	27	73	25	3
New Hampshire	16	222	37	63	15	84	247	8	92	48	3
New Jersey	13	212	51	49	10	87	243	15	85	43	2
New Mexico	16	207	61	39	12	84	225	33	67	18	2
New York	11	215	49	51	11	89	239	18	82	36	3
North Carolina	14	230	30	70	26	86	244	13	87	43	4
North Dakota	14	215	49	51	9	86	241	12	88	38	2
Ohio	9	214	49	51	9	91	240	16	84	38	4
Oklahoma	14	209	57	43	8	86	232	21	79	25	3
Oregon	15	218	46	54	13	85	239	17	83	36	4
Pennsylvania	11	209	58	42	12	89	239	18	82	39	2
Rhode Island	19	210	56	44	9	81	235	22	78	33	2
South Carolina	11	221	38	62	14	89	238	19	81	34	6
South Dakota	13	219	44	56	15	87	240	14	86	37	1
Tennessee	11	206	61	39	12	89	230	27	73	25	2
Texas	8	224	35	65	16	92	239	16	84	34	7
Utah	10	213	50	50	9	90	237	18	82	34	2
Vermont	14	221	40	60	16	86	245	11	89	46	4
Virginia	9	220	41	59	15	91	241	15	85	38	4
Washington	12	214	53	47	11	88	242	14	86	40	2
West Virginia	13	208	61	39	7	87	234	20	80	26	3
Wisconsin	12	211	55	45	9	88	240	16	84	39	3
Wyoming	14	221	39	61	13	86	244	9	91	43	1
Other jurisdictions											
District of Columbia	10	177	91	9	2	90	208	61	39	8	4
DDESS [1]	10	220	39	61	11	90	239	13	87	33	2
DoDDS [2]	8	215	52	48	11	92	239	13	87	33	1

See notes at end of table. ▶

Table C.17 Average mathematics scale scores and achievement-level results, by students with and without disabilities and limited English proficiency, grade 4 public schools: By state, 2003—Continued

Grade 4

Limited-English-proficient students

	YES					NO					
	Weighted percentage of students assessed	Average scale scores	Percentage of students Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students assessed	Average scale scores	Percentage of students Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students excluded
Nation (public)	9	214	51	49	9	91	236	21	79	34	1
Alabama	1	‡	‡	‡	‡	99	224	35	65	19	#
Alaska	18	215	52	48	12	82	237	20	80	34	#
Arizona	18	207	62	38	6	82	234	23	77	30	2
Arkansas	3	221	37	63	16	97	229	28	72	27	1
California	32	212	53	47	8	68	235	23	77	32	2
Colorado	9	206	65	35	5	91	238	19	81	37	1
Connecticut	3	211	54	46	3	97	242	16	84	42	1
Delaware	2	‡	‡	‡	‡	98	236	19	81	31	1
Florida	9	222	38	62	16	91	235	23	77	33	2
Georgia	4	208	59	41	8	96	231	27	73	28	1
Hawaii	5	197	77	23	2	95	228	29	71	24	2
Idaho	6	211	56	44	7	94	237	18	82	32	1
Illinois	7	204	66	34	5	93	235	24	76	34	2
Indiana	3	216	45	55	8	97	239	17	83	36	#
Iowa	3	217	46	54	6	97	239	16	84	36	1
Kansas	3	224	33	67	16	97	242	15	85	42	#
Kentucky	1	‡	‡	‡	‡	99	229	27	73	22	1
Louisiana	2	‡	‡	‡	‡	98	226	33	67	21	#
Maine	1	‡	‡	‡	‡	99	238	17	83	34	1
Maryland	3	219	44	56	15	97	234	27	73	32	2
Massachusetts	4	217	45	55	9	96	243	14	86	43	1
Michigan	5	228	37	63	24	95	236	22	78	35	1
Minnesota	5	213	50	50	7	95	244	14	86	44	1
Mississippi	#	‡	‡	‡	‡	100	223	38	62	17	1
Missouri	2	‡	‡	‡	‡	98	235	20	80	30	1
Montana	4	208	60	40	2	96	237	17	83	32	#
Nebraska	4	204	66	34	5	96	238	18	82	35	1
Nevada	15	208	61	39	6	85	231	25	75	26	2
New Hampshire	2	224	40	60	19	98	244	12	88	43	1
New Jersey	4	213	52	48	7	96	240	18	82	40	1
New Mexico	28	209	59	41	7	72	228	29	71	21	2
New York	5	206	61	39	6	95	237	19	81	34	3
North Carolina	5	231	26	74	25	95	243	15	85	42	1
North Dakota	4	211	54	46	5	96	239	15	85	35	#
Ohio	1	213	53	47	18	99	238	19	81	36	1
Oklahoma	6	220	41	59	16	94	230	26	74	23	1
Oregon	11	212	54	46	9	89	239	17	83	36	1
Pennsylvania	2	‡	‡	‡	‡	98	236	22	78	36	1
Rhode Island	8	196	77	23	3	92	233	24	76	30	2
South Carolina	2	‡	‡	‡	‡	98	236	21	79	32	#
South Dakota	4	206	66	34	5	96	238	16	84	35	#
Tennessee	1	‡	‡	‡	‡	99	228	30	70	24	#
Texas	15	219	40	60	11	85	241	14	86	37	2
Utah	11	215	49	51	10	89	237	18	82	34	1
Vermont	2	‡	‡	‡	‡	98	242	15	85	42	#
Virginia	6	226	32	68	19	94	240	16	84	37	2
Washington	6	212	55	45	7	94	240	17	83	38	1
West Virginia	#	‡	‡	‡	‡	100	231	25	75	24	#
Wisconsin	6	215	48	52	10	94	238	19	81	37	1
Wyoming	4	215	46	54	10	96	242	11	89	40	#
Other jurisdictions											
District of Columbia	6	200	72	28	3	94	205	63	37	7	1
DDESS [1]	3	‡	‡	‡	‡	97	237	15	85	31	1
DoDDS [2]	6	221	40	60	14	94	238	14	86	32	1

