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ABSTRACT

The National Assessment of Educational Progress (NAEP) is the nation's only ongoing representative sample survey of student achievement in core subject areas. In 2000, NAEP conducted a national mathematics assessment of fourth-, eighth-, and twelfth-grade students. State-level results were also collected at the fourth and eighth grades within participating states and jurisdictions. This report presents the results of the NAEP 2000 mathematics assessment for the nation and the states. Comparisons are made to performance in previous national assessments in 1990, 1992, and 1996 at grades 4, 8, and 12. Comparison data are given both within and across participating jurisdictions for 1992, 1996, and 2000 at grade 4, and for 1990, 1992, 1996, and 2000 at grade 8. Student performance is reported in terms of average scale scores on the NAEP mathematics scale and by the percentages of students who attained the achievement levels set by the National Assessment Governing Board (NAGB). In addition, percentile distributions and demographic subgroup results are presented, including results by gender, race/ethnicity, region of the country, type of school location, school type, and student eligibility for the free/reduced price lunch program. One chapter focuses on a second set of results that includes the performance of special needs students who were permitted accommodations in the test administration, both in the national and state samples. The report features information on contexts for learning mathematics including teacher characteristics, classroom practices, use of computers/calculators, student attitudes toward mathematics, and out-of-classroom activities. The report also includes sample test questions and examples of student responses. (ASK)

National Center for Education Statistics

The Nation's Report Card
Mathematics 2000

U.S. Department of Education
Office of Educational Research and Improvement

NCES 2001-517

What is The Nation's Report Card?

THE NATION'S REPORT CARD, the National Assessment of Educational Progress (NAEP), is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields. By making objective information on student performance available to policymakers at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information related to academic achievement is collected under this program. NAEP guarantees the privacy of individual students and their families.

NAEP is a congressionally mandated project of the National Center for Education Statistics, the U.S. Department of Education. The Commissioner of Education Statistics is responsible, by law, for carrying out the NAEP project through competitive awards to qualified organizations. NAEP reports directly to the Commissioner, who is also responsible for providing continuing reviews, including validation studies and solicitation of public comment, on NAEP's conduct and usefulness.

In 1988, Congress established the National Assessment Governing Board (NAGB) to formulate policy guidelines for NAEP. The Board is responsible for selecting the subject areas to be assessed from among those included in the National Education Goals; for setting appropriate student performance levels; for developing assessment objectives and test specifications through a national consensus approach; for designing the assessment methodology; for developing guidelines for reporting and disseminating NAEP results; for developing standards and procedures for interstate, regional, and national comparisons; for determining the appropriateness of test items and ensuring they are free from bias; and for taking actions to improve the form and use of the National Assessment.

The National Assessment Governing Board

National Center for Education Statistics

The Nation's Report Card
Mathematics 2000

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Table of Contents

6

Chapter 2: Figures and Tables

Chapter 5: Figures and Tables

Chapter 6: Figures and Tables

Executive Summary

The National Assessment of Educational Progress (NAEP) is the nation's only ongoing representative sample survey of student achievement in core subject areas. In 2000, NAEP conducted a national mathematics assessment of fourth-, eighth-, and twelfth-grade students. State-level results were also collected at the fourth and eighth grades within participating states and jurisdictions.

Authorized by Congress and administered by the National Center for Education Statistics (NCES) in the U.S. Department of Education, NAEP regularly reports to the public on the educational progress of students in grades 4, 8, and 12. This report presents the results of the NAEP 2000 mathematics assessment for the nation and the states. Results in 2000 are compared to results of previous NAEP mathematics assessments. Students' performance on the assessment is described in terms of average scores on a 0-500 scale and in terms of the percentages of students attaining 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 collective judgments of what students should know and be able to do. The Governing Board is an independent, bipartisan group created by Congress in 1988 to set policy for the National Assessment of Educational Progress.

As provided by law, the Acting Commissioner of Education Statistics, upon review of a congressionally mandated evaluation of NAEP, determined that the achievement levels are to be considered developmental and should be interpreted and used with caution. However, both the Acting Commissioner and the Board believe these performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials, including the National Education Goals Panel, as a common yardstick of academic performance.

In addition to providing average scores and achievement level performance at the national level and state level, this report provides results for subgroups of students defined by various background and contextual characteristics. This report also contains results for a second sample at both the national and state levels—one in which testing accommodations were provided to students with special needs (students with disabilities or students with limited English proficiency).

The results presented in this report are based on representative samples of students for the nation and for participating states. In the national sample, approximately 14,000 fourth-graders from 742 schools, 16,000 eighth-graders from 744 schools, and 13,000 twelfth-graders from 558 schools were assessed. In the state assessments, approximately 100,000 students at each of grades 4 and 8 were assessed.

A summary of major findings from the 2000 NAEP mathematics assessment is presented on the following pages. Differences between results across years or between groups of students are discussed only if they have been determined to be statistically significant.

Major Findings for the Nation, Regions, and States

For the Nation:

- Fourth-, eighth-, and twelfth-grade students had higher average scores in 2000 than in 1990, the first assessment year in which the current mathematics framework was used. Fourth- and eighth-graders showed steady progress across the decade. Twelfth-graders made gains from 1990 to 1996, but their average score declined between 1996 and 2000.
- In 2000, the percentage of students performing at or above *Proficient*—identified by NAGB as the level that all students should reach—was 26 percent at grade 4, 27 percent at grade 8, and 17 percent at grade 12. At each grade, the percentage of students performing at or above this level was higher in 2000 than in 1990. There were gains over the decade at the *Basic* and *Advanced* levels as well. However, from 1996 to 2000, the percentage of twelfth-graders reaching the *Basic* level declined.
- Score increases are evident across the performance distribution—higher-, middle-, and lower-performing students have made gains since 1990 at each grade. At grade 12, however, the decline in the average score between 1996 and 2000 was reflected mostly in the scores of students in the middle- and lower-performance ranges: scores declined only at the 50th, 25th, and 10th percentiles.

For the Regions:

- Average scores in the Southeast, Central, and West were higher in 2000 than in 1990 for students in all three grades. Average scores in the Northeast were higher in 2000 than in 1990 for fourth- and eighth-graders, but the apparent difference for twelfth-graders was not statistically significant.
- In 2000, average scores for fourth-graders were higher in the Northeast and Central regions than in the Southeast. For eighth- and twelfth-graders, scores in the Northeast, Central, and West were higher than in the Southeast.

For the States and Other Jurisdictions:

- In the NAEP 2000 state-by-state assessment, 40 states and 6 other jurisdictions at grade 4, and 39 states and 5 other jurisdictions at grade 8 met the participation guidelines for reporting results. Only public schools participated in the state-by-state assessment.

At grade 4:

- In 2000, no state scored higher than these nine: Connecticut, Indiana, Iowa, Kansas, Massachusetts, Minnesota, North Carolina, Texas, and Vermont. The states with the highest percentages of students at or above *Proficient* were Connecticut, Indiana, Kansas, Massachusetts, Michigan, Minnesota, and Vermont. Their percentages at or above *Proficient* ranged from 29 percent to 34 percent.
- Of the 36 states and jurisdictions that participated in both 2000 and the first state assessment at grade 4 in 1992, 26 had higher average scores in 2000 than in 1992.

At grade 8:

- In 2000, no state scored higher than these three: Kansas, Minnesota, and Montana. The two states with the highest percentages of students at or above *Proficient* were Minnesota (40 percent) and Montana (37 percent).
- Of the 31 states and jurisdictions that participated in both 2000 and the first state assessment at grade 8 in 1990, 27 had higher average scores in 2000 than in 1990.

National Results for Student Subgroups

In addition to overall results for the nation and jurisdictions, NAEP reports on the performance of various subgroups of students. Observed differences between student subgroups in NAEP mathematics performance most likely reflect a range of socioeconomic and educational factors not addressed in this report or by NAEP.

Gender

- In 2000, there was no significant difference between the average scores of male and female fourth-graders, but the average score of males was higher than that of females for both eighth- and twelfth-graders.
- At all three grades, both male and female students had higher average scores in 2000 than in 1990.
- The difference, or "gap," between the average scores of male and female students at every grade was relatively small and has shown little change in its size over the four assessments beginning in 1990.

Race/Ethnicity

- In 2000, at all three grades, the average scores of white students were higher than those of black, Hispanic, and American Indian students.
- In 2000, at grade 12, the average score of Asian/Pacific Islander students was higher than the scores of white, black, and Hispanic students.
- White, black, and Hispanic students at grades 4 and 8 had higher average scores in 2000 than in 1990. At grade 12, only white students had a higher average score in 2000 than in 1990. The score gaps between white and black students, and between white and Hispanic students, were large at every grade. There was no evidence in the 2000 assessment of any narrowing of the racial/ethnic group score gaps since 1990.

Parents' Level of Education

- Generally, students in grades 8 and 12 with higher scores reported higher levels of parental education in 2000. This result is consistent with past NAEP assessments.
- At grade 8, students at each level of parental education had higher scores in 2000 than in 1990. At grade 12, however, only students who reported their parents' highest level of education as "graduated from college" had higher scores in 2000 than in 1990.

Type of School

- At all three grades in 2000, students attending nonpublic schools outperformed their peers attending public schools.
- Over the period from 1990 to 2000, public, nonpublic, and Catholic schools had increased average scores for fourth-graders. For eighth-graders, the scores of public, nonpublic, Catholic, and other nonpublic school students also increased over the 10 year period. Similarly, for twelfth-graders, average scores for all the school types were higher in 2000 than in 1990.

Type of Location

- In 2000, fourth-, eighth-, and twelfth-graders in central city schools had lower average scores than their counterparts in urban fringe/large town schools. Fourth- and eighth-graders in central city schools had lower average scores than their counterparts in rural/small town schools. Fourth-graders in urban fringe/ large town schools had higher scores than their counterparts in rural/small town schools.

Free/Reduced-Price Lunch Program

- At all three grades in 2000, students eligible for the Free/Reduced-Price Lunch Program administered by the U.S. Department of Agriculture (USDA) had lower average scores than those who were not eligible. Free/reduced-price lunches are intended for children at or near the poverty line: eligibility is determined by the USDA's Income Eligibility guidelines. (http://www.fns.usda.gov/ cnd/IEGs&NAPs/IEGs.htm).

Becoming a More Inclusive NAEP

A second set of results from the NAEP 2000 mathematics assessment includes the performance of special-needs students who were provided with testing accommodations. A similar set of results is available from 1996 at the national level only, allowing for comparisons between 1996 and 2000 national results based on administration procedures that permitted accommodations.

For the Nation:

- At grades 4 and 8, the small differences between the "accommodations-permitted" and "accommodations-not-permitted" national average scores were not statistically significant in either 1996 or 2000. At grade 12, there was no significant difference between the two sets of results in the 2000 assessment, but in the 1996 assessment the average score was higher when accommodations were not permitted.
- Between 1996 and 2000, average scores increased at grades 4 and 8 in both sets of results. At grade 12, the average score declined in both sets of results during the same time period; however, the apparent decline in "accommodations-permitted" results was not statistically significant.

For the States and Other Jurisdictions:

- At grade 4, there were no statistically significant differences observed between the "accommodations-not-permitted" results and the "accommodations-permitted" results for any participating state or jurisdiction in 2000.
- At grade 8, the seven states that had average scores that were higher in the "accommodations-not-permitted" results than in the "accommodations-permitted" results were Maryland, Massachusetts, Missouri, Nevada, New York, North Carolina, and West Virginia.

School Contexts for Learning

NAEP collects information about the contexts for student learning by administering questionnaires to assessed students, their teachers, and their school administrators. Using the student as the unit of analysis, NAEP examines the relationship between selected contextual variables drawn from these questionnaires and students' average scores on the mathematics assessment. Readers are cautioned that the relationship between a contextual variable (for example, teacher self-reported preparation levels, or classroom instructional activities) and student mathematics performance is not necessarily causal (see page 130 for more on this topic).

Teacher Preparation (grades 4 and 8 only)

- In 2000, eighth-graders whose teachers majored in either mathematics or mathematics education had higher average scores than did students whose teachers did not major in these subjects.
- Most fourth- and eighth-grade students in 2000 were taught by teachers who considered themselves to be well prepared to teach the mathematics content areas assessed by NAEP. There were no significant differences in the average scores of fourth-graders based on teachers' self-reported level of preparation in

NAEP content areas. However, eighth-graders whose teachers reported being very well prepared in these content areas had higher average scores than did students whose teachers reported they were less well prepared.

- Eighth-graders in 2000 who were taught by mathematics teachers with 11 or more years of experience had higher average scores than those taught by teachers with 2 years or less of experience.

Technology

- Eighth-graders whose teachers reported that they permitted unrestricted use of calculators had higher average scores in 2000 than did the students whose teachers restricted calculator use.
- In 2000, eighth-graders whose teachers reported that they permitted calculator use on class tests had higher average NAEP scores than students whose teachers did not permit calculator use on tests. (NAEP permits calculators on certain sections of the assessment.)
- In grades 4, 8, and 12, there was an increase between 1996 and 2000 in the percentage of students in schools that reported computers were available at all times in classrooms.

Instructional Time and Homework

- In 2000, the average scores of eighth-graders, but not fourth-graders, generally increased as the amount of homework that teachers reported assigning increased.
- In 2000, 82 percent of eighth-grade students attended schools that reported offering algebra to eighth-graders for high school course placement or credit.

Classroom Practices and Home Contexts for Learning

Teachers' Classroom Practices

- In 2000, the majority of students at all three grade levels reported that they did mathematics textbook problems in school every day. Eighth- and twelfth-graders who reported doing textbook problems in school every day had higher average scores than did students who reported doing textbook problems less frequently.

Calculator Usage

- At both grades 4 and 8, the percentage of students who reported using calculators every day for classwork and for homework declined between 1996 and 2000. For twelfth-graders, however, there was no change over the same time span in the frequency of use of calculators for classwork or homework.
- While frequent usage of calculators reported by fourth-graders in 2000 was associated with lower average mathematics scores than less frequent usage, for eighth- and twelfth-graders just the opposite was true—more frequent calculator usage was associated with higher scores.
- In 2000, more frequent usage of calculators on both homework and quizzes as reported by students was again associated with lower average scores for fourth-graders, but with higher scores for eighth- and twelfth-graders.
- There was an increase between 1996 and 2000 in the percentage of twelfth-graders who reported using graphing calculators for schoolwork. In 2000, eighth- and twelfth-graders who used graphing calculators in class had higher average NAEP scores than did nonusers.

Courses Taken by Twelfth-Grade Students

- Twelfth-graders' responses to the NAEP questionnaire in 2000 indicated that 94 percent had taken first-year algebra, 88 percent had taken geometry, 18 percent had taken statistics, and 18 percent had taken calculus.
- Analysis of course-taking patterns revealed a positive association between higher levels of mathematics courses taken and progressively higher NAEP mathematics scores.

Time Spent on Homework

- In 2000, eighth-graders who reported spending a moderate amount of time on mathematics homework had higher average scores than did those who spent either no time on homework or more than 1 hour. Twelfth-graders who spent some time doing mathematics homework had higher average scores than either the 29 percent who were not taking math or the 12 percent who spent no time on homework.

Hours Worked at a Part-Time Job

- More than two-thirds of twelfth-graders reported spending time working at a part-time job in 2000. Those who worked 15 or fewer hours had higher average scores than did those who worked 21 or more hours.

Television Viewing Habits

- Fourth-graders reported watching less television in 2000 than in earlier assessment years. In 2000, the scores of fourth-, eighth-, and twelfth-graders who reported heavy television watching were lower than for students who watched little or a moderate amount of television.

Attitudes Toward Mathematics

- Fourth-, eighth-, and twelfth-graders in 2000 who reportedly agreed that they liked math and that math was useful for solving problems had higher average scores than those who disagreed.
- Students at all three grades in 2000 who disagreed with the statements that math was mostly memorizing facts and that there was only one way to solve a mathematics problem scored higher, on average, than those who agreed.
- Fewer eighth- and twelfth-graders reported liking mathematics in 2000 than in the early 1990s.

The full set of results is available in an interactive database on the NAEP web site,

http://nces.ed.gov/nationsreportcard

Released test questions from previous assessments and question-level performance data are also available on the web site.

1 NAEP 2000 Mathematics Assessment

Introduction

The ability to know and use mathematics is a necessity of daily life. Whether America's young people learn quantitative sciences such as physics or economics or engage in such daily activities as making change or following a recipe, they must rely on the language of numbers to succeed.

In order to provide students with the mathematics skills they need to live and learn in the modern world, America's schools typically teach mathematics every year through junior high school (eighth grade), and require students to take at least one or two years of mathematics to graduate from high school. Beginning in the junior high years and continuing through high school, students can choose from a variety of mathematics course offerings, from practical or business math through algebra, geometry, and calculus.

Young people need to understand and be able to apply mathematical skills and concepts to function in today's technological world. Their need to demonstrate mathematical literacy underlies the importance of monitoring their mathematics achievement. This report summarizes student achievement in the NAEP 2000 mathematics assessment for grades 4, 8, and 12 and compares the results for the nation and states with previous NAEP assessments beginning in 1990.

Chapter Focus

What is the NAEP mathematics assessment?

How does the NAEP mathematics assessment measure and report student progress?

Chapter Contents

Overview of the 2000 National Assessment of Educational Progress

In 1969, the National Assessment of Educational Progress (NAEP) was authorized by Congress to collect, analyze, and report reliable and valuable information about what American students know and can do in core subject areas. Since that time, in what has come to be referred to as the long-term trend assessment, NAEP has assessed public and nonpublic school students who are 9, 13, and 17 years old. (See page 184 in appendix A for more detail on NAEP's Long-Term Trend Assessment). Since 1990, the more recently developed assessments, referred to as the main NAEP, have assessed public and nonpublic school students in grades 4, 8, and 12. In 2000, student performance in mathematics and science was assessed at all three grades, and student performance in reading was assessed at grade 4 only.

All NAEP assessments are based on content frameworks developed through a national consensus process. The NAEP 2000 mathematics assessment was the fourth administration of an assessment based on the *NAEP Mathematics Framework*, which was originally developed for the 1990 assessment and refined for the 1996 and 2000 assessments.[1] In 1990, 1992, and 1996, the NAEP mathematics assessment was administered to national samples of fourth-, eighth-, and twelfth-graders.

The mathematics assessment was also administered to samples of fourth-graders participating in the state-by-state assessment in 1992, 1996, and 2000 and eighth-graders participating in the state assessment in 1990, 1992, 1996, and 2000. The legislation authorizing NAEP did not include state-by-state testing in grade 12.[2]

This report describes the results of the 2000 NAEP mathematics assessment at grades 4, 8, and 12 and compares results in 2000 to those in 1990, 1992, and 1996. The comparisons focus on 2000 results in relation to earlier results. Comparisons of 1996 to 1992 and of 1992 to 1990 were made in previous report cards and therefore are not highlighted in tables or figures in this report.[3] Comparisons across assessment years are possible because the assessments were developed under the same basic framework and share a common set of mathematics questions. In addition, the populations of students were sampled and assessed using comparable procedures.

The Mathematics Assessment Framework

The NAEP Mathematics Framework has provided the operational specifications for developing NAEP mathematics assessments since 1990. In 1996 the framework was refined so that the 1996 and 2000 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 National Assessment Governing Board. *Mathematics framework for the 1996 and 2000 National Assessment of Educational Progress*. Washington, DC: Author.

2 Public Law 100–297. (1988). National Assessment of Educational Progress Improvement Act (20 USC 1211).

3 Reese, C.M., Miller, K.E., Mazzeo, J., & Dossey, J.A. (1997). *NAEP 1996 mathematics report card for the nation and the states*. Washington, DC: National Center for Education Statistics.

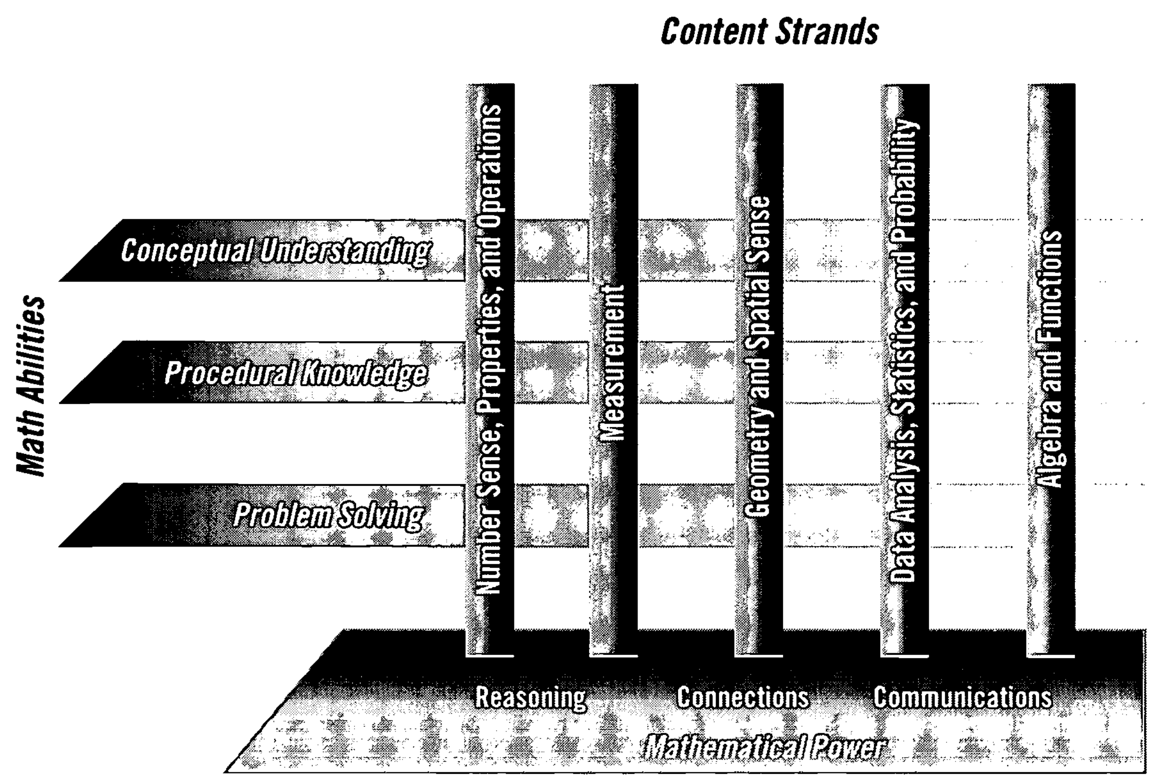
Mullis, I.V.S., Dossey, J., Owen, E.H., & Phillips, G.W. (1993). *NAEP 1992 mathematics report card for the nation and the states*. Washington, DC: National Center for Education Statistics.

Mullis, I.V.S. et al. (1991). *The state of mathematics achievement: NAEP's 1990 assessment of the nation and the trial assessment of the states*. Washington, DC: United States Department of Education, Office of Educational Research and Improvement.

The framework calls for questions based on five mathematics content strands: number sense, properties, and operations; measurement; geometry and spatial sense; data analysis, statistics, and probability; and algebra and functions. Questions were also categorized according to two domains: mathematical abilities and mathematical power. Mathematical abilities describes the types of knowledge or processes required for a student to successfully respond to a question. Mathematical abilities may reflect conceptual understanding, procedural knowledge, or a combination of both in problem solving. The second domain, mathematical power, reflects the processes stressed as major goals of the mathematics curriculum. These include the student's ability to reason, to communicate, and to make connections between concepts and skills either across the mathematics content strands, or from mathematics to other curricular areas. Figure 1.1 summarizes the structure of the 2000 assessment.

A breakdown of the percentage of questions in each content strand prescribed by the framework for the 1990, 1992, 1996, and 2000 assessments is provided in table A.1 (page 187). The framework also incorporates the use of calculators (four-function at grade 4 and scientific at grades 8 and 12), rulers (at all grades), protractors (at grades 8 and 12), and manipulatives such as spinners and geometric shapes. 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.

Figure 1.1: Structure of the 2000 Assessment



SOURCE: National Assessment Governing Board. *Mathematics Framework for the 1996 and 2000 National Assessment of Educational Progress.*

The Mathematics Assessment Instruments

As the only federally authorized ongoing assessment of student mathematics achievement on a national scale, the NAEP assessment must reflect the framework and expert perspectives and opinions about mathematics and its measurement. To that end, the assessment development process involves stages of review by teachers and teacher educators, state officials, and measurement experts. All components of the assessment are evaluated for curricular relevance, developmental appropriateness, and fairness concerns. Final approval of NAEP test questions is given by the National Assessment Governing Board. A list of the mathematics development committee members for the 2000 assessment is provided in appendix E.

The 2000 mathematics assessment booklets at grades 4, 8, and 12 each contained three, separately timed, 15-minute sections of mathematics questions. Typically, a section, or block as it is sometimes called, will contain about 12-15 questions, but there is considerable variation depending on the balance between multiple-choice and constructed-response questions. The total numbers of test questions used in grades 4, 8, and 12 were 145, 160, and 163, respectively. Each student answered only a small portion of the total number of questions. Each assessment booklet also included a set of background questions that asked students to give information about themselves and their home and school practices, such as time spent on homework, calculator use, and time spent watching television. The assessment time for each grade was 45 minutes plus the 10–15 minutes needed to complete the background questions.

The mathematics blocks included both multiple-choice and constructed-response questions designed to assess the framework objectives. More than 50 percent of student assessment time was devoted to constructed-response questions. Two types of constructed-response questions were used:

- short-constructed response questions that required students to provide answers to computation problems or to describe solutions in one or two sentences, and
- extended constructed-response questions that required students to give longer responses.

Additional information about the design of the 2000 mathematics assessment is presented in appendix A (pages 188–189).

Description of School and Student Samples

The NAEP 2000 mathematics assessment was conducted nationally at grades 4, 8, and 12 and state-by-state at grades 4 and 8. The national assessment included representative samples of both public and nonpublic schools. The state-by-state assessments included only public schools. In the national sample approximately 14,000 fourth-graders, 16,000 eighth-graders, and 13,000 twelfth-graders were assessed. In the state assessments, approximately 100,000 students at each of grades 4 and 8 were assessed. The number of schools in the reporting sample were 742 at grade four, 744 at grade 8, and 558 at grade 12. Additional information about school and student samples is given in appendix A (pages 189–194).

Jurisdictions including 41 states, the District of Columbia, American Samoa, Guam, the Department of Defense Domestic Dependent Elementary and Secondary Schools (DDESS), the overseas Department of Defense Dependents Schools (DoDDS), and the Virgin Islands participated in the 2000 state-by-state assessment. To ensure comparability across jurisdictions, NCES has established guidelines for school and student participation rates. Appendix A highlights these guidelines (pages 195–198), and jurisdictions failing to meet them are noted in tables and figures presenting state-by-state results.

Figure 1.2 lists the jurisdictions that participated in the 2000 mathematics assessment and notes those jurisdictions failing to meet one or more NCES-established participation rate guidelines for public schools. Results are not reported for jurisdictions failing to meet the initial school participation rate of 70 percent.

Figure 1.2 **Participating jurisdictions in the NAEP 2000 state assessment program in mathematics**

Grade 4	Alabama	Kentucky	New Mexico	Vermont[2]
	Arizona	Louisiana	New York[2]	Virginia
	Arkansas	Maine[2]	North Carolina	West Virginia
	California[2]	Maryland	North Dakota	Wisconsin[1]
	Connecticut	Massachusetts	Ohio[2]	Wyoming
	Georgia	Michigan[2]	Oklahoma	American Samoa
	Hawaii	Minnesota[2]	Oregon[2]	District of
	Idaho[2]	Mississippi	Rhode Island	Columbia
	Illinois[2]	Missouri	South Carolina	DDESS
	Indiana[2]	Montana[2]	Tennessee	DoDDS
	Iowa[2]	Nebraska	Texas	Guam
	Kansas[2]	Nevada	Utah	Virgin Islands
Grade 8	Alabama	Louisiana	New York[2]	Virginia
	Arizona[2]	Maine[2]	North Carolina	West Virginia
	Arkansas	Maryland	North Dakota	Wisconsin[1]
	California[2]	Massachusetts	Ohio	Wyoming
	Connecticut	Michigan[2]	Oklahoma	American Samoa
	Georgia	Minnesota[2]	Oregon[2]	District of
	Hawaii	Mississippi	Rhode Island	Columbia
	Idaho[2]	Missouri	South Carolina	DDESS
	Illinois[2]	Montana[2]	Tennessee	DoDDS
	Indiana[2]	Nebraska	Texas	Guam
	Kansas[2]	Nevada	Utah	Virgin Islands[1]
	Kentucky	New Mexico	Vermont[2]	

[1] Failed to meet the initial school participation rate of 70 percent; results not reported.
[2] Failed to meet one or more participation rate guidelines; results reported with appropriate notation.
For more details on participation rate guidelines, see appendix A.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools
DoDDS: Department of Defense Dependents School (Overseas)
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Two Sets of NAEP Results:
Accommodations Not Permitted and Accommodations Permitted

Although NAEP assessments are designed to include special-needs students—those with disabilities and those with limited English proficiency (LEP)—to the fullest degree possible, there have always been some special-needs students who were excluded because they could not participate meaningfully in the assessment. Schools that participate in NAEP have been permitted to exclude some students who may have Individualized Education Programs (IEPs) or are receiving services under Section 504 of the Rehabilitation Act of 1973.[4] Similarly, schools have been permitted to exclude students they identify as being limited English proficient. Schools are encouraged to make exclusion decisions in accordance with explicit criteria provided by the NAEP program.

In order to move its assessments toward more inclusive samples, NAEP began to explore the use of accommodations or alternate testing situations with special-needs students in the 1996 mathematics and science assessments. This shift toward greater inclusiveness allowed NAEP to more closely approximate state and district testing policies that have increasingly offered testing accommodations to special-needs students. In 1996, the national NAEP sample was split so that some of the schools sampled were permitted to provide accommodations to special-needs students and the others were not. This sample design made it possible to study the effects on NAEP results of including special-needs students in the assessments under alternate testing conditions. A series of technical research papers has been published with the results of these comparisons.[5] Based on the outcomes of these technical analyses, the 1998 results of those NAEP assessments that used new test frameworks (writing and civics), and hence also began new trend lines, were reported for the first time with the inclusion of data from accommodated special-needs students.

The results presented in the 1996 mathematics report card included the performance of students with disabilities (SD) and those with limited English proficiency (LEP) who were assessed without accommodations. The results did not include the performance of students for whom accommodations were permitted because of the need to preserve comparability with the results from 1990 and 1992. Students in those earlier assessments had not had accommodations available to them. However, in both the 1996 and 2000 mathematics assessments, the NAEP program used the split-sample design, so that trends in students' mathematics achievement could be reported across all the assessment years and, at the same time, the program could continue to examine the effects of including students tested with accommodations.

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4 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 received federal financial assistance.

5 Olson, J.F. and Goldstein, A. A. (1997). *The inclusion of students with disabilities and limited English proficient students in large-scale assessments: A summary of recent progress.* (NCES Publication No. 97–482). Washington, DC: National Center for Education Statistics.

Mazzeo, J., Carlson, J.E., Voelkl, K.E., & Lutkus, A. D. (1999). *Increasing the participation of special needs students in NAEP: A report on 1996 research activities.* (NCES Publication No. 2000–473). Washington, DC: National Center for Education Statistics.

This report displays two different sets of NAEP results based on the split-sample design:

- those that reflect the performance of regular and special-needs students when accommodations were not permitted, and
- those that reflect the performance of regular and special-needs students—those who required and were given accommodations (such as extended time, small group administration, Spanish-English bilingual booklets, etc.) and those who could be tested without accommodations—when accommodations were permitted.

It should be noted that accommodated students make up a small proportion of the total weighted number of students assessed (see table A.8 in appendix A, page 204, for details). Making accommodations available may change the overall assessment results in subtle ways. For example, some special-needs students who may have been tested without accommodations in previous assessment years may now receive accommodations and, possibly, attain higher scores. Further, special-needs students who may have been excluded in previous years may now be included, but produce relatively low scores. The findings on results when accommodated special-needs students are included in the NAEP assessment are presented in chapter 4 of this report.

Reporting the Assessment Results

The results of student performance on the NAEP mathematics assessment are presented in this report in two ways: as average scores on the NAEP mathematics scale and as the percentages of students attaining NAEP mathematics achievement levels. The average scale scores represent how students performed on the assessment. The achievement levels represent how that performance measured up against set expectations for achievement. Thus, the average scale scores represent what students know and can do, while the achievement level results indicate the degree to which student performance meets expectations of what they should know and be able to do.

The national results for 1990, 1992, 1996, and 2000 are presented on the grade 4, 8, and 12 NAEP mathematics scale. A scale ranging from 0 to 500 was created to report performance for each content strand. The scales summarize student performance across all three types of questions in the assessment (multiple-choice, short constructed-response, and extended constructed-response).

Each mathematics scale was initially based on the distribution of student performance across all three grades in the national assessment (grades 4, 8, and 12). The scales had an average of 250 and a standard deviation of 50. In addition, a composite scale was created as an overall measure of students' mathematics performance. This composite scale is a weighted average of the separate scales for the content strands. The weight for each content strand corresponds to the relative importance of each strand in the NAEP 2000 mathematics framework. A full description of NAEP scales and scaling procedures can be found in the forthcoming *NAEP 2000 Technical Report*.

Achievement level results are presented in terms of mathematics achievement levels as authorized by the NAEP legislation and adopted by the National Assessment Governing Board.[6] For each grade tested, NAGB has adopted three achievement levels: *Basic*, *Proficient*, and *Advanced*. For reporting purposes, the achievement level cut scores are placed on the mathematics scale, resulting in four ranges: below *Basic*, *Basic*, *Proficient*, and *Advanced*.

The Setting of Achievement Levels

The 1988 NAEP legislation that created the National Assessment Governing Board directed the Board to identify "appropriate achievement goals...for each subject area" that NAEP measures.[7] The 1994 NAEP reauthorization reaffirmed many of the Board's statutory responsibilities, including "developing appropriate student performance standards for each age and grade in each subject area to be tested under the National Assessment."[8] In order to follow this directive and achieve the mandate of the 1988 statute to "improve the form and use of NAEP results," the Board undertook the development of student performance standards called "achievement levels." Since 1990, 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 signifies superior performance at a given grade. For each grade, the levels are cumulative; that is, abilities achieved at the *Proficient* level presume mastery of abilities associated with the *Basic* level, and attainment of the *Advanced* level presumes mastery of both the *Basic* and *Proficient* levels. Figure 1.3 presents the policy definitions of the achievement levels that apply across all grades and subject areas. Adopting three levels of achievement for each grade signals the importance of looking at more than one standard of performance. The Board believes, however, that all students should reach the *Proficient* level; the *Basic* level is not the desired goal, but rather represents partial mastery that is a step toward *Proficient*.

6 Public Law 100–297. (1988). National Assessment of Educational Progress Improvement Act (20 USC 1211). Washington, DC.

Public Law 102–382. (1994). Improving America's Schools Act (20 USC 9010). Washington, DC.

7 Public Law 100-297. (1988). National Assessment of Educational Progress Improvement Act (20 USC 1211). Washington, DC.

8 Public Law 102-382. (1994). Improving America's Schools Act (20 USC 9010). Washington, DC.

Figure 1.3 Achievement Levels	Policy definitions of the three 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.

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, Inc. 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 NAEP framework for mathematics. This achievement level setting process was reviewed by a variety 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 persons to comment on the recommended levels and to review the results.

The results of the achievement level setting process, after NAGB approval, became a set of achievement level descriptions and a set of achievement level cut points on the 0-500 NAEP mathematics scale. The cut points are the scores that define the boundaries between below *Basic*, *Basic*, *Proficient*, and *Advanced* performance at grades 4, 8, and 12. The Board established these mathematics achievement levels in 1992 based upon the mathematics content framework.

Achievement Level Descriptions for Each Grade

Specific definitions of the *Basic*, *Proficient*, and *Advanced* mathematics achievement levels for grades 4, 8, and 12 are presented in figures 1.4 through 1.6. 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 skills and knowledge associated with both the *Basic* and the *Proficient* levels. For each achievement level listed in figures 1.4 through 1.6, the scale score that corresponds to the beginning of that level is shown in parentheses. For example, in figure 1.4 the scale score of 249 corresponds to the beginning of the grade 4 *Proficient* level of achievement.

Figure 1.4 NAEP mathematics achievement levels: Grade 4

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 and 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.

SOURCE: National Assessment Governing Board.
NOTE: The scores in parentheses indicate the cutpoint on the scale at which the achievement level range begins.

Figure 1.5 NAEP mathematics achievement levels: Grade 8

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.

SOURCE: National Assessment Governing Board.
NOTE: The scores in parentheses indicate the cutpoint on the scale at which the achievement level range begins.

Figure 1.6 NAEP mathematics achievement levels: Grade 12

***Basic* (288)**	**Twelfth-grade students performing at the *Basic* level should demonstrate procedural and conceptual knowledge in solving problems in the five NAEP content strands.** Twelfth-grade students performing at the *Basic* level should be able to use estimation to verify solutions and determine the reasonableness of results as applied to real-world problems. They are expected to use algebraic and geometric reasoning strategies to solve problems. Twelfth-graders performing at the *Basic* level should recognize relationships presented in verbal, algebraic, tabular, and graphical forms; and demonstrate knowledge of geometric relationships and corresponding measurement skills. They should be able to apply statistical reasoning in the organization and display of data and in reading tables and graphs. They also should be able to generalize from patterns and examples in the algebra, geometry, and statistics strands. At this level, they should use correct mathematical language and symbols to communicate mathematical relationships and reasoning processes; and use calculators appropriately to solve problems.
***Proficient* (336)**	**Twelfth-grade students performing at the *Proficient* level should consistently integrate mathematical concepts and procedures into the solutions of more complex problems in the five NAEP content strands.** Twelfth-graders performing at the *Proficient* level should demonstrate an understanding of algebraic, statistical, and geometric and spatial reasoning. They should be able to perform algebraic operations involving polynomials; justify geometric relationships; and judge and defend the reasonableness of answers as applied to real-world situations. These students should be able to analyze and interpret data in tabular and graphical form; understand and use elements of the function concept in symbolic, graphical, and tabular form; and make conjectures, defend ideas, and give supporting examples.
***Advanced* (367)**	**Twelfth-grade students performing at the *Advanced* level should consistently demonstrate the integration of procedural and conceptual knowledge and the synthesis of ideas in the five NAEP content strands.** Twelfth-grade students performing at the *Advanced* level should understand the function concept and be able to compare and apply the numeric, algebraic, and graphical properties of functions. They should apply their knowledge of algebra, geometry, and statistics to solve problems in more *Advanced* areas of continuous and discrete mathematics. They should be able to formulate generalizations and create models through probing examples and counterexamples. They should be able to communicate their mathematical reasoning through the clear, concise, and correct use of mathematical symbolism and logical thinking.

SOURCE: National Assessment Governing Board.
NOTE: The scores in parentheses indicate the cutpoint on the scale at which the achievement level range begins.

The Developmental Status of Achievement Levels

The 1994 NAEP reauthorization law requires that the achievement levels be used on a developmental basis until the Commissioner of Education Statistics determines that the achievement levels are "reasonable, valid, and informative to the public."[9] Until that determination is made, the law requires the Commissioner and the Board to state clearly the developmental 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 cutpoint may be underestimated.[10] Others have critiqued these evaluations, asserting that the weight of the empirical evidence does not support such conclusions.[11]

In response to the evaluations and critiques, NAGB conducted an additional study of the 1992 reading achievement levels before deciding to use those reading achievement levels for reporting 1994 NAEP results.[12] 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."[13] 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.*[14]

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9 The Improving America's Schools Act of 1994 (20 USC 9010) requires that the Commissioner base his determination on a congressionally mandated evaluation by one or more nationally recognized evaluation organizations, such as the National Academy of Education or the National Academy of Science.

10 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.

11 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.

12 American College Testing. (1995). *NAEP reading revisited: An evaluation of the 1992 achievement level descriptions.* Washington, DC: National Assessment Governing Board.

13 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.

14 National Academy of Education. (1997). *Assessment in transition: Monitoring the nation's educational progress* (p. 99). Mountain View, CA: Author.

The NAE Panel report recommended "that the current achievement levels be abandoned by the end of the century and replaced by new standards...." The National Center for Education Statistics and the National Assessment Governing Board have sought and continue to seek new and better ways to set performance standards on NAEP.[15] For example, NCES and NAGB jointly sponsored a national conference on standard setting in large-scale assessments, which explored many issues related to standard setting.[16] Although new directions were presented and discussed, a proven alternative to the current process has not yet been identified. The Acting Commissioner of Education Statistics and the Board 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."[17]

The NAS Panel accepted the continuing use of achievement levels in reporting NAEP results on a developmental 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."[18]

The National Assessment Governing Board 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. The Board and the Acting

15 Reckase, Mark, 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.

16 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: Government Printing Office.

17 Pellegrino, J.W., Jones, L.R., & 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. (p.182). Washington, DC: National Academy Press.

18 Ibid., page 176.

Commissioner believe that the achievement levels are useful for reporting trends in the educational achievement of students in the United States.[19] 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. The National Education Goals Panel and 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, the Acting Commissioner agrees with the National Academy's recommendation that caution needs to be exercised in the use of the current achievement levels. Therefore, the Acting Commissioner concludes that these achievement levels should continue to be considered developmental and should continue to be interpreted and used with caution.

Sample Assessment Questions

No questions from the NAEP mathematics assessment administered in 2000 will be released at this time so that they may be used again in a future assessment. However, nine sample questions from the 1996 assessment, three at each grade level, are presented in appendix D. They represent the types of questions used in 2000 (i.e., multiple-choice, short constructed-response, and extended constructed-response), but do not illustrate the breadth of the content assessed. A large collection of questions from the 1996 assessment and from earlier assessments in 1990 and 1992 is available on the NAEP web site at http://nces.ed.gov/nationsreportcard.

Maps of Selected Item Descriptions

The mathematics performance of fourth-, eighth-, and twelfth-graders can be illustrated by maps that position item descriptions along the NAEP mathematics scale where items are likely to be answered successfully by students.[20] The descriptions used on these maps focus on the mathematics skill or knowledge needed to answer the question. For multiple-choice questions, the description indicates the skill or knowledge demonstrated by selection of the correct option; for constructed-response questions, the description takes into account the skill or knowledge specified by the different levels of scoring criteria for that question.

Figures 1.7 through 1.9 are item maps for grades 4, 8, and 12, respectively. Approximately 25 questions from each grade have been selected and placed on each item map. For each question indicated on the map, students who scored above the scale point had a higher probability of successfully answering the question, and students who scored below the scale point had a lower probability of successfully answering the question. The map location for each question identifies where that

[19] Forsyth, Robert 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, Jeffrey M. (2000). States with NAEP-like performance standards. In *Student performance standards on the National Assessment of Educational Progress: Affirmations and improvements*. Washington, DC: National Assessment Governing Board.

[20] Details on the procedures used to develop item maps are provided in appendix A, 214–215.

question was answered successfully by at least 65 percent of the students for constructed-response questions, 74 percent of the students for four-option multiple-choice questions, and 72 percent of the students for five-option multiple-choice questions.

As an example of how to interpret the item maps, consider the question in figure 1.7 that maps at score point 282. As the description indicates, fourth-graders were required to "Find the area of an irregular figure on a 4 by 7 grid" in order to answer this question successfully. As this was a four-option multiple-choice question, students who scored at or above 282 (its map value) on the NAEP scale had at least a 74 percent probability of answering the question correctly. Students who scored below 282 had less than a 74 percent probability of doing so. This does not mean that all students scoring 282 or above always answered the question correctly, or that students scoring below 282 always answered the question incorrectly. Rather, the item map indicates higher or lower probability of answering the question successfully depending on students' overall mathematics ability as measured by the NAEP scale.

As another example of how to interpret the item maps, consider the question in figure 1.8 that maps at score point 330 and requires eighth-graders to "Write a word problem to fit a given situation involving division." Students' responses to this constructed-response question were rated according to a three-level scoring guide that distinguished between "Unsatisfactory," "Partial," and "Satisfactory" responses. As with all constructed-response questions portrayed on the item maps, the description of this item takes into account the requirements for a response to be rated at a certain level according to the scoring criteria for that question. With this question, the description is based on the level of performance required for a score of "Satisfactory." Its map location indicates that students who scored 330 or above had at least a 65 percent probability of demonstrating the skill required to answer the question satisfactorily. Students who scored below 330 had less than a 65 percent probability of doing so.

In interpreting the item map information, it is important to note that questions administered at grade 4 tend to map to the lower range of the cross-grade scale, reflecting the typical performance of fourth-graders. Questions administered at grade 12 tend to map to the higher range of the scale. Questions administered at grade 8 tend to map more to the middle of the scale. The three mathematics achievement levels for a specific grade are also indicated on the item map for that grade. Although the same 0-to-500 mathematics scale is used at each grade, the achievement levels are grade specific and each achievement level begins at a different score point at each grade.

Figure 1.7

Grade 4 Item Map

Map of selected item descriptions on the National Assessment of Educational Progress mathematics scale for grade 4

This map describes the skill or ability associated with answering individual mathematics questions. The map identifies the score point at which students had a high probability of successfully answering the question.*

500

340

330 — **332** Extend a pattern in a table and explain the answer

320 — **322** *Solve a story problem involving fractions*

310 — **313** *Solve a problem involving the start time and stop time to cook a turkey*

300 — **301** *Recognize the best unit to measure the length of an object*

290 — **292** List and explain possible ways to select a flavor of ice cream and a serving container

Advanced 282

280 — **282** *Find the area of an irregular figure on a 4 by 7 grid*

270 — **272** *Find the product of several numbers when one of them is zero*

260 — **264** Apply the concept of symmetry to visualize the result of folding a marked strip of paper
261 *Solve a story problem that involves recognizing that the solution must be a multiple of six*
257 *Identify the procedure needed to find the weight of boxes that each weigh the same amount*

Proficient 249

250 — **253** *Solve a ratio problem involving pints*
251 Draw bars on a graph to represent a situation
247 *Use a ruler to find the total length of three line segments*
246 Given three equivalent fractions, provide two more fractions that are equivalent to the three

240 — **245** Solve a problem involving even and odd numbers
241 *Given points on a number line, find their sum*

230 — **230** Given certain coins, show how a given amount of money can be made

220 — **221** Write an addition problem in terms of multiplication

Basic 214

210 — **213** Complete a bar graph

208 *Identify which of four objects is heaviest*

200

194 Shade a region to represent a given fraction

190

189 *Round money as specified*
188 Solve a simple subtraction problem

180

0

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

* Each grade 4 mathematics question in the 2000 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 question. Only selected questions are presented. Scale score ranges for mathematics achievement levels are referenced on the map.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Figure 1.8

Grade 8 Item Map

Map of selected item descriptions on the National Assessment of Educational Progress mathematics scale for grade 8

This map describes the skill or ability associated with answering individual mathematics questions. The map identifies the score point at which students had a high probability of successfully answering the question.*

500

400

390
- **393** Draw a right triangle on a grid that has the same angle measures as a given right triangle, but has a specified larger area

380
- **383** Solve a problem involving postage

370

360
- **363** List all possible pairs of numbered chips that can be drawn from a box

350
- **347** Given two methods of price reductions, indicate which method results in the cheaper price

340
- **344** *Determine which term in a pattern of fractions will have a specified decimal value*
- **340** *Determine a central angle in a circle, given the fraction of the circumference the angle subtends*

Advanced 333

330
- **331** *Given the formula, convert a temperature from Fahrenheit to Celsius*
- **330** Write a word problem to fit a given situation involving division
- **328** *Use proportional reasoning to find the distance between two towns*

320
- **317** Find the area of a figure

310
- **314** *Determine which equation is true for each of three given pairs of x and y values*

Proficient 299

300
- **305** Draw a line of symmetry for each of two figures
- **301** Graph an inequality, given certain specifications
- **298** *Find the coordinates of one vertex of a square, given the coordinates of the other vertices*

290
- **291** Determine which of two surveys is better and explain why
- **287** *Solve a basic percent problem*

280
- **281** *Determine how much change a person will get back from a purchase*

270
- **274** Determine the length of an object pictured above a ruler, but not aligned at the beginning of the scale

Basic 262

260
- **264** *Apply property of a cube*
- **259** *Solve a problem using data given in a pie chart*

250
- **254** *Solve a story problem involving division*

240
- **240** Display data on a bar graph

230
- **235** Visualize a geometric figure
- **230** Determine the value of a number located on a number line

0

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

* Each grade 8 mathematics question in the 2000 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 question. Only selected questions are presented. Scale score ranges for mathematics achievement levels are referenced on the map.

SOURCE: National Center for Education Statistics. National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Figure 1.9

Grade 12 Item Map

Map of selected item descriptions on the National Assessment of Educational Progress mathematics scale for grade 12

This map describes the skill or ability associated with answering individual mathematics questions. The map identifies the score point at which students had a high probability of successfully answering the question.*

500

410

400
- **404** Interpret slope and intercept

390
- **388** Given the graphs of two functions, describe the transformations required to obtain the second from the first
- **386** Given a table of interest rates, determine which bank account would have the most money after 2 years

380
- **372** *Determine the x coordinate of a point on the graph of a trig function*
- **370** *Determine which of five triangles is not a 30° - 60° - 90° triangle*
- **370** *Solve a quadratic inequality*

370

Advanced 367

- **366** Analyze and explain a situation involving percent
- **363** *Use proportional reasoning to find the distance between two towns*

360

350
- **349** Solve a system of equations for x and y
- **346** Given a frequency distribution of scores, determine the average score
- **342** *Given a formula involving several variables, solve for one variable in terms of the others*

340

Proficient 336

- **336** *Find the perimeter of a figure*
- **333** *Choose solution set for a cubic equation*
- **330** *Recognize a property of prime numbers*

330
- **329** Determine the first three terms in a sequence
- **326** *Visualize where a point will touch when a rectangle is folded along a dotted line*

320
- **314** Provide a counterexample to a statement about a number sequence expressed algebraically
- **312** *Identify a statement about a given parallelogram that is not necessarily true*

310

300
- **297** *Identify which figure could not be folded to make a cube*
- **293** *Apply the concept of perimeter*

290

Basic 288

- **286** *Determine the cost of renting a car given the per day and mileage charges*
- **282** Place a dot on a number line to locate a given fraction

280
- **277** *Find missing length in a figure*

270
- **269** *Interpret pie chart data*
- **262** *Solve story problem involving division*

260

0

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

* Each grade 12 mathematics question in the 2000 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 question. Only selected questions are presented. Scale score ranges for mathematics achievement levels are referenced on the map.

SOURCE: National Center for Education Statistics. National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Interpreting NAEP Results

The average scores and percentages presented in this report are estimates because they are based on representative samples of students rather than on the entire population of students. Moreover, the collection of questions used at each grade level is but a sample of the many questions that could have been asked that measure the NAEP framework. As such, the results are subject to a measure of uncertainty, reflected in the standard error of the estimates. The standard errors for the estimated scale scores and percentages in this report are provided in appendix B.

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. Throughout this report, differences between scores or between percentages are pointed out only when they are significant from a statistical perspective. 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 of the educational relevance of the differences. It is intended to identify statistically dependable population differences to help inform dialogue among policymakers, educators, and the public.

Readers are cautioned against interpreting NAEP results in a causal sense. Inferences related to subgroup performance or to the effectiveness of public and nonpublic schools, for example, should take into consideration the many socioeconomic and educational factors that may also impact on mathematics performance.

Overview of the Remaining Report

The results in chapters 2 and 3 of this report are based on the set of data with no accommodations offered. Findings are presented for the nation, for regions, for participating jurisdictions, and for the major reporting subgroups included in all NAEP report cards. Trends from the 1990, 1992, and 1996 assessments are noted where the data permit comparisons. State-by-state results are included for the states and jurisdictions that participated in the mathematics assessment at grades 4 and 8.

Chapter 4 presents an overview of the second set of results—those that include students who were provided accommodations during the test administration. By including these results in the nation's mathematics report card, the NAEP program continues a phased transition toward a more inclusive reporting sample. Future assessment results will be based solely on a student and school sample in which accommodations are permitted.

Chapter 5 examines contexts for learning mathematics in terms of school/teacher policies and their relationship to student learning as measured by NAEP scale scores. Special emphasis is given to teacher preparation and to the use of technology in mathematics instruction. Chapter 6 examines contexts for learning mathematics in terms of classroom practices and student variables. This chapter includes information about course-taking patterns in grades eight and twelve, calculator usage, students' reports of their use of time outside of school, and their attitudes toward mathematics.

This report also contains appendices that support or augment the results presented. Appendix A contains an overview of the NAEP mathematics framework and specifications, information on the national and state samples, and a more detailed description of the major reporting subgroups featured in chapters 2 and 3. Appendix B contains the full data with standard errors for all tables and figures in this report. Appendix C presents selected contextual variables from non-NAEP sources that likely have bearing on student performance. Appendix D provides a set of sample NAEP test questions that were administered in the 1996 assessment. Appendix E contains a list of the NAEP mathematics committee members.

Detailed information about the measurement methodology and data analysis techniques will be available in the forthcoming *NAEP 2000 Technical Report*.

2 Overall Results for the Nation and the States

Overview

This chapter presents the 2000 mathematics scale score and achievement level results for the nation at grades 4, 8, and 12 and for the participating states and jurisdictions at grades 4 and 8. The 2000 national results are compared to results from the three previous mathematics assessments—1990, 1992, and 1996. The state assessments in mathematics were first administered in 1990 at grade 8 and in 1992 at grade 4. The 2000 results for participating states and jurisdictions are compared to those from the three previous assessments at grade 8 (1990, 1992, and 1996) and the two previous assessments at grade 4 (1992 and 1996). The results reported in this chapter are based on testing conditions comparable to those in previous NAEP assessments. Accommodations for special-needs students were not offered, but special-needs students who could participate in the assessment without accommodations were included. Results that were obtained when accommodations were offered for special-needs students are presented in chapter 4.

Chapter Focus

Are the nation's and states' fourth-, eighth-, and twelfth-graders making progress in mathematics?

Chapter Contents

The performance of students across the nation and within states is summarized by an average score on the NAEP mathematics scale, which ranges from 0 to 500. Performance is also described in terms of the percentages of students who attained each of the three mathematics achievement levels: *Basic, Proficient,* and *Advanced.* The overall national results are presented first, followed by results for individual states and, finally, cross-state comparisons.

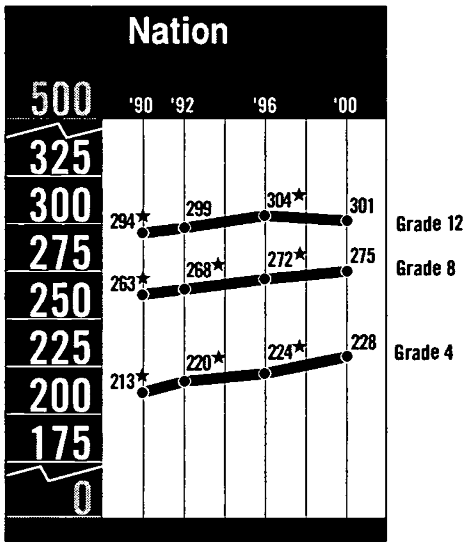
National Scale Score Results

Figure 2.1 displays the national average mathematics scale scores for fourth-, eighth-, and twelfth-graders in 1990, 1992, 1996, and 2000. At grades 4 and 8, the trend in student performance is one of continued improvement across the decade. The average scores for these students increased each year, and in 2000 they were higher than those for fourth- and eighth-graders in 1990, 1992, or 1996. The trend pattern was different at grade 12. The average score of twelfth-graders increased between 1990 and 1996, but then declined between 1996 and 2000. Despite this recent downturn in performance, the twelfth-grade average score in 2000 was higher than that in 1990.

Figure 2.1

National Scale Score Results

National average mathematics scale scores, grades 4, 8, and 12: 1990–2000



★ Significantly different from 2000.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Achievement Level Results for the Nation

The achievement levels that have been set by the National Assessment Governing Board (NAGB) as authorized by the NAEP legislation establish a set of standards for what students are expected to know and do at each grade level.[1] The setting of achievement levels was based on the collective judgments of experts about what students should be expected to know and be able to do in terms of the NAEP mathematics framework. Viewing students' performance from this perspective provides some insight into the adequacy of students' knowledge and skills and the extent to which they achieved expected levels of performance.

In 1992, NAGB reviewed and adopted the recommended achievement levels,

[1] The Improving America's Schools Act of 1994 (20 USC 9010) requires that the National Assessment Governing Board develop "appropriate student performance levels" for reporting NAEP results.

which were derived from the judgments of a broadly representative panel that included teachers, education specialists, and members of the general public. For each grade assessed, NAGB has adopted three achievement levels: *Basic, Proficient,* and *Advanced.* For reporting purposes, the achievement level cut scores are placed on the NAEP mathematics scale resulting in four ranges: below *Basic, Basic, Proficient,* and *Advanced.* Figures 1.4-1.6 in chapter 1 present specific descriptions of mathematics achievement for the *Basic*, *Proficient*, and *Advanced* levels at each of the three grades.

The NAEP legislation requires that achievement levels be "used on a developmental basis until the Commissioner of Education Statistics determines...that such levels are reasonable, valid and informative to the public." A discussion of the developmental status of achievement levels may be found in chapter 1.

Figure 2.2 displays the achievement level results for the nation for each grade. Results are presented in two ways: 1) the percentage of students within each achievement level interval, and 2) the percentage of students at or above the *Basic* and at or above the *Proficient* achievement levels. In reading figure 2.2, it is necessary to keep in mind that the percentages at or above specific achievement levels are cumulative. Therefore, included among the percentage of students at or above the *Basic* level are also those who have achieved the *Proficient* and *Advanced* levels of performance, and included among students at or above the *Proficient* level are also those who have attained the *Advanced* level of performance.

In the 2000 mathematics assessment, 26 percent of fourth-graders, 27 percent of eighth-graders, and 17 percent of twelfth-graders performed at or above the *Proficient* level—identified by NAGB as the level at which all students should perform. Students' attainment of the achievement levels across years generally reflects the trends in scale score results described in the previous section: A pattern of steady growth is evident at grades 4 and 8, while the results at grade 12 are somewhat mixed.

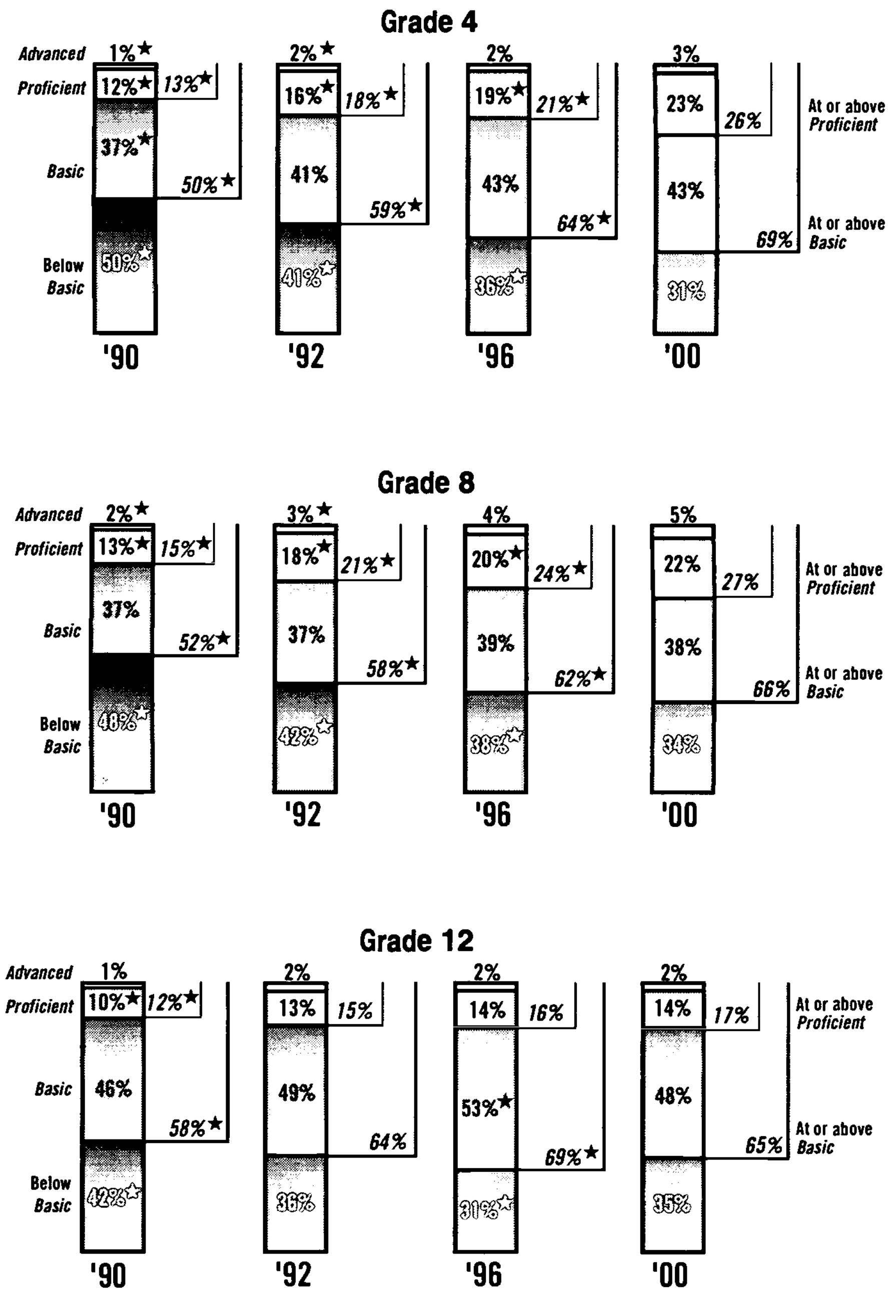
At grades 4 and 8, the percentage of students performing at or above *Basic* increased each assessment year, with the highest percentage at or above this level in 2000. The percentage of fourth- and eighth-graders at or above *Proficient* has also increased across the decade, reaching its highest level in both grades in 2000. Gains between 1990 and 2000 in the percentages of fourth- and eighth-grade students reaching the *Advanced* level are also evident, although they remain small—from 1 to 3 percent at grade 4 and from 2 to 5 percent at grade 8.

At grade 12, the percentage of students performing at or above *Basic* increased between 1990 and 1996, but declined between 1996 and 2000. The percentage of twelfth-graders attaining this level of performance, however, remained higher in 2000 than in 1990. The percentage of twelfth-graders at or above *Proficient* increased between 1990 and 1992, but the small changes since that time were not statistically significant. Despite the lack of more recent gains, the percentage of students reaching the *Proficient* level in 2000 was higher than in 1990. The percentage of twelfth-grade students who reached the *Advanced* level has remained relatively stable since 1990. Only 2 percent of twelfth-graders in 2000 attained this highest achievement level.

Figure 2.2

National Achievement Level Results

Percentage of students within each mathematics achievement level range and at or above achievement levels, grades 4, 8, and 12: 1990–2000



How to read these figures:

- The italicized percentages to the right of the shaded bars represent the percentages of students at or above *Basic* and *Proficient*.
- The percentages in the shaded bars represent the percentages of students within each achievement level.

★ Significantly different from 2000.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

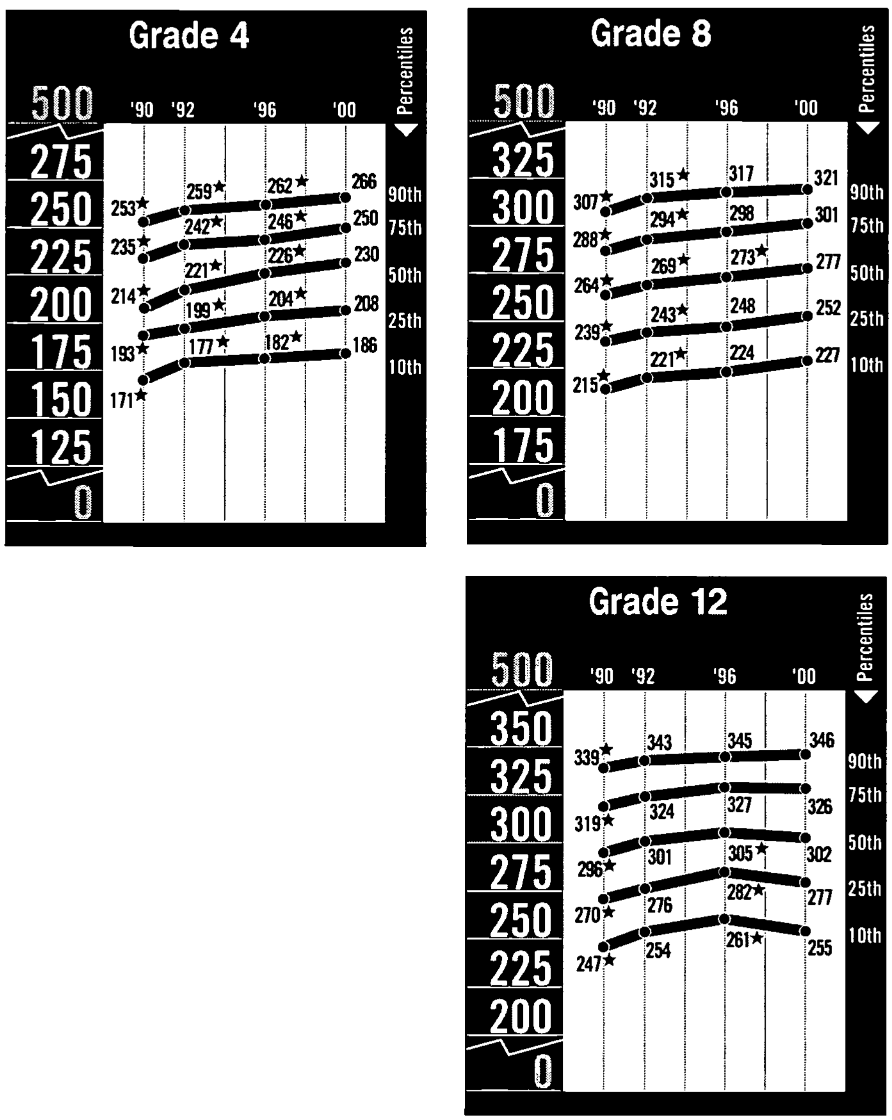
Scale Scores by Percentile

Another perspective on trends in student performance is gained by examining scores at different percentiles across assessment years. The advantage of looking at data in this way is that it shows whether trends in the national average scores presented earlier in this chapter are reflected in scores across the performance distribution. Comparing scores at different percentiles in 2000 to those in previous years reveals, for example, the trends in performance for lower- and higher-performing students. Figure 2.3 displays the mathematics scale scores for grades 4, 8, and 12 at the 10th, 25th, 50th, 75th, and 90th percentiles across the four assessments.

Figure 2.3

National Performance Distribution

National mathematics scale score percentiles, grades 4, 8, and 12: 1990–2000



★ Significantly different from 2000.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

At grade 4, the scale scores at all five percentile points were higher in 2000 than in 1990, 1992, and 1996. At grade 8, all of the scale scores at each of the percentile points were higher in 2000 than in 1990 or 1992. However, the only grade 8 scale score that was higher in 2000 than in 1996 occurred at the 50th percentile. At the other percentiles, apparent changes since 1996 were not statistically significant.

At grade 12, where the average scale score declined from 1996 to 2000, the picture provided by trends in percentile scores is different. At this grade, the scale scores at the lower and middle percentiles (10th, 25th, and 50th) in 2000 were lower than those in 1996. However, the small changes since 1996 in scores at upper percentiles (75th and 90th) were not statistically significant. Viewed over the ten-year period, average scale scores at all percentiles were higher in 2000 than in 1990.

These results indicate that the score gains made over time in grades 4 and 8 are reflected broadly across their score distributions. At grade 12, in contrast, the recent performance decline is primarily focused in the lower and middle points of the score distribution.

Results for Regions of the Nation

NAEP assessments traditionally provide results for four regions of the country: Northeast, Southeast, Central, and West. Appendix A (see page 221) contains a description of the states and jurisdictions that make up each region.

With the exception of the decline in scores at grade 12 in 2000, an encouraging ten-year national trend of improved performance is generally reflected in average scale scores across the regions of the nation. As shown in figure 2.4, the apparent gains for fourth- and eighth-grade students in all regions of the country between 1996 and 2000 were not statistically significant for any individual region.[2] Nevertheless, fourth- and eighth-graders in each region had higher scores in 2000 than in 1992 and 1990. For twelfth-graders, results appeared to be lower in 2000 than in 1996 for all regions, but not significantly so in any one region. Results for the Southeast, Central, and West regions were higher in 2000 than in 1990 at grade 12. The apparent change in average scores between 1990 and 2000 for twelfth-graders in the Northeast was not statistically significant.

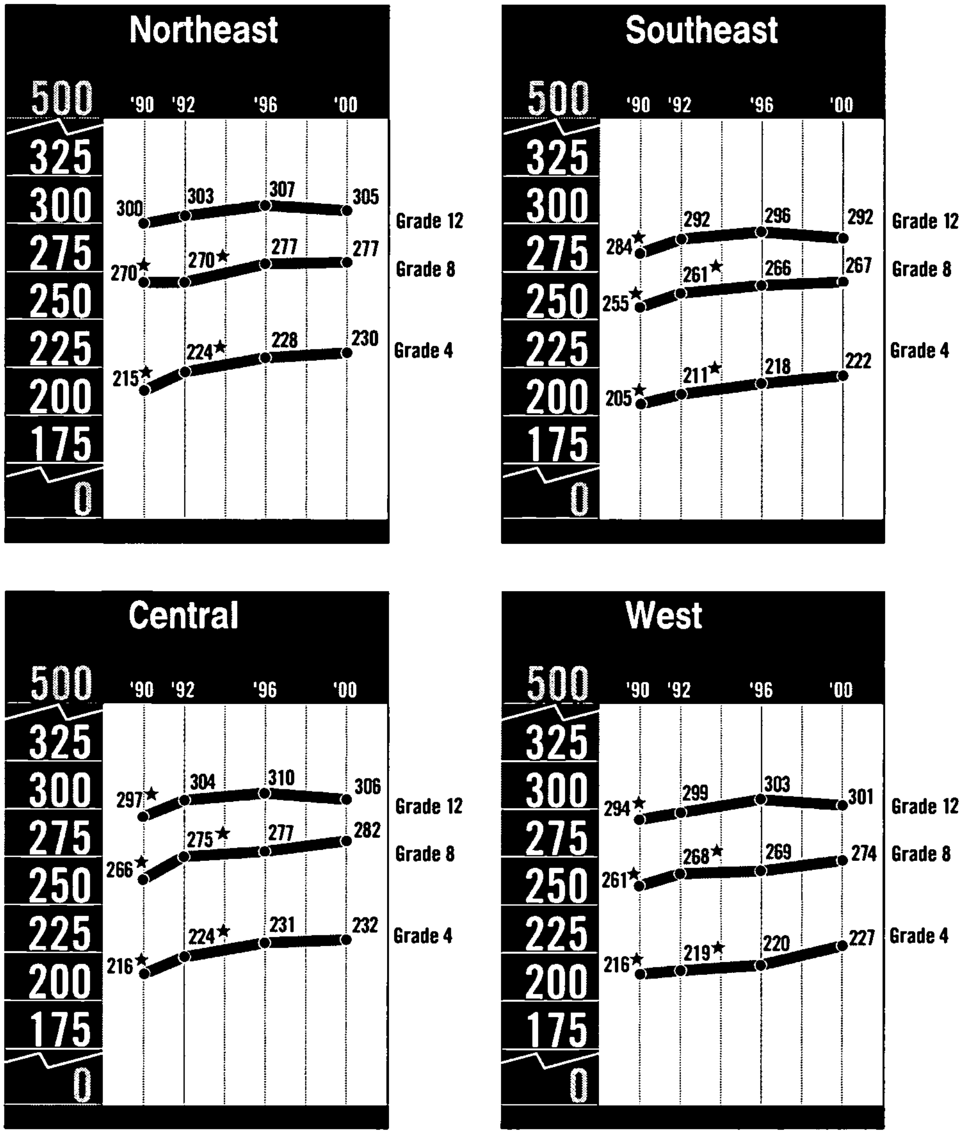
Performance differences among regions of the country are evident in 2000. At grade 4, students in the Northeast and Central regions had higher scores than students in the Southeast. At grades 8 and 12, students in the Northeast, Central and West regions outperformed those in the Southeast.

[2] The significance tests used in figure 2.4 and all other figures or tables in this report that compare results among subgroups or jurisdictions are based on the False Discovery Rate (FDR) procedure for multiple comparisons. (Further details on the FDR procedure are presented in appendix A, see pages 218–220.)

Figure 2.4

National Scale Score Results by Region

National mathematics scale score results by region of the country, grades 4, 8, and 12: 1990–2000



★ Significantly different from 2000.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

50

Achievement level results for the four regions are displayed in figure 2.5. At grade 4, gains in the percentage of students at or above *Basic* and at or above *Proficient* are evident in each region. From 1990 to 2000, all four regions had a higher percentage of fourth-graders reaching or exceeding these two levels of performance. However, from 1996 to 2000 only the West region showed a gain, which occurred in the percentage of fourth-graders who performed at or above the *Proficient* level.

At grade 8, the percentage of students at or above *Basic* increased between 1990 and 2000 in the Southeast, Central, and West regions. Although the percentage of Northeast students in 2000 who were at or above *Basic* was higher than in 1992, the apparent increase between 1990 and 2000 for these students was not statistically significant. All four regions showed gains in the percentage of students at or above *Proficient* between 1990 and 2000. In addition, there were small, but statistically significant, increases since 1990 in the percentage of students reaching the *Advanced* level in each region. Although some gains were evident across the decade for each of the four regions, none of the apparent changes since 1996 for eighth-graders in any region of the country were statistically significant.

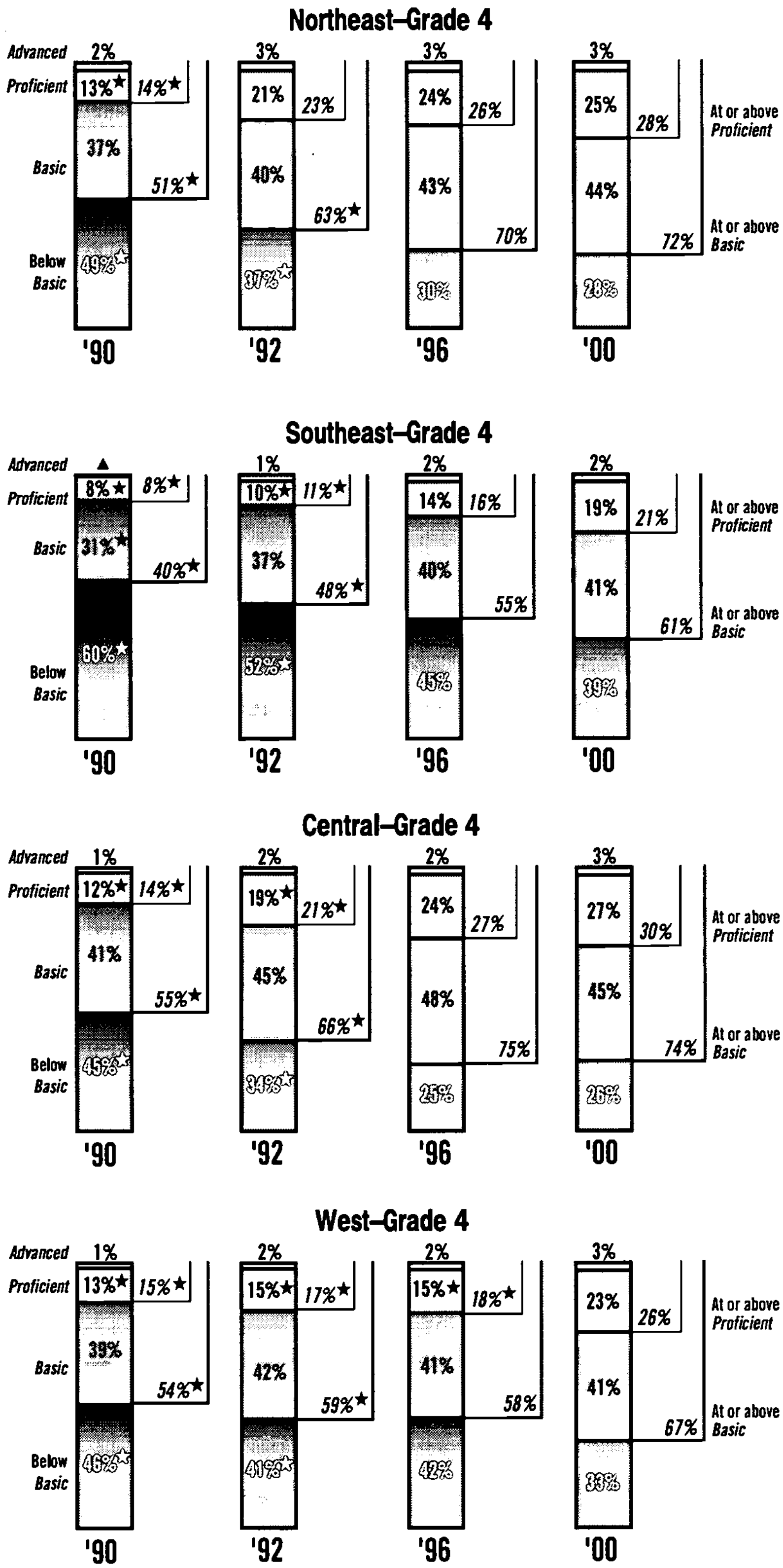
At grade 12, only the Southeast and Central regions had gains based on achievement level results between 1990 and 2000. In both regions, the percentage of students at or above *Proficient* was higher in 2000 than in 1990. Any apparent changes between 1996 and 2000 in achievement level results for the regions were not statistically significant.

As with the scale score results presented earlier in this chapter, differences between regions in the percentages of students at or above the different achievement levels were evident in 2000. Both the Northeast and the Central regions had higher percentages of fourth-graders at or above the *Basic* level than did the Southeast. Also, a greater percentage of fourth-graders in the Central region than in the Southeast performed at or above *Proficient*. At both grades 8 and 12, a greater percentage of students in the Northeast, Central, and West regions were at or above *Basic* and at or above *Proficient* than in the Southeast.