#The estimate rounds to zero.
‡Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
[1]Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2]Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. The results for students with disabilities and limited-English-proficient students are based on students who were assessed and cannot be generalized to the total population of such students. The weighted percentages of students with and without disabilities and limited English proficiency are based on the total number of students assessed while the percentages excluded are based on the number of students sampled.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table C.18 Average mathematics scale scores and achievement-level results, by students with and without disabilities and limited English proficiency, grade 8 public schools: By state, 2003

Grade 8	Students with disabilities										
	YES					NO					
	Weighted percentage of students assessed	Average scale scores	Percentage of students Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students assessed	Average scale scores	Percentage of students Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students excluded
Nation (public)	11	242	71	29	6	89	280	29	71	30	3
Alabama	11	213	88	12	2	89	268	42	58	17	2
Alaska	14	248	66	34	9	86	284	25	75	33	1
Arizona	9	240	75	25	3	91	274	35	65	23	3
Arkansas	13	219	88	12	1	87	273	35	65	21	1
California	10	232	80	20	5	90	271	40	60	24	1
Colorado	11	249	65	35	7	89	287	22	78	38	1
Connecticut	12	252	60	40	8	88	288	22	78	39	3
Delaware	9	237	80	20	3	91	281	27	73	28	8
Florida	12	235	76	24	5	88	277	33	67	26	2
Georgia	10	234	76	24	6	90	274	37	63	23	2
Hawaii	13	228	87	13	1	87	271	38	62	19	3
Idaho	10	241	75	25	5	90	284	22	78	31	1
Illinois	12	241	72	28	5	88	282	28	72	33	4
Indiana	12	244	69	31	4	88	286	21	79	34	2
Iowa	14	245	72	28	4	86	290	16	84	38	2
Kansas	11	252	61	39	6	89	288	20	80	38	2
Kentucky	9	230	83	17	3	91	279	30	70	26	4
Louisiana	12	233	79	21	4	88	271	38	62	19	4
Maine	13	253	62	38	7	87	286	20	80	33	4
Maryland	11	248	65	35	12	89	281	29	71	32	3
Massachusetts	15	254	59	41	9	85	292	18	82	43	2
Michigan	9	240	73	27	5	91	280	28	72	30	4
Minnesota	11	251	61	39	6	89	296	13	87	48	2
Mississippi	4	231	86	14	2	96	262	51	49	13	5
Missouri	12	247	70	30	5	88	283	24	76	31	4
Montana	11	246	69	31	4	89	291	15	85	39	2
Nebraska	12	250	65	35	4	88	287	20	80	36	3
Nevada	11	233	78	22	4	89	272	37	63	22	2
New Hampshire	16	258	56	44	8	84	292	15	85	40	3
New Jersey	15	247	66	34	7	85	287	22	78	38	1
New Mexico	18	238	74	26	6	82	269	42	58	17	2
New York	13	243	68	32	7	87	285	24	76	36	4
North Carolina	13	255	56	44	13	87	285	24	76	35	3
North Dakota	13	253	59	41	6	87	292	13	87	41	1
Ohio	8	245	67	33	5	92	285	22	78	33	5
Oklahoma	14	238	76	24	4	86	277	29	71	23	2
Oregon	12	249	66	34	7	88	285	25	75	35	3
Pennsylvania	13	244	73	27	6	87	284	25	75	33	1
Rhode Island	18	244	69	31	8	82	278	30	70	27	3
South Carolina	8	249	62	38	5	92	280	30	70	28	7
South Dakota	9	246	69	31	5	91	289	17	83	38	2
Tennessee	12	242	70	30	16	88	272	37	63	22	3
Texas	10	245	72	28	4	90	281	27	73	27	6
Utah	9	243	73	27	5	91	284	24	76	34	2
Vermont	15	258	54	46	10	85	291	17	83	39	3
Virginia	9	255	58	42	10	91	285	24	76	33	6
Washington	11	240	74	26	5	89	286	22	78	36	2
West Virginia	14	232	86	14	1	86	277	30	70	23	3
Wisconsin	13	247	69	31	7	87	289	18	82	39	3
Wyoming	14	248	70	30	4	86	289	16	84	37	1
Other jurisdictions											
District of Columbia	11	204	96	4	1	89	248	67	33	7	5
DDESS [1]	11	249	66	34	6	89	286	17	83	29	1
DoDDS [2]	6	236	75	25	2	94	289	18	82	36	1