Figure 2.5

National Achievement Level Results by Region

Percentage of students within each mathematics achievement level range and at or above achievement levels by region of the country, grades 4, 8, and 12: 1990–2000

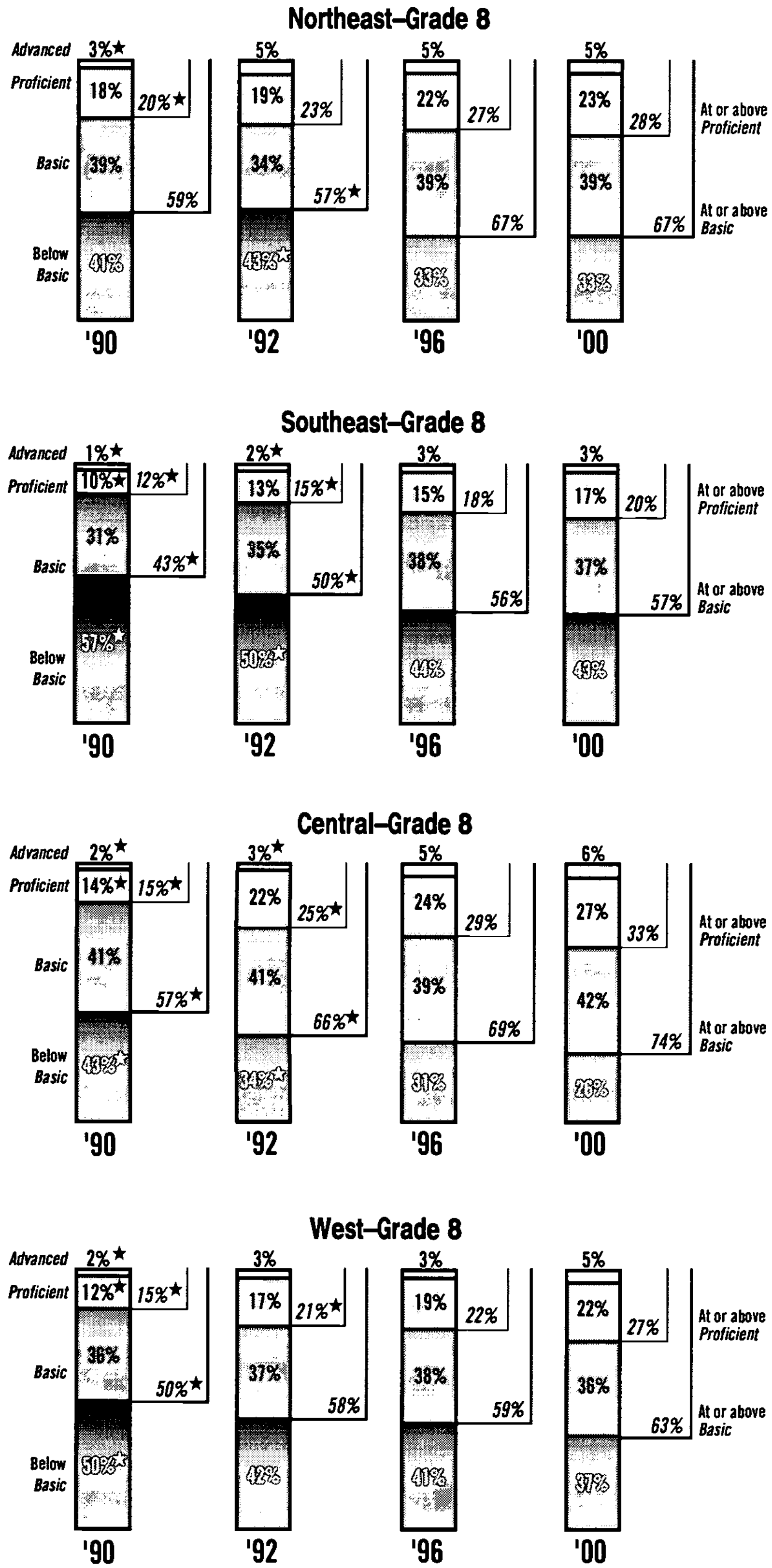


See footnotes at end of figure. ▶

Figure 2.5

National Achievement Level Results by Region (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by region of the country, grades 4, 8, and 12: 1990–2000

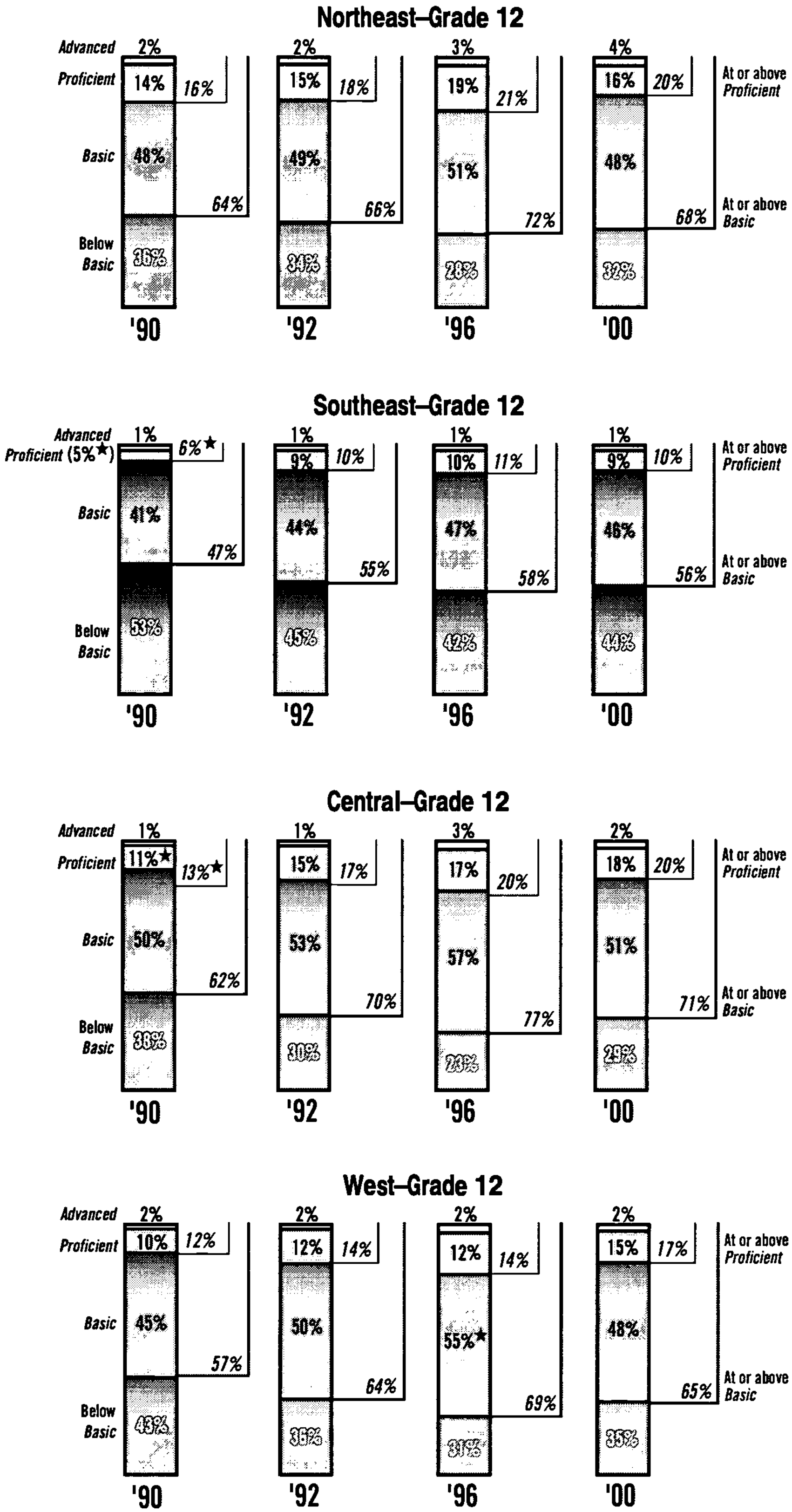


See footnotes at end of figure. ▶

Figure 2.5

National Achievement Level Results by Region (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by region of the country, grades 4, 8, and 12: 1990–2000



★ Significantly different from 2000.

▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

State Results

In addition to the national results, the 2000 mathematics assessment produced results for participating states and jurisdictions for fourth- and eighth-grade public school students.[3] Results are also available for many of these jurisdictions from previous assessments beginning with 1990 in grade 8 and with 1992 in grade 4. Not all jurisdictions met minimum school participation guidelines in every NAEP assessment. (See appendix A, pages 195–198, for details on the participation and reporting guidelines.) In 2000, results for grades 4 and 8 in Wisconsin and grade 8 in the Virgin Islands are not included in the relevant tables and appendices because they failed to meet the initial public school participation rate of 70 percent.

As with the national results presented in this chapter, the results addressed here were obtained by assessing a representative sample of students in each jurisdiction under conditions that did not offer accommodations to special-needs students. These were the same conditions under which results were obtained in previous assessments. Consequently, it is possible to report trends in student performance across the assessment years. In 2000, a separate representative sample was assessed in each participating jurisdiction for which accommodations were offered to special-needs students. Those results are presented in chapter 4, along with a comparison of "accommodations-permitted" and "accommodations-not-permitted" results for each state.

In examining the "accommodations-not-permitted" results for jurisdictions presented in this chapter, it should be noted that schools participating in the NAEP assessments under these conditions are permitted to exclude those students who can not be assessed meaningfully without accommodations. Exclusion rates vary considerably across years in many jurisdictions. In 2000, in the sample that did not permit accommodations, the pattern in most jurisdictions was for more special-needs students to be excluded from the assessment than in previous years. This may be accounted for in a variety of ways. Among the most far-reaching is the implementation of the Individuals with Disabilities Education Act (IDEA). Jurisdictions that have been diligent in implementing IDEA in their assessment programs may have higher exclusion rates in the 2000 assessment than in previous years. Local district and school staff who have become accustomed to providing accommodations in their jurisdictions' testing situations may have opted for exempting special-needs students from the 2000 NAEP assessment rather than including them without their accommodations.

In addition to changes across years in exclusion rates for a particular jurisdiction, there is considerable variation in exclusion rates across jurisdictions. Exclusion rates vary across jurisdictions not only because of differences in IDEA policy implementation, but also because of real population shifts in the percentage of students with disabilities and, especially, limited English proficient students. Therefore, comparisons of assessment results across jurisdictions and within jurisdictions across years should be made with caution. The percentage of students excluded from the assessment has implications for the representativeness of

[3] Throughout this and subsequent chapters the term jurisdiction is used to refer to the states, territories, and Department of Defense Education Activity schools that participated in the 2000 NAEP state-by-state assessment.

the sample assessed within a jurisdiction. No adjustments have been made for differing exclusion rates across jurisdictions or across years. Thus, a comparison within a jurisdiction across years or between two jurisdictions may be based on samples with exclusion rates that differ considerably. The exclusion rates for each jurisdiction across years are presented in appendix A (see pages 202 and 203).

Scale Score Results by Jurisdiction

The average scale scores for participating jurisdictions in 2000 are presented in table 2.1 for grade 4 and table 2.2 for grade 8, along with the changes in scores from previous assessments. The national public school average scores shown at the top of these tables are based on the national sample (not on the aggregated jurisdiction samples) and, like the jurisdiction results, represent the performance of public schools only. The national results shown in previous sections of this chapter represent both public and private school students.

Fourth-grade results are reported for the 46 jurisdictions that participated in the 2000 mathematics assessment with average scale scores ranging from 157 to 235. Thirty-six of these jurisdictions also participated in state NAEP in 1992; 26 of these had higher average scores in 2000.[4] Of the 39 jurisdictions that participated in the last two assessments, 11 had higher average scores in 2000 than in 1996. From the grade 4 state assessment base year of 1992 to the year 2000, the average gain for public school students in the national sample was 8 score points. Significant gains among jurisdictions' average scores ranged from 4 to 20 points. Only one jurisdiction (Guam) had a significantly lower average at grade 4 in 2000 than in 1992.

At grade 8, average scale scores for the 44 jurisdictions that participated in the 2000 assessment ranged from 195 to 288. Thirty-one jurisdictions at grade 8 participated in state NAEP in both 2000 and 1990, the first state-assessment year at grade 8. Of these, 27 showed improvement between the first and most recent assessments—their 2000 average scores were higher than their 1990 average scores. The average gain for public school students in the national sample from 1990 to 2000 was 13 score points. Significant gains at grade 8 among the jurisdictions ranged from 5 to 30 points over the ten-year time span. No jurisdiction had a lower average score in 2000 than in 1990. Of the 37 jurisdictions that participated in the last two assessments, 13 had higher average scores in 2000 than in 1996. Average scores by state for each of the assessment years are displayed in appendix B, tables B.6 and B.7 (see pages 232 and 233).

Eight of 36 jurisdictions had significant improvements in both grades 4 and 8 between the 1996 and 2000 assessments (Indiana, Louisiana, Massachusetts, North Carolina, South Carolina, Vermont, Virginia, and Department of Defense Dependent Schools (Overseas)).

[4] Two types of statistical tests were calculated for the between-year comparisons of results for jurisdictions. The first type of test examines each jurisdiction's results in isolation. The second type of test uses a multiple-comparison procedure that takes into account the decrease in certainty of the difference between years for any given jurisdiction when examining all the jurisdictions together. (See appendix A for further details on multiple-comparison procedures.) In these and all subsequent tables that present results for participating jurisdictions across years, two sets of notations are used to represent the results of the two different statistical tests. The asterisk (*) indicates that the difference between years is statistically significant only when examining results for a single jurisdiction. The dagger (‡) indicates that the difference between years is statistically significant both when examining the jurisdiction in isolation and when using the multiple-comparison procedure based on all participating jurisdictions. Throughout this report, differences between years for jurisdictions are discussed only if they are statistically significant based on the multiple-comparison procedure as indicated by the dagger (‡) in the figure or table.

Table 2.1: State Scale Score Results, Grade 4 Public Schools

Average mathematics scale score results by state for grade 4 public schools: 1992–2000

	2000 Average scale score	Change from 1996 average scale score	Change from 1992 average scale score
Nation	226	4 *	8 *
Alabama	218	6 ‡	10 ‡
Arizona	219	1	4
Arkansas	217	1	7 ‡
California †	214	4	5 ‡
Connecticut	234	2	7 ‡
Georgia	220	4 *	4 ‡
Hawaii	216	1	2
Idaho †	227	—	5 ‡
Illinois †	225	—	—
Indiana †	234	5 ‡	13 ‡
Iowa †	233	4 *	3
Kansas †	232	—	—
Kentucky	221	1	6 ‡
Louisiana	218	9 ‡	14 ‡
Maine †	231	-2	-1
Maryland	222	2	5 ‡
Massachusetts	235	6 ‡	8 ‡
Michigan †	231	5 *	11 ‡
Minnesota †	235	3	7 ‡
Mississippi	211	3	9 ‡
Missouri	229	4 *	6 ‡
Montana †	230	2	—
Nebraska	226	-2	1
Nevada	220	3	—
New Mexico	214	▲	1
New York †	227	4 *	8 ‡
North Carolina	232	8 ‡	20 ‡
North Dakota	231	▲	2
Ohio †	231	—	12 ‡
Oklahoma	225	—	5 ‡
Oregon †	227	3	—
Rhode Island	225	4 *	9 ‡
South Carolina	220	7 ‡	8 ‡
Tennessee	220	1	9 ‡
Texas	233	4 *	15 ‡
Utah	227	1	3 *
Vermont †	232	7 ‡	—
Virginia	230	8 ‡	10 ‡
West Virginia	225	1	10 ‡
Wyoming	229	6 ‡	4 ‡
Other Jurisdictions			
American Samoa	157	—	—
District of Columbia	193	6 ‡	1
DDESS	228	4 *	—
DoDDS	228	4 ‡	—
Guam	184	-4	-9 ‡
Virgin Islands	183	—	—

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.
‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple-comparison procedure based on all jurisdictions that participated both years.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
▲ Difference is between −0.5 and 0.5.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependent Schools (Overseas).
NOTE: National results are based on the national sample, not on aggregated state assessment samples.
Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1992, 1996, and 2000 Mathematics Assessments.

Table 2.2: State Scale Score Results, Grade 8 Public Schools

Average mathematics scale score results by state for grade 8 public schools: 1990–2000

	2000 Average scale score	Change from 1996 average scale score	Change from 1992 average scale score	Change from 1990 average scale score
Nation	274	4 *	8 *	13 *
Alabama	262	6	10 ‡	9 ‡
Arizona †	271	3	5 ‡	11 ‡
Arkansas	261	▲	5 ‡	5 ‡
California †	262	-1	1	6 ‡
Connecticut	282	2	8 ‡	12 ‡
Georgia	266	4	7 ‡	7 ‡
Hawaii	263	1	5 ‡	12 ‡
Idaho †	278	—	3	6 ‡
Illinois †	277	—	—	16 ‡
Indiana †	283	8 ‡	13 ‡	16 ‡
Kansas †	284	—	—	—
Kentucky	272	5 ‡	9 ‡	14 ‡
Louisiana	259	7 ‡	9 ‡	13 ‡
Maine †	284	▲	5 ‡	—
Maryland	276	6 ‡	11 ‡	15 ‡
Massachusetts	283	6 ‡	10 ‡	—
Michigan †	278	2	11 ‡	14 ‡
Minnesota †	288	4	5 ‡	12 ‡
Mississippi	254	4 *	8 ‡	—
Missouri	274	▲	2	—
Montana †	287	4 *	—	6 ‡
Nebraska	281	-2	3	5 ‡
Nevada	268	—	—	—
New Mexico	260	-2	▲	3
New York †	276	6 *	10 ‡	15 ‡
North Carolina	280	12 ‡	22 ‡	30 ‡
North Dakota	283	-1	▲	2
Ohio	283	—	15 ‡	19 ‡
Oklahoma	272	—	4	8 ‡
Oregon †	281	4	—	9 ‡
Rhode Island	273	5 ‡	8 ‡	13 ‡
South Carolina	266	6 ‡	6 ‡	—
Tennessee	263	▲	5 *	—
Texas	275	5 *	10 ‡	17 ‡
Utah	275	-1	1	—
Vermont	283	4 ‡	—	—
Virginia	277	7 ‡	9 ‡	12 ‡
West Virginia	271	6 ‡	12 ‡	15 ‡
Wyoming	277	2	2	5 ‡
Other Jurisdictions				
American Samoa	195	—	—	—
District of Columbia	234	2	▲	3
DDESS	277	8 ‡	—	—
DoDDS	278	3 ‡	—	—
Guam	233	-5	-2	2

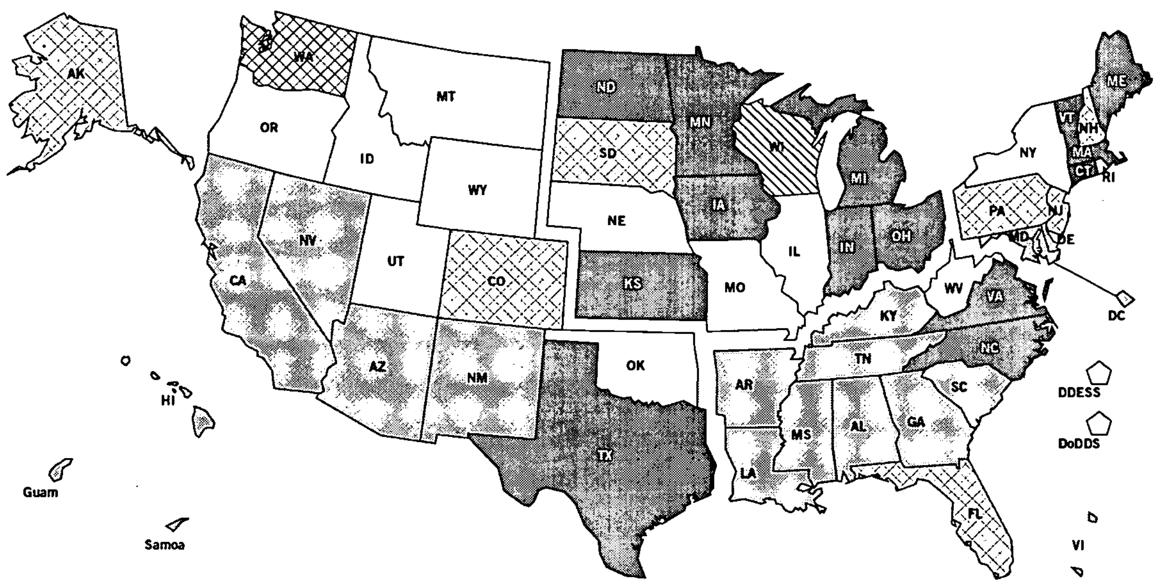
* Significantly different from 2000 if only one jurisdiction or the nation is being examined.
‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple-comparison procedure based on all jurisdictions that participated both years.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
▲ Difference is between −0.5 and 0.5.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependent Schools (Overseas).
NOTE: National results are based on the national sample, not on aggregated state assessment samples.
Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1990, 1992, 1996, and 2000 Mathematics Assessments.

The maps in figures 2.6 (grade 4) and 2.7 (grade 8) show the jurisdictions divided into three groups by performance on the 2000 assessment: those whose average scale scores were above the national average, at or around the national average, and below the national average. In examining these results, it should be noted that differences in mathematics performance among jurisdictions likely reflect an interaction between the effectiveness of the educational programs within the jurisdiction and the challenges posed by economic constraints and varying student demographic characteristics.

Figure 2.6

State vs National Scale Score, Grade 4

Comparison results of state and national average mathematics scale scores for grade 4: 2000



State has higher average scale score than nation.
State is not significantly different from nation in average scale score.
State has lower average scale score than nation.
State did not meet the minimum participation rate guidelines.
State did not particpate in the NAEP 2000 Mathematics State Assessment.

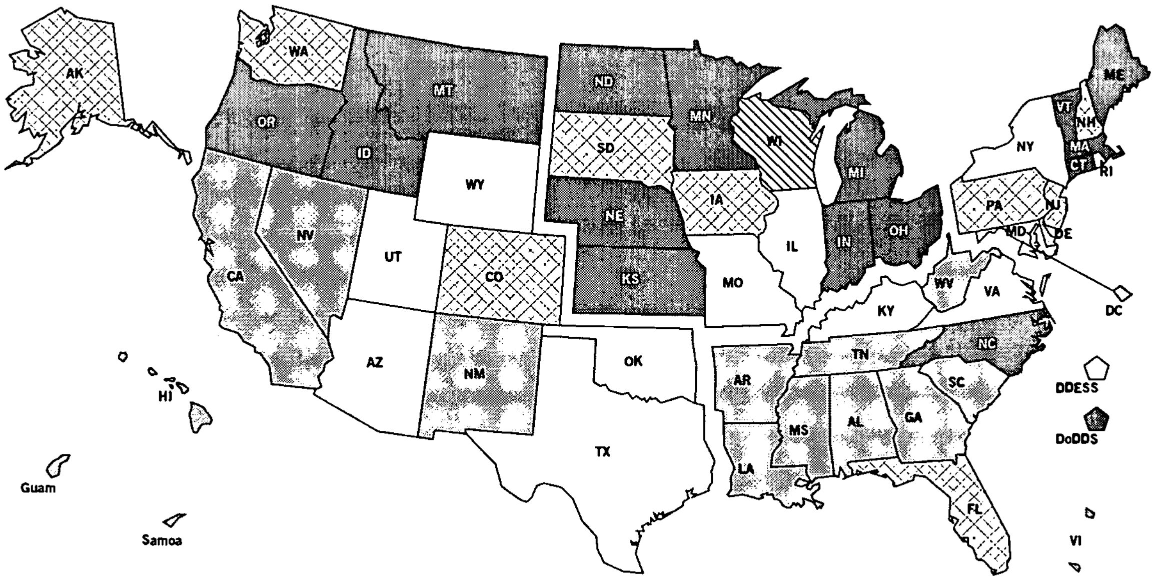
Caution should be exercised when interpreting comparisons among states and other jurisdictions. NAEP performance estimates are not adjusted to account for the socioeconomic, demographic, or geographic differences among states and jurisdictions.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Figure 2.7

State vs National Scale Score, Grade 8

Comparison results of state and national average mathematics scale scores for grade 8: 2000



State has higher average scale score than nation.

State is not significantly different from nation in average scale score.

State has lower average scale score than nation.

State did not meet the minimum participation rate guidelines.

State did not particpate in the NAEP 2000 Mathematics State Assessment.

Caution should be exercised when interpreting comparisons among states and other jurisdictions. NAEP performance estimates are not adjusted to account for the socioeconomic, demographic, or geographic differences among states and jurisdictions.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

60

Cross-State Scale Score Comparisons

Figures 2.8 and 2.9 indicate whether differences between the scale scores of any pairs of participating jurisdictions are statistically significant. These figures for grades 4 and 8, respectively, permit comparisons of a jurisdiction with any other jurisdiction For example, in figure 2.8 Minnesota appears first at the top row. The second row is Massachusetts. Jurisdictions are ranked from highest to lowest average scale score in this table, both from left to right across the columns and down the rows. The state abbreviation, MA, in the second row of the first column indicates that Massachusetts is being compared with Minnesota (the column head). The lack of shading for this cell indicates that there was no significant difference between the averages scale scores of these two states. Moving down the first column to ND (or North Dakota), the shading changes to indicate that, in this comparison, the scale score average for Minnesota was significantly higher than that for North Dakota. Thus the shading in the intersection of each row and column indicates the result of the statistical comparison of the two respective jurisdictions (i.e., whether the jurisdiction at the top of the table was higher than, lower than, or not significantly different from the jurisdiction listed in the table cell being examined).

At grade 4, the top group of 9 jurisdictions in 2000 had average scores which did not differ significantly from each other (Minnesota, Massachusetts, Indiana, Connecticut, Iowa, Texas, North Carolina, Kansas, and Vermont). At grade 8, the top group of 3 jurisdictions (Minnesota, Montana, and Kansas) did not differ significantly from each other.

Figure 2.8: Cross-State Scale Score Comparisons, Grade 4

Comparisons of average mathematics scale scores for grade 4 public schools: 2000

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average math scale score of this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, in the column under Michigan, Michigan's score was lower than Minnesota and Massachusetts, about the same as all the states from Indiana through Oregon, and higher than the remaining states down the column.

Minnesota (MN)†	Massachusetts (MA)	Indiana (IN)†	Connecticut (CT)	Iowa (IA)†	Texas (TX)	North Carolina (NC)	Kansas (KS)†	Vermont (VT)†	North Dakota (ND)	Michigan (MI)†	Ohio (OH)†	Maine (ME)†	Virginia (VA)	Montana (MT)†	Wyoming (WY)	Missouri (MO)	DoDEA/DDESS (DD)	DoDEA/DoDDS (DI)	Utah (UT)	Idaho (ID)†	Oregon (OR)†	New York (NY)†	Nebraska (NE)	Oklahoma (OK)	Illinois (IL)†	West Virginia (WV)	Rhode Island (RI)	Maryland (MD)	Kentucky (KY)	South Carolina (SC)	Nevada (NV)	Tennessee (TN)	Georgia (GA)	Arizona (AZ)	Louisiana (LA)	Alabama (AL)	Arkansas (AR)	Hawaii (HI)	New Mexico (NM)	California (CA)†	Mississippi (MS)	District of Columbia (DC)	Guam (GU)	Virgin Islands (VI)	American Samoa (AS)
MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN
MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA
IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
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IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA
TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS
VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
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VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY
MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO
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NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY
NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
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IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
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SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
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AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ
LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC
GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU
VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI
AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

Jurisdiction has statistically significantly higher average scale score than the jurisdiction listed at the top of the chart.

No statistically significant difference from the jurisdiction listed at the top of the chart.

Jurisdiction has statistically significantly lower average scale score than the jurisdiction listed at the top of the chart.

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).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress, 2000 Mathematics Assessment.

Figure 2.9: Cross-State Scale Score Comparisons, Grade 8

Comparisons of average mathematics scale scores for grade 8 public schools: 2000

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average math scale score of this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, in the column under Maine, Maine's score was lower than Minnesota, about the same as all the states from Montana through Nebraska, and higher than the remaining states down the column.

Minnesota (MN)†	Montana (MT)†	Kansas (KS)†	Maine (ME)†	Vermont (VT)†	Massachusetts (MA)	North Dakota (ND)	Indiana (IN)†	Ohio (OH)	Connecticut (CT)	Oregon (OR)†	Nebraska (NE)	North Carolina (NC)	Michigan (MI)†	DoDEA/DoDDS (DI)	Idaho (ID)†	DoDEA/DDESS (DD)	Illinois (IL)†	Wyoming (WY)	Virginia (VA)	New York (NY)†	Maryland (MD)	Utah (UT)	Texas (TX)	Missouri (MO)	Rhode Island (RI)	Oklahoma (OK)	Kentucky (KY)	West Virginia (WV)	Arizona (AZ)†	Nevada (NV)	South Carolina (SC)	Georgia (GA)	Tennessee (TN)	Hawaii (HI)	California (CA)†	Alabama (AL)	Arkansas (AR)	New Mexico (NM)	Louisiana (LA)	Mississippi (MS)	District of Columbia (DC)	Guam (GU)	American Samoa (AS)
MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN
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IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
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CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT
OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
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DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY
VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY
MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD
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MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO
RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
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KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY
WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ
NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN
HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
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NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
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AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

Jurisdiction has statistically significantly higher average scale score than the jurisdiction listed at the top of the chart.

No statistically significant difference from the jurisdiction listed at the top of the chart.

Jurisdiction has statistically significantly lower average scale score than the jurisdiction listed at the top of the chart.

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).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress, 2000 Mathematics Assessment.

Achievement Level Results by Jurisdiction

Achievement level results for the jurisdictions are presented here in two ways: 1) the percentage within each achievement level range, and 2) the percentage at or above the *Proficient* achievement level. Figure 2.10 presents the percentage of grade 4 students within each achievement level range for each participating jurisdiction in 2000. Figure 2.11 presents the same information for participating jurisdictions for grade 8. The shaded bars in these figures represent the proportion of the population in each range: below *Basic*, *Basic*, *Proficient* and *Advanced*. The sections to the left of the center vertical line represent the proportion of students who were at *Basic* or below *Basic*. The sections of bars to the right of the vertical line represent the proportion of students who reached the *Proficient* and *Advanced* levels of performance. Scanning down the horizontal bars to the right of the vertical line allows easy comparison of jurisdictions' percentages of students who were at or above *Proficient*.

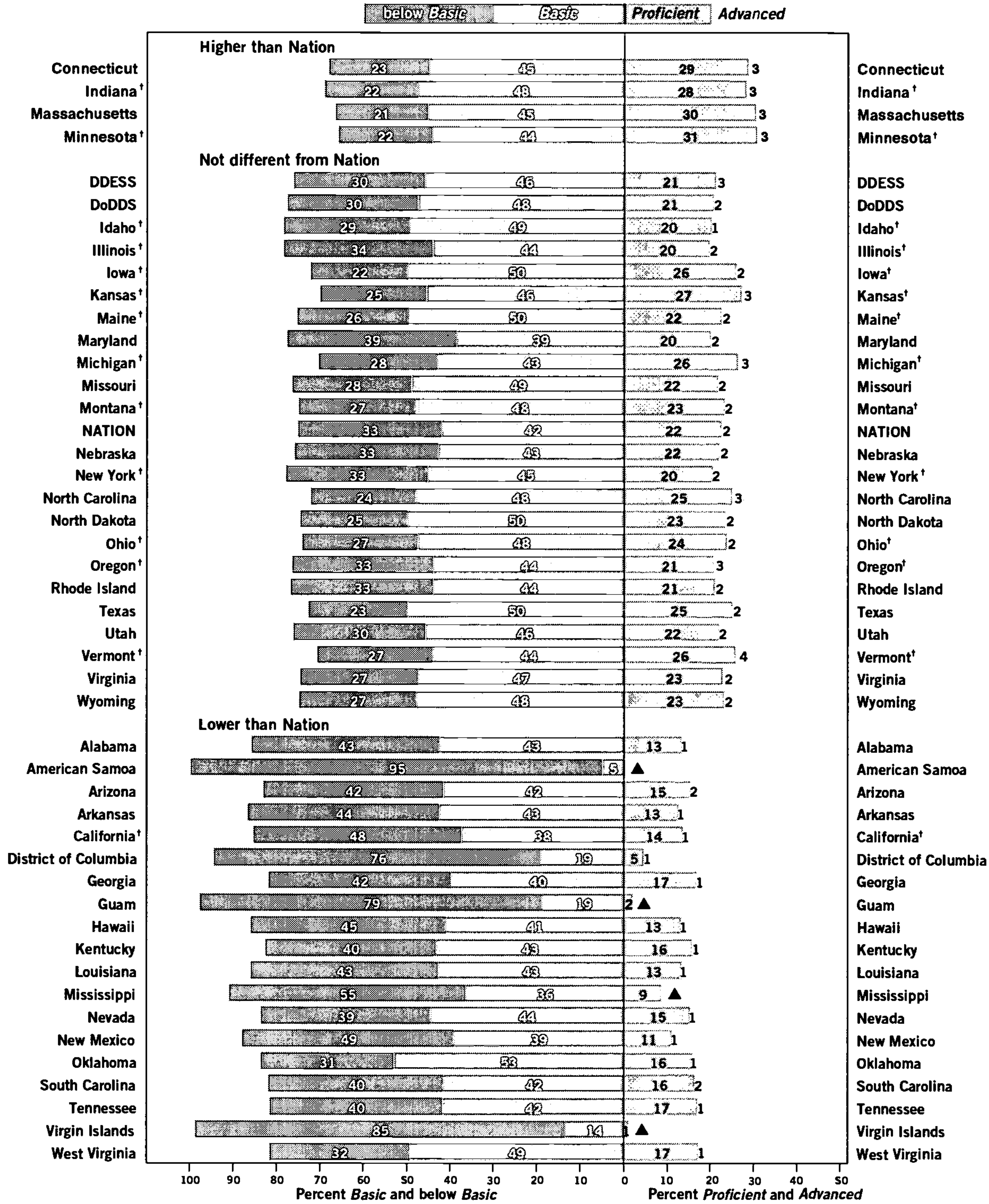
The jurisdictions are presented in these figures in three clusters based on a statistical comparison of the percentage of students at or above *Proficient* within each jurisdiction to the national percentage. The cluster of jurisdictions at the top of each figure had a higher percentage of students at or above *Proficient* in comparison to the nation. For jurisdictions in the middle cluster, the percentage of students did not differ significantly from the national percentage. Jurisdictions listed in the bottom cluster had percentages lower than the national percentage. Within each of the three clusters, jurisdictions are listed in alphabetical order.

Figure 2.10

State Achievement Level Results, Grade 4

Percentage of students within each mathematics achievement level range by state for grade 4 public schools: 2000

The bars below contain estimated percentages of students in each NAEP mathematics achievement category. Each population of students is aligned at the point where the *Proficient* category begins, so that they may be compared at *Proficient* and above.



† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

▲ Percentage is between 0.0 and 0.5.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependent Schools (Overseas).

NOTE: Numbers may not add to 100 due to rounding. National results are based on the national sample, not on aggregated state assessment samples.

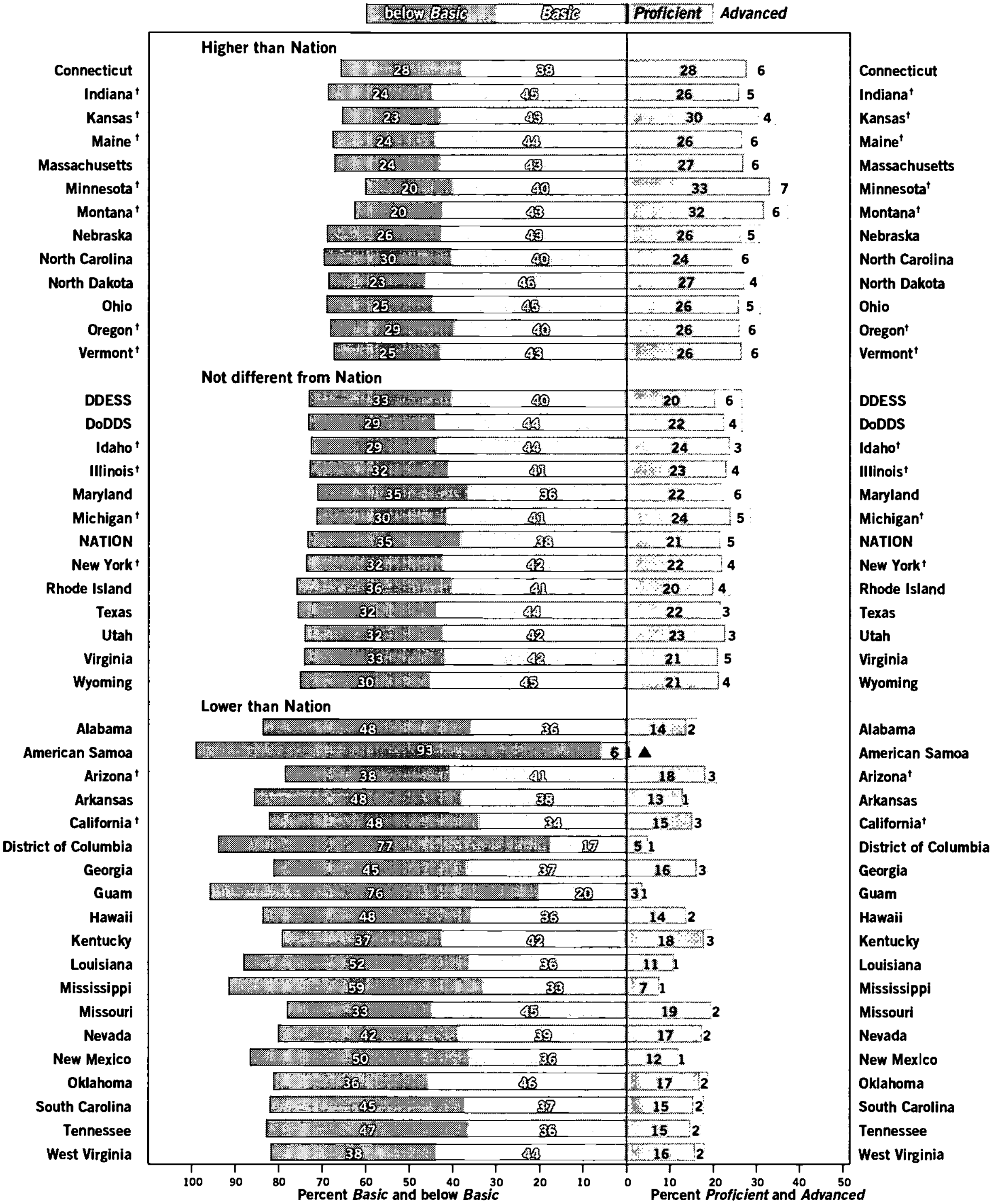
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Figure 2.11

State Achievement Level Results, Grade 8

Percentage of students within each mathematics achievement level range by state for grade 8 public schools: 2000

The bars below contain estimated percentages of students in each NAEP mathematics achievement category. Each population of students is aligned at the point where the *Proficient* category begins, so that they may be compared at *Proficient* and above.



† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

▲ Percentage is between 0.0 and 0.5.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependent Schools (Overseas).

NOTE: Numbers may not add to 100 due to rounding. National results are based on the national sample, not on aggregated state assessment samples.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Tables 2.3 and 2.4 present the percentages of students by jurisdiction who were performing at or above the *Proficient* achievement level for grades 4 and 8 across the assessment years.

At grade 4, from 0 percent to 34 percent of students in the various jurisdictions were at or above the *Proficient* level in 2000. Of the 36 jurisdictions at grade 4 that participated in both 1992 and 2000, 23 made gains between these two years in the percentage of students at or above *Proficient*. Between the two most recent assessments (1996 and 2000), 11 of 39 participating jurisdictions had an increase in the percentage of students attaining this level of performance.

At grade 8, from 1 percent to 40 percent of students in the various jurisdictions were at or above the *Proficient* level in 2000. Of the 31 jurisdictions at grade 8 that participated in both 1990 and 2000, 29 made gains between these two years in the percentage of students at or above *Proficient*. Between the two most recent assessments (1996 and 2000), 2 of 37 participating jurisdictions had an increase in the percentage of students attaining this level of performance. Students in grades 4 and 8 also made gains over time in percentages at or above *Basic*. These results by jurisdiction are presented in appendix B.

Table 2.3: State *Proficient* Level Results, Grade 4 Public Schools

Percentage of students at or above the *Proficient* level in mathematics by state for grade 4 public schools: 1992–2000

	1992	1996	2000
Nation	17 *	20 *	25
Alabama	10 ‡	11	14
Arizona	13 *	15	17
Arkansas	10 ‡	13	13
California †	12	11	15
Connecticut	24 ‡	31	32
Georgia	15	13 ‡	18
Hawaii	15	16	14
Idaho †	16 ‡	—	21
Illinois †	—	—	21
Indiana †	16 ‡	24 ‡	31
Iowa †	26	22 *	28
Kansas †	—	—	30
Kentucky	13 ‡	16	17
Louisiana	8 ‡	8 ‡	14
Maine †	27	27	25
Maryland	18 *	22	22
Massachusetts	23 ‡	24 ‡	33
Michigan †	18 ‡	23 ‡	29
Minnesota †	26 ‡	29	34
Mississippi	6 ‡	8	9
Missouri	19 ‡	20	23
Montana †	—	22	25
Nebraska	22	24	24
Nevada	—	14	16
New Mexico	11	13	12
New York †	17 ‡	20	22
North Carolina	13 ‡	21 ‡	28
North Dakota	22	24	25
Ohio †	16 ‡	—	26
Oklahoma	14	—	16
Oregon †	—	21	23
Rhode Island	13 ‡	17 ‡	23
South Carolina	13 ‡	12 ‡	18
Tennessee	10 ‡	17	18
Texas	15 ‡	25	27
Utah	19 ‡	23	24
Vermont †	—	23 ‡	29
Virginia	19 ‡	19 ‡	25
West Virginia	12 ‡	19	18
Wyoming	19 ‡	19 ‡	25
Other Jurisdictions			
American Samoa	—	—	▲
District of Columbia	5	5	6
DDESS	—	20	24
DoDDS	—	19 *	22
Guam	5 ‡	3	2
Virgin Islands	—	—	1

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.
‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple-comparison procedure based on all jurisdictions that participated both years.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation. — Indicates that the jurisdiction did not participate.
▲ Percentage is between 0.0 and 0.5.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependent Schools (Overseas).
NOTE: National results are based on the national sample, not on aggregated state assessment samples.
Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table 2.4: State *Proficient* Level Results, Grade 8 Public Schools

Percentage of students at or above the *Proficient* level in mathematics by state for grade 8 public schools: 1990–2000

	1990	1992	1996	2000
Nation	15 *	20 *	23 *	26
Alabama	9 ‡	10 ‡	12	16
Arizona †	13 ‡	15 ‡	18	21
Arkansas	9 ‡	10 ‡	13	14
California †	12 ‡	16	17	18
Connecticut	22 ‡	26 ‡	31	34
Georgia	14 ‡	13 ‡	16	19
Hawaii	12 ‡	14	16	16
Idaho †	18 ‡	22 ‡	—	27
Illinois †	15 ‡	—	—	27
Indiana †	17 ‡	20 ‡	24 *	31
Kansas †	—	—	—	34
Kentucky	10 ‡	14 ‡	16 *	21
Louisiana	5 ‡	7 ‡	7 *	12
Maine †	—	25 ‡	31	32
Maryland	17 ‡	20 ‡	24	29
Massachusetts	—	23 ‡	28 *	32
Michigan †	16 ‡	19 ‡	28	28
Minnesota †	23 ‡	31 ‡	34 *	40
Mississippi	—	6	7	8
Missouri	—	20	22	22
Montana †	27 ‡	—	32 *	37
Nebraska	24 ‡	26 *	31	31
Nevada	—	—	—	20
New Mexico	10 ‡	11	14	13
New York †	15 ‡	20 ‡	22	26
North Carolina	9 ‡	12 ‡	20 ‡	30
North Dakota	27	29	33	31
Ohio	15 ‡	18 ‡	—	31
Oklahoma	13 ‡	17	—	19
Oregon †	21 ‡	—	26 *	32
Rhode Island	15 ‡	16 ‡	20 *	24
South Carolina	—	15	14 *	18
Tennessee	—	12 ‡	15	17
Texas	13 ‡	18 ‡	21	24
Utah	—	22 *	24	26
Vermont †	—	—	27 *	32
Virginia	17 ‡	19 ‡	21 *	26
West Virginia	9 ‡	10 ‡	14 ‡	18
Wyoming	19 ‡	21 ‡	22 *	25
Other Jurisdictions				
American Samoa	—	—	—	1
District of Columbia	3 ‡	4	5	6
DDESS	—	—	21	27
DoDDS	—	—	23 *	27
Guam	4	6	6	4

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple-comparison procedure based on all jurisdictions that participated both years.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependent Schools (Overseas).

NOTE: National results are based on the national sample, not on aggregated state assessment samples.

Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Cross-State Achievement Level Comparisons

Figures 2.12 and 2.13 present the same type of data display for the 2000 assessment as the two comparison charts presented earlier for scale scores, only this time the performance measure used is percentages of students at or above the *Proficient* level, for grades 4 and 8, respectively. At grade 4, the seven highest performing jurisdictions (Minnesota, Massachusetts, Connecticut, Indiana, Kansas, Michigan, and Vermont) have similar percentages. At grade 8, in figure 2.13, two jurisdictions (Minnesota and Montana) form the top-performing group and have similar percentages of students at or above *Proficient*. At grade 8, Minnesota is significantly higher than all jurisdictions, except Montana. Montana's percentage at or above *Proficient* exceeds all jurisdictions but Minnesota, Kansas, and Connecticut.

Figure 2.12: Cross-State Achievement Level Comparisons, Grade 4

Comparisons of percentage of students at or above *Proficient* in mathematics for grade 4 public schools: 2000

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the percentage of students at or above *Proficient* in this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, in the column under North Carolina, North Carolina's percentage was lower than Minnesota and Massachusetts, about the same as all the states from Connecticut through Oregon, and higher than the remaining states down the column.

Minnesota (MN)†	Massachusetts (MA)	Connecticut (CT)	Indiana (IN)†	Kansas (KS)†	Michigan (MI)†	Vermont (VT)†	North Carolina (NC)	Iowa (IA)†	Texas (TX)	Ohio (OH)†	North Dakota (ND)	Virginia (VA)	Wyoming (WY)	Montana (MT)†	Maine (ME)†	Nebraska (NE)	Utah (UT)	DoDEA/DDESS (DD)	Missouri (MO)	Oregon (OR)†	Rhode Island (RI)	DoDEA/DoDDS (DI)	Maryland (MD)	New York (NY)†	Idaho (ID)†	Illinois (IL)†	West Virginia (WV)	Tennessee (TN)	South Carolina (SC)	Georgia (GA)	Kentucky (KY)	Arizona (AZ)	Oklahoma (OK)	Nevada (NV)	California (CA)†	Alabama (AL)	Louisiana (LA)	Hawaii (HI)	Arkansas (AR)	New Mexico (NM)	Mississippi (MS)	District of Columbia (DC)	Guam (GU)	Virgin Islands (VI)	American Samoa (AS)
MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN
MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA
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KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS
MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
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IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA
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OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
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MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
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NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
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DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO
OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI
MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD
NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY
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IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN
SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
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NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
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LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
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NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
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VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI
AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

Jurisdiction has statistically significantly higher percentage than the jurisdiction listed at the top of the chart.

No statistically significant difference from the jurisdiction listed at the top of the chart.

Jurisdiction has statistically significantly lower percentage than the jurisdiction listed at the top of the chart.

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).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress, 2000 Mathematics Assessment.

Figure 2.13: Cross-State Achievement Level Comparisons, Grade 8

Comparisons of percentage of students at or above *Proficient* in mathematics for grade 8 public schools: 2000

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the percentage of students at or above *Proficient* in this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, in the column under Kansas, Kansas' percentage was lower than Minnesota, about the same as all the states from Montana through North Carolina, and higher than the remaining states down the column.

Minnesota (MN)†	Montana (MT)†	Kansas (KS)†	Connecticut (CT)	Massachusetts (MA)	Vermont (VT)†	Maine (ME)†	Oregon (OR)†	North Dakota (ND)	Indiana (IN)†	Nebraska (NE)	Ohio (OH)	North Carolina (NC)	Maryland (MD)	Michigan (MI)†	Idaho (ID)†	Illinois (IL)†	DoDEA/DDESS (DD)	DoDEA/DoDDS (DI)	New York (NY)†	Utah (UT)	Virginia (VA)	Wyoming (WY)	Texas (TX)	Rhode Island (RI)	Missouri (MO)	Arizona (AZ)†	Kentucky (KY)	Nevada (NV)	Oklahoma (OK)	Georgia (GA)	West Virginia (WV)	South Carolina (SC)	California (CA)†	Tennessee (TN)	Hawaii (HI)	Alabama (AL)	Arkansas (AR)	New Mexico (NM)	Louisiana (LA)	Mississippi (MS)	District of Columbia (DC)	Guam (GU)	American Samoa (AS)
MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN
MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS
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OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
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MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID
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DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI
NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY
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VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
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RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
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OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
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SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
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AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

Jurisdiction has statistically significantly higher percentage than the jurisdiction listed at the top of the chart.

No statistically significant difference from the jurisdiction listed at the top of the chart.

Jurisdiction has statistically significantly lower percentage than the jurisdiction listed at the top of the chart.

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).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress, 2000 Mathematics Assessment.

3 Subgroup Results for the Nation and the States

Chapter Contents

Chapter Focus

Are selected subgroups of students making progress in mathematics?

This chapter presents the 2000 mathematics results for various subgroups of students. Subgroup results are given for the nation and for the jurisdictions that participated in the assessment. The 2000 results for the nation are reported for grades 4, 8, and 12 by gender, race/ethnicity, parents' education level, type of school, type of location, and eligibility for the free/reduced-price lunch program, and are compared to results in 1990, 1992, and 1996. For jurisdictions, results are reported for grades 4 and 8 by gender, race/ethnicity and eligibility for the free/reduced-price lunch program. State results for 2000 at grade 4 are compared to those from 1992 and 1996, while grade 8 results are compared to those from 1990, 1992, and 1996. Complete information on subgroups for each jurisdiction that participated in the 2000 assessment is available on the NAEP web site at http://nces.ed.gov/nationsreportcard/tables/.

The differences that are reported in this chapter for demographic subgroups for the 2000 assessment and previous assessments are based on statistical tests that consider both the magnitude of the difference between group average scores or percentages and the standard error of those statistics. Differences between groups and between assessment years are discussed only if they have been determined to be statistically significant. Furthermore, the reader should bear in mind that differences in mathematics performance most likely reflect a range of socioeconomic and educational factors not addressed in this report or by NAEP.

The results are most useful when they are considered in combination with other information about the student population and the educational system, such as trends in instruction, changes in school-age population, funding levels, and societal demands and expectations. Examples of related data by state that are not collected by NAEP are given in appendix C.

National Results: Performance of Selected Subgroups

Gender

Figure 3.1 presents average mathematics scores across assessment years for male and female students at grades 4, 8, and 12. As shown in this figure, both male and female students at each grade had higher scores in 2000 than in 1990.

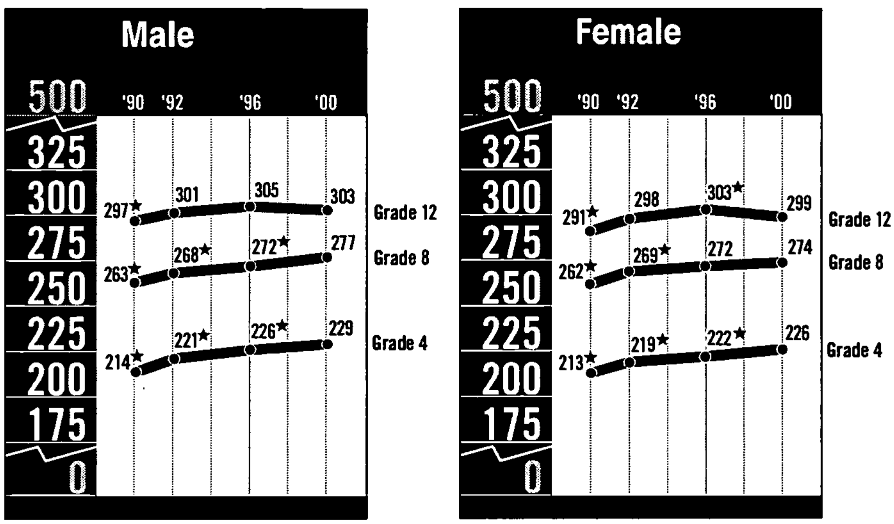
Among fourth-graders, progress has been relatively steady for both males and females throughout the decade, with each year's average score being higher than the previous year. Steady gains are also evident across this ten-year period for male eighth-graders. The average score for female eighth-graders increased from 1990 to 1996, but the apparent increase since 1996 was not statistically significant.

Consistent with the national overall results, the gains made by twelfth-grade male and female students between 1990 and 1996 did not continue through the 2000 assessment. Although the average score for both groups of students remained higher in 2000 than in 1990, there is evidence of a decline since 1996. The

Figure 3.1

National Scale Score Results by Gender

Average mathematics scale scores by gender, grades 4, 8, and 12: 1990–2000



★ Significantly different from 2000.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

apparent decline for male students, however, was not statistically significant.

In 2000, male students outperformed their female peers in grades 8 and 12. However, the apparent score difference between males and females in the fourth grade was not statistically significant.

The percentages of male and female students at or above the mathematics achievement levels and within each achievement level range are presented in figure 3.2. At grade 4, the percentages of both male and female students who performed at or above the *Basic* achievement level increased each assessment year since 1990. Overall gains are also evident in the percentages of students at or above the *Proficient* level, the achievement level identified by the National Assessment Governing Board (NAGB) as the goal for all students. The percentages of male and female fourth-graders performing at this level have at least doubled since 1990—from 13 to 28 percent for male students, and from 12 to 24 percent for female students. Despite some gains since 1990, the percentages of male and female fourth-graders attaining the *Advanced* level remained small in 2000—3 and 2 percent, respectively.

At grade 8, the percentage of male eighth-graders performing at or above the *Basic* level increased each assessment year since 1990. The comparable percentage for female students also increased each year; however, the apparent increase between 1996 and 2000 was not statistically significant. The percentages of students at or above *Proficient* increased between 1990 and 2000—from 17 to 29 percent for males and from 14 to 25 percent for females. Between 1996 and 2000, gains were made by male students at this level, but the apparent increase for female students was not statistically significant. Although the percentages of males and females at the *Advanced* level remained small in 2000 (6 and 4 percent, respectively), for both groups of students these percentages represent an increase from 1990.

At grade 12, the percentages of male and female students at or above *Basic* increased from 1990 through 1996. Although both groups show a decline between 1996 and 2000, the percentages of males and females performing at this level in 2000 remained higher than those in 1990. Performance at or above the *Proficient* level was demonstrated by 20 percent of males and 14 percent of females in 2000. Since 1990 the percentages of male and female twelfth-graders reaching the *Advanced* level have remained mostly stable. In 2000, only 3 percent of males and 1 percent of females demonstrated performance at this highest achievement level.

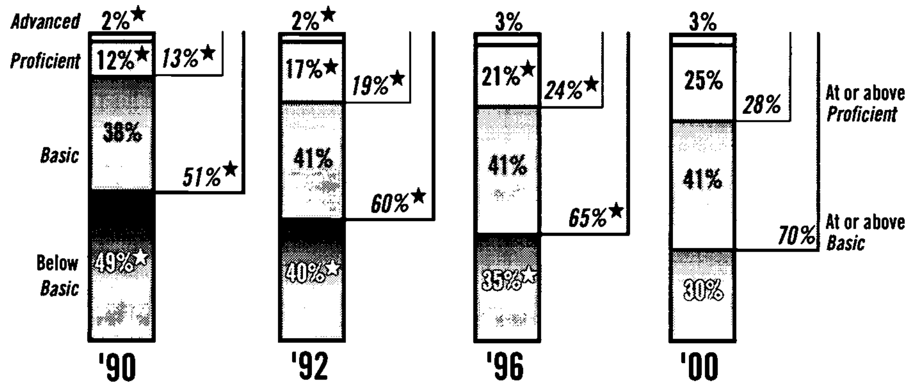
Comparing the performance of male and female students in 2000 by scale scores revealed a difference favoring male students at grades 8 and 12. A comparison of achievement level results shows that a greater percentage of male students at all three grades performed at or above *Proficient* and at the *Advanced* level in 2000 than did female students. Apparent differences in the percentages of males and females at or above *Basic* in 2000 were not statistically significant at any of the three grades.

Figure 3.2

National Achievement Level Results by Gender

Percentages of students within each mathematics achievement level range and at or above achievement levels by gender, grades 4, 8, and 12: 1990–2000

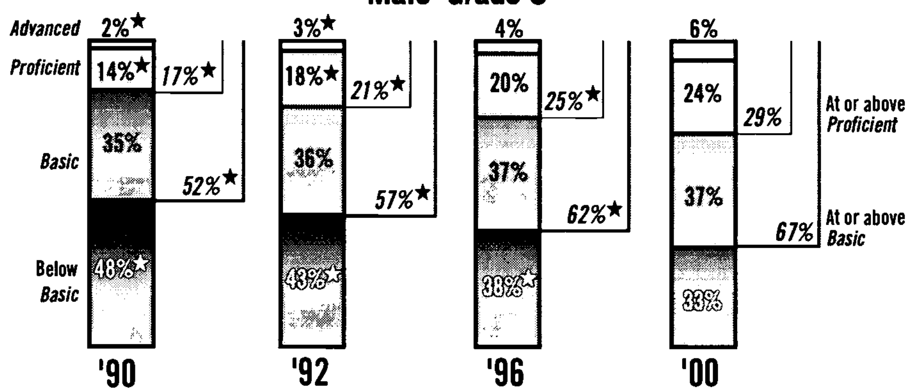
Male–Grade 4



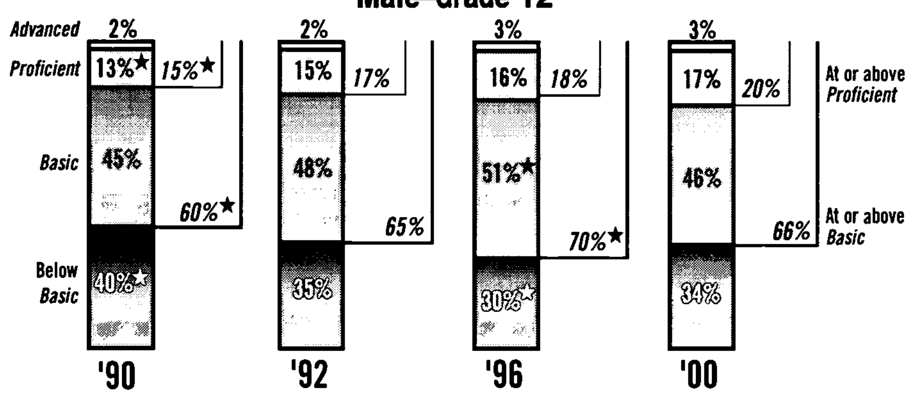
How to read these figures:

- The italicized percentages to the right of the shaded bars represent the percentages of students at or above *Basic* and *Proficient.*
- The percentages in the shaded bars represent the percentages of students within each achievement level.

Male–Grade 8



Male–Grade 12

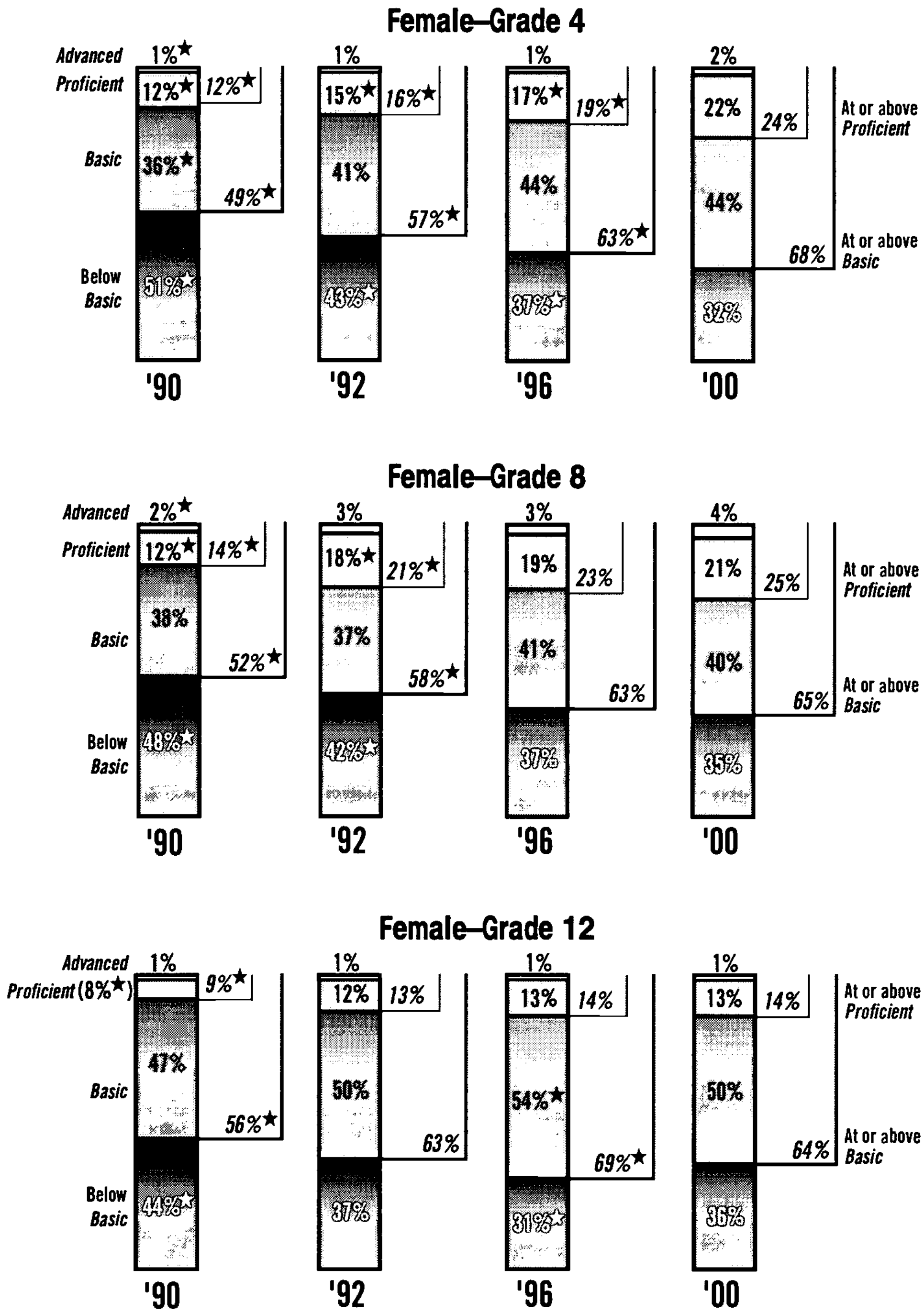


See footnotes at end of figure. ▶

Figure 3.2

National Achievement Level Results by Gender (continued)

Percentages of students within each mathematics achievement level range and at or above achievement levels by gender, grades 4, 8, and 12: 1990–2000



★ Significantly different from 2000.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Race/Ethnicity

Students participating in the assessment were asked to indicate which of the following racial/ethnic subgroups best describes them—white, black, Hispanic, Asian/Pacific Islander, or American Indian (including Alaskan native). Figure 3.3 presents average scale scores for students by these subgroups at grades 4, 8, and 12. Overall, while some groups of students have made progress over the past decade, results are mixed.

At grade 4, white, black, and Hispanic students attained a higher score in 2000 than in either 1990 or 1992, while the apparent increase since 1990 for American Indian students was not statistically significant. Data for Asian/Pacific Islander students were not available for 2000 because special analyses raised concerns about the accuracy and precision of these results (see appendix A for a full discussion of this).

At grade 8, scores for white students were higher in 2000 than in any of the previous three assessment years: 1990, 1992, or 1996. Scores for black and Hispanic eighth-graders also were up in 2000 over both 1990 and 1992. However, the apparent increases from 1990 for Asian/Pacific Islander and American Indian eighth-graders were not statistically significant.

Of the three grades assessed, grade 12 saw the fewest increases in students' mathematics performance over the past decade. Despite increases in the mathematics scores of black and Hispanic students from 1990 to 1992, the average scores for both these groups of students in 2000 was similar to that in 1990. White students showed a 7-point increase in scores between 1990 and 2000.

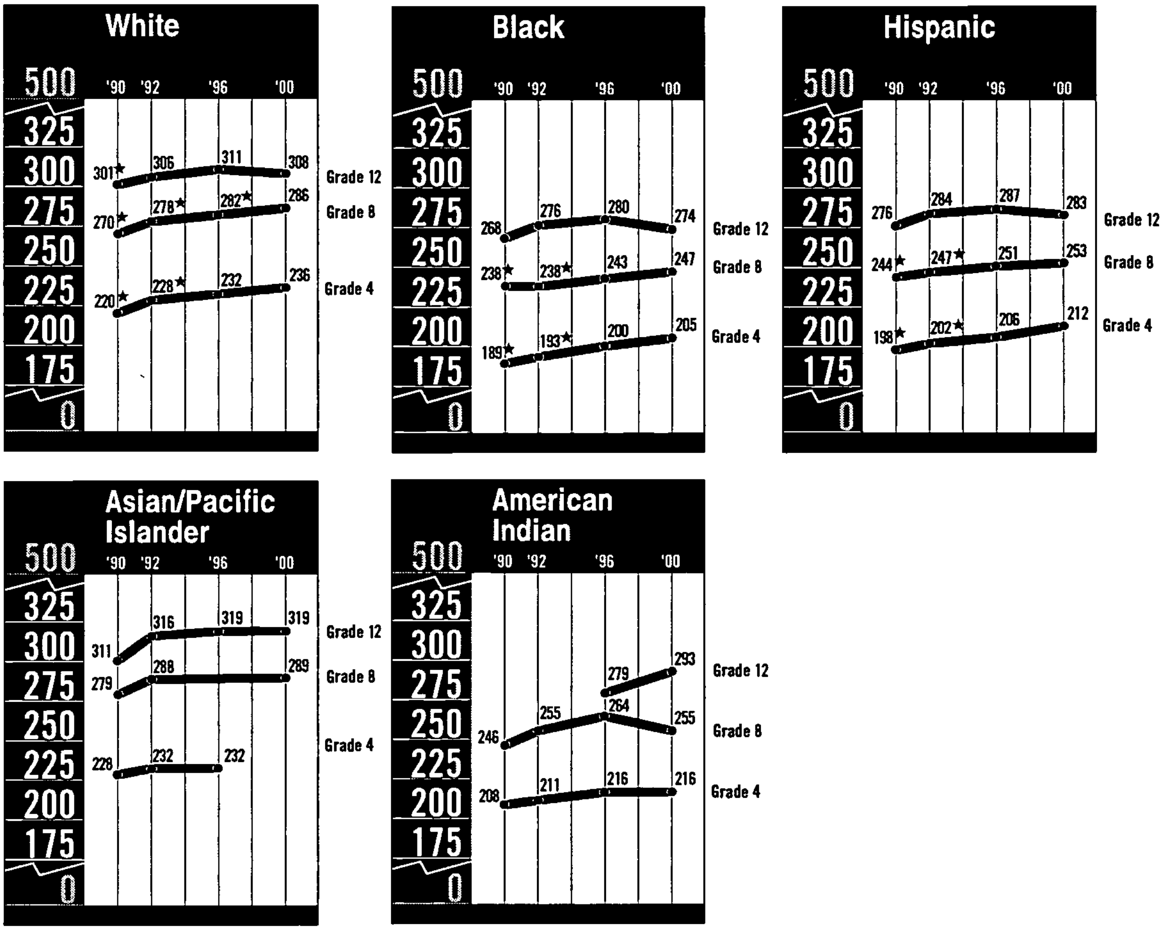
As in previous NAEP mathematics assessments, differences by racial/ethnic subgroup can be seen in students' 2000 mathematics performance at all three grade levels.[1] White and Asian/Pacific Islander students scored higher, on average, than their black, Hispanic and American Indian counterparts at all three grades. Asian/Pacific Islander students scored higher than white students at grade 12.

[1] Reese, C.M., Miller, K.E., Mazzeo, J., & Dossey, J.A. (1997). *NAEP 1996 mathematics report card for the nation and states*. Washington, DC: National Center for Education Statistics.

Figure 3.3

National Scale Score Results by Race/Ethnicity

Average mathematics scale scores by race/ethnicity, grades 4, 8, and 12: 1990–2000



★Significantly different from 2000.

NOTE: Sample size was insufficient to permit a reliable estimate for American Indian students in grade 12 in 1990 and 1992.

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 the body of this report. See appendix A for a more detailed discussion.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

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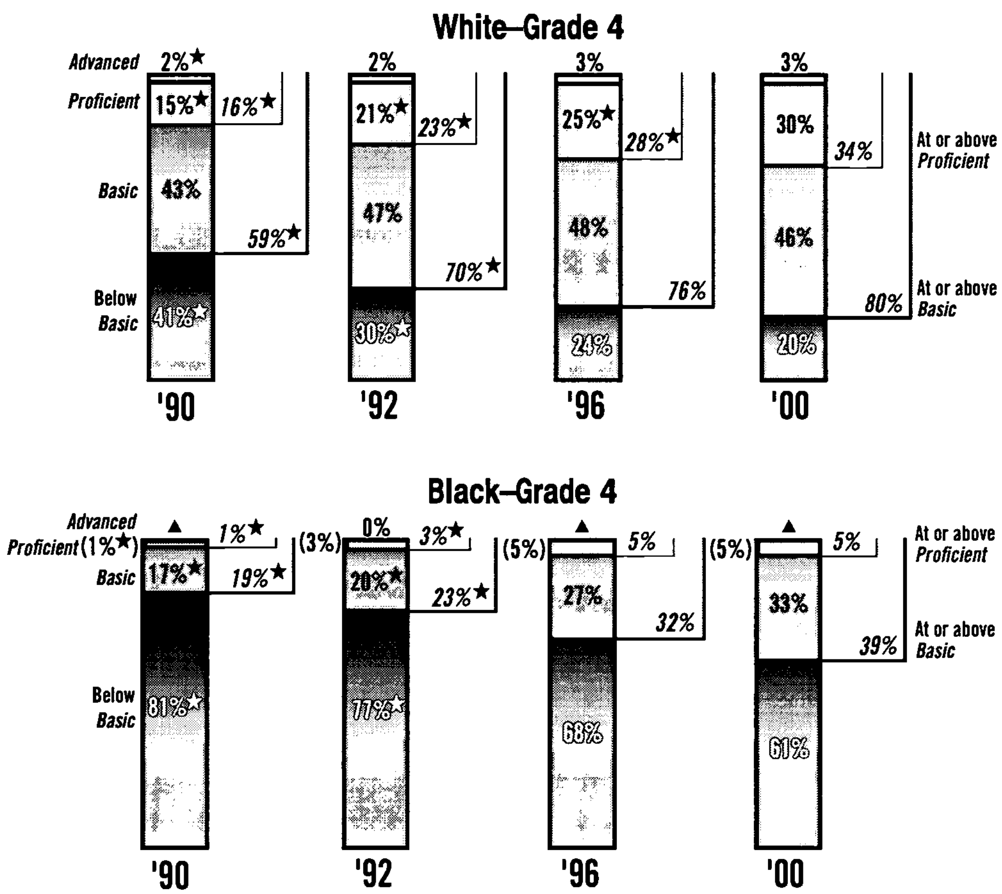
Achievement level results for the racial/ethnic subgroups are presented in figures 3.4a–c. As with the scale score results for 2000, achievement level results for these subgroups of students are mixed.

At grade 4, the percentage at or above *Proficient* increased between 1990 and 2000 for four of the groups of students—white, black, Hispanic, and American Indian. (As noted earlier, results could not be reported for Asian/Pacific Islander fourth-graders in 2000.) In fact, for each of these groups, the percentage at or above *Proficient* in 2000 was at least double that in 1990. The percentage of white fourth-graders at or above *Proficient* level increased in each assessment year from 1990 to 2000, while percentages of black and Hispanic fourth-graders increased in 2000 over 1990 and 1992. There were also higher percentages of white, black, and Hispanic students in 2000 at or above *Basic* than in 1990 or 1992. Percentages at the *Advanced* level remained small for all groups in 2000, though there was a slight increase since 1990 for white fourth-graders.

Figure 3.4a

National Achievement Level Results by Race/Ethnicity

Percentages of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity, grade 4: 1990–2000



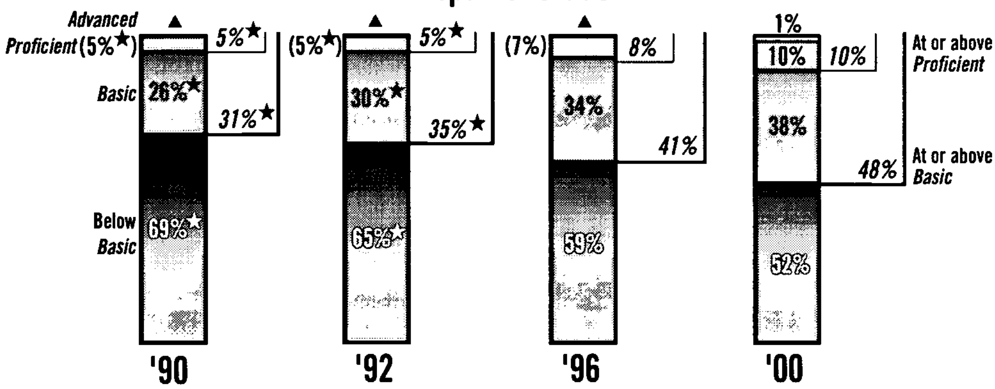
See footnotes at end of figure. ▶

Figure 3.4a

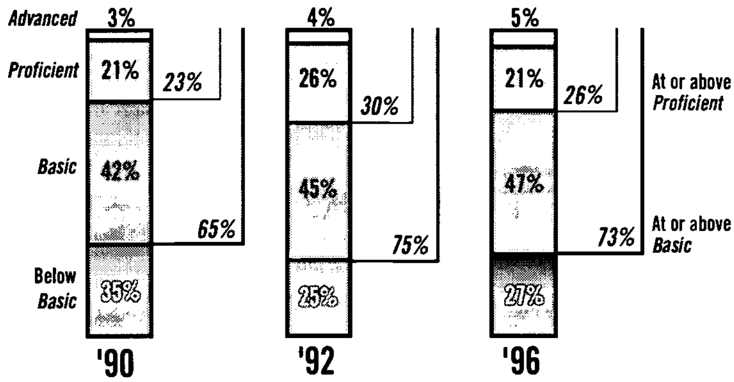
National Achievement Level Results by Race/Ethnicity (continued)

Percentages of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity, grade 4: 1990–2000

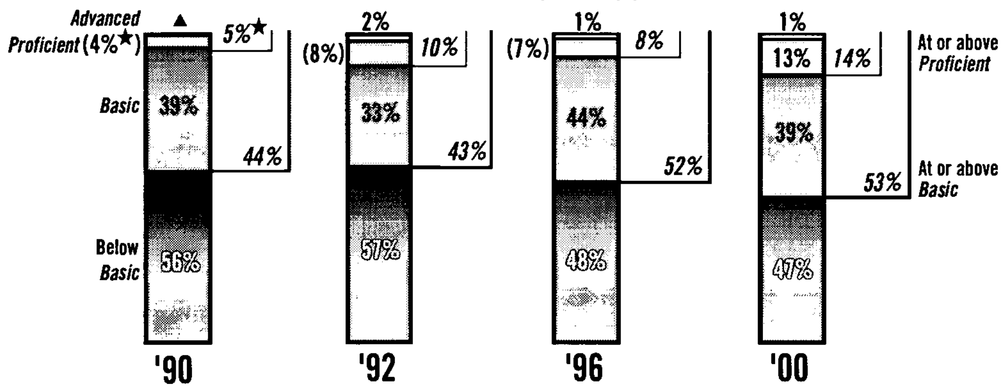
Hispanic–Grade 4



Asian/Pacific Islander–Grade 4



American Indian–Grade 4



★ Significantly different from 2000.

▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding. Special analyses raised concerns about the accuracy and precision of national grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

At grade 8, there were higher percentages of white and Hispanic students at or above *Proficient* in 2000 than in 1990 and higher percentages of white, black, and Hispanic students at or above this level than in 1992. At or above the *Basic* level, there were higher percentages of white, black and Hispanic students in 2000 than in 1990 or 1992. As seen at grade 4, few students attained the *Advanced* level, with the only increase in occurring for white students in 2000 over 1990 and 1992.

Figure 3.4b

National Achievement Level Results by Race/ Ethnicity

Percentages of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity, grade 8: 1990–2000

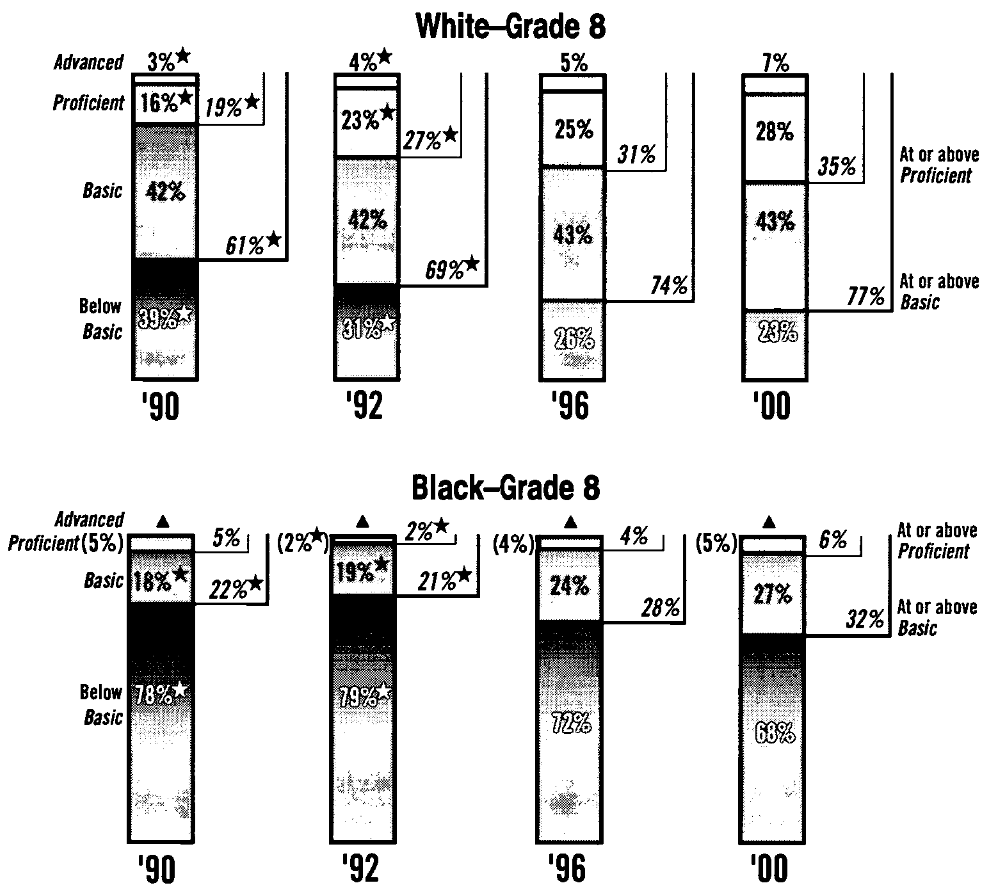


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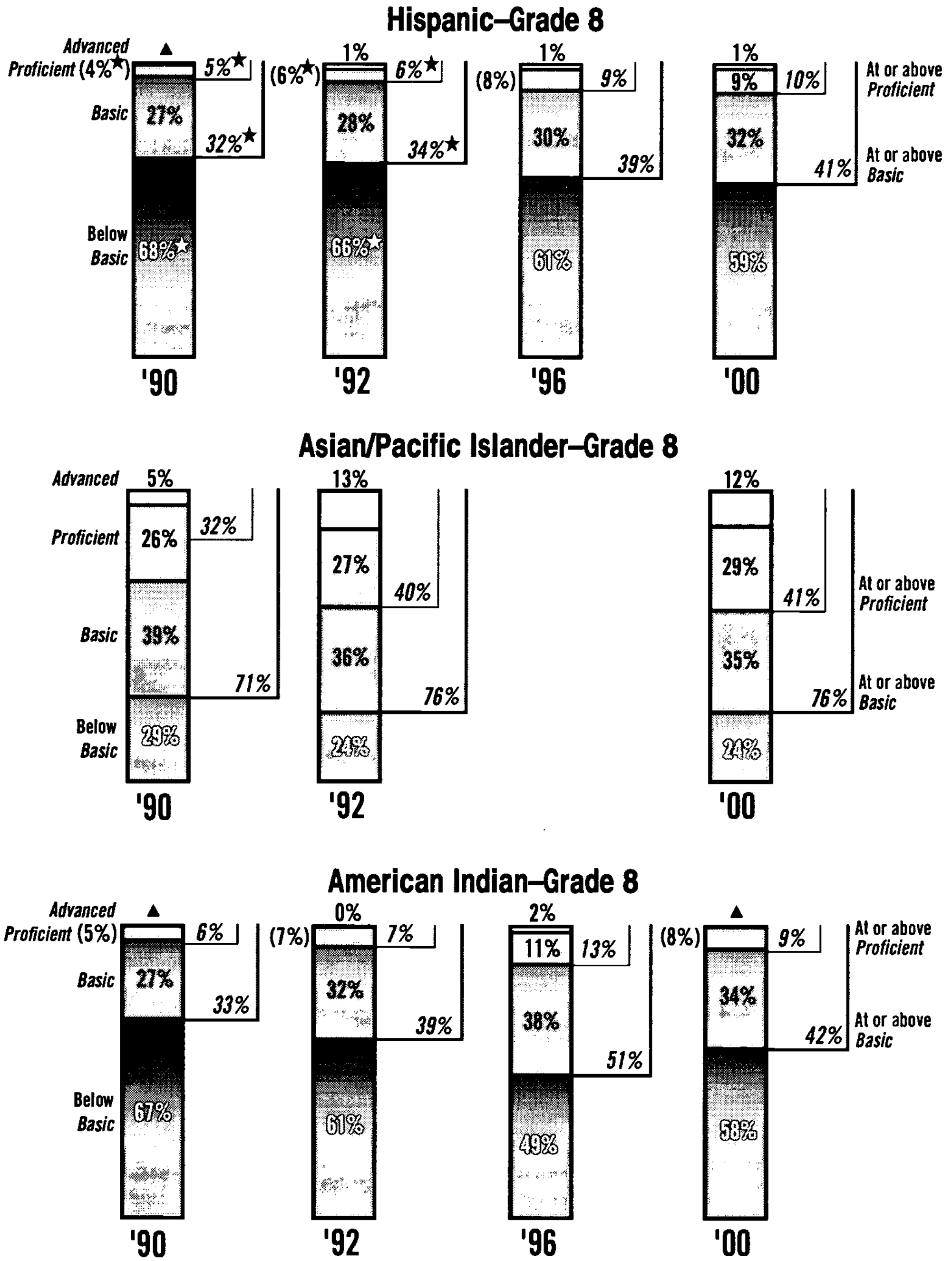
Figure 3.4b

National Achievement Level Results by Race/Ethnicity (continued)

Percentages of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity, grade 8: 1990–2000



★ Significantly different from 2000.

▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding. Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

At grade 12, there were few changes in students' performance over the past decade. The percentages of white students at or above *Proficient* and at or above *Basic* were higher in 2000 than in 1990. There were also higher percentages of white twelfth-graders at the *Proficient* level in 2000 than in 1990 and at the *Basic* level in 2000 over 1996. These increases for white students were accompanied by a concomitant decrease in 2000 since 1990 at the below *Basic* range.

Figure 3.4c

National Achievement Level Results by Race/Ethnicity

Percentages of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity, grade 12: 1990–2000

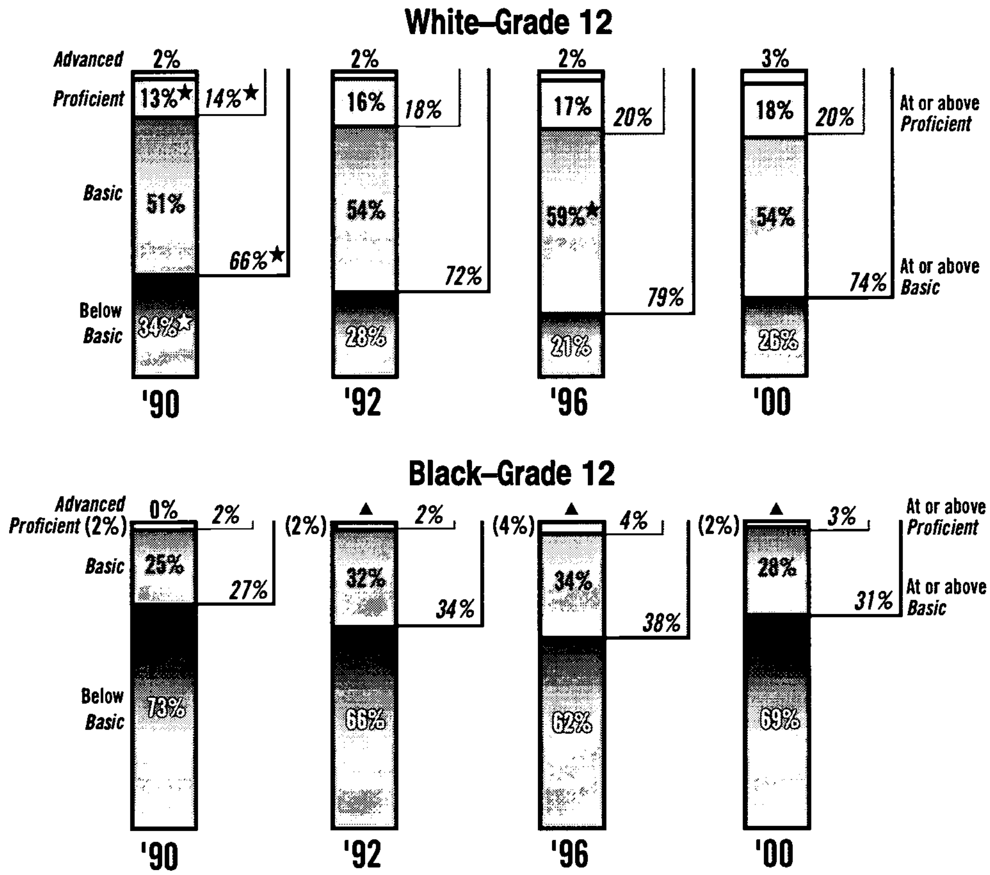


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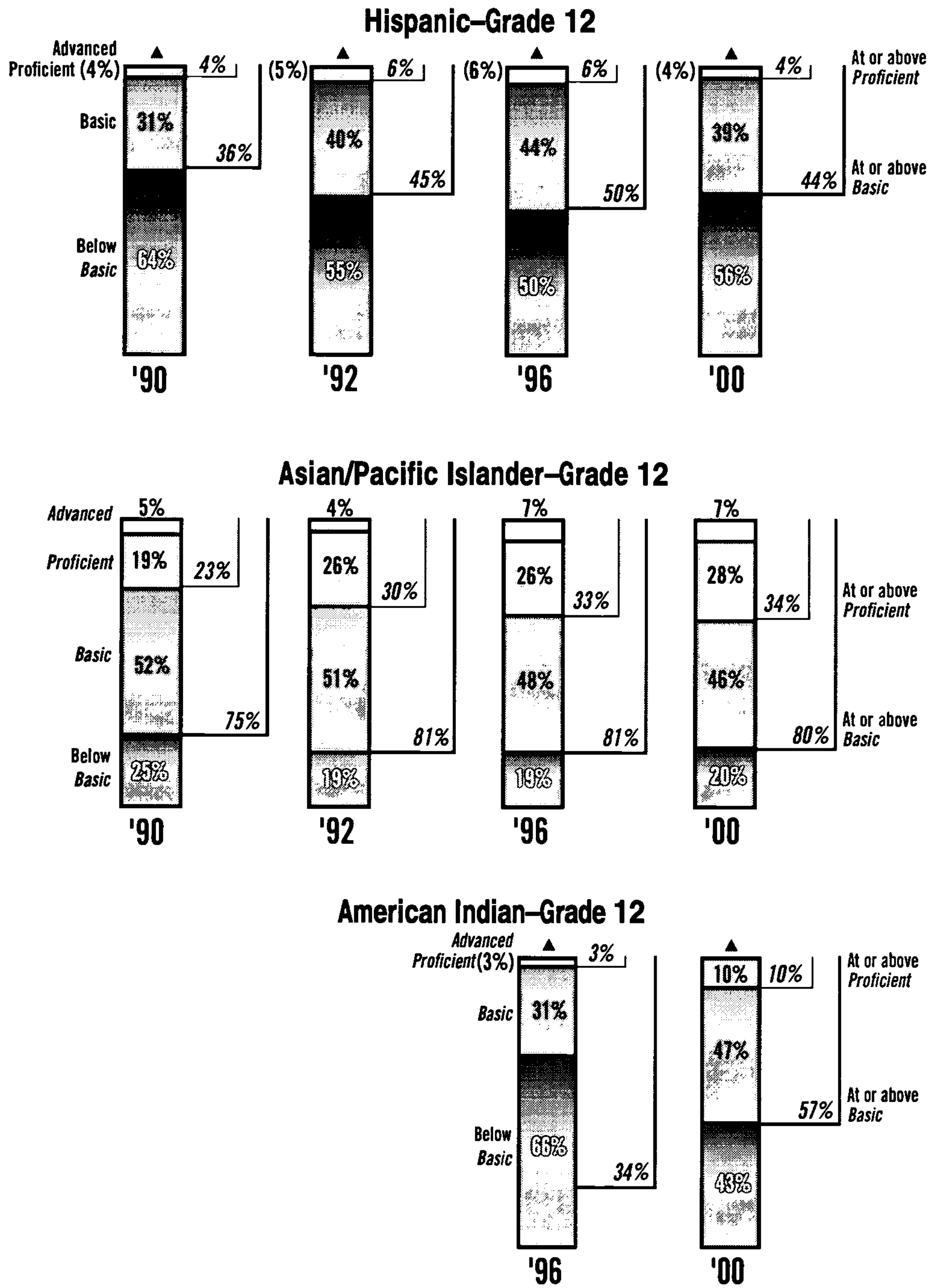
Figure 3.4c

National Achievement Level Results by Race/ Ethnicity (continued)

Percentages of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity, grade 12: 1990–2000



★Significantly different from 2000.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding. Sample size was insufficient to permit a reliable estimate for American Indian students in 1990 and 1992.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Trends in Scale Score Differences Between Selected Subgroups

Results from the past four NAEP mathematics assessments allow for comparison of performance differences between male and female students and between racial/ethnic subgroups. These differences should be interpreted with caution. The average score of a selected subgroup does not represent the entire range of performance within that group. Furthermore, differences between groups of students can not be attributed solely to group identification.

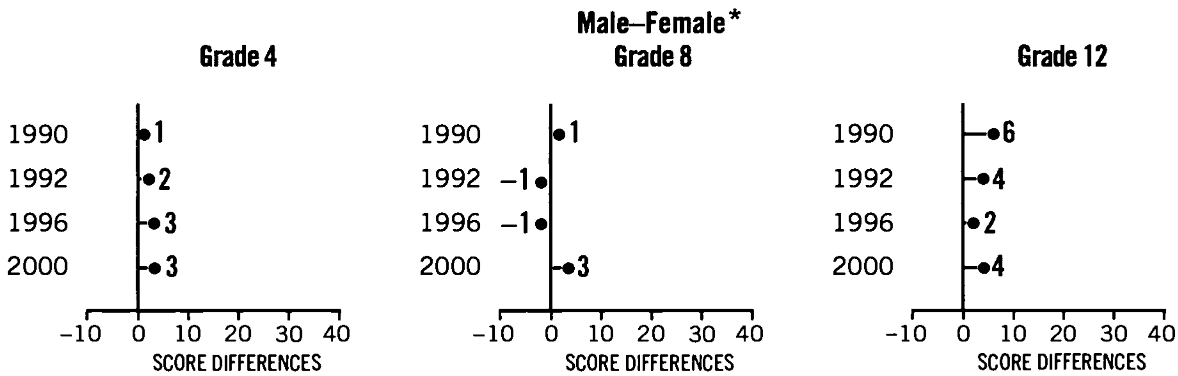
A complex array of educational and social factors interacts to affect average student performance. Analysis of the patterns of NAEP score gaps by subgroup both within and across states has been a frequent topic in recent education policy research.[2]

Differences between the average scale scores of male and female students are presented in figure 3.5. Although significant at grades 8 and 12 in 2000, the gap between average scale scores by gender has been quite small and has fluctuated only slightly over the past four mathematics assessments.

Figure 3.5

National Scale Score Differences by Gender

Gender gaps in average mathematics scale scores, grades 4, 8, and 12: 1990–2000



* Score differences are calculated based on differences between unrounded average scale scores.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

[2] Barton, P.E. (2001) *Raising achievement and reducing gaps: Reporting progress toward goals for academic achievement.* Washington, DC: National Education Goals Panel.

Haycock, K., Jerald, C., & Huang, S. (2001). New frontiers for a new century: A national overview. Thinking K-16, *Education Trust.*, Vol. 5, Issue 2.

Sadowski, M. (2001). Closing the gap one school at a time, Harvard Education Letter, *Research OnLine.* [Available online at http://www.edletter.org/current/].

The College Board, (1999). *Reaching the top: A report of the national task force on minority high achievement.* New York: Author. [Available online at http://www.collegeboard.com].

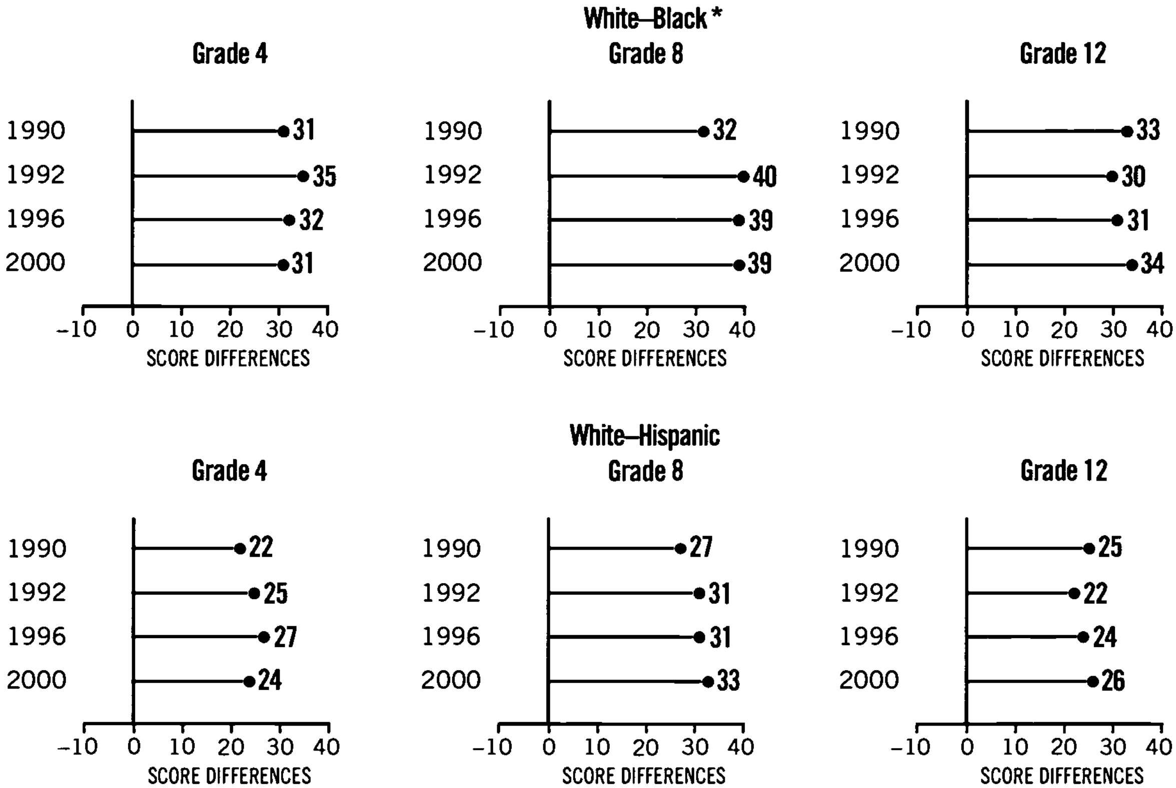
Jencks, C. and Phillips, M. (eds.) (1998). The black-white test score gap. Washington, DC: Brookings Institution.

The gaps in scale scores between white and black students and between white and Hispanic students are shown in figure 3.6. Unlike the small gaps seen between the genders, the size of the scale score gaps between the racial/ethnic subgroups presented here are much larger. The widening of the gap from 32 to 40 points between white and black eighth-graders from 1990 to 1992 is the only statistically significant change between either white and black students or white and Hispanic students over the past ten years. The 39 point gaps seen in 1996 and 2000 between white and black students at grade 8 are not significantly different from the gap in 1990.

Figure 3.6

National Scale Score Differences by Race/Ethnicity

Racial/ethnic gaps in average mathematics scale scores, grades 4, 8, and 12: 1990–2000



* Score differences are calculated based on differences between unrounded average scale scores.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Parents' Highest Level of Education

Students who participated in the NAEP mathematics assessment were asked to indicate the highest level of education completed by each parent. Four levels of education were identified: did not finish high school, graduated from high school, some education after high school, and graduated from college. Students could also choose the response, "I don't know." For this analysis, the highest education level reported for either parent was used. Data are presented for students in grades 8 and 12 only. Data were not collected at grade 4 because in previous NAEP assessments fourth-graders' responses about their parents' education were highly variable and contained a large percentage of "I don't know" responses.

The scale score results for all levels of student-reported parent education are presented in figure 3.7. Almost one-half of both the eighth- and twelfth-graders (45 and 46 percent, respectively) reported that at least one parent had graduated college, whereas a small percentage of students reported that their parents had not graduated high school (7 and 6 percent at grades 8 and 12, respectively). Additional information on the percentages of students reporting parents' highest level of education is available in appendix B.

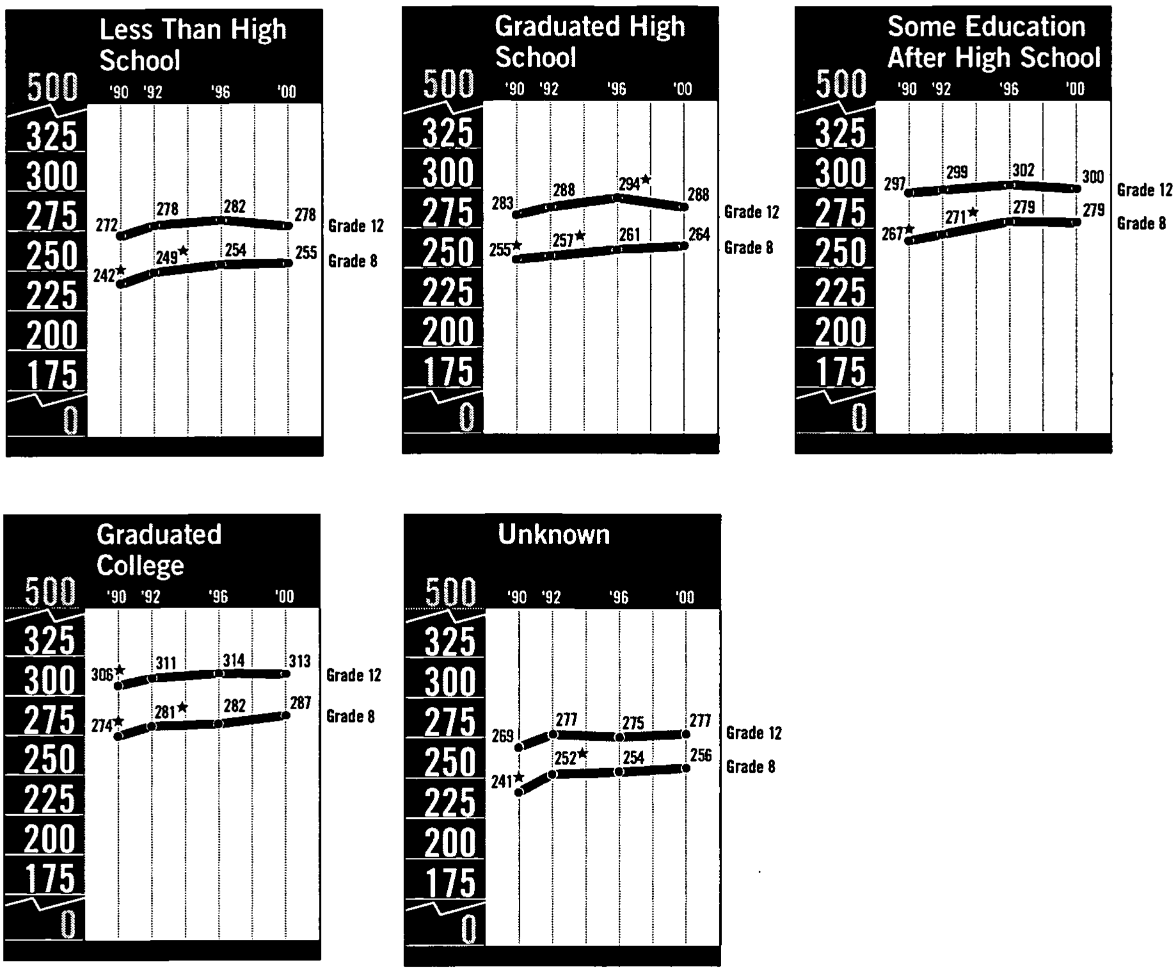
At grade 8, scale scores for students were higher in 2000 than in 1990 and 1992, regardless of the level of parental education reported. None of the other apparent changes at this grade were statistically significant.

At grade 12, the scale score for only one group of twelfth-graders—students whose parents graduated college—was higher in 2000 compared to 1990. None of the other apparent changes between 1990 and 2000 in performance by parental level of education was statistically significant, although there was a performance decline from 1996 to 2000 of those students whose parents' highest level of education was high school graduate.

Overall there is a clear, positive association at both grades 8 and 12 between increasing level of parental education and increasing scale scores on the mathematics assessment.

Figure 3.7
National Scale Score Results by Parents' Education

Average mathematics scale scores by student-reported parents' highest level of education, grades 8 and 12: 1990–2000



★ Significantly different from 2000.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

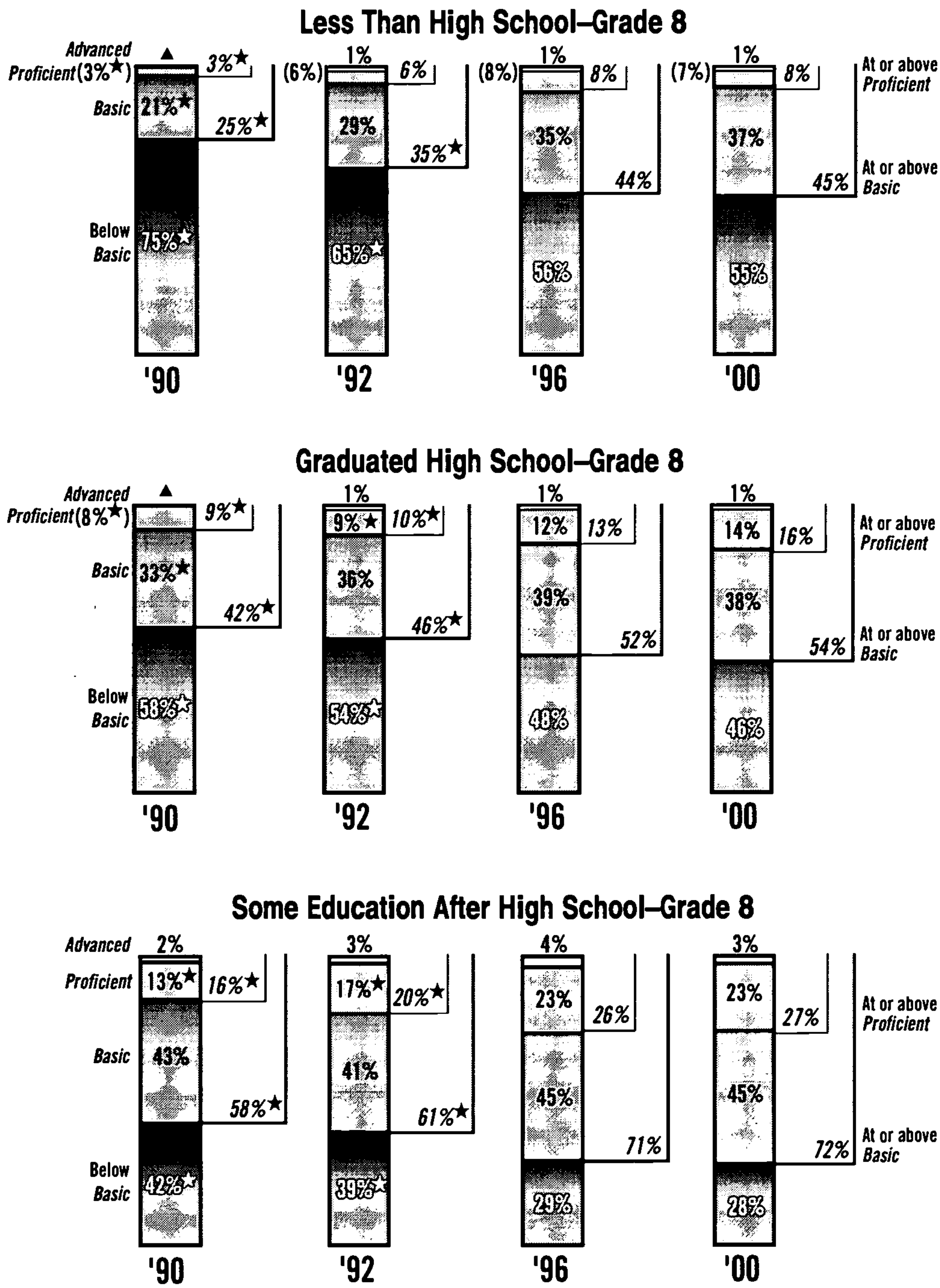
Achievement level results across years by level of parental education are presented in figure 3.8a and b. At grade 8, students in the 2000 assessment at each level of parental education had a higher percentage at or above *Basic* than their counterparts in 1990 or in 1992 and a higher percentage at or above *Proficient* than in 1990. At grade 12 there was an increase between 1990 and 2000 in the percentages of students at or above *Proficient* and at or above *Basic* who reported that their parents had graduated from college. None of the other apparent changes since 1990 at this grade level were statistically significant.

89

Figure 3.8a

National Achievement Level Results by Parents' Education

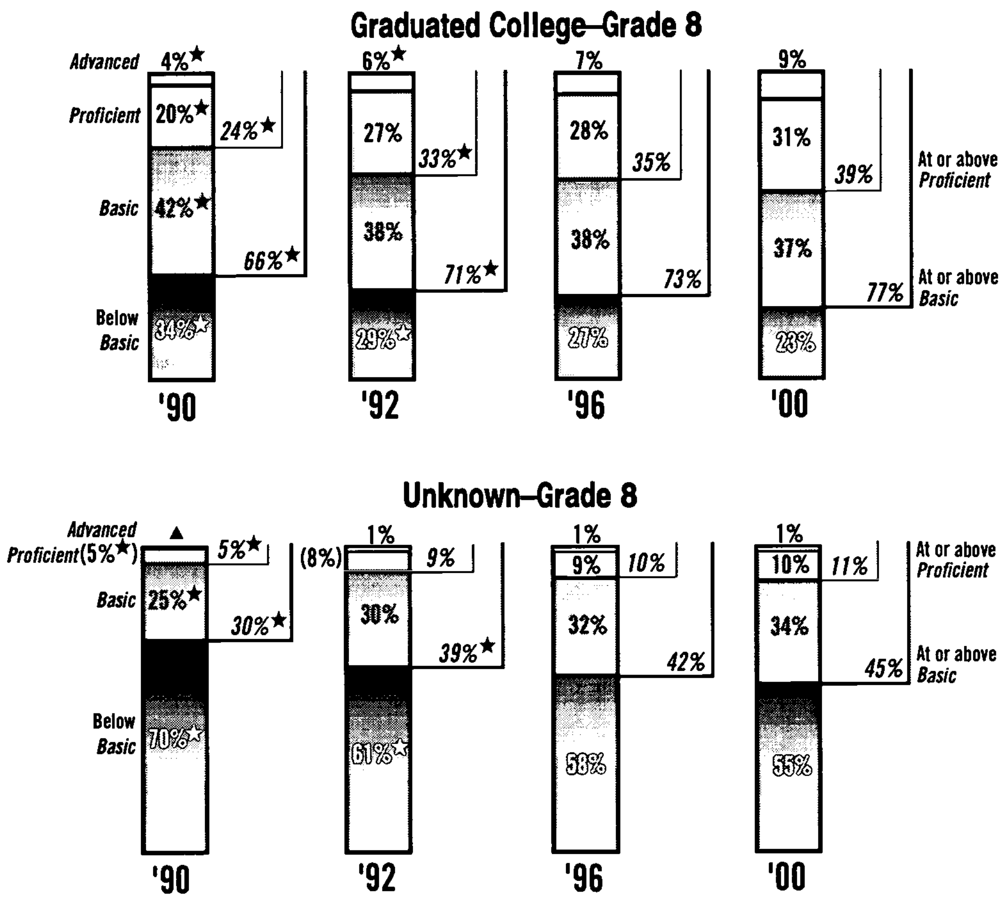
Percentage of students within each mathematics achievement level range and at or above achievement levels by parents' highest level of education, grade 8: 1990–2000



See footnotes at end of figure. ▶

Figure 3.8a
National Achievement Level Results by Parents' Education
(continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by parents' highest level of education, grade 8: 1990–2000



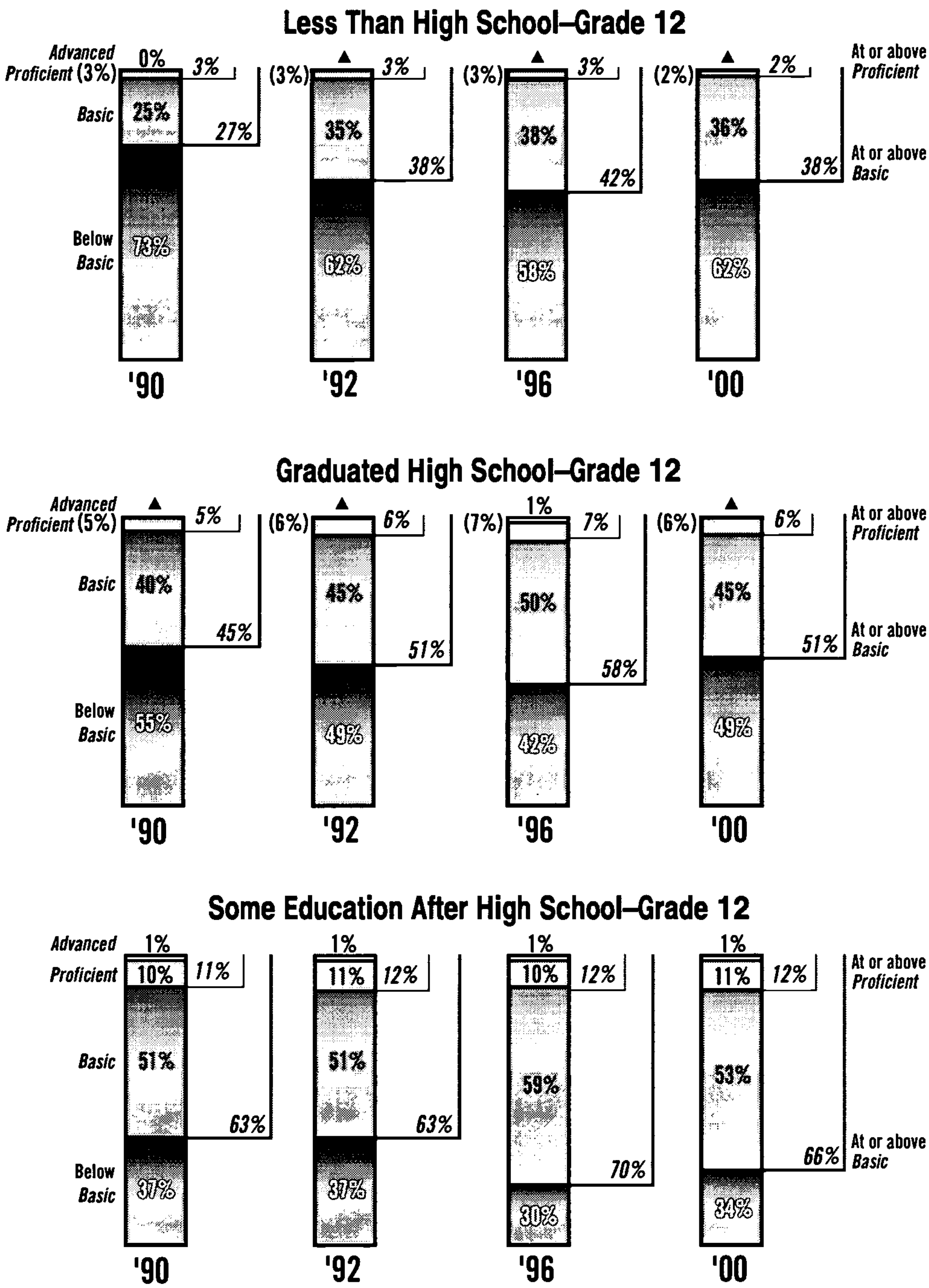
★ Significantly different from 2000.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

91

Figure 3.8b

National Achievement Level Results by Parents' Education

Percentage of students within each mathematics achievement level range and at or above achievement levels by parent's highest level of education, grade 12: 1990–2000



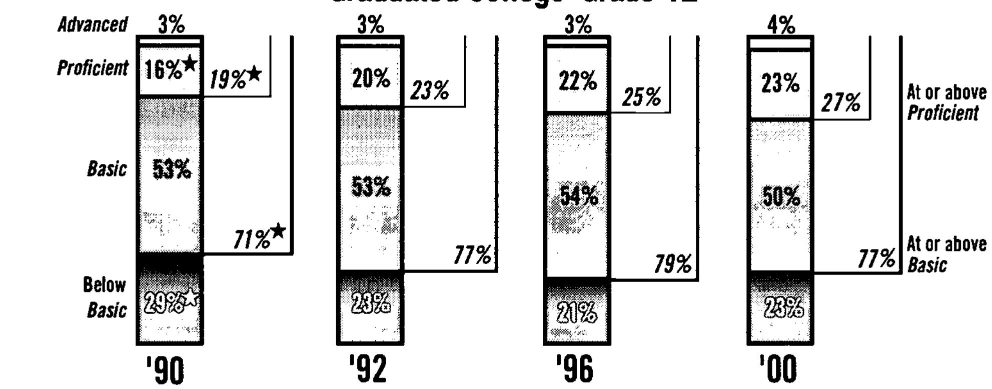
See footnotes at end of figure. ▶

Figure 3.8b

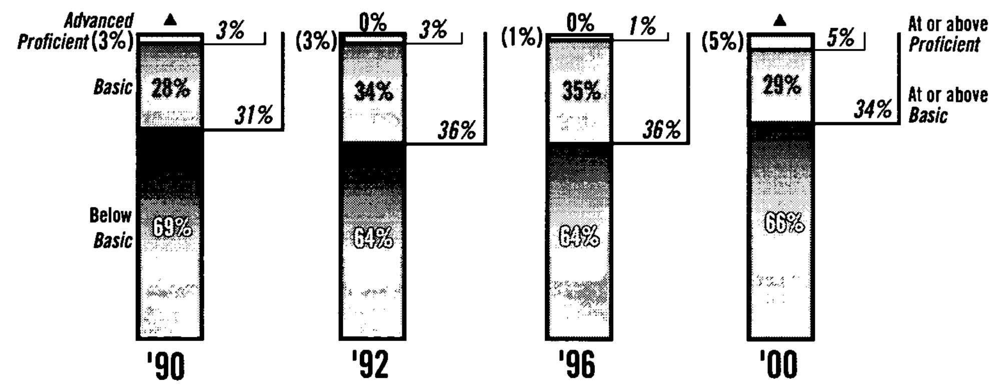
National Achievement Level Results by Parents' Education (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by parent's highest level of education, grade 12: 1990–2000

Graduated College–Grade 12



Unknown–Grade 12



★ Significantly different from 2000.

▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

93

Type of School

The schools that participate in the NAEP assessment are classified as either public or nonpublic. A further distinction is then made within the nonpublic classification between schools that are Catholic and other nonpublic schools.[3] Differences in performance between public and nonpublic schools surveyed and reported on in NAEP mathematics assessments have shown that students attending nonpublic schools outperform their public school peers.[4] Despite this pattern of performance results, readers are cautioned about the comparative quality of instruction in public and nonpublic schools. Socioeconomic and sociological factors that may affect student performance should be considered when interpreting these results.

Average mathematics scale scores by type of school are presented in figure 3.9. In 2000, as in previous NAEP assessments, students attending nonpublic schools—both Catholic and other nonpublic—had higher mathematics scale scores than did students attending public schools at each of the three grades. However, students in public schools at grades 4 and 8 showed the steadiest improvement, with scores rising regularly in every assessment from 1990 to 2000. At grade 12, students' average scores in all school types have been relatively flat since 1992. However, twelfth-graders' scores in each of the school types were higher in 2000 than in 1990.

[3] More detail on results by school type including additional breakouts by types of nonpublic schools are available at the NAEP website (http://nces.ed.gov/nationsreportcard).

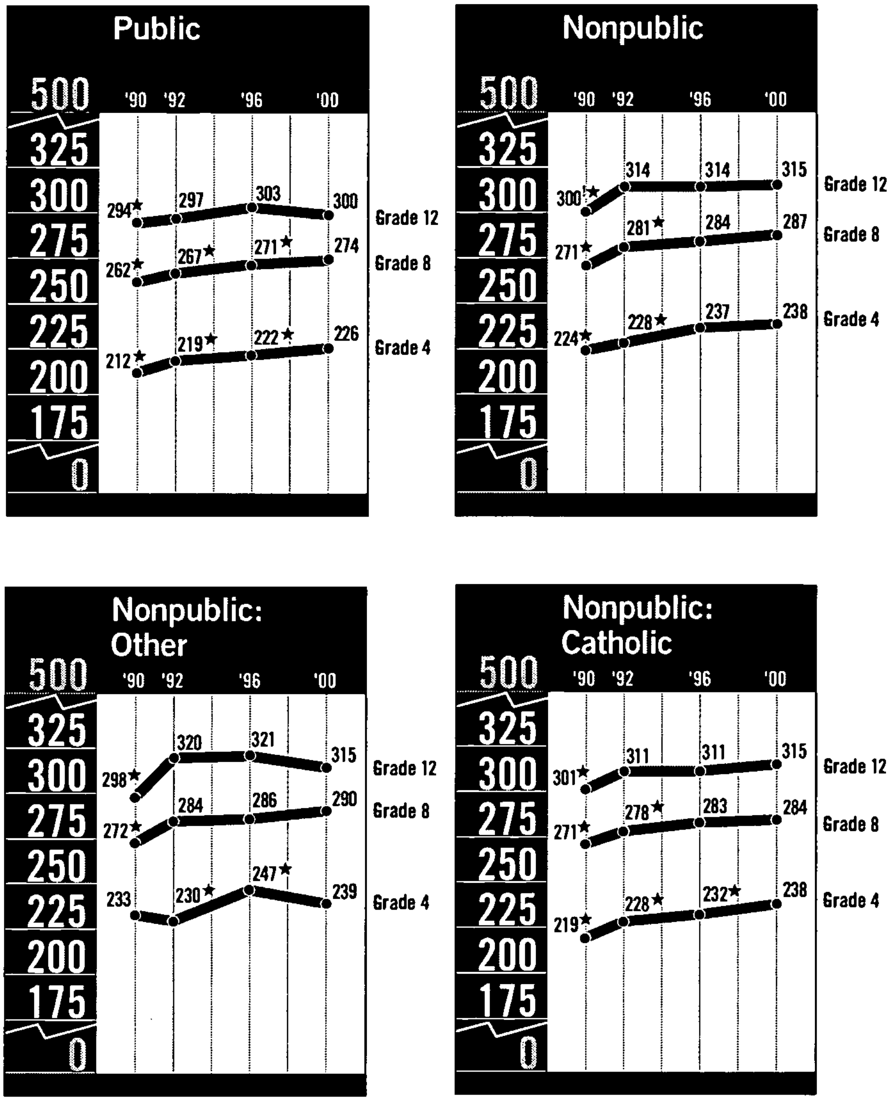
[4] Campbell, J.R., Voelkl, K.E., & Donahue, P.L. (1997). *NAEP 1996 trends in academic progress.* Washington, DC: National Center for Education Statistics.

Campbell, J.R., Hombo, C.M., & Mazzeo, J. (2000) *NAEP 1999 trends in academic progress: Three decades of student performance.* Washington, DC: National Center for Education Statistics (NCES 2000-469).

Figure 3.9

National Scale Score Results by Type of School

Average mathematics scale scores by type of school, grades 4, 8, and 12: 1990–2000



★ Significantly different from 2000.

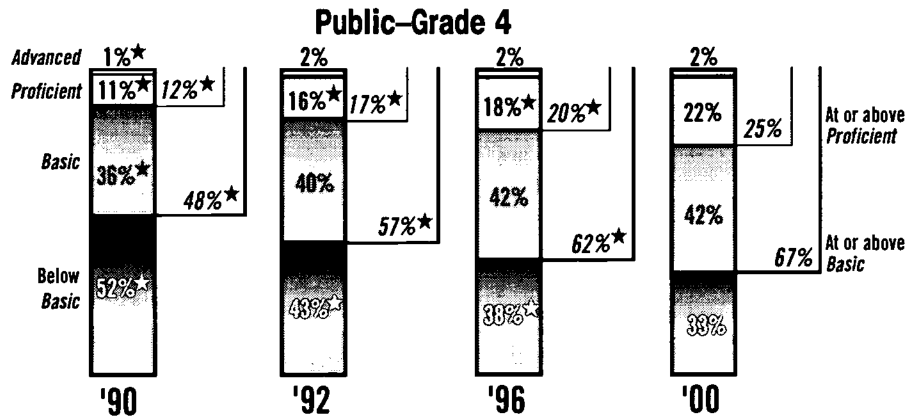
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Achievement level results by school type are presented in figures 3.10a-c. At grade 4, the percentages of public and nonpublic school students performing at or above the *Proficient* achievement level increased between 1990 and 2000. The percentage of students performing at or above *Proficient* at Catholic schools also increased in 2000 in comparison to 1990. Despite some fluctuation, the apparent increase between 1990 and 2000 in the percentage of other nonpublic school students (i.e., non-Catholic schools) at or above *Proficient* was not statistically significant. A similar pattern was evident for the percentage of students at or above *Basic*. There were also steady increases in the percentages of public school students performing at or above the *Basic* level between 1990 and 2000, while the percentages of nonpublic and Catholic school students at or above this level increased in 2000 over 1990 and 1992, and those of other nonpublic students increased between 1992 and 2000.

Figure 3.10a

National Achievement Level Results by Type of School

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of school, grade 4: 1990–2000



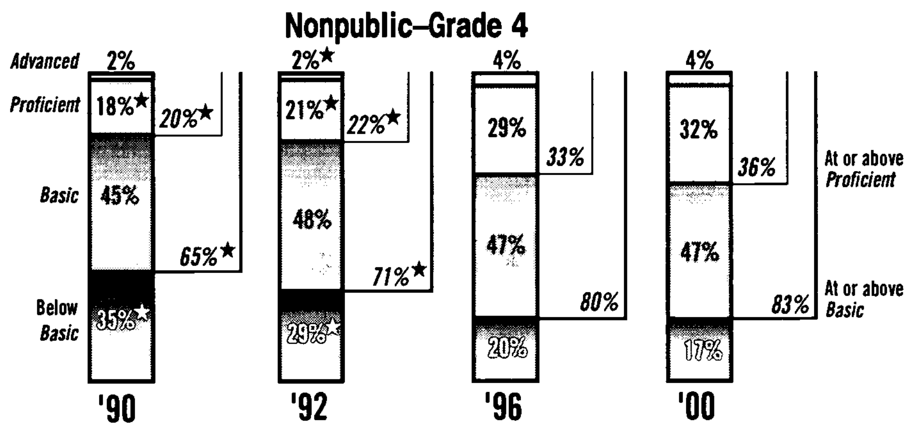


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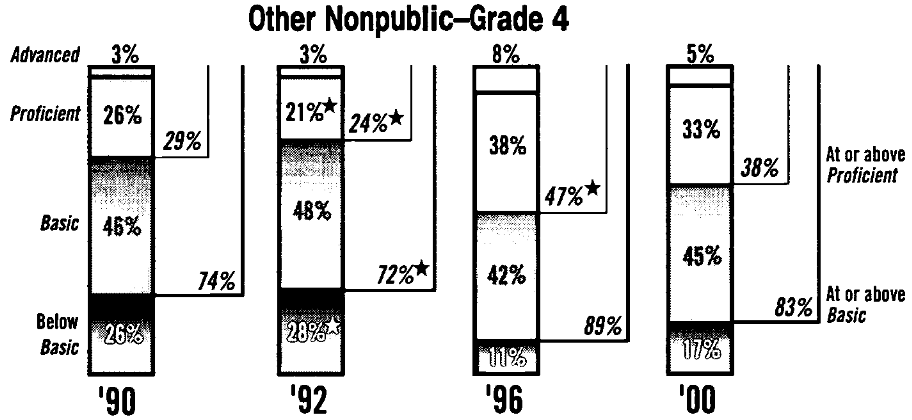
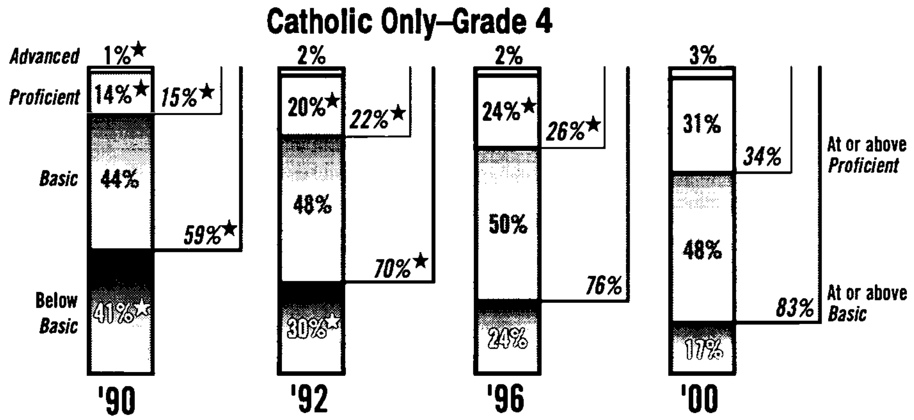
Figure 3.10a

National Achievement Level Results by Type of School (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of school, grade 4: 1990–2000





★ Significantly different from 2000.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

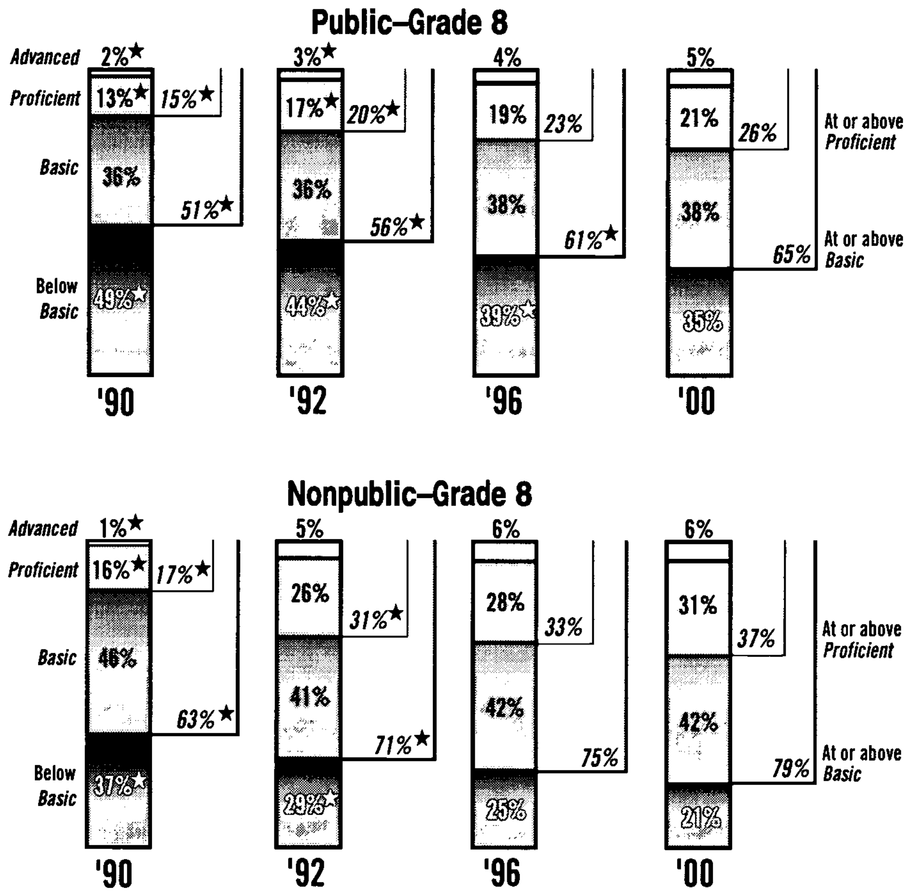
97

At grade 8, all of the school types had higher percentages of students at or above *Proficient* and at or above *Basic* in 2000 than in 1990. However, none of the apparent increases from 1996 to 2000 in percentages of students at or above *Proficient* were statistically significant for any school type. Students in public schools at grade 8 were the only group to have higher percentages at or above *Basic* in 2000 compared with 1996.

Figure 3.10b

National Achievement Level Results by Type of School

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of school, grade 8: 1990–2000

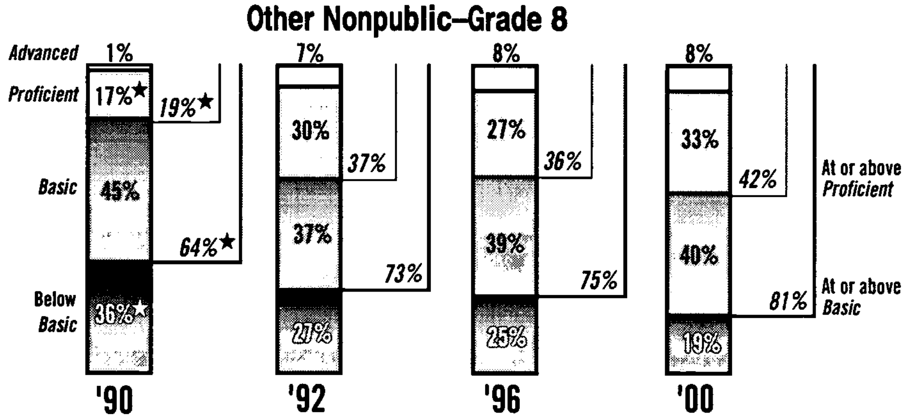


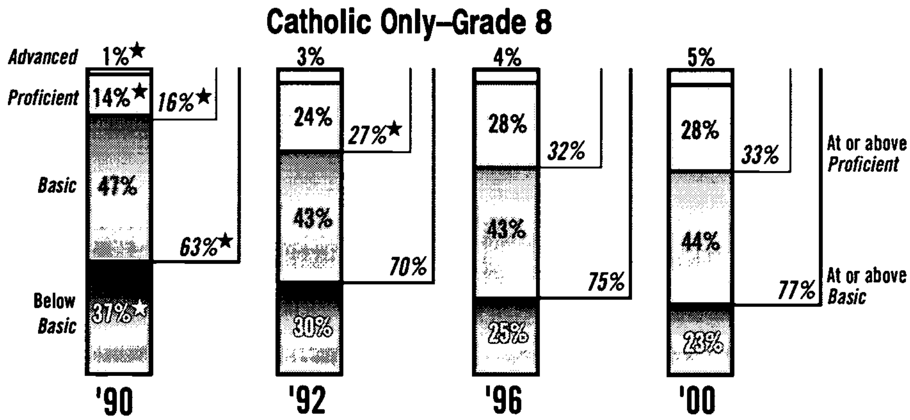
See footnotes at end of figure. ▶

Figure 3.10b

National Achievement Level Results by Type of School (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of school, grade 8: 1990–2000





★ Significantly different from 2000.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

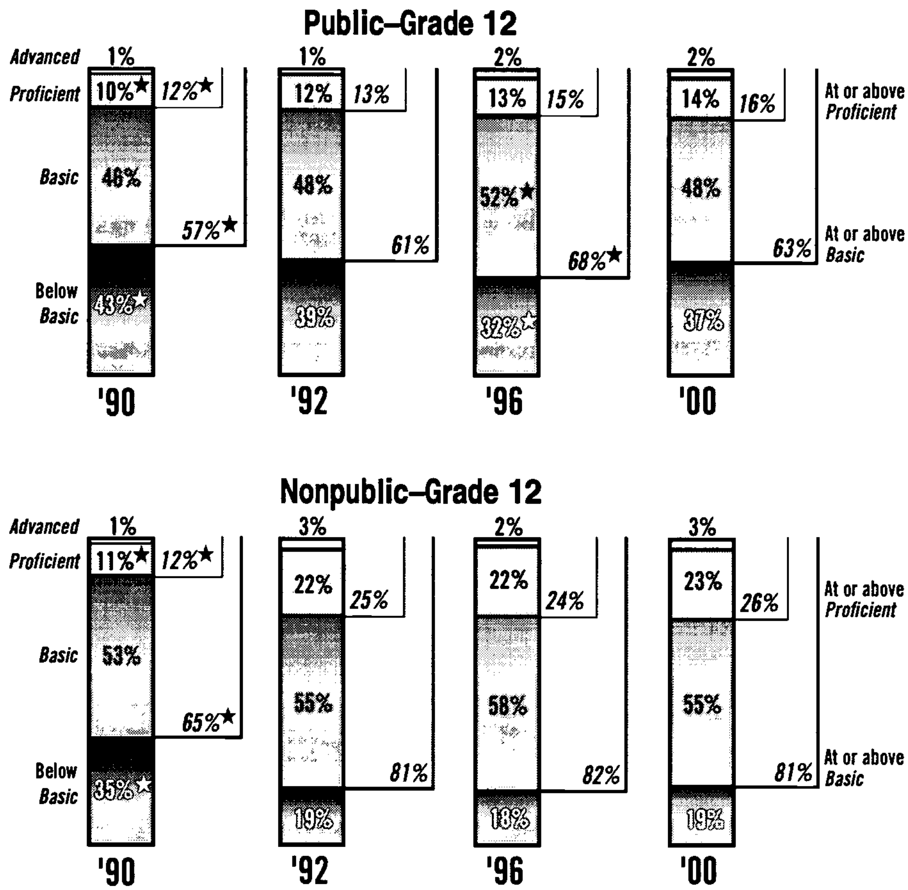
99

At grade 12, as at grade 8, all of the school types had higher percentages of students at or above the *Proficient* and *Basic* achievement levels in 2000 than in 1990. There was a decline, however, between 1996 and 2000 in the percentage of twelfth-graders attending public school who were at or above the *Basic* level.

Figure 3.10c

National Achievement Level Results by Type of School

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of school, grade 12: 1990–2000

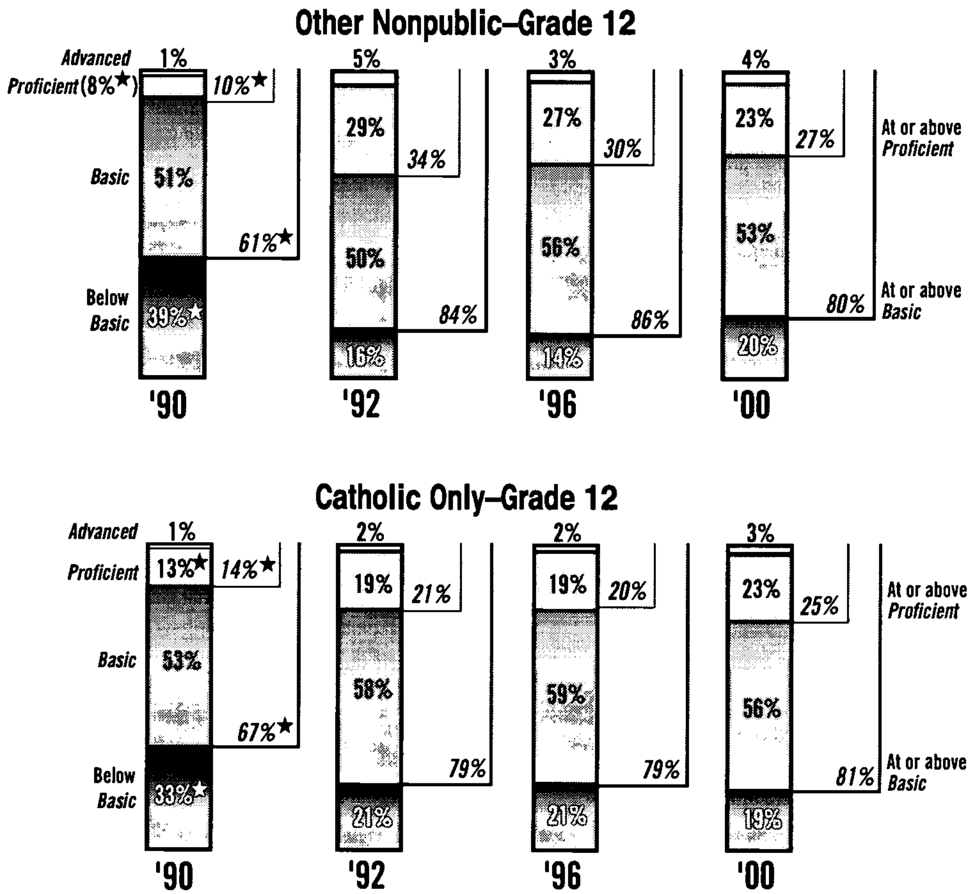


See footnotes at end of figure. ▶

Figure 3.10c

National Achievement Level Results by Type of School (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of school, grade 12: 1990–2000



★ Significantly different from 2000.

NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

101

Type of Location

The schools from which NAEP draws its samples of students are classified according to their type of location. Based on Census Bureau definitions of metropolitan statistical areas, including population size and density, the three mutually exclusive categories are: central city, rural/small town, and urban fringe/large town. Because of slight changes by the Census Bureau in the definitions of these categories, schools were not classified in exactly the same way in 2000 as in previous years in terms of location type. Therefore, comparisons to previous years are not possible, and only the data for the 2000 assessment are reported. More information on the definitions of the 2000 assessment classifications of location type is given in appendix A.

The performance of students in the three grades by type of school location is shown in table 3.1. At all three grades, students in the urban fringe/large town locations had higher scale scores than students in central city locations. At grades 4 and 8, students in rural/small town locations also outperformed their counterparts in the central city locations.

Percentages of students in each achievement level by type of school location are presented in figure 3.11. At grade 4, within the 2000 assessment, there were higher percentages of students at *Advanced,* at or above *Proficient,* and at or above *Basic* attending schools in urban fringe/large town locations than in central city locations.

At grade 8, there were higher percentages of students at or above *Proficient* and at or above *Basic* attending schools in urban fringe/large town locations than in central city locations.

At grade 12, there were higher percentages of students at or above *Proficient* and at *Advanced* attending schools in urban fringe/large town locations than in rural school locations. There was also a higher percentage of twelfth-graders at or above the *Basic* level attending schools in urban fringe/large town locations than in central city locations.

Table 3.1: National Scale Score Results by Type of Location

Average mathematics scale scores by type of location, grades 4, 8, and 12: 2000

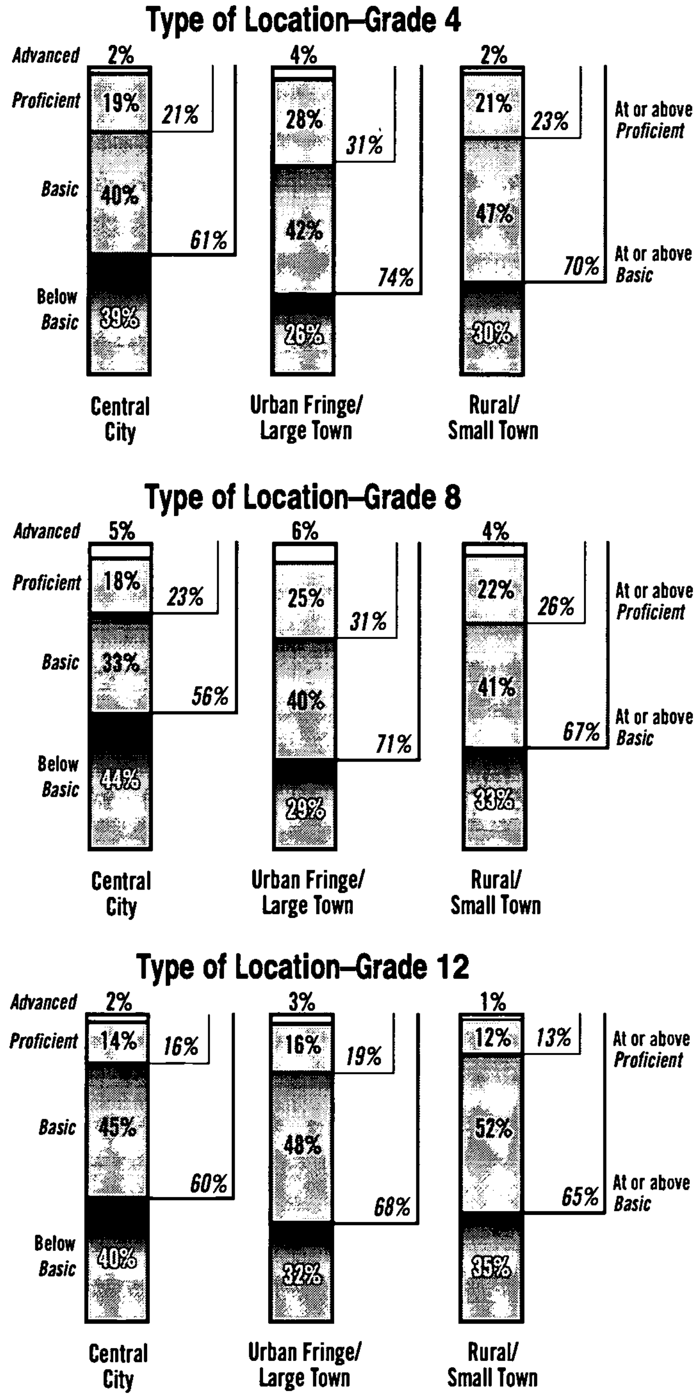
	Central City	Urban Fringe/Large Town	Rural/Small Town
Grade 12	298	304	300
Grade 8	268	280	276
Grade 4	222	232	227

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Figure 3.11

National Achievement Level Results by Type of Location

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of location, grades 4, 8, and 12: 2000



NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Free/Reduced-Price Lunch Program Eligibility

Funded by the U.S. Department of Agriculture (USDA) as part of the National School Lunch Program, the Free/Reduced-Price Lunch Program is designed to assure that children at or near the poverty line receive nourishing meals. Eligibility guidelines for the lunch program are based on the Federal income poverty guidelines and are stated by household size.[5] NAEP began collecting data on student eligibility for this program in 1996.

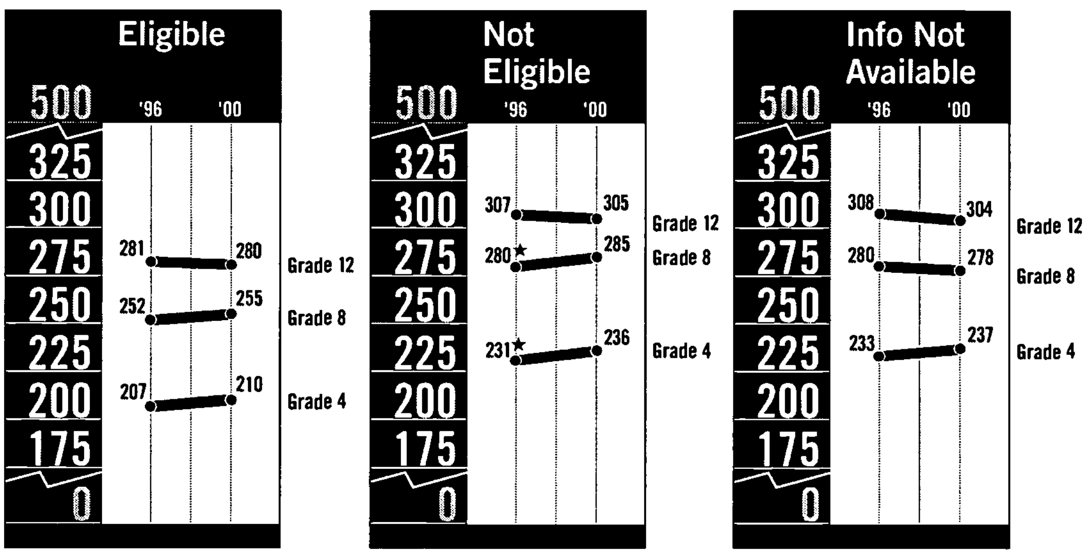
As shown in figure 3.12, at every grade, the scale scores for students who are not eligible for the Free/reduced Price Lunch Program (i.e., those above the poverty guidelines) are significantly higher than the scores for the students who are eligible for the program. Since information on eligibility is not available for a substantial percentage of the students at each grade, figure 3.13 also displays the scale score averages for this third group of students. This group also has higher scale scores at every grade than the students eligible for the free/reduced-price lunch program. Some schools do not offer free/reduced price lunches. Students from these schools are counted in the Information Not Available category.

For those students eligible for the program, none of the apparent changes from 1996 to 2000 in average scores were statistically significant at any grade. For the students at grades 4 and 8 who were not eligible for the program, average scores improved from 1996 to 2000, parallel to the finding for the assessment as a whole.

Figure 3.12

National Scale Score Results by Free/Reduced Price Lunch Eligibility

Average mathematics scale scores by student eligibility for free/reduced price lunch program, grades 4, 8, and 12: 1996–2000



★ Significantly different from 2000.

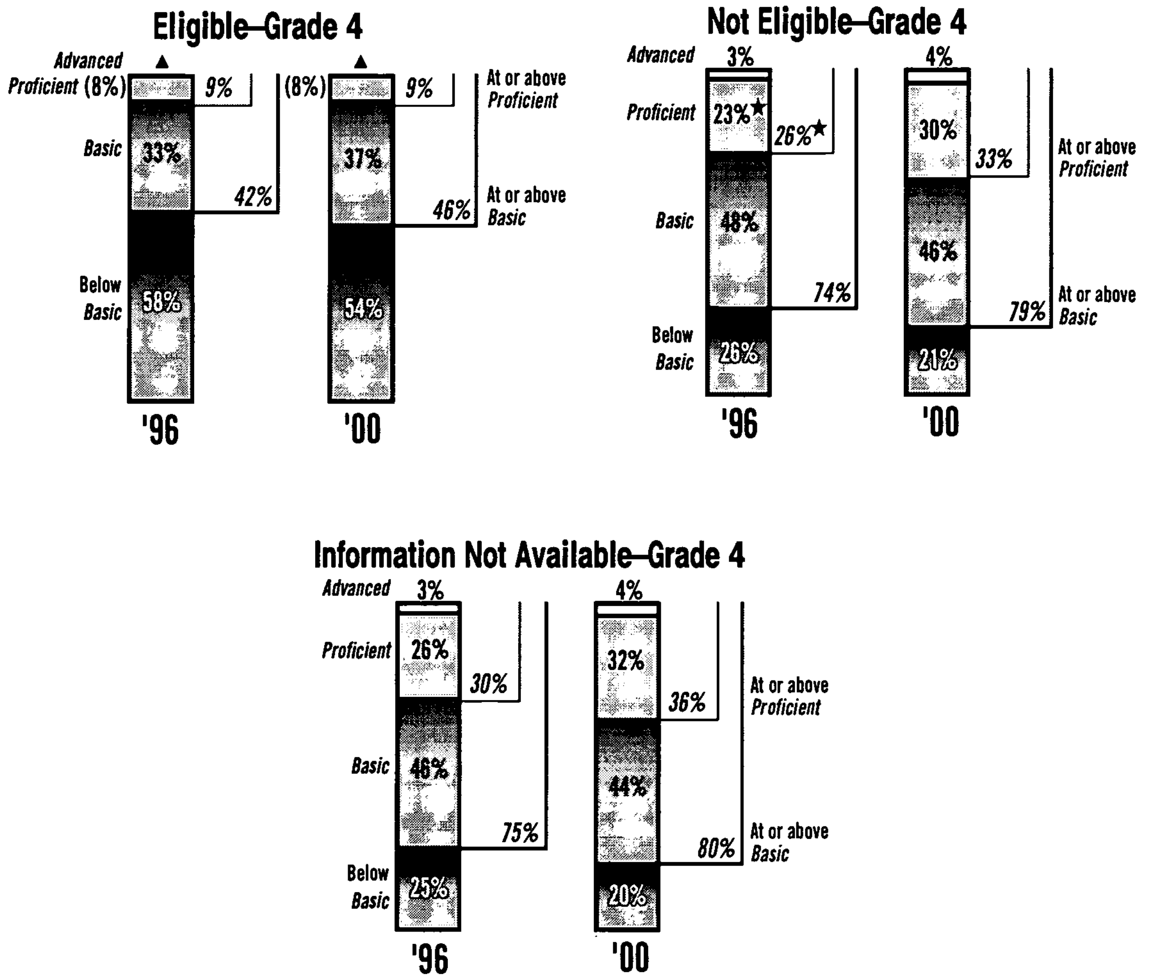
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

[5] U.S. General Services Administration. (1999) *Catalogue of federal domestic assistance.* Washington, DC: Executive Office of the President, Office of Management and Budget.

The pattern for achievement level results is displayed in figure 3.13 and parallels that seen in the scale scores. Any apparent changes between 1996 and 2000 in the percentages of students in each achievement level for those students who were eligible for the program were not statistically significant. Among students not eligible for the program, a higher percentage in 2000 than in 1996 were at or above *Proficient* in grade 4, and at or above *Basic* in grade 8. At every grade, there were higher percentages of students who were not eligible for the program at or above *Proficient* and at or above *Basic* than students who were eligible.

Figure 3.13
National Achievement Level Results by Free/Reduced Price Lunch Program Eligibilty

Percentage of students within each mathematics achievement level range and at or above achievement levels by student eligibility for the free/reduced-price lunch program, grades 4, 8, and 12: 1996–2000

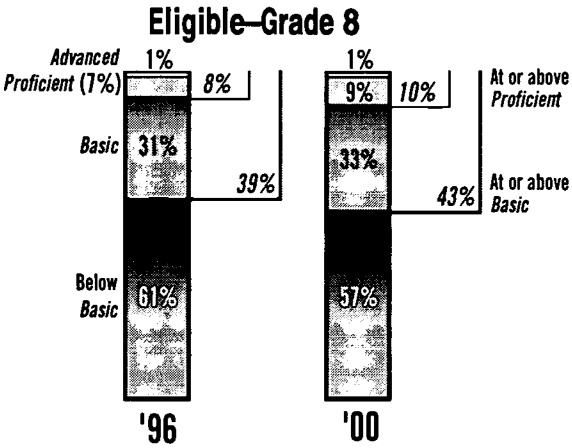


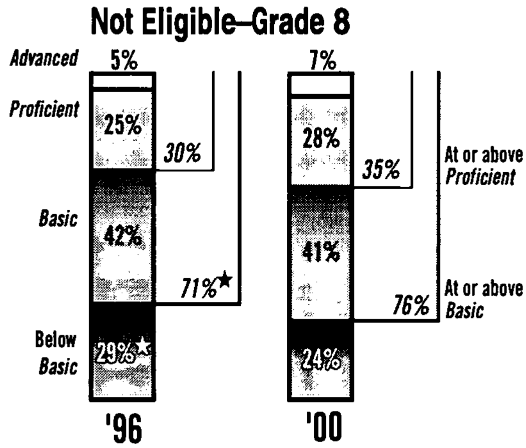
See footnotes at end of figure. ▶

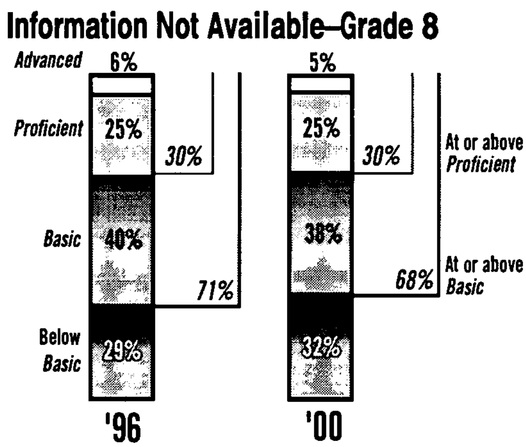
105

Figure 3.13
National Achievement Level Results by Free/Reduced Price Lunch Program Eligibilty (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by student eligibility for the free/reduced-price lunch program, grades 4, 8, and 12: 1996–2000



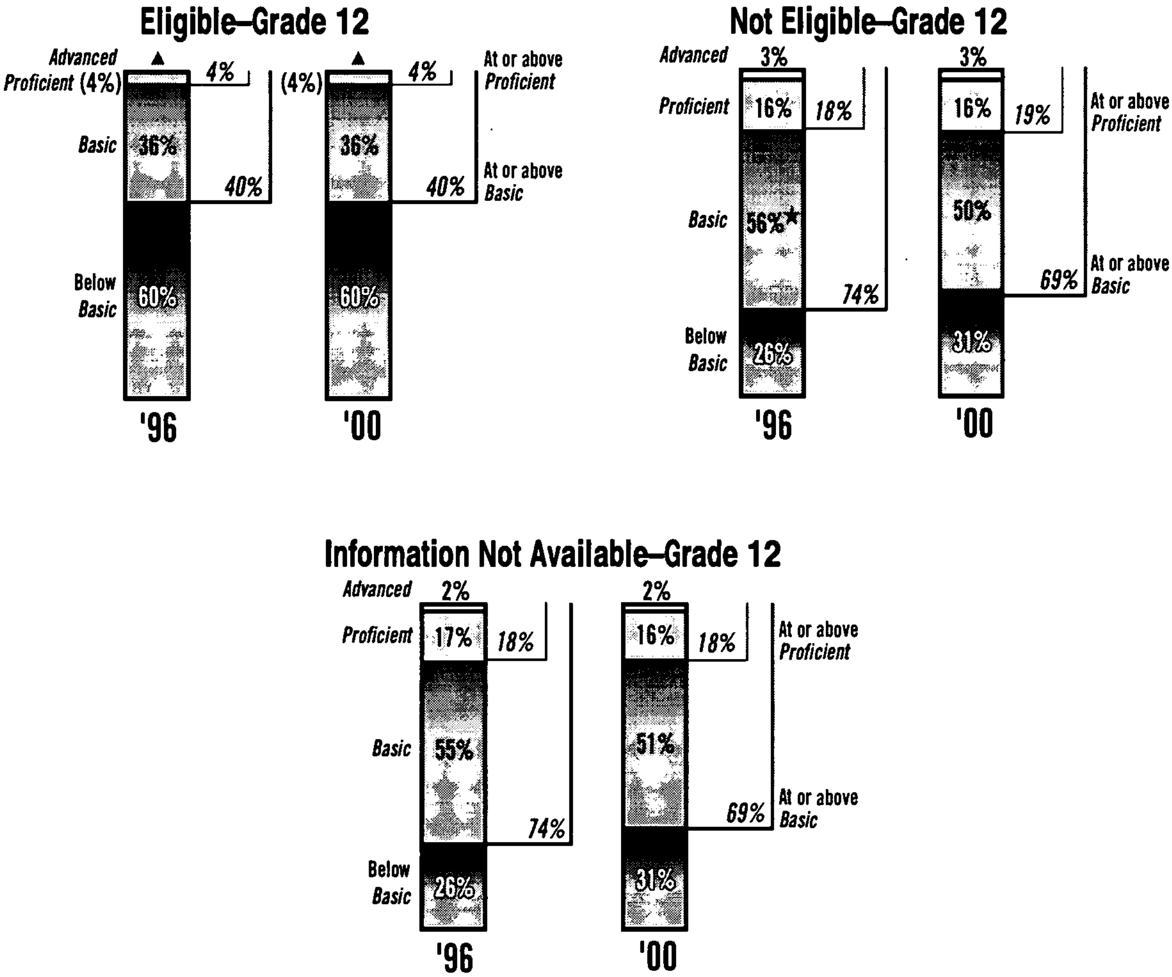




See footnotes at end of figure. ▶

Figure 3.13
National Achievement Level Results by Free/Reduced Price Lunch Program Eligibilty (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by student eligibility for the free/reduced-price lunch program, grades 4, 8, and 12: 1996–2000



★ Significantly different from 2000.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1996 and 2000 Mathematics Assessments.

107

State Results: Performance of Selected Subgroups

Individual state assessments were administered at grades 4 and 8 in addition to the national component of the NAEP 2000 mathematics assessment. Results for public schools in participating states and jurisdictions are presented in this section by gender and race/ethnicity. Complete data for participating jurisdictions are available on the NAEP web site at http://nces.ed.gov/nationsreportcard/tables.

State NAEP assessments began in 1990 at grade 8 and in 1992 at grade 4. Nonpublic schools were not included in the state NAEP assessments for 2000, but were included in the national samples. The national data shown for comparison at the top of the state tables in this chapter are based on the national sample (not on aggregated state samples), and also represent the performance of public schools only. The national results shown in the previous sections of this chapter represented both public and nonpublic school students combined.

In addition to results from the 2000 state assessment, results are also available from previous assessments for many of the jurisdictions. Not all jurisdictions, however, met minimum school participation guidelines in every NAEP assessment. (See appendix A for details on the participation and reporting guidelines.) In 2000, results for grades 4 and 8 in Wisconsin and grade 8 in the Virgin Islands are not included in the relevant tables and appendices because of these guidelines.

The state results presented here were obtained by assessing a representative sample of students in each state under conditions that did not permit accommodations for special-needs students. These were the same conditions under which results were obtained in previous state assessments. Consequently, it is possible to report trends in student performance across the assessment years. In 2000, a separate representative sample was assessed in each participating jurisdiction for which accommodations were offered to special-needs students. Those results are presented in chapter 4, along with a comparison of "accommodations-permitted" and "accommodations-not-permitted" results in each state. Subgroup "accommodations-permitted" results by state are available on the NAEP web site.

In examining the state results presented in this section, it should be noted that schools participating in the NAEP assessments under these conditions are permitted to exclude those students who can not be assessed meaningfully without accommodations. Exclusion rates vary considerably across years in many jurisdictions. In 2000, in the sample that did not permit accommodations the pattern in most jurisdictions was for more special-needs students to be excluded from the assessment than in previous years.

In addition to changes across years in exclusion rates for a particular jurisdiction, there is considerable variation in exclusion rates across jurisdictions. Comparisons of assessment results across jurisdictions and within jurisdictions across years should be made with caution. No adjustments have been made for differing exclusion rates across jurisdictions or across years. Thus, a comparison within a jurisdiction across years or between two jurisdictions may be based on samples with exclusion rates that differ considerably. The exclusion rates for each jurisdiction across years are presented in appendix A.

Gender Results by State

Figures 3.14 and 3.15 present male and female students' average mathematics scores for each jurisdiction that participated in the 2000 assessment. For each subgroup of students, the 2000 average score is compared to previous years' scores where available. An upward arrow (🡅) in the columns labeled for previous assessment years indicates the average score in 2000 was higher than that in the indicated year. A downward arrow (🡇) indicates that the average score in 2000 was lower than that in the indicated year. A circle (●) indicates that there was no significant difference between the 2000 score and the previous year's score. The dark arrows indicate that the difference between years is statistically significant when examining one jurisdiction and when using a multiple-comparison procedure based on all jurisdictions that participated both years. The lighter arrows (↑) indicate that the difference between years is statistically significant when only one jurisdiction is being examined at a time. The following discussion of trends in subgroup performance within jurisdictions is based only on results of the statistical testing using a multiple-comparison procedure, as indicated by the dark arrows in these figures.

At grade 4, the average score in 2000 was higher than that in 1992 for male students in 24 jurisdictions, and for female students in 26 jurisdictions. In 21 jurisdictions average scores increased between 1992 and 2000 for both male and female students. Between 1996 and 2000, gains are evident for males in 6 jurisdictions, and for females in 11 jurisdictions. The following 5 jurisdictions had gains for both male and female students between 1996 and 2000: Louisiana, Massachusetts, North Carolina, South Carolina, and Virginia.

At grade 8, the average score in 2000 was higher than that in 1990 for male students in 24 jurisdictions, and for female students in 28 jurisdictions. In 23 jurisdictions average scores increased between 1990 and 2000 for both male and female students. Between 1996 and 2000, gains are evident for males in 5 jurisdictions, and for females in 7 jurisdictions. In North Carolina and West Virginia, both male and female students made gains between 1996 and 2000.