See notes at end of table. ▶

Table C.18 Average mathematics scale scores and achievement-level results, by students with and without disabilities and limited English proficiency, grade 8 public schools: By state, 2003—Continued

Grade 8	Limited-English-proficient students										
	YES					NO					
	Weighted percentage of students assessed	Average scale scores	Percentage of students Below *Basic*	Percentage of students At or above *Basic*	Percentage of students At or above *Proficient*	Weighted percentage of students assessed	Average scale scores	Percentage of students Below *Basic*	Percentage of students At or above *Basic*	Percentage of students At or above *Proficient*	Weighted percentage of students excluded
Nation (public)	5	241	74	26	5	95	278	31	69	29	1
Alabama	1	‡	‡	‡	‡	99	262	47	53	16	#
Alaska	11	251	63	37	9	89	283	26	74	33	#
Arizona	14	246	73	27	4	86	275	33	67	24	2
Arkansas	2	‡	‡	‡	‡	98	266	41	59	19	1
California	19	239	76	24	4	81	274	37	63	26	2
Colorado	4	243	75	25	5	96	285	24	76	36	1
Connecticut	3	241	69	31	11	97	285	26	74	35	1
Delaware	1	‡	‡	‡	‡	99	278	31	69	26	1
Florida	6	236	78	22	2	94	273	36	64	25	1
Georgia	2	239	75	25	4	98	270	40	60	22	1
Hawaii	5	238	79	21	2	95	267	42	58	18	1
Idaho	5	241	74	26	3	95	282	25	75	30	#
Illinois	3	237	80	20	4	97	279	31	69	30	1
Indiana	2	‡	‡	‡	‡	98	282	26	74	31	#
Iowa	2	245	68	32	9	98	285	23	77	34	#
Kansas	3	249	67	33	9	97	285	23	77	35	1
Kentucky	1	‡	‡	‡	‡	99	275	34	66	24	1
Louisiana	1	‡	‡	‡	‡	99	266	43	57	17	1
Maine	1	‡	‡	‡	‡	99	282	25	75	30	#
Maryland	2	‡	‡	‡	‡	98	278	32	68	30	1
Massachusetts	2	242	71	29	4	98	287	23	77	39	1
Michigan	2	‡	‡	‡	‡	98	277	32	68	28	1
Minnesota	3	253	56	44	4	97	292	17	83	45	1
Mississippi	1	‡	‡	‡	‡	99	261	53	47	12	#
Missouri	1	‡	‡	‡	‡	99	279	29	71	28	#
Montana	2	‡	‡	‡	‡	98	287	20	80	36	#
Nebraska	2	‡	‡	‡	‡	98	283	25	75	33	1
Nevada	7	234	78	22	3	93	270	38	62	21	1
New Hampshire	1	‡	‡	‡	‡	99	286	21	79	35	#
New Jersey	2	‡	‡	‡	‡	98	282	27	73	34	1
New Mexico	19	240	75	25	3	81	269	41	59	18	1
New York	4	237	79	21	3	96	282	27	73	33	2
North Carolina	3	250	62	38	7	97	282	27	73	33	1
North Dakota	2	‡	‡	‡	‡	98	288	18	82	37	#
Ohio	1	235	78	22	3	99	282	26	74	31	#
Oklahoma	5	251	60	40	12	95	273	34	66	20	1
Oregon	6	246	70	30	4	94	283	27	73	34	1
Pennsylvania	2	‡	‡	‡	‡	98	279	31	69	30	#
Rhode Island	4	228	87	13	3	96	274	35	65	25	2
South Carolina	1	‡	‡	‡	‡	99	277	32	68	26	#
South Dakota	3	239	75	25	4	97	286	20	80	36	#