Figure 3.14: State Scale Score Results by Gender, Grade 4

Comparison of 2000 state average scale scores to previous years by gender for grade 4 public schools: 1992–2000

	Male			Female		
	1992	1996	2000	1992	1996	2000
Nation	↑	↑	227	↑	↑	225
Alabama	⬆	↑	217	⬆	⬆	219
Arizona	⬆	●	220	●	●	218
Arkansas	⬆	●	217	⬆	●	217
California †	●	●	213	⬆	↑	214
Connecticut	⬆	●	235	⬆	●	233
Georgia	⬆	●	220	●	●	219
Hawaii	●	●	214	●	●	217
Idaho †	↑	—	227	⬆	—	227
Illinois †	—	—	227	—	—	222
Indiana †	⬆	↑	235	⬆	⬆	233
Iowa †	●	↑	235	●	●	231
Kansas †	—	—	232	—	—	232
Kentucky	⬆	●	222	⬆	●	220
Louisiana	⬆	⬆	218	⬆	⬆	218
Maine †	●	●	232	●	●	229
Maryland	●	●	223	⬆	●	221
Massachusetts	⬆	⬆	237	⬆	⬆	233
Michigan †	⬆	↑	232	⬆	↑	230
Minnesota †	⬆	●	237	⬆	●	233
Mississippi	⬆	●	210	⬆	●	211
Missouri	⬆	●	229	⬆	↑	228
Montana †	—	●	232	—	●	228
Nebraska	●	●	227	●	●	225
Nevada	—	●	222	—	●	218
New Mexico	●	●	216	●	●	212
New York †	⬆	↑	228	⬆	●	225
North Carolina	⬆	⬆	234	⬆	⬆	231
North Dakota	●	●	233	●	●	229
Ohio †	⬆	—	233	⬆	—	228
Oklahoma	⬆	—	226	⬆	—	224
Oregon †	—	●	229	—	●	224
Rhode Island	⬆	●	225	⬆	⬆	224
South Carolina	⬆	⬆	221	⬆	⬆	220
Tennessee	⬆	●	222	⬆	●	218
Texas	⬆	↑	235	⬆	●	231
Utah	●	●	227	⬆	●	228
Vermont †	—	↑	232	—	⬆	231
Virginia	⬆	⬆	233	⬆	⬆	228
West Virginia	⬆	●	226	⬆	●	223
Wyoming	●	↑	230	⬆	⬆	228
Other Jurisdictions						
American Samoa	—	—	156	—	—	157
District of Columbia	●	↑	193	●	⬆	194
DDESS	—	●	230	—	●	226
DoDDS	—	⬆	230	—	↑	226
Guam	⬇	●	181	⬇	●	187
Virgin Islands	—	—	183	—	—	183

● Indicates no significant difference between earlier year and 2000 in average scores.

⬆ Indicates the average score in 2000 was significantly higher than in the specified year.

⬇ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (⬆⬇) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑ ↓) indicate a significant change when only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1992, 1996, and 2000 Mathematics Assessments.

Figure 3.15: State Scale Score Results by Gender, Grade 8

Comparison of 2000 state average scale scores to previous years by gender for grade 8 public schools: 1990–2000

	Male 1990	Male 1992	Male 1996	Male 2000	Female 1990	Female 1992	Female 1996	Female 2000
Nation	↑	↑	↑	276	↑	↑	●	273
Alabama	⬆	⬆	●	262	⬆	⬆	●	262
Arizona †	⬆	⬆	●	274	⬆	●	●	268
Arkansas	⬆	⬆	●	262	⬆	⬆	●	261
California †	●	●	●	262	⬆	●	●	262
Connecticut	⬆	⬆	●	284	⬆	⬆	●	279
Georgia	⬆	⬆	↑	268	⬆	⬆	●	265
Hawaii	⬆	⬆	●	261	⬆	↑	●	264
Idaho †	⬆	●	—	278	⬆	●	—	278
Illinois †	⬆	—	—	276	⬆	—	—	278
Indiana †	⬆	⬆	⬆	285	⬆	⬆	↑	281
Kansas †	—	—	—	285	—	—	—	283
Kentucky	⬆	⬆	⬆	274	⬆	⬆	●	270
Louisiana	⬆	⬆	⬆	261	⬆	⬆	↑	258
Maine †	—	⬆	●	285	—	●	●	282
Maryland	⬆	⬆	●	276	⬆	⬆	↑	276
Massachusetts	—	⬆	↑	285	—	⬆	●	281
Michigan †	⬆	⬆	●	279	⬆	⬆	●	278
Minnesota †	⬆	⬆	●	288	⬆	↑	●	288
Mississippi	—	⬆	●	255	—	⬆	●	253
Missouri	—	●	●	276	—	●	●	271
Montana †	●	—	●	287	⬆	—	●	286
Nebraska	⬆	⬆	●	283	●	●	⬇	278
Nevada	—	—	—	269	—	—	—	267
New Mexico	●	●	●	259	⬆	●	●	260
New York †	⬆	⬆	↑	280	⬆	⬆	●	273
North Carolina	⬆	⬆	⬆	282	⬆	⬆	⬆	278
North Dakota	●	●	●	283	⬆	●	●	284
Ohio	⬆	⬆	—	283	⬆	⬆	—	282
Oklahoma	⬆	●	—	273	⬆	●	—	270
Oregon †	⬆	—	●	281	⬆	—	●	280
Rhode Island	⬆	⬆	●	274	⬆	⬆	⬆	273
South Carolina	—	⬆	●	266	—	⬆	⬆	267
Tennessee	—	●	●	265	—	●	●	261
Texas	⬆	⬆	●	274	⬆	⬆	⬆	276
Utah	—	●	●	275	—	●	●	276
Vermont †	—	—	●	283	—	—	⬆	283
Virginia	⬆	⬆	↑	278	⬆	⬆	⬆	276
West Virginia	⬆	⬆	⬆	270	⬆	⬆	⬆	271
Wyoming	●	●	●	277	⬆	●	●	276
Other Jurisdictions								
American Samoa	—	—	—	190	—	—	—	200
District of Columbia	●	●	●	234	●	●	●	235
DDESS	—	—	●	279	—	—	●	275
DoDDS	—	—	↑	280	—	—	●	277
Guam	●	●	●	233	●	●	↓	234

● Indicates no significant difference between earlier year and 2000 in average scores.

⬆ Indicates the average score in 2000 was significantly higher than in the specified year.

⬇ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (⬆⬇) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑↓) indicate a significant change when only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Figures 3.16 and 3.17 present the percentages of male and female students at or above *Proficient* by jurisdiction for 2000, with dark arrow symbols indicating the results of significance testing between years, using a multiple-comparison procedure, as in the previous tables. The trends in improvement in mathematics scores from 1990 to 2000 at grade 8, 1992 to 2000 at grade 4, and 1996 to 2000 at both grades can also be seen in the achievement level data.

At grade 4, the percentage of students at or above *Proficient* in 2000 was higher than that in 1992 for male students in 19 jurisdictions, and for female students in 15 jurisdictions. In 13 jurisdictions the percentages of both males and females who were at or above *Proficient* increased between 1992 and 2000. Between 1996 and 2000, the percentages of students performing at this level increased for males in North Carolina and South Carolina, and for females in Louisiana and Massachusetts.

At grade 8, the percentage of students at or above *Proficient* in 2000 was higher than that in 1990 for male students in 28 jurisdictions and female students in 27 jurisdictions. In 25 jurisdictions the percentages of both males and females who were at or above *Proficient* increased between 1990 and 2000. Between 1996 and 2000, the percentages of students performing at this level increased for males in Indiana and West Virginia, and for both males and females in North Carolina.

Figure 3.16: State Achievement Level Results by Gender, Grade 4

Comparisons of 2000 state percentages at or above *Proficient* to previous years by gender for grade 4 public schools: 1992–2000

	Male			Female		
	1992	1996	2000	1992	1996	2000
Nation	↑	↑	27	↑	↑	22
Alabama	⬆	●	15	●	●	13
Arizona	●	●	18	●	●	16
Arkansas	⬆	●	14	●	●	13
California †	●	●	14	●	↑	15
Connecticut	⬆	●	34	⬆	●	29
Georgia	●	●	19	●	↑	17
Hawaii	●	●	14	●	●	14
Idaho †	↑	—	23	⬆	—	20
Illinois †	—	—	25	—	—	17
Indiana †	⬆	↑	33	⬆	↑	29
Iowa †	●	●	31	●	●	24
Kansas †	—	—	32	—	—	28
Kentucky	↑	●	19	↑	●	16
Louisiana	⬆	↑	14	⬆	⬆	14
Maine †	●	●	27	●	●	22
Maryland	●	●	24	●	●	20
Massachusetts	⬆	↑	36	⬆	⬆	31
Michigan †	⬆	↑	31	⬆	↑	28
Minnesota †	⬆	●	38	⬆	●	30
Mississippi	⬆	●	10	●	●	8
Missouri	●	●	24	●	●	23
Montana †	—	●	29	—	●	20
Nebraska	●	●	25	●	●	23
Nevada	—	●	19	—	●	13
New Mexico	●	●	14	●	●	10
New York †	●	●	24	⬆	●	20
North Carolina	⬆	⬆	30	⬆	↑	26
North Dakota	●	●	29	●	●	22
Ohio †	⬆	—	30	⬆	—	22
Oklahoma	●	—	18	●	—	14
Oregon †	—	●	27	—	●	20
Rhode Island	⬆	↑	26	⬆	↑	20
South Carolina	⬆	⬆	20	↑	↑	15
Tennessee	⬆	●	20	⬆	●	16
Texas	⬆	●	31	⬆	●	24
Utah	⬆	●	25	●	●	23
Vermont †	—	↑	31	—	↑	28
Virginia	⬆	↑	29	●	●	22
West Virginia	⬆	●	21	⬆	●	15
Wyoming	⬆	↑	27	⬆	↑	23
Other Jurisdictions						
American Samoa	—	—	▲	—	—	▲
District of Columbia	●	●	6	●	●	5
DDESS	—	●	26	—	●	22
DoDDS	—	↑	26	—	●	19
Guam	●	●	3	⬇	●	2
Virgin Islands	—	—	1	—	—	1

● Indicates no significant difference between earlier year and 2000 in average scores.

⬆ Indicates the average score in 2000 was significantly higher than in the specified year.

⬇ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (⬆⬇) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑ ↓) indicate a significant change when only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
▲ Percentage is between 0.0 and 0.5
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1992, 1996, and 2000 Mathematics Assessments.

Figure 3.17: State Achievement Level Results by Gender, Grade 8

Comparisons of 2000 state percentages at or above *Proficient* to previous years by gender for grade 8 public schools: 1990–2000

	Male				Female			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	↑	↑	↑	29	↑	↑	●	24
Alabama	**↑**	**↑**	●	17	**↑**	**↑**	●	15
Arizona †	**↑**	**↑**	●	24	**↑**	●	●	18
Arkansas	**↑**	**↑**	●	15	**↑**	●	●	13
California †	**↑**	●	●	19	**↑**	●	●	16
Connecticut	**↑**	**↑**	●	36	**↑**	**↑**	●	31
Georgia	**↑**	**↑**	●	20	**↑**	**↑**	●	17
Hawaii	**↑**	**↑**	●	17	●	●	●	16
Idaho †	**↑**	●	—	28	**↑**	**↑**	—	26
Illinois †	**↑**	—	—	26	**↑**	—	—	28
Indiana †	**↑**	**↑**	**↑**	35	**↑**	**↑**	●	27
Kansas †	—	—	—	37	—	—	—	32
Kentucky	**↑**	**↑**	↑	23	**↑**	**↑**	●	18
Louisiana	**↑**	**↑**	↑	14	**↑**	●	●	10
Maine †	—	**↑**	●	34	—	**↑**	●	30
Maryland	**↑**	**↑**	●	29	**↑**	**↑**	●	29
Massachusetts	—	**↑**	●	34	—	**↑**	●	30
Michigan †	**↑**	**↑**	●	30	**↑**	**↑**	●	27
Minnesota †	**↑**	**↑**	●	40	**↑**	**↑**	●	39
Mississippi	—	●	●	10	—	●	●	7
Missouri	—	●	●	24	—	●	●	20
Montana †	**↑**	—	●	38	**↑**	—	●	37
Nebraska	**↑**	●	●	34	●	●	●	27
Nevada	—	—	—	21	—	—	—	18
New Mexico	●	●	●	14	**↑**	**↑**	●	12
New York †	**↑**	**↑**	●	29	**↑**	●	●	23
North Carolina	**↑**	**↑**	**↑**	31	**↑**	**↑**	**↑**	29
North Dakota	●	●	●	32	**↑**	●	●	31
Ohio	**↑**	**↑**	—	33	**↑**	**↑**	—	29
Oklahoma	**↑**	●	—	21	**↑**	●	—	17
Oregon †	**↑**	—	↑	34	**↑**	—	●	29
Rhode Island	**↑**	**↑**	●	24	**↑**	**↑**	●	23
South Carolina	—	●	●	18	—	●	↑	18
Tennessee	—	**↑**	●	20	—	**↑**	●	14
Texas	**↑**	●	●	24	**↑**	**↑**	●	25
Utah	—	●	●	27	—	●	●	25
Vermont †	—	—	●	33	—	—	●	32
Virginia	**↑**	**↑**	●	28	**↑**	**↑**	●	23
West Virginia	**↑**	**↑**	**↑**	19	**↑**	**↑**	●	17
Wyoming	**↑**	●	●	26	**↑**	●	●	24
Other Jurisdictions								
American Samoa	—	—	—	1	—	—	—	1
District of Columbia	**↑**	●	●	6	●	●	●	6
DDESS	—	—	●	30	—	—	●	23
DoDDS	—	—	●	28	—	—	●	25
Guam	●	●	●	4	●	●	●	4

● Indicates no significant difference between earlier year and 2000 in average scores.

↑ Indicates the average score in 2000 was significantly higher than in the specified year.

↓ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (**↑↓**) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑ ↓) indicate a significant change when only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Race/Ethnicity

Figures 3.18 and 3.19 display the average mathematics scores in 2000 for each of the racial/ethnic groups by jurisdiction. Similar to the preceding figures, arrows indicate the direction of statistically significant changes since previous assessment years.

At grade 4, the average score in 2000 was higher than that in 1992 for white students in 29 jurisdictions, for black students in 17 jurisdictions, and for Hispanic students in 10 jurisdictions. American Indian students had mixed results—gaining in two states (North Carolina and Oklahoma) and declining in one (New Mexico). Jurisdictions that show gains for at least three of the five racial/ethnic groups include Arkansas, Connecticut, Indiana, Mississippi, New York, North Carolina, and Texas.

Between 1996 and 2000, gains in fourth-graders' average scores are evident for white students in 15 jurisdictions, for black students in 7 jurisdictions, for Hispanic students in 2 jurisdictions, and for Asian/Pacific Islander students in 1 jurisdiction. In Louisiana, white, black, and Hispanic students made gains between 1996 and 2000. In Alabama, Indiana, North Carolina, and Virginia, both white and black students' scores increased during this period.

At grade 8, the average score in 2000 was higher than that in 1990 for white students in 28 jurisdictions, for black students in 14 jurisdictions, and for Hispanic students in 17 jurisdictions. Gains for Asian/Pacific Islander and American Indian students were limited to 3 and 2 jurisdictions, respectively. Jurisdictions that showed gains among at least three of the five racial/ethnic groups included: California, Georgia, Hawaii, Illinois, Indiana, Maryland, Michigan, New York, North Carolina, Ohio, Rhode Island, Texas, Virginia, and West Virginia.

Between 1996 and 2000, gains in eighth-graders' average scores were evident for white students in 11 jurisdictions, for black students in 2 jurisdictions, and for Hispanic students in 3 jurisdictions. Apparent gains for Asian/Pacific Islander and American Indian students in any jurisdiction were not statistically significant. In North Carolina, gains are evident for three of the five racial/ethnic groups—white, black, and Hispanic students. In Indiana, both white and black students' scores increased, and in Massachusetts, both white and Hispanic students made gains.

In every state where sample sizes were large enough for reliable statistical comparisons, white students outperformed black and Hispanic students at both grades 4 and 8. Most of the apparent differences between white and Asian/Pacific Islander students were not statistically significant, with a small number of exceptions. White students had higher scale scores than Asian/Pacific Islander students in grade 4 in Hawaii, Rhode Island, and Utah, and in grade 8 in Hawaii. Asian/Pacific Islander students outperformed white students at grade 4 in Oregon and at grade 8 in Maryland and Virginia.

The percentages of students in the different racial/ethnic subgroups who were at or above *Proficient* across jurisdictions in 2000, and comparisons to earlier years, are presented in figure 3.20 (grade 4) and figure 3.21 (grade 8).

Figure 3.18: State Scale Score Results by Race/Ethnicity, Grade 4

Comparison of 2000 state average scale scores to previous years by race/ethnicity for grade 4 public schools: 1992–2000

	White			Black			Hispanic		
	1992	1996	2000	1992	1996	2000	1992	1996	2000
Nation	↑	●	235	↑	●	205	↑	●	211
Alabama	**↑**	**↑**	229	**↑**	**↑**	205	●	●	201
Arizona	**↑**	●	231	●	●	208	●	●	204
Arkansas	**↑**	●	225	**↑**	●	198	**↑**	●	205
California †	**↑**	●	229	↑	●	193	**↑**	●	201
Connecticut	**↑**	●	243	**↑**	●	209	**↑**	●	214
Georgia	●	**↑**	232	**↑**	↑	206	**↑**	●	208
Hawaii	●	●	225	●	●	204	●	●	205
Idaho †	**↑**	—	230	●	—	****	**↑**	—	213
Illinois †	—	—	237	—	—	205	—	—	213
Indiana †	**↑**	**↑**	238	**↑**	**↑**	216	**↑**	●	220
Iowa †	**↑**	**↑**	235	●	●	****	●	●	216
Kansas †	—	—	238	—	—	207	—	—	215
Kentucky	**↑**	●	225	●	●	200	●	●	207
Louisiana	**↑**	**↑**	230	**↑**	**↑**	204	●	**↑**	210
Maine †	●	●	231	●	●	****	●	●	****
Maryland	**↑**	●	237	**↑**	●	204	●	●	210
Massachusetts	**↑**	**↑**	241	**↑**	●	212	●	●	210
Michigan †	**↑**	**↑**	239	**↑**	●	201	●	●	210
Minnesota †	**↑**	↑	240	**↑**	**↑**	211	●	●	214
Mississippi	**↑**	●	224	**↑**	●	199	**↑**	●	201
Missouri	**↑**	**↑**	235	●	●	202	●	●	213
Montana †	—	●	234	—	●	****	—	●	219
Nebraska	●	●	232	●	●	199	●	●	206
Nevada	—	●	228	—	●	206	—	●	210
New Mexico	●	●	227	●	●	****	●	●	208
New York †	**↑**	↑	238	**↑**	↑	211	**↑**	↑	211
North Carolina	**↑**	**↑**	241	**↑**	**↑**	218	**↑**	↑	218
North Dakota	**↑**	●	233	●	●	****	●	●	214
Ohio †	**↑**	—	236	**↑**	—	208	↑	—	218
Oklahoma	**↑**	—	230	●	—	206	●	—	215
Oregon †	—	●	230	—	●	****	—	●	206
Rhode Island	**↑**	**↑**	234	●	●	201	●	●	198
South Carolina	**↑**	**↑**	233	**↑**	↑	204	●	↑	209
Tennessee	**↑**	●	227	●	●	199	●	●	207
Texas	**↑**	●	243	**↑**	↑	220	**↑**	**↑**	224
Utah	**↑**	●	232	●	●	****	●	●	206
Vermont †	—	**↑**	233	—	●	****	—	●	****
Virginia	**↑**	**↑**	240	**↑**	**↑**	212	●	●	219
West Virginia	**↑**	●	227	●	●	207	●	●	213
Wyoming	●	**↑**	232	●	●	****	●	●	215
Other Jurisdictions									
American Samoa	—	—	****	—	—	****	—	—	150
District of Columbia	●	●	241	●	**↑**	191	●	●	189
DDESS	—	●	237	—	●	218	—	●	220
DoDDS	—	**↑**	235	—	●	214	—	●	218
Guam	●	●	****	●	●	****	●	●	168
Virgin Islands	—	—	****	—	—	185	—	—	176

See footnotes at end of figure. ▶

Figure 3.18: State Scale Score Results by Race/Ethnicity, Grade 4 (continued)

Comparison of 2000 state average scale scores to previous years by race/ethnicity for grade 4 public schools: 1992–2000

	Asian			American Indian		
	1992	1996	2000	1992	1996	2000
Nation	●	●	~	●	●	215
Alabama	●	●	****	●	●	****
Arizona	●	●	234	●	●	196
Arkansas	●	●	****	●	●	213
California †	●	●	227	●	●	****
Connecticut	●	●	246	●	●	****
Georgia	●	●	****	●	●	****
Hawaii	●	●	216	●	●	****
Idaho †	●	—	****	●	—	****
Illinois †	—	—	****	—	—	****
Indiana †	●	●	****	●	●	****
Iowa †	●	●	****	●	●	****
Kansas †	—	—	****	—	—	****
Kentucky	●	●	****	●	●	****
Louisiana	●	●	****	●	●	****
Maine †	●	●	****	●	●	****
Maryland	●	●	240	●	●	****
Massachusetts	●	●	239	●	●	****
Michigan †	●	●	****	●	●	****
Minnesota †	●	↑	235	●	●	****
Mississippi	●	●	****	●	●	****
Missouri	●	●	****	●	●	****
Montana †	—	●	****	—	●	212
Nebraska	●	●	****	●	●	****
Nevada	—	●	224	—	●	212
New Mexico	●	●	****	●	●	197
New York †	●	↑	247	●	●	****
North Carolina	●	●	****	↑	●	229
North Dakota	●	●	****	●	●	208
Ohio †	●	—	****	●	—	****
Oklahoma	●	—	****	↑	—	222
Oregon †	—	●	240	—	●	****
Rhode Island	↑	●	221	●	●	****
South Carolina	●	●	****	●	●	****
Tennessee	●	●	****	●	●	****
Texas	↑	●	247	●	●	****
Utah	●	●	222	●	●	****
Vermont †	—	●	****	—	●	****
Virginia	●	●	243	●	●	****
West Virginia	●	●	****	●	●	****
Wyoming	●	●	****	●	●	224
Other Jurisdictions						
American Samoa	—	—	157	—	—	****
District of Columbia	●	●	****	●	●	****
DDESS	—	●	230	—	●	****
DoDDS	—	●	233	—	●	219
Guam	↓	●	188	●	●	****
Virgin Islands	—	—	****	—	—	****

● Indicates no significant difference between earlier year and 2000 in average scores.

↑ Indicates the average score in 2000 was significantly higher than in the specified year.

↓ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (↑↓) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑↓) indicate a significant change when only one jurisdiction or the nation is being examined.

**** Sample size is insufficient to permit a reliable estimate.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
~ Special analyses raised concerns about the accuracy and precision of national grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Figure 3.19: State Scale Score Results by Race/Ethnicity, Grade 8

Comparison of 2000 state average scale scores to previous years by race/ethnicity for grade 8 public schools: 1990–2000

	White				Black				Hispanic			
	1990	1992	1996	2000	1990	1992	1996	2000	1990	1992	1996	2000
Nation	↑	↑	●	285	↑	↑	●	246	↑	↑	●	252
Alabama	**↑**	**↑**	●	275	●	↑	●	239	●	**↑**	●	239
Arizona †	**↑**	**↑**	**↑**	284	●	●	●	250	**↑**	●	●	252
Arkansas	**↑**	**↑**	●	272	●	●	●	235	●	●	●	234
California †	**↑**	●	●	278	●	●	●	242	**↑**	●	●	246
Connecticut	**↑**	**↑**	**↑**	294	↑	●	●	248	**↑**	●	●	252
Georgia	**↑**	**↑**	●	280	**↑**	●	↑	246	**↑**	●	●	247
Hawaii	**↑**	**↑**	●	275	●	●	●	256	**↑**	●	●	248
Idaho †	**↑**	**↑**	—	282	●	●	—	****	●	●	—	250
Illinois †	**↑**	—	—	288	**↑**	—	—	255	**↑**	—	—	261
Indiana †	**↑**	**↑**	**↑**	287	**↑**	**↑**	**↑**	260	**↑**	↑	●	264
Kansas †	—	—	—	288	—	—	—	257	—	—	—	261
Kentucky	**↑**	**↑**	**↑**	275	**↑**	**↑**	●	253	●	●	●	****
Louisiana	**↑**	**↑**	**↑**	276	**↑**	↑	●	240	●	●	●	237
Maine †	—	**↑**	●	285	—	●	●	****	—	●	●	****
Maryland	**↑**	**↑**	↑	290	**↑**	**↑**	↑	249	**↑**	**↑**	↑	265
Massachusetts	—	**↑**	**↑**	289	—	●	●	254	—	**↑**	**↑**	259
Michigan †	**↑**	**↑**	●	287	**↑**	**↑**	●	242	**↑**	●	●	259
Minnesota †	**↑**	**↑**	↑	291	●	●	●	****	**↑**	●	●	257
Mississippi	—	**↑**	●	268	—	**↑**	●	238	—	●	●	227
Missouri	—	**↑**	●	280	—	●	●	244	—	●	●	251
Montana †	**↑**	—	↑	290	●	—	●	****	●	—	↑	276
Nebraska	**↑**	●	●	285	●	●	●	246	●	●	●	255
Nevada	—	—	—	278	—	—	—	251	—	—	—	251
New Mexico	**↑**	**↑**	●	278	●	●	●	****	●	●	●	251
New York †	**↑**	**↑**	**↑**	289	**↑**	**↑**	●	257	**↑**	●	●	259
North Carolina	**↑**	**↑**	**↑**	291	**↑**	**↑**	**↑**	256	**↑**	**↑**	**↑**	269
North Dakota	●	●	●	286	●	●	●	****	●	●	●	262
Ohio	**↑**	**↑**	—	287	**↑**	**↑**	—	255	**↑**	**↑**	—	270
Oklahoma	**↑**	**↑**	—	277	●	●	—	248	●	●	—	254
Oregon †	**↑**	—	●	284	●	—	●	260	●	—	●	259
Rhode Island	**↑**	**↑**	**↑**	281	**↑**	●	●	245	**↑**	**↑**	●	246
South Carolina	—	**↑**	●	279	—	**↑**	●	249	—	**↑**	●	250
Tennessee	—	**↑**	●	271	—	●	●	237	—	↑	●	246
Texas	**↑**	**↑**	●	288	**↑**	●	●	252	**↑**	**↑**	**↑**	266
Utah	—	●	●	279	—	●	●	****	—	●	●	249
Vermont †	—	—	↑	284	—	—	●	****	—	—	●	****
Virginia	**↑**	**↑**	**↑**	285	**↑**	**↑**	↑	252	**↑**	↑	●	267
West Virginia	**↑**	**↑**	**↑**	272	**↑**	●	●	251	**↑**	**↑**	●	256
Wyoming	**↑**	●	●	280	●	●	●	****	●	●	●	255
Other Jurisdictions												
American Samoa	—	—	—	****	—	—	—	****	—	—	—	172
District of Columbia	●	●	●	****	●	●	●	232	●	●	●	224
DDESS	—	—	●	288	—	—	↑	267	—	—	●	269
DoDDS	—	—	●	287	—	—	●	261	—	—	●	271
Guam	●	●	●	****	●	●	●	****	●	●	●	216

See footnotes at end of figure. ▶

Figure 3.19: State Scale Score Results by Race/Ethnicity, Grade 8 (continued)

Comparison of 2000 state average scale scores to previous years by race/ethnicity for grade 8 public schools: 1990–2000

	Asian				American Indian			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	●	●	~	288	●	●	●	261
Alabama	●	●	●	****	●	●	●	****
Arizona †	●	●	●	282	●	●	●	****
Arkansas	●	●	●	****	●	●	●	****
California †	↑	●	●	282	●	●	●	****
Connecticut	●	●	●	287	●	●	●	****
Georgia	●	●	●	****	●	●	●	****
Hawaii	↑	↑	●	263	●	●	●	****
Idaho †	●	●	—	****	●	●	—	****
Illinois †	●	—	—	****	●	—	—	****
Indiana †	●	●	●	****	●	●	●	****
Kansas †	—	—	—	****	—	—	—	****
Kentucky	●	●	●	****	●	●	●	****
Louisiana	●	●	●	****	●	●	●	****
Maine †	—	●	●	****	—	●	●	****
Maryland	↑	↑	●	306	●	●	●	****
Massachusetts	—	●	↑	295	—	●	●	****
Michigan †	●	●	●	****	●	●	●	****
Minnesota †	●	●	●	****	●	●	●	****
Mississippi	—	●	●	****	—	●	●	****
Missouri	—	●	●	****	—	●	●	****
Montana †	●	—	●	****	●	—	●	253
Nebraska	●	●	●	****	●	●	●	****
Nevada	—	—	—	278	—	—	—	263
New Mexico	●	●	●	****	●	●	●	243
New York †	●	●	●	288	●	●	●	****
North Carolina	●	●	●	****	●	●	●	****
North Dakota	●	●	●	****	↑	●	●	258
Ohio	●	●	—	****	●	●	—	****
Oklahoma	●	●	—	****	↑	●	—	264
Oregon †	●	—	●	281	●	—	●	****
Rhode Island	●	●	●	271	●	●	●	****
South Carolina	—	●	●	****	—	●	●	****
Tennessee	—	●	●	****	—	●	●	****
Texas	●	●	●	292	●	●	●	****
Utah	—	●	●	281	—	●	●	****
Vermont †	—	—	●	****	—	—	●	****
Virginia	●	↑	↑	300	●	●	●	****
West Virginia	●	●	●	****	●	●	●	****
Wyoming	●	●	●	****	●	●	●	253
Other Jurisdictions								
American Samoa	—	—	—	205	—	—	—	****
District of Columbia	●	●	●	****	●	●	●	****
DDESS	—	—	●	****	—	—	●	****
DoDDS	—	—	●	283	—	—	●	****
Guam	●	●	●	236	●	●	●	****

● Indicates no significant difference between earlier year and 2000 in average scores.

↑ Indicates the average score in 2000 was significantly higher than in the specified year.

↓ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (↑↓) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑↓) indicate a significant change when only one jurisdiction or the nation is being examined.

**** Sample size is insufficient to permit a reliable estimate.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
~ Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Figure 3.20: State Achievement Level Results by Race/Ethnicity, Grade 4

Comparison of 2000 state percentages at or above *Proficient* to previous years by race/ethnicity for grade 4 public schools: 1992–2000

	White			Black			Hispanic		
	1992	1996	2000	1992	1996	2000	1992	1996	2000
Nation	↑	↑	33	↑	●	5	↑	●	10
Alabama	**↑**	↑	23	**↑**	●	4	●	●	5
Arizona	**↑**	●	26	●	●	5	●	●	6
Arkansas	**↑**	●	18	●	●	2	●	●	6
California †	●	●	25	●	●	2	●	●	5
Connecticut	**↑**	●	41	●	●	6	●	●	9
Georgia	●	**↑**	29	**↑**	**↑**	6	●	●	8
Hawaii	●	●	19	●	●	3	●	●	7
Idaho †	**↑**	—	24	●	—	****	●	—	8
Illinois †	—	—	32	—	—	5	—	—	8
Indiana †	**↑**	↑	34	**↑**	**↑**	14	**↑**	●	16
Iowa †	●	↑	30	●	●	****	●	●	13
Kansas †	—	—	36	—	—	7	—	—	11
Kentucky	**↑**	●	20	●	●	2	●	●	9
Louisiana	**↑**	**↑**	23	**↑**	↑	4	●	●	7
Maine †	●	●	25	●	●	****	●	●	****
Maryland	**↑**	●	36	●	●	5	●	●	10
Massachusetts	**↑**	**↑**	39	●	●	7	●	●	10
Michigan †	**↑**	**↑**	37	●	●	4	●	●	15
Minnesota †	**↑**	●	39	●	●	11	●	●	13
Mississippi	●	●	16	●	●	2	●	●	6
Missouri	**↑**	●	28	●	●	4	●	●	11
Montana †	—	●	28	—	●	****	—	●	12
Nebraska	●	●	29	●	●	6	●	●	7
Nevada	—	●	23	—	●	5	—	●	8
New Mexico	●	●	22	●	●	****	●	●	6
New York †	**↑**	●	34	●	●	5	●	●	7
North Carolina	**↑**	**↑**	38	**↑**	**↑**	9	●	●	13
North Dakota	●	●	27	●	●	****	●	●	12
Ohio †	**↑**	—	32	●	—	3	●	—	12
Oklahoma	●	—	20	●	—	3	●	—	9
Oregon †	—	●	26	—	●	****	—	●	6
Rhode Island	**↑**	**↑**	30	●	●	4	↑	●	5
South Carolina	**↑**	**↑**	28	↑	●	4	●	●	12
Tennessee	**↑**	●	23	●	●	4	●	●	9
Texas	**↑**	●	41	**↑**	●	12	**↑**	●	14
Utah	**↑**	●	28	●	●	****	●	●	8
Vermont †	—	↑	31	—	●	****	—	●	****
Virginia	**↑**	**↑**	35	●	●	6	●	●	11
West Virginia	**↑**	●	19	●	●	6	●	●	13
Wyoming	**↑**	**↑**	28	●	●	****	●	●	12
Other Jurisdictions									
American Samoa	—	—	****	—	—	****	—	—	▲
District of Columbia	●	●	49	●	●	2	●	●	4
DDESS	—	●	34	—	●	12	—	●	14
DoDDS	—	●	31	—	●	7	—	●	13
Guam	●	●	****	●	●	****	●	●	1
Virgin Islands	—	—	****	—	—	1	—	—	1

See footnotes at end of figure. ▶

Figure 3.20: State Achievement Level Results by Race/Ethnicity, Grade 4 (continued)

Comparison of 2000 state percentages at or above *Proficient* to previous years by race/ethnicity for grade 4 public schools: 1992–2000

	Asian			American Indian		
	1992	1996	2000	1992	1996	2000
Nation	●	●	~	●	●	13
Alabama	●	●	****	●	●	****
Arizona	●	●	28	●	●	4
Arkansas	●	●	****	●	●	9
California †	●	●	25	●	●	****
Connecticut	●	●	45	●	●	****
Georgia	●	●	****	●	●	****
Hawaii	●	●	15	●	●	****
Idaho †	●	—	****	●	—	****
Illinois †	—	—	****	—	—	****
Indiana †	●	●	****	●	●	****
Iowa †	●	●	****	●	●	****
Kansas †	—	—	****	—	—	****
Kentucky	●	●	****	●	●	****
Louisiana	●	●	****	●	●	****
Maine †	●	●	****	●	●	****
Maryland	●	●	40	●	●	****
Massachusetts	●	●	41	●	●	****
Michigan †	●	●	****	●	●	****
Minnesota †	●	●	32	●	●	****
Mississippi	●	●	****	●	●	****
Missouri	●	●	****	●	●	****
Montana †	—	●	****	—	●	8
Nebraska	●	●	****	●	●	****
Nevada	—	●	21	—	●	7
New Mexico	●	●	****	●	●	5
New York †	●	●	47	●	●	****
North Carolina	●	●	****	●	●	21
North Dakota	●	●	****	●	●	7
Ohio †	●	—	****	●	—	****
Oklahoma	●	—	****	●	—	12
Oregon †	—	●	36	—	●	****
Rhode Island	↑	●	21	●	●	****
South Carolina	●	●	****	●	●	****
Tennessee	●	●	****	●	●	****
Texas	●	●	48	●	●	****
Utah	●	●	16	●	●	****
Vermont †	—	●	****	—	●	****
Virginia	●	●	45	●	●	****
West Virginia	●	●	****	●	●	****
Wyoming	●	●	****	●	●	18
Other Jurisdictions						
American Samoa	—	—	▲	—	—	****
District of Columbia	●	●	****	●	●	****
DDESS	—	●	23	—	●	****
DoDDS	—	●	27	—	●	10
Guam	●	●	2	●	●	****
Virgin Islands	—	—	****	—	—	****

● Indicates no significant difference between earlier year and 2000 in average scores.

↑ Indicates the average score in 2000 was significantly higher than in the specified year.

↓ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (↑↓) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑↓) indicate a significant change when only one jurisdiction or the nation is being examined.

**** Sample size is insufficient to permit a reliable estimate.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
~ Special analyses raised concerns about the accuracy and precision of national grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.
▲ Percentage is between 0.0 and 0.5
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Figure 3.21: State Achievement Level Results by Race/Ethnicity, Grade 8

Comparison of 2000 state percentages at or above *Proficient* to previous years by race/ethnicity for grade 8 public schools: 1990–2000

	White				Black				Hispanic			
	1990	1992	1996	2000	1990	1992	1996	2000	1990	1992	1996	2000
Nation	↑	↑	●	34	●	↑	●	5	↑	↑	●	9
Alabama	**↑**	**↑**	●	23	●	↑	●	4	●	●	●	6
Arizona †	**↑**	**↑**	●	31	●	●	●	8	●	●	●	8
Arkansas	**↑**	**↑**	●	19	●	●	●	2	●	●	●	4
California †	**↑**	●	●	27	●	●	●	4	●	●	●	7
Connecticut	**↑**	**↑**	↑	44	●	●	●	4	●	●	●	9
Georgia	**↑**	**↑**	●	28	●	●	●	4	●	●	●	5
Hawaii	**↑**	↑	●	28	●	●	●	8	●	●	●	5
Idaho †	**↑**	**↑**	—	30	●	●	—	****	●	●	—	9
Illinois †	**↑**	—	—	38	●	—	—	7	**↑**	—	—	11
Indiana †	**↑**	**↑**	↑	35	●	●	●	7	●	●	●	13
Kansas †	—	—	—	38	—	—	—	10	—	—	—	13
Kentucky	**↑**	**↑**	↑	23	●	●	●	7	●	●	●	****
Louisiana	**↑**	**↑**	↑	20	●	●	●	2	●	●	●	4
Maine †	—	**↑**	●	33	—	●	●	****	—	●	●	****
Maryland	**↑**	**↑**	●	40	↑	**↑**	●	7	↑	**↑**	●	17
Massachusetts	—	**↑**	●	37	—	●	●	8	—	**↑**	●	14
Michigan †	**↑**	**↑**	●	35	●	●	●	2	●	●	●	9
Minnesota †	**↑**	**↑**	●	42	●	●	●	****	●	●	●	13
Mississippi	—	●	●	14	—	●	●	1	—	●	●	1
Missouri	—	●	●	25	—	●	●	5	—	●	●	10
Montana †	**↑**	—	●	40	●	—	●	****	●	—	●	23
Nebraska	**↑**	●	●	34	●	●	●	8	●	●	●	11
Nevada	—	—	—	26	—	—	—	7	—	—	—	9
New Mexico	●	**↑**	●	26	●	●	●	****	●	●	●	6
New York †	**↑**	**↑**	●	36	●	●	●	10	**↑**	●	●	12
North Carolina	**↑**	**↑**	**↑**	41	**↑**	**↑**	●	7	**↑**	↑	●	18
North Dakota	●	●	●	33	●	●	●	****	●	●	●	17
Ohio	**↑**	**↑**	—	34	↑	●	—	8	**↑**	**↑**	—	21
Oklahoma	**↑**	●	—	22	**↑**	●	—	5	●	●	—	8
Oregon †	**↑**	—	●	34	●	—	●	15	●	—	●	13
Rhode Island	**↑**	**↑**	●	29	●	●	●	6	●	●	●	4
South Carolina	—	●	●	28	—	●	●	4	—	●	●	9
Tennessee	—	**↑**	●	21	—	●	●	3	—	●	●	12
Texas	**↑**	**↑**	●	37	●	●	●	6	**↑**	**↑**	●	14
Utah	—	↑	●	28	—	●	●	****	—	●	●	7
Vermont †	—	—	↑	33	—	—	●	****	—	—	●	****
Virginia	**↑**	**↑**	●	33	●	●	●	5	●	●	●	14
West Virginia	**↑**	**↑**	↑	19	●	●	●	8	↑	**↑**	●	14
Wyoming	**↑**	●	●	27	●	●	●	****	●	●	●	10
Other Jurisdictions												
American Samoa	—	—	—	****	—	—	—	****	—	—	—	▲
District of Columbia	●	●	●	****	**↑**	●	●	3	●	●	●	4
DDESS	—	—	●	38	—	—	●	17	—	—	●	16
DoDDS	—	—	●	36	—	—	●	10	—	—	●	18
Guam	●	●	●	****	●	●	●	****	●	●	●	2

See footnotes at end of figure. ▶

Figure 3.21: State Achievement Level Results by Race/Ethnicity, Grade 8 (continued)

Comparison of 2000 state percentages at or above *Proficient* to previous years by race/ethnicity for grade 8 public schools: 1990–2000

	Asian				American Indian			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	●	●	~	40	●	●	●	12
Alabama	●	●	●	****	●	●	●	****
Arizona †	●	●	●	35	●	●	●	****
Arkansas	●	●	●	****	●	●	●	****
California †	●	●	●	33	●	●	●	****
Connecticut	●	●	●	38	●	●	●	****
Georgia	●	●	●	****	●	●	●	****
Hawaii	↑	●	●	16	●	●	●	****
Idaho †	●	●	—	****	●	●	—	****
Illinois †	●	—	—	****	●	—	—	****
Indiana †	●	●	●	****	●	●	●	****
Kansas †	—	—	—	****	—	—	—	****
Kentucky	●	●	●	****	●	●	●	****
Louisiana	●	●	●	****	●	●	●	****
Maine †	—	●	●	****	—	●	●	****
Maryland	↑	↑	●	64	●	●	●	****
Massachusetts	—	●	●	49	—	●	●	****
Michigan †	●	●	●	****	●	●	●	****
Minnesota †	●	●	●	****	●	●	●	****
Mississippi	—	●	●	****	—	●	●	****
Missouri	—	●	●	****	—	●	●	****
Montana †	●	—	●	****	●	—	●	8
Nebraska	●	●	●	****	●	●	●	****
Nevada	—	—	—	26	—	—	—	11
New Mexico	●	●	●	****	●	●	●	4
New York †	●	●	●	42	●	●	●	****
North Carolina	●	●	●	****	●	●	●	****
North Dakota	●	●	●	****	●	●	●	6
Ohio	●	●	—	****	●	●	—	****
Oklahoma	●	●	—	****	●	●	—	8
Oregon †	●	—	●	35	●	—	●	****
Rhode Island	●	●	●	21	●	●	●	****
South Carolina	—	●	●	****	—	●	●	****
Tennessee	—	●	●	****	—	●	●	****
Texas	●	●	●	42	●	●	●	****
Utah	—	●	●	35	—	●	●	****
Vermont †	—	—	●	****	—	—	●	****
Virginia	●	●	●	49	●	●	●	****
West Virginia	●	●	●	****	●	●	●	****
Wyoming	●	●	●	****	●	●	●	7
Other Jurisdictions								
American Samoa	—	—	—	1	—	—	—	****
District of Columbia	●	●	●	****	●	●	●	****
DDESS	—	—	●	****	—	—	●	****
DoDDS	—	—	●	30	—	—	●	****
Guam	●	●	●	4	●	●	●	****

● Indicates no significant difference between earlier year and 2000 in average scores.

↑ Indicates the average score in 2000 was significantly higher than in the specified year.

↓ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (↑↓) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑↓) indicate a significant change when only one jurisdiction or the nation is being examined.

**** Sample size is insufficient to permit a reliable estimate.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
~ Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.
▲ Percentage is between 0.0 and 0.5
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

At grade 4, the percentage of students at or above *Proficient* in 2000 was higher than that in 1992 for white students in 24 jurisdictions, for black students in 6 jurisdictions, for Hispanic students in 2 jurisdictions, and for Asian/Pacific Islander students in 1 jurisdiction. None of the apparent changes for American Indian students were statistically significant in any jurisdiction.

In Indiana and Texas, the percentages of students performing at or above *Proficient* increased for white, black, and Hispanic students. In Alabama, Louisiana, and North Carolina, gains were made among white and black students. Between 1996 and 2000, the percentages of students at or above *Proficient* increased for white students in 9 jurisdictions, and for black students in 3 jurisdictions. None of the other apparent racial/ethnic group changes was statistically significant in any jurisdiction.

At grade 8, the percentage of students at or above *Proficient* in 2000 was higher than that in 1990 for white students in 27 jurisdictions, for black students in 3 jurisdictions, and for Hispanic students in 5 jurisdictions. None of the apparent changes for Asian/Pacific Islander or American Indian students in any state were statistically significant. North Carolina was the only state in which the percentages of white, black, and Hispanic students at or above *Proficient* increased during this time period. In Oklahoma, both white and black students made gains, and in Illinois, New York, Ohio, and Texas both white and Hispanic students made gains. Between 1996 and 2000, the only increase in percentages of students at or above *Proficient* across the racial/ethnic groups and jurisdictions were among white students in North Carolina.

The percentages of students at or above *Basic* by state across assessment years are presented in appendix B (tables B.37 and B.40). Cumulative percentages in each achievement level in 2000 by race/ethnicity for each jurisdiction are also given in appendix B (tables B.38 and B.41).

Trends in Scale Score Differences Between Selected Subgroups by State

Similar to results for the nation, trends in the score differences or "gaps" between male and female students across the assessment years were relatively small and unchanged across the states. Also similar to the national data, the score gaps between male and female students are generally much smaller than those seen between racial/ethnic subgroups. The only change in the magnitude of the racial/ethnic gaps studied across jurisdictions was a narrowing of the gap between white and Hispanic eighth-graders in North Carolina between 1990 and 2000. None of the other changes in racial/ethnic score gaps across years were statistically significant. The gender and racial/ethnic score gap results for jurisdictions are provided in appendix B.

Free/Reduced-Price Lunch Eligibility and NAEP Scores by State

NAEP collects data on students' eligibility for the federal Free/Reduced-Price lunch program as an indicator of economic status in both the national and state-by-state samples. Figures 3.22 and 3.23 present the results by state for grades 4 and 8, respectively. As noted previously, data collection of student eligibility for this program began in 1996, so the trend data displayed have only two points. At grade 4, students eligible for the program (those meeting the low-income guidelines) had improved average scale scores from 1996 to 2000 in 10 jurisdictions, while students whose families had somewhat higher incomes, and were consequently ineligible for the program, had improved average scale scores in 11 jurisdictions. Both eligible and non-eligible students showed gains since 1996 in five jurisdictions (Alabama, Louisiana, North Carolina, South Carolina, and Virginia).

At grade 8, students eligible for the program had higher scores from 1996 to 2000 in 5 jurisdictions, while students ineligible had higher scores in 10 jurisdictions. Both eligible and non-eligible students made gains between 1996 and 2000 in three jurisdictions (Indiana, North Carolina, and Virginia).

The percentages of students at or above *Proficient* by Free/Reduced-Price Lunch eligibility are presented for each participating jurisdiction in figures 3.24 and 3.25 for grades 4 and 8, respectively. Additional data for these subgroups of students by jurisdiction are included in appendix B: The percentages of students at or above *Basic* across years are presented in tables B.49 and B.52, and the cumulative percentages of students in each achievement level in 2000 are presented in tables B.50 and B.53.

Figure 3.22: State Scale Score Results by Free/Reduced-Price Lunch Eligibility, Grade 4

State average scale scores by student eligibility for free/reduced-price lunch program for grade 4 public schools: 1996–2000

	Eligible		Not Eligible	
	1996	2000	1996	2000
Nation	●	210	↑	236
Alabama	⬆	206	⬆	230
Arizona	●	205	●	231
Arkansas	●	206	●	229
California †	●	200	↑	229
Connecticut	⬆	216	●	242
Georgia	●	204	⬆	233
Hawaii	●	205	●	226
Idaho †	—	217	—	234
Illinois †	—	209	—	235
Indiana †	⬆	222	↑	240
Iowa †	●	224	●	236
Kansas †	—	217	—	241
Kentucky	●	210	●	231
Louisiana	⬆	210	⬆	233
Maine †	●	222	●	234
Maryland	●	204	●	233
Massachusetts	●	213	⬆	243
Michigan †	●	211	⬆	240
Minnesota †	●	220	●	240
Mississippi	●	202	●	226
Missouri	●	213	↑	237
Montana †	●	217	●	236
Nebraska	●	210	●	235
Nevada	●	208	●	228
New Mexico	●	205	●	227
New York †	⬆	214	●	239
North Carolina	⬆	220	⬆	241
North Dakota	●	221	●	235
Ohio †	—	217	—	239
Oklahoma	—	217	—	234
Oregon †	●	213	●	234
Rhode Island	●	206	⬆	236
South Carolina	⬆	208	⬆	235
Tennessee	●	204	●	231
Texas	⬆	222	●	242
Utah	●	215	●	233
Vermont †	●	216	⬆	237
Virginia	⬆	214	⬆	237
West Virginia	●	217	●	232
Wyoming	↑	220	⬆	234
Other Jurisdictions				
American Samoa	—	157	—	****
District of Columbia	⬆	188	●	219
DDESS	●	224	●	231
DoDDS	●	222	↑	229
Guam	●	176	●	194
Virgin Islands	—	183	—	****

● Indicates no significant difference between earlier year and 2000 in average scores.

⬆ Indicates the average score in 2000 was significantly higher than in the specified year.

⬇ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (⬆⬇) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑↓) indicate a significant change when only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
**** Sample size is insufficient to permit a reliable estimate.
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1996 and 2000 Mathematics Assessments.

Figure 3.23: State Scale Score Results by Free/Reduced-Price Lunch Eligibility, Grade 8

State average scale scores by student eligibility for free/reduced-price lunch program for grade 8 public schools: 1996–2000

	Eligible		Not Eligible	
	1996	2000	1996	2000
Nation	●	255	↑	285
Alabama	●	243	●	275
Arizona †	●	252	●	280
Arkansas	●	249	●	269
California †	●	242	●	273
Connecticut	●	251	**↑**	292
Georgia	**↑**	248	●	278
Hawaii	●	251	●	270
Idaho †	—	264	—	284
Illinois †	—	259	—	285
Indiana †	**↑**	267	**↑**	288
Kansas †	—	267	—	290
Kentucky	↑	257	**↑**	281
Louisiana	●	246	**↑**	276
Maine †	●	273	●	287
Maryland	↑	251	↑	286
Massachusetts	●	261	↑	289
Michigan †	●	256	●	286
Minnesota †	●	274	●	291
Mississippi	●	241	●	267
Missouri	●	256	●	280
Montana †	●	275	●	292
Nebraska	↓	262	●	288
Nevada	—	248	—	275
New Mexico	●	250	●	272
New York †	●	261	●	286
North Carolina	**↑**	261	**↑**	289
North Dakota	●	271	●	287
Ohio	—	262	—	289
Oklahoma	—	259	—	280
Oregon †	●	263	●	287
Rhode Island	●	252	**↑**	283
South Carolina	↑	252	↑	278
Tennessee	●	244	●	274
Texas	**↑**	261	●	285
Utah	●	262	●	281
Vermont †	●	266	**↑**	288
Virginia	**↑**	258	**↑**	282
West Virginia	↑	259	**↑**	278
Wyoming	●	265	●	281
Other Jurisdictions				
American Samoa	—	195	—	****
District of Columbia	●	227	**↑**	261
DDESS	●	268	●	281
DoDDS	●	271	●	280
Guam	●	216	●	238

● Indicates no significant difference between earlier year and 2000 in average scores.

↑ Indicates the average score in 2000 was significantly higher than in the specified year.

↓ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (**↑** **↓**) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑ ↓) indicate a significant change when only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
**** Sample size is insufficient to permit a reliable estimate.
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1996 and 2000 Mathematics Assessments.

Figure 3.24: State Achievement Level Results by Free/Reduced-Price Lunch Eligibility, Grade 4

State percentages at or above *Proficient* by student eligibility for free/reduced-price lunch program for grade 4 public schools: 1996–2000

	Eligible		Not Eligible	
	1996	2000	1996	2000
Nation	●	9	↑	33
Alabama	●	5	●	24
Arizona	●	7	●	26
Arkansas	●	5	●	21
California †	●	5	●	25
Connecticut	●	11	●	40
Georgia	●	5	🡅	29
Hawaii	●	6	●	22
Idaho †	—	13	—	28
Illinois †	—	7	—	30
Indiana †	↑	14	↑	37
Iowa †	●	17	●	32
Kansas †	—	13	—	40
Kentucky	●	7	●	26
Louisiana	🡅	7	🡅	27
Maine †	●	14	●	29
Maryland	●	7	●	31
Massachusetts	●	9	🡅	42
Michigan †	●	11	↑	38
Minnesota †	●	15	●	40
Mississippi	●	4	●	18
Missouri	●	9	●	31
Montana †	●	10	●	32
Nebraska	●	11	●	31
Nevada	●	6	●	22
New Mexico	●	5	●	22
New York †	●	8	●	36
North Carolina	↑	12	🡅	39
North Dakota	●	16	●	29
Ohio †	—	11	—	35
Oklahoma	—	8	—	25
Oregon †	●	11	●	30
Rhode Island	●	7	🡅	33
South Carolina	↑	7	🡅	31
Tennessee	●	6	●	27
Texas	●	13	●	40
Utah	●	13	●	29
Vermont †	●	15	●	34
Virginia	●	9	●	32
West Virginia	●	11	●	25
Wyoming	●	16	↑	30
Other Jurisdictions				
American Samoa	—	▲	—	****
District of Columbia	●	2	●	22
DDESS	●	18	●	28
DoDDS	●	17	●	24
Guam	●	1	●	4
Virgin Islands	—	1	—	****

● Indicates no significant difference between earlier year and 2000 in average scores.

🡅 Indicates the average score in 2000 was significantly higher than in the specified year.

🡇 Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (🡅🡇) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑↓) indicate a significant change when only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
**** Sample size is insufficient to provide a reliable estimate.
▲ Percentage is between 0.0 and 0.5.
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1996 and 2000 Mathematics Assessments.

Figure 3.25: State Achievement Level Results by Free/Reduced-Price Lunch Eligibility, Grade 8

State percentages at or above *Proficient* by student eligibility for free/reduced-price lunch program for grade 8 public schools: 1996–2000

	Eligible		Not Eligible	
	1996	2000	1996	2000
Nation	●	10	●	35
Alabama	●	5	●	23
Arizona †	●	9	●	27
Arkansas	●	7	●	18
California †	●	4	●	24
Connecticut	●	7	●	42
Georgia	●	5	●	27
Hawaii	●	8	●	21
Idaho †	—	17	—	32
Illinois †	—	12	—	34
Indiana †	●	13	↑	36
Kansas †	—	17	—	41
Kentucky	↑	8	↑	29
Louisiana	●	4	↑	22
Maine †	●	20	●	36
Maryland	●	7	●	37
Massachusetts	●	11	●	38
Michigan †	●	9	●	35
Minnesota †	●	27	●	42
Mississippi	●	3	●	14
Missouri	●	9	●	26
Montana †	●	25	●	43
Nebraska	●	15	●	36
Nevada	—	6	—	24
New Mexico	●	6	●	21
New York †	●	12	●	34
North Carolina	↑	13	⬆	38
North Dakota	●	21	●	35
Ohio	—	10	—	36
Oklahoma	—	8	—	26
Oregon †	●	16	●	37
Rhode Island	●	7	↑	31
South Carolina	●	6	↑	27
Tennessee	●	7	●	23
Texas	●	11	●	34
Utah	●	15	●	29
Vermont †	●	14	↑	38
Virginia	●	8	●	31
West Virginia	●	8	⬆	25
Wyoming	●	15	●	28
Other Jurisdictions				
American Samoa	—	1	—	****
District of Columbia	●	2	●	18
DDESS	●	16	●	31
DoDDS	●	18	●	27
Guam	●	1	●	5

● Indicates no significant difference between earlier year and 2000 in average scores.

⬆ Indicates the average score in 2000 was significantly higher than in the specified year.

⬇ Indicates the average score in 2000 was significantly lower than in the specified year.

NOTE:
Dark arrows, (⬆⬇) indicate a significant difference when examining only one jurisdiction and when using a multiple comparison based on all jurisdictions that participated in both years.

Light arrows (↑↓) indicate a significant change when only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
— Indicates that the jurisdiction did not participate.
**** Sample size is insufficient to provide a reliable estimate.
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.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1996 and 2000 Mathematics Assessments.

4 Becoming a More Inclusive National Assessment

Chapter Contents

Two sets of 2000 NAEP Mathematics Results

Results for the Nation

National Results by Gender

National Results by Race/Ethnicity

Overall State Results

Chapter Focus

How would the NAEP results differ if accommodations were permitted for special-needs students?

Legislation at the federal level now mandates the inclusion of all students in large-scale academic assessments.[1] As a consequence, most states have assessment programs that must make provisions for special-needs students—those with disabilities or limited English proficiency—that include the allowance of testing accommodations when appropriate. Assessing as representative a sample of the nation's students as possible is particularly important for NAEP's mission to serve as a key indicator of the academic achievement of the nation's students. This mission can be satisfactorily accomplished only if the assessment results include data gathered from all groups of students, including those classified as having special needs.

Although the intent of NAEP has consistently been to include special-needs students in its assessments to the fullest degree possible, the implementation of the assessment has always resulted in some exclusion of students who could not be assessed meaningfully without accommodations. Participating schools have been permitted to exclude certain students who have been classified as having a disability under the Individuals with Disabilities Education Act, based upon their Individualized Education Programs (IEP) and Section 504 of the Rehabilitation Act of 1973.

1 Goals 2000, Elementary and Secondary Education Act (ESEA), Improving America's Schools Act (IASA), Individuals with Disabilities Education Act (IDEA). See also: Title VI of the Civil Rights Act, Equal Educational Opportunities Act, Section 504 of the Rehabilitation Act.

Similarly, schools have been permitted to exclude some students they identify as being limited English proficient. Exclusion decisions are made in accordance with explicit criteria provided by the NAEP program.

In order to move the NAEP assessments toward more inclusive samples, the NAEP program began to explore the use of accommodations with special-needs students during the 1996 and 1998 assessments. An additional impetus for this change was an attempt to keep NAEP consistent with state and district testing policies that increasingly offered accommodations so that more special-needs students could be assessed. In both 1996 and 1998, the national NAEP sample was split so that some of the schools sampled were permitted to provide accommodations to special-needs students and the others were not. This sample design made it possible to study the effects on NAEP results of including special-needs students in the assessments under alternate testing conditions. Technical research papers have been published with the results of these comparisons.[2] Based on the outcomes of these technical analyses, the 1998 results of those NAEP assessments that used new test frameworks (writing and civics), and hence also began new trend lines, were reported with the inclusion of data from accommodated special-needs students.

The results presented in the 1996 mathematics report card included the performance of those students with disabilities (SD) or with limited English proficiency (LEP) who were assessed without the possibility of accommodations. They did not include the performance of students for whom accommodations were permitted in order to preserve comparability with the results from 1990 and 1992. Students in those assessments had not had accommodations offered to them. However, in both the 1996 and 2000 mathematics assessments, the NAEP program used the split-sample design, so that trends in students' mathematics achievement could be reported across all the assessment years and, at the same time, the program could continue to examine the effects of including students assessed with accommodations.

Two Sets of 2000 NAEP Mathematics Results

This report card is the first to display two different sets of NAEP mathematics results based on the split-sample design: 1) those that reflect the performance of regular and special-needs students when accommodations were not permitted, and 2) those that reflect the performance of regular and special-needs students—both those who were accommodated and those who could test without accommodations—when accommodations were permitted. It should be noted that accommodated students make up a small proportion of the total weighted number of students assessed (see table A.8, page 204 in appendix A for details). Making accommodations available may change the overall assessment results in subtle and different ways. For example, when accommodations are permitted, there may be some occurrences of students being accommodated who might have taken the test under standard conditions if accommodations were not permitted. This could lead

[2] Olson, J.F. and Goldstein, A. A. (1997). *The inclusion of students with disabilities and limited English proficient students in large-scale assessments: A summary of recent progress*. (NCES Publication No. 97–482). Washington, DC: National Center for Education Statistics.

Mazzeo, J., Carlson, J.E., Voelkl, K.E., & Lutkus, A. D. (1999). *Increasing the participation of special needs students in NAEP: A report on 1996 research activities*. (NCES Publication No. 2000–473). Washington, DC: National Center for Education Statistics.

to an overall increase in the average assessment results, if accommodations were to increase special-needs students' performance. Conversely, when accommodations are permitted, special-needs students who could not have been tested without accommodations could be included in the sample. Assuming that these are generally lower-performing students, their inclusion in the sample—even with accommodations—could result in an overall lower average score.

Chapters 1, 2, 3, 5, and 6 of this report are based on the first set of results (no accommodations offered). This chapter presents an overview of the second set of results—results that include students who were provided accommodations during the assessment administration. By including these results, the NAEP program begins a phased transition toward a more inclusive reporting sample. Future assessment results will be based solely on a student and school sample in which accommodations are permitted.

The two sets of results presented in this chapter were obtained by administering the assessment to a nationally representative sample of students and schools. In one part of the schools sampled, no accommodations were permitted; all students were assessed under the same conditions that were the basis for reporting results from the 1990, 1992, and 1996 NAEP mathematics assessments. In another part of the schools sampled, accommodations were permitted for students with disabilities and limited English proficient students who normally receive accommodations in their district or state assessment programs. Most accommodations that schools routinely provide for their own testing programs were permitted. The permitted accommodations included, but were not limited to the following:

- one-on-one testing,
- bilingual books,
- large print book,
- small-group testing,
- extended time,
- oral reading of directions, and
- use of an aide for transcribing responses.

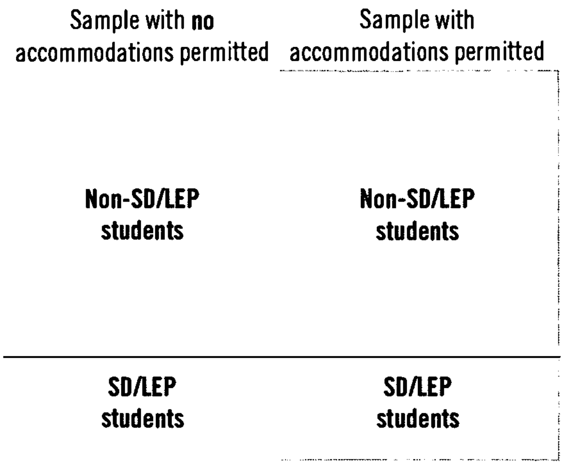
(See appendix A, table A.10, page 209, for greater detail on the numbers and percentages of students accommodated by accommodation type in the 1996 and 2000 assessments.)

Figure 4.1 provides a visual representation of how the two sets of results were based on the two samples in 1996 and 2000. Included in both sets of results (accommodations not permitted and accommodations permitted) are those students from both samples of schools who were not identified as either SD or LEP. In addition, the first set of results (accommodations not permitted) includes SD and LEP students from the sample of schools where accommodations were not permitted (see middle portion of figure 4.1). This is the set of results that allows for trend comparisons back to 1990 and are presented in the other chapters of this report.

The second set of results, accommodations permitted (see bottom portion of figure 4.1), includes SD and LEP students from the sample of schools where accommodations were permitted. This is the set of results that form the new, more inclusive baseline for future reporting of trend comparisons for the NAEP mathematics assessment.

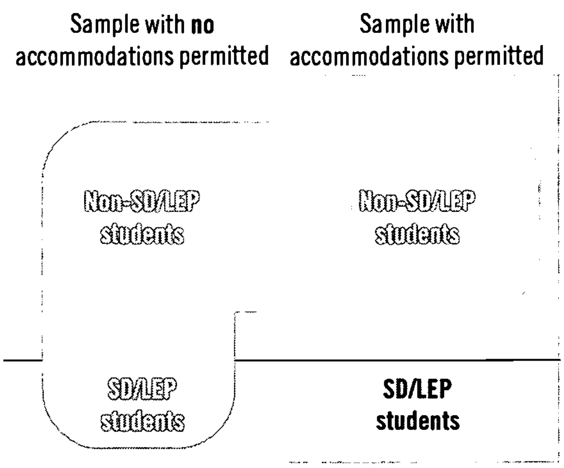
Figure 4.1 Split-Sample Design

The two sets of NAEP results based on a split-sample design



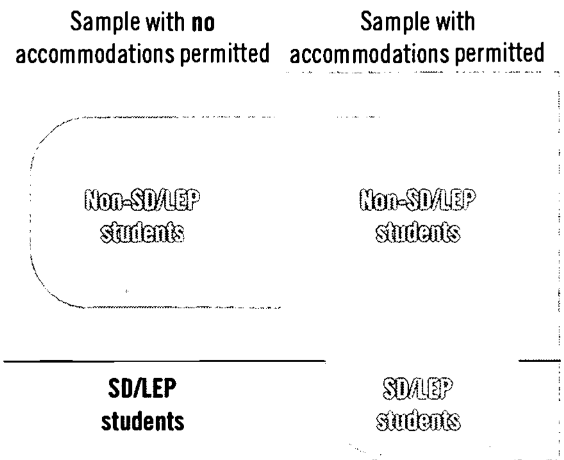
Split-sample design

The national sample was split. In part of the schools, accommodations were not permitted for students with disabilities (SD) and students with limited English proficiency (LEP). In the other schools, accommodations were permitted for SD and LEP students who routinely received them in their school assessments.



Accommodations-not-permitted results

The accommodations-not-permitted results include the performance of students from both samples who were not classified as SD or LEP and the performance of SD and LEP students from the sample in which no accommodations were permitted.



Accommodations-permitted results

The accommodations-permitted results also include the performance of students from both samples who were not classified as SD or LEP; however, the SD and LEP students whose performance is included in this set of results were from the sample in which accommodations were permitted. Since students who required testing accommodations could be assessed and represented in the overall results, it was anticipated that these results would include more special-needs students and reflect a more inclusive sample.

In the NAEP 2000 sample where accommodations were not permitted, 15 percent of the students at grade 4, 14 percent at grade 8, and 9 percent at grade 12, were identified by their schools as having special needs (i.e., either as students with disabilities or limited English proficient students). In the other sample where accommodations were offered, 17 percent of the students at grade 4, 13 percent at grade 8, and 9 percent at grade 12 were identified as having special needs. In the sample where accommodations were not permitted, 48 percent of the special-needs students at each of the three grade levels (between 4 and 7 percent of all students—see appendix A, table A.6, page 201) were excluded from NAEP testing by their schools. In the sample where accommodations were offered, between 22 and 28 percent of the special-needs students were excluded from the assessment (between 2 and 4 percent of the total sample). Thus, offering accommodations would appear to lead to greater inclusion of special-needs students.

The focus of this chapter is a comparison of data from the two sets of results: 1) accommodations were not permitted, and (2) accommodations were permitted. Because the split-sample design was used in both 1996 and 2000 for the NAEP national mathematics assessment, both sets of results are presented for both years. The split-sample design was first used in the NAEP state mathematics assessment in 2000. Overall results are provided for the nation and for participating states and other jurisdictions. In addition, national results are presented by gender and by race/ethnicity. These results are discussed in terms of statistically significant differences between the two sets of results in each year, changes between assessment years, and differences between subgroups of students within each set of results. Throughout this chapter, the assessment results that include SD and LEP students for whom accommodations were not permitted will be referred to as the "accommodations-not-permitted" results. The set of results that includes SD and LEP students for whom accommodations were permitted will be referred to as the "accommodations-permitted" results.

Results for the Nation

Accommodations Not Permitted and Accommodations Permitted

Table 4.1 displays the average mathematics scale scores for the nation in 1996 and 2000 for two sets of results: 1) accommodations not permitted, and 2) accommodations permitted. At grades 4 and 8 the apparent differences between the two average scores in either 1996 or 2000 were not statistically significant. At grade 12, the accommodations-permitted average score in 1996 was two points lower than the accommodations-not-permitted average score. The small difference between the two sets of results in 2000 was not statistically significant. Although there was a decline in average scores at grade 12 in both sets of results between 1996 and 2000, the 2 point decline when accommodations were permitted was not statistically significant.

Table 4.1 Comparison of Two Sets of National Scale Score Results

National average mathematics scale scores by type of results, grades 4, 8, and 12: 1996–2000

	Accommodations not permitted	Accommodations permitted
Grade 4		
1996	224 *	224 *
2000	228	226
Grade 8		
1996	272 *	271 *
2000	275	274
Grade 12		
1996	304 *	302 †
2000	301	300

* Significantly different from 2000.
† Significantly different from the sample where accommodations were not permitted.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

As noted in the introduction to this chapter, NAEP has always sought to include special-needs students proportional to their representation in the U.S. population. Offering accommodations tends to reduce exclusion rates for special-needs students and therefore allows NAEP to offer a fairer and more accurate picture of the status of American education. Because special-needs students are typically classified as eligible for special educational services after having shown some difficulty in the regular learning environment, some may assume that the academic achievement of special-needs students would be lower than that of students without such needs. This assumption appears to have been justified only in the observed difference between the two sets of grade 12 mathematics results in 1996, where the accommodations-permitted results, which included slightly more special-needs students because of the availability of accommodations, were lower than the accommodations-not-permitted results. It is important to examine the percentages of students attaining the NAEP achievement levels, however, to see if there were higher percentages at the lower achievement levels (i.e., below *Basic* and *Basic*), when students were assessed with accommodations.

Table 4.2 shows the percentages of students attaining each of the achievement levels. The percentages are similar across the two sets of 1996 results for grades 4 and 8; apparent differences between the accommodations-not-permitted and the accommodations-permitted results were not significantly different. At grade 12, however, the percentage of students below *Basic* in 1996 was higher when accommodations were permitted than when they were not permitted. In 2000, the percentage of fourth-graders below *Basic* was higher when accommodations were permitted than when accommodations were not permitted.

Table 4.2 Comparison of Two Sets of National Achievement Level Results

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of results, grades 4, 8, and 12: 1996 and 2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
1996: Accommodations were						
not permitted	36 *	43	19 *	2	64 *	21 *
permitted	36	43	19 *	2	64	21 *
2000: Accommodations were						
not permitted	31	43	23	3	69	26
permitted	33 †	42	22	3	67 †	25
Grade 8						
1996: Accommodations were						
not permitted	38 *	39	20 *	4	62 *	24 *
permitted	39 *	38	20 *	4	61 *	23 *
2000: Accommodations were						
not permitted	34	38	22	5	66	27
permitted	35	38	22	5	65	27
Grade 12						
1996: Accommodations were						
not permitted	31 *	53 *	14	2	69 *	16
permitted	34 †	50 †	14	2	66 †	16
2000: Accommodations were						
not permitted	35	48	14	2	65	17
permitted	36	48	14	2	64	16

* Significantly different from 2000.
† Significantly different from the sample where accommodations were not permitted.
NOTE: Percentages within each mathematics achievement level range may not add to 100 or to the exact percentages at or above achievement levels due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

National Results by Gender

Accommodations Not Permitted and Accommodations Permitted

The average mathematics scale scores by gender for both sets of results in 1996 and 2000 are provided in table B.58 (page 297) in appendix B. In 1996, female students at grade 12 had higher mathematics scores when accommodations were not permitted than when accommodations were permitted. The same was true for male students at grade 8 in 2000.

While the apparent difference in scores between male and female students in the fourth grade was not statistically significant when accommodations were not permitted in 2000, male students did score higher than females when accommodations were permitted. The reverse was true at grade 8, where male students scored higher than females when accommodations were not permitted, but the apparent difference in scores was not statistically significant when accommodations were permitted.

At grade 12, male students outperformed female students in 2000 regardless of whether or not accommodations were permitted.

There was also some variation by grade reflected in the two sets of results with respect to differences in the performance of female students between 1996 and 2000. At grade 4, female students had higher mathematics scores in 2000 than in 1996 when accommodations were not permitted and lower scores in 2000 at grade 12 when accommodations were not permitted. However, apparent differences in the performance of female students at grades 4 and 12 between 1996 and 2000 were not statistically significant when accommodations were permitted. The reverse was true at grade 8, where female students showed no statistically significant difference in performance when accommodations were not permitted but did show an increase from 1996 to 2000 when accommodations were permitted. The relationship in the performance of male students between 1996 and 2000 was similar in both sets of results.

The percentages of male and female students attaining the *Basic, Proficient,* and *Advanced* levels are provided in table B.59 (page 298) in appendix B. Comparing the two sets of results both in 1996 and 2000, no statistically significant differences were found in the percentages of students attaining each of the achievement levels at grades 4 or 8. At grade 12, however, a higher percentage of both male and female students were below *Basic* when accommodations were permitted in 1996 than when they were not.

National Results by Race/Ethnicity

Accommodations Not Permitted and Accommodations Permitted

NAEP assessments across academic subjects have typically reported large score differences according to race and ethnic group membership. If students with disabilities or limited English proficient students are over represented in a particular racial or ethnic group, that group's assessment scores may decrease. Table B.60 (page 299) in appendix B provides the average mathematics scale scores for each of the race/ethnicity categories for the two sets of results in 1996 and 2000. There were no statistically significant differences observed between the average scores when accommodations were not permitted and when accommodations were permitted for any of the race/ethnicity categories in either 1996 or 2000.

As noted in chapter 3, a pattern of performance differences by race/ethnicity can be seen in the accommodations-not-permitted results in 2000. Both white and Asian/Pacific Islander students scored higher than black, Hispanic, or American Indian students. The same pattern can be observed in the accommodations-permitted results. The only differences noted in the performance by ethnicity pattern between the two sets of results was that in the accommodations-permitted results, American Indian students scored higher than Hispanic students at grade 4 and higher than black students at grade 8. This was not the case in the accommodations-not-permitted results. At both grades 4 and 8, black students scored higher in 2000 than in 1996 when accommodations were permitted, while the apparent increase was not significant when accommodations were not permitted.

The percentages of students in each race/ethnicity category who attained the *Basic, Proficient,* and *Advanced* levels are provided in table B.61 (page 300) in appendix B. No significant differences were found at either grade 4 or grade 8 between the accommodations-not-permitted results and the accommodations-permitted results for the percentages of students attaining each of the achievement levels in 1996 and 2000. At grade 12, a higher percentage of white students in 1996 were below *Basic* when accommodations were permitted than when accommodations were not permitted.

State Results

Accommodations Not Permitted and Accommodations Permitted

While the split-sample design was used for both the 1996 and 2000 national assessments, it was used for the first time in the state assessment of mathematics in 2000. The two sets of average scale scores for the jurisdictions that participated in 2000 are presented in tables 4.3 and 4.4 for grades 4 and 8, respectively. As with the presentation of results for jurisdictions in previous chapters, two types of statistical tests are indicated in these tables—one that involves a multiple-comparison procedure based on all jurisdictions that participated, and one that examines each jurisdiction in isolation. The following discussion of differences between the accommodations-not-permitted results and the accommodations-permitted results is based solely on the multiple-comparison procedure.

Consistent with the national results, none of the apparent differences between the accommodations-not-permitted results and the accommodations-permitted results for grade 4 were statistically significant. At grade 8, however, there were seven states that had higher average scores when accommodations were not permitted than when they were permitted: Maryland, Massachusetts, Missouri, Nevada, New York, North Carolina, and West Virginia.

Figures 4.2 and 4.3 show comparisons of scale scores across states when accommodations were permitted for fourth- and eighth-grade students, respectively. Nine states were included among the highest-performing jurisdictions at grade 4: Connecticut, Minnesota, Massachusetts, Indiana, Kansas, Vermont, Texas, Iowa and Ohio. Eight of these states were also included among the highest-performing jurisdictions when accommodations were not permitted (Ohio had lower average scores than Minnesota, Massachusetts, and Indiana when accommodations were not permitted–see chapter 2). At grade 8, the cluster of highest-performing jurisdictions when accommodations were permitted included Minnesota, Montana, and Kansas. The same three states were also the highest-performing jurisdictions when accommodations were not permitted.

Table 4.3 Comparison of Two Sets of State Scale Score Results, Grade 4

State average mathematics scale scores by type of results for grade 4 public schools: 2000

	Accommodations not permitted	Accommodations permitted
Nation	226	225
Alabama	218	217
Arizona	219	219
Arkansas	217	216
California †	214	213
Connecticut	234	234
Georgia	220	219
Hawaii	216	216
Idaho †	227	224 *
Illinois †	225	223
Indiana †	234	233
Iowa †	233	231
Kansas †	232	232
Kentucky	221	219
Louisiana	218	218
Maine †	231	230
Maryland	222	222
Massachusetts	235	233
Michigan †	231	229 *
Minnesota †	235	234
Mississippi	211	211
Missouri	229	228
Montana †	230	228
Nebraska	226	225
Nevada	220	220
New Mexico	214	213
New York †	227	225
North Carolina	232	230 *
North Dakota	231	230
Ohio †	231	230
Oklahoma	225	224
Oregon †	227	224 *
Rhode Island	225	224
South Carolina	220	220
Tennessee	220	220
Texas	233	231
Utah	227	227
Vermont †	232	232
Virginia	230	230
West Virginia	225	223
Wyoming	229	229
Other Jurisdictions		
American Samoa	157	152
District of Columbia	193	192
DDESS	228	228
DoDDS	228	226
Guam	184	184
Virgin Islands	183	181

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
*Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessments.

Table 4.4 Comparison of Two Sets of State Scale Score Results, Grade 8

State average mathematics scale scores by type of results for grade 8 public schools: 2000

	Accommodations not permitted	Accommodations permitted
Nation	274	273
Alabama	262	264
Arizona †	271	269
Arkansas	261	257 *
California †	262	260
Connecticut	282	281
Georgia	266	265
Hawaii	263	262
Idaho †	278	277
Illinois †	277	275
Indiana †	283	281 *
Kansas †	284	283
Kentucky	272	270 *
Louisiana	259	259
Maine †	284	281 *
Maryland	276	272 ‡
Massachusetts	283	279 ‡
Michigan †	278	277
Minnesota †	288	287
Mississippi	254	254
Missouri	274	271 ‡
Montana †	287	285
Nebraska	281	280
Nevada	268	265 ‡
New Mexico	260	259
New York †	276	271 ‡
North Carolina	280	276 ‡
North Dakota	283	282
Ohio	283	281 *
Oklahoma	272	270
Oregon †	281	280
Rhode Island	273	269 *
South Carolina	266	265
Tennessee	263	262
Texas	275	273
Utah	275	274 *
Vermont †	283	281
Virginia	277	275
West Virginia	271	266 ‡
Wyoming	277	276
Other Jurisdictions		
American Samoa	195	192
District of Columbia	234	235
DDESS	277	274
DoDDS	278	278
Guam	233	234

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
*Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction.
‡ Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessments.

Figure 4.2 Cross-State Scale Score Comparisons for Accommodations-Permitted Results, Grade 4

Comparisons of average mathematics scale scores for grade 4 public schools: 2000 sample where accommodations were permitted

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average math scale score of this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, in the column under North Carolina: North Carolina's score was lower than Connecticut and Minnesota, about the same as all the states from Massachusetts through Utah, and higher than the remaining states down the column.

Connecticut (CT)	Minnesota (MN)†	Massachusetts (MA)	Indiana (IN)†	Kansas (KS)†	Vermont (VT)†	Texas (TX)	Iowa (IA)†	Ohio (OH)†	North Carolina (NC)	North Dakota (ND)	Maine (ME)†	Virginia (VA)	Michigan (MI)†	Wyoming (WY)	Montana (MT)†	Missouri (MO)	DoDEA/DDESS (DD)	Utah (UT)	DoDEA/DoDDS (DI)	New York (NY)†	Nebraska (NE)	Idaho (ID)†	Rhode Island (RI)	Oregon (OR)†	Oklahoma (OK)	West Virginia (WV)	Illinois (IL)†	Maryland (MD)	South Carolina (SC)	Tennessee (TN)	Nevada (NV)	Kentucky (KY)	Georgia (GA)	Arizona (AZ)	Louisiana (LA)	Alabama (AL)	Hawaii (HI)	Arkansas (AR)	New Mexico (NM)	California (CA)†	Mississippi (MS)	District of Columbia (DC)	Guam (GU)	Virgin Islands (VI)	American Samoa (AS)
CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT
MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN
MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA
IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS
VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT
TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA
OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME
VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY
MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO
DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI
NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY
NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID
RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD
SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN
NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY
GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ
LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC
GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU
VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI
AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

Jurisdiction has statistically significantly higher average scale score than the jurisdiction listed at the top of the chart.

No statistically significant difference from the jurisdiction listed at the top of the chart.

Jurisdiction has statistically significantly lower average scale score than the jurisdiction listed at the top of the chart.

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).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress, 2000 Mathematics Assessment.

Figure 4.3 Cross-State Scale Score Comparisons for Accommodations-Permitted Results, Grade 8

Comparisons of average mathematics scale scores for grade 8 public schools: 2000 sample where accommodations were permitted

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average math scale score of this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, in the column under Indiana: Indiana's score was lower than Minnesota, about the same as all the states from Montana through Michigan, and higher than the remaining states down the column.