Tennessee	2	‡	‡	‡	‡	98	269	41	59	21	1
Texas	6	243	75	25	4	94	279	29	71	26	2
Utah	7	248	67	33	7	93	283	26	74	33	1
Vermont	1	‡	‡	‡	‡	99	286	23	77	35	#
Virginia	2	‡	‡	‡	‡	98	282	27	73	31	2
Washington	4	246	69	31	6	96	283	26	74	33	1
West Virginia	#	‡	‡	‡	‡	100	271	37	63	20	#
Wisconsin	3	‡	‡	‡	‡	97	285	23	77	36	1
Wyoming	3	254	64	36	7	97	285	22	78	33	#
Other jurisdictions											
District of Columbia	4	231	79	21	3	96	244	70	30	6	1
DDESS [1]	6	‡	‡	‡	‡	94	283	20	80	28	1
DoDDS [2]	3	256	59	41	9	97	287	20	80	35	1

#The estimate rounds to zero.
‡Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
[1]Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2]Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. The results for students with disabilities and limited-English-proficient students are based on students who were assessed and cannot be generalized to the total population of such students. The weighted percentages of students with and without disabilities and limited English proficiency are based on the total number of students assessed while the percentages excluded are based on the number of students sampled.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table C.19 Average mathematics scale score and achievement-level results, by students with disabilities and limited-English-proficient students, grade 4 public schools: By urban district, 2003

Grade 4	Weighted percentage of students assessed	Average scale scores	Percentage of students Below *Basic*	At or above *Basic*	At or above *Proficient*
Students with disabilities					
Nation (public)	11	214	50	50	12
Large central city (public)	10	204	63	37	7
Atlanta	7	200	67	33	8
Boston	17	201	71	29	3
Charlotte	14	225	36	64	16
Chicago	11	194	74	26	4
Cleveland	7	195	78	22	1
District of Columbia	10	177	91	9	2
Houston	12	216	47	53	10
Los Angeles	9	198	73	27	4
New York City	12	203	65	35	4
San Diego	10	210	58	42	8
Limited-English-proficient students					
Nation (public)	9	214	51	49	9
Large central city (public)	19	212	54	46	7
Atlanta	2	‡	‡	‡	‡
Boston	16	209	59	41	5
Charlotte	6	226	33	67	17
Chicago	17	204	67	33	3
Cleveland	3	‡	‡	‡	‡
District of Columbia	6	200	72	28	3
Houston	34	221	39	61	10
Los Angeles	55	207	61	39	4
New York City	7	203	66	34	7
San Diego	33	211	55	45	5

‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
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), 2003 Trial Urban District Mathematics Assessment.

Table C.20 Average mathematics scale score and achievement-level results, by students with disabilities and limited-English-proficient students, grade 8 public schools: By urban district, 2003

Grade 8	Weighted percentage of students assessed	Average scale scores	Percentage of students: Below *Basic*	At or above *Basic*	At or above *Proficient*
Students with disabilities					
Nation (public)	11	242	71	29	6
Large central city (public)	11	229	81	19	4
Atlanta	9	210	95	5	#
Boston	21	227	89	11	2
Charlotte	12	253	58	42	16
Chicago	13	217	92	8	1
Cleveland	9	223	90	10	2
District of Columbia	11	204	96	4	1
Houston	10	241	77	23	4
Los Angeles	11	215	91	9	2
New York City	14	223	89	11	#
San Diego	10	228	86	14	2
Limited-English-proficient students					
Nation (public)	5	241	74	26	5
Large central city (public)	11	238	76	24	4
Atlanta	1	‡	‡	‡	‡
Boston	9	229	88	12	2
Charlotte	6	258	59	41	19
Chicago	5	228	82	18	2
Cleveland	5	‡	‡	‡	‡
District of Columbia	4	231	79	21	3
Houston	12	240	79	21	2
Los Angeles	32	223	90	10	2
New York City	10	238	78	22	4
San Diego	21	235	82	18	2

The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
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), 2003 Trial Urban District Mathematics Assessment.

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D Appendix D

State- and District-Level Contextual Variables

To help place results from the NAEP 2003 state and Trial Urban District assessment programs into context, this appendix presents selected state- and district-level data from sources other than NAEP. These data are taken from the *Digest of Education Statistics 2002*.

Table D.1 Population and public-school enrollment, from non-NAEP sources: By state, April 2000 and Fall 2000

	Estimated resident populations: April 1, 2000		Enrollment in public elementary and secondary schools: Fall 2000		
	Total (in thousands)	5- to 17-year-olds (in thousands)	Total (in thousands)	Kindergarten through grade 8[1] (in thousands)	Grades 9–12 (in thousands)
Nation	281,422	53,118	47,223	33,709	13,514
Alabama	4,447	827	740	539	201
Alaska	627	143	133	94	39
Arizona	5,131	985	878	641	237
Arkansas	2,673	499	450	318	132
California	33,872	6,763	6,142	4,409	1,733
Colorado	4,301	803	725	517	208
Connecticut	3,406	618	562	406	156
Delaware	784	143	115	81	34
Florida	15,982	2,701	2,435	1,760	675
Georgia	8,186	1,574	1,445	1,060	385
Hawaii	1,212	218	184	132	52
Idaho	1,294	271	245	170	75
Illinois	12,419	2,369	2,049	1,474	575
Indiana	6,080	1,151	989	703	286
Iowa	2,926	545	495	334	161
Kansas	2,688	524	471	323	147
Kentucky	4,042	729	666	472	194
Louisiana	4,469	902	743	547	197
Maine	1,275	231	207	146	61
Maryland	5,296	1,003	853	609	244
Massachusetts	6,349	1,103	975	703	273
Michigan	9,938	1,924	1,743	1,256	488
Minnesota	4,919	957	854	578	277
Mississippi	2,845	571	498	364	134
Missouri	5,595	1,058	913	645	268
Montana	902	175	155	105	50
Nebraska	1,711	333	286	195	91
Nevada	1,998	366	341	251	90
New Hampshire	1,236	234	208	147	61
New Jersey	8,414	1,524	1,308	953	355
New Mexico	1,819	378	320	225	95
New York	18,976	3,451	2,882	2,029	853
North Carolina	8,049	1,425	1,294	945	348
North Dakota	642	121	109	72	37
Ohio	11,353	2,133	1,835	1,294	541
Oklahoma	3,451	656	623	445	178
Oregon	3,421	624	546	379	167
Pennsylvania	12,281	2,194	1,814	1,258	556
Rhode Island	1,048	184	157	114	44
South Carolina	4,012	745	677	493	184
South Dakota	755	152	129	88	41
Tennessee	5,689	1,024	909	668	241
Texas	20,852	4,262	4,060	2,943	1,117
Utah	2,233	509	482	333	148
Vermont	609	114	102	70	32
Virginia	7,079	1,276	1,145	816	329
Washington	5,894	1,120	1,005	694	310
West Virginia	1,808	301	286	201	85
Wisconsin	5,364	1,026	879	595	285
Wyoming	494	98	90	60	30
Other Jurisdictions					
District of Columbia	572	82	69	54	15
DDESS [2]	–	–	34	31	3
DoDDS [3]	–	–	74	59	14

– Not available.
[1] Includes a number of prekindergarten students.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
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, *Digest of Education Statistics, 2002* (NCES 2003-060), tables 17 and 37 (pp. 24, 50–51), 2003; U.S. Department of Commerce, U.S. Census Bureau, *Current Population Reports*, Series P-25, No. 1095 at the national level, SF1-P12 and unpublished data; and Common Core of Data surveys.