Minnesota (MN)†	Montana (MT)†	Kansas (KS)†	North Dakota (ND)	Maine (ME)†	Indiana (IN)†	Connecticut (CT)	Ohio (OH)	Vermont (VT)†	Oregon (OR)†	Nebraska (NB)	Massachusetts (MA)	DoDEA/DoDDS (DI)	Michigan (MI)†	Idaho (ID)†	North Carolina (NC)	Wyoming (WY)	Virginia (VA)	Illinois (IL)†	Utah (UT)	DoDEA/DDESS (DD)	Texas (TX)	Maryland (MD)	New York (NY)†	Missouri (MO)	Kentucky (KY)	Oklahoma (OK)	Rhode Island (RI)	Arizona (AZ)†	West Virginia (WV)	Georgia (GA)	Nevada (NV)	South Carolina (SC)	Alabama (AL)	Hawaii (HI)	Tennessee (TN)	California (CA)†	New Mexico (NM)	Louisiana (LA)	Arkansas (AR)	Mississippi (MS)	District of Columbia (DC)	Guam (GU)	American Samoa (AS)
MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN
MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME
IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT
OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT
OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA
DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI
MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID
NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY
VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD
NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY
MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO
KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ
WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN
CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC
GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU
AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

Jurisdiction has statistically significantly higher average scale score than the jurisdiction listed at the top of the chart.

No statistically significant difference from the jurisdiction listed at the top of the chart.

Jurisdiction has statistically significantly lower average scale score than the jurisdiction listed at the top of the chart.

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).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress, 2000 Mathematics Assessment.

Tables 4.5 and 4.6 show the percentages of students in each jurisdiction who were at or above the *Proficient* level when accommodations were not permitted and when accommodations were permitted. Again, like the national results, the percentages were similar across the two sets of results at both grades 4 and 8.

Figures 4.4 and 4.5 indicate whether differences in the percentages of students at or above *Proficient* between pairs of participating jurisdictions were statistically significant when accommodations were permitted. The cluster of seven states with the highest percentage at or above the *Proficient* level included Minnesota, Massachusetts, Connecticut, Indiana, Vermont, Kansas, and Michigan. The same seven states were also clustered at the top when accommodations were not permitted (see chapter 2). At grade 8, Minnesota and Montana had the highest percentages of students at or above *Proficient* when accommodations were permitted. Although the percentages of students in Kansas and Connecticut were not statistically significantly different from that in Montana, they were lower than the percentage of students in Minnesota. The same pattern was observed in the accommodations-not-permitted results for grade 8.

Table 4.5 Comparisons of Two Sets of State *Proficient* Level Results, Grade 4

Percentage of students at or above the *Proficient* level in mathematics by state and type of results for grade 4 public schools: 2000

	Accommodations not permitted	Accommodations permitted
Nation	25	23
Alabama	14	13
Arizona	17	16
Arkansas	13	14
California †	15	13 *
Connecticut	32	31
Georgia	18	17
Hawaii	14	14
Idaho †	21	20
Illinois †	21	20
Indiana †	31	30
Iowa †	28	26
Kansas †	30	29
Kentucky	17	17
Louisiana	14	14
Maine †	25	23
Maryland	22	21
Massachusetts	33	31
Michigan †	29	28
Minnesota †	34	33
Mississippi	9	9
Missouri	23	23
Montana †	25	24
Nebraska	24	24
Nevada	16	16
New Mexico	12	12
New York †	22	21
North Carolina	28	25 *
North Dakota	25	25
Ohio †	26	25
Oklahoma	16	16
Oregon †	23	23
Rhode Island	23	22
South Carolina	18	18
Tennessee	18	18
Texas	27	25
Utah	24	23
Vermont †	29	29
Virginia	25	24
West Virginia	18	17
Wyoming	25	25
Other Jurisdictions		
American Samoa	▲	▲
District of Columbia	6	5
DDESS	24	23
DoDDS	22	21
Guam	2	2
Virgin Islands	1	1

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
*Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction.
▲ Percentage is between 0.0 and 0.5.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table 4.6 Comparisons of Two Sets of State *Proficient* Level Results, Grade 8

Percentage of students at or above the *Proficient* level in mathematics by state and type of results for grade 8 public schools: 2000

	Accommodations not permitted	Accommodations permitted
Nation	26	26
Alabama	16	16
Arizona †	21	20
Arkansas	14	13
California †	18	17
Connecticut	34	33
Georgia	19	19
Hawaii	16	16
Idaho †	27	26
Illinois †	27	26
Indiana †	31	29
Kansas †	34	34
Kentucky	21	20
Louisiana	12	11
Maine †	32	30
Maryland	29	27 *
Massachusetts	32	30
Michigan †	28	28
Minnesota †	40	39
Mississippi	8	9
Missouri	22	21
Montana †	37	36
Nebraska	31	30
Nevada	20	18
New Mexico	13	12
New York †	26	24
North Carolina	30	27 *
North Dakota	31	30
Ohio	31	30
Oklahoma	19	18
Oregon †	32	31
Rhode Island	24	22
South Carolina	18	17
Tennessee	17	16
Texas	24	24
Utah	26	25
Vermont †	32	31
Virginia	26	25
West Virginia	18	17
Wyoming	25	23
Other Jurisdictions		
American Samoa	1	1
District of Columbia	6	6
DDESS	27	24
DoDDS	27	27
Guam	4	4

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
*Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Figure 4.4 Cross-State *Proficient* Level Comparisons for Accommodations-Permitted Results, Grade 4

Comparisons of percentage of students at or above *Proficient* in mathematics for grade 4 public schools: 2000 sample where accommodations were permitted

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average math scale score of this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, in the column under Iowa: Iowa's score was lower than Minnesota, Massachusetts and Connecticut, about the same as all the states from Indiana through Rhode Island, and higher than the remaining states down the column.

Minnesota (MN)†	Massachusetts (MA)	Connecticut (CT)	Indiana (IN)†	Vermont (VT)†	Kansas (KS)†	Michigan (MI)†	Iowa (IA)†	Texas (TX)	North Carolina (NC)	Wyoming (WY)	North Dakota (ND)	Ohio (OH)†	Virginia (VA)	Montana (MT)†	Nebraska (NE)	Missouri (MO)	Maine (ME)†	DoDEA/DDESS (DD)	Oregon (OR)†	Utah (UT)	Rhode Island (RI)	Maryland (MD)	New York (NY)†	DoDEA/DoDDS (DI)	Illinois (IL)†	Idaho (ID)†	Tennessee (TN)	South Carolina (SC)	Georgia (GA)	West Virginia (WV)	Kentucky (KY)	Arizona (AZ)	Nevada (NV)	Oklahoma (OK)	Hawaii (HI)	Louisiana (LA)	Arkansas (AR)	Alabama (AL)	California (CA)†	New Mexico (NM)	Mississippi (MS)	District of Columbia (DC)	Guam (GU)	Virgin Islands (VI)	American Samoa (AS)
MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN
MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA
CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT
IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT
KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS
MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA
TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO
ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME
DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD
NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY
DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI
IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID
TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN
SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY
AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ
NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC
GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU
VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI
AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

Jurisdiction has statistically significantly higher average scale score than the jurisdiction listed at the top of the chart.

No statistically significant difference from the jurisdiction listed at the top of the chart.

Jurisdiction has statistically significantly lower average scale score than the jurisdiction listed at the top of the chart.

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).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress, 2000 Mathematics Assessment.

Figure 4.5 Cross-State *Proficient* Level Comparisons for Accommodations-Permitted Results, Grade 8

Comparisons of percentage of students at or above *Proficient* in mathematics for grade 8 public schools: 2000 sample where accommodations were permitted

Instructions: Read down the column directly under a jurisdiction name listed in the heading at the top of the chart. Match the shading intensity surrounding a jurisdiction's abbreviation to the key below to determine whether the average math scale score of this jurisdiction is higher than, the same as, or lower than the jurisdiction in the column heading. For example, in the column under Kansas: Kansas's score was lower than Minnesota, about the same as all the states from Montana through Michigan, and higher than the remaining states down the column.

Minnesota (MN)†	Montana (MT)†	Kansas (KS)†	Connecticut (CT)	Oregon (OR)†	Vermont (VT)†	North Dakota (ND)	Maine (ME)†	Ohio (OH)	Massachusetts (MA)	Nebraska (NE)	Indiana (IN)†	Michigan (MI)†	North Carolina (NC)	DoDEA/DoDDS (DI)	Maryland (MD)	Idaho (ID)†	Illinois (IL)†	Virginia (VA)	Utah (UT)	New York (NY)†	DoDEA/DoDDS (DI)	Texas (TX)	Wyoming (WY)	Rhode Island (RI)	Missouri (MO)	Kentucky (KY)	Arizona (AZ)†	Georgia (GA)	Oklahoma (OK)	Nevada (NV)	West Virginia (WV)	South Carolina (SC)	California (CA)†	Alabama (AL)	Tennessee (TN)	Hawaii (HI)	Arkansas (AR)	New Mexico (NM)	Louisiana (LA)	Mississippi (MS)	District of Columbia (DC)	Guam (GU)	American Samoa (AS)
MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN	MN
MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS	KS
CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT	CT
OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR
VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT	VT
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME
OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA	MA
NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI	MI
NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI
MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD	MD
ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID
IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA	VA
UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT	UT
NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY	NY
DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX	TX
WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY	WY
RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO	MO
KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY	KY
AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ
GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV	WV
SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN
HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC
GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU	GU
AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS

Jurisdiction has statistically significantly higher average scale score than the jurisdiction listed at the top of the chart.

No statistically significant difference from the jurisdiction listed at the top of the chart.

Jurisdiction has statistically significantly lower average scale score than the jurisdiction listed at the top of the chart.

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).

† Indicates that the jurisdiction did not satisfy one or more of the guidelines for school participation rates (see appendix A).

NOTE: Differences between states and jurisdictions may be partially explained by other factors not included in this table.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress, 2000 Mathematics Assessment.

5 School Contexts for Learning

Learning takes place in diverse contexts. This chapter and chapter 6 present information about the primary contexts that contribute to students learning mathematics: school and home. At school, students' teachers, the environment in which they learn, the availability of technology, and the amount of time devoted to instruction all have an impact on learning.[1] This chapter considers school factors, as reported by teachers and other school staff, and examines their relationship to students' average scale scores on the NAEP assessment. The information in this chapter is based on responses to background questionnaires completed by teachers of students who participated in the NAEP mathematics assessment and by administrative staff in the participating schools. Data based on teachers' responses are presented for grades 4 and 8 only. Teachers of grade 12 students were not administered a questionnaire because of the difficulty of linking students to teachers across the diversity of mathematics courses at this grade level. The information presented in this chapter and the next may help readers interpret some of the findings presented in earlier chapters of this report.

Chapter Focus

What teacher factors are related to mathematics achievement?

How does technology use and instructional time relate to achievement?

Chapter Contents

The contexts for learning explored in this chapter address three areas: teacher preparation, the use of technology, and instructional time and homework. As with all NAEP data, the unit of analysis in this chapter is the student. Although

1 Educational Resources Information Center (Fall, 1999). K-8 science and mathematics education. *ERIC Review (6)*2. (ERIC accession number ED 437931).

the data here are based on teachers' responses to the questionnaires, the results are reported in terms of the percentages of students whose teachers responded to each question in a particular manner. The results for each of the factors discussed in this chapter include the percentage of students and their corresponding average scale scores. Results from the 2000 assessment are compared to 1996, 1992, and 1990 results. In some cases, however, data for all these years were not available.

Readers are reminded that the relationship between a contextual variable and mathematics performance is not necessarily causal. For example, data from table 5.4 show that eighth-graders whose teachers reported more than 10 years of experience had higher scores than did students whose teachers reported no more than 2 years of experience. This finding seems to imply that teachers' experience has a positive impact on students' scores. Some school systems, however, allow experienced teachers to choose the school where they will teach, and some schools allow experienced teachers to select which classes they will teach. Teachers may prefer to teach in schools and classes with high-performing students. Thus, it may be that some students of experienced teachers have higher scores because experienced teachers choose to teach high-performing students, not because experienced teachers are more effective teachers. NAEP data can identify relationships between contextual variables and student performance, but cannot explain why the relationships exist.

Teacher Preparation: Area of Certification

Certification is one way that teachers can indicate they have had course work relevant to teaching. However, certification does not ensure that teachers have knowledge of the subject they teach or the skill to use that knowledge to instruct students. While most states have increased their licensing standards since 1980, more than half of the states still permit teachers to be hired who have not met the relevant licensing standards, a practice that has been on the rise in recent years as a result of the demand for teachers.[2]

Teachers who responded to the 2000 NAEP questionnaire were asked whether they had state-recognized teaching certification in various areas. Table 5.1 shows the percentages of students whose teachers indicated having certification in a particular area and the average mathematics scores of those students.

[2] Darling-Hammond, L. (1999). *Teacher quality and student achievement: A review of state policy evidence* (p. 10). (Document R-99-1). Washington, DC: University of Washington, Center for the Study of Teaching and Policy.

Table 5.1

Percentage of fourth- and eighth-graders and average score by teachers' reports on area of certification: 1992–2000

Grade 4

Teacher certification

	1992	1996	2000
Elementary or middle/junior high school education (general)			
Yes	97 *	95	95
	220	225	228
No	3 *	5	5
	217	218	217
Not offered	▲	▲	▲
	****	****	****
Elementary mathematics			
Yes	—	40 *	30
	—	225	228
No	—	37 *	49
	—	222	228
Not offered	—	23	21
	—	227	232
Middle/junior high school or secondary mathematics			
Yes	15	14	11
	219	227	225
No	85	84	86
	221	224	229
Not offered	1 *	2	3
	****	234	233

Fourth-graders with teachers certified in elementary or middle education scored higher than students whose teachers did not have this certification.

See footnotes at end of table. ▶

Table 5.1 (continued)

Percentage of fourth- and eighth-graders and average score by teachers' reports on area of certification: 1992–2000

Grade 8

Teacher certification

	1992	1996	2000
Elementary or middle/junior high school education (general)			
Yes	62 268	63 271	60 275
No	36 272	36 276	40 280
Not offered	2 280	1 ****	▲ ****
Elementary mathematics			
Yes	— —	26 274	24 277
No	— —	65 275	67 279
Not offered	— —	8 278	9 277
Middle/junior high school or secondary math			
Yes	83 270	85 * 276	78 281
No	17 266	14 * 267	19 267
Not offered	▲ * ****	1 ****	3 285

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
— Comparable data were not available.
**** Sample size is insufficient to permit a reliable estimate.
▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Eighth-graders with teachers certified in middle/junior high school or secondary math scored higher than students whose teachers did not have this certification.

In 2000, the relationship between teachers' reports on areas of certification and their students' average mathematics scores was mixed, and varied across the two grades. At grade 4, the students of teachers who reported having certification in elementary or middle/junior high school education scored higher, on average, than did the students of teachers who did not have this certification. Conversely, eighth-graders taught by teachers certified in elementary or middle/junior high school education actually scored lower, on average, than did eighth-graders taught by teachers without this certification.

At the eighth-grade, teachers' certification in middle/junior high school or secondary mathematics had a positive relationship with performance—students with teachers certified in this area had higher average scores than students with teachers without this certification. These results suggest that, at least at grade 8, teacher certification in a field and at a level consistent with the subject and grade-level taught does have a positive relationship with students' mathematics performance.

Few significant changes since 1992 or 1996 are evident in the percentages of students taught by teachers with different areas of certification. Almost all fourth-grade students who participated in the 1992, 1996, and 2000 mathematics assessments had teachers who reported being certified in elementary or middle/junior high school education. There was, however, a small decrease in the percentage of students taught by teachers with this certification—from 97 percent in 1992 to 95 percent in 2000. In addition, the percentage of fourth-graders with teachers certified specifically in elementary mathematics decreased from 40 percent in 1996 to 30 percent in 2000. The small percentage of fourth-graders with teachers certified in middle/junior high school or secondary mathematics did not change significantly between 1992 and 2000.

In 2000, about three-quarters of the students at grade 8 were taught by teachers who were certified in middle/junior high school or secondary mathematics, which was lower than the percentage reported in 1996. None of the other apparent changes across years in eighth-grade teachers' reports of certification area were statistically significant.

Teacher Preparation: Undergraduate Major Fields of Study

In order for students to meet higher standards in mathematics, it is important that their teachers have adequate knowledge of mathematical content and adequate skill to put that knowledge into practice in the classroom.[3] With this in mind, it is of interest to examine teachers' reports of their undergraduate major fields of study and their relationship to students' mathematics performance. Teachers who responded to the NAEP 2000 questionnaires were asked to identify their undergraduate major fields of study. Table 5.2 provides a summary of results for the various mathematics-related fields. The "yes" column provides results for students of teachers who marked a field as their major. The "no" column provides results for students of teachers who did not mark that field. It should be noted that teachers sometimes reported multiple fields of study.

[3] Kilpatrick, J., Swafford, J., Findell, B., (Eds.). (Forthcoming). *Adding it up: Helping children learn mathematics.* Washington, DC: National Academy Press.

Table 5.2

Percentage of fourth- and eighth-graders and average score by teachers' reports of undergraduate major: 1996–2000

Teachers' undergraduate major (more than one response could be given)

Grade 4

	1996		2000	
	Yes	No	Yes	No
Education	44 227	56 222	38 228	62 227
Elementary education	79 226	21 218	75 228	25 226
Secondary education	4 228	96 224	3 234	97 227
Mathematics	7 218	93 225	4 227	96 228
Mathematics education	6 232	94 224	4 233	96 227

Grade 8

	1996		2000	
	Yes	No	Yes	No
Education	31 273	69 274	30 277	70 277
Elementary education	25 271	75 274	31 275	69 277
Secondary education	33 276	67 272	29 278	71 276
Mathematics	44 278	56 269	43 282	57 273
Mathematics education	22 273	78 273	26 281	74 275

Eighth-graders had lower average scores when their teachers did not major in math or math education.

The percentage of students is listed first with the corresponding average scale score presented below.
NOTE: Percentages may not add to 100 due to rounding. Teachers may have reported more than one major.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

At the fourth-grade, students' average scores in 2000 had no significant relationship to whether or not their teacher reported majoring in any of the fields of study listed in the table. At the eighth-grade, however, two fields of study did show a relationship to student performance. In 2000, the students of teachers who majored in mathematics or mathematics education scored higher, on average, than did students whose teachers did not major in these fields. These results are consistent with those in the previous section, providing further evidence that, at grade 8, training within the field being taught does have a positive relationship to student performance.

Between 1996 and 2000, no significant change in teachers' reports of undergraduate majors is evident at either grade 4 or 8. At the fourth-grade, about three-quarters of the students in 2000 were taught by teachers who reported majoring in elementary education, while only 4 percent were taught by teachers who majored in either mathematics or mathematics education.

While fourth-graders were most commonly taught by teachers with education or elementary education majors, eighth-graders were taught by teachers who reported a wider distribution of majors. Although 43 percent of the eighth-graders in 2000 were taught by teachers who reported mathematics as a major, a substantial percentage of students were taught by teachers who reported other majors. This finding is consistent with a recent TIMMS international report in which it was noted that 41 percent of the U.S. eighth-graders were taught by teachers who have mathematics degrees compared to 71 percent of those who responded to an international survey.[4] These results are also consistent with those reported in a Council of Chief State School Officers report of classroom practices and subject content.[5] The Council's report noted that approximately 5 percent of elementary school teachers were mathematics or mathematics education majors, whereas almost one-half of middle school teachers had one of these majors.

Teacher Preparation: Preparation to Teach Mathematics Topics

To best serve the students they teach, teachers need preparation in the content areas of mathematics that are part of their students' curriculum. Therefore, it is interesting to examine the percentages and average scale scores of students whose teachers reported having different degrees of preparedness in content areas of mathematics. As noted in chapter 1, the questions used in the NAEP mathematics assessment were classified as belonging to one of five content strands: number sense, properties, and operations; measurement; geometry and spatial sense; data analysis, statistics, and probability; and algebra and functions. Teachers of students who participated in the assessment were asked how well prepared they were to teach each of these content strands. Table 5.3 presents the 2000 results for grades 4 and 8 based on teachers' responses to these questions. At both grades, the majority of students in 2000 were taught by teachers who considered themselves to be very well prepared or moderately well prepared to teach each of the content strands.

[4] Gonzales et al. (2000). *Pursuing excellence: Comparisons of eighth-grade mathematics and science achievement from a U. S. perspective, 1995 and 1999* (p. 44). Washington, DC: National Center for Education Statistics. Available online: www.nces.ed.gov/timss/timss-r

[5] Council of Chief State School Officers (May, 2000). *Using data on enacted curriculum in mathematics & science* (p. 27). Washington, DC: Author.

Table 5.3

Percentage of fourth- and eighth-graders and average score by teachers' reports on how well prepared they were to teach certain topics: 2000

Teachers' preparedness

Grade 4

	Very Well Prepared	Moderately Well Prepared	Not Very Well Prepared	Not Prepared
Number sense	74 228	25 225	▲ 218	▲ ****
Measurement	62 229	36 226	2 226	0 ****
Geometry	51 228	43 227	6 225	▲ ****
Data analysis	34 229	46 227	17 226	3 228
Algebra	36 229	45 227	16 227	3 223

Grade 8

	Very Well Prepared	Moderately Well Prepared	Not Very Well Prepared	Not Prepared
Number sense	84 279	15 267	▲ 269	▲ ****
Measurement	74 279	24 272	2 265	▲ ****
Geometry	64 280	32 274	4 258	▲ ****
Data analysis	61 280	33 272	6 272	1 247
Algebra	84 279	14 267	2 250	▲ ****

Eighth-graders whose teachers reported being very well prepared generally scored highest.

The percentage of students is listed first with the corresponding average scale score presented below.

**** Sample size is insufficient to permit a reliable estimate.

▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages may not add to 100 due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Similar to the results presented in the previous two sections, the relationship between this aspect of teacher preparation and students' scores was different at each grade. At grade 4, average mathematics scores did not vary significantly according to teachers' reports on how prepared they felt to teach each of the content strands. However, a positive relationship between teacher preparedness and students' average scores is quite evident at grade 8. For each content strand, students whose teachers reported being very well prepared to teach that content area scored higher, on average, than did students whose teachers reported being moderately well prepared.

Teacher Preparation: Total Years of Teaching Experience

Students who participated in the 2000 mathematics assessment were taught by teachers with various years of teaching experience, ranging from 2 years or less to 25 years or more. This section examines how long teachers of assessed students have been teaching, and the relationship between this aspect of teacher preparation and mathematics achievement. Teachers were asked how many years in total (including part-time teaching) they had taught at either the elementary or secondary level. Table 5.4 presents the 1996 and 2000 results for fourth- and eighth-grade students.

Table 5.4

Percentage of fourth- and eighth-graders and average score by teachers' reports on the number of years of experience teaching mathematics: 1996–2000

Teaching experience

Grade 4

	1996	2000
Two years or less	11 221	15 224
Three to five years	15 218	17 228
Six to ten years	26 * 227	18 226
Eleven to twenty-four years	33 224	32 228
Twenty-five years or more	15 229	18 231

Grade 8

	1996	2000
Two years or less	13 267	18 270
Three to five years	13 271	16 277
Six to ten years	20 272	19 276
Eleven to twenty-four years	37 276	32 278
Twenty-five years or more	17 277	15 282

Eighth-graders whose teachers had more than 10 years of experience scored higher than students whose teachers had 2 years or less experience.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Similar to the previous factors related to teacher preparation presented in this chapter, years of teaching experience had a somewhat positive relationship with student performance at grade 8, but no significant relationship at grade 4. In 2000, students' performance at grade 4 did not vary significantly in relation to the number of years of experience reported by their teachers. At grade 8, however, the scores of students whose teachers reported having more than 10 years of teaching experience were higher, on average, than the scores of students whose teachers reported having only 2 years or less of teaching experience.

About one-half of fourth- and eighth-graders in 2000 were taught by teachers with more than 10 years of experience. Teachers with only 2 years or less of experience were teaching 15 percent of fourth-graders and 18 percent of eighth-graders in 2000. These percentages did not change significantly between 1996 and 2000.

Teacher Preparation: Teachers' Familiarity with the NCTM Standards

The National Council of Teachers of Mathematics (NCTM) is a leading professional association concerned with providing leadership at the elementary and secondary levels to improve the learning and teaching of mathematics. The Council published *Curriculum and Evaluation Standards for School Mathematics* in 1989 and issued revised *Principles and Standards for School Mathematics* in 2000. [6,7] The earlier *Standards* document influenced the NAEP framework developed for the 1990 and 1992 assessments as well as the minor refinements made for the 1996 and 2000 assessments. Thus, it is of interest to find out the degree to which teachers at the fourth- and eighth-grade levels are familiar with the NCTM *Standards*. Teachers were asked how knowledgeable they were about the *Standards*, with response choices ranging from "Very knowledgeable" to "I have little or no knowledge." Table 5.5 presents the percentages of students and their average scores based on teachers' responses to this question.

6 National Council of Teachers of Mathematics (1989). *Curriculum and evaluation standards for school mathematics.* Reston, VA: Author.

7 National Council of Teachers of Mathematics (2000). *Principles and standards for school mathematics.* Reston, VA: Author.

Table 5.5

Percentage of fourth- and eighth-graders and average score by teachers' reports on their level of knowledge about the NCTM standards: 1996–2000

Teacher familiarity with NCTM standards

Grade 4

	1996	2000
Very knowledgeable	5 236	6 234
Knowledgeable	17 223	16 227
Somewhat knowledgeable	32 * 224	41 227
Little or no knowledge	46 * 223	36 227

Grade 8

	1996	2000
Very knowledgeable	16 282	22 282
Knowledgeable	32 * 276	40 277
Somewhat knowledgeable	33 * 270	25 278
Little or no knowledge	19 * 267	13 265

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Eighth-graders with teachers who had little or no knowledge of the NCTM standards scored lowest.

Here again, the relationship between this aspect of teacher preparation and student scores varied across the two grades. In 2000, eighth-graders whose teachers reported being very knowledgeable about the standards had higher average scores than those whose teachers reported being knowledgeable or having little knowledge about the standards. Students with teachers who reported having little or no knowledge of the standards scored the lowest. Among fourth-graders, however, there was no significant variation in average scores by teachers' familiarity with the *Standards*.

At both grades 4 and 8, there was evidence of a moderate increase in teachers' familiarity with the *Standards* between 1996 and 2000. The percentage of fourth-graders who were taught by teachers that were somewhat knowledgeable about the NCTM *Standards* increased from 32 to 41 percent, while the percentage of students taught by teachers with little or no knowledge of the *Standards* decreased by a similar amount. Nevertheless, despite the 11 years of exposure since the appearance of the *Standards*, only 6 percent of the fourth-graders in 2000 were taught by teachers who reported that they were very knowledgeable about the standards, while only another 16 percent of the students were taught by teachers who reported they were knowledgeable.

At grade 8, the percentage of students with teachers knowledgeable about the *Standards* increased, while the percentage taught by teachers who reported less familiarity decreased between 1996 and 2000. Eighth-graders appeared more likely to be taught by teachers with greater familiarity of the *Standards* than were fourth-graders. In 2000, 62 percent of eighth-grade students were taught by teachers who reported that they were at least knowledgeable about the *Standards*.

Use of Technology: Calculators in the Classroom

The proper role of calculators in the K-12 curriculum has been and continues to be debated. Calculator use policies vary across schools and, even within the same school, teachers have different opinions about how calculators should be integrated with instruction. For the past several NAEP mathematics assessments, fourth- and eighth-grade teachers of participating students have been asked questions about calculator use in their classes. The questions asked include how often students use calculators, whether instruction in the use of calculators is provided, whether calculator usage is restricted, and whether calculators can be used on tests. Table 5.6 presents the data for each of these questions. Additional information about calculator usage based on students' responses to related but different questions can be found in chapter 6.

Table 5.6

Percentage of fourth- and eighth-graders and average score by teachers' reports on calculator usage: 1990–2000

Grade 4

Calculator usage

	1990	1992	1996	2000
How often do students use a calculator?				
Every day	—	1 *	5	5
	—	209	228	230
Weekly	—	15	28	21
	—	225	229	230
Monthly	—	32	42	37
	—	222	224	230
Never/Hardly ever	—	51 *	26 *	37
	—	217	219	225
Do you provide instruction in the use of calculators?				
Yes	—	62 *	81 *	75
	—	221	225	229
No	—	38 *	19 *	25
	—	216	219	227
Do you permit unrestricted use of calculators?				
Yes	—	5 *	13	12
	—	220	225	229
No	—	95 *	87	88
	—	219	224	228
Do you permit calculator use on tests?				
Yes	2 *	5 *	10	11
	****	228	223	228
No	98 *	95 *	90	89
	215	219	224	228

No significant relationship between teachers' reports of calculator use and student performance at grade 4.

See footnotes at end of table. ▶

Table 5.6 (continued)

Percentage of fourth- and eighth-graders and average score by teachers' reports on calculator usage: 1990–2000

Grade 8

Calculator usage

	1990	1992	1996	2000
How often do students use a calculator?				
Every day	—	34 *	55	48
	—	280	281	283
Weekly	—	22	21	23
	—	269	271	275
Monthly	—	21 *	14	15
	—	259	263	267
Never/Hardly ever	—	24 *	9	14
	—	265	256	268
Do you provide instruction in the use of calculators?				
Yes	—	—	83	80
	—	—	274	277
No	—	—	17	20
	—	—	273	274
Do you permit unrestricted use of calculators?				
Yes	—	30	47 *	33
	—	281	280	281
No	—	70	53 *	67
	—	264	268	274
Do you permit calculator use on tests?				
Yes	32 *	48 *	67	65
	272	276	280	281
No	68 *	52 *	33	35
	259	263	262	269

Eighth-graders whose teachers reported daily calculator use scored highest.

Unrestricted calculator use and permitting calculator use on tests were both associated with higher scores.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
**** Sample size is insufficient to permit a reliable estimate.
— Comparable data were not available.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Student performance at grade 4 showed no significant relationship to teachers' reports of calculator use—regardless of its frequency, instruction provided, or the degree of restriction placed on its use. At grade 8, however, a mostly positive relationship was evident between students' average scores and teachers' reports on calculator use. Eighth-graders whose teachers reported that calculators were used almost every day scored highest. Weekly use was also associated with higher average scores than less frequent use. In addition, teachers who permitted unrestricted use of calculators and those who permitted calculator use on tests had eighth-graders with higher average scores than did teachers who did not indicate such use of calculators in their classrooms.

The most notable change in the frequency of calculator use at grade 4 is evident in the drop in the percentage of students with teachers who reported that calculators were never or hardly ever used in class—from 51 percent in 1992, to 26 percent in 1996, and then rising to 37 percent in 2000. Despite the increase between 1996 and 2000, the percentage in 2000 remained lower than that in 1992. This was accompanied by a small increase in the percentage of fourth-graders using calculators everyday—from 1 percent in 1992 to 5 percent in 1996 and 2000.

A similar pattern was observed in the percentage of fourth-graders with teachers who reported providing instruction in calculator use, which increased from 62 percent in 1992 to 81 percent in 1996, and then decreased to 75 percent in 2000. Despite the decrease between 1996 and 2000, the percentage in 2000 remained higher than that in 1992. Even though three-quarters of fourth-grade students in 2000 had teachers who reported providing some instruction on how to use calculators, the vast majority of fourth-graders were not permitted unrestricted use of calculators, or permitted to use a calculator for testing. There is some evidence, however, that such uses of calculators in fourth-grade classrooms is increasing. The percentage of students whose teachers permitted unrestricted calculator use increased from 5 percent in 1992 to 12 percent in 2000, and the percentage of students whose teachers permitted calculator use on tests increased from 2 percent in 1990 to 11 percent in 2000.

In contrast to the reports of fourth-grade teachers, the teachers of eighth-grade students reported more frequent use of calculators. In 2000, almost half of the students at grade 8 were taught by teachers who indicated that calculators were used on a daily basis. This represents an increase since 1992 when 34 percent of the eighth-graders used calculators every day. Teacher-reported information on instruction in the use of calculators was only available for 1996 and 2000, and showed no significant change in the fact that a large majority of eighth-grade students did receive some kind of instruction in both years.

The extent to which eighth-grade students' use of calculators has been restricted seems to have fluctuated across the years, with less restricted use in 1996 than in 1992, and more restricted use in 2000 compared to 1996. One-third of the eighth-graders in 2000 had teachers who permitted unrestricted calculator use. The percentage of students at grade 8 whose teachers allowed them to use calculators on tests has doubled since 1990—from 32 to 65 percent.

Use of Technology: Availability of Computers

Over the past decade, computers have played an increasingly important role in the nation's classrooms. Furthermore, research into the use of computer technology has shown that it can have a positive impact on student achievement when implemented properly.[8] As part of the NAEP mathematics assessment, school administrators were asked about the availability of computers in the school for students at grades 4, 8, and 12. Specifically they were asked to report whether or not computers were available to students in each of the following ways: in the classroom at all times, grouped in a separate computer laboratory available to classes, or available to bring to classrooms when needed. The results presented in table 5.7 highlight the increasing availability of computers in classrooms.

[8] Wenglinsky, H. (1998). *Does it compute? The relationship between education technology and student achievement in mathematics.* Princeton, NJ: Educational Testing Service.

Table 5.7

Percentage of students and their average scores by school reports on the availability of computers at grades 4, 8, and 12: 1996–2000

Availability of computers

Grade 4

	1996		2000	
	Yes	No	Yes	No
Available at all times in classrooms	61 *	39 *	83	17
	226	221	228	225
Grouped in computer lab but available	78	22	83	17
	224	223	229	226
Available to bring to classrooms	42 *	58 *	27	73
	226	222	227	230

Grade 8

	1996		2000	
	Yes	No	Yes	No
Available at all times in classrooms	30 *	70 *	52	48
	275	272	274	278
Grouped in computer lab but available	87	13	92	8
	273	271	277	275
Available to bring to classrooms	49 *	51 *	37	63
	274	272	276	276

Grade 12

	1996		2000	
	Yes	No	Yes	No
Available at all times in classrooms	18 *	82 *	43	57
	304	304	301	302
Grouped in computer lab but available	97	3	95	5
	304	298	302	287
Available to bring to classrooms	47 *	53 *	36	64
	306	302	304	300

At each grade, the percentage of students with computers available at all times in classrooms increased by at least 20 percentage points between 1996 and 2000.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Few significant relationships between computer availability and students' mathematics performance in 2000 are evident at any grade. Among eighth-graders, those students from schools that indicated computers were available at all times in classrooms scored lower, on average, than students from schools that did not indicate this level of computer availability. Among twelfth-graders, those students from schools that indicated computers were available in a computer laboratory had higher average scores than students from schools who did not indicate that computers were available in this manner. It should be noted, however, that only 5 percent of twelfth-graders in 2000 attended schools that did not have computers available for use in a laboratory setting.

In 2000, 83 percent of fourth-graders, 52 percent of eighth-graders, and 43 percent of twelfth-graders had access to computers in the classroom at all times. At each grade, these percentages represented an increase of at least 20 percentage points from 1996. As computers have become more available in the classrooms since 1996, there has been a concomitant decrease in the percentage of students in schools where computers are available to bring into the classroom. The availability of computers in labs has not changed significantly since 1996.

Use of Technology: Uses of Computers in Grades 4 and 8

The data presented in the previous section suggests that computers are widely available in individual classrooms, computer labs, or both places. But what instructional use is being made of these computers? Teachers of fourth- and eighth-grade students who participated in the mathematics assessment were asked, if they did use computers, what the primary uses of the computers were for mathematics instruction. The results for this question are presented in table 5.8.

Table 5.8

Percentage of fourth- and eighth-graders and average score by teachers' reports on their primary use of computers for mathematics instruction: 1996–2000

Instructional use of computers

Grade 4

	1996	2000
Drill	27 223	24 229
Demonstrate new math topics	2 222	3 234
Play math learning games	41 226	42 228
Simulations and applications	6 225	5 230
Not used	25 222	26 227

Grade 8

	1996	2000
Drill	16 270	15 271
Demonstrate new math topics	4 280	8 281
Play math learning games	13 267	14 271
Simulations and applications	12 281	12 281
Not used	54 272	52 278

Using computers for demonstrating new topics and for simulations and applications was associated with higher scores than other uses.

The percentage of students is listed first with the corresponding average scale score presented below.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

At grade 4, students' average mathematics scores in 2000 did not vary significantly across the different types of instructional uses of computers reported by teachers. At grade 8, however, there were some differences. Eighth-graders whose teachers reported using computers primarily for demonstrating new math topics or for simulations and applications had higher mathematics scores, on average, than students whose teachers reported using computers primarily for drill or for playing math learning games. In addition, the use of computers for drill and for games was associated with lower average scores than not using computers at all for instruction.

There were no significant changes between 1996 and 2000 in the patterns of computer use for mathematics instruction at either grade 4 or grade 8. In 2000, 26 percent of fourth-grade students and 52 percent of eighth-grade students had teachers who reported never using computers for instruction.

Instructional Time and Homework: Availability of Eighth-Grade Algebra

Algebra has been identified as a key course in the mathematics sequence.[9] Once offered primarily to ninth-graders, algebra is now commonly offered to eighth-grade students. Administrators in schools participating in the mathematics assessment were asked whether or not the school offers an eighth-grade algebra course for high school course placement or credit. Table 5.9 presents the results for this question.

Table 5.9

Percentage of eighth-graders and average scores by school reports on whether or not an algebra course was offered to eighth-grade students for high school credit: 1996-2000

Grade 8

Eighth-grade algebra

	1996	2000
Yes	80 275	82 277
No	20 267	18 272

The percentage of students is listed first with the corresponding average scale score presented below.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

[9] Choike, J. R. (2000). Teaching strategies for "algebra for all." *Mathematics Teacher (93)* 7, 556-560.

Although there was no significant relationship to mathematics performance, a large majority of eighth-grade students (82 percent) in 2000 were in schools that offered algebra to them for course placement or credit. This percentage has not changed significantly since 1996. Additional information about algebra, including which years students tend to be taking first- and second-year algebra, can be found in chapter 6.

Instructional Time and Homework: Math Instructional Time Per Week in Grades 4 and 8

Teachers of fourth- and eighth-grade students participating in the mathematics assessment were asked how many hours of mathematics instruction they delivered per week, ranging from two and one-half hours or less to four hours or more per week. Table 5.10 presents the results for this question.

Table 5.10

Percentage of fourth- and eighth-graders and average score by teachers' reports on the amount of instructional time spent on mathematics each week: 1992-2000

Time on mathematics instruction

Grade 4

	1992	1996	2000
Two and one-half hours or less	5 224	6 228	7 222
More than two and one-half hours but less than 4 hours	25 224	26 226	20 228
Four hours or more	71 217	68 223	73 229

Grade 8

	1992	1996	2000
Two and one-half hours or less	13 270	20 * 269	12 273
More than two and one-half hours but less than 4 hours	55 270	47 275	49 279
Four hours or more	32 268	33 274	40 274

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996 and 2000 Mathematics Assessments.

The amount of time teachers reported spending on mathematics instruction at grade 4 had no significant relationship to students' performance on the mathematics assessment in 2000. However, students at grade 8 whose teachers reported spending between two and one-half hours and four hours on mathematics instruction scored higher, on average, than those whose teachers spent four hours or more.

In 2000, 73 percent of fourth-grade students had teachers who reported spending four hours or more on mathematics instruction each week. This drops to 40 percent at grade 8 where almost half of the students were in classes where teachers spend between two and one-half and four hours per week on mathematics. These patterns of instructional time have remained fairly stable since 1992 with the exception of a decrease in the percentage of eighth-grade students with teachers reporting spending two and one-half hours or less on mathematics—from 20 percent in 1996 to 12 percent in 2000.

Instructional Time and Homework: Amount of Homework Assigned in Grades 4 and 8

In 1999, American eighth-graders scored above the 38-nation average in mathematics in the Third International Mathematics and Science Study-Repeat (TIMSS-R), but did not distinguish themselves as high achievers. [10] One of the factors related to achievement in mathematics is homework. [11]

For the 2000 NAEP mathematics assessment, teachers of fourth- and eighth-graders who participated in the assessment were asked how much mathematics homework they assigned to students each day. The results are presented in table 5.11.

[10] Gonzales, et al. (2000). *Pursuing excellence: Comparisons of eighth-grade mathematics and science achievement from a U. S. perspective, 1995 and 1999* (p. 116). Washington, DC: National Center for Education Statistics. Available online: www.nces.ed.gov/timss/timss-r

[11] Campbell, J.R., Hombo, C.M., and Mazzeo, J. *NAEP 1999 trends in academic progress: Three decades of student performance.* Washington, DC: National Center for Education Statistics.

Table 5.11

Percentage of fourth- and eighth-graders and average score by teachers' reports on the amount of mathematics homework assigned per day: 1992–2000

Mathematics homework assigned

Grade 4

	1992	1996	2000
None	6 222	4 232	6 231
15 minutes	52 222	50 226	47 230
30 minutes	37 218	40 222	40 227
45 minutes	4 203	4 214	5 212
1 hour	1 ****	1 206	1 219
More than 1 hour	▲ ****	1 ****	1 ****

Grade 8

	1992	1996	2000
None	3 238	2 241	2 255
15 minutes	29 263	30 266	25 269
30 minutes	49 269	54 276	55 276
45 minutes	16 282	10 * 284	15 290
1 hour	4 289	4 284	3 298
More than 1 hour	▲ ****	1 273	▲ ****

Eighth-graders whose teachers assigned 45 minutes of homework daily scored higher than students whose teachers assigned lesser amounts of homework.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
**** Sample size is insufficient to permit a reliable estimate.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996 and 2000 Mathematics Assessments.

In 2000, fourth-grade teachers who reported that they assigned 45 minutes of mathematics homework had students with lower average scores than teachers who assigned less homework. There were no significant differences among the average scores for students of teachers who assigned lesser amounts of homework. The relationship between amount of homework and mathematics performance was different at grade 8. In 2000, eighth-grade teachers who reported that they assigned 45 minutes of homework had students with higher average scores than did students with teachers who assigned lesser amounts of homework. Also, the average score of students whose teachers assigned no homework was lower than that for students of teachers who assigned 30 minutes, 45 minutes, or 1 hour of homework.

Most fourth- and eighth-graders in 2000 were taught by teachers who reported assigning either 15 or 30 minutes of homework in each of the three assessment years. There were no significant changes across the years at the fourth grade. For eighth-graders, the only significant change was an increase from 10 to 15 percent between 1996 and 2000 in the percentage of students whose teachers assigned 45 minutes of homework.

6 Classroom Practices and Home Contexts for Learning

The classroom teacher guides the learning of mathematics. However, unless students make a commitment to learning, even a rich and well-taught curriculum can fail to achieve the desired result. Evidence from a variety of sources makes it clear that a substantial number of students are not learning the mathematics they need to function in daily life and in the workplace.[1] In fact, earlier chapters of this report revealed that the performance of some population subgroups continues to lag far behind the performance of others.

Chapter Contents

Chapter Focus

What classroom practices and home factors are related to mathematics achievement? How have these practices and factors changed across years?

This chapter continues the examination of the school contexts in which students learn. However, unlike chapter 5, which considers students' performance on NAEP in terms of teachers' and school administrators' perceptions, this chapter looks at performance in light of students' perceptions. In addition, it looks at the course-taking patterns reported by eighth- and twelfth-graders and provides average scale scores for those who have taken particular courses in grades eight through twelve. This chapter also examines students' performance on NAEP with regard to their own perceptions about home factors, such as television viewing habits and hours worked at a job for pay, that may have an impact on mathematics achievement.

1 National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics* (p.4). Reston, VA: Author

The information presented in this chapter is based on students' responses to background questions administered as part of the NAEP 2000 mathematics assessment. In some cases, results from the 2000 assessment are compared with results from prior mathematics assessments to observe trends in students' responses. In other cases, data from previous years are not available.

As mentioned in the previous chapter, it is important to keep in mind that the relationship between a contextual variable and students' mathematics performance is not necessarily causal. For example, data from table 6.4 show that twelfth-graders who reported using graphing calculators had higher scores than those who did not. This finding may suggest that the use of graphing calculators is responsible for the higher level of performance. However, another plausible explanation for this result is that those students who use graphing calculators at grade 12 have taken more advanced mathematics courses or are otherwise more mathematically able than those students who reported not using graphing calculators at this grade level. NAEP data can identify relationships between contextual variables and student performance, but cannot explain why the relationships exist.

Classroom Practices

Table 6.1 presents three of the instructional practices students were asked about, including how often they do math problems from textbooks, talk with other students during class about how to solve problems, and use a calculator for mathematics. This table provides the percentages and corresponding average scores of students by frequency of these activities.

In 2000, fourth-graders generally seemed to perform best when certain classroom activities were engaged in on a moderate basis, rather than on a daily basis. Fourth-grade students who reported never or hardly ever doing math problems from a textbook scored lower in 2000 than those who did so more frequently. Students who reported talking with others about how to solve math problems on a monthly basis not only scored higher than students who never talked with other students, but also had higher average scores than those students who did so daily or weekly. A similar relationship was associated with fourth-grade students' performance and calculator use.

At grade 8, higher average scores were more likely to be associated with engaging in certain practices more frequently. Eighth-grade students who reported doing math problems from a textbook every day scored higher than those who engaged in this practice less frequently. The same was true for students' reported calculator use. Students who reported never or hardly ever engaging in these activities consistently had the lowest scores.

More frequent engagement in certain classroom activities was also associated with higher scores on the assessment at grade 12. Twelfth-grade students who reported doing math problems from a textbook every day, or using a calculator every day, scored higher than those who engaged in these activities less frequently. Twelfth-grade students who reported talking with others about how to solve math problems at least weekly scored higher than those students who reported talking with others either monthly or never.

Table 6.1

Percentage of students and average scores by students' reports on how often they do certain classroom activities at grades 4, 8, and 12: 1996–2000

Grade 4

Classroom Activities

	1996	2000
Do math problems from textbook		
Every day	57 227	56 230
Weekly	21 223	21 228
Monthly	6 221	7 230
Never/Hardly ever	15 217	16 221
Talk with other students during class about how to solve problems		
Every day	21 218	19 222
Weekly	18 * 224	22 229
Monthly	12 * 230	15 235
Never/Hardly ever	49 * 226	44 229
Use a calculator for mathematics		
Every day	10 207	10 214
Weekly	23 225	20 228
Monthly	26 234	25 238
Never/Hardly ever	41 222	45 228

Fourth-graders who reported never doing math problems from a textbook scored lowest.

Fourth-graders who reported monthly use of a calculator scored highest.

See footnotes at end of table ▶

Table 6.1 (continued)

Percentage of students and average scores by students' reports on how often they do certain classroom activities at grades 4, 8, and 12: 1996–2000

Classroom Activities

Grade 8

	1996	2000
Do math problems from textbook		
Every day	76 * 277	72 281
Weekly	15 * 261	18 265
Monthly	3 * 257	4 268
Never/Hardly ever	7 256	6 255
Talk with other students during class about how to solve problems		
Every day	31 * 270	38 277
Weekly	17 * 273	27 278
Monthly	13 274	13 279
Never/Hardly ever	39 * 273	22 269
Use a calculator for mathematics		
Every day	48 280	48 282
Weekly	26 268	25 274
Monthly	14 267	13 272
Never/Hardly ever	12 258	13 263

Eighth-graders who reported doing math problems from a textbook daily scored highest.

Eighth-graders who reported using a calculator daily scored highest.

See footnotes at end of table ▶

Table 6.1 (continued)

Percentage of students and average scores by students' reports on how often they do certain classroom activities at grades 4, 8, and 12: 1996–2000

Grade 12

Classroom Activities

	1996	2000
Do math problems from textbook		
Every day	71 *	65
	311	309
Weekly	10 *	13
	293	293
Monthly	3	4
	284	286
Never/Hardly ever	16 *	18
	286	283
Talk with other students during class about how to solve problems		
Every day	23 *	42
	307	309
Weekly	15 *	24
	306	306
Monthly	13 *	9
	307	300
Never/Hardly ever	50 *	24
	302	285
Use a calculator for mathematics		
Every day	69	69
	311	309
Weekly	15	14
	294	289
Monthly	7	6
	285	283
Never/Hardly ever	9	11
	283	279

Twelfth-graders who reported doing math problems from a textbook daily scored highest.

Twelfth-graders who reported using a calculator daily scored highest.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Except for an increase in the percentage of fourth-graders who reported talking with other students about how to solve math problems on a weekly or monthly basis, there has been little change in the frequency of classroom activities reported at grade 4 since 1996. The percentage of eighth-grade students who reported doing textbook problems every day dropped from 76 percent in 1996 to 72 percent in 2000. Similarly, the percentage of twelfth-graders decreased from 71 percent to 65 percent in the same span of time. In contrast, the percentage of students who reported solving problems with other students every day or weekly increased at both grades between 1996 and 2000. Most notably, the percentage of twelfth-graders engaged in this activity on a daily basis increased from 23 to 42 percent.

Frequency of Calculator Use for Classwork, Homework, and Quizzes

Students are permitted to use calculators on approximately one-third of the NAEP mathematics assessment blocks at each grade level. At grade 4, a four-function calculator is provided; at grades 8 and 12, a scientific calculator is provided. Although calculator use is permitted on some blocks, many of the questions in these blocks can be answered without the use of a calculator. Students must decide when the use of a calculator is helpful.

Students in all three grades were asked how frequently they used a calculator for classwork, homework, and on tests or quizzes. Table 6.2 presents the percentages and average scores for students who responded that they used a calculator for these activities every day, weekly, monthly, or never or hardly ever.

The relationship between calculator use and students' performance was markedly different at grade 4 than it was at either grade 8 or grade 12. Whereas lower scores on the mathematics assessment were associated with more frequent calculator use at grade 4, the opposite was generally true for eighth- and twelfth-grade students.

In 2000, about one-quarter of the fourth-grade students reported using calculators every day for classwork or for homework, and only a small percentage (4 percent) for tests and quizzes. Students at grade 4 who indicated that they used a calculator every day, whether for classwork, for homework, or for tests and quizzes, consistently scored lower than students who reported less frequent use of calculators for the same purposes. In contrast, students at both grades 8 and 12 who reported using calculators daily for these same purposes scored higher on the mathematics assessment than those at the same grade level who reported less frequent calculator use.

While there has been a decline since 1996 in the percentage of fourth-grade students who reported using a calculator every day for classwork and for homework, there has been no significant change in the proportion of students using calculators on tests and quizzes every day. At grade 8, there has been a decrease in the percentage of students using calculators daily for classwork (from 58 percent in 1996 to 44 percent in 2000) and for homework (from 52 percent in 1996 to 41 percent in 2000). There has been no significant change since 1996 in the reported frequency of calculator use by twelfth-grade students.

Table 6.2

Percentage of students and average scores by students' reports on how often they use a calculator for mathematics activities at grades 4, 8, and 12: 1996-2000

Frequency of Calculator Use

Grade 4

	1996	2000
Classwork		
Every day	33 * 208	24 210
Weekly	17 227	14 230
Monthly	17 241	17 240
Never/Hardly ever	34 * 232	44 235
Homework		
Every day	30 * 208	24 211
Weekly	16 223	16 222
Monthly	14 * 236	15 238
Never/Hardly ever	40 * 234	45 238
Tests and Quizzes		
Every day	5 198	4 202
Weekly	17 * 210	15 213
Monthly	18 * 220	13 222
Never/Hardly ever	60 * 233	68 236

More frequent use of calculators was generally associated with lower scores at grade 4.

See footnotes at end of table ▶

Table 6.2 (continued)

Percentage of students and average scores by students' reports on how often they use a calculator for mathematics activities at grades 4, 8, and 12: 1996-2000

Frequency of Calculator Use

Grade 8

	1996	2000
Classwork		
Every day	58 * 271	44 279
Weekly	21 * 275	25 276
Monthly	9 * 277	12 275
Never/Hardly ever	13 * 269	18 268
Homework		
Every day	52 * 274	41 283
Weekly	24 271	26 274
Monthly	10 * 275	13 275
Never/Hardly ever	14 * 266	21 265
Tests and Quizzes		
Always	—	24 292
Sometimes	—	45 274
Never	—	31 267

More frequent use of calculators was associated with higher scores at grade 8.

See footnotes at end of table ▶

Table 6.2 (continued)

Percentage of students and average scores by students' reports on how often they use a calculator for mathematics activities at grades 4, 8, and 12: 1996-2000

Frequency of Calculator Use

Grade 12

	1996	2000
Classwork		
Every day	68 309	68 308
Weekly	14 302	14 292
Monthly	4 290	3 286
Never/Hardly ever	14 287	14 283
Homework		
Every day	61 312	61 310
Weekly	16 296	15 293
Monthly	5 291	5 291
Never/Hardly ever	18 287	19 283
Tests and Quizzes		
Always	—	58 309
Sometimes	—	29 296
Never	—	13 280

More frequent use of calculators was associated with higher scores at grade 12.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
— Comparable data were not available.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Type of Calculator Used

Since calculator usage is so prevalent, and because enhancements are added regularly to calculators to increase their power, it is important to examine the types of calculators students are using in their regular schoolwork and to observe how students who customarily use different types of calculators perform on the NAEP assessment. This information is presented for fourth-grade students in table 6.3 and eighth- and twelfth-grade students in table 6.4.

At grade 4, students who use calculators generally work with a fairly simple four-function model. Fourth-graders participating in the mathematics assessment were asked whether or not they have a calculator that can be used to do mathematics schoolwork. Their responses are summarized in table 6.3

In 2000, more than one-half (55 percent) of the fourth-grade students indicated that they had access to a calculator to use for mathematics schoolwork. Fourth-graders who indicated that they have a calculator scored higher than their peers who did not. The extent to which fourth-grade students have reported having access to a calculator seems to have fluctuated over the years, increasing from 46 percent with access in 1992 to 62 percent in 1996, and then decreasing to 55 percent in 2000.

Table 6.3

Percentage of students and average scores by fourth-grade students' reports on whether or not they have a calculator for schoolwork: 1992-2000

Grade 4

Availability of a Calculator for Schoolwork

	1992	1996	2000
Yes	46 * 221	62 * 227	55 231
No	54 * 219	38 * 225	45 227

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP, 1992, 1996 and 2000 Mathematics Assessments.

Scientific and graphing calculators are the most common types of calculators used in grades 7-12. Eighth- and twelfth-graders who participated in the mathematics assessment were shown pictures and descriptions of scientific and graphing calculators. They were asked whether or not they used either of these types of calculators for their mathematics schoolwork. These students were also asked whether or not they used a calculator that can manipulate symbols, solve equations, and carry out other procedures (sometimes referred to as "symbol manipulators" or as having "algebraic logic"). For this question, a picture of a sample calculator screen was presented with the question to illustrate how the calculator screen for this type of calculator might look. Students' responses to these questions are shown in table 6.4.

Table 6.4

Percentage of students and average scores by students' reports on whether or not they use a particular type of calculator at grades 8 and 12: 1996-2000

Type of Calculator Used

Grade 8

	1996	2000
Scientific		
Yes	61 *	67
	277	279
No	39 *	33
	265	269
Graphing		
Yes	11 *	18
	275	286
No	89 *	82
	272	273
Symbol Manipulator		
Yes	—	9
		259
No	—	91
		277

Use of scientific or graphing calculator associated with higher scores at grade 8.

Grade 12

	1996	2000
Scientific		
Yes	70	68
	305	299
No	30	32
	303	306
Graphing		
Yes	51 *	62
	316	311
No	49 *	38
	292	286
Symbol Manipulator		
Yes	—	15
		301
No	—	85
		302

Use of graphing calculator associated with higher scores at grade 12.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
— Comparable data were not available.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

There was a relationship at both grades 8 and 12 between whether or not students used a particular type of calculator and how they performed on the mathematics assessment. This relationship was, however, dependent on the specific type of calculator and grade level.

In 2000, about two-thirds of the students at both grades 8 and 12 reported using a scientific calculator. While eighth-grade students who indicated they used a scientific calculator had higher average scores than their peers who did not use one, students at grade 12 who reported using a scientific calculator scored lower than other twelfth-graders who indicated that they did not. Using a graphing calculator was associated with higher mathematics scores at both grades 8 and 12. At grade 12, those students who reported using a graphing calculator scored an average of 25 scale score points higher than those who did not. Relatively few students at either grade 8 or grade 12 reported using a symbol manipulator. While eighth-grade students who indicated that they did not use a symbol manipulator had higher average scores than those who did, there was no relationship between student performance and the use of a symbol manipulator at grade 12.

Students' reported use of both scientific and graphing calculators at grade 8 has increased since 1996. While more twelfth-grade students reported using a graphing calculator in 2000 than in 1996, there has been no change in the proportion of students using a scientific calculator.

Mathematics Course-Taking in Grade 8

There was considerable variety in the mathematics classes eighth-graders reported taking. This section looks at the classes they reported taking and how percentages of students and average scale scores varied by class. Students were asked what mathematics class they were taking during the year in which the assessment took place. The response choices offered a wide range of courses from which students could choose. Eighth-graders' responses, broken down by males and females for each of the classes listed, are shown in table 6.5.

In 2000, most eighth-grade students reported being enrolled in either an eighth-grade mathematics course (37 percent), a prealgebra course (31 percent), or a first-year algebra course (25 percent). Eighth-graders who were enrolled in either an eighth-grade mathematics course or in prealgebra had lower mathematics scores than those enrolled in a first- or second-year algebra course, geometry, or integrated or sequential mathematics. There were no significant differences in performance for eighth-graders enrolled in first- or second-year algebra, geometry, or integrated or sequential mathematics. These same relationships between the course eighth-grade students were enrolled in and their performance on the mathematics assessment carried over for both male and female students.

Table 6.5

Percentage of students and average scores by eighth-grade students' reports on what mathematics class they are currently taking: 2000

Grade 8

Current Eighth-Grade Mathematics Course

	2000
All Students	
Eighth-grade mathematics	37 264
Prealgebra	31 270
First-year algebra	25 301
Geometry	2 295
Second-year algebra	1 291
Integrated or sequential math	2 296
Other math class	3 247
Male	
Eighth-grade mathematics	38 265
Prealgebra	29 272
First-year algebra	25 302
Geometry	2 296
Second-year algebra	2 293
Integrated or sequential math	2 298
Other math class	3 248
Female	
Eighth-grade mathematics	36 263
Prealgebra	32 268
First-year algebra	25 299
Geometry	1 294
Second-year algebra	1 287
Integrated or sequential math	2 293
Other math class	3 246

Eighth-graders taking eighth-grade mathematics or prealgebra scored lower than students taking first- or second-year algebra, geometry, or integrated math.

Eighth-grade males taking eighth-grade mathematics or prealgebra scored lower than students taking first- or second-year algebra, geometry, or integrated math.

Eighth-grade females taking eighth-grade mathematics or prealgebra scored lower than students taking first- or second-year algebra, geometry, or integrated math.

The percentage of students is listed first with the corresponding average scale score presented below.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Trends in Courses Taken by Twelfth-Grade Students

Assessment results are strongly linked to the opportunity to study challenging material and the degree to which students take advantage of these opportunities. This includes not only the way students apply themselves in the courses they take, but also the particular courses students choose to take as they progress through school. In grades 8–12, students can take a variety of mathematics courses. In 2000, students who participated in the twelfth-grade assessment were asked the following question about a group of 13 mathematics courses:

Which courses have you taken from eighth-grade to present? You should fill in more than one oval in each row if you have taken a course of that description more than once. If you have never taken a particular course, fill in the oval in the column "Course not taken." Fill in at least one oval in each row.

The specific courses listed started with general mathematics and ended with calculus. Table 6.6 presents the results for this question for each of the courses listed.

The "Not Taken" column provides evidence about the popularity of the various courses. Of the course titles listed, only 6 percent marked first-year algebra as not taken, so this was taken by nearly all high-school students (i.e., by 94 percent of the students). Some students marked more than one grade for a particular course. For example, they may have marked geometry in both grades 9 and 10. In such cases, the last year in which the course was taken was the one considered in the tabulation. It is of interest to peruse the table and note the most common grade in which various courses were taken and the average scores of students who took the course in that grade. For first-year algebra, 50 percent of the students took the course in grade 9 with an average score of 303. This is the traditional grade for taking first-year algebra. There has been a trend toward moving algebra earlier to make room for other mathematics courses. So it is not surprising to see that 23 percent of the students reported that they took first-year algebra in grade 8 and that their average score of 328 was higher than the average score of 303 for students who reported taking this course in grade 9.

The first four mathematics courses listed (general, business, applied, and introduction to algebra) are not considered to be part of the typical college preparatory curriculum. As one might expect, for each of these courses, the average score of students who reported that they did not take the course was higher than the average for those who did take the course in various other years.

Some schools offer students the opportunity to take unified, integrated, or sequential mathematics. Students may take courses by one of these names in more than one grade. For example, a student may take Course 1, Course 2, and Course 3 of unified mathematics in grades 9, 10, and 11. These courses would build on one another and get progressively more advanced as one moves from Course 1 to Course 3. Since, for a given course, the tabulations were done by considering only the last year in which a course was taken, a student who marked this course in grades 9, 10, and 11 would have had this response tabulated under grade 11, the last year the unified course was taken. Note that the percentages are generally low for this course, but the average scores tend to increase from grade 8 to grade 12.

The course with the highest average score at any grade is calculus taken in grade 12. Other courses with high average scores were precalculus at grade 11 (336) and geometry at grades 8 (339) and 9 (330).

Table 6.6

Percentage of students and average scores by twelfth-grade students' reports on mathematics courses taken since eighth-grade: 2000

Grade 12

Twelfth-Grade Course-Taking Patterns

	Not Taken	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
1. General mathematics	36 318	53 296	5 274	2 276	2 276	3 288
2. Business mathematics	80 306	2 285	4 280	3 283	4 291	7 289
3. Applied mathematics	82 307	4 294	5 276	3 278	3 280	3 290
4. Introduction to algebra	26 317	42 310	23 285	6 267	2 270	1 263
5. Algebra I	6 283	23 328	50 303	16 283	4 274	1 269
6. Geometry	12 271	2 339	20 330	44 306	16 291	5 280
7. Algebra II	20 276	1 306	6 328	27 323	36 305	10 290
8. Trigonometry	74 299	▲ ****	▲ 300	3 332	12 324	10 307
9. Precalculus	63 291	▲ ****	▲ ****	2 335	18 336	17 318
10. Unified, integrated, or sequential mathematics	89 304	1 276	2 281	2 303	4 304	3 307
11. Statistics	82 303	1 275	2 289	2 300	5 311	8 317
12. Discrete/finite mathematics	95 304	1 272	1 ****	1 288	1 302	2 315
13. Calculus	82 297	▲ ****	▲ ****	▲ ****	2 329	16 342
14. Other	83 305	1 288	2 288	2 288	4 296	8 302

Twelfth-graders who had taken higher-level courses generally scored higher.

The percentage of students is listed first with the corresponding average scale score presented below.
**** Sample size is insufficient to permit a reliable estimate.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Mathematics Courses Taken vs. NAEP Performance

Students who take certain courses listed in table 6.6 may be better prepared to take the NAEP twelfth-grade assessment than are students who take, for example, only one or two of the more basic courses such as general mathematics or introduction to algebra. To explore how the particular pattern of courses students take relates to performance, four groupings of the courses were considered. A description of each grouping is presented in figure 6.1. The groupings are generally consistent with the course sequencing practices of most school districts. The course groups are organized in ascending order of mathematics preparation with Group I representing the lowest level of course taking and Group IV the highest. The groupings are imperfect because course titles are imperfect representations of course content. For example, a course listed as "introduction to algebra" at one school may be just as demanding as first-year algebra at another school. Nevertheless, the courses in each successive grouping represent a generally agreed upon hierarchy of courses offered in grades 8 through 12.

Figure 6.1 Groupings of Courses Taken	Mathematics courses associated with each group as related to the twelfth-grade mathematics assessment
Group I Level	Students were placed in Group I if they had not taken any math course or if the only courses they had taken were those numbered 1 through 4 in table 6.6 (general mathematics through introduction to algebra). Students in this group have had the opportunity to be exposed to some mathematical content in each of the five mathematics content strands, but not at the level needed to deal with much of the content assessed by NAEP.
Group II Level	Students were placed in Group II if they took first-year algebra no later than grade 9 or took course 10, unified, integrated, or sequential mathematics in grade 9. Students who, in addition, took one or more of the Group I courses (numbers 1-4) were included in this group. Students who took courses such as geometry, second-year algebra, or other higher-numbered courses were not included in this group. The primary difference between this group and the previous group is the higher level of preparation in algebra.
Group III Level	Students were placed in Group III if they marked one or more of courses 6, 7, or 10 with course 6 (geometry) taken in grade 10 or earlier and course 10 (unified) taken in grades 10, 11, or 12. Students who, in addition, took courses listed in Group I or II above were included in this group. Students who took any of the more advanced courses numbered 8, 9, 11, 12, or 13 were not included in this group. As an example, a student who took general mathematics, first-year algebra, and geometry would be considered to be in Group III.
Group IV Level	Students were placed in Group IV if they took at least one of courses 8, 9, 11, 12, or 13. Students who, in addition, took any of the courses listed above were also included in this group. For example, a student who took first-year algebra, geometry, second-year algebra, precalculus, and calculus would be considered in this group. Students in this group should have had the opportunity to learn most of the material needed to answer NAEP mathematics questions, and in certain cases (e.g., precalculus or calculus) to learn material beyond that required by NAEP.

Table 6.7 provides the percentage of students who fall in each of the four course groupings described in figure 6.1 and their average scale scores. Groups III and IV account for 32 percent and 50 percent, respectively, of the twelfth-grade students. There is a strong relationship between group membership and average scores. The average score of the students in each group is higher than the average for students in any lower numbered group. For example, the average score of students in Group III (294) is higher than that of Group I (275) and Group II (282). These findings indicate that successively more advanced course taking had a positive relationship with average mathematics scores.

These performance results are consistent with data presented in the 2000 College Bound Seniors Report.[2] In that report, the average SAT I mathematics scores of college bound seniors who studied mathematics for 2 years was 449, whereas the average for 4 years of study was 522. Relative to mathematics courses taken, the average SAT I score for students who took geometry was 518, while for those who took calculus the average was 610. ACT results show a similar relationship to achievement.[3] Students who reported taking core mathematics courses (three or more years of mathematics, including Algebra I, Algebra II, and Geometry) had an average ACT score of 21.8 compared to 19.0 for those who took less than the core courses.

Table 6.7

Percentage of students and average scores by mathematics course groupings based on twelfth-grade students reports on courses taken since eighth grade: 2000

Grade 12

Mathematics Courses Taken vs. Performance at Grade 12

	Group I	Group II	Group III	Group IV
	15 275	4 282	32 294	50 318

The percentage of students is listed first with the corresponding average scale score presented below.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

[2] The College Board. (2000). *College bound seniors national report* (p.3). New York, NY: Author.
[3] ACT. (2000). *ACT assessment 2000 results: Summary report national* (p.4). Iowa City, IA: Author.

Students' Reported Time Spent on Mathematics Homework

It has been observed that the correlation between homework and achievement is weaker in elementary school than in secondary school.[4] One of the possible reasons advanced to explain this observation is that elementary school teachers are more likely to use homework to review class material, whereas secondary school teachers more often used homework to prepare for and enrich class lessons.

Table 6.8 presents information about time spent on mathematics homework in 2000 for grades 4, 8, and 12. Most students at all three grades reported spending between 15 and 45 minutes per day on mathematics homework in 2000 (keeping in mind that 29 percent of the students at grade 12 reported not taking a mathematics course at all in their senior year). Although the relationship between student performance and the amount of time spent on mathematics homework varied by grade level, there was a common pattern that suggested more time was not necessarily better.

Fourth-grade students who reported spending 15 or 30 minutes per day on math homework had higher average scores than students who reported spending more time. In addition, fourth-graders who reported not doing any homework performed similarly to those who spent anywhere from 15 to 45 minutes per day, and actually had higher average scores than those who spent one hour or more on homework.

Students at grade 8 who reported not doing mathematics homework had lower average scores than those students who spent between 15 minutes and one hour on mathematics homework, but did not differ in performance from students who reported spending more than one hour on homework. Eighth-grade students who reported spending as little as 15 minutes per day doing math homework had higher scores than those who spent an hour or more; however, only 3 percent of eighth-graders reported spending more than one hour daily on homework.

Students at grade 12 who reported not spending any time doing mathematics homework scored lower than their peers who reported spending anywhere from 15 minutes to as much as an hour or more on homework. However, there was no significant difference in the performance of students who reported spending any amount of time from 15 minutes to an hour or more on mathematics homework.

[4] Muhlenbruck, L., Cooper, H., Nye, B., & Lindsay, J. (2000). Homework and achievement: Explaining the different strengths of relation at the elementary and secondary levels. *Social Psychology of Education,* 3, 295-317.

Table 6.8

Percentage of students and average scores by students' reports on time spent per day on mathematics homework at grades 4, 8, and 12: 2000

Time Spent on Mathematics Homework

Grade 4

	2000
None	6 228
15 minutes	44 232
30 minutes	28 230
45 minutes	10 224
One hour	8 217
More than one hour	4 217

Fourth-graders who spent 15 to 30 minutes per day on homework scored higher than students who spent more time.

Grade 8

	2000
None	9 265
15 minutes	32 280
30 minutes	34 277
45 minutes	14 278
One hour	8 274
More than one hour	3 271

Eighth-graders who did not do homework scored lower than students who spent 15 minutes to one hour per day on homework.

See footnotes at end of table ▶

Table 6.8 (continued)

Percentage of students and average scores by students' reports on time spent per day on mathematics homework at grades 4, 8, and 12: 2000

Grade 12

Time Spent on Mathematics Homework

	2000
Not taking math this year	29 293
None	12 290
15 minutes	16 307
30 minutes	20 308
45 minutes	11 310
One hour	8 311
More than one hour	4 309

Twelfth-graders who did not do homework scored lower than students who did.

The percentage of students is listed first with the corresponding average scale score presented below.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Time Spent Working at a Part-Time Job

Most twelfth-graders spend time working at part-time jobs. This section reports how much time students are spending at these jobs and provides average scale scores for those who worked various numbers of hours. Students were asked how many hours per week they usually work in a part-time job, and were told to exclude vacations. The response choices to this question ranged from "None" to "More than 30 hours." The full range of responses is shown in table 6.9.

In 2000, 71 percent of twelfth-grade students reported working at a part-time job. Students who reported working 21 hours per week or more had lower average scores than those who did not work at all or worked fewer hours. There was no difference between the performance of students who didn't work at all and those who worked up to 20 hours per week.

Table 6.9

Percentage of students and average scores by twelfth-grade students' reports on hours spent at a part-time job: 2000

Grade 12

Time Spent Working at a Part-Time Job

	2000
None	29 306
Fewer than six hours	5 312
Six to ten hours	10 308
Eleven to fifteen hours	12 308
Sixteen to twenty hours	17 305
Twenty-one to twenty-five hours	13 296
Twenty-six to thirty hours	8 292
More than thirty hours	6 287

Twelfth-graders who worked 21 hours or more each week scored lowest.

The percentage of students is listed first with the corresponding average scale score presented below.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Time Spent Watching Television

The impact of television on school learning has been a topic for discussion and debate for many years. Although many television programs have sound educational value, watching too much television is widely believed to detract from academic pursuits. Other forms of entertainment such as video games, computer games, and surfing the internet also compete for students' time, but they are not considered in this report.

After-school activities such as television viewing, extracurricular activities, homework, and jobs have been found to be related to test scores and grades.[5] While more time in extracurricular and other structured activities were associated with higher test scores and class grades, more time spent watching television and at jobs were associated with lower test scores and grades.

Students who participated in the 2000 assessment in grades 4, 8, and 12 were asked how much television they usually watch each day and could choose a response ranging from "None" to "6 hours or more." For this analysis, their responses have been collapsed into three categories. Table 6.10 presents the results for grades 4, 8, and 12, respectively. Results are presented for the 2000 mathematics assessment as well as for the mathematics assessments in 1990, 1992, and 1996 when this same question was asked.

About one-third of the students at both grades 4 and 8, and less than one-fifth at grade 12, reported watching television four hours or more per day in 2000. The relationship between students' performance in mathematics and more frequent television watching was similar at all three grades—that is, students who watched television for four or more hours per day scored lower than those who watched less frequently. At grade 4, however, students who watched television two or three hours per day scored higher than those who watched one hour or less, while the reverse was true at grades 8 and 12.

At grades 4 and 8, students' reports indicate a trend toward less television viewing on a daily basis. The percentage of students watching four hours or more of television each day decreased between 1990 and 2000—from 44 percent of fourth-graders and 43 percent of eighth-graders in 1990 to only 33 percent at each grade in 2000. Only minimal changes across years are evident in the television viewing habits of twelfth-graders, with no significant differences between the reports of students in 1990 and those in 2000.

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5 Cooper, H., Valentine, J., Nye, B., & Lindsay, J. (1999). Relationship between five after-school activities and academic achievement. *Journal of Educational Psychology*, 91(2), 369-378.

Table 6.10

Percentage of students and average scores by students' reports on the amount of time spent watching television each day at grades 4, 8, and 12: 1990-2000

Time Spent Watching Television

Grade 4

	1990	1992	1996	2000
One hour or less	19 * 213	21 * 223	25 * 225	28 230
Two or three hours	36 * 220	36 * 226	36 * 230	39 233
Four hours or more	44 * 208	43 * 213	39 * 217	33 219

Grade 8

	1990	1992	1996	2000
One hour or less	13 * 270	17 * 279	18 * 278	20 285
Two or three hours	44 * 267	46 275	46 277	47 280
Four hours or more	43 * 256	37 * 256	37 * 262	33 264

Grade 12

	1990	1992	1996	2000
One hour or less	33 304	33 * 309	34 314	36 310
Two or three hours	47 295	46 300	46 304	46 301
Four hours or more	20 278	20 * 284	20 * 288	18 285

Students at each grade who watched four hours or more of TV per day scored lowest.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Students' Attitudes Toward Mathematics

Students' attitudes about a subject have been found to be related to performance.[6] In fact, as will be seen in this section, the attitudes of students who took the NAEP assessment relate rather strongly to performance. Students who participated in the mathematics assessment at all three grades were asked to consider several statements (not all of which are included in this report) about mathematics, such as "I like mathematics," and to indicate the extent to which they agreed with each statement. There were five response choices associated with each statement: strongly agree, agree, undecided, disagree, and strongly disagree. These choices were collapsed for reporting purposes as follows: strongly agree or agree were collapsed to "agree"; and disagree and strongly disagree were collapsed to "disagree." Table 6.11 presents the results for four statements at grades 4, 8, and 12. Results for two of these questions are presented for the 2000 mathematics assessment as well as for the mathematics assessments in 1990, 1992, and 1996 when the same questions were asked.

All three grade levels showed a positive relationship between students' performance and their attitudes toward mathematics. Students who agreed that they liked math and that math was useful for solving problems had higher average scores than those who disagreed. Students at all three grades who disagreed that math was mostly memorizing facts and that there was only one way to solve a problem scored higher than those who agreed with these statements. In addition, students at grade 12 who indicated that they would not study mathematics if they had the choice scored lower than those who indicated that they would.

The extent to which students' attitudes toward mathematics have changed since the early 1990s varies somewhat by grade. While there has been no change since 1990 in the percentage of fourth-graders who reported liking math, fewer eighth- and twelfth-grade students reported liking math in 2000 than in the early 1990s. While the percentage of fourth-grade students who agreed that math was useful for solving everyday problems increased from 63 percent in 1990 to 71 percent in 2000, the percentage of twelfth-grade students who responded similarly decreased from 73 percent in 1990 to 61 percent in 2000. The percentage of students who disagreed that math was mostly memorizing facts increased at all three grade levels between 1992 and 2000.

[6] National Academy Press. (1999). *Global perspectives for legal action: Using TIMSS to improve U.S. mathematics and science education* (p.18). Washington, DC: Author.

Table 6.11

Percentage of students and average scores by students' reports on their attitudes toward mathematics at grades 4, 8, and 12: 1990-2000

Grade 4

Students' Attitudes Toward Mathematics

	1990	1992	1996	2000
I like Math				
Agree	70 215	71 222	69 226	70 231
Undecided	16 213	16 221	17 225	16 229
Disagree	14 204	12 209	14 219	14 221
Math is useful for solving problems				
Agree	63 * 216	66 * 224	69 229	71 234
Undecided	22 * 213	21 * 219	17 222	18 225
Disagree	14 * 203	13 * 208	14 * 213	11 217
Math is mostly memorizing facts				
Agree	—	57 * 218	54 221	52 225
Undecided	—	28 225	25 * 228	27 233
Disagree	—	16 * 224	21 235	21 240
Only one way to solve a problem				
Agree	—	—	17 207	16 212
Undecided	—	—	20 221	19 225
Disagree	—	—	63 232	65 236

Fourth-graders who said they like math scored highest.

Fourth-graders who thought math is useful for solving problems scored highest.

Fourth-graders who did not think math is mostly memorizing facts or that there's only one way to solve a problem scored highest.

See footnotes at end of table ▶

197

Table 6.11 (continued)

Percentage of students and average scores by students' reports on their attitudes toward mathematics at grades 4, 8, and 12: 1990-2000

Grade 8

Students' Attitudes Toward Mathematics

	1990	1992	1996	2000
I like Math				
Agree	57 267	57 * 273	56 277	54 282
Undecided	22 261	20 268	21 271	21 277
Disagree	21 * 254	23 * 260	23 * 263	26 267
Math is useful for solving problems				
Agree	76 266	81 * 271	80 * 275	75 279
Undecided	15 262	12 * 269	12 * 274	15 280
Disagree	9 245	7 * 259	8 * 259	10 269
Math is mostly memorizing facts				
Agree	—	44 * 259	41 * 263	37 268
Undecided	—	26 * 273	28 275	28 278
Disagree	—	30 * 283	31 * 284	35 289
Only one way to solve a problem				
Agree	—	—	8 246	9 255
Undecided	—	—	14 264	13 268
Disagree	—	—	78 277	78 282

Eighth-graders who said they like math scored highest.

Eighth-graders who thought math is useful for solving problems scored highest.

Eighth-graders who did not think math is mostly memorizing facts or that there's only one way to solve a problem scored highest.

See footnotes at end of table ▶

Table 6.11 (continued)

Percentage of students and average scores by students' reports on their attitudes toward mathematics at grades 4, 8, and 12: 1990-2000

Grade 12

Students' Attitudes Toward Mathematics

	1990	1992	1996	2000
I like Math				
Agree	54 *	51 *	50 *	47
	304	308	313	312
Undecided	17	17	17	17
	286	297	301	298
Disagree	29 *	32 *	33 *	37
	284	288	293	289
Math is useful for solving problems				
Agree	73 *	71 *	70 *	61
	298	302	307	305
Undecided	15 *	18 *	16 *	19
	289	298	301	302
Disagree	12 *	12 *	14 *	19
	286	292	296	292
Math is mostly memorizing facts				
Agree	—	41 *	35	36
		288	292	290
Undecided	—	20 *	21	22
		297	299	297
Disagree	—	39 *	44	42
		314	317	314
Only one way to solve a problem				
Agree	—	—	6	6
			291	284
Undecided	—	—	12	12
			290	288
Disagree	—	—	82	83
			308	305
Would not study math if given choice				
Agree	—	—	31 *	37
			295	293
Undecided	—	—	22 *	19
			301	299
Disagree	—	—	47 *	43
			312	311

Twelfth-graders who said they like math scored highest.

Twelfth-graders who thought math is useful for solving problems scored highest.

Twelfth-graders who did not think math is mostly memorizing facts or that there's only one way to solve a problem scored highest.

Twelfth-graders who would not study math if given a choice scored lowest.

The percentage of students is listed first with the corresponding average scale score presented below.
* Significantly different from 2000.
— Comparable data were not available.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Appendix A

Overview of Procedures Used for the NAEP 2000 Mathematics Assessment

This appendix provides an overview of the NAEP 2000 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 forthcoming *NAEP 2000 Technical Report.*

Chapter Focus

Technical Aspects of the NAEP 2000 Mathematics Assessment

Appendix Contents

The NAEP 2000 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 through a national consensus approach. The mathematics framework used for the 2000 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]

[1] National Council of Teachers of Mathematics (1989). *Curriculum and evaluation standards for school mathematics.* Reston, VA: Author.

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

Prior to 1990, mathematics was assessed based on an earlier framework, which was also 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 2000 is comparable only to the other assessments based on the 1990 framework—1990, 1992, and 1996. Furthermore, the 2000 assessment includes questions based on a refinement of the 1990 framework, which took place in 1993 and represents more recent instructional viewpoints.