Table D.2 Poverty status of school-age children and children served under Individuals with Disabilities Education Act and Chapter 1, from non-NAEP sources: By state, 2001 and school years 1990–1991 through 2000–2001

	Poverty status of 5- to 17-year-olds: 2001		Children (birth to 21-year-olds) served under IDEA[1] and Chapter 1 of the Education Consolidation and Improvement Act, State Operated Programs	
	Number in poverty (in thousands)	Percent in poverty	Number of children: 2000–2001 school year	Percent change: 1990–1991 to 2000–2001
Nation	7,891	15.1	6,292,930	32.2
Alabama	174	21.1	99,828	5.1
Alaska	14	10.3	17,691	20.0
Arizona	214	20.1	96,442	68.5
Arkansas	124	25.0	62,222	30.1
California	1,101	15.4	645,287	37.5
Colorado	90	10.5	78,806	38.0
Connecticut	58	9.6	73,886	14.4
Delaware	13	8.5	16,760	17.3
Florida	499	17.5	367,335	55.6
Georgia	301	18.4	171,292	67.9
Hawaii	32	14.6	23,951	81.9
Idaho	36	13.1	29,174	32.5
Illinois	342	15.3	297,316	24.3
Indiana	105	9.6	156,320	36.4
Iowa	32	6.1	72,461	19.4
Kansas	58	12.3	61,267	35.5
Kentucky	108	15.5	94,572	19.1
Louisiana	188	21.3	97,938	33.0
Maine	22	11.2	35,633	27.3
Maryland	73	6.8	112,077	22.8
Massachusetts	110	11.3	162,216	4.9
Michigan	206	11.6	221,456	32.7
Minnesota	70	8.1	109,955	35.9
Mississippi	131	24.0	62,281	2.2
Missouri	108	10.7	137,381	34.7
Montana	22	13.7	19,129	11.6
Nebraska	39	12.5	42,793	30.6
Nevada	37	8.9	38,160	106.9
New Hampshire	16	7.1	30,077	53.0
New Jersey	124	8.9	221,715	22.3
New Mexico	85	24.1	52,256	45.0
New York	624	19.0	438,465	42.6
North Carolina	216	14.7	173,067	40.6
North Dakota	16	16.7	13,652	9.2
Ohio	294	15.0	237,643	15.7
Oklahoma	113	18.0	85,577	30.3
Oregon	87	13.8	75,204	36.4
Pennsylvania	257	12.7	242,655	10.6
Rhode Island	16	9.1	30,727	45.8
South Carolina	169	22.2	105,922	36.2
South Dakota	9	6.9	16,825	12.3
Tennessee	169	17.3	125,863	20.0
Texas	897	20.4	491,642	40.2
Utah	54	10.8	53,921	12.9
Vermont	9	9.9	13,623	11.1
Virginia	99	7.4	162,212	42.3
Washington	134	12.1	118,851	39.2
West Virginia	56	20.5	50,333	16.7
Wisconsin	111	12.1	125,358	44.2
Wyoming	7	8.9	13,154	17.4
Other Jurisdictions				
District of Columbia	24	30.9	10,559	67.9

[1] Individuals with Disabilities Education Act.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, *Digest of Education Statistics, 2002* (NCES 2003-060), tables 20 and 55 (pp. 27, 68), 2003; U.S. Department of Commerce, U.S. Census Bureau, Decennial Census, *Minority Economic Profiles*, unpublished data; *Current Population Reports*, Series P-60, "Poverty in the United States," "Money Income of Households, Families, and Persons in the United States," and "Income, Poverty, and Valuation of Noncash Benefits," various years, and "Money Income in the U.S.: 2001," P60-218; U.S. Department of Education, Office of Special Education and Rehabilitative Services, *Annual Report to Congress on the Implementation of The Individuals with Disabilities Education Act*, various years; and unpublished tabulations.