The 1996 assessment was based on the first update of the 1990 NAEP mathematics framework[3] since the release of the NCTM *Curriculum and Evaluation Standards for School Mathematics* in 1989. 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 2000 framework is the same as the 1996 framework, the assessment results from 1990 to 2000 can be compared. The refinements that distinguish the framework used in the 1996 and 2000 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 (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 (communication and connections) from the NCTM *Standards*;
- including more constructed-response questions in the 1996 and 2000 assessments than were included in 1990 and 1992; and
- revisiting some of the content strands to make sure they reflect recent curricular emphases.

Figure A.1 describes the five content strands that constitute the NAEP mathematics assessment. These content strands apply to each of the three grades assessed by NAEP. The questions designed to test the various strand topics 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 Strands**

Number Sense, Properties, and Operations

This content strand 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, this strand emphasizes 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, and the strand addresses properties and operations involving whole numbers, fractions, decimals, integers, and rational numbers. At grade 12, this strand includes real and complex numbers and allows students to demonstrate competency up to the precalculus or calculus level.

Measurement

This content strand 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 strand focuses on time, money, temperature, length, perimeter, area, capacity, weight/mass, and angle measure. At grades 8 and 12, the strand 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- and twelfth-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 strand 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 they are asked 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. At grade 12, students are asked to demonstrate an understanding of transformational geometry and to apply concepts of proportional thinking to various geometric situations.

Continued on next page. ▶

Figure A.1 (continued) — **Descriptions of the Five NAEP Mathematics Content Strands**

Data Analysis, Statistics, and Probability	This content strand 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 strand 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. At grade 12, the strand focuses on the ability to apply the concepts of probability and to use formulas and more formal terminology to describe a variety of situations. For twelfth-graders, the strand also emphasizes a basic understanding of how to use mathematical equations and graphs to interpret data.
Algebra and Functions	This content strand extends from work with simple patterns at grade 4 to basic algebra concepts at grade 8 to sophisticated analyses at grade 12. It involves not only algebra, but also precalculus and some topics from discrete mathematics. Students are expected to use algebraic notation and thinking in meaningful contexts to solve mathematical and real-world problems, specifically addressing an increasing understanding of the use of functions (including algebraic and geometric) as a representational tool. 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. By grade 12, students are asked about basic algebraic notation and terminology as they relate to representations of mathematical and real-world situations. Twelfth-graders are asked to use functions as a way of representing and describing relationships.

SOURCE: National Assessment Governing Board. *Mathematics framework for the 1996 National Assessment of Educational Progress.* Washington, DC: Author.

The assessment framework specified not only the particular strand topics that should be assessed, but also the target percentages of the assessment questions that should be devoted to each of the strands. The distribution of items among the content strands is a critical feature of the assessment design, since it reflects the relative importance and value given to each. Table A.1 gives the target percentages for each of the five strands by grade level for the four most recent assessments. The actual percentages of items came very close to these targets. Notice that these percentages shift from grade 4 to grade 12 to reflect the shift in curricular emphasis as students move from fourth- to twelfth-grade. For example, in grade 4 there is more emphasis on the number sense, properties, and operations strand than on the algebra and functions strand. In grade 12, the percentage of algebra and functions items increases, and the percentage of number sense, properties, and operations items decreases.

Table A.1

Target percentage distribution of items by content strand and grade: 1990–2000

	Grade 4				Grade 8				Grade 12			
	1990	1992	1996	2000	1990	1992	1996	2000	1990	1992	1996	2000
Number sense, properties, and operations	45	45	40	40	30	30	25	25	25	25	20	20
Measurement	20	20	20	20	15	15	15	15	15	15	15	15
Geometry and spatial sense	15	15	15	15	20	20	20	20	20	20	20	20
Data analysis, statistics, and probability	10	10	10	10	15	15	15	15	15	15	20	20
Algebra and functions	10	10	15	15	20	20	25	25	25	25	25	25

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

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The Assessment Design

Each student who participated in the mathematics assessment received a booklet containing six sections: a set of general background questions, a set of subject-specific background questions, three sets of cognitive questions, and a set of questions about their motivation and familiarity with assessment tasks. Assessments for each grade consisted of 13 sets of cognitive questions or "blocks." Three blocks at each grade level from the 1990 assessment, three from the 1992 assessment, and four from the 1996 assessment were carried forward to 2000 to allow for the measurement of trends across time. The remaining three blocks contained new questions that were developed for the 2000 assessment as specified by the updated framework.

As mentioned in chapter 1 of this report, 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 2000 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: 1990–2000

	Grade 4				Grade 8				Grade 12			
	1990	1992	1996	2000	1990	1992	1996	2000	1990	1992	1996	2000
Multiple-choice	102	99	81	87	149	118	102	100	156	115	99	100
Short constructed-response *	41	59	64	50	42	65	69	51	47	64	74	54
Extended constructed-response **	—	5	13	8	—	6	12	9	—	6	11	9
Total	143	163	158	145	191	189	183	160	203	185	184	163

*Short constructed-response questions included in the 1990 and 1992 assessments were scored dichotomously.
New short constructed-response questions included in the 1996 and 2000 assessments were scored to allow for partial credit.
**No extended constructed-response questions were included in the 1990 assessment.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

The assessment design allowed for maximum coverage of mathematics abilities at grades 4, 8, and 12 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 were required to take only a small portion of the assessment, but the aggregate results across the entire assessment allowed for broad reporting of mathematics abilities for the targeted population.

In addition to matrix sampling, the assessment design utilized a procedure for distributing booklets that controlled for position and context effects. Students received different blocks of questions in their booklets according to a procedure called "balanced incomplete block (BIB) spiraling." This procedure assigns blocks of questions so that every block appears in the first, second, or third position within a booklet an equal number of times. Every block of questions is paired with every other block. The spiraling aspect of this procedure 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 Students with Disabilities/Limited English Proficiency (SD/LEP) questionnaire.

The teacher questionnaire was administered to the mathematics teachers of the fourth- and eighth-grade students participating in the assessment. The questionnaire consisted of three sections and took approximately 20 minutes to complete. The first section focused on the teacher's general background and experience; the second section on the teacher's background related to the mathematics; and the third section on classroom information about mathematics instruction.

The school characteristics and policy 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 student questionnaire was completed by a school staff member knowledgeable about those students selected to participate in the assessment who were identified as 1) having an Individualized Education Plan (IEP) or equivalent classification (for reasons other than being gifted or talented) or 2) being limited English proficient (LEP). An SD/LEP student questionnaire was completed for each identified student regardless of whether or not 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.

National and State Samples

The national results presented in this report are based on a nationally representative probability sample of fourth-, eighth-, and twelfth-grade students. The sample was chosen using a complex multistage design that involved sampling students from selected schools within selected geographic areas across the country. The sample design had the following stages:

1) selection of geographic areas (a county, group of counties, or metropolitan statistical area);

2) selection of schools (public and nonpublic) within the selected areas; and

3) selection of students within selected schools.

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 due to the oversampling of students who attend schools with high concentrations of black and/or Hispanic students and students who attend nonpublic schools. Among other uses, sampling weights also account for lower sampling rates for very small schools.

A special feature of the 1996 and 2000 national assessments of mathematics was the collection of data from samples of

Table A.3

National student sample size by grade: 1990–2000

	1990	1992	1996		2000	
	Accommodations not permitted sample	Accommodations not permitted sample	Accommodations not permitted sample	Accommodations permitted sample	Accommodations not permitted sample	Accommodations permitted sample
Grade 4						
Non SD/LEP students assessed	—	6,906	6,351	6,399	12,970	
SD/LEP students assessed without accommodations	—	270	276	286	541	590
SD/LEP students assessed with accommodations	NA	NA	NA	230	NA	295
Total students assessed	3,423	7,176	6,627	6,915	13,511	13,855
Grade 8						
Non SD/LEP students assessed	—	7,364	6,921	6,574	14,778	
SD/LEP students assessed without accommodations	—	299	225	357	916	802
SD/LEP students assessed with accommodations	NA	NA	NA	183	NA	350
Total students assessed	3,431	7,663	7,146	7,114	15,694	15,930
Grade 12						
Non SD/LEP students assessed	—	6,810	6,763	6,371	12,965	
SD/LEP students assessed without accommodations	—	163	141	281	467	563
SD/LEP students assessed with accommodations	NA	NA	NA	73	NA	135
Total students assessed	3,138	6,973	6,904	6,725	13,432	13,663

SD = Students with Disabilities (the term previously used was IEP).
LEP = Limited English Proficient students.
NA = Not applicable. No accommodations were permitted in this sample.
— Data on participation of SD/LEP students in the national assessment are not available for 1990.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

students where assessment accommodations for special-needs students were not permitted and samples of students where accommodations were permitted. NAEP inclusion rules were applied, and accommodations were offered only when a student had an Individualized Education Plan (IEP) for reasons other than being gifted and talented or was identified as limited English proficient (LEP); all other students were asked to participate in the assessment under standard conditions.

Table A.3 shows the number of students included in the national samples for the NAEP mathematics assessments at each grade level. For the 1996 and 2000 assessments, the table includes the number of students in the sample where accommodations were not permitted and the number of students in the sample where accommodations were permitted. The table shows that the same non-SD/LEP students were included in both samples in 2000; only the SD/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.

Table A.4 provides a summary of the national school and student participation rates for the mathematics assessment samples where accommodations were not permitted and where accommodations were permitted. Participation rates are presented for public and nonpublic schools, individually and combined. The first rate is the weighted percentage of schools participating in the assessment before substitution. This rate is based only on the number of schools that were initially selected for the assessment. The numerator of this rate is the sum of the number of students represented by each initially selected school that participated in the assessment. The denominator is the sum of the number of students represented by each of the initially selected schools that had eligible students enrolled.

The second school participation rate is the weighted participation rate after substitution. The numerator of this rate is the sum of the number of students represented by each of the participating schools, whether originally selected or selected as a substitute for a school that chose not to participate. The denominator is the same as that for the weighted participation rate for the initial sample. The denominator for this participation rate, as well as for the rate before substitution of schools, is the number of eligible students from all schools with eligible students within the nation. Because of the common denominators, the weighted participation rate after substitution is at least as great as the weighted participation rate before substitution.

Also presented in table A.4 are weighted student participation rates. The numerator of this rate is the sum across all students assessed (in either an initial session or a makeup session) of the number of students that each represents. The denominator of this rate is the sum across all eligible sampled students in participating schools of the number of students that each represents. The overall participation rates take into account the weighted percentage of school participation before or after substitution and the weighted percentage of student participation after makeup sessions.

Table A.4

National school and student participation rates for public schools, nonpublic schools, and public and nonpublic schools combined: 2000

	Weighted school participation			Samples where accommodations were not permitted				Samples where accommodations were permitted			
						Overall participation rate				Overall participation rate	
	Percentage before substitution	Percentage after substitution	Total number of schools	Weighted percentage student participation	Total number of students assessed	Before substitution	After substitution	Weighted percentage student participation	Total number of students assessed	Before substitution	After substitution
Grade 4											
Public	86	89	385	96	7,070	82	85	95	7,395	82	85
Nonpublic	83	88	357	96	6,441	80	84	96	6,460	80	84
All schools	85	89	742	96	13,511	82	85	96	13,855	82	85
Grade 8											
Public	83	86	385	92	9,389	76	79	91	9,583	76	78
Nonpublic	81	84	359	96	6,305	78	81	96	6,347	78	81
All schools	83	85	744	92	15,694	76	79	92	15,930	76	78
Grade 12											
Public	79	82	243	76	6,874	59	62	76	7,051	60	63
Nonpublic	75	83	315	88	6,558	66	73	88	6,612	66	73
All schools	78	82	558	77	13,432	60	63	77	13,663	60	64

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

The results of the 2000 state assessment program in mathematics provided in this report 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 participating jurisdictions and then students within schools. As with the national samples, the jurisdiction samples were weighted to allow for valid inferences about the populations of interest. Tables A.5a and A.5b contain the unweighted number of participating schools and students as well as weighted school and student participation rates for state samples where accommodations were not permitted and where accommodations were permitted.

Table A.5a

State school and student participation rates for grade 4 public schools: 2000

	Weighted school participation			Samples where accommodations were not permitted				Samples where accommodations were permitted			
						Overall participation rate				Overall participation rate	
	Percentage before substitution	Percentage after substitution	Total number of schools	Weighted percentage student participation	Total number of students assessed	Before substitution	After substitution	Weighted percentage student participation	Total number of students assessed	Before substitution	After substitution
Nation	86	89	385	96	7,070	82	85	95	7,395	82	85
Alabama	87	94	108	95	2,438	83	90	95	2,493	83	90
Arizona	88	88	95	94	2,082	83	83	95	2,135	83	83
Arkansas	87	87	99	95	2,262	83	83	96	2,291	83	83
California †	76	76	81	94	1,656	72	72	94	1,678	71	71
Connecticut	100	100	106	96	2,499	96	96	96	2,560	96	96
Georgia	99	99	107	95	2,681	94	94	95	2,740	94	94
Hawaii	99	99	108	94	2,439	93	93	94	2,441	93	93
Idaho †	74	75	77	96	1,699	71	72	95	1,748	71	71
Illinois †	74	74	78	94	1,622	69	69	94	1,713	70	70
Indiana †	71	71	80	95	1,864	68	68	95	1,924	68	68
Iowa †	70	70	90	95	1,909	67	67	95	1,998	67	67
Kansas †	71	71	79	96	1,561	68	68	95	1,621	68	68
Kentucky	92	94	104	95	2,275	87	90	95	2,335	87	90
Louisiana	100	100	109	96	2,513	96	96	96	2,575	96	96
Maine †	86	86	108	95	2,132	81	81	94	2,202	81	81
Maryland	100	100	109	95	2,645	95	95	94	2,726	94	94
Massachusetts	99	99	105	96	2,292	95	95	96	2,391	95	95
Michigan †	72	85	85	94	1,903	68	80	94	1,942	68	80
Minnesota †	83	83	77	94	1,822	78	78	94	1,844	78	78
Mississippi	98	98	108	95	2,831	93	93	95	2,850	93	93
Missouri	96	96	101	95	2,330	92	92	95	2,410	92	92
Montana †	75	77	61	95	1,123	71	73	95	1,109	71	73
Nebraska	97	97	79	94	1,396	92	92	95	1,452	92	92
Nevada	100	100	109	94	2,529	94	94	94	2,619	94	94
New Mexico	93	93	100	95	1,933	88	88	95	2,044	88	88
New York †	71	71	76	94	1,753	67	67	94	1,827	67	67
North Carolina	100	100	107	95	2,413	95	95	96	2,526	96	96
North Dakota	88	88	131	96	2,456	85	85	96	2,478	85	85
Ohio †	82	82	86	95	1,913	78	78	95	1,938	78	78
Oklahoma	100	100	114	95	2,302	95	95	94	2,352	94	94
Oregon †	73	74	78	93	1,596	68	69	94	1,661	68	69
Rhode Island	100	100	112	95	2,447	95	95	95	2,550	95	95
South Carolina	97	97	104	96	2,501	93	93	96	2,537	93	93
Tennessee	97	97	104	96	2,488	93	93	96	2,518	93	93
Texas	97	99	101	96	2,171	93	95	96	2,299	93	95
Utah	100	100	109	94	2,639	94	94	93	2,704	93	93
Vermont †	70	70	61	95	1,165	66	66	95	1,246	67	67
Virginia	100	100	106	96	2,439	96	96	95	2,568	95	95
West Virginia	100	100	123	95	2,431	95	95	95	2,533	95	95
Wisconsin †	67	69	70	96	1,455	64	66	97	1,540	64	67
Wyoming	100	100	94	95	1,739	95	95	95	1,770	95	95
Other Jurisdictions											
American Samoa	100	100	16	94	459	94	94	94	492	94	94
District of Columbia	99	99	110	94	2,297	93	93	94	2,354	94	94
DDESS	100	100	40	95	1,334	95	95	95	1,328	95	95
DoDDS	100	100	86	94	2,786	94	94	93	2,819	93	93
Guam	97	97	25	95	1,012	92	92	95	1,114	92	92
Virgin Islands	100	100	23	95	751	95	95	95	773	95	95

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table A.5b

State school and student participation rates for grade 8 public schools: 2000

	Weighted school participation			Samples where accommodations were not permitted				Samples where accommodations were permitted			
						Overall participation rate				Overall participation rate	
	Percentage before substitution	Percentage after substitution	Total number of schools	Weighted percentage student participation	Total number of students assessed	Before substitution	After substitution	Weighted percentage student participation	Total number of students assessed	Before substitution	After substitution
Nation	83	86	385	92	9,389	76	79	91	9,583	76	78
Alabama	82	91	102	92	2,327	76	84	92	2,308	75	84
Arizona †	76	76	79	91	1,786	69	69	91	1,839	69	69
Arkansas	87	87	94	93	2,170	81	81	93	2,224	81	81
California †	72	72	76	91	1,628	65	65	92	1,677	66	66
Connecticut	99	99	104	92	2,454	91	91	92	2,504	91	91
Georgia	99	99	102	90	2,513	89	89	90	2,545	89	89
Hawaii	91	91	51	90	2,277	82	82	91	2,249	83	83
Idaho †	78	78	66	93	1,971	73	73	93	2,047	73	73
Illinois †	75	75	78	93	1,719	70	70	92	1,753	69	69
Indiana †	73	73	76	93	1,855	68	68	92	1,900	67	67
Kansas †	71	71	74	92	1,676	65	65	92	1,670	65	65
Kentucky	94	95	97	94	2,294	89	90	94	2,363	89	90
Louisiana	100	100	104	90	2,359	90	90	90	2,411	90	90
Maine †	83	84	84	91	2,102	76	77	91	2,184	75	77
Maryland	98	98	105	90	2,401	88	88	91	2,503	89	89
Massachusetts	99	99	99	93	2,303	92	92	93	2,423	92	92
Michigan †	71	81	85	88	1,975	63	71	88	1,993	63	71
Minnesota †	74	74	64	93	1,525	69	69	92	1,575	68	68
Mississippi	98	98	101	92	2,394	90	90	92	2,418	90	90
Missouri	92	94	104	92	2,329	85	87	93	2,408	85	87
Montana †	74	75	65	92	1,740	68	69	92	1,771	68	69
Nebraska	99	99	83	92	1,916	91	91	91	1,899	90	90
Nevada	100	100	63	92	2,614	92	92	92	2,710	92	92
New Mexico	91	91	83	89	1,919	81	81	89	1,926	81	81
New York †	70	70	74	90	1,633	63	63	90	1,718	63	63
North Carolina	99	99	104	92	2,354	91	91	92	2,479	91	91
North Dakota	90	90	95	95	2,227	86	86	94	2,271	85	85
Ohio	91	91	87	91	2,084	83	83	91	2,114	82	82
Oklahoma	99	99	113	93	2,424	92	92	92	2,485	91	91
Oregon †	75	75	81	90	1,779	67	67	91	1,825	68	68
Rhode Island	100	100	51	91	2,314	91	91	90	2,428	90	90
South Carolina	91	92	95	93	2,306	85	86	93	2,341	85	86
Tennessee	89	91	95	90	2,232	80	82	91	2,259	81	83
Texas	93	96	104	93	2,317	87	89	93	2,334	86	89
Utah	100	100	96	92	2,472	92	92	92	2,502	92	92
Vermont †	82	82	76	92	2,004	76	76	92	2,058	76	76
Virginia	100	100	105	92	2,469	92	92	91	2,517	91	91
West Virginia	100	100	104	92	2,463	92	92	91	2,574	91	91
Wisconsin †	65	73	79	92	1,760	60	68	91	1,847	60	67
Wyoming	100	100	71	93	2,634	93	93	93	2,665	93	93
Other Jurisdictions											
American Samoa	100	100	14	97	423	97	97	98	438	98	98
District of Columbia	100	100	34	87	1,614	87	87	88	1,665	88	88
DDESS	100	100	13	92	646	92	92	92	692	92	92
DoDDS	100	100	51	94	1,951	94	94	94	1,993	94	94
Guam	100	100	7	92	1,017	92	92	93	985	93	93
Virgin Islands *	100	100	6	94	596	94	94	94	607	94	94

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

* Although 100% of the schools serving eighth-graders in the Virgin Islands participated in the 2000 mathematics assessment, the results from only two-thirds of the schools qualified for reporting. For this reason, grade 8 Virgin Island results are omitted from this report.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Standards for Sample Participation and Reporting of Results

In carrying out the 2000 state assessment program, the National Center for Education Statistics (NCES) established participation rate standards that jurisdictions were required to meet in order for their results to be reported. NCES also established additional standards that required the annotation of published results for jurisdictions whose sample participation rates were low enough to raise concerns about their representativeness. The NCES guideline used to report results in the state assessments, and the guidelines for notation when there is some risk of nonresponse bias in the reported results, are presented in the tables of the following section.

Guidelines for Notations 1

The publication of NAEP results

The conditions that will result in the publication of a jurisdiction's results are presented below.

Guideline 1 - Publication of Public School Results

A jurisdiction will have its public school results published in the 2000 NAEP Mathematics Report Card (or in other reports that include all state-level results) if and only if its weighted participation rate for the initial sample of public schools is greater than or equal to 70 percent. Similarly, a jurisdiction will receive a separate NAEP State Report if and only if its weighted participation rate for the initial sample of public schools is greater than or equal to 70 percent.

Discussion: If a jurisdiction's public school participation rate for the initial sample of schools is below 70 percent, there is a substantial possibility that bias will be introduced into the assessment results. This possibility remains even after making statistical adjustments to compensate for school nonparticipation. There remains the likelihood that, in aggregate, the substitute schools are sufficiently dissimilar from the originals that they are replacing and represent too great a proportion of the population to discount such a difference. Similarly, the assumptions underlying the use of statistical adjustments to compensate for nonparticipation are likely to be significantly violated if the initial response rate falls below the 70 percent level. Guideline 1 takes this into consideration. This guideline is congruent with current NAGB policy, which requires that data for jurisdictions that do not have a 70 percent before-substitution participation rate be reported "in a different format," and with the Education Information Advisory Committee (EIAC) resolution, which calls for data from such jurisdictions not to be published.

The following guidelines concerning school and student participation rates in the NAEP state assessment program were established to address four significant ways in which nonresponse bias could be introduced into the jurisdiction sample estimates. Presented on the following pages are the conditions that will result in a jurisdiction's receiving a notation in the 2000 reports. Note that in order for a jurisdiction's results to be published with no notations, that jurisdiction must satisfy all guidelines.

Guidelines for Notations 2

Reporting school and student participation rates with possible bias due to school nonresponse

Guideline 2 - Notation for Overall Public School Participation Rate

A jurisdiction that meets Guideline 1 will receive a notation if its weighted participation rate for the initial sample of public schools was below 85 percent and the weighted public school participation rate after substitution was below 90 percent.

Discussion: For jurisdictions that did not use substitute schools, the participation rates are based on participating schools from the original sample. In these situations, the NCES standards specify weighted school participation rates of at least 85 percent to guard against potential bias due to school nonresponse. Thus the first part of these guidelines, referring to the weighted school participation rate for the initial sample of schools, is in direct accordance with NCES standards.

To help ensure adequate sample representation for each jurisdiction participating in the NAEP 2000 state assessments, NAEP provided substitutes for nonparticipating public schools. For jurisdictions that used substitute schools, the assessment results will be based on the student data from all schools participating from both the original sample and the list of substitutes (unless both an initial school and its substitute eventually participated, in which case only the data from the initial school will be used).

The NCES standards do not explicitly address the use of substitute schools to replace initially selected schools that decide not to participate in the assessment. However, considerable technical consideration was given to this issue. Even though the characteristics of the substitute schools were matched as closely as possible to the characteristics of the initially selected schools, substitution does not entirely eliminate bias due to the nonparticipation of initially selected schools. Thus, for the weighted school participation rates including substitute schools, the guidelines were set at 90 percent.

If a jurisdiction meets either standard (i.e., 85 percent or higher prior to substitution or 90 percent or higher after substitution), there will be no notation for the relevant overall school participation rate.

Guidelines for Notations 3

Important segments of the jurisdiction's student population that must be adequately represented to avoid possible nonresponse bias

Guideline 3 - Notation for Strata-Specific Public School Participation Rates

A jurisdiction that is not already receiving a notation under Guideline 2 will receive a notation if the sample of public schools included a class of schools with similar characteristics that had a weighted participation rate (after substitution) of below 80 percent, and from which the nonparticipating schools together accounted for more than five percent of the jurisdiction's total weighted sample of public schools. The classes of schools from each of which a jurisdiction needed minimum school participation levels were determined by degree of urbanization, minority enrollment, and median household income of the area in which the school is located.

Discussion: The NCES standards specify that attention should be given to the representativeness of the sample coverage. Thus, if some important segment of the jurisdiction's population is not adequately represented, it is of concern, regardless of the overall participation rate.

If nonparticipating schools are concentrated within a particular class of schools, the potential for substantial bias remains, even if the overall level of school participation appears to be satisfactory. Nonresponse adjustment cells for public schools have been formed within each jurisdiction, and the schools within each cell are similar with respect to minority enrollment, degree of urbanization, and/or median household income, as appropriate for each jurisdiction.

If the weighted response rate, after substitution, for a single adjustment cell falls below 80 percent, and more than five percent (weighted) of the sampled schools are nonparticipants from such a cell, the potential for nonresponse bias is too great. This guideline is based on the NCES standard for stratum-specific school response rates.

Guidelines for Notations 4

Possible student nonresponse bias

Guideline 4 - Notation for Overall Student Participation Rate in Public Schools

A jurisdiction that meets Guideline 1 will receive a notation if the weighted student response rate within participating public schools was below 85 percent.

Discussion: This guideline follows the NCES standard of 85 percent for overall student participation rates. The weighted student participation rate is based on all eligible students from initially selected or substitute schools who participated in the assessment in either an initial session or a make-up session. If the rate falls below 85 percent, the potential for bias due to students' nonresponse is too great.

Guidelines for Notations 5

Possible nonresponse bias from inadequately represented strata

Guideline 5 - Notation for Strata-Specific Student Participation Rates in Public Schools

A jurisdiction that is not already receiving a notation under Guideline 4 will receive a notation if the sampled students within participating public schools included a class of students with similar characteristics that had a weighted student response rate of below 80 percent, and from which the nonresponding students together accounted for more than five percent of the jurisdiction's weighted assessable public school student sample. Student groups from which a jurisdiction needed minimum levels of participation were determined by the age of the student, whether or not the student was classified as a student with a disability (SD) or of limited English proficiency (LEP), and the type of assessment session (monitored or unmonitored), as well as school level of urbanization, minority enrollment, and median household income of the area in which the school is located.

Discussion: This guideline addresses the fact that if nonparticipating students are concentrated within a particular class of students, the potential for substantial bias remains, even if the overall student participation level appears to be satisfactory. Student nonresponse adjustment cells have been formed using the school-level nonresponse adjustment cells, together with the student's age and the nature of the assessment session (unmonitored or monitored).

If the weighted response rate for a single adjustment cell falls below 80 percent, and more than five percent (weighted) of the invited students who do not participate in the assessment are from such a cell, the potential for nonresponse bias is too great. This guideline is based on the NCES standard for stratum-specific student response rates.

At both fourth- and eighth-grade, one state, Wisconsin, failed to meet the initial public school participation rate of 70 percent, and the Virgin Islands failed to meet this standard at grade 8. Results for these jurisdictions are not reported in this or any report of NAEP 2000 mathematics findings. Several other jurisdictions whose results were published received a notation to indicate possible nonresponse bias.

Thirteen jurisdictions at grade 4 failed to meet the second guideline for notation (i.e., the weighted participation rate for the initial sample of schools was below 85 percent and the weighted school participation rate after substitution was below 90 percent): California, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Montana, New York, Ohio, Oregon, and Vermont. Similarly, 13 jurisdictions failed to meet this guideline at grade 8: Arizona, California, Idaho, Illinois, Indiana, Kansas, Maine, Michigan, Minnesota, Montana, New York, Oregon, and Vermont. Results for these jurisdictions were reported with a notation. In addition, grade 4 results for Maine also received a notation for failing to meet the third guideline indicating that the sample of public schools included a class of schools with similar characteristics that had a weighted participation rate (after substitution) of below 80 percent, and from which the nonparticipating schools together accounted for more than five percent of the jurisdiction's total weighted sample of public schools.

Students with Disabilities (SD) and 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 with Individualized Education Programs (IEPs) were to be included in the NAEP assessment except in the following cases:

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

All LEP students receiving academic instruction in English for three years or more were to be included in the assessment. Those LEP students receiving 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 two 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 "accommodations" such as extra time, one-on-one administration, or use of magnifying equipment. 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 Individuals with Disabilities Education ACT (IDEA), which led schools and states to identify increasing proportions of students as needing accommodations on assessments to best show what they know and can do.[4] In addition, as the proportion of English-language learners in the population has increased, some states have started offering accommodations such as translated versions 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: they threatened the stability of trend lines (because excluding more students in one year than the next might lead to apparent rather than real gains), and made NAEP samples less than optimally representative of target populations.

NAEP reacted to this challenge by adopting a multipart strategy. It became clear that to ensure that NAEP samples were as inclusive as possible, the program had to move toward allowing the same assessment accommodations that were afforded students in state and district testing programs. However, allowing accommodations represents a change in testing conditions that may affect trend. Therefore, beginning with the 1996 national assessments and the 1998 state assessments, NAEP has assessed a series of parallel samples of students. In one set of samples, testing accommodations were not permitted: this has allowed NAEP to maintain the measurement of achievement trends on an assessment that was, throughout its existence, administered under common conditions. 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. First, data trends could be maintained. Second, parallel trend lines could be set in ways that ensure that, in future years, the program will be able to use the most inclusive practices possible and mirror the procedures used by most state and district assessments. Beginning in 2002, NAEP will use only the more inclusive samples 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. The results

[4] Office of Special Education Programs (1997). *Nineteenth annual report to Congress on the implementation of the individuals with disabilities education act.* Washington, DC: U. S. Department of Education.

for this sample are presented in chapters 1, 2, 3, 5, and 6 of this report. National data for the second sample, in which accommodations were permitted, is reported at all grades for 1996 and 2000. State data on this more inclusive sample is reported for 2000. The results for this sample are presented in chapter 4. By comparing the results for the two samples, readers may get a general sense of the impact of excluding of students.

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 included 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.

Participation rates across the assessment years for students with disabilities (SD) and limited English proficient (LEP) students for the national sample where accommodations were not permitted are presented in table A.6. The data in this table include the percentages of students *identified* as SD and/or LEP, the percentage of students *excluded*, and the percentage of *assessed* SD/LEP students. Data for SD/LEP students in 1990 are not available at the national level.[5] Tables A.7a and A.7b show similar information by jurisdiction for grades 4 and 8. Participation rates for the national sample where accommodations were permitted are presented in table A.8, and state results where accommodations were permitted are shown in tables A.9a and A.9b. The data in these tables include the percentages of students *identified* as SD and/or LEP, the percentage of students *excluded*, the percentage of *assessed* SD/LEP students, the percentage *assessed without accommodations*, and the percentage *assessed with accommodations*.

In the 2000 accommodations-not-permitted national sample, 7 percent of students at grades 4 and 8, and 4 percent of students at grade 12 were excluded from the assessment. The comparable percentages in the 2000 accommodations-permitted national sample were 4 percent at grades 4 and 8, and 2 percent at grade 12. This comparison would suggest that allowing accommodations did help to decrease the percentage of students excluded from the assessment. A similar pattern is evident in the various jurisdictions that participated in the 2000 state assessment. Across the jurisdictions, the percentage of students excluded in the accommodations-not-permitted sample ranged from 4 to 15 percent at grade 4, and from 3 to 14 percent at grade 8. In the accommodations-permitted sample the percentages of students excluded ranged from 1 to 9 percent at grade 4, and from 1 to 8 percent at grade 8. As with the national exclusion rates, most states and jurisdictions excluded a smaller percentage of students when accommodations were permitted.

[5] In 1990, information on SD/LEP students was collected across the entire national sample, including the sample which was administered the 1990 NAEP science assessment. As a consequence, SD/LEP information specific to the national mathematics assessment is not reported in table A.6. Because only one subject area (grade-eight mathematics) was assessed at the state level in 1990, SD/LEP information is available for individual states that participated in that year, and is presented in table A.7b.

Table A.6

SD and LEP students in the NAEP mathematics assessment national samples where accommodations were not permitted: 1992–2000

	1992*		1996		2000	
	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 and LEP 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 only						
Identified	1,163	7	359	11	672	11
Excluded	990	4	153	5	380	5
Assessed	173	3	206	6	292	5
LEP students only						
Identified	939	3	142	3	454	5
Excluded	835	2	67	1	189	2
Assessed	104	1	75	2	265	3
Grade 8						
SD and LEP 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 only						
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 only						
Identified	838	2	106	3	551	4
Excluded	750	2	38	1	210	1
Assessed	88	1	68	2	341	2
Grade 12						
SD and LEP students						
Identified	1,580	6	257	7	904	9
Excluded	1,417	4	116	3	437	4
Assessed	163	2	141	4	467	5
SD students only						
Identified	1,166	4	211	6	680	7
Excluded	1,088	3	108	3	379	4
Assessed	78	1	103	3	301	3
LEP students only						
Identified	447	2	47	1	264	2
Excluded	351	1	9	▲	93	1
Assessed	96	1	38	1	171	2

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient students.

* In 1992, the identified and excluded students were combined across subject areas. Although their weighted percentages are comparable to 1996 and 2000, the raw numbers of students are not.

NOTE: 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.

Within each portion of the table, percentages may not sum properly due to rounding. SD/LEP information is not available at the national level in 1990.

▲ Percentage is between 0.0 and 0.5.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table A.7a

Percentage of SD and LEP students in the NAEP mathematics assessment state samples where accommodations were not permitted for grade 4 public schools: 1992–2000

	SD and LEP Students								
	1992			1996			2000		
	Identified	Excluded	Assessed	Identified	Excluded	Assessed	Identified	Excluded	Assessed
Nation	12	8	4	16	6	9	16	7	9
Alabama	10	5	6	12	6	5	13	6	7
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
Connecticut	14	7	7	16	8	8	15	10	5
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 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
Rhode Island	16	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	7	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
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									
American Samoa	—	—	—	—	—	—	15	14	1
District of Columbia	11	9	2	14	11	3	19	9	10
DDESS	—	—	—	9	4	5	11	5	5
DoDDS	—	—	—	10	5	5	11	5	6
Guam	12	6	5	16	12	3	26	12	15
Virgin Islands	5	3	2	—	—	—	8	6	3

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient students.

Percentages may not sum properly due to rounding.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Jurisdiction did not participate in this year.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table A.7b

Percentage of SD and LEP students in the NAEP mathematics assessment state samples where accommodations were not permitted for grade 8 public schools: 1990–2000

	SD and LEP Students											
	1990			1992			1996			2000		
	Identified	Excluded	Assessed	Identified	Excluded	Assessed	Identified	Excluded	Assessed	Identified	Excluded	Assessed
Nation	*	*	*	12	7	5	11	5	7	15	7	8
Alabama	9	5	4	10	5	5	13	7	6	14	5	9
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
Connecticut	11	6	5	14	7	8	15	8	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
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	5	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 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
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
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												
American Samoa	—	—	—	—	—	—	—	—	—	14	12	2
District of Columbia	6	5	1	11	10	2	13	10	4	15	9	6
DDESS	—	—	—	—	—	—	12	4	8	13	11	1
DoDDS	—	—	—	—	—	—	7	3	4	8	3	4
Guam	6	4	2	7	4	3	7	3	4	13	5	8

SD = Students with Disabilities (the term previously used was IEP) LEP = Limited English Proficient students.

* SD/LEP information not available for the nation in 1990.

Within each portion of the table, percentages may not sum properly due to rounding.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Jurisdiction did not participate in this year.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table A.8

SD and LEP students in the NAEP mathematics assessment national samples where accommodations were permitted: 1996 and 2000

		1996		2000	
		Number of students	Weighted percentage of students sampled	Number of students	Weighted percentage of students sampled
Grade 4					
SD and LEP students	Identified	701	15	1131	17
	Excluded	185	4	246	4
	Assessed	516	11	885	13
	Assessed without accommodations	286	6	590	8
	Assessed with accommodations	230	5	295	4
SD students only	Identified	424	11	706	12
	Excluded	109	3	180	3
	Assessed	315	8	526	9
	Assessed without accommodations	172	4	310	5
	Assessed with accommodations	143	4	216	4
LEP students only	Identified	308	5	472	5
	Excluded	86	1	87	1
	Assessed	222	4	385	4
	Assessed without accommodations	114	2	297	3
	Assessed with accommodations	108	1	88	1
Grade 8					
SD and LEP students	Identified	758	12	1603	13
	Excluded	218	3	451	4
	Assessed	540	9	1152	10
	Assessed without accommodations	357	6	802	7
	Assessed with accommodations	183	3	350	3
SD students only	Identified	557	9	1206	10
	Excluded	183	3	402	3
	Assessed	374	7	804	7
	Assessed without accommodations	227	4	523	5
	Assessed with accommodations	147	2	281	2
LEP students only	Identified	226	3	471	3
	Excluded	51	1	103	1
	Assessed	175	2	368	3
	Assessed without accommodations	133	2	290	2
	Assessed with accommodations	42	▲	78	1
Grade 12					
SD and LEP students	Identified	589	8	961	9
	Excluded	235	3	263	2
	Assessed	354	5	698	7
	Assessed without accommodations	281	4	563	5
	Assessed with accommodations	73	1	135	2
SD students only	Identified	386	6	681	7
	Excluded	206	3	228	2
	Assessed	180	3	453	5
	Assessed without accommodations	107	2	338	4
	Assessed with accommodations	73	1	115	1
LEP students only	Identified	228	3	318	2
	Excluded	38	▲	56	▲
	Assessed	190	2	262	2
	Assessed without accommodations	178	2	241	2
	Assessed with accommodations	12	▲	21	▲

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient students.

NOTE: 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.

Within each portion of the table, percentages may not sum properly due to rounding.

▲ Percentage is between 0.0 and 0.5.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table A.9a

Percentage of SD and LEP students in the NAEP mathematics assessment state samples where accommodations were permitted for grade 4 public schools: 2000

	Identified	Excluded	Assessed	Assessed under standard conditions	Assessed with accommodations	All students assessed under standard conditions
Nation	18	4	14	9	5	91
Alabama	13	3	10	7	3	94
Arizona	25	4	21	12	9	87
Arkansas	14	4	10	6	4	92
California †	33	6	27	19	8	86
Connecticut	14	5	10	5	4	91
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 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
Rhode Island	23	3	20	10	10	87
South Carolina	17	5	12	7	5	90
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
West Virginia	13	3	11	3	8	89
Wisconsin †	19	5	14	7	8	87
Wyoming	15	2	13	8	6	92
Other Jurisdictions						
American Samoa	15	4	11	8	3	93
District of Columbia	19	5	14	7	7	88
DDESS	11	4	7	3	4	92
DoDDS	11	2	9	5	4	94
Guam	26	6	20	16	4	89
Virgin Islands	8	4	4	4	▲	96

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient students.
Percentages may not sum properly due to rounding.
▲ Percentage is between 0.0 and 0.5.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
DDESS:Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table A.9b

Percentage of SD and LEP students in the NAEP mathematics assessment state samples where accommodations were permitted for grade 8 public schools: 2000

	Identified	Excluded	Assessed	Assessed under standard conditions	Assessed with accommodations	All students assessed under standard conditions
Nation	14	4	10	7	3	93
Alabama	14	6	8	7	1	93
Arizona †	19	3	16	11	4	92
Arkansas	14	2	11	8	4	94
California †	27	4	22	17	5	91
Connecticut	16	6	10	6	4	90
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
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 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
Rhode Island	20	3	16	12	4	92
South Carolina	13	4	9	7	2	94
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
West Virginia	15	3	12	4	8	90
Wisconsin †	17	4	13	6	6	90
Wyoming	13	1	12	9	3	96
Other Jurisdictions						
American Samoa	14	4	10	5	4	92
District of Columbia	15	6	9	3	6	88
DDESS	13	3	10	7	3	94
DoDDS	8	1	7	5	1	98
Guam	13	6	6	5	2	92

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient students

Percentages may not sum properly due to rounding.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Investigating the effects of exclusion rates on assessment results

As indicated by the data in the previous section, exclusion rates have tended to increase across assessment years in the samples that did not permit accommodations, particularly within certain states. In considering the effects of exclusion rates on assessment results, at least two major issues become evident. First, if exclusion rates vary substantially across assessment years, then the ability to report trends (i.e., compare results between years) may be threatened by the fact that the results from different years are based on different proportions of the population. Second, the variation in exclusion rates among states and jurisdictions may threaten the comparison of state-by-state results within a given year, again because the results for different states or jurisdictions are based on different proportions of the populations.

As a consequence, NCES investigated the possibility of establishing criteria for including cautionary notations based on excessive or increased exclusion rates (similar to those based on overall participation rates) in the reporting of national and state-by-state results. This investigation, however, did not reveal a consistent relationship between levels of exclusion, or degrees of change in inclusion rates, and overall results. There were several reasons for this.

First of all, real demographic differences influence exclusion rates in states, and thus some differences may be unavoidable. Second, program research conducted by NCES and Educational Testing Service (ETS) was unable to identify a particular level of exclusion increase that seemed to affect scores. Third, since excluded students were not tested, NAEP has no direct information about how those students *would* have done had they been tested. Given these realities and uncertainties, the best approach seemed to be to supply all data about student exclusion, and allow readers to consider it as they interpret the achievement data. However, it is important to remember that the main solutions to this issue lie not in flagging results, but in ensuring that all sampled students participate in assessments. The new, more inclusive samples that are to become NAEP's main samples in 2002 are intended to accomplish this goal.

The move to more inclusive samples, however, will not be a perfect solution. For example, even within the context of the samples in which accommodations are permitted, there is still some student exclusion (albeit at a far lower level, as the data in tables A.8 and A.9a/b show). In addition, the assessment accommodations may not have an entirely neutral impact on scores. In other words, it is possible that changes in the percentages of students receiving assessment accommodations may influence scores. It is also possible that differences in state and local accommodations policies will affect state comparisons.

Because of these remaining issues, NCES has funded and undertaken several major research studies. These activities have been organized around two distinct questions. First, as was mentioned above, some students are excluded from even the more inclusive NAEP. Therefore, NCES has funded research into ways excluded students might be *included* in the estimation of scores for overall populations. In other words, NCES is researching statistical adjustments that might be used to ensure that final NAEP estimates include data for all students in a sampled population. There are two general ways in which this might be accomplished. The first is an idea championed by Dr. Albert Beaton of Boston College. Dr. Beaton recommends making a simple assumption about excluded students: he would assume that, had these students been tested, they would have performed below some predefined level (for example, the median score or the lowest score in the *basic* achievement range). This statistic (whether median or some other level) would be adjusted to take account of excluded students.

The second approach to obtaining full population estimates has been recommended by Dr. Donald McLaughlin of the American Institutes for Research (AIR). His approach involves using background data about excluded students to estimate how they, as a group, would have performed had they been assessed. This approach is based on different and stronger assumptions than Dr. Beaton's. It would have the advantage of allowing NAEP to continue to report all the types of statistics currently in use (including average scores).

The results from an initial examination of the 1996 and 2000 NAEP mathematics data using Dr. McLaughlin's approach indicated that the reported average score gains from 1996 to 2000 in many jurisdictions would be somewhat smaller if full-population estimates were used. This is apparently due to the increase in exclusion rates between years within these states. It should be noted that using such full-population estimates may not only alter the estimates of score gains, but may also alter the rank ordering of states within a given year.

NCES has not yet judged either statistical adjustment approach ready for operational use. Therefore, these "full population reporting" approaches may or may not be used in future years. Results of the studies produced by Dr. McLaughlin may be obtained from NCES, as can copies of an Educational Testing Service (ETS) study that implemented Dr. Beaton's methodology.

In addition to full population reporting research, NCES has also commissioned studies of the impact of assessment accommodations on overall scores. Specifically, ETS has conducted differential item functioning (DIF) studies of items assessed with accommodation in both the 1996 and 1998 assessments.[6] In these studies, ETS researchers found little evidence that accommodations changed the functioning of test questions.

Types of accommodations permitted

Table A.10 displays the number and the percentages of SD and LEP students assessed with the variety of available accommodations. It should be noted that students assessed with accommodations typically received some combination of accommodations. For example, students assessed in small groups (as compared to standard NAEP sessions of about 30 students) usually received extended time. In one-on-one administrations, students often received assistance in recording answers and were afforded extra time. Extended time was considered the primary accommodation only when it was the sole accommodation provided.

[6] For information on DIF studies of items assessed with accommodations in the 1996 mathematics assessment, see Mazzeo, J.M., Carlson, J.E., Voelkl, K.E., and Lutkus, A.D. (1999). *Increasing the participation of special needs students in NAEP; A report on 1996 NAEP research activities.* Washington, DC: National Center for Education Statistics.

Table A.10

SD and LEP students in the NAEP mathematics assessment national samples where accommodations were permitted by type of accommodation: 1996 and 2000

	Grade 4				Grade 8				Grade 12			
	1996		2000		1996		2000		1996		2000	
	Number of students	Weighted percentage of students sampled	Number of students	Weighted percentage of students sampled	Number of students	Weighted percentage of students sampled	Number of students	Weighted percentage of students sampled	Number of students	Weighted percentage of students sampled	Number of students	Weighted percentage of students sampled
SD and LEP students												
Bilingual book	88	1.13	63	0.61	34	0.36	52	0.39	NA	NA	NA	NA
Large-print book	0	0	1	0.04	1	0.05	0	0	0	0	1	0.05
Extended time	32	0.82	59	0.64	41	0.71	77	0.53	23	0.28	60	0.48
Read aloud	15	0.41	21	0.32	11	0.16	29	0.26	7	0.18	7	0.10
Small group	70	1.86	128	2.47	68	1.05	169	1.63	26	0.40	58	0.96
One-on-one	24	0.85	21	0.47	16	0.44	13	0.11	13	0.22	2	0.00
Scribe/computer	NA	NA	2	0.03	NA	NA	1	0.00	NA	NA	0	0
Other	1	0.02	0	0	10	0.10	9	0.08	4	0.04	1	0.01
SD students only												
Bilingual book	1	0.02	0	0	0	0	0	0	NA	NA	NA	NA
Large-print book	0	0	1	0.04	1	0.05	0	0	0	0	1	0.05
Extended time	32	0.82	55	0.61	41	0.71	68	0.44	23	0.28	51	0.42
Read aloud	15	0.41	20	0.31	11	0.16	28	0.23	7	0.18	7	0.10
Small group	70	1.86	118	2.34	68	1.05	164	1.59	26	0.40	53	0.83
One-on-one	24	0.85	20	0.45	16	0.44	12	0.11	13	0.22	2	0.00
Scribe/computer	NA	NA	2	0.03	NA	NA	1	0.00	NA	NA	0	0
Other	1	0.02	0	0	10	0.10	8	0.07	4	0.04	1	0.01
LEP students only												
Bilingual book	88	1.13	63	0.61	34	0.36	52	0.39	NA	NA	NA	NA
Large-print book	0	0	0	0	0	0	0	0	0	0	0	0
Extended time	6	0.07	5	0.05	1	0.01	11	0.10	5	0.05	10	0.07
Read aloud	1	0.02	2	0.01	4	0.06	3	0.04	1	0.01	0	0
Small group	9	0.11	17	0.24	0	0	10	0.07	1	0.01	5	0.13
One-on-one	4	0.06	1	0.01	1	0.01	1	0.00	3	0.07	0	0
Scribe/computer	NA	NA	0	0	NA	NA	0	0	NA	NA	0	0
Other	0	0	0	0	0	0	1	0.01	2	0.03	0	0

SD = Students with Disabilities (the term previously used was IEP). LEP = Limited English Proficient students.
NA = Not Applicable. Accommodation was not offered.
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 bottom portions but counted only once in the top portion.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Data Collection and Scoring

The 2000 mathematics assessment was conducted from January through March 2000, with some makeup sessions in early April. As with all NAEP assessments, data collection for the 2000 assessment was conducted by a trained field staff. For the national assessment, this was accomplished by staff from Westat, Inc.

For the state assessment, testing sessions were conducted and administered by employees of state and local educational agencies and institutions. These employees were carefully trained in assessment procedures by Westat. In addition, Westat employed quality control monitors who observed 25 percent of the sessions in state assessments.

Materials from the 2000 assessment were shipped to National Computer Systems, where trained staff evaluated the responses to the constructed-response questions using scoring rubrics or guides prepared by Educational Testing Service. Each constructed-response question had a unique scoring rubric that defined the criteria used to evaluate students' responses. The extended constructed-response questions were evaluated with four- and five-level rubrics, and many of the short constructed-response questions were rated according to three-level rubrics that permitted partial credit. Other short constructed-response questions were scored as either acceptable or unacceptable.

For the 2000 mathematics assessment, 3,856,211 constructed responses were scored. This number includes rescoring to monitor inter-rater reliability. The within-year average percentage of agreement for the 2000 national reliability sample was 97 percent at grade 4, 97 percent at grade 8, and 97 percent at grade 12.

Data Analysis and IRT Scaling

Subsequent to the professional scoring, all information was transcribed to the NAEP database at ETS. Each processing activity was conducted with rigorous quality control. After the assessment information had been compiled in the database, the data were weighted according to the population structure. The weighting for the national sample reflected the probability of selection for each student as a result of the sampling design, adjusted for nonresponse. Through post-stratification, the weighting assured that the representation of certain subpopulations corresponded to figures from the U.S. Census and the Current Population Survey.[7]

The procedure used for sample weighting in the state assessments is similar to that used in national samples. There are two important differences. First, because there is no oversampling of high-minority schools in state samples, the weighting process does not need to adjust for such a procedure. Second, Current Population Survey target totals are not available or stable on a state-by-state basis. Therefore, the poststratification process described above is not utilized in the state program.

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

[7] These procedures are described more fully in the section "Weighting and Variance Estimation." For additional information about the use of weighting procedures in NAEP, see Johnson, E.G. (1989, December). Considerations and techniques for the analysis of NAEP data. *Journal of Education Statistics* (14)4, 303–334.

responses at the end of a block (i.e., missing responses subsequent to the last question the student answered) and missing responses prior to the last observed response. Missing responses before the last observed response were considered intentional omissions. Missing responses at the end of the block 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, the standard practice would result in extremely large drops in the proportion of students attempting the final question. 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 across groups such as those defined by characteristics, including gender and race/ethnicity.

In producing the mathematics 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 rubric, as well as extended constructed-response questions rated on a four- or five-level rubric, were scaled using a Generalized Partial-Credit (GPC) model.[8] 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.

The mathematics scale is 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). One natural question about the mathematics scales concerns the amount of information contributed by each type of question. Unfortunately, this question has no simple answer for the NAEP mathematics assessment, due to the complex procedures used to form the composite mathematics scale. The information provided

[8] Muraki, E. (1992). A generalized partial credit model: Application of an EM algorithm. *Applied Psychological Measurement*, (*16*)2, 159–176.

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.[9] 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 strands. The composite scale is a weighted combination of these subscales. IRT information functions are only strictly 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 of the BIB-spiraling design used by NAEP, students do not receive enough questions about a specific topic to provide reliable information about individual performance. Traditional test scores for individual students, even those based on IRT, would lead to misleading estimates of population characteristics, such as subgroup means and percentages of students at or above a certain scale-score level. Consequently, NAEP constructs sets of plausible values designed to represent the distribution of performance in the population. A plausible value for an individual is not a scale score for that individual, but may be regarded as a representative value from the distribution of potential scale scores for all students in the population with similar characteristics and identical patterns of item response. Statistics describing performance on the NAEP mathematics scale are based on the plausible values. 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, which would not be the case for population estimates obtained by aggregating optimal estimates of individual performance.[10]

Asian/Pacific Islander Samples

As noted in earlier chapters, national scale score and achievement level results for eighth-grade Asian/Pacific Islanders in 1996 and for fourth-grade Asian/Pacific Islander students in 2000 are not included in the main body of the *NAEP 2000 Mathematics Report Card*. Table A.11 contains average mathematics scale score estimates, and their standard errors, for the nation and Asian/Pacific Islander subgroup for the 1990, 1992, 1996, and 2000 assessment years. Despite statistically significant gains from 1992 to 1996 in average scale scores for the nation as a whole at all three grade levels, a large apparent decline in average scores was observed for the grade 8 Asian/Pacific Islander subgroup. From 1992 to 1996, the estimated decline in average scores for this subgroup was approximately 14 scale score points (about 0.4 within-grade standard deviation units) on the

[9] Donoghue, J.R. (1994). An empirical examination of the IRT information of polytomously scored reading items under the generalized partial credit model. *Journal of Educational Measurement, (31)*4, 295–311.

[10] 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.

For computational details, see the forthcoming NAEP 2000 technical report.

National Assessment of Educational Progress (2000). *NAEP 2000 technical report.* [forthcoming] Princeton, NJ: Educational Testing Service.

NAEP 500-point scale. Despite the large magnitude of this apparent decline, it was not statistically significant at the 0.05 level, after controlling for multiple comparisons. In 2000, the mean scale score for Asian/ Pacific Islanders at grade 4 was 12 points higher than in 1996, however, this cross-year difference was also not significant. There were no large apparent changes in average scores for the grade 12 Asian/ Pacific Islander group.

It is important to note that all NAEP results are estimates and are subject to some degree of sampling variability. If different samples of schools or students had been obtained, results for some subgroups would be higher than reported here and some would be lower. In most subgroups, particularly large subgroups or subgroups for which special sampling procedures are employed, estimates of performance are likely to remain similar from one sample to another. However, the national population of Asian/Pacific Islander students is small (about 3 percent of the national population), heterogeneous with respect to academic achievement, and highly clustered in certain locations and schools — factors which are associated with large sampling variability in survey results and reflected in the large standard errors associated with performance estimates for this subgroup. Furthermore, the sampling plan for the national assessment does not include explicit stratification procedures designed to mitigate these factors. The occurrence of the large, but statistically nonsignificant, change in the 1996 grade 8 and 2000 grade 4 Asian/Pacific Islander results was a likely consequence of these three factors: 1) the heterogeneous nature of the Asian/Pacific Islander population, 2) the current NAEP sampling design, and, 3) the sample sizes that were assessed.

Table A.11

Average mathematics scale scores for the Asian/Pacific Islander subgroup at grades 8 and 4: 1990-2000

	1990		1992		1996		2000	
	Percentage	Average score	Percentage	Average score	Percentage	Average score	Percentage	Average score
All students at grade 8	100	263 (1.3)	100	268 (0.9)*	100	272 (1.1)*†	100	275 (0.8) *†‡
Asian/ Pacific Islander at grade 8	2 (0.5)	279 (4.8)!	3 (0.2)	288 (5.4)	3 (0.2)	274 (3.9)	4 (0.4)	289 (3.4) ‡
All students at grade 4	100	213 (0.9)	100	220 (0.7)*	100	224 (0.9) *†	100	228 (0.9) *†‡
Asian/ Pacific Islander at grade 4	2 (0.2)	228 (3.5)	2 (0.2)	232 (2.3)	3 (0.2)	232 (4.1)	3 (0.2)	244 (4.5)*

The standard errors of the estimated percentages and average scale scores appear in parentheses.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
* Indicates a significant difference from 1990.
† Indicates a significant difference from 1992.
‡ Indicates a significant difference from 1996.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Item Mapping Procedures

To map items to particular points on the mathematics proficiency scale, a response probability convention was adopted that would divide those who had a higher probability of success from those who had a lower probability. Establishing a response probability convention has an impact on the mapping of the test items onto the mathematics scale. A lower boundary convention maps the mathematics items at lower points along the scale, and a higher boundary convention maps the same items 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 items 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 an item right than get it wrong, while those below the boundary would be more likely to get the item 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 item 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 success with an item. 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 item right than wrong, yet would not be in the group described as "able to do" the item.

In a compromise between the 50 percent and the 80 percent conventions, NAEP has adopted two related response probability conventions: 74 percent for multiple-choice questions with four response options 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) and 65 percent for constructed-response questions (where guessing is not a factor). These 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.[11] He examined the IRT information provided by items, according to the IRT model used in scaling NAEP questions. ("Information" is used here in a technical sense. See the forthcoming *NAEP 2000 Technical Report* for details.) Following Bock, Huynh decomposed the item information into that provided by a correct response [P(q) I(q)] and that provided by an incorrect response [(1- P(q)) I(q)].[12] Huynh showed that the item information provided by a correct response to a constructed-response item is maxi-

11 Huynh, H. (1994, October). *Some technical aspects of standard setting*. Paper presented at the Joint Conference on Standard Setting for Large-Scale Assessment, Washington, DC.

12 Bock, R. D. (1972). Estimating item parameters and latent ability when responses are scored in two or more latent categories. *Psychometrika*, 37, 29–51.

mized at the point along the mathematics scale at which the probability of a correct response is two thirds (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 .74). It should be noted, however, that maximizing the item information I(q), rather than the information provided by a correct response [P(q) I(q)], would imply an item mapping criterion closer to 50 percent.

The results in this report are presented in terms of the composite mathematics scale. However, the mathematics assessment was scaled separately for the five content strands at grade 4, 8 and 12. The composite scale is a weighted combination of the five subscales for the five content strands. To obtain item map information presented in this report, a procedure developed by Donoghue was used.[13] This method models the relationship between the item response function for the subscale and the subscale structure to derive the relationship between the item 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 sample design was used to select the students who were assessed. The properties of a sample selected through a complex design could 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 complex 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.

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 relatively small number of cognitive questions. 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

13 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.

information that can be observed without error. However, because each student typically responds to only a few questions within any content strand, the scale score for any single student would be imprecise. In this case, plausible values methodology can be used to describe the performance of groups and subgroups of students, but the underlying imprecision involved in this step adds another component of variability to statistics based on NAEP scale scores.[14] (Appendix B provides the standard errors for the results presented in this report.)

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. Throughout this report, estimates of standard errors subject to a large degree of uncertainty are followed by the "!" symbol. In such cases, the standard errors-and any confidence intervals or significance tests involving these standard errors-should be interpreted cautiously. Additional details concerning procedures for identifying such standard errors are discussed in the forthcoming *NAEP 2000 Technical Report*.

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 information; mistakes in recording, coding, or scoring data; and other errors in collecting, processing, sampling, and estimating missing data. The extent of nonsampling error 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 statistics included in this report 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 standard error should be taken into account, and observed similarities or differences should not be relied on solely. Therefore, the comparisons discussed in this report are based on statistical tests that consider the standard errors of those statistics and the magnitude of the difference among the averages or percentages.

[14] For further details, see Johnson, E.G. & Rust, K.F. (1992). Population inferences and variance estimation for NAEP data. *Journal of Educational Statistics*, (17)2, 175–190.

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 approximately a 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.

As an example, suppose that the average mathematics scale score of the students in a particular group was 256 with a standard error of 1.2. A 95 percent confidence interval for the population quantity would be as follows:

$$\text{Average} \pm 1.96 \text{ standard errors}$$
$$256 \pm 1.96 \times 1.2$$
$$256 \pm 2.35$$
$$(253.65, 258.35)$$

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 253.65 and 258.35.

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 go below 0 percent, resulting in numbers that are not meaningful. (The forthcoming *NAEP 2000 Technical Report* will contain a more complete discussion of extreme percentages.)

Analyzing Group Differences in Averages and Percentages

Statistical tests determine whether the evidence, based on the data from the groups in the sample, is strong enough 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 than or lower than another group), regardless of whether the sample averages or percentages appear to be approximately the same. Occasionally, if an apparent difference is quite large but not statistically significant, this report will point out that fact.

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 =

$$SE_{A-B} = \sqrt{(SE_A^{\,2} + SE_B^{\,2})}$$

Similar to how the standard error for an individual group average or percentage is used, the standard error of the difference can be used 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 two standard errors of the difference represents an approximate 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 (different) at the 0.05 level.

As an example of comparing groups, consider the problem of determining whether the average mathematics scale score of group A is higher than that of group B. Suppose that the sample estimates of the average scale scores and standard errors were 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 approximate 95 percent confidence interval for this difference is plus or minus two standard errors of the difference

$$2 \pm 1.96 \times 1.4$$

$$2 \pm 2.74$$

$$(-0.74, 4.74)$$

The value zero is within the confidence interval; therefore, there is insufficient evidence to claim that group A outperformed group B.

In some cases, the differences between groups were not discussed in this report. This happened for one of two reasons: (a) if the comparison involved an extreme percentage (as defined above); or (b) if the standard error for either group was subject to a large degree of uncertainty (i.e., the coefficient of variation is greater than 20 percent, denoted by "!" in the tables).[15] In either case, the results of any statistical test involving that group need to be interpreted with caution; and so, the results of such tests are not discussed in this report.

Conducting Multiple Tests

The procedures in the previous section 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

[15] As was discussed in the section "Weighting and Variance Estimation," estimates of standard errors subject to a large degree of uncertainty are designated by the symbol "!". In such cases, the standard error—and any confidence intervals or significance tests among these standard errors—should be interpreted with caution.

significance is being performed. However, in chapters 2, 3, 4, 5, and 6 of this report, 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., 0.05), adjustments (called "multiple comparison procedures"[16]) must be made to the methods described in the previous section. One such procedure, the False Discovery Rate (FDR) procedure[17] was used to control the certainty level.

Unlike the other multiple comparison procedures (e.g., the Bonferroni procedure) 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, familywise procedures are considered conservative for large families of comparisons.[18] Therefore, the FDR procedure is more suitable for multiple comparisons in NAEP than other procedures. A detailed description of the FDR procedure appears in the forthcoming *NAEP 2000 Technical Report.*

To illustrate how the FDR procedure is used, consider the comparisons of current and previous years' average mathematics scale scores for the five groups presented in table A.12. Note that the difference in average scale scores and the standard error of the difference are calculated in a way comparable with that of the example in the previous section. The test statistic shown is the difference in average scale scores divided by the standard error of the difference.

Table A.12

FDR 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	Difference in averages	Standard error of difference	Test statistic	Percent confidence*
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	.51	62
Group 5	201	3.4	196	4.7	-5.51	5.81	-.95	35

* 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.

16 Miller, R.G. (1966). *Simultaneous statistical inference.* New York: Wiley.

17 Benjamini, Y. & 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.*, pp 298–300.

18 Williams, V.S.L., Jones, L.V., & Tukey, J.W. (1994, December). *Controlling error in multiple comparisons with special attention to the National Assessment of Educational Progress.* Research Triangle Park, NC: National Institute of Statistical Sciences.

The difference in average scale scores and its standard error can be used to find an approximate 95 percent confidence interval as in the example in the previous section or they can be used to identify a confidence percentage. In the example in the previous section, because an approximate 95 percent confidence interval was desired, the number 2 was used to multiply the standard error of the difference to create the approximate confidence interval. In the current example, the test statistic is treated like the number 2 and the matching percent confidence for the related confidence interval is identified from statistical tables. Instead of checking to see if zero is within the 95 percent confidence interval, the percent confidence from the statistical tables can be directly compared to 100-95 = 5 percent.

If the comparison of average scale scores across two years were made for only one of the five groups, there would be a significant difference between the average scale scores for the two years if the percent confidence were 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 percents of confidence to 5 percent is not adequate. Groups of students defined by shared characteristics, such as race/ethnicity groups, are treated as sets or families when making comparisons. However, comparisons of average scale scores for each pair of years were treated separately. So the steps described in this example would be replicated for the comparison of other current and previous year average scale scores.

To use 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 $.05*(5-1)/5 = 4$ percent,[19] 20 percent for the Group 1 comparison would be compared to $.05*(5-2)/5 = 3$ percent, 4 percent for the Group 3 comparison would be compared to $.05*(5-3)/5 = 2$ percent, and 1 percent for the Group 2 comparison (actually slightly smaller than 1 prior to rounding) would be compared to $.05*(5-4)/5 = 1$ percent. The last of these comparisons is the only one for which the percent confidence is smaller than the FDR procedure value. The difference in the current year 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 of counterintuitive results occur when using the FDR procedures to examine between-year differences in subgroup results by jurisdiction. In that case, results were not included in this report. NCES is continuing to evaluate the use of FDR and multiple-comparison procedures for future reporting.

19 The level of confidence times the number of comparisons minus one divided by the number of comparisons is $.05*(5-1)/5 = 4$ percent.

NAEP Reporting Groups

In this report, results are provided for groups of students defined by shared characteristics-region of the country, gender, race or ethnicity, school's type of location, eligibility for the Free/Reduced-Price School Lunch program, and type of school. 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).[20] However, the data for all students, regardless of whether their subgroup was reported separately, were included in computing overall results. Definitions of the subpopulations referred to in this report are presented below.

Region

Results in NAEP are reported for four regions of the nation: Northeast, Southeast, Central, and West. Figure A.2 shows how states are subdivided into these NAEP regions. All 50 states and the District of Columbia are listed. Territories and the two Department of Defense Educational Activities jurisdictions are not assigned to any region.

Figure A.2

States included in the four NAEP regions

Northeast	Southeast	Central	West
Connecticut	Alabama	Illinois	Alaska
Delaware	Arkansas	Indiana	Arizona
District of Columbia	Florida	Iowa	California
Maine	Georgia	Kansas	Colorado
Maryland	Kentucky	Michigan	Hawaii
Massachusetts	Louisiana	Minnesota	Idaho
New Hampshire	Mississippi	Missouri	Montana
New Jersey	North Carolina	Nebraska	Nevada
New York	South Carolina	North Dakota	New Mexico
Pennsylvania	Tennessee	Ohio	Oklahoma
Rhode Island	*Virginia	South Dakota	Oregon
Vermont	West Virginia	Wisconsin	Texas
*Virginia			Utah
			Washington
			Wyoming

* NOTE: The part of Virginia that is included in the Northeast region is the Washington, DC metropolitan area; the remainder of the state is included in the Southeast region.

20 For the national assessment, a PSU is a selected geographic region (a county, group of counties, or metropolitan statistical area). For the state assessment program, a PSU is most often a single school. Further details about the procedure for determining minimum sample size appear in the *1998 NAEP Technical Report.*

National Assessment of Educational Progress (2000). *NAEP 2000 technical report.* [forthcoming] Princeton, NJ: Educational Testing Service.

Gender

Results are reported separately for males and females.

Race/Ethnicity

The race/ethnicity variable is derived from two questions asked of students and from school records, and it is used for race/ethnicity subgroup comparisons. Two questions from the set of general student background questions were used to determine race/ethnicity:

If you are Hispanic, what is your Hispanic background?

❑ I am not Hispanic

❑ Mexican, Mexican American, or Chicano

❑ Puerto Rican

❑ Cuban

❑ Other Spanish or Hispanic background

Students who responded to this question by filling in the second, third, fourth, or fifth oval were considered Hispanic. For students who filled in the first oval, did not respond to the question, or provided information that was illegible or could not be classified, responses to the following question were examined to determine their race/ethnicity.

Which best describes you?

❑ White (not Hispanic)

❑ Black (not Hispanic)

❑ Hispanic ("Hispanic" means someone who is Mexican, Mexican American, Chicano, Puerto Rican, Cuban, or other Spanish or Hispanic background)

❑ Asian or Pacific Islander ("Asian or Pacific Islander" means someone who is from a Chinese, Japanese, Korean, Filipino, Vietnamese, Asian American or from some other Asian or Pacific Islander background.)

❑ American Indian or Alaskan Native ("American Indian or Alaskan Native" means someone who is from one of the American Indian tribes or one of the original people of Alaska.)

❑ Other (specify) ____________________

Students' race/ethnicity was then assigned on the basis of their responses. For students who filled in the sixth oval ("Other"), provided illegible information or information that could not be classified, or did not respond at all, race/ethnicity was assigned as determined by school records.

Race/ethnicity could not be determined for students who did not respond to either of the demographic questions and whose schools did not provide information about race/ethnicity.

Details of how race/ethnicity classifications were derived are presented so that readers can determine how useful the results are for their particular purposes.

Also, some students indicated that they were from a Hispanic background (e.g., Puerto Rican or Cuban) and that a racial/ethnic category other than Hispanic best described them. These students were classified as Hispanic based on the rules described above. Furthermore, information from the schools did not always correspond to how students described themselves.

Therefore, the racial/ethnic results presented in this report attempt to provide a clear picture based on several sources of information.

Type of Location

Results from the 2000 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: This category includes central cities of all Standard Metropolitan Statistical Areas (SMSA) as defined by the Office of Management and Budget. Central City is a geographical term and is not synonymous with "inner city."

Urban Fringe/Large Town: The urban fringe category includes all densely settled places and areas within SMSA's that are classified as urban by the Bureau of the Census, but which do not qualify as Central City. A Large Town is defined as a place outside a SMSA 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 Bureau of the Census. A Small Town is defined as a place outside a SMSA with a population of less than 25,000, but greater than or equal to 2,500.

In this report, results for each type of location are not compared across years. This was 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.

Eligibility for the Free/Reduced-Price School Lunch Program

Based on available school records, students were classified as either currently eligible for the free/reduced-price lunch component of the Department of Agriculture's National School Lunch Program or not eligible. The classification applies only to the school year when the assessment was administered (i.e., the 1999-2000 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."

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.[21] Although 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.

[21] Through a pilot study, more detailed breakdowns of nonpublic school results are available on the NAEP web site (http://nces.ed.gov/nationsreportcard).

Grade 12 Participation Rates and Motivation

NAEP has been described as a "low-stakes" assessment. That is, students receive no individual scores, and their NAEP performance has no effect on their grades, promotions, or graduation. There has been continued concern that this lack of consequences affects participation rates of students and schools, as well as the motivation of students to perform well on NAEP. Of particular concern has been the performance of twelfth graders, who typically have lower student participation rates than fourth- and eighth-graders, and who are more likely to omit responses compared to the younger cohorts.

Participation Rates

In NAEP, there has been a consistent pattern of lower participation rates for older students. In the 2000 NAEP assessments, for example, the student participation rates were 96 percent and 92 percent at grades 4 and 8, respectively. At the twelfth grade, however, the participation rate was 77 percent. School participation rates (the percentage of sampled schools that participated in the assessment) have also typically decreased with grade level. Again citing the 2000 assessments, the school participation rate was 89 percent for the fourth grade, 85 percent for the eighth grade, and 82 percent for the twelfth grade.

The effect of participation rates on student performance, however, is unclear. Students may choose not to participate in NAEP for many reasons, such as desire to attend regular classes so as not to miss important instruction or fear of not doing well on NAEP. Similarly, there are a variety of reasons for which various schools do not participate. The sampling weights and nonresponse adjustments, described earlier in this appendix, provide an approximate statistical adjustment for nonparticipation. However, the effect of some school and student nonparticipation may have some undetermined effect on results.

Motivation

To the extent that students in the NAEP sample are not trying their hardest, NAEP results may underestimate student performance. The concern increases as students get older, and may be particularly pronounced for twelfth graders. The students themselves furnish some evidence about their motivation. As part of the background questions, students were asked how important it was to do well on the NAEP mathematics assessment. They were asked to indicate whether it was very important, important, somewhat important, or not very important to them. The percentage of students indicating they thought it was either important or very important to do well was 89 percent for fourth graders, 60 percent for eighth graders, and 28 percent for twelfth graders.

Several factors may contribute to this pattern. NAEP was administered in the late winter, when high school seniors often have other things on their minds. More recently, the addition to NAEP of more constructed-response questions, which in many instances take longer for the student to answer, may also have had some effect on twelfth graders completing the assessment. As with participation rates, however, the combined effect of these and other factors is unknown.

It is also interesting to note that students who indicated it was very important for them to do well on NAEP did not have the highest average scores. In fact, at grades 8 and 12, students who reported it was not very important to do well also had higher average scores than those who reported it was very important to do well. These data further cloud the relationship between motivation and performance on NAEP.

Need for Future Research

More research is needed to delineate the factors that contribute to nonparticipation and lack of motivation. To that end, NCES commissioned a study of high school transcripts to learn more about the academic performance of twelfth-grade students who do not participate in the assessment. In addition, NCES is currently investigating how various types of incentives can be effectively used to increase participation in NAEP.

Cautions in Interpretations

As described earlier, 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 capture 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.

Appendix B
Data Appendix

This appendix contains complete data for all the tables and figures presented in this report, including average scores, achievement level results, and percentages of students. In addition, standard errors appear in parentheses next to each scale score and percentage. The comparisons presented in this report are based on statistical tests that consider the magnitude of the difference between group averages or percentages and the standard errors of those statistics. Because NAEP scores and percentages are based on samples rather than the entire population(s), the results are subject to a measure of uncertainty reflected in the standard errors of the estimates. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. As with the figures and tables in the chapters, significant differences between results of previous assessments and the 2000 assessment are highlighted.

Appendix Focus

Complete data for all tables and figures.

Appendix Contents

Average Scores

Achievement Level Results

Percentages of Students

Standard Errors

243

Table B.1: Data for Figure 2.1 National Scale Score Results

Average mathematics scale scores, grades 4, 8, and 12: 1990–2000

	Grade 12	Grade 8	Grade 4
1990	294 (1.1) *	263 (1.3) *	213 (0.9) *
1992	299 (0.9)	268 (0.9) *	220 (0.7) *
1996	304 (1.0) *	272 (1.1) *	224 (0.9) *
2000	301 (0.9)	275 (0.8)	228 (0.9)

Standard errors of the estimated scale scores appear in parentheses.
* Significantly different from 2000.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.2: Data for Figure 2.2: National Achievement Level Results

Percentage of students within each mathematics achievement level range and at or above achievement levels, grades 4, 8, and 12: 1990–2000

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4	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)
Grade 8	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)
Grade 12	1990	42 (1.6) *	46 (1.5)	10 (0.8) *	1 (0.3)	58 (1.6) *	12 (0.9) *
	1992	36 (1.1)	49 (1.0)	13 (0.7)	2 (0.3)	64 (1.1)	15 (0.8)
	1996	31 (1.3) *	53 (1.1) *	14 (0.9)	2 (0.3)	69 (1.3) *	16 (1.1)
	2000	35 (1.1)	48 (0.9)	14 (0.8)	2 (0.3)	65 (1.1)	17 (0.9)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.3: Data for Figure 2.3: National Performance Distribution

National mathematics scale score percentiles, grades 4, 8, and 12: 1990–2000

		Mean	10th	25th	50th	75th	90th
Grade 4	1990	213 (0.9) *	171 (2.1) *	193 (1.0) *	214 (1.3) *	235 (1.0) *	253 (1.6) *
	1992	220 (0.7) *	177 (0.9) *	199 (1.3) *	221 (1.0) *	242 (1.0) *	259 (0.9) *
	1996	224 (0.9) *	182 (1.2) *	204 (1.3) *	226 (1.0) *	246 (0.7) *	262 (1.2) *
	2000	228 (0.9)	186 (1.1)	208 (0.9)	230 (1.0)	250 (1.0)	266 (1.0)
Grade 8	1990	263 (1.3) *	215 (2.3) *	239 (1.5) *	264 (1.4) *	288 (1.3) *	307 (2.2) *
	1992	268 (0.9) *	221 (0.9) *	243 (0.9) *	269 (1.7) *	294 (0.8) *	315 (1.1) *
	1996	272 (1.1) *	224 (1.9)	248 (1.5)	273 (1.1) *	298 (1.6)	317 (1.2)
	2000	275 (0.8)	227 (1.4)	252 (1.0)	277 (0.8)	301 (1.0)	321 (1.6)
Grade 12	1990	294 (1.1) *	247 (1.0) *	270 (1.3) *	296 (1.7) *	319 (1.4) *	339 (1.6) *
	1992	299 (0.9)	254 (1.3)	276 (1.5)	301 (1.2)	324 (1.4)	343 (0.8)
	1996	304 (1.0) *	261 (1.1) *	282 (1.4) *	305 (1.2) *	327 (1.3)	345 (1.3)
	2000	301 (0.9)	255 (1.3)	277 (1.0)	302 (0.8)	326 (1.0)	346 (1.4)

Standard errors of the estimated scale scores appear in parentheses.
* Significantly different from 2000.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.4: Data for Figure 2.4 National Scale Score Results by Region

Percentage of students and average mathematics scale scores results by region of the country, grades 4, 8, and 12: 1990–2000

		Northeast	Southeast	Central	West
Grade 12	1990	24 (1.2)	20 (1.1)	27 (0.8)	29 (1.2)
		300 (2.3)	284 (2.2) *	297 (2.6) *	294 (2.6) *
	1992	24 (0.6)	23 (0.6)	25 (0.6)	27 (0.9)
		303 (1.5)	292 (1.4)	304 (1.8)	299 (1.7)
	1996	22 (1.3)	22 (1.9)	24 (0.8)	33 (2.0)
		307 (2.0)	296 (1.9)	310 (2.9)	303 (1.7)
	2000	21 (1.1)	22 (1.3)	26 (0.6)	31 (1.3)
		305 (2.8)	292 (1.8)	306 (1.9)	301 (1.7)
Grade 8	1990	20 (0.9)	25 (1.1)	24 (0.8)	30 (1.0)
		270 (2.8) *	255 (2.5) *	266 (2.3) *	261 (2.6) *
	1992	22 (0.8)	25 (0.7)	25 (0.6)	28 (0.7)
		270 (2.7) *	261 (1.4) *	275 (1.9) *	268 (2.0) *
	1996	20 (1.2)	23 (1.7)	24 (1.0)	32 (1.6)
		277 (3.1)	266 (2.6)	277 (3.1)	269 (2.2)
	2000	21 (0.6)	21 (0.7)	26 (0.7)	32 (0.8)
		277 (2.0)	267 (1.3)	282 (1.9)	274 (1.5)
Grade 4	1990	22 (1.0)	25 (1.1)	25 (0.8)	27 (0.8)
		215 (2.9) *	205 (2.1) *	216 (1.7) *	216 (2.4) *
	1992	21 (0.9)	24 (0.9)	27 (0.5)	28 (0.7)
		224 (2.0) *	211 (1.6) *	224 (1.8) *	219 (1.5) *
	1996	22 (1.2)	21 (1.6)	25 (0.7)	32 (1.8)
		228 (2.2)	218 (2.1)	231 (1.6)	220 (2.0)
	2000	22 (0.8)	23 (1.3)	24 (0.5)	30 (1.3)
		230 (1.6)	222 (2.1)	232 (1.4)	227 (1.9)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.5: Data for Figure 2.5: National Achievement Level Results by Region

Percentage of students within each mathematics achievement level range and at or above achievement levels, by region of the country, grades 4, 8, and 12: 1990–2000

			Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4	Northeast	1990	49 (4.2) *	37 (4.7)	13 (2.9) *	2 (1.0)	51 (4.2) *	14 (3.4) *
		1992	37 (2.7) *	40 (2.3)	21 (2.3)	3 (0.7)	63 (2.7) *	23 (2.5)
		1996	30 (2.9)	43 (2.7)	24 (1.6)	3 (0.9)	70 (2.9)	26 (1.6)
		2000	28 (1.8)	44 (1.9)	25 (1.8)	3 (0.8)	72 (1.8)	28 (2.2)
	Southeast	1990	60 (2.9) *	31 (2.4) *	8 (1.4) *	▲ (0.3)	40 (2.9) *	8 (1.6) *
		1992	52 (2.2) *	37 (1.4)	10 (1.0) *	1 (0.4)	48 (2.2) *	11 (1.2) *
		1996	45 (2.9)	40 (2.2)	14 (1.9)	2 (0.8)	55 (2.9)	16 (2.4)
		2000	39 (3.1)	41 (1.9)	19 (1.8)	2 (0.3)	61 (3.1)	21 (1.9)
	Central	1990	45 (2.7) *	41 (2.7)	12 (1.6) *	1 (****)	55 (2.7) *	14 (1.6) *
		1992	34 (2.8) *	45 (1.7)	19 (1.8) *	2 (0.5)	66 (2.8) *	21 (1.7) *
		1996	25 (2.6)	48 (1.8)	24 (2.1)	2 (0.6)	75 (2.6)	27 (2.1)
		2000	26 (1.7)	45 (1.7)	27 (1.9)	3 (0.5)	74 (1.7)	30 (2.0)
	West	1990	46 (3.2) *	39 (2.3)	13 (1.9) *	1 (0.7)	54 (3.2) *	15 (2.3) *
		1992	41 (2.1) *	42 (2.3)	15 (2.1) *	2 (0.6)	59 (2.1) *	17 (2.2) *
		1996	42 (2.8)	41 (2.0)	15 (1.6) *	2 (0.5)	58 (2.8)	18 (1.7) *
		2000	33 (2.3)	41 (1.5)	23 (1.9)	3 (0.5)	67 (2.3)	26 (2.1)
Grade 8	Northeast	1990	41 (4.0)	39 (2.8)	18 (2.7)	3 (0.7) *	59 (4.0)	20 (2.7) *
		1992	43 (3.5) *	34 (1.9)	19 (1.8)	5 (0.9)	57 (3.5) *	23 (2.5)
		1996	33 (3.1)	39 (2.8)	22 (2.6)	5 (1.9)	67 (3.1)	27 (3.7)
		2000	33 (2.2)	39 (1.7)	23 (1.7)	5 (0.9)	67 (2.2)	28 (2.0)
	Southeast	1990	57 (2.6) *	31 (3.0)	10 (1.8) *	1 (0.5) *	43 (2.6) *	12 (2.1) *
		1992	50 (1.8) *	35 (1.5)	13 (1.2)	2 (0.4) *	50 (1.8) *	15 (1.2) *
		1996	44 (3.2)	38 (2.5)	15 (1.7)	3 (0.6)	56 (3.2)	18 (1.8)
		2000	43 (1.6)	37 (1.2)	17 (1.0)	3 (0.5)	57 (1.6)	20 (1.2)
	Central	1990	43 (2.5) *	41 (1.9)	14 (1.2) *	2 (0.5) *	57 (2.5) *	15 (1.3) *
		1992	34 (2.7) *	41 (2.0)	22 (2.4)	3 (0.6) *	66 (2.7) *	25 (2.4) *
		1996	31 (3.4)	39 (1.8)	24 (1.8)	5 (1.0)	69 (3.4)	29 (2.5)
		2000	26 (2.0)	42 (1.8)	27 (1.9)	6 (1.1)	74 (2.0)	33 (2.3)
	West	1990	50 (2.6) *	36 (1.7)	12 (1.8) *	2 (0.6) *	50 (2.6) *	15 (2.1) *
		1992	42 (2.5)	37 (1.8)	17 (1.7)	3 (1.0)	58 (2.5)	21 (1.9) *
		1996	41 (2.2)	38 (1.5)	19 (1.6)	3 (0.6)	59 (2.2)	22 (1.9)
		2000	37 (1.5)	36 (1.2)	22 (1.3)	5 (0.6)	63 (1.5)	27 (1.4)
Grade 12	Northeast	1990	36 (3.1)	48 (2.5)	14 (1.7)	2 (0.8)	64 (3.1)	16 (1.9)
		1992	34 (2.0)	49 (1.7)	15 (1.2)	2 (0.7)	66 (2.0)	18 (1.5)
		1996	28 (2.9)	51 (2.4)	19 (1.8)	3 (0.7)	72 (2.9)	21 (2.1)
		2000	32 (2.7)	48 (2.0)	16 (1.8)	4 (1.3)	68 (2.7)	20 (2.5)
	Southeast	1990	53 (3.9)	41 (3.5)	5 (0.8) *	1 (0.3)	47 (3.9)	6 (0.8) *
		1992	45 (2.1)	44 (1.6)	9 (1.1)	1 (0.3)	55 (2.1)	10 (1.1)
		1996	42 (2.6)	47 (2.4)	10 (1.3)	1 (0.3)	58 (2.6)	11 (1.5)
		2000	44 (2.2)	46 (2.0)	9 (1.1)	1 (0.2)	56 (2.2)	10 (1.2)
	Central	1990	38 (3.5)	50 (3.4)	11 (1.5) *	1 (0.6)	62 (3.5)	13 (1.7) *
		1992	30 (2.6)	53 (2.1)	15 (1.3)	1 (0.4)	70 (2.6)	17 (1.4)
		1996	23 (3.6)	57 (2.1)	17 (2.3)	3 (0.7)	77 (3.6)	20 (2.8)
		2000	29 (2.3)	51 (1.9)	18 (2.2)	2 (0.6)	71 (2.3)	20 (2.1)
	West	1990	43 (3.2)	45 (2.8)	10 (1.9)	2 (0.9)	57 (3.2)	12 (2.5)
		1992	36 (1.7)	50 (1.5)	12 (1.4)	2 (0.4)	64 (1.7)	14 (1.6)
		1996	31 (2.4)	55 (2.2) *	12 (1.5)	2 (0.6)	69 (2.4)	14 (1.7)
		2000	35 (2.0)	48 (1.4)	15 (1.1)	2 (0.6)	65 (2.0)	17 (1.3)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000. (****) Standard error estimates cannot be accurately determined.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.6: Data for Table 2.1: State Scale Score Results, Grade 4

Average mathematics scale score results by state for grade 4 public schools: 1992–2000

	2000	1996	1992
Nation	226 (1.0)	222 (1.0) *	219 (0.8) *
Alabama	218 (1.4)	212 (1.2) ‡	208 (1.6) ‡
Alaska	—	224 (1.3)	—
Arizona	219 (1.4)	218 (1.7)	215 (1.1)
Arkansas	217 (1.1)	216 (1.5)	210 (0.9) ‡
California †	214 (1.8)	209 (1.8)	208 (1.6) ‡
Colorado	—	226 (1.0)	221 (1.0)
Connecticut	234 (1.2)	232 (1.1)	227 (1.1) ‡
Delaware	—	215 (0.6)	218 (0.8)
Florida	—	216 (1.2)	214 (1.5)
Georgia	220 (1.1)	215 (1.5) *	216 (1.2) ‡
Hawaii	216 (1.1)	215 (1.5)	214 (1.3)
Idaho †	227 (1.2)	—	222 (1.0) ‡
Illinois †	225 (1.9)	—	—
Indiana †	234 (1.1)	229 (1.0) ‡	221 (1.0) ‡
Iowa †	233 (1.3)	229 (1.1) *	230 (1.0)
Kansas †	232 (1.5)	—	—
Kentucky	221 (1.2)	220 (1.1)	215 (1.0) ‡
Louisiana	218 (1.4)	209 (1.1) ‡	204 (1.5) ‡
Maine †	231 (0.9)	232 (1.0)	232 (1.0)
Maryland	222 (1.3)	221 (1.6)	217 (1.3) ‡
Massachusetts	235 (1.1)	229 (1.3) ‡	227 (1.2) ‡
Michigan †	231 (1.4)	226 (1.3) *	220 (1.7) ‡
Minnesota †	235 (1.3)	232 (1.1)	228 (0.9) ‡
Mississippi	211 (1.1)	208 (1.2)	202 (1.1) ‡
Missouri	229 (1.2)	225 (1.1) *	222 (1.2) ‡
Montana †	230 (1.8)	228 (1.2)	—
Nebraska	226 (1.7)	228 (1.2)	225 (1.2)
Nevada	220 (1.2)	218 (1.3)	—
New Hampshire	—	—	230 (1.2)
New Jersey	—	227 (1.5)	227 (1.5)
New Mexico	214 (1.5)	214 (1.8)	213 (1.4)
New York †	227 (1.3)	223 (1.2) *	218 (1.2) ‡
North Carolina	232 (1.0)	224 (1.2) ‡	213 (1.1) ‡
North Dakota	231 (0.9)	231 (1.2)	229 (0.8)
Ohio †	231 (1.3)	—	219 (1.2) ‡
Oklahoma	225 (1.3)	—	220 (1.0) ‡
Oregon †	227 (1.6)	223 (1.4)	—
Pennsylvania	—	226 (1.2)	224 (1.3)
Rhode Island	225 (1.2)	220 (1.4) *	215 (1.5) ‡
South Carolina	220 (1.4)	213 (1.3) ‡	212 (1.1) ‡
Tennessee	220 (1.5)	219 (1.4)	211 (1.4) ‡
Texas	233 (1.2)	229 (1.4) *	218 (1.2) ‡
Utah	227 (1.2)	227 (1.2)	224 (1.0) *
Vermont †	232 (1.6)	225 (1.2) ‡	—
Virginia	230 (1.3)	223 (1.4) ‡	221 (1.3) ‡
West Virginia	225 (1.2)	223 (1.0)	215 (1.1) ‡
Washington	—	225 (1.2)	—
Wisconsin †	—	231 (1.0)	229 (1.1)
Wyoming	229 (1.3)	223 (1.4) ‡	225 (0.9) ‡
Other Jurisdictions			
American Samoa	157 (3.9)	—	—
District of Columbia	193 (1.2)	187 (1.1) ‡	193 (0.5)
DDESS	228 (1.2)	224 (1.0) *	—
DoDDS	228 (0.7)	223 (0.7) ‡	—
Guam	184 (2.3)	188 (1.3)	193 (0.8) ‡
Virgin Islands	183 (2.8)	—	—

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined. ‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation in 2000.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.7: Data for Table 2.2: State Scale Score Results, Grade 8

Average mathematics scale score results by state for grade 8 public schools: 1990–2000

	2000	1996	1992	1990
Nation	274 (0.8)	271 (1.2) *	267 (1.0) *	262 (1.4) *
Alabama	262 (1.8)	257 (2.1)	252 (1.7) ‡	253 (1.1) ‡
Alaska	—	278 (1.8)	—	—
Arizona †	271 (1.5)	268 (1.6)	265 (1.3) ‡	260 (1.3) ‡
Arkansas	261 (1.4)	262 (1.5)	256 (1.2) ‡	256 (0.9) ‡
California †	262 (2.0)	263 (1.9)	261 (1.7)	256 (1.3) ‡
Colorado	—	276 (1.1)	272 (1.0)	267 (0.9)
Connecticut	282 (1.4)	280 (1.1)	274 (1.1) ‡	270 (1.0) ‡
Delaware	—	267 (0.9)	263 (1.0)	261 (0.9)
Florida	—	264 (1.8)	260 (1.5)	255 (1.2)
Georgia	266 (1.3)	262 (1.6)	259 (1.2) ‡	259 (1.3) ‡
Hawaii	263 (1.3)	262 (1.0)	257 (0.9) ‡	251 (0.8) ‡
Idaho †	278 (1.3)	—	275 (0.7)	271 (0.8) ‡
Illinois †	277 (1.6)	—	—	261 (1.7) ‡
Indiana †	283 (1.4)	276 (1.4) ‡	270 (1.1) ‡	267 (1.2) ‡
Iowa	—	284 (1.3)	283 (1.0)	278 (1.1)
Kansas †	284 (1.4)	—	—	—
Kentucky	272 (1.4)	267 (1.1) ‡	262 (1.1) ‡	257 (1.2) ‡
Louisiana	259 (1.5)	252 (1.6) ‡	250 (1.7) ‡	246 (1.2) ‡
Maine †	284 (1.2)	284 (1.3)	279 (1.0) ‡	—
Maryland	276 (1.4)	270 (2.1) ‡	265 (1.3) ‡	261 (1.4) ‡
Massachusetts	283 (1.3)	278 (1.7) ‡	273 (1.0) ‡	—
Michigan †	278 (1.6)	277 (1.8)	267 (1.4) ‡	264 (1.2) ‡
Minnesota †	288 (1.4)	284 (1.3)	282 (1.0) ‡	275 (0.9) ‡
Mississippi	254 (1.3)	250 (1.2) *	246 (1.2) ‡	—
Missouri	274 (1.5)	273 (1.4)	271 (1.2)	—
Montana †	287 (1.2)	283 (1.3) *	—	280 (0.9) ‡
Nebraska	281 (1.1)	283 (1.0)	278 (1.1)	276 (1.0) ‡
Nevada	268 (0.9)	—	—	—
New Hampshire	—	—	278 (1.0)	273 (0.9)
New Jersey	—	—	272 (1.6)	270 (1.1)
New Mexico	260 (1.7)	262 (1.2)	260 (0.9)	256 (0.7)
New York †	276 (2.1)	270 (1.7) *	266 (2.1) ‡	261 (1.4) ‡
North Carolina	280 (1.1)	268 (1.4) ‡	258 (1.2) ‡	250 (1.1) ‡
North Dakota	283 (1.1)	284 (0.9)	283 (1.1)	281 (1.2)
Ohio	283 (1.5)	—	268 (1.5) ‡	264 (1.0) ‡
Oklahoma	272 (1.5)	—	268 (1.1)	263 (1.3) ‡
Oregon †	281 (1.6)	276 (1.5)	—	271 (1.0) ‡
Pennsylvania	—	—	271 (1.5)	266 (1.6)
Rhode Island	273 (1.1)	269 (0.9) ‡	266 (0.7) ‡	260 (0.6) ‡
South Carolina	266 (1.4)	261 (1.5) ‡	261 (1.0) ‡	—
Tennessee	263 (1.7)	263 (1.4)	259 (1.4) *	—
Texas	275 (1.5)	270 (1.4) *	265 (1.3) ‡	258 (1.4) ‡
Utah	275 (1.2)	277 (1.0)	274 (0.7)	—
Vermont †	283 (1.1)	279 (1.0) ‡	—	—
Virginia	277 (1.5)	270 (1.6) ‡	268 (1.2) ‡	264 (1.5) ‡
Washington	—	276 (1.3)	—	—
West Virginia	271 (1.0)	265 (1.0) ‡	259 (1.0) ‡	256 (1.0) ‡
Wisconsin †	—	283 (1.5)	278 (1.5)	274 (1.3)
Wyoming	277 (1.2)	275 (0.9)	275 (0.9)	272 (0.7) ‡
Other Jurisdictions				
American Samoa	195 (4.5)	—	—	—
District of Columbia	234 (2.2)	233 (1.3)	235 (0.9)	231 (0.9)
DDESS	277 (2.3)	269 (2.3) ‡	—	—
DoDDS	278 (1.0)	275 (0.9) ‡	—	—
Guam	233 (2.2)	239 (1.7)	235 (1.0)	232 (0.7)
Virgin Islands †	—	—	223 (1.1)	219 (0.9)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined. ‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation in 2000.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.8: Data for Figure 2.10: State Achievement Level Results, Grade 4

Percentage of students within each mathematics achievement level range by state for grade 4 public schools: 2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*
National - public schools	33 (1.2)	42 (0.9)	22 (1.1)	2 (0.3)
Alabama	43 (2.1)	43 (1.6)	13 (1.2)	1 (0.2)
Arizona	42 (1.9)	42 (1.6)	15 (1.3)	2 (0.5)
Arkansas	44 (1.9)	43 (1.6)	13 (1.1)	1 (0.2)
California †	48 (2.3)	38 (1.6)	14 (1.4)	1 (0.3)
Connecticut	23 (1.5)	45 (1.4)	29 (1.4)	3 (0.5)
Georgia	42 (1.5)	40 (1.4)	17 (1.0)	1 (0.3)
Hawaii	45 (1.9)	41 (1.7)	13 (0.9)	1 (0.3)
Idaho †	29 (1.7)	49 (1.4)	20 (1.5)	1 (0.4)
Illinois †	34 (2.4)	44 (1.9)	20 (2.1)	2 (0.6)
Indiana †	22 (1.5)	48 (1.6)	28 (1.6)	3 (0.7)
Iowa †	22 (1.9)	50 (1.9)	26 (1.7)	2 (0.4)
Kansas †	25 (2.3)	46 (1.6)	27 (1.9)	3 (0.7)
Kentucky	40 (1.8)	43 (1.6)	16 (1.1)	1 (0.3)
Louisiana	43 (2.0)	43 (1.5)	13 (1.3)	1 (0.2)
Maine †	26 (1.8)	50 (1.8)	22 (1.2)	2 (0.4)
Maryland	39 (1.8)	39 (1.7)	20 (1.2)	2 (0.4)
Massachusetts	21 (1.4)	45 (1.2)	30 (1.5)	3 (0.5)
Michigan †	28 (1.9)	43 (1.6)	26 (1.6)	3 (0.6)
Minnesota †	22 (1.7)	44 (1.5)	31 (1.5)	3 (0.7)
Mississippi	55 (1.7)	36 (1.4)	9 (0.8)	▲ (0.2)
Missouri	28 (1.6)	49 (1.6)	22 (1.4)	2 (0.4)
Montana †	27 (2.6)	48 (2.3)	23 (2.4)	2 (0.7)
Nebraska	33 (2.3)	43 (1.9)	22 (1.7)	2 (0.5)
Nevada	39 (1.7)	44 (1.5)	15 (1.1)	1 (0.2)
New Mexico	49 (2.0)	39 (1.6)	11 (1.0)	1 (0.2)
New York †	33 (2.1)	45 (1.8)	20 (1.4)	2 (0.4)
North Carolina	24 (1.5)	48 (1.5)	25 (1.4)	3 (0.4)
North Dakota	25 (1.5)	50 (1.5)	23 (1.2)	2 (0.4)
Ohio †	27 (2.0)	48 (2.0)	24 (1.9)	2 (0.4)
Oklahoma	31 (1.9)	53 (1.6)	16 (1.1)	1 (0.2)
Oregon †	33 (2.3)	44 (2.1)	21 (1.5)	3 (0.6)
Rhode Island	33 (1.5)	44 (1.2)	21 (1.2)	2 (0.4)
South Carolina	40 (1.8)	42 (1.6)	16 (1.1)	2 (0.3)
Tennessee	40 (1.8)	42 (1.3)	17 (1.4)	1 (0.4)
Texas	23 (1.6)	50 (1.4)	25 (1.6)	2 (0.5)
Utah	30 (1.7)	46 (1.5)	22 (1.2)	2 (0.3)
Vermont †	27 (2.0)	44 (1.7)	26 (2.0)	4 (0.7)
Virginia	27 (1.8)	47 (1.5)	23 (1.3)	2 (0.6)
West Virginia	32 (1.6)	49 (1.7)	17 (1.5)	1 (0.3)
Wyoming	27 (2.0)	48 (1.8)	23 (1.4)	2 (0.5)
Other Jurisdictions				
American Samoa	95 (1.4)	5 (1.3)	▲ (****)	0 (****)
District of Columbia	76 (1.1)	19 (0.8)	5 (0.8)	1 (0.2)
DDESS	30 (2.0)	46 (1.8)	21 (1.5)	3 (0.6)
DoDDS	30 (1.2)	48 (0.9)	21 (1.1)	2 (0.3)
Guam	79 (1.8)	19 (1.5)	2 (0.6)	▲ (****)
Virgin Islands	85 (3.2)	14 (3.2)	1 (0.5)	▲ (****)

Standard errors of the estimated percentages appear in parentheses.
(****) Standard error estimates cannot be accurately determined.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
▲ Percentage is between 0.0 and 0.5.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: Percentages within each mathematics achievement level range may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.9: Data for Figure 2.11: State Achievement Level Results, Grade 8

Percentage of students within each mathematics achievement level range by state for grade 8 public schools: 2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*
National - public schools	35 (0.9)	38 (0.9)	21 (0.8)	5 (0.5)
Alabama	48 (2.1)	36 (1.4)	14 (1.2)	2 (0.5)
Arizona †	38 (1.9)	41 (1.8)	18 (1.5)	3 (0.5)
Arkansas	48 (1.9)	38 (1.5)	13 (1.2)	1 (0.4)
California †	48 (2.3)	34 (1.5)	15 (1.3)	3 (0.6)
Connecticut	28 (1.3)	38 (1.2)	28 (1.3)	6 (0.7)
Georgia	45 (1.7)	37 (1.5)	16 (1.0)	3 (0.4)
Hawaii	48 (1.6)	36 (1.8)	14 (1.3)	2 (0.4)
Idaho †	29 (1.5)	44 (1.8)	24 (1.7)	3 (0.5)
Illinois †	32 (2.1)	41 (1.8)	23 (1.3)	4 (0.7)
Indiana †	24 (1.7)	45 (1.6)	26 (1.5)	5 (0.7)
Kansas †	23 (1.7)	43 (1.4)	30 (1.6)	4 (0.8)
Kentucky	37 (1.7)	42 (1.6)	18 (1.4)	3 (0.5)
Louisiana	52 (1.8)	36 (1.5)	11 (1.1)	1 (0.4)
Maine †	24 (1.5)	44 (1.4)	26 (1.2)	6 (0.7)
Maryland	35 (1.6)	36 (1.3)	22 (1.1)	6 (0.6)
Massachusetts	24 (1.5)	43 (1.2)	27 (1.1)	6 (0.7)
Michigan †	30 (1.9)	41 (1.3)	24 (1.6)	5 (0.7)
Minnesota †	20 (1.8)	40 (1.5)	33 (1.4)	7 (0.8)
Mississippi	59 (1.6)	33 (1.4)	7 (0.7)	1 (0.3)
Missouri	33 (2.0)	45 (1.5)	19 (1.3)	2 (0.3)
Montana †	20 (1.5)	43 (1.6)	32 (1.6)	6 (0.6)
Nebraska	26 (1.6)	43 (1.4)	26 (1.4)	5 (0.7)
Nevada	42 (1.1)	39 (1.3)	17 (0.8)	2 (0.4)
New Mexico	50 (1.8)	36 (1.8)	12 (1.0)	1 (0.4)
New York †	32 (2.5)	42 (1.8)	22 (1.7)	4 (0.7)
North Carolina	30 (1.3)	40 (1.2)	24 (1.0)	6 (0.7)
North Dakota	23 (1.4)	46 (1.7)	27 (1.5)	4 (0.6)
Ohio	25 (1.9)	45 (1.4)	26 (1.5)	5 (0.7)
Oklahoma	36 (1.9)	46 (1.5)	17 (1.1)	2 (0.3)
Oregon †	29 (1.7)	40 (1.5)	26 (1.7)	6 (0.8)
Rhode Island	36 (1.1)	41 (1.1)	20 (0.9)	4 (0.6)
South Carolina	45 (1.9)	37 (1.4)	15 (1.1)	2 (0.4)
Tennessee	47 (1.9)	36 (1.4)	15 (1.2)	2 (0.4)
Texas	32 (1.8)	44 (1.5)	22 (1.3)	3 (0.5)
Utah	32 (1.4)	42 (1.3)	23 (1.1)	3 (0.4)
Vermont †	25 (1.7)	43 (1.9)	26 (1.3)	6 (0.6)
Virginia	33 (2.0)	42 (1.3)	21 (1.2)	5 (0.7)
West Virginia	38 (1.2)	44 (0.9)	16 (0.7)	2 (0.4)
Wyoming	30 (1.4)	45 (1.2)	21 (1.2)	4 (0.5)
Other Jurisdictions				
American Samoa	93 (2.1)	6 (2.0)	1 (****)	▲ (****)
District of Columbia	77 (2.0)	17 (1.6)	5 (0.8)	1 (0.4)
DDESS	33 (2.9)	40 (3.0)	20 (2.0)	6 (1.4)
DoDDS	29 (1.4)	44 (1.3)	22 (1.1)	4 (0.7)
Guam	76 (1.5)	20 (1.6)	3 (0.7)	1 (0.3)

Standard errors of the estimated percentages appear in parentheses.
(****) Standard error estimates cannot be accurately determined.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
▲ Percentage is between 0.0 and 0.5.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
NOTE: Percentages within each mathematics achievement level range may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.10: Data for Table 2.3 State Cumulative Achievement Level Results, Grade 4

Percentage of students at or above mathematics achievement levels by state for grade 4 public schools: 1992–2000

	1992				1996			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	43 (1.2) *	57 (1.2) *	17 (1.1) *	2 (0.3)	38 (1.4) *	62 (1.4) *	20 (1.0) *	2 (0.3)
Alabama	57 (2.1) ‡	43 (2.1) ‡	10 (1.2) ‡	▲ (0.1)	52 (2.0) ‡	48 (2.0) ‡	11 (1.1)	1 (0.2)
Arizona	47 (1.6)	53 (1.6)	13 (0.9) *	1 (0.2)	43 (2.4)	57 (2.4)	15 (1.6)	1 (0.4)
Arkansas	53 (1.5) ‡	47 (1.5) ‡	10 (0.7) ‡	▲ (0.2)	46 (2.2)	54 (2.2)	13 (1.4)	1 (0.3)
California †	54 (1.9)	46 (1.9)	12 (1.2)	1 (0.4)	54 (2.4)	46 (2.4)	11 (1.5)	1 (0.4)
Connecticut	33 (1.6) ‡	67 (1.6) ‡	24 (1.4) ‡	3 (0.5)	25 (1.5)	75 (1.5)	31 (1.7)	3 (0.5)
Georgia	47 (1.7) *	53 (1.7) *	15 (1.2)	1 (0.3)	47 (2.1) *	53 (2.1) *	13 (1.3) ‡	1 (0.3)
Hawaii	48 (1.8)	52 (1.8)	15 (0.9)	1 (0.2)	47 (1.6)	53 (1.6)	16 (1.1)	2 (0.4)
Idaho †	37 (1.7) ‡	63 (1.7) ‡	16 (1.0) ‡	1 (0.3)	—	—	—	—
Illinois †	—	—	—	—	—	—	—	—
Indiana †	40 (1.7) ‡	60 (1.7) ‡	16 (1.1) ‡	1 (0.2) *	28 (1.7) ‡	72 (1.7) ‡	24 (1.6) ‡	2 (0.5)
Iowa †	28 (1.5) ‡	72 (1.5) ‡	26 (1.2)	2 (0.4)	26 (1.4)	74 (1.4)	22 (1.4) *	1 (0.4)
Kansas †	—	—	—	—	—	—	—	—
Kentucky	49 (1.5) ‡	51 (1.5) ‡	13 (1.2) ‡	1 (0.3)	40 (1.8)	60 (1.8)	16 (1.1)	1 (0.3)
Louisiana	61 (2.0) ‡	39 (2.0) ‡	8 (0.8) ‡	▲ (0.2)	56 (1.8) ‡	44 (1.8) ‡	8 (0.9) ‡	▲ (0.2)
Maine †	25 (1.5)	75 (1.5)	27 (1.5)	2 (0.5)	25 (1.4)	75 (1.4)	27 (1.4)	3 (0.6)
Maryland	45 (1.6) ‡	55 (1.6) ‡	18 (1.2) *	2 (0.3)	41 (1.8)	59 (1.8)	22 (1.7)	3 (0.7)
Massachusetts	32 (1.6) ‡	68 (1.6) ‡	23 (1.5) ‡	2 (0.5)	29 (1.8) ‡	71 (1.8) ‡	24 (1.9) ‡	2 (0.5)
Michigan †	39 (2.2) ‡	61 (2.2) ‡	18 (1.7) ‡	1 (0.4) *	32 (1.8)	68 (1.8)	23 (1.5) ‡	2 (0.5)
Minnesota †	29 (1.6) ‡	71 (1.6) ‡	26 (1.3) ‡	3 (0.4)	24 (1.5)	76 (1.5)	29 (1.5)	3 (0.5)
Mississippi	64 (1.3) ‡	36 (1.3) ‡	6 (0.6) ‡	▲ (0.1)	58 (1.9)	42 (1.9)	8 (0.9)	▲ (0.2)
Missouri	38 (1.7) ‡	62 (1.7) ‡	19 (1.3) ‡	1 (0.3)	34 (1.7) ‡	66 (1.7) ‡	20 (1.3)	1 (0.3)
Montana †	—	—	—	—	29 (1.9)	71 (1.9)	22 (1.6)	1 (0.4)
Nebraska	33 (1.8)	67 (1.8)	22 (1.6)	2 (0.5)	30 (1.6)	70 (1.6)	24 (1.4)	2 (0.3)
Nevada	—	—	—	—	43 (1.8)	57 (1.8)	14 (1.2)	1 (0.3)
New Mexico	50 (2.0)	50 (2.0)	11 (1.3)	1 (0.2)	49 (2.4)	51 (2.4)	13 (1.2)	1 (0.3)
New York †	43 (1.8) ‡	57 (1.8) ‡	17 (1.3) ‡	1 (0.3)	36 (1.8)	64 (1.8)	20 (1.2)	2 (0.4)
North Carolina	50 (1.6) ‡	50 (1.6) ‡	13 (0.8) ‡	1 (0.3) *	36 (1.6) ‡	64 (1.6) ‡	21 (1.3) ‡	2 (0.4)
North Dakota	28 (1.3)	72 (1.3)	22 (1.1)	1 (0.3)	25 (1.9)	75 (1.9)	24 (1.3)	2 (0.5)
Ohio †	43 (1.7) ‡	57 (1.7) ‡	16 (1.2) ‡	1 (0.3)	—	—	—	—
Oklahoma	40 (1.7) ‡	60 (1.7) ‡	14 (1.2)	1 (0.3)	—	—	—	—
Oregon †	—	—	—	—	35 (2.2)	65 (2.2)	21 (1.3)	2 (0.5)
Rhode Island	46 (2.2) ‡	54 (2.2) ‡	13 (1.1) ‡	1 (0.4)	39 (2.0) ‡	61 (2.0) ‡	17 (1.3) ‡	1 (0.3)
South Carolina	52 (1.7) ‡	48 (1.7) ‡	13 (1.1) ‡	1 (0.3)	52 (2.0) ‡	48 (2.0) ‡	12 (1.3) ‡	1 (0.3)
Tennessee	53 (2.0) ‡	47 (2.0) ‡	10 (1.0) ‡	▲ (0.2)	42 (2.0)	58 (2.0)	17 (1.5)	1 (0.3)
Texas	44 (1.6) ‡	56 (1.6) ‡	15 (1.2) ‡	1 (0.3)	31 (1.9) ‡	69 (1.9) ‡	25 (1.5)	3 (0.5)
Utah	34 (1.7)	66 (1.7)	19 (1.1) ‡	1 (0.3)	31 (1.6)	69 (1.6)	23 (1.3)	2 (0.4)
Vermont †	—	—	—	—	33 (2.1) *	67 (2.1) *	23 (1.1) ‡	3 (0.5)
Virginia	41 (1.4) ‡	59 (1.4) ‡	19 (1.5) ‡	2 (0.5)	38 (2.2) ‡	62 (2.2) ‡	19 (1.5) ‡	2 (0.5)
West Virginia	48 (1.5) ‡	52 (1.5) ‡	12 (0.9) ‡	1 (0.3)	37 (1.6)	63 (1.6)	19 (1.2)	2 (0.5)
Wyoming	31 (1.4)	69 (1.4)	19 (1.1) ‡	1 (0.3)	36 (1.7) ‡	64 (1.7) ‡	19 (1.2) ‡	1 (0.3)
Other Jurisdictions								
American Samoa	—	—	—	—	—	—	—	—
District of Columbia	77 (0.9)	23 (0.9)	5 (0.3)	1 (0.2)	80 (0.8) ‡	20 (0.8) ‡	5 (0.5)	1 (0.4)
DDESS	—	—	—	—	36 (1.7) *	64 (1.7) *	20 (1.5)	2 (0.6)
DoDDS	—	—	—	—	36 (1.2) ‡	64 (1.2) ‡	19 (1.1) *	1 (0.3)
Guam	74 (1.4) ‡	26 (1.4) ‡	5 (0.5) ‡	▲ (0.2)	77 (1.4)	23 (1.4)	3 (0.5)	▲ (****)
Virgin Islands	—	—	—	—	—	—	—	—

See footnotes at end of table. ▶

Table B.10: Data for Table 2.3 State Cumulative Achievement Level Results, Grade 4 (continued)

Percentage of students at or above mathematics achievement levels by state for grade 4 public schools: 1992–2000

	2000			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	33 (1.2)	67 (1.2)	25 (1.2)	2 (0.3)
Alabama	43 (2.1)	57 (2.1)	14 (1.3)	1 (0.2)
Arizona	42 (1.9)	58 (1.9)	17 (1.6)	2 (0.5)
Arkansas	44 (1.9)	56 (1.9)	13 (1.1)	1 (0.2)
California †	48 (2.3)	52 (2.3)	15 (1.4)	1 (0.3)
Connecticut	23 (1.5)	77 (1.5)	32 (1.6)	3 (0.5)
Georgia	42 (1.5)	58 (1.5)	18 (1.1)	1 (0.3)
Hawaii	45 (1.5)	55 (1.5)	14 (1.0)	1 (0.3)
Idaho †	29 (1.7)	71 (1.7)	21 (1.6)	1 (0.4)
Illinois †	34 (2.4)	66 (2.4)	21 (2.5)	2 (0.6)
Indiana †	22 (1.5)	78 (1.5)	31 (1.6)	3 (0.7)
Iowa †	22 (1.9)	78 (1.9)	28 (1.9)	2 (0.4)
Kansas †	25 (2.3)	75 (2.3)	30 (2.1)	3 (0.7)
Kentucky	40 (1.8)	60 (1.8)	17 (1.2)	1 (0.3)
Louisiana	43 (2.0)	57 (2.0)	14 (1.4)	1 (0.2)
Maine †	26 (1.8)	74 (1.8)	25 (1.3)	2 (0.4)
Maryland	39 (1.8)	61 (1.8)	22 (1.4)	2 (0.4)
Massachusetts	21 (1.4)	79 (1.4)	33 (1.6)	3 (0.5)
Michigan †	28 (1.9)	72 (1.9)	29 (1.8)	3 (0.6)
Minnesota †	22 (1.7)	78 (1.7)	34 (1.8)	3 (0.7)
Mississippi	55 (1.7)	45 (1.7)	9 (0.9)	▲ (0.2)
Missouri	28 (1.6)	72 (1.6)	23 (1.6)	2 (0.4)
Montana †	27 (2.6)	73 (2.6)	25 (2.5)	2 (0.7)
Nebraska	33 (2.3)	67 (2.3)	24 (1.9)	2 (0.5)
Nevada	39 (1.7)	61 (1.7)	16 (1.1)	1 (0.2)
New Mexico	49 (2.0)	51 (2.0)	12 (1.0)	1 (0.2)
New York †	33 (2.1)	67 (2.1)	22 (1.6)	2 (0.4)
North Carolina	24 (1.5)	76 (1.5)	28 (1.5)	3 (0.4)
North Dakota	25 (1.5)	75 (1.5)	25 (1.3)	2 (0.4)
Ohio †	27 (2.0)	73 (2.0)	26 (2.1)	2 (0.4)
Oklahoma	31 (1.9)	69 (1.9)	16 (1.2)	1 (0.2)
Oregon †	33 (2.3)	67 (2.3)	23 (1.8)	3 (0.6)
Rhode Island	33 (1.5)	67 (1.5)	23 (1.3)	2 (0.4)
South Carolina	40 (1.8)	60 (1.8)	18 (1.2)	2 (0.3)
Tennessee	40 (1.8)	60 (1.8)	18 (1.5)	1 (0.4)
Texas	23 (1.6)	77 (1.6)	27 (1.8)	2 (0.5)
Utah	30 (1.7)	70 (1.7)	24 (1.3)	2 (0.3)
Vermont †	27 (2.0)	73 (2.0)	29 (2.2)	4 (0.7)
Virginia	27 (1.8)	73 (1.8)	25 (1.6)	2 (0.6)
West Virginia	32 (1.6)	68 (1.6)	18 (1.6)	1 (0.3)
Wyoming	27 (2.0)	73 (2.0)	25 (1.5)	2 (0.5)
Other Jurisdictions				
American Samoa	95 (1.4)	5 (1.4)	▲ (****)	0 (****)
District of Columbia	76 (1.1)	24 (1.1)	6 (0.8)	1 (0.2)
DDESS	30 (2.0)	70 (2.0)	24 (1.8)	3 (0.6)
DoDDS	30 (1.2)	70 (1.2)	22 (1.1)	2 (0.3)
Guam	79 (1.8)	21 (1.8)	2 (0.6)	▲ (****)
Virgin Islands	85 (3.2)	15 (3.2)	1 (0.6)	▲ (****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

(****) Standard error estimates cannot be accurately determined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.11: Data for Table 2.4 State Cumulative Achievement Level Results, Grade 8

Percentage of students at or above mathematics achievement levels by state for grade 8 public schools: 1990–2000

	1990				1992			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	49 (1.5) *	51 (1.5) *	15 (1.1) *	2 (0.4) *	44 (1.2) *	56 (1.2) *	20 (1.0) *	3 (0.4) *
Alabama	60 (1.7) ‡	40 (1.7) ‡	9 (0.7) ‡	1 (0.2) ‡	61 (1.9) ‡	39 (1.9) ‡	10 (0.9) ‡	1 (0.3) ‡
Arizona †	52 (1.8) ‡	48 (1.8) ‡	13 (0.9) ‡	1 (0.4) ‡	45 (1.8) ‡	55 (1.8) ‡	15 (1.3) ‡	1 (0.3) ‡
Arkansas	56 (1.2) ‡	44 (1.2) ‡	9 (0.7) ‡	1 (0.2)	56 (1.8) ‡	44 (1.8) ‡	10 (0.8) ‡	1 (0.2)
California †	55 (1.7) ‡	45 (1.7) ‡	12 (1.1) ‡	2 (0.3)	50 (1.9)	50 (1.9)	16 (1.3)	2 (0.7)
Connecticut	40 (1.4) ‡	60 (1.4) ‡	22 (0.9) ‡	3 (0.4) ‡	36 (1.4) ‡	64 (1.4) ‡	26 (1.1) ‡	3 (0.6) ‡
Georgia	53 (1.5) ‡	47 (1.5) ‡	14 (1.2) ‡	2 (0.4)	52 (1.7) ‡	48 (1.7) ‡	13 (0.9) ‡	1 (0.3) ‡
Hawaii	60 (1.0) ‡	40 (1.0) ‡	12 (0.7) ‡	2 (0.3)	54 (1.1) ‡	46 (1.1) ‡	14 (0.7)	2 (0.3)
Idaho †	37 (1.2) ‡	63 (1.2) ‡	18 (1.1) ‡	1 (0.3) ‡	32 (1.0)	68 (1.0)	22 (1.2) ‡	2 (0.3) *
Illinois †	50 (2.0) ‡	50 (2.0) ‡	15 (1.3) ‡	2 (0.4) ‡	—	—	—	—
Indiana †	44 (1.5) ‡	56 (1.5) ‡	17 (1.1) ‡	3 (0.5) ‡	40 (1.5) ‡	60 (1.5) ‡	20 (1.2) ‡	3 (0.4) ‡
Kansas †	—	—	—	—	—	—	—	—
Kentucky	57 (1.7) ‡	43 (1.7) ‡	10 (0.8) ‡	1 (0.3) ‡	49 (1.5) ‡	51 (1.5) ‡	14 (1.1) ‡	2 (0.3) *
Louisiana	68 (1.6) ‡	32 (1.6) ‡	5 (0.6) ‡	1 (0.2)	63 (1.9) ‡	37 (1.9) ‡	7 (1.0) ‡	▲ (0.2)
Maine †	—	—	—	—	28 (1.3) ‡	72 (1.3) ‡	25 (1.5) ‡	3 (0.6) ‡
Maryland	50 (1.6) ‡	50 (1.6) ‡	17 (1.2) ‡	3 (0.5) ‡	46 (1.4) ‡	54 (1.4) ‡	20 (1.2) ‡	3 (0.5) ‡
Massachusetts	—	—	—	—	37 (1.5) ‡	63 (1.5) ‡	23 (1.3) ‡	3 (0.5) ‡
Michigan †	47 (1.7) ‡	53 (1.7) ‡	16 (1.2) ‡	2 (0.4) ‡	42 (1.7) ‡	58 (1.7) ‡	19 (1.5) ‡	2 (0.4) ‡
Minnesota †	33 (1.1) ‡	67 (1.1) ‡	23 (1.2) ‡	3 (0.5) ‡	26 (1.3) ‡	74 (1.3) ‡	31 (1.2) ‡	5 (0.6)
Mississippi	—	—	—	—	67 (1.6) ‡	33 (1.6) ‡	6 (0.7)	▲ (0.1)
Missouri	—	—	—	—	38 (1.6)	62 (1.6)	20 (1.2)	2 (0.4)
Montana †	26 (1.5) ‡	74 (1.5) ‡	27 (1.4) ‡	4 (0.5) ‡	—	—	—	—
Nebraska	32 (1.3) ‡	68 (1.3) ‡	24 (1.2) ‡	3 (0.5)	30 (1.3)	70 (1.3)	26 (1.6) *	3 (0.5)
Nevada	—	—	—	—	—	—	—	—
New Mexico	57 (1.2) ‡	43 (1.2) ‡	10 (0.9) ‡	1 (0.3)	52 (1.3)	48 (1.3)	11 (0.8)	1 (0.3)
New York †	50 (1.7) ‡	50 (1.7) ‡	15 (0.9) ‡	3 (0.4)	43 (2.2) ‡	57 (2.2) ‡	20 (1.3) ‡	3 (0.5)
North Carolina	62 (1.4) ‡	38 (1.4) ‡	9 (0.7) ‡	1 (0.3) ‡	53 (1.4) ‡	47 (1.4) ‡	12 (1.0) ‡	1 (0.3) ‡
North Dakota	25 (1.6)	75 (1.6)	27 (1.8)	4 (0.6)	22 (1.4)	78 (1.4)	29 (1.6)	3 (0.5)
Ohio	47 (1.6) ‡	53 (1.6) ‡	15 (1.1) ‡	2 (0.3) ‡	41 (2.1) ‡	59 (2.1) ‡	18 (1.3) ‡	2 (0.4) ‡
Oklahoma	48 (1.8) ‡	52 (1.8) ‡	13 (1.2) ‡	1 (0.4)	41 (1.6)	59 (1.6)	17 (1.1)	1 (0.3)
Oregon †	38 (1.4) ‡	62 (1.4) ‡	21 (1.1) ‡	3 (0.5) ‡	—	—	—	—
Rhode Island	51 (1.0) ‡	49 (1.0) ‡	15 (0.7) ‡	2 (0.3) ‡	44 (1.2) ‡	56 (1.2) ‡	16 (1.1) ‡	1 (0.3) ‡
South Carolina	—	—	—	—	52 (1.3) ‡	48 (1.3) ‡	15 (1.0)	2 (0.5)
Tennessee	—	—	—	—	53 (1.9) ‡	47 (1.9) ‡	12 (1.0) ‡	1 (0.4) ‡
Texas	55 (1.6) ‡	45 (1.6) ‡	13 (1.1) ‡	2 (0.3)	47 (1.5) ‡	53 (1.5) ‡	18 (1.2) ‡	3 (0.6)
Utah	—	—	—	—	33 (1.2)	67 (1.2)	22 (1.0) *	2 (0.4)
Vermont †	—	—	—	—	—	—	—	—
Virginia	48 (1.7) ‡	52 (1.7) ‡	17 (1.6) ‡	4 (0.8)	43 (1.7) ‡	57 (1.7) ‡	19 (1.1) ‡	3 (0.6) *
West Virginia	58 (1.1) ‡	42 (1.1) ‡	9 (0.8) ‡	1 (0.2) ‡	53 (1.6) ‡	47 (1.6) ‡	10 (0.8) ‡	1 (0.2) ‡
Wyoming	36 (1.3) ‡	64 (1.3) ‡	19 (0.9) ‡	2 (0.2) ‡	33 (1.3)	67 (1.3)	21 (1.1) ‡	2 (0.4) ‡
Other Jurisdictions								
American Samoa	—	—	—	—	—	—	—	—
District of Columbia	83 (1.0) ‡	17 (1.0) ‡	3 (0.6) ‡	1 (0.2)	78 (1.1)	22 (1.1)	4 (0.9)	1 (0.2)
DDESS	—	—	—	—	—	—	—	—
DoDDS	—	—	—	—	—	—	—	—
Guam	78 (1.0)	22 (1.0)	4 (0.4)	▲ (0.2)	75 (1.4)	25 (1.4)	6 (0.6)	▲ (0.1)

See footnotes at end of table. ▶

Table B.11: Data for Table 2.4 State Cumulative Achievement Level Results, Grade 8 (continued)

Percentage of students at or above mathematics achievement levels by state for grade 8 public schools: 1990–2000

	1996				2000			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	39 (1.3) *	61 (1.3) *	23 (1.2) *	4 (0.6)	35 (0.9)	65 (0.9)	26 (1.0)	5 (0.5)
Alabama	55 (2.6)	45 (2.6)	12 (1.8)	1 (0.4)	48 (2.1)	52 (2.1)	16 (1.6)	2 (0.5)
Arizona †	43 (1.9)	57 (1.9)	18 (1.2)	2 (0.3) *	38 (1.9)	62 (1.9)	21 (1.6)	3 (0.5)
Arkansas	48 (1.8)	52 (1.8)	13 (1.0)	2 (0.4)	48 (1.9)	52 (1.9)	14 (1.2)	1 (0.4)
California †	49 (2.1)	51 (2.1)	17 (1.5)	3 (0.5)	48 (2.3)	52 (2.3)	18 (1.6)	3 (0.6)
Connecticut	30 (1.4)	70 (1.4)	31 (1.5)	5 (0.6)	28 (1.3)	72 (1.3)	34 (1.5)	6 (0.7)
Georgia	49 (2.0)	51 (2.0)	16 (1.8)	2 (0.5)	45 (1.7)	55 (1.7)	19 (1.1)	3 (0.4)
Hawaii	49 (1.5)	51 (1.5)	16 (0.9)	2 (0.4)	49 (1.3)	51 (1.3)	16 (1.3)	2 (0.4)
Idaho †	—	—	—	—	29 (1.5)	71 (1.5)	27 (1.7)	3 (0.5)
Illinois †	—	—	—	—	32 (2.1)	68 (2.1)	27 (1.4)	4 (0.7)
Indiana †	32 (2.0) ‡	68 (2.0) ‡	24 (1.7) *	3 (0.5) *	24 (1.7)	76 (1.7)	31 (1.9)	5 (0.7)
Kansas †	—	—	—	—	23 (1.7)	77 (1.7)	34 (1.9)	4 (0.8)
Kentucky	44 (1.6) ‡	56 (1.6) ‡	16 (1.2) *	1 (0.3) *	37 (1.7)	63 (1.7)	21 (1.5)	3 (0.5)
Louisiana	62 (2.0) ‡	38 (2.0) ‡	7 (1.1) *	▲ (0.2)	52 (1.8)	48 (1.8)	12 (1.2)	1 (0.4)
Maine †	23 (1.5)	77 (1.5)	31 (1.7)	6 (0.7)	24 (1.5)	76 (1.5)	32 (1.4)	6 (0.7)
Maryland	43 (2.2) ‡	57 (2.2) ‡	24 (2.3)	5 (1.0)	35 (1.6)	65 (1.6)	29 (1.4)	6 (0.6)
Massachusetts	32 (2.3) ‡	68 (2.3) ‡	28 (1.8) *	5 (0.8)	24 (1.5)	76 (1.5)	32 (1.3)	6 (0.7)
Michigan †	33 (2.1)	67 (2.1)	28 (1.8)	4 (0.8)	30 (1.9)	70 (1.9)	28 (1.9)	5 (0.7)
Minnesota †	25 (1.5)	75 (1.5)	34 (1.8) *	6 (0.8)	20 (1.8)	80 (1.8)	40 (1.6)	7 (0.8)
Mississippi	64 (1.3) ‡	36 (1.3) ‡	7 (0.8)	▲ (0.2)	59 (1.6)	41 (1.6)	8 (0.7)	1 (0.3)
Missouri	36 (2.0)	64 (2.0)	22 (1.4)	2 (0.5)	33 (2.0)	67 (2.0)	22 (1.4)	2 (0.3)
Montana †	25 (1.7)	75 (1.7)	32 (1.5) *	5 (0.5)	20 (1.5)	80 (1.5)	37 (1.6)	6 (0.6)
Nebraska	24 (1.1)	76 (1.1)	31 (1.5)	5 (0.7)	26 (1.6)	74 (1.6)	31 (1.6)	5 (0.7)
Nevada	—	—	—	—	42 (1.1)	58 (1.1)	20 (0.9)	2 (0.4)
New Mexico	49 (1.6)	51 (1.6)	14 (1.1)	2 (0.3)	50 (1.8)	50 (1.8)	13 (1.0)	1 (0.4)
New York †	39 (2.0) *	61 (2.0) *	22 (1.5)	3 (0.5)	32 (2.5)	68 (2.5)	26 (1.9)	4 (0.7)
North Carolina	44 (1.8) ‡	56 (1.8) ‡	20 (1.3) ‡	3 (0.6) *	30 (1.3)	70 (1.3)	30 (1.3)	6 (0.7)
North Dakota	23 (1.2)	77 (1.2)	33 (1.5)	4 (0.7)	23 (1.4)	77 (1.4)	31 (1.6)	4 (0.6)
Ohio	—	—	—	—	25 (1.9)	75 (1.9)	31 (1.7)	5 (0.7)
Oklahoma	—	—	—	—	36 (1.9)	64 (1.9)	19 (1.2)	2 (0.3)
Oregon †	33 (1.7)	67 (1.7)	26 (1.6) *	4 (0.7)	29 (1.7)	71 (1.7)	32 (1.9)	6 (0.8)
Rhode Island	40 (1.6) *	60 (1.6) *	20 (1.3) *	3 (0.4)	36 (1.1)	64 (1.1)	24 (1.0)	4 (0.6)
South Carolina	52 (1.7) ‡	48 (1.7) ‡	14 (1.2) *	2 (0.4)	45 (1.9)	55 (1.9)	18 (1.2)	2 (0.4)
Tennessee	47 (1.8)	53 (1.8)	15 (1.3)	2 (0.3)	47 (1.9)	53 (1.9)	17 (1.4)	2 (0.4)
Texas	41 (1.8) ‡	59 (1.8) ‡	21 (1.5)	3 (0.4)	32 (1.8)	68 (1.8)	24 (1.4)	3 (0.5)
Utah	30 (1.5)	70 (1.5)	24 (1.3)	3 (0.4)	32 (1.4)	68 (1.4)	26 (1.2)	3 (0.4)
Vermont †	28 (1.7)	72 (1.7)	27 (1.4) *	4 (0.6) *	25 (1.7)	75 (1.7)	32 (1.5)	6 (0.6)
Virginia	42 (2.0) ‡	58 (2.0) ‡	21 (1.2) *	3 (0.4) *	33 (2.0)	67 (2.0)	26 (1.5)	5 (0.7)
West Virginia	46 (1.6) ‡	54 (1.6) ‡	14 (0.9) ‡	1 (0.4) *	38 (1.2)	62 (1.2)	18 (0.9)	2 (0.4)
Wyoming	32 (1.2)	68 (1.2)	22 (1.0) *	2 (0.6)	30 (1.4)	70 (1.4)	25 (1.1)	4 (0.5)
Other Jurisdictions								
American Samoa	—	—	—	—	93 (2.1)	7 (2.1)	1 (****)	▲ (****)
District of Columbia	80 (1.2)	20 (1.2)	5 (0.8)	1 (0.3)	77 (2.0)	23 (2.0)	6 (0.8)	1 (0.4)
DDESS	43 (3.1) *	57 (3.1) *	21 (2.4)	5 (1.1)	33 (2.9)	67 (2.9)	27 (2.8)	6 (1.4)
DoDDS	35 (1.4) ‡	65 (1.4) ‡	23 (1.2) *	3 (0.6)	29 (1.4)	71 (1.4)	27 (1.2)	4 (0.7)
Guam	71 (1.6) *	29 (1.6) *	6 (0.8)	▲ (****)	76 (1.5)	24 (1.5)	4 (0.8)	1 (0.3)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

(****) Standard error estimates cannot be accurately determined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.12: Data for Figure 3.1 National Scale Score Results by Gender

Percentage of students and average mathematics scale scores by gender, grades 4, 8, and 12: 1990–2000

		Male	Female
Grade 12	1990	48 (1.0) 297 (1.4) *	52 (1.0) 291 (1.3) *
	1992	49 (0.8) 301 (1.1)	51 (0.8) 298 (1.0)
	1996	48 (0.9) 305 (1.1)	52 (0.9) 303 (1.1) *
	2000	49 (0.6) 303 (1.1)	51 (0.6) 299 (0.9)
Grade 8	1990	51 (1.0) 263 (1.6) *	49 (1.0) 262 (1.3) *
	1992	51 (0.6) 268 (1.1) *	49 (0.6) 269 (1.0) *
	1996	52 (0.8) 272 (1.4) *	48 (0.8) 272 (1.1)
	2000	51 (0.5) 277 (0.9)	49 (0.5) 274 (0.9)
Grade 4	1990	52 (1.0) 214 (1.2) *	48 (1.0) 213 (1.1) *
	1992	50 (0.6) 221 (0.8) *	50 (0.6) 219 (1.0) *
	1996	51 (0.7) 226 (1.1) *	49 (0.7) 222 (1.0) *
	2000	51 (0.7) 229 (1.0)	49 (0.7) 226 (0.9)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.13: Data for Figure 3.2 National Achievement Level Results by Gender

Percentage of students within each mathematics achievement level range and at or above achievement levels by gender, grades 4, 8, and 12: 1990–2000

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
Male	1990	49 (1.7) *	38 (1.8)	12 (1.3) *	2 (0.6) *	51 (1.7) *	13 (1.5) *
	1992	40 (1.1) *	41 (1.4)	17 (1.0) *	2 (0.3) *	60 (1.1) *	19 (1.1) *
	1996	35 (1.6) *	41 (1.6)	21 (1.0) *	3 (0.4)	65 (1.6) *	24 (1.1) *
	2000	30 (1.1)	41 (1.0)	25 (1.0)	3 (0.4)	70 (1.1)	28 (1.2)
Female	1990	51 (1.9) *	36 (2.0) *	12 (1.3) *	1 (0.4) *	49 (1.9) *	12 (1.3) *
	1992	43 (1.6) *	41 (1.4)	15 (1.3) *	1 (0.3)	57 (1.6) *	16 (1.3) *
	1996	37 (1.6) *	44 (1.3)	17 (1.0) *	1 (0.3)	63 (1.6) *	19 (1.1) *
	2000	32 (1.2)	44 (0.9)	22 (1.1)	2 (0.3)	68 (1.2)	24 (1.2)
Grade 8							
Male	1990	48 (1.9) *	35 (1.6)	14 (1.3) *	2 (0.5) *	52 (1.9) *	17 (1.5) *
	1992	43 (1.4) *	36 (1.1)	18 (1.1) *	3 (0.5) *	57 (1.4) *	21 (1.3) *
	1996	38 (1.7) *	37 (1.8)	20 (1.2)	4 (0.7)	62 (1.7) *	25 (1.5) *
	2000	33 (0.9)	37 (1.0)	24 (0.8)	6 (0.6)	67 (0.9)	29 (1.1)
Female	1990	48 (1.5) *	38 (1.4)	12 (1.0) *	2 (0.4) *	52 (1.5) *	14 (1.1) *
	1992	42 (1.4) *	37 (1.1)	18 (1.0) *	3 (0.4)	58 (1.4) *	21 (1.2) *
	1996	37 (1.3)	41 (1.2)	19 (1.0)	3 (0.6)	63 (1.3)	23 (1.2)
	2000	35 (1.0)	40 (0.8)	21 (0.8)	4 (0.5)	65 (1.0)	25 (1.0)
Grade 12							
Male	1990	40 (1.8) *	45 (1.7)	13 (1.2) *	2 (0.6)	60 (1.8) *	15 (1.4) *
	1992	35 (1.3)	48 (1.2)	15 (0.8)	2 (0.4)	65 (1.3)	17 (1.0)
	1996	30 (1.4) *	51 (1.3) *	16 (1.2)	3 (0.4)	70 (1.4) *	18 (1.3)
	2000	34 (1.3)	46 (1.1)	17 (0.8)	3 (0.5)	66 (1.3)	20 (1.0)
Female	1990	44 (1.8) *	47 (1.8)	8 (0.9) *	1 (0.2)	56 (1.8) *	9 (0.9) *
	1992	37 (1.3)	50 (1.2)	12 (0.9)	1 (0.2)	63 (1.3)	13 (1.0)
	1996	31 (1.5) *	54 (1.4) *	13 (1.1)	1 (0.3)	69 (1.5) *	14 (1.2)
	2000	36 (1.2)	50 (1.1)	13 (1.1)	1 (0.3)	64 (1.2)	14 (1.1)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.14: Data for Figure 3.3 National Scale Score Results by Race/Ethnicity

Percentage of students and average mathematics scale scores by race/ethnicity, grades 4, 8, and 12: 1990–2000

		White	Black	Hispanic	Asian/ Pacific Islander	American Indian
Grade 12	1990	74 (0.6)	14 (0.5)	8 (0.2)	3 (0.3)	1 (0.3)
		301 (1.2) *	268 (1.9)	276 (2.8)	311 (5.2)	**** (****)
	1992	71 (0.6)	15 (0.4)	9 (0.5)	4 (0.2)	1 (0.1)
		306 (0.9)	276 (1.7)	284 (1.7)	316 (3.5)	**** (****)
	1996	70 (0.5)	14 (0.4)	11 (0.4)	4 (0.4)	1 (0.6)
		311 (1.0)	280 (2.2)	287 (1.8)	319 (4.8)	279 (8.9) !
	2000	70 (0.4)	14 (0.3)	11 (0.2)	5 (0.2)	1 (0.1)
		308 (1.0)	274 (1.9)	283 (2.1)	319 (2.8)	293 (4.4)
Grade 8	1990	71 (0.3)	15 (0.2)	10 (0.2)	2 (0.5)	2 (0.6)
		270 (1.4) *	238 (2.7) *	244 (2.8) *	279 (4.8) !	246 (9.4) !
	1992	70 (0.2)	16 (0.1)	10 (0.2)	3 (0.2)	1 (0.2)
		278 (1.0) *	238 (1.3) *	247 (1.2) *	288 (5.4)	255 (2.8)
	1996	69 (0.2)	14 (0.2)	12 (0.1)	~	1 (0.2)
		282 (1.2) *	243 (2.0)	251 (2.0)		264 (3.0) !
	2000	67 (0.2)	13 (0.1)	14 (0.2)	4 (0.4)	2 (0.4)
		286 (0.8)	247 (1.4)	253 (1.5)	289 (3.4)	255 (8.3) !
Grade 4	1990	70 (0.2)	15 (0.1)	10 (0.2)	2 (0.2)	2 (0.2)
		220 (1.1) *	189 (1.8) *	198 (2.0) *	228 (3.5)	208 (3.9)
	1992	70 (0.2)	16 (0.1)	9 (0.2)	2 (0.2)	1 (0.2)
		228 (0.9) *	193 (1.3) *	202 (1.4) *	232 (2.3)	211 (3.1)
	1996	68 (0.4)	15 (0.2)	13 (0.4)	3 (0.2)	2 (0.2)
		232 (0.9)	200 (2.3)	206 (2.1)	232 (4.1)	216 (2.3)
	2000	66 (0.3)	14 (0.2)	15 (0.3)	~	2 (0.2)
		236 (1.0)	205 (1.6)	212 (1.5)		216 (2.1)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
**** (****) Sample size is insufficient to permit a reliable estimate.
NOTE: Percentages may not add to 100 due to rounding.
~ 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 the body of this report. See appendix A for a more detailed discussion.

Table B.15: Data for Figure 3.4 National Achievement Level Results by Race/Ethnicity

Percentage of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity, grades 4, 8, and 12: 1990–2000

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
White	1990	41 (1.7) *	43 (2.0)	15 (1.5) *	2 (0.5) *	59 (1.7) *	16 (1.6) *
	1992	30 (1.2) *	47 (1.3)	21 (1.3) *	2 (0.3)	70 (1.2) *	23 (1.4) *
	1996	24 (1.4)	48 (1.0)	25 (1.1) *	3 (0.4)	76 (1.4)	28 (1.2) *
	2000	20 (1.1)	46 (1.2)	30 (1.2)	3 (0.4)	80 (1.1)	34 (1.4)
Black	1990	81 (2.4) *	17 (2.2) *	1 (0.5) *	▲ (****)	19 (2.4) *	1 (0.6) *
	1992	77 (1.8) *	20 (1.7) *	3 (0.7)	0 (****)	23 (1.8) *	3 (0.7) *
	1996	68 (3.2)	27 (2.4)	5 (1.4)	▲ (0.1)	32 (3.2)	5 (1.4)
	2000	61 (2.5)	33 (2.2)	5 (0.9)	▲ (****)	39 (2.5)	5 (0.9)
Hispanic	1990	69 (2.6) *	26 (2.6) *	5 (1.1) *	▲ (****)	31 (2.6) *	5 (1.1) *
	1992	65 (2.1) *	30 (2.0) *	5 (1.1) *	▲ (****)	35 (2.1) *	5 (1.1) *
	1996	59 (2.4)	34 (2.2)	7 (0.9)	▲ (****)	41 (2.4)	8 (1.0)
	2000	52 (2.1)	38 (1.7)	10 (1.3)	1 (0.2)	48 (2.1)	10 (1.3)
Asian/Pacific Islander	1990	35 (5.4)	42 (7.0)	21 (4.5)	3 (****)	65 (5.4)	23 (5.6)
	1992	25 (3.2)	45 (4.2)	26 (3.8)	4 (1.8)	75 (3.2)	30 (4.5)
	1996	27 (5.0)	47 (5.1)	21 (4.1)	5 (2.4)	73 (5.0)	26 (5.3)
	2000	~	~	~	~	~	~
American Indian	1990	56 (8.3)	39 (8.9)	4 (2.6) *	▲ (****)	44 (8.3)	5 (2.6) *
	1992	57 (4.8)	33 (5.2)	8 (3.5)	2 (0.9)	43 (4.8)	10 (3.6)
	1996	48 (5.7)	44 (5.5)	7 (2.7)	1 (****)	52 (5.7)	8 (2.5)
	2000	47 (5.8)	39 (6.2)	13 (2.7)	1 (****)	53 (5.8)	14 (2.9)
Grade 8							
White	1990	39 (1.6) *	42 (1.4)	16 (1.2) *	3 (0.5) *	61 (1.6) *	19 (1.3) *
	1992	31 (1.3) *	42 (0.8)	23 (1.0) *	4 (0.4) *	69 (1.3) *	27 (1.2) *
	1996	26 (1.3)	43 (1.2)	25 (1.0)	5 (0.7)	74 (1.3)	31 (1.4)
	2000	23 (0.9)	43 (1.0)	28 (1.0)	7 (0.6)	77 (0.9)	35 (1.2)
Black	1990	78 (2.4) *	18 (2.2) *	5 (1.1)	▲ (****)	22 (2.4) *	5 (1.0)
	1992	79 (2.0) *	19 (2.0) *	2 (0.6) *	▲ (****)	21 (2.0) *	2 (0.7) *
	1996	72 (2.8)	24 (2.6)	4 (0.9)	▲ (****)	28 (2.8)	4 (0.9)
	2000	68 (1.8)	27 (1.6)	5 (0.6)	▲ (0.2)	32 (1.8)	6 (0.6)
Hispanic	1990	68 (3.1) *	27 (3.0)	4 (1.4) *	▲ (0.2)	32 (3.1) *	5 (1.3) *
	1992	66 (1.9) *	28 (1.8)	6 (0.9) *	1 (0.4)	34 (1.9) *	6 (0.8) *
	1996	61 (2.5)	30 (2.4)	8 (1.4)	1 (0.6)	39 (2.5)	9 (1.6)
	2000	59 (1.9)	32 (1.4)	9 (0.8)	1 (0.3)	41 (1.9)	10 (0.9)
Asian/Pacific Islander	1990	29 (5.8) !	39 (4.8) !	26 (5.5) !	5 (2.3) !	71 (5.8) !	32 (5.8) !
	1992	24 (4.6)	36 (4.3)	27 (4.6)	13 (3.9)	76 (4.6)	40 (6.8)
	1996	~	~	~	~	~	~
	2000	24 (3.5)	35 (3.4)	29 (2.8)	12 (2.6)	76 (3.5)	41 (3.7)
American Indian	1990	67 (10.2) !	27 (7.3) !	5 (****)	▲ (****)	33 (10.2) !	6 (****)
	1992	61 (5.8)	32 (4.6)	7 (3.1)	▲ (****)	39 (5.8)	7 (3.1)
	1996	49 (6.2) !	38 (7.0) !	11 (5.9) !	2 (****)	51 (6.2) !	13 (5.0) !
	2000	58 (9.6) !	34 (6.9) !	8 (3.8) !	▲ (****)	42 (9.6) !	9 (3.9) !

See footnotes at end of table. ▶

259

Table B.15: Data for Figure 3.4 National Achievement Level Results by Race/Ethnicity (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity, grades 4, 8, and 12: 1990–2000

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 12							
White	1990	34 (1.8) *	51 (1.7)	13 (0.9) *	2 (0.4)	66 (1.8) *	14 (1.1) *
	1992	28 (1.3)	54 (1.3)	16 (0.8)	2 (0.3)	72 (1.3)	18 (0.9)
	1996	21 (1.3)	59 (1.4) *	17 (1.1)	2 (0.4)	79 (1.3)	20 (1.3)
	2000	26 (1.2)	54 (1.2)	18 (1.1)	3 (0.4)	74 (1.2)	20 (1.2)
Black	1990	73 (2.7)	25 (2.6)	2 (0.8)	0 (****)	27 (2.7)	2 (0.8)
	1992	66 (2.6)	32 (2.5)	2 (0.6)	▲ (****)	34 (2.6)	2 (0.5)
	1996	62 (3.3)	34 (2.7)	4 (1.0)	▲ (0.1)	38 (3.3)	4 (1.0)
	2000	69 (2.6)	28 (2.4)	2 (0.6)	▲ (****)	31 (2.6)	3 (0.6)
Hispanic	1990	64 (3.9)	31 (3.8)	4 (1.2)	▲ (****)	36 (3.9)	4 (1.1)
	1992	55 (2.0)	40 (1.8)	5 (0.9)	▲ (****)	45 (2.0)	6 (0.9)
	1996	50 (3.6)	44 (3.8)	6 (1.1)	▲ (****)	50 (3.6)	6 (1.1)
	2000	56 (3.1)	39 (2.7)	4 (0.8)	▲ (0.1)	44 (3.1)	4 (0.7)
Asian/Pacific Islander	1990	25 (5.8)	52 (6.1)	19 (6.2)	5 (2.4)	75 (5.8)	23 (7.1)
	1992	19 (4.3)	51 (5.5)	26 (5.1)	4 (1.4)	81 (4.3)	30 (5.6)
	1996	19 (4.3)	48 (4.6)	26 (4.9)	7 (2.8)	81 (4.3)	33 (6.3)
	2000	20 (2.6)	46 (3.1)	28 (3.2)	7 (2.5)	80 (2.6)	34 (3.8)
American Indian	1990	**** (****)	**** (****)	**** (****)	**** (****)	**** (****)	**** (****)
	1992	**** (****)	**** (****)	**** (****)	**** (****)	**** (****)	**** (****)
	1996	66 (16.0) !	31 (13.7) !	3 (****)	▲ (****)	34 (16.0) !	3 (****)
	2000	43 (5.7)	47 (7.9)	10 (4.8)	▲ (****)	57 (5.7)	10 (4.8)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
(****) Standard error estimates cannot be accurately determined.
**** (****) Sample size is insufficient to permit a reliable estimate.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
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 the body of this report. See appendix A for a more detailed discussion.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.16: Data for Figure 3.5 National Scale Score Differences by Gender

Gender gaps in average mathematics scale scores, grades 4, 8, and 12: 1990–2000

		Male-Female
Grade 4	1990	1 (1.7)
	1992	2 (1.2)
	1996	3 (1.5)
	2000	3 (1.3)
Grade 8	1990	1 (2.1)
	1992	-1 (1.5)
	1996	-1 (1.7)
	2000	3 (1.2)
Grade 12	1990	6 (1.9)
	1992	4 (1.4)
	1996	2 (1.6)
	2000	4 (1.5)

Standard errors of the estimated difference in scale scores appear in parentheses.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.17: Data for Figure 3.6 National Scale Score Differences by Race/Ethnicity

Racial/ethnic gaps in average mathematics scale scores, grades 4, 8, and 12: 1990–2000

		White-Black	White-Hispanic
Grade 4	1990	31 (2.1)	22 (2.2)
	1992	35 (1.6)	25 (1.6)
	1996	32 (2.5)	27 (2.3)
	2000	31 (1.9)	24 (1.8)
Grade 8	1990	32 (3.1)	27 (3.1)
	1992	40 (1.7)	31 (1.6)
	1996	39 (2.3)	31 (2.4)
	2000	39 (1.6)	33 (1.8)
Grade 12	1990	33 (2.3)	25 (3.1)
	1992	30 (1.9)	22 (2.0)
	1996	31 (2.4)	24 (2.1)
	2000	34 (2.2)	26 (2.4)

Standard errors of the estimated difference in scale scores appear in parentheses.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.18: Data for Figure 3.7 National Scale Score Results by Parents' Education

Percentage of students and average mathematics scale scores by student-reported parents' highest level of education, grades 8 and 12: 1990–2000

		Less than High School	Graduated High School	Some education after High School	Graduated College	Unknown
Grade 12	1990	8 (0.7)	24 (1.1)	27 (1.0)	39 (1.4)	2 (0.3)
		272 (2.1)	283 (2.0)	297 (1.2)	306 (1.6) *	269 (4.9)
	1992	6 (0.4)	21 (0.8)	26 (0.7)	43 (1.1)	3 (0.3)
		278 (1.7)	288 (1.4)	299 (1.0)	311 (1.2)	277 (3.0)
	1996	6 (0.5)	19 (0.8)	25 (0.8)	47 (1.5)	3 (0.2)
		282 (1.8)	294 (1.3) *	302 (0.8)	314 (1.3)	275 (2.4)
	2000	6 (0.4)	20 (0.6)	25 (0.6)	46 (1.1)	3 (0.2)
		278 (1.9)	288 (1.2)	300 (1.2)	313 (1.1)	277 (2.8)
Grade 8	1990	9 (0.8)	24 (1.1)	17 (0.8)	41 (1.8)	9 (0.6)
		242 (2.0) *	255 (1.6) *	267 (1.6) *	274 (1.5) *	241 (3.2) *
	1992	8 (0.5)	24 (0.7)	18 (0.5)	42 (1.3)	9 (0.4)
		249 (1.7) *	257 (1.2) *	271 (1.1) *	281 (1.2) *	252 (1.6) *
	1996	7 (0.4)	22 (0.8)	19 (0.7)	42 (1.3)	11 (0.6)
		254 (1.8)	261 (1.2)	279 (1.4)	282 (1.5)	254 (1.6)
	2000	7 (0.3)	20 (0.5)	18 (0.5)	45 (0.9)	11 (0.4)
		255 (1.5)	264 (1.1)	279 (1.0)	287 (1.0)	256 (1.1)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.19: Data for Figure 3.8 National Achievement Level Results by Parents' Education

Percentage of students within each mathematics achievement level range and at or above achievement levels by parents' highest level of education, grades 8 and 12: 1990–2000

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 8							
Less than H.S.	1990	75 (3.4) *	21 (3.2) *	3 (1.1) *	▲ (****)	25 (3.4) *	3 (1.1) *
	1992	65 (3.1) *	29 (2.9)	6 (1.6)	1 (****)	35 (3.1) *	6 (1.6)
	1996	56 (2.6)	35 (2.6)	8 (2.1)	1 (****)	44 (2.6)	8 (2.1)
	2000	55 (2.3)	37 (2.3)	7 (1.3)	1 (0.3)	45 (2.3)	8 (1.4)
Graduated H.S.	1990	58 (2.0) *	33 (1.9) *	8 (1.3) *	▲ (****)	42 (2.0) *	9 (1.3) *
	1992	54 (1.9) *	36 (1.6)	9 (1.0) *	1 (0.4)	46 (1.9) *	10 (1.0) *
	1996	48 (2.0)	39 (2.0)	12 (1.3)	1 (0.4)	52 (2.0)	13 (1.3)
	2000	46 (1.3)	38 (1.2)	14 (1.3)	1 (0.4)	54 (1.3)	16 (1.3)
Some Educ After H.S.	1990	42 (2.6) *	43 (3.1)	13 (2.0) *	2 (0.8)	58 (2.6) *	16 (1.9) *
	1992	39 (1.7) *	41 (1.6)	17 (1.2) *	3 (0.6)	61 (1.7) *	20 (1.3) *
	1996	29 (2.0)	45 (1.9)	23 (1.8)	4 (0.8)	71 (2.0)	26 (1.8)
	2000	28 (1.5)	45 (1.9)	23 (1.3)	3 (0.9)	72 (1.5)	27 (1.5)
Graduated College	1990	34 (1.9) *	42 (1.8) *	20 (1.9) *	4 (0.7) *	66 (1.9) *	24 (2.1) *
	1992	29 (1.3) *	38 (1.3)	27 (1.3)	6 (0.8) *	71 (1.3) *	33 (1.7) *
	1996	27 (1.3)	38 (1.4)	28 (1.3)	7 (1.0)	73 (1.3)	35 (1.9)
	2000	23 (0.9)	37 (1.1)	31 (1.1)	9 (0.8)	77 (0.9)	39 (1.3)
Unknown	1990	70 (3.5) *	25 (3.4) *	5 (1.7) *	▲ (****)	30 (3.5) *	5 (1.7) *
	1992	61 (2.4) *	30 (2.7)	8 (1.2)	1 (****)	39 (2.4) *	9 (1.3)
	1996	58 (2.2)	32 (2.5)	9 (1.4)	1 (0.3)	42 (2.2)	10 (1.4)
	2000	55 (2.1)	34 (2.3)	10 (1.2)	1 (0.4)	45 (2.1)	11 (1.1)
Grade 12							
Less than H.S.	1990	73 (3.6)	25 (3.6)	3 (1.7)	0 (****)	27 (3.6)	3 (1.7)
	1992	62 (2.9)	35 (3.0)	3 (1.1)	▲ (****)	38 (2.9)	3 (1.2)
	1996	58 (3.3)	38 (3.4)	3 (1.1)	▲ (0.2)	42 (3.3)	3 (1.1)
	2000	62 (2.6)	36 (2.5)	2 (0.6)	▲ (****)	38 (2.6)	2 (0.6)
Graduated H.S.	1990	55 (2.8)	40 (2.7)	5 (1.0)	▲ (0.3)	45 (2.8)	5 (1.1)
	1992	49 (1.9)	45 (1.6)	6 (0.9)	▲ (****)	51 (1.9)	6 (0.9)
	1996	42 (2.2)	50 (2.3)	7 (1.1)	1 (0.3)	58 (2.2)	7 (1.2)
	2000	49 (2.0)	45 (2.0)	6 (0.8)	▲ (0.2)	51 (2.0)	6 (0.8)
Some Educ After H.S.	1990	37 (1.7)	51 (2.2)	10 (1.4)	1 (0.5)	63 (1.7)	11 (1.4)
	1992	37 (1.8)	51 (1.6)	11 (1.0)	1 (0.4)	63 (1.8)	12 (1.0)
	1996	30 (1.2)	59 (1.4)	10 (0.9)	1 (0.4)	70 (1.2)	12 (0.9)
	2000	34 (1.9)	53 (1.7)	11 (0.9)	1 (0.4)	66 (1.9)	12 (0.9)
Graduated College	1990	29 (1.9) *	53 (1.9)	16 (1.5) *	3 (0.6)	71 (1.9) *	19 (1.8) *
	1992	23 (1.4)	53 (1.5)	20 (1.1)	3 (0.6)	77 (1.4)	23 (1.3)
	1996	21 (1.5)	54 (1.4)	22 (1.3)	3 (0.5)	79 (1.5)	25 (1.6)
	2000	23 (1.1)	50 (1.2)	23 (1.3)	4 (0.7)	77 (1.1)	27 (1.5)
Unknown	1990	69 (6.8)	28 (6.6)	3 (1.9)	▲ (****)	31 (6.8)	3 (1.7)
	1992	64 (6.0)	34 (5.8)	3 (1.8)	0 (****)	36 (6.0)	3 (1.8)
	1996	64 (4.4)	35 (4.5)	1 (0.7)	0 (****)	36 (4.4)	1 (0.7)
	2000	66 (4.1)	29 (4.1)	5 (1.7)	▲ (****)	34 (4.1)	5 (1.6)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
(****) Standard error estimates cannot be accurately determined.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.20: Data for Figure 3.9 National Scale Score Results by Type of School

Percentage of students and average mathematics scale scores by type of school, grades 4, 8, and 12: 1990–2000

		Public	Nonpublic	Private Only	Catholic Only
Grade 12	1990	91 (2.0)	9 (2.0)	3 (1.4)	5 (1.6)
		294 (1.2) *	300 (3.6) !*	298 (5.1) !*	301 (4.6) !*
	1992	87 (1.2)	13 (1.2)	4 (1.0)	8 (1.3)
		297 (1.0)	314 (2.3)	320 (4.2) !	311 (2.5)
	1996	88 (1.5)	12 (1.5)	4 (0.8)	8 (1.3)
		303 (0.9)	314 (2.2)	321 (4.2)	311 (2.1)
	2000	91 (0.5)	9 (0.5)	4 (0.3)	5 (0.4)
		300 (1.1)	315 (1.2)	315 (1.8)	315 (1.5)
Grade 8	1990	92 (1.3)	8 (1.3)	3 (0.8)	5 (1.0)
		262 (1.4) *	271 (2.5) *	272 (3.1) !*	271 (3.5) *
	1992	89 (0.9)	11 (0.9)	5 (0.7)	6 (0.7)
		267 (1.0) *	281 (2.2) *	284 (4.0)	278 (2.1) *
	1996	89 (1.1)	11 (1.1)	4 (0.8)	6 (0.8)
		271 (1.2) *	284 (2.4)	286 (3.7)	283 (3.1)
	2000	90 (0.4)	10 (0.4)	4 (0.3)	5 (0.4)
		274 (0.8)	287 (1.2)	290 (1.4)	284 (1.6)
Grade 4	1990	89 (1.4)	11 (1.4)	4 (0.9)	7 (1.2)
		212 (1.1) *	224 (2.6) *	233 (3.6) !	219 (3.0) *
	1992	88 (0.8)	12 (0.8)	4 (0.6)	8 (0.7)
		219 (0.8) *	228 (1.1) *	230 (2.8) *	228 (1.2) *
	1996	89 (1.6)	11 (1.6)	4 (0.8)	7 (1.2)
		222 (1.0) *	237 (1.9)	247 (2.8) !*	232 (2.2) *
	2000	89 (0.5)	11 (0.5)	5 (0.3)	6 (0.5)
		226 (1.0)	238 (0.8)	239 (1.3)	238 (1.1)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.21: Data for Figure 3.10 National Achievement Level Results by Type of School

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of school, grades 4, 8, and 12: 1990–2000