Table D.3 **Expenditure per pupil, average teacher salary, and pupil/teacher ratio, in public schools, from non-NAEP sources: By state, school years 1999–2000, 2001–2002, and fall 2000**

	In public elementary and secondary schools		
	Expenditure per pupil: 1999–2000	Estimated average annual salary of teachers: 2001–2002	Pupil/teacher ratio: fall 2000
Nation	$6,911	$44,604	16 [1]
Alabama	5,638	39,268	15 [1]
Alaska	8,806	49,418	17
Arizona	4,999	36,966	20
Arkansas	5,277	35,389	14
California	6,314	53,870	21 [1]
Colorado	6,215	40,222	17
Connecticut	9,753	54,300	14
Delaware	8,310	48,363	15
Florida	5,831	38,719	18
Georgia	6,437	44,073	16
Hawaii	6,530	41,951	17
Idaho	5,315	37,482	18
Illinois	7,133	50,000	16
Indiana	7,192	44,195	17
Iowa	6,564	38,230	14
Kansas	6,294	36,673	14
Kentucky	5,921	37,847	17
Louisiana	5,804	35,437	17
Maine	7,667	37,100	13
Maryland	7,731	46,200	16
Massachusetts	8,761	50,293	14
Michigan	8,110	52,037	18 [1]
Minnesota	7,190	43,330	16
Mississippi	5,014	32,800	16
Missouri	6,187	37,695	14
Montana	6,314	34,379	15
Nebraska	6,683	36,236	14
Nevada	5,760	41,524	19
New Hampshire	6,860	38,911	15
New Jersey	10,337	54,575	13
New Mexico	5,825	36,490	15
New York	9,846	53,081	14
North Carolina	6,045	42,959	15
North Dakota	5,667	31,709	13
Ohio	7,065	44,492	16
Oklahoma	5,395	35,412	15
Oregon	7,149	43,886	19
Pennsylvania	7,772	50,599	16
Rhode Island	8,904	49,758	15
South Carolina	6,130	38,943	15
South Dakota	5,632	31,295	14
Tennessee	5,383	38,554	15 [1]
Texas	6,288	39,293	15
Utah	4,378	37,414	22
Vermont	8,323	38,802	12
Virginia	6,841	41,262	13 [1]
Washington	6,376	43,483	20
West Virginia	7,152	36,751	14
Wisconsin	7,806	43,114	14
Wyoming	7,425	37,841	13
Other Jurisdictions			
District of Columbia	10,107	47,049	14
DDESS [2]	–	–	14
DoDDS [3]	–	–	14

– Not available.
[1] Includes imputations for underreporting.
[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[3] Department of Defense Dependents Schools (Overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, *Digest of Education Statistics, 2002* (NCES 2003–060), tables 67, 78, and 169 (pp. 79, 88, 198-99), 2003; U.S. Department of Education, National Center for Education Statistics, *Revenues and Expenditures for Public Elementary and Secondary Schools,* various years; *Statistics of State School Systems*, various years; Common Core of Data surveys; National Education Association, Estimates of School Statistics; and unpublished data, 2002.

Table D.4 Enrollment, expenditure per pupil, and pupil/teacher ratio in public schools, from non-NAEP sources: By urban district, fall 2000 and school year 1999–2000

	In public elementary and secondary schools		
	Total enrollment: fall 2000 (in thousands)	Expenditure per pupil:[1] 1999–2000	Pupil/teacher ratio: fall 2000
Atlanta	58	$8,623	15
Boston	63	11,503	11
Charlotte	103	6,617	16
Chicago	435	7,214	18
Cleveland	76	7,679	14
District of Columbia	69	10,874	14
Houston	208	6,196	19
Los Angeles	721	6,740	21
New York City	1,067	9,472	16
San Diego	142	6,765	19

[1] Expenditure per pupil based on fall enrollment collected by the Bureau of the Census.
NOTE: Total enrollment reflects totals reported by school districts and may differ from data derived from summing school-level data to school district aggregates.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, *Digest of Education Statistics, 2002* (NCES 2003–060), tables 90 and 91 (pp. 99–116), 2003; U.S. Department of Education, National Center for Education Statistics, Common Core of Data survey; and U.S. Department of Commerce, "Survey of Local Government Finances."

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Appendix E

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