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
Public	1990	52 (1.5) *	36 (1.6) *	11 (1.2) *	1 (0.4) *	48 (1.5) *	12 (1.3) *
	1992	43 (1.2) *	40 (1.1)	16 (1.1) *	2 (0.3)	57 (1.2) *	17 (1.1) *
	1996	38 (1.4) *	42 (1.1)	18 (0.9) *	2 (0.3)	62 (1.4) *	20 (1.0) *
	2000	33 (1.2)	42 (0.9)	22 (1.1)	2 (0.3)	67 (1.2)	25 (1.2)
Nonpublic	1990	35 (3.9) *	45 (2.7)	18 (2.3) *	2 (1.0)	65 (3.9) *	20 (2.8) *
	1992	29 (1.8) *	48 (2.2)	21 (1.5) *	2 (0.4) *	71 (1.8) *	22 (1.6) *
	1996	20 (2.2)	47 (1.7)	29 (1.9)	4 (1.2)	80 (2.2)	33 (2.2)
	2000	17 (1.1)	47 (1.0)	32 (1.0)	4 (0.4)	83 (1.1)	36 (1.1)
Private Only	1990	26 (5.8) !	46 (4.8) !	26 (3.9) !	3 (****)	74 (5.8) !	29 (5.1) !
	1992	28 (4.7) *	48 (4.6)	21 (3.4) *	3 (1.1)	72 (4.7) *	24 (3.7) *
	1996	11 (2.3) !	42 (3.4) !	38 (2.5) !	8 (2.9) !	89 (2.3) !	47 (3.8) !*
	2000	17 (1.6)	45 (1.5)	33 (1.6)	5 (0.7)	83 (1.6)	38 (1.8)
Catholic Only	1990	41 (4.5) *	44 (3.5)	14 (2.3) *	1 (0.6) *	59 (4.5) *	15 (2.5) *
	1992	30 (2.4) *	48 (2.7)	20 (1.6) *	2 (0.3)	70 (2.4) *	22 (1.6) *
	1996	24 (3.1)	50 (2.3)	24 (2.5) *	2 (0.7)	76 (3.1)	26 (2.5) *
	2000	17 (1.5)	48 (1.4)	31 (1.3)	3 (0.6)	83 (1.5)	34 (1.5)
Grade 8							
Public	1990	49 (1.5) *	36 (1.2)	13 (1.0) *	2 (0.4) *	51 (1.5) *	15 (1.1) *
	1992	44 (1.2) *	36 (0.8)	17 (0.8) *	3 (0.4) *	56 (1.2) *	20 (1.0) *
	1996	39 (1.3) *	38 (1.1)	19 (0.9)	4 (0.6)	61 (1.3) *	23 (1.2)
	2000	35 (0.9)	38 (0.9)	21 (0.8)	5 (0.5)	65 (0.9)	26 (1.0)
Nonpublic	1990	37 (4.1) *	46 (4.0)	16 (2.0) *	1 (0.5) *	63 (4.1) *	17 (2.0) *
	1992	29 (2.5) *	41 (1.9)	26 (2.0)	5 (0.9)	71 (2.5) *	31 (2.5) *
	1996	25 (2.8)	42 (2.4)	28 (2.3)	6 (1.2)	75 (2.8)	33 (2.9)
	2000	21 (1.3)	42 (1.0)	31 (1.0)	6 (0.6)	79 (1.3)	37 (1.3)
Private Only	1990	36 (5.5) !*	45 (6.7) !	17 (3.7) !*	1 (****)	64 (5.5) !*	19 (4.0) !*
	1992	27 (4.3)	37 (2.6)	30 (4.2)	7 (1.7)	73 (4.3)	37 (5.0)
	1996	25 (4.2)	39 (3.8)	27 (3.5)	8 (2.3)	75 (4.2)	36 (4.7)
	2000	19 (1.6)	40 (1.9)	33 (1.3)	8 (0.9)	81 (1.6)	42 (1.9)
Catholic Only	1990	37 (5.6) *	47 (4.5)	14 (2.5) *	1 (0.7) *	63 (5.6) *	16 (2.5) *
	1992	30 (2.8)	43 (2.2)	24 (2.3)	3 (0.9)	70 (2.8)	27 (2.3) *
	1996	25 (3.9)	43 (2.5)	28 (3.1)	4 (0.9)	75 (3.9)	32 (3.5)
	2000	23 (1.8)	44 (1.4)	28 (1.4)	5 (0.8)	77 (1.8)	33 (1.8)
Grade 12							
Public	1990	43 (1.7) *	46 (1.7)	10 (0.8) *	1 (0.3)	57 (1.7) *	12 (1.0) *
	1992	39 (1.3)	48 (1.0)	12 (0.7)	1 (0.3)	61 (1.3)	13 (0.8)
	1996	32 (1.3) *	52 (1.1) *	13 (0.8)	2 (0.3)	68 (1.3) *	15 (1.0)
	2000	37 (1.2)	48 (1.0)	14 (0.9)	2 (0.4)	63 (1.2)	16 (1.0)
Nonpublic	1990	35 (4.8) !*	53 (3.9) !	11 (2.3) !*	1 (0.8) !	65 (4.8) !*	12 (2.6) !*
	1992	19 (2.5)	55 (2.2)	22 (2.4)	3 (0.6)	81 (2.5)	25 (2.6)
	1996	18 (2.5)	58 (2.0)	22 (2.0)	2 (0.9)	82 (2.5)	24 (2.4)
	2000	19 (1.3)	55 (1.0)	23 (1.1)	3 (0.5)	81 (1.3)	26 (1.2)
Private Only	1990	39 (7.6) !*	51 (6.5) !	8 (3.2) !*	1 (****)	61 (7.6) !*	10 (4.1) !*
	1992	16 (4.1) !	50 (3.5) !	29 (4.6) !	5 (1.5) !	84 (4.1) !	34 (5.4) !
	1996	14 (4.0)	56 (1.5)	27 (3.4)	3 (2.2)	86 (4.0)	30 (4.2)
	2000	20 (2.1)	53 (1.7)	23 (1.9)	4 (0.9)	80 (2.1)	27 (1.9)
Catholic Only	1990	33 (5.7) !*	53 (4.4) !	13 (3.0) !*	1 (0.6) !	67 (5.7) !*	14 (3.4) !*
	1992	21 (2.8)	58 (2.2)	19 (2.7)	2 (0.7)	79 (2.8)	21 (2.6)
	1996	21 (2.8)	59 (2.8)	19 (2.3)	2 (1.0)	79 (2.8)	20 (2.6)
	2000	19 (1.6)	56 (1.2)	23 (1.3)	3 (0.5)	81 (1.6)	25 (1.5)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
(****) Standard error estimates cannot be accurately determined.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.22: Data for Table 3.1 National Scale Score Results by Type of Location

Percentage of students and average mathematics scale scores by type of location, grades 4, 8, and 12: 2000

	Central city	Urban fringe/large town	Rural/small town
Grade 12	27 (2.0)	48 (3.4)	25 (2.9)
	298 (1.8)	304 (1.4)	300 (1.9)
Grade 8	30 (1.3)	45 (2.0)	25 (1.9)
	268 (1.8)	280 (1.4)	276 (1.9)
Grade 4	31 (1.7)	46 (2.3)	23 (1.9)
	222 (1.6)	232 (1.5)	227 (1.7)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.23: Data for Figure 3.11 National Achievement Level Results by Type of Location

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of location, grades 4, 8, and 12: 2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
Central city	39 (2.2)	40 (1.4)	19 (1.4)	2 (0.3)	61 (2.2)	21 (1.6)
Urban fringe/large town	26 (1.7)	42 (1.3)	28 (1.4)	4 (0.5)	74 (1.7)	31 (1.7)
Rural/small town	30 (2.5)	47 (2.0)	21 (2.1)	2 (0.5)	70 (2.5)	23 (2.1)
Grade 8						
Central city	44 (1.9)	33 (1.2)	18 (1.3)	5 (0.8)	56 (1.9)	23 (1.8)
Urban fringe/large town	29 (1.5)	40 (1.4)	25 (1.2)	6 (0.6)	71 (1.5)	31 (1.6)
Rural/small town	33 (2.0)	41 (1.6)	22 (1.7)	4 (0.9)	67 (2.0)	26 (2.0)
Grade 12						
Central city	40 (2.2)	45 (1.5)	14 (1.0)	2 (0.5)	60 (2.2)	16 (1.2)
Urban fringe/large town	32 (1.6)	48 (1.6)	16 (1.3)	3 (0.6)	68 (1.6)	19 (1.5)
Rural/small town	35 (2.5)	52 (2.0)	12 (1.6)	1 (0.4)	65 (2.5)	13 (1.6)

Standard errors of the estimated percentages appear in parentheses.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.24: Data for Figure 3.12 National Scale Score Results by Free/Reduced-Price Lunch Eligibility

Percentage of students and average mathematics scale scores by student eligibility for free/reduced-price lunch program, grades 4, 8, and 12: 1996–2000

		Eligible	Not Eligible	Info Not Available
Grade 12	1996	13 (1.3)	60 (3.7)	27 (3.8)
		281 (1.6)	307 (1.3)	308 (1.9)
	2000	13 (1.0)	59 (3.4)	28 (3.6)
		280 (1.8)	305 (1.4)	304 (1.5)
Grade 8	1996	27 (1.4)	55 (2.4)	17 (2.9)
		252 (1.5)	280 (1.4) *	280 (2.9)
	2000	26 (1.0)	53 (1.6)	21 (1.9)
		255 (1.3)	285 (1.1)	278 (1.3)
Grade 4	1996	31 (1.4)	53 (2.5)	16 (3.0)
		207 (1.9)	231 (1.0) *	233 (3.1)
	2000	32 (1.0)	49 (2.2)	18 (2.2)
		210 (1.0)	236 (1.2)	237 (1.6)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.25: Data for Figure 3.13 National Achievement Level Results by Free/Reduced-Price Lunch

Percentage of students within each mathematics achievement level range and at or above achievement levels by student eligibility for the free/reduced-price lunch program, grades 4, 8, and 12: 1996–2000

		Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4							
Eligible	1996	58 (2.6)	33 (1.9)	8 (1.2)	▲ (0.3)	42 (2.6)	9 (1.1)
	2000	54 (1.5)	37 (1.2)	8 (0.8)	▲ (0.1)	46 (1.5)	9 (0.8)
Not Eligible	1996	26 (1.7)	48 (1.6)	23 (1.3) *	3 (0.6)	74 (1.7)	26 (1.3) *
	2000	21 (1.3)	46 (1.1)	30 (1.2)	4 (0.5)	79 (1.3)	33 (1.5)
Info Not Available	1996	25 (4.1)	46 (2.9)	26 (3.3)	3 (1.3)	75 (4.1)	30 (4.1)
	2000	20 (2.2)	44 (1.8)	32 (2.3)	4 (0.6)	80 (2.2)	36 (2.4)
Grade 8							
Eligible	1996	61 (1.8)	31 (1.6)	7 (1.0)	1 (0.3)	39 (1.8)	8 (1.1)
	2000	57 (1.8)	33 (1.6)	9 (0.8)	1 (0.2)	43 (1.8)	10 (0.9)
Not Eligible	1996	29 (1.5) *	42 (1.5)	25 (1.2)	5 (0.8)	71 (1.5) *	30 (1.6)
	2000	24 (1.0)	41 (1.0)	28 (1.1)	7 (0.7)	76 (1.0)	35 (1.4)
Info Not Available	1996	29 (3.1)	40 (2.2)	25 (2.7)	6 (1.2)	71 (3.1)	30 (3.5)
	2000	32 (1.8)	38 (1.7)	25 (1.5)	5 (0.7)	68 (1.8)	30 (1.4)
Grade 12							
Eligible	1996	60 (2.4)	36 (2.2)	4 (0.8)	▲ (****)	40 (2.4)	4 (0.8)
	2000	60 (2.8)	36 (2.6)	4 (0.8)	▲ (****)	40 (2.8)	4 (0.8)
Not Eligible	1996	26 (1.4)	56 (1.2) *	16 (1.1)	3 (0.4)	74 (1.4)	18 (1.4)
	2000	31 (1.6)	50 (1.2)	16 (1.4)	3 (0.6)	69 (1.6)	19 (1.5)
Info Not Available	1996	26 (2.6)	55 (2.5)	17 (2.0)	2 (0.5)	74 (2.6)	18 (2.2)
	2000	31 (1.9)	51 (1.6)	16 (1.4)	2 (0.3)	69 (1.9)	18 (1.5)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
(****) Standard error estimates cannot be accurately determined.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.26: Data for Figure 3.14 State Scale Score Results by Gender, Grade 4

State average mathematics scale scores by gender for grade 4 public schools: 1992–2000

	Male			Female		
	1992	1996	2000	1992	1996	2000
Nation	220(0.9) *	224(1.2) *	227(1.1)	218(1.1) *	221(1.1) *	225(1.0)
Alabama	208(1.8) ‡	212(1.4) *	217(1.7)	208(1.6) ‡	212(1.3) ‡	219(1.4)
Arizona	215(1.3) ‡	218(2.1)	220(1.5)	216(1.1)	217(1.6)	218(1.7)
Arkansas	211(1.0) ‡	216(1.5)	217(1.4)	210(1.1) ‡	216(1.7)	217(1.3)
California †	209(1.9)	211(2.2)	213(2.0)	208(1.6) ‡	207(1.7) *	214(2.2)
Connecticut	228(1.3) ‡	234(1.2)	235(1.4)	225(1.3) ‡	230(1.3)	233(1.2)
Georgia	215(1.6) ‡	216(1.7)	220(1.4)	216(1.3)	215(1.5)	219(1.1)
Hawaii	213(1.7)	215(1.4)	214(1.3)	215(1.2)	215(2.0)	217(1.4)
Idaho †	223(1.1) *	—	227(1.5)	220(1.1) ‡	—	227(1.3)
Illinois †	—	—	227(2.2)	—	—	222(2.0)
Indiana †	222(1.4) ‡	231(1.3) *	235(1.2)	220(1.1) ‡	228(1.2) ‡	233(1.4)
Iowa †	230(1.1)	230(1.2) *	235(1.5)	229(1.2)	228(1.3)	231(1.4)
Kansas †	—	—	232(1.9)	—	—	232(1.7)
Kentucky	215(1.3) ‡	220(1.5)	222(1.5)	215(1.1) ‡	220(1.1)	220(1.2)
Louisiana	205(1.7) ‡	209(1.6) ‡	218(1.6)	204(1.6) ‡	210(1.0) ‡	218(1.4)
Maine †	232(1.2)	234(1.3)	232(1.3)	231(1.3)	231(1.2)	229(1.0)
Maryland	219(1.5)	222(1.6)	223(1.6)	216(1.6) ‡	220(1.7)	221(1.4)
Massachusetts	228(1.3) ‡	230(1.5) ‡	237(1.3)	225(1.3) ‡	228(1.4) ‡	233(1.1)
Michigan †	222(1.8) ‡	227(1.5) *	232(1.8)	217(1.9) ‡	225(1.4) *	230(1.7)
Minnesota †	229(1.1) ‡	234(1.3)	237(1.8)	228(1.1) ‡	231(1.3)	233(1.2)
Mississippi	201(1.3) ‡	208(1.5)	210(1.5)	203(1.3) ‡	209(1.4)	211(1.0)
Missouri	222(1.4) ‡	225(1.3)	229(1.5)	223(1.2) ‡	224(1.2) *	228(1.1)
Montana †	—	229(1.4)	232(2.1)	—	226(1.5)	228(2.4)
Nebraska	227(1.3)	228(1.5)	227(2.4)	224(1.5)	227(1.2)	225(1.6)
Nevada	—	220(1.6)	222(1.4)	—	216(1.6)	218(1.3)
New Mexico	213(1.7)	215(2.0)	216(1.8)	213(1.5)	213(2.0)	212(1.6)
New York †	222(1.3) ‡	224(1.4) *	228(1.4)	215(1.5) ‡	222(1.4)	225(1.6)
North Carolina	213(1.2) ‡	224(1.3) ‡	234(1.3)	213(1.3) ‡	224(1.3) ‡	231(1.0)
North Dakota	230(1.0)	232(1.5)	233(1.1)	227(0.9)	230(1.3)	229(1.2)
Ohio †	220(1.2) ‡	—	233(1.6)	217(1.5) ‡	—	228(1.3)
Oklahoma	221(1.1) ‡	—	226(1.6)	219(1.2) ‡	—	224(1.2)
Oregon †	—	224(1.6)	229(2.1)	—	223(1.5)	224(1.7)
Rhode Island	216(1.8) ‡	223(1.7)	225(1.8)	215(1.6) ‡	218(1.6) ‡	224(1.4)
South Carolina	213(1.4) ‡	214(1.3) ‡	221(1.7)	212(1.1) ‡	213(1.6) ‡	220(1.3)
Tennessee	211(1.5) ‡	220(1.6)	222(1.7)	211(1.5) ‡	218(1.5)	218(1.5)
Texas	219(1.4) ‡	229(1.4) *	235(1.5)	217(1.3) ‡	228(1.6)	231(1.2)
Utah	224(1.1)	228(1.3)	227(1.7)	224(1.2) ‡	225(1.4)	228(1.2)
Vermont †	—	226(1.5) *	232(2.0)	—	224(1.4) ‡	231(1.8)
Virginia	222(1.6) ‡	224(1.6) ‡	233(1.3)	219(1.4) ‡	221(1.4) ‡	228(1.5)
West Virginia	216(1.4) ‡	224(1.3)	226(1.4)	214(1.0) ‡	223(1.1)	223(1.3)
Wyoming	227(1.2)	224(1.6) *	230(1.8)	224(1.0) ‡	223(1.4) ‡	228(1.3)
Other Jurisdictions						
American Samoa	—	—	156(5.4)	—	—	157(4.0)
District of Columbia	193(1.0)	187(1.5) *	193(1.6)	192(0.9)	187(1.4) ‡	194(1.2)
DDESS	—	226(1.3)	230(1.5)	—	222(1.2)	226(1.6)
DoDDS	—	224(1.0) ‡	230(0.9)	—	222(0.9) *	226(1.2)
Guam	190(1.2) ‡	187(1.5)	181(3.0)	195(1.0) ‡	189(1.8)	187(2.8)
Virgin Islands	—	—	183(4.0)	—	—	183(2.5)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools. DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.27: Data for Figure 3.15 State Scale Score Results by Gender, Grade 8

State average mathematics scale scores by gender for grade 8 public schools: 1990–2000

	Male				Female			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	262 (1.7) *	266 (1.1) *	270 (1.5) *	276 (0.9)	261 (1.4) *	267 (1.1) *	271 (1.2)	273 (1.0)
Alabama	254 (1.5) ‡	253 (1.8) ‡	257 (2.9)	262 (1.9)	252 (1.3) ‡	251 (1.9) ‡	256 (1.8)	262 (2.2)
Arizona †	262 (1.5) ‡	266 (1.4) ‡	271 (1.5)	274 (1.7)	257 (1.5) ‡	265 (1.4)	265 (2.2)	268 (1.7)
Arkansas	257 (1.3) ‡	257 (1.4) ‡	261 (1.9)	262 (1.7)	255 (1.1) ‡	256 (1.3) ‡	262 (1.6)	261 (1.7)
California †	258 (1.6)	260 (1.9)	264 (2.4)	262 (2.4)	255 (1.3) ‡	262 (1.9)	261 (1.7)	262 (2.1)
Connecticut	271 (1.2) ‡	275 (1.4) ‡	280 (1.5)	284 (1.7)	269 (1.4) ‡	273 (1.3) ‡	279 (1.4)	279 (1.5)
Georgia	259 (1.7) ‡	261 (1.5) ‡	262 (1.8) *	268 (1.6)	258 (1.5) ‡	258 (1.2) ‡	263 (1.8)	265 (1.4)
Hawaii	248 (1.1) ‡	254 (1.1) ‡	259 (1.3)	261 (2.0)	254 (1.3) ‡	261 (1.2) *	266 (1.3)	264 (1.4)
Idaho †	272 (1.0) ‡	277 (1.1)	—	278 (1.5)	270 (0.9) ‡	273 (0.9)	—	278 (1.8)
Illinois †	261 (2.0) ‡	—	—	276 (1.6)	260 (1.7) ‡	—	—	278 (2.1)
Indiana †	270 (1.4) ‡	272 (1.4) ‡	276 (1.7) ‡	285 (1.6)	264 (1.4) ‡	268 (1.3) ‡	275 (1.5) *	281 (1.8)
Kansas †	—	—	—	285 (1.8)	—	—	—	283 (1.5)
Kentucky	259 (1.4) ‡	263 (1.4) ‡	267 (1.4) ‡	274 (1.6)	256 (1.2) ‡	261 (1.4) ‡	266 (1.2)	270 (1.9)
Louisiana	248 (1.4) ‡	252 (1.6) ‡	252 (1.8) ‡	261 (2.0)	245 (1.5) ‡	248 (2.0) ‡	253 (1.7) *	258 (1.6)
Maine †	—	279 (1.3) ‡	285 (1.4)	285 (1.7)	—	279 (1.2)	283 (1.4)	282 (1.4)
Maryland	261 (1.5) ‡	266 (1.6) ‡	271 (2.5)	276 (1.6)	261 (1.8) ‡	264 (1.5) ‡	269 (2.2) *	276 (1.7)
Massachusetts	—	274 (1.5) ‡	278 (2.1) *	285 (1.3)	—	272 (1.1) ‡	277 (2.0)	281 (1.5)
Michigan †	265 (1.4) ‡	270 (1.6) ‡	279 (2.0)	279 (1.8)	264 (1.3) ‡	265 (1.5) ‡	275 (2.0)	278 (1.8)
Minnesota †	276 (1.1) ‡	282 (1.4) ‡	285 (1.7)	288 (1.4)	275 (1.1) ‡	283 (1.0) *	283 (1.5)	288 (2.1)
Mississippi	—	248 (1.6) ‡	251 (1.4)	255 (1.7)	—	245 (1.4) ‡	250 (1.4)	253 (1.3)
Missouri	—	272 (1.5)	274 (1.5)	276 (1.6)	—	270 (1.4)	273 (1.6)	271 (1.7)
Montana †	283 (1.4)	—	283 (1.6)	287 (1.6)	278 (1.4) ‡	—	283 (1.7)	286 (1.8)
Nebraska	277 (1.4) ‡	278 (1.3) ‡	283 (1.4)	283 (1.5)	275 (1.4)	277 (1.4)	282 (1.1) ‡	278 (1.3)
Nevada	—	—	—	269 (1.2)	—	—	—	267 (1.1)
New Mexico	259 (1.1)	261 (1.3)	262 (1.8)	259 (2.2)	254 (1.0) ‡	258 (1.0)	262 (1.4)	260 (1.7)
New York †	262 (1.6) ‡	267 (2.3) ‡	272 (2.0) *	280 (2.2)	259 (1.7) ‡	266 (2.2) ‡	269 (1.8)	273 (2.3)
North Carolina	250 (1.3) ‡	259 (1.4) ‡	270 (1.9) ‡	282 (1.6)	251 (1.2) ‡	257 (1.4) ‡	266 (1.5) ‡	278 (1.1)
North Dakota	284 (1.5)	285 (1.3)	285 (1.1)	283 (1.6)	278 (1.6) ‡	282 (1.4)	284 (1.3)	284 (1.5)
Ohio	266 (1.3) ‡	270 (1.8) ‡	—	283 (1.6)	261 (1.2) ‡	267 (1.8) ‡	—	282 (1.7)
Oklahoma	266 (1.5) ‡	269 (1.2)	—	273 (1.7)	261 (1.5) ‡	267 (1.6)	—	270 (1.7)
Oregon †	272 (1.3) ‡	—	276 (1.7)	281 (2.1)	270 (1.0) ‡	—	277 (1.7)	280 (1.8)
Rhode Island	262 (1.0) ‡	266 (0.9) ‡	271 (1.2)	274 (1.3)	259 (1.0) ‡	266 (0.9) ‡	267 (1.4) ‡	273 (1.5)
South Carolina	—	261 (1.4) ‡	262 (1.8)	266 (1.7)	—	260 (1.0) ‡	259 (1.7) ‡	267 (1.7)
Tennessee	—	261 (1.7)	263 (1.8)	265 (2.1)	—	257 (1.5)	263 (1.5)	261 (1.7)
Texas	260 (1.8) ‡	267 (1.3) ‡	273 (1.7)	274 (2.0)	256 (1.4) ‡	262 (1.6) ‡	268 (1.7) ‡	276 (1.4)
Utah	—	276 (1.0)	278 (1.1)	275 (1.9)	—	273 (1.0)	275 (1.3)	276 (1.0)
Vermont †	—	—	281 (1.3)	283 (1.6)	—	—	278 (1.4) ‡	283 (1.3)
Virginia	266 (2.0) ‡	268 (1.6) ‡	273 (1.7) *	278 (1.9)	263 (1.4) ‡	267 (1.2) ‡	267 (1.8) ‡	276 (1.6)
West Virginia	256 (1.5) ‡	260 (1.1) ‡	264 (1.2) ‡	270 (1.5)	255 (1.1) ‡	259 (1.2) ‡	266 (1.3) ‡	271 (1.1)
Wyoming	274 (0.8)	275 (1.1)	276 (1.2)	277 (1.7)	270 (0.9) ‡	275 (1.2)	274 (1.3)	276 (1.3)
Other Jurisdictions								
American Samoa	—	—	—	190 (8.2)	—	—	—	200 (3.2)
District of Columbia	230 (1.2)	234 (1.2)	231 (2.2)	234 (2.0)	233 (1.0)	236 (1.4)	235 (1.5)	235 (3.0)
DDESS	—	—	271 (3.9)	279 (3.0)	—	—	267 (2.2)	275 (3.2)
DoDDS	—	—	276 (1.3) *	280 (1.2)	—	—	274 (1.9)	277 (1.6)
Guam	232 (1.4)	233 (1.5)	235 (2.7)	233 (2.9)	231 (1.1)	237 (1.5)	242 (2.4) *	234 (2.3)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.28: Data for Figure 3.16 State *Proficient* Level Achievement Results by Gender, Grade 4

State percentages of students at or above the *Proficient* level in mathematics by gender for grade 4 public schools: 1992–2000

	Male			Female		
	1992	1996	2000	1992	1996	2000
Nation	19 (1.2) *	22 (1.2) *	27 (1.3)	16 (1.4) *	17 (1.2) *	22 (1.3)
Alabama	10 (1.3) ‡	11 (1.3)	15 (1.6)	10 (1.4)	10 (1.2)	13 (1.5)
Arizona	13 (1.2)	17 (2.2)	18 (1.8)	13 (1.2)	13 (1.5)	16 (1.7)
Arkansas	10 (1.0) ‡	14 (1.7)	14 (1.3)	9 (1.1)	12 (1.6)	13 (1.7)
Califomia †	13 (1.5)	12 (1.9)	14 (1.7)	12 (1.2)	9 (1.3) *	15 (1.8)
Connecticut	26 (1.7) ‡	34 (2.2)	34 (2.0)	23 (1.8) ‡	27 (2.0)	29 (1.8)
Georgia	16 (1.5)	15 (1.7)	19 (1.5)	14 (1.2)	11 (1.6) *	17 (1.2)
Hawaii	16 (1.3)	18 (1.3)	14 (1.4)	14 (1.0)	15 (1.4)	14 (1.4)
Idaho †	17 (1.1) *	—	23 (2.2)	14 (1.2) ‡	—	20 (1.8)
Illinois †	—	—	25 (2.9)	—	—	17 (2.6)
Indiana †	17 (1.5) ‡	26 (2.2) *	33 (1.9)	15 (1.1) ‡	21 (1.9) *	29 (2.1)
Iowa †	27 (1.6)	24 (1.7)	31 (2.5)	25 (1.4)	20 (1.9)	24 (1.8)
Kansas †	—	—	32 (2.3)	—	—	28 (2.6)
Kentucky	14 (1.6) *	17 (1.8)	19 (1.6)	12 (1.2) *	14 (1.2)	16 (1.5)
Louisiana	8 (0.9) ‡	8 (1.4) *	14 (1.7)	7 (1.0) ‡	7 (0.9) ‡	14 (1.5)
Maine †	28 (1.8)	29 (2.0)	27 (1.8)	27 (1.9)	26 (1.5)	22 (1.5)
Maryland	20 (1.6)	22 (2.0)	24 (1.7)	17 (1.5)	21 (2.1)	20 (1.8)
Massachusetts	25 (1.7) ‡	27 (2.4) *	36 (2.2)	21 (1.6) ‡	22 (1.9) ‡	31 (1.9)
Michigan †	21 (2.1) ‡	25 (1.7) *	31 (2.3)	15 (1.8) ‡	21 (1.8) *	28 (2.8)
Minnesota †	28 (1.5) ‡	32 (1.9)	38 (2.4)	24 (1.6) ‡	27 (1.6)	30 (1.8)
Mississippi	6 (0.9) ‡	9 (1.0)	10 (1.3)	6 (0.8)	7 (1.2)	8 (0.9)
Missouri	19 (1.6)	22 (1.5)	24 (1.9)	18 (2.0)	18 (1.7)	23 (1.7)
Montana †	—	25 (1.8)	29 (2.8)	—	19 (2.3)	20 (3.3)
Nebraska	24 (1.7)	26 (1.7)	25 (2.4)	20 (2.1)	22 (1.6)	23 (2.3)
Nevada	—	16 (1.8)	19 (1.7)	—	12 (1.1)	13 (1.4)
New Mexico	11 (1.1)	14 (1.6)	14 (1.5)	11 (2.0)	11 (1.3)	10 (1.2)
New York †	20 (1.6)	21 (1.6)	24 (1.8)	13 (1.4) ‡	18 (1.6)	20 (2.0)
North Carolina	13 (1.1) ‡	22 (1.5) ‡	30 (1.9)	12 (1.2) ‡	20 (1.6) *	26 (1.6)
North Dakota	24 (1.6)	26 (1.9)	29 (1.4)	20 (1.9)	22 (1.7)	22 (2.1)
Dhio †	18 (1.4) ‡	—	30 (2.9)	14 (1.5) ‡	—	22 (2.0)
Dklahoma	15 (1.7)	—	18 (1.7)	13 (1.3)	—	14 (1.3)
Dregon †	—	22 (1.7)	27 (2.6)	—	20 (1.6)	20 (2.0)
Rhode Island	15 (1.5) ‡	20 (1.7) *	26 (1.8)	12 (1.2) ‡	14 (1.5) *	20 (1.7)
South Carolina	14 (1.5) ‡	13 (1.6) ‡	20 (1.5)	12 (1.1) *	11 (1.5) *	15 (1.2)
Tennessee	10 (1.3) ‡	18 (1.9)	20 (1.9)	10 (1.1) ‡	15 (1.4)	16 (1.6)
Texas	17 (1.7) ‡	27 (2.0)	31 (2.3)	13 (1.5) ‡	24 (1.9)	24 (2.0)
Utah	19 (1.5) ‡	26 (1.7)	25 (1.8)	19 (1.4)	20 (1.6)	23 (1.7)
Vermont †	—	24 (1.5) *	31 (2.6)	—	21 (1.5) *	28 (2.8)
Virginia	20 (1.9) ‡	21 (2.0) *	29 (2.0)	17 (1.6)	17 (1.4)	22 (1.9)
West Virginia	14 (1.5) ‡	20 (1.6)	21 (2.2)	11 (1.0) ‡	18 (1.5)	15 (1.7)
Wyoming	21 (1.5) ‡	20 (1.8) *	27 (2.0)	17 (1.3) ‡	18 (1.2) *	23 (1.8)
Other Jurisdictions						
American Samoa	—	—	▲ (0.5)	—	—	▲ (0.4)
District of Columbia	6 (0.7)	6 (0.6)	6 (1.1)	5 (0.7)	4 (0.5)	5 (1.0)
DDESS	—	24 (2.1)	26 (2.3)	—	17 (1.6)	22 (2.3)
DoDDS	—	21 (1.5) *	26 (1.4)	—	17 (1.2)	19 (1.3)
Guam	4 (0.7)	4 (0.7)	3 (1.1)	5 (0.8) ‡	3 (0.8)	2 (0.7)
Virgin Islands	—	—	1 (0.7)	—	—	1 (0.8)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.29: Data for Figure 3.17 State *Proficient* Level Achievement Results by Gender, Grade 8

State percentages of students at or above the *Proficient* level in mathematics by gender for grade 8 public schools: 1990–2000

	Male				Female			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	17 (1.5) *	20 (1.3) *	24 (1.6) *	29 (1.2)	14 (1.2) *	20 (1.3) *	21 (1.4)	24 (1.0)
Alabama	10 (1.1) ‡	11 (1.3) ‡	14 (2.3)	17 (1.9)	8 (0.9) ‡	9 (1.2) ‡	11 (1.7)	15 (1.7)
Arizona †	15 (1.3) ‡	16 (1.6) ‡	20 (1.6)	24 (1.8)	10 (1.2) ‡	14 (1.5)	16 (1.3)	18 (1.9)
Arkansas	11 (0.9) ‡	11 (1.2) ‡	14 (1.4)	15 (1.5)	8 (1.0) ‡	9 (0.9)	12 (1.1)	13 (1.8)
California †	14 (1.5) ‡	16 (1.5)	19 (2.0)	19 (1.8)	11 (1.2) ‡	17 (1.8)	15 (1.4)	16 (1.7)
Connecticut	23 (1.4) ‡	27 (1.3) ‡	30 (2.1)	36 (1.9)	20 (1.4) ‡	24 (1.3) ‡	31 (1.6)	31 (1.7)
Georgia	15 (1.7) ‡	14 (1.3) ‡	17 (2.0)	20 (1.4)	13 (1.3) ‡	11 (1.1) ‡	14 (2.0)	17 (1.5)
Hawaii	11 (1.1) ‡	12 (1.0) ‡	15 (1.1)	17 (1.7)	12 (1.0)	15 (1.0)	17 (1.4)	16 (2.0)
Idaho †	20 (1.6) ‡	24 (1.7)	—	28 (2.5)	16 (1.4) ‡	19 (1.2) ‡	—	26 (1.9)
Illinois †	15 (1.5) ‡	—	—	26 (1.9)	14 (1.4) ‡	—	—	28 (2.2)
Indiana †	19 (1.6) ‡	22 (1.7) ‡	24 (2.0) ‡	35 (2.2)	14 (1.4) ‡	18 (1.5) ‡	23 (1.9)	27 (2.1)
Kansas †	—	—	—	37 (2.5)	—	—	—	32 (2.4)
Kentucky	11 (1.1) ‡	15 (1.6) ‡	17 (1.6) *	23 (1.7)	9 (0.8) ‡	13 (1.3) ‡	15 (1.5)	18 (1.9)
Louisiana	7 (0.9) ‡	7 (1.1) ‡	8 (1.3) *	14 (1.5)	4 (0.7) ‡	7 (1.2)	7 (1.3)	10 (1.3)
Maine †	—	27 (1.9) ‡	33 (2.1)	34 (2.2)	—	24 (1.9) ‡	29 (2.0)	30 (1.6)
Maryland	17 (1.3) ‡	21 (1.7) ‡	26 (2.8)	29 (1.8)	16 (1.4) ‡	19 (1.5) ‡	23 (2.3)	29 (1.8)
Massachusetts	—	26 (1.8) ‡	29 (2.2)	34 (1.6)	—	21 (1.5) ‡	26 (2.1)	30 (1.8)
Michigan †	17 (1.3) ‡	21 (1.9) ‡	30 (2.1)	30 (2.2)	15 (1.4) ‡	17 (1.6) ‡	27 (2.0)	27 (2.2)
Minnesota †	25 (1.5) ‡	32 (1.7) ‡	36 (2.4)	40 (2.0)	22 (1.4) ‡	31 (1.6) ‡	33 (1.9)	39 (2.2)
Mississippi	—	7 (1.0)	7 (0.9)	10 (1.2)	—	6 (0.9)	7 (1.0)	7 (1.1)
Missouri	—	21 (1.6)	23 (1.8)	24 (2.0)	—	18 (1.4)	21 (1.6)	20 (1.9)
Montana †	31 (2.0) ‡	—	33 (1.9)	38 (2.4)	22 (1.9) ‡	—	31 (2.3)	37 (2.6)
Nebraska	26 (1.8) ‡	28 (1.9)	32 (2.0)	34 (2.1)	23 (1.6)	25 (1.9)	30 (1.7)	27 (1.9)
Nevada	—	—	—	21 (1.5)	—	—	—	18 (1.2)
New Mexico	12 (1.2)	13 (1.2)	15 (1.5)	14 (1.5)	8 (1.3) ‡	9 (0.9) ‡	14 (1.4)	12 (1.1)
New York †	17 (1.3) ‡	21 (1.7) ‡	24 (1.6)	29 (2.2)	14 (1.1) ‡	19 (1.4)	20 (2.3)	23 (2.2)
North Carolina	9 (0.8) ‡	14 (1.4) ‡	23 (1.6) ‡	31 (1.9)	8 (0.9) ‡	10 (1.2) ‡	18 (1.6) ‡	29 (1.4)
North Dakota	30 (2.4)	31 (2.1)	34 (1.3)	32 (2.0)	24 (2.0) ‡	28 (1.9)	32 (2.4)	31 (2.0)
Ohio	17 (1.4) ‡	19 (1.8) ‡	—	33 (2.1)	13 (1.4) ‡	17 (1.9) ‡	—	29 (2.2)
Oklahoma	16 (1.5) ‡	18 (1.4)	—	21 (1.3)	11 (1.4) ‡	15 (1.8)	—	17 (1.6)
Oregon †	23 (1.5) ‡	—	26 (2.1) *	34 (2.3)	18 (1.2) ‡	—	26 (1.8)	29 (2.1)
Rhode Island	16 (1.2) ‡	17 (1.6) ‡	22 (1.6)	24 (1.5)	13 (1.0) ‡	15 (1.3) ‡	19 (1.5)	23 (1.5)
South Carolina	—	16 (1.3)	16 (1.5)	18 (1.7)	—	14 (1.4)	12 (1.3) *	18 (1.4)
Tennessee	—	14 (1.4) ‡	16 (1.6)	20 (1.7)	—	9 (1.1) ‡	14 (1.4)	14 (1.5)
Texas	14 (1.4) ‡	21 (1.4)	23 (1.9)	24 (2.1)	11 (1.4) ‡	16 (1.6) ‡	19 (1.9)	25 (1.8)
Utah	—	24 (1.5)	27 (1.6)	27 (1.7)	—	21 (1.2)	22 (1.5)	25 (1.3)
Vermont †	—	—	28 (2.1)	33 (2.1)	—	—	26 (1.8)	32 (1.9)
Virginia	19 (2.2) ‡	20 (1.6) ‡	24 (1.5)	28 (1.9)	15 (1.4) ‡	18 (1.3) ‡	18 (1.6)	23 (1.8)
West Virginia	10 (1.1) ‡	11 (1.2) ‡	14 (1.0) ‡	19 (1.4)	8 (1.1) ‡	9 (0.9) ‡	14 (1.2)	17 (1.5)
Wyoming	21 (1.4) ‡	21 (1.6)	24 (1.5)	26 (1.4)	16 (1.0) ‡	21 (1.6)	20 (1.4)	24 (1.6)
Other Jurisdictions								
American Samoa	—	—	—	1 (0.9)	—	—	—	1 (0.9)
District of Columbia	2 (0.6) ‡	4 (1.1)	6 (1.0)	6 (1.0)	4 (0.8)	5 (1.1)	5 (1.0)	6 (1.2)
DDESS	—	—	24 (2.8)	30 (3.0)	—	—	18 (3.6)	23 (4.6)
DoDDS	—	—	25 (1.7)	28 (1.9)	—	—	21 (2.3)	25 (2.0)
Guam	4 (0.8)	6 (1.0)	6 (1.3)	4 (1.1)	3 (0.7)	5 (1.0)	6 (1.0)	4 (1.3)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.30: State Scale Score Differences by Gender, Grade 4

Gender gaps in state average mathematics scale scores for grade 4 public schools: 1992–2000

	Male-Female		
	1992	1996	2000
Nation	2 (1.4)	3 (1.7)	3 (1.5)
Alabama	▲ (2.4)	▲ (2.0)	-2 (2.3)
Arizona	-1 (1.7)	1 (2.7)	2 (2.2)
Arkansas	1 (1.5)	-1 (2.3)	▲ (1.9)
California †	1 (2.5)	3 (2.8)	-2 (3.0)
Connecticut	3 (1.8)	5 (1.8)	2 (1.9)
Georgia	-1 (2.1)	1 (2.3)	2 (1.8)
Hawaii	-3 (2.1)	▲ (2.4)	-3 (1.9)
Idaho †	3 (1.6)	—	1 (1.9)
Illinois †	—	—	5 (3.0)
Indiana †	3 (1.7)	4 (1.7)	2 (1.8)
Iowa †	1 (1.7)	2 (1.8)	3 (2.0)
Kansas †	—	—	1 (2.5)
Kentucky	▲ (1.7)	1 (1.9)	2 (1.9)
Louisiana	1 (2.3)	-1 (1.9)	1 (2.2)
Maine †	1 (1.8)	3 (1.8)	4 (1.6)
Maryland	4 (2.2)	2 (2.4)	2 (2.1)
Massachusetts	3 (1.9)	2 (2.0)	4 (1.7)
Michigan †	5 (2.6)	2 (2.0)	3 (2.5)
Minnesota †	1 (1.5)	3 (1.8)	4 (2.2)
Mississippi	-2 (1.8)	▲ (2.1)	-1 (1.8)
Missouri	-1 (1.9)	1 (1.7)	1 (1.9)
Montana †	—	3 (2.0)	4 (3.2)
Nebraska	3 (2.0)	▲ (1.9)	2 (2.9)
Nevada	—	4 (2.3)	4 (1.9)
New Mexico	▲ (2.2)	2 (2.8)	5 (2.4)
New York †	7 (2.0)	2 (2.0)	4 (2.1)
North Carolina	-1 (1.7)	▲ (1.9)	2 (1.6)
North Dakota	3 (1.4)	2 (2.0)	4 (1.6)
Ohio †	3 (1.9)	—	5 (2.1)
Oklahoma	2 (1.6)	—	3 (2.0)
Oregon †	—	▲ (2.2)	5 (2.7)
Rhode Island	2 (2.4)	5 (2.3)	1 (2.2)
South Carolina	1 (1.8)	1 (2.0)	2 (2.2)
Tennessee	▲ (2.1)	2 (2.2)	4 (2.3)
Texas	2 (2.0)	1 (2.1)	4 (1.9)
Utah	▲ (1.6)	3 (1.9)	-2 (2.1)
Vermont †	—	2 (2.1)	1 (2.7)
Virginia	2 (2.1)	3 (2.1)	6 (2.0)
West Virginia	2 (1.8)	1 (1.7)	3 (1.9)
Wyoming	3 (1.6)	1 (2.1)	2 (2.2)
Other Jurisdictions			
American Samoa	—	—	-2 (6.7)
District of Columbia	1 (1.3)	▲ (2.1)	-1 (2.0)
DDESS	—	5 (1.8)	4 (2.2)
DoDDS	—	2 (1.4)	4 (1.5)
Guam	-5 (1.6)	-2 (2.4)	-6 (4.1)
Virgin Islands	—	—	-1 (4.7)

Standard errors of the estimated difference in scale scores appear in parentheses.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Difference is between −0.5 and 0.5.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996 and 2000 Mathematics Assessments.

Table B.31: State Scale Score Differences by Gender, Grade 8

Gender gaps in state average mathematics scale scores for grade 8 public schools: 1990-2000

	Male-Female			
	1990	1992	1996	2000
Nation	1 (2.2)	-1 (1.6)	▲ (2.0)	3 (1.3)
Alabama	2 (2.0)	3 (2.6)	1 (3.4)	1 (2.9)
Arizona †	6 (2.1)	1 (2.0)	5 (2.6)	6 (2.4)
Arkansas	2 (1.7)	1 (1.9)	-1 (2.5)	▲ (2.4)
California †	3 (2.1)	-2 (2.6)	3 (2.9)	▲ (3.2)
Connecticut	3 (1.8)	2 (1.9)	▲ (2.1)	5 (2.3)
Georgia	1 (2.2)	3 (1.9)	-1 (2.6)	3 (2.1)
Hawaii	-6 (1.7)	-6 (1.6)	-7 (1.8)	-3 (2.4)
Idaho †	2 (1.3)	4 (1.4)	—	1 (2.3)
Illinois †	▲ (2.7)	—	—	-1 (2.7)
Indiana †	5 (2.0)	4 (1.9)	1 (2.3)	4 (2.4)
Kansas †	—	—	—	2 (2.3)
Kentucky	3 (1.8)	2 (2.0)	▲ (1.8)	4 (2.5)
Louisiana	3 (2.0)	4 (2.5)	-1 (2.5)	3 (2.5)
Maine †	—	▲ (1.7)	2 (2.0)	3 (2.2)
Maryland	▲ (2.3)	2 (2.2)	2 (3.3)	1 (2.3)
Massachusetts	—	2 (1.9)	2 (2.9)	4 (2.0)
Michigan †	1 (1.9)	5 (2.2)	4 (2.8)	1 (2.6)
Minnesota †	1 (1.6)	▲ (1.8)	3 (2.3)	▲ (2.5)
Mississippi	—	3 (2.1)	1 (2.0)	2 (2.1)
Missouri	—	2 (2.0)	1 (2.2)	4 (2.3)
Montana †	6 (1.9)	—	▲ (2.4)	▲ (2.4)
Nebraska	2 (2.0)	2 (1.9)	1 (1.7)	6 (2.0)
Nevada	—	—	—	2 (1.7)
New Mexico	6 (1.4) *	3 (1.7)	▲ (2.3)	-1 (2.8)
New York †	3 (2.3)	2 (3.2)	3 (2.7)	6 (3.2)
North Carolina	-1 (1.8)	2 (1.9)	3 (2.4)	3 (2.0)
North Dakota	6 (2.2) *	3 (1.9)	1 (1.7)	-1 (2.2)
Ohio	5 (1.8)	3 (2.5)	—	2 (2.3)
Oklahoma	5 (2.1)	3 (2.0)	—	4 (2.4)
Oregon †	2 (1.6)	—	-1 (2.4)	2 (2.7)
Rhode Island	3 (1.4)	▲ (1.3)	4 (1.8)	1 (2.0)
South Carolina	—	1 (1.7)	3 (2.5)	-1 (2.4)
Tennessee	—	5 (2.3)	1 (2.3)	4 (2.7)
Texas	4 (2.3)	5 (2.1) *	5 (2.4) *	-3 (2.5)
Utah	—	2 (1.4)	3 (1.7)	-1 (2.2)
Vermont †	—	—	3 (1.9)	▲ (2.1)
Virginia	3 (2.4)	1 (2.0)	6 (2.5)	2 (2.5)
West Virginia	1 (1.9)	1 (1.7)	-2 (1.8)	-1 (1.9)
Wyoming	5 (1.2)	▲ (1.7)	2 (1.7)	1 (2.1)
Other Jurisdictions				
American Samoa	—	—	—	-10 (8.8)
District of Columbia	-3 (1.6)	-2 (1.9)	-4 (2.6)	▲ (3.6)
DDESS	—	—	4 (4.5)	4 (4.4)
DoDDS	—	—	2 (2.3)	3 (2.0)
Guam	1 (1.8)	-5 (2.1)	-7 (3.6)	-2 (3.7)

Standard errors of the estimated difference in scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Difference is between −0.5 and 0.5.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996 and 2000 Mathematics Assessments.

Table B.32: State Percentages of Students by Gender, Grade 4

State percentages of students by gender for grade 4 public schools: 1992–2000

	Male			Female		
	1992	1996	2000	1992	1996	2000
Nation	50 (0.7)	51 (0.7)	51 (0.7)	50 (0.7)	49 (0.7)	49 (0.7)
Alabama	51 (1.0)	50 (1.2)	50 (1.2)	49 (1.0)	50 (1.2)	50 (1.2)
Arizona	51 (1.1)	51 (1.0)	52 (1.0)	49 (1.1)	49 (1.0)	48 (1.0)
Arkansas	53 (1.0)	50 (1.2)	51 (1.1)	47 (1.0)	50 (1.2)	49 (1.1)
California †	52 (1.0)	51 (1.1)	50 (1.2)	48 (1.0)	49 (1.1)	50 (1.2)
Connecticut	49 (1.1)	50 (0.9)	51 (1.0)	51 (1.1)	50 (0.9)	49 (1.0)
Georgia	51 (1.0)	50 (1.0)	48 (0.9)	49 (1.0)	50 (1.0)	52 (0.9)
Hawaii	49 (1.0)	53 (1.2)	49 (1.1)	51 (1.0)	47 (1.2)	51 (1.1)
Idaho †	49 (0.8)	—	50 (1.2)	51 (0.8)	—	50 (1.2)
Illinois †	—	—	50 (1.6)	—	—	50 (1.6)
Indiana †	50 (1.0)	49 (1.0)	50 (1.2)	50 (1.0)	51 (1.0)	50 (1.2)
Iowa †	51 (0.9)	51 (1.0)	50 (1.2)	49 (0.9)	49 (1.0)	50 (1.2)
Kansas †	—	—	51 (1.6)	—	—	49 (1.6)
Kentucky	49 (0.9)	52 (1.1)	49 (1.2)	51 (0.9)	48 (1.1)	51 (1.2)
Louisiana	52 (1.0)	50 (1.0)	51 (1.0)	48 (1.0)	50 (1.0)	49 (1.0)
Maine †	49 (1.1)	50 (1.1)	50 (1.0)	51 (1.1)	50 (1.1)	50 (1.0)
Maryland	50 (1.1)	50 (0.9)	49 (1.2)	50 (1.1)	50 (0.9)	51 (1.2)
Massachusetts	51 (1.0)	52 (1.1)	50 (1.0)	49 (1.0)	48 (1.1)	50 (1.0)
Michigan †	52 (1.0)	51 (0.8)	50 (1.4)	48 (1.0)	49 (0.8)	50 (1.4)
Minnesota †	50 (0.9)	51 (1.1)	49 (1.2)	50 (0.9)	49 (1.1)	51 (1.2)
Mississippi	52 (0.7)	50 (1.1)	48 (1.0)	48 (0.7)	50 (1.1)	52 (1.0)
Missouri	52 (0.9)	50 (1.0)	49 (0.9)	48 (0.9)	50 (1.0)	51 (0.9)
Montana †	—	53 (1.0)	51 (1.9)	—	47 (1.0)	49 (1.9)
Nebraska	51 (0.9)	52 (0.9)	49 (1.6)	49 (0.9)	48 (0.9)	51 (1.6)
Nevada	—	50 (1.1)	51 (1.0)	—	50 (1.1)	49 (1.0)
New Mexico	47 (1.0)	48 (1.0)	50 (1.1)	53 (1.0)	52 (1.0)	50 (1.1)
New York †	52 (1.1)	50 (0.9)	48 (1.1)	48 (1.1)	50 (0.9)	52 (1.1)
North Carolina	51 (0.9)	50 (0.8)	49 (1.0)	49 (0.9)	50 (0.8)	51 (1.0)
North Dakota	53 (1.1)	50 (1.0)	51 (1.0)	47 (1.1)	50 (1.0)	49 (1.0)
Ohio †	51 (1.0)	—	50 (1.3)	49 (1.0)	—	50 (1.3)
Oklahoma	51 (1.1)	—	48 (1.1)	49 (1.1)	—	52 (1.1)
Oregon †	—	50 (1.0)	50 (1.4)	—	50 (1.0)	50 (1.4)
Rhode Island	51 (1.1)	52 (1.1)	50 (1.3)	49 (1.1)	48 (1.1)	50 (1.3)
South Carolina	50 (1.1)	50 (1.0)	52 (1.1)	50 (1.1)	50 (1.0)	48 (1.1)
Tennessee	52 (0.8)	51 (1.1)	50 (0.9)	48 (0.8)	49 (1.1)	50 (0.9)
Texas	49 (0.9)	51 (1.1)	47 (1.1)	51 (0.9)	49 (1.1)	53 (1.1)
Utah	51 (1.0)	50 (0.9)	52 (1.0)	49 (1.0)	50 (0.9)	48 (1.0)
Vermont †	—	51 (1.0)	49 (1.4)	—	49 (1.0)	51 (1.4)
Virginia	51 (1.0)	50 (0.9)	49 (1.0)	49 (1.0)	50 (0.9)	51 (1.0)
West Virginia	49 (0.9)	52 (1.1)	50 (1.0)	51 (0.9)	48 (1.1)	50 (1.0)
Wyoming	50 (1.0)	50 (1.3)	53 (1.2)	50 (1.0)	50 (1.3)	47 (1.2)
Other Jurisdictions						
American Samoa	—	—	46 (2.4)	—	—	54 (2.4)
District of Columbia	48 (0.9)	49 (1.2)	48 (1.1)	52 (0.9)	51 (1.2)	52 (1.1)
DDESS	—	50 (1.8)	52 (1.6)	—	50 (1.8)	48 (1.6)
DoDDS	—	50 (1.0)	50 (0.9)	—	50 (1.0)	50 (0.9)
Guam	52 (1.2)	52 (1.3)	50 (1.6)	48 (1.2)	48 (1.3)	50 (1.6)
Virgin Islands	—	—	53 (1.7)	—	—	47 (1.7)

Standard errors of the estimated percentages appear in parentheses.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

NOTE: Percentages may not add to 100 due to rounding.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.33: State Percentages of Students by Gender, Grade 8

State percentages of students by gender for grade 8 public schools: 1990–2000

	Male				Female			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	51 (1.1)	52 (0.6)	52 (0.9)	50 (0.5)	49 (1.1)	48 (0.6)	48 (0.9)	50 (0.5)
Alabama	50 (1.0)	52 (1.0)	49 (0.9)	50 (1.0)	50 (1.0)	48 (1.0)	51 (0.9)	50 (1.0)
Arizona †	50 (0.9)	51 (1.0)	48 (1.0)	50 (1.0)	50 (0.9)	49 (1.0)	52 (1.0)	50 (1.0)
Arkansas	50 (1.1)	51 (1.0)	50 (1.3)	50 (1.1)	50 (1.1)	49 (1.0)	50 (1.3)	50 (1.1)
California †	51 (0.9)	49 (1.2)	49 (1.1)	51 (1.1)	49 (0.9)	51 (1.2)	51 (1.1)	49 (1.1)
Connecticut	48 (0.8)	50 (0.9)	51 (1.1)	52 (1.1)	52 (0.8)	50 (0.9)	49 (1.1)	48 (1.1)
Georgia	51 (0.8)	48 (1.0)	50 (0.9)	48 (1.1)	49 (0.8)	52 (1.0)	50 (0.9)	52 (1.1)
Hawaii	53 (1.0)	52 (1.2)	52 (1.0)	51 (1.1)	47 (1.0)	48 (1.2)	48 (1.0)	49 (1.1)
Idaho †	52 (1.2)	51 (1.0)	—	52 (1.2)	48 (1.2)	49 (1.0)	—	48 (1.2)
Illinois †	52 (1.1)	—	—	51 (1.3)	48 (1.1)	—	—	49 (1.3)
Indiana †	51 (0.9)	51 (1.0)	51 (1.2)	48 (1.3)	49 (0.9)	49 (1.0)	49 (1.2)	52 (1.3)
Kansas †	—	—	—	49 (1.3)	—	—	—	51 (1.3)
Kentucky	51 (1.1)	50 (1.0)	51 (1.0)	49 (1.1)	49 (1.1)	50 (1.0)	49 (1.0)	51 (1.1)
Louisiana	50 (1.1)	47 (1.0)	48 (1.0)	46 (1.0)	50 (1.1)	53 (1.0)	52 (1.0)	54 (1.0)
Maine †	—	51 (1.0)	50 (1.1)	50 (1.2)	—	49 (1.0)	50 (1.1)	50 (1.2)
Maryland	51 (0.8)	50 (1.0)	50 (1.0)	50 (1.0)	49 (0.8)	50 (1.0)	50 (1.0)	50 (1.0)
Massachusetts	—	50 (0.8)	52 (1.4)	51 (1.1)	—	50 (0.8)	48 (1.4)	49 (1.1)
Michigan †	52 (1.0)	48 (1.0)	50 (1.1)	49 (1.2)	48 (1.0)	52 (1.0)	50 (1.1)	51 (1.2)
Minnesota †	50 (1.0)	49 (1.0)	51 (1.0)	50 (1.5)	50 (1.0)	51 (1.0)	49 (1.0)	50 (1.5)
Mississippi	—	48 (1.0)	48 (1.1)	51 (1.0)	—	52 (1.0)	52 (1.1)	49 (1.0)
Missouri	—	52 (1.0)	49 (1.0)	51 (1.3)	—	48 (1.0)	51 (1.0)	49 (1.3)
Montana †	51 (1.4)	—	49 (0.9)	52 (1.1)	49 (1.4)	—	51 (0.9)	48 (1.1)
Nebraska	52 (1.2)	53 (1.2)	51 (1.0)	53 (1.1)	48 (1.2)	47 (1.2)	49 (1.0)	47 (1.1)
Nevada	—	—	—	49 (0.9)	—	—	—	51 (0.9)
New Mexico	50 (1.2)	50 (1.0)	48 (1.1)	50 (1.2)	50 (1.2)	50 (1.0)	52 (1.1)	50 (1.2)
New York †	49 (1.3)	49 (1.2)	50 (1.1)	46 (1.2)	51 (1.3)	51 (1.2)	50 (1.1)	54 (1.2)
North Carolina	51 (1.0)	50 (0.9)	48 (1.2)	49 (1.2)	49 (1.0)	50 (0.9)	52 (1.2)	51 (1.2)
North Dakota	51 (1.6)	51 (1.1)	51 (1.2)	52 (1.1)	49 (1.6)	49 (1.1)	49 (1.2)	48 (1.1)
Ohio	53 (0.9)	50 (1.1)	—	50 (1.2)	47 (0.9)	50 (1.1)	—	50 (1.2)
Oklahoma	50 (0.8)	50 (1.0)	—	51 (1.0)	50 (0.8)	50 (1.0)	—	49 (1.0)
Oregon †	52 (0.9)	—	51 (1.0)	52 (1.2)	48 (0.9)	—	49 (1.0)	48 (1.2)
Rhode Island	50 (0.9)	50 (0.8)	49 (1.2)	51 (1.0)	50 (0.9)	50 (0.8)	51 (1.2)	49 (1.0)
South Carolina	—	50 (0.9)	47 (1.1)	49 (1.1)	—	50 (0.9)	53 (1.1)	51 (1.1)
Tennessee	—	50 (1.1)	50 (1.1)	49 (0.9)	—	50 (1.1)	50 (1.1)	51 (0.9)
Texas	50 (1.0)	49 (0.9)	47 (1.3)	51 (1.2)	50 (1.0)	51 (0.9)	53 (1.3)	49 (1.2)
Utah	—	52 (1.2)	50 (0.9)	49 (1.0)	—	48 (1.2)	50 (0.9)	51 (1.0)
Vermont †	—	—	51 (1.4)	51 (1.3)	—	—	49 (1.4)	49 (1.3)
Virginia	49 (0.9)	50 (0.7)	50 (1.2)	49 (1.1)	51 (0.9)	50 (0.7)	50 (1.2)	51 (1.1)
West Virginia	52 (1.1)	49 (1.0)	50 (1.1)	51 (1.2)	48 (1.1)	51 (1.0)	50 (1.1)	49 (1.2)
Wyoming	51 (0.8)	50 (1.0)	51 (0.8)	50 (1.2)	49 (0.8)	50 (1.0)	49 (0.8)	50 (1.2)
Other Jurisdictions								
American Samoa	—	—	—	46 (2.1)	—	—	—	54 (2.1)
District of Columbia	47 (0.9)	49 (1.4)	47 (1.5)	47 (1.2)	53 (0.9)	51 (1.4)	53 (1.5)	53 (1.2)
DDESS	—	—	52 (2.1)	50 (1.9)	—	—	48 (2.1)	50 (1.9)
DoDDS	—	—	52 (1.2)	50 (1.2)	—	—	48 (1.2)	50 (1.2)
Guam	51 (1.2)	52 (1.2)	53 (1.4)	47 (1.4)	49 (1.2)	48 (1.2)	47 (1.4)	53 (1.4)

Standard errors of the estimated percentages appear in parentheses.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

NOTE: Percentages may not add to 100 due to rounding.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.34: Data for Figure 3.18 State Scale Score Results by Race/Ethnicity, Grade 4

State average mathematics scale scores by race/ethnicity for grade 4 public schools: 1992–2000

	White			Black			Hispanic		
	1992	1996	2000	1992	1996	2000	1992	1996	2000
Nation	227 (1.0) *	231 (1.1)	235 (1.1)	192 (1.4) *	200 (2.4)	205 (1.7)	201 (1.5) *	205 (2.2)	211 (1.6)
Alabama	219 (1.5) ‡	223 (1.3) ‡	229 (1.4)	189 (1.1) ‡	194 (1.5) ‡	205 (1.3)	193 (3.9)	196 (3.1)	201 (3.3)
Arizona	226 (0.8) ‡	228 (1.6)	231 (1.3)	199 (3.6)	200 (3.7)	208 (3.5)	203 (1.2)	203 (2.1)	204 (1.9)
Arkansas	218 (0.9) ‡	224 (1.4)	225 (1.1)	189 (1.7) ‡	193 (2.2)	198 (1.7)	195 (2.9) ‡	203 (2.6)	205 (3.2)
California †	221 (1.7) ‡	223 (1.7)	229 (1.6)	184 (3.3) *	188 (3.0)	193 (2.8)!	192 (1.6) ‡	197 (2.5)	201 (2.3)
Connecticut	235 (0.9) ‡	241 (1.0)	243 (1.0)	195 (2.6) ‡	206 (2.8)	209 (2.3)	206 (2.7) ‡	207 (3.1)	214 (2.3)
Georgia	229 (1.2)	225 (1.6) ‡	232 (1.5)	197 (1.4) ‡	201 (1.5) *	206 (1.4)	198 (2.6) ‡	202 (3.4)	208 (2.8)
Hawaii	219 (1.7)	225 (1.8)	225 (2.0)	200 (3.2)	204 (3.9)	204 (2.7)	199 (2.6)	201 (2.5)	205 (1.9)
Idaho †	224 (0.9) ‡	—	230 (1.2)	****(****)	—	****(****)	204 (2.4) ‡	—	213 (2.1)
Illinois †	—	—	237 (2.5)	—	—	205 (2.0)	—	—	213 (2.0)
Indiana †	225 (0.9) ‡	233 (1.0) ‡	238 (1.2)	196 (2.3) ‡	206 (2.5) ‡	216 (2.5)	210 (1.9) ‡	215 (2.6)	220 (3.7)
Iowa †	232 (0.9) ‡	231 (1.0) ‡	235 (1.1)	194 (3.8) !	205 (3.3) !	****(****)	219 (2.5)	212 (2.9)	216 (4.0)
Kansas †	—	—	238 (1.5)	—	—	207 (5.3)!	—	—	215 (2.6)
Kentucky	217 (1.0) ‡	223 (1.1)	225 (1.2)	201 (2.5)	203 (2.3)	200 (1.9)	199 (2.9)	201 (4.2)	207 (4.6)
Louisiana	218 (1.5) ‡	222 (1.3) ‡	230 (1.3)	187 (1.7) ‡	196 (1.5) ‡	204 (1.9)	200 (4.3)	193 (3.2) ‡	210 (3.2)
Maine †	233 (1.0)	233 (1.1)	231 (1.0)	****(****)	****(****)	****(****)	219 (3.5)	218 (2.8)	****(****)
Maryland	229 (1.1) ‡	235 (1.6)	237 (1.4)	195 (1.8) ‡	199 (1.4)	204 (1.9)	207 (3.4)	206 (3.8)	210 (3.1)
Massachusetts	232 (1.0) ‡	233 (1.3) ‡	241 (1.0)	194 (3.0) ‡	208 (3.3)	212 (2.9)	207 (2.6)	211 (2.4)	210 (2.7)
Michigan †	228 (1.5) ‡	233 (1.2) ‡	239 (1.3)	186 (3.8) ‡	199 (2.8)	201 (2.6)	206 (2.6)	205 (2.6)	210 (3.9)
Minnesota †	232 (0.8) ‡	236 (1.1) *	240 (1.1)	194 (3.0) ‡	193 (4.5) ‡	211 (4.3)	208 (2.9)	219 (3.3)	214 (4.1)
Mississippi	219 (1.2) ‡	222 (1.2)	224 (1.5)	190 (1.3) ‡	197 (1.3)	199 (1.0)	186 (2.8) ‡	196 (3.0)	201 (2.6)
Missouri	228 (1.0) ‡	230 (0.9) ‡	235 (1.0)	196 (2.2)	201 (2.2)	202 (3.0)	208 (3.1)	214 (3.2)	213 (4.2)
Montana †	—	231 (1.2)	234 (1.8)	—	****(****)	****(****)	—	218 (2.5)	219 (3.9)
Nebraska	229 (1.2)	232 (1.1)	232 (1.3)	191 (2.4)	198 (3.5)	199 (3.8)!	210 (3.1)	209 (3.2)	206 (3.8)
Nevada	—	225 (1.2)	228 (1.0)	—	196 (3.4)	206 (2.5)	—	206 (2.1)	210 (2.1)
New Mexico	225 (1.4)	227 (1.2)	227 (1.8)	203 (3.8)	205 (8.2)	****(****)	203 (1.4)	205 (1.6)	208 (1.8)
New York †	229 (1.3) ‡	234 (1.0) *	238 (1.5)	199 (2.7) ‡	204 (2.7) *	211 (2.2)	199 (2.3) ‡	205 (2.3) *	211 (1.7)
North Carolina	223 (1.1) ‡	234 (1.1) ‡	241 (1.1)	193 (1.3) ‡	205 (1.2) ‡	218 (1.3)	200 (4.1) ‡	206 (4.3) *	218 (3.6)
North Dakota	230 (0.7) ‡	232 (1.0)	233 (0.9)	****(****)	****(****)	****(****)	215 (3.5)	222 (5.0)	214 (3.6)
Ohio †	223 (1.1) ‡	—	236 (1.4)	195 (2.9) ‡	—	208 (1.5)	208 (3.1) *	—	218 (3.1)
Oklahoma	225 (1.0) ‡	—	230 (1.0)	202 (2.5)	—	206 (5.3)	210 (2.4)	—	215 (2.1)
Oregon †	—	227 (1.4)	230 (1.6)	—	****(****)	****(****)	—	201 (2.4)	206 (2.6)
Rhode Island	222 (1.3) ‡	226 (1.3) ‡	234 (1.0)	191 (3.3)	194 (4.0)	201 (3.6)	190 (2.7)	201 (3.0)	198 (2.7)
South Carolina	226 (1.2) ‡	225 (1.4) ‡	233 (1.0)	195 (1.1) ‡	199 (1.3) *	204 (1.8)	200 (2.6)	199 (2.9) *	209 (3.8)
Tennessee	218 (1.1) ‡	226 (1.2)	227 (1.3)	193 (1.9)	198 (2.4)	199 (2.9)	193 (4.1)	208 (4.5)	207 (5.3)
Texas	229 (1.6) ‡	242 (1.4)	243 (1.3)	199 (1.9) ‡	212 (1.8) *	220 (2.5)	209 (1.9) ‡	216 (1.8) ‡	224 (1.6)
Utah	226 (0.9) ‡	230 (1.0)	232 (1.0)	****(****)	****(****)	****(****)	209 (2.1)	208 (2.9)	206 (2.5)
Vermont †	—	226 (1.2) ‡	233 (1.8)	—	****(****)	****(****)	—	214 (4.1)	****(****)
Virginia	229 (1.5) ‡	230 (1.4) ‡	240 (1.2)	198 (1.5) ‡	204 (1.5) ‡	212 (1.5)	212 (3.3)	214 (3.3)	219 (2.4)
West Virginia	216 (1.0) ‡	225 (1.1)	227 (1.1)	204 (4.3)	205 (4.1)	207 (3.4)	204 (3.0)	210 (3.2)	213 (4.1)
Wyoming	228 (0.9)	226 (1.1) ‡	232 (1.5)	****(****)	****(****)	****(****)	215 (1.7)	208 (3.3)	215 (2.2)
Other Jurisdictions									
American Samoa	—	—	****(****)	—	—	****(****)	—	—	150 (6.1)
District of Columbia	242 (4.2)	240 (3.9)	241 (4.7)	190 (0.7)	184 (1.1) ‡	191 (0.9)	182 (2.1)	182 (4.5)	189 (3.5)
DDESS	—	234 (1.2)	237 (1.7)	—	211 (2.5)	218 (2.6)	—	215 (3.0)	220 (2.5)
DoDDS	—	230 (1.2) ‡	235 (1.2)	—	210 (1.4)	214 (1.9)	—	214 (1.9)	218 (1.8)
Guam	206 (2.0)	198 (5.2)	****(****)	185 (5.3)	****(****)	****(****)	181 (2.1)	176 (3.8)	168 (7.6)
Virgin Islands	—	—	****(****)	—	—	185 (3.3)	—	—	176 (3.9)

See footnotes at end of table. ▶

Table B.34: Data for Figure 3.18 State Scale Score Results by Race/Ethnicity, Grade 4 (continued)

State average mathematics scale scores by race/ethnicity for grade 4 public schools: 1992–2000

	Asian			American Indian		
	1992	1996	2000	1992	1996	2000
Nation	233 (2.5)	231 (4.6)	~	210 (3.5)	216 (2.5)	215 (2.3)
Alabama	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Arizona	****(****)	****(****)	234 (4.3)	193 (3.4)	201 (2.9) !	196 (2.4)
Arkansas	****(****)	****(****)	****(****)	211 (3.7)	210 (3.9)	213 (4.7)
California †	224 (2.7)	218 (5.0)	227 (4.2)	208 (6.6)	****(****)	****(****)
Connecticut	****(****)	****(****)	246 (3.6)	****(****)	****(****)	****(****)
Georgia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Hawaii	216 (1.6)	216 (2.0)	216 (1.5)	****(****)	213 (5.6)	****(****)
Idaho †	****(****)	—	****(****)	213 (2.9)	—	****(****)
Illinois †	—	—	****(****)	—	—	****(****)
Indiana †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Iowa †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kansas †	—	—	****(****)	—	—	****(****)
Kentucky	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Louisiana	****(****)	****(****)	****(****)	****(****)	205 (2.5) !	****(****)
Maine †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maryland	235 (3.7)	247 (5.0)	240 (4.1)	****(****)	****(****)	****(****)
Massachusetts	229 (7.7)	237 (5.4)	239 (5.3)	****(****)	****(****)	****(****)
Michigan †	****(****)	****(****)	****(****)	212 (3.8)	216 (4.0)	****(****)
Minnesota †	****(****)	220 (4.4) *	235 (3.6)	****(****)	218 (5.1)	****(****)
Mississippi	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Missouri	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Montana †	—	****(****)	****(****)	—	209 (2.6)	212 (4.1)
Nebraska	****(****)	****(****)	****(****)	****(****)	215 (4.9)	****(****)
Nevada	—	225 (3.5)	224 (3.6)	—	213 (3.1) !	212 (4.2)
New Mexico	****(****)	****(****)	****(****)	208 (2.9) !	197 (4.6) !	197 (3.3)
New York †	236 (4.2) !	233 (2.8) ‡	247 (3.7)!	****(****)	****(****)	****(****)
North Carolina	****(****)	****(****)	****(****)	204 (4.7) ! ‡	****(****)	229 (3.5)!
North Dakota	****(****)	****(****)	****(****)	213 (3.1) !	209 (7.3) !	208 (4.9)
Ohio †	****(****)	—	****(****)	218 (4.1)	—	****(****)
Oklahoma	****(****)	—	****(****)	213 (1.9) ‡	—	222 (1.6)
Oregon †	—	229 (3.7)	240 (4.0)	—	210 (3.2)	****(****)
Rhode Island	193 (4.2) *	215 (5.3)	221 (5.2)	****(****)	****(****)	****(****)
South Carolina	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Tennessee	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Texas	235 (4.3) *	****(****)	247 (3.4)	****(****)	****(****)	****(****)
Utah	****(****)	****(****)	222 (4.5)	****(****)	214 (4.2)	****(****)
Vermont †	—	****(****)	****(****)	—	****(****)	****(****)
Virginia	237 (4.5)	240 (4.5)	243 (7.5)!	****(****)	****(****)	****(****)
West Virginia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Wyoming	****(****)	****(****)	****(****)	213 (3.8) !	211 (4.7)	224 (5.0)
Other Jurisdictions						
American Samoa	—	—	157 (4.4)	—	—	****(****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DDESS	—	****(****)	230 (5.8)	—	****(****)	****(****)
DoDDS	—	228 (2.3)	233 (1.6)	—	218 (3.6)	219 (4.9)
Guam	195 (1.1) ‡	192 (1.5)	188 (2.5)	****(****)	****(****)	****(****)
Virgin Islands	—	—	****(****)	—	—	****(****)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

****(****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

~ Special analyses raised concerns about the accuracy and precision of national grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

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.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.35: Data for Figure 3.19 State Scale Score Results by Race/Ethnicity, Grade 8

State average mathematics scale scores by race/ethnicity for grade 8 public schools: 1990–2000

	White				Black				Hispanic			
	1990	1992	1996	2000	1990	1992	1996	2000	1990	1992	1996	2000
Nation	270 (1.5) *	277 (1.1) *	281 (1.4)	285 (0.9)	237 (2.8) *	237 (1.3) *	242 (2.1)	246 (1.5)	242 (2.8) *	245 (1.3) *	250 (2.1)	252 (1.6)
Alabama	263 (1.0) ‡	265 (1.4) ‡	271 (2.4)	275 (1.6)	234 (1.6)	232 (2.2) *	233 (1.8)	239 (2.0)	227 (3.7)	221 (5.3) ‡	232 (5.0)	239 (5.1)
Arizona †	271 (1.1) ‡	276 (1.1) ‡	278 (1.2) ‡	284 (1.4)	245 (3.2)	252 (3.3)	254 (3.5)	250 (4.4)	242 (1.9) ‡	248 (2.7)	251 (2.4)	252 (2.2)
Arkansas	265 (0.9) ‡	265 (1.0) ‡	270 (1.3)	272 (1.3)	232 (1.2)	231 (1.8)	235 (3.0)	235 (1.9)	230 (4.0)	229 (4.1)	****(****)	234 (5.9)
California †	271 (1.5) ‡	277 (1.9)	279 (1.5)	278 (2.2)	233 (3.4)	234 (3.6)	239 (3.9)	242 (2.8)	236 (1.6) ‡	241 (2.0)	246 (1.8)	246 (2.7)
Connecticut	278 (0.9) ‡	284 (0.9) ‡	288 (1.1) ‡	294 (1.2)	241 (2.4) *	243 (2.9)	245 (2.3)	248 (2.1)	237 (2.7) ‡	242 (2.4)	252 (1.8)	252 (3.4)
Georgia	271 (1.5) ‡	271 (1.3) ‡	276 (1.9)	280 (1.5)	240 (1.5) ‡	242 (1.3)	241 (1.5) *	246 (1.5)	231 (3.3) ‡	234 (5.5)	246 (4.9)	247 (2.6)
Hawaii	263 (2.0) ‡	266 (1.6) ‡	273 (2.3)	275 (3.3)	****(****)	****(****)	****(****)	256 (5.6)	231 (2.5) ‡	239 (2.2)	245 (3.6)	248 (4.4)
Idaho †	274 (0.8) ‡	277 (0.8) ‡	—	282 (1.1)	****(****)	****(****)	—	****(****)	249 (2.8)	254 (2.2)	—	250 (4.3)
Illinois †	271 (1.4) ‡	—	—	288 (1.6)	233 (4.2) ‡	—	—	255 (2.9)	237 (3.9) ‡	—	—	261 (3.9)
Indiana †	271 (1.0) ‡	274 (1.2) ‡	281 (1.3) ‡	287 (1.2)	243 (2.9) ‡	244 (2.5) ‡	247 (2.1) ‡	260 (2.8)!	245 (3.6) ‡	250 (4.5) *	254 (4.8)	264 (4.3)
Kansas †	—	—	—	288 (1.4)	—	—	—	257 (5.5)	—	—	—	261 (3.7)
Kentucky	260 (1.2) ‡	265 (1.1) ‡	269 (1.1) ‡	275 (1.3)	240 (2.4) ‡	242 (2.6) ‡	248 (3.3)	253 (2.8)	229 (3.5)	233 (4.5)	****(****)	****(****)
Louisiana	259 (1.4) ‡	263 (1.7) ‡	266 (1.3) ‡	276 (1.3)	230 (1.3) ‡	233 (2.1) *	235 (1.8)	240 (1.8)	226 (4.2)	229 (3.5)	242 (3.5)	237 (5.2)
Maine †	—	280 (0.9) ‡	285 (1.3)	285 (1.2)	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Maryland	273 (1.5) ‡	279 (1.5) ‡	285 (1.9) *	290 (1.3)	238 (1.9) ‡	240 (2.0) ‡	243 (1.8) *	249 (2.0)	237 (2.9) ‡	241 (3.2) ‡	248 (4.2) *	265 (4.3)
Massachusetts	—	278 (1.1) ‡	283 (1.5) ‡	289 (1.0)	—	244 (4.9)	250 (4.2)	254 (3.7)	—	241 (3.4) ‡	242 (4.1) ‡	259 (3.8)
Michigan †	271 (1.0) ‡	277 (1.5) ‡	285 (1.6)	287 (1.4)	232 (1.5) ‡	233 (1.8) ‡	246 (3.7)	242 (2.6)	243 (3.2) ‡	249 (3.9)	249 (4.4)	259 (3.9)
Minnesota †	278 (0.9) ‡	284 (0.9) ‡	287 (1.2) *	291 (1.1)	239 (4.7) !	****(****)	248 (5.0)	****(****)	239 (5.0) ‡	254 (3.7)	266 (5.9)	257 (5.1)
Mississippi	—	263 (1.4) ‡	266 (1.2)	268 (1.2)	—	231 (1.4) ‡	236 (1.4)	238 (1.5)	—	224 (3.1)	225 (3.3)	227 (4.7)
Missouri	—	276 (1.0) ‡	278 (1.3)	280 (1.2)	—	242 (2.9)	243 (3.8)	244 (4.2)	—	251 (4.1)	259 (4.3)	251 (5.5)
Montana †	283 (0.9) ‡	—	287 (1.2) *	290 (1.1)	****(****)	—	****(****)	****(****)	263 (3.8)	—	256 (5.6) *	276 (4.4)
Nebraska	279 (1.1) ‡	282 (1.1)	286 (1.0)	285 (1.1)	235 (5.2)	237 (4.7)	256 (3.3)	246 (4.5)	253 (4.1)	255 (3.1)	253 (4.2)	255 (3.8)
Nevada	—	—	—	278 (0.9)	—	—	—	251 (2.1)	—	—	—	251 (2.0)
New Mexico	272 (1.2) ‡	273 (1.2) ‡	280 (1.0)	278 (1.4)	****(****)	****(****)	****(****)	****(****)	247 (1.1)	249 (1.0)	252 (1.5)	251 (2.0)
New York †	274 (1.1) ‡	280 (1.1) ‡	283 (1.3) ‡	289 (1.3)	236 (3.1) ‡	233 (4.4) ‡	246 (3.0)	257 (4.3)	237 (2.9) ‡	244 (4.7)	245 (2.7)	259 (5.0)
North Carolina	262 (1.3) ‡	267 (1.0) ‡	278 (1.3) ‡	291 (1.1)	233 (1.3) ‡	239 (1.7) ‡	247 (1.6) ‡	256 (1.4)	218 (3.3) ‡	239 (4.7) ‡	253 (3.5) ‡	269 (3.6)
North Dakota	284 (1.0)	284 (1.1)	286 (0.9)	286 (1.2)	****(****)	****(****)	****(****)	****(****)	248 (6.0)	****(****)	264 (5.0)	262 (6.7)
Ohio	269 (1.0) ‡	275 (1.4) ‡	—	287 (1.2)	233 (1.7) ‡	235 (2.3) ‡	—	255 (3.7)	237 (4.4) ‡	246 (4.7) ‡	—	270 (4.2)
Oklahoma	269 (1.3) ‡	273 (1.0) ‡	—	277 (1.2)	237 (2.2)	239 (3.0)	—	248 (4.7)	246 (4.3)	253 (3.2)	—	254 (5.9)
Oregon †	274 (0.9) ‡	—	279 (1.3)	284 (1.7)	****(****)	—	****(****)	260 (6.9)!	254 (2.8)	—	259 (3.7)	259 (5.4)
Rhode Island	266 (0.7) ‡	271 (0.8) ‡	275 (0.8) ‡	281 (1.1)	227 (3.1) ‡	241 (2.9)	244 (3.9)	245 (3.2)	230 (2.4) ‡	233 (2.7) ‡	239 (4.3)	246 (2.8)
South Carolina	—	274 (1.1) ‡	274 (1.6)	279 (1.5)	—	242 (1.0) ‡	246 (1.5)	249 (1.7)	—	234 (2.6) ‡	235 (6.0)	250 (3.9)
Tennessee	—	266 (1.1) ‡	271 (1.5)	271 (1.4)	—	235 (2.4)	234 (2.9)	237 (3.0)	—	229 (4.8) *	246 (5.2)	246 (6.1)
Texas	273 (1.3) ‡	279 (1.5) ‡	285 (1.4)	288 (1.4)	236 (1.8) ‡	244 (2.0)	249 (2.6)	252 (3.3)	245 (1.9) ‡	249 (1.2) ‡	256 (1.8) ‡	266 (1.9)
Utah	—	276 (0.8)	279 (0.9)	279 (1.1)	—	****(****)	****(****)	****(****)	—	254 (2.2)	256 (2.9)	249 (3.1)
Vermont †	—	—	281 (0.9) *	284 (1.1)	—	—	****(****)	****(****)	—	—	****(****)	****(****)
Virginia	272 (1.6) ‡	275 (1.1) ‡	279 (1.3) ‡	285 (1.4)	242 (1.6) ‡	245 (1.8) ‡	244 (2.6) *	252 (1.9)	243 (4.1) ‡	254 (4.0) *	258 (4.8)	267 (3.5)
West Virginia	258 (0.9) ‡	261 (1.0) ‡	266 (1.1) ‡	272 (1.0)	235 (4.1) ‡	244 (3.7)	246 (3.8) !	251 (4.8)	232 (4.2) ‡	231 (4.9) ‡	244 (5.6)	256 (4.7)
Wyoming	275 (0.7) ‡	278 (0.8)	278 (0.8)	280 (1.1)	****(****)	****(****)	****(****)	****(****)	255 (2.2)	258 (2.1)	256 (3.2)	255 (3.7)
Other Jurisdictions												
American Samoa	—	—	—	****(****)	—	—	—	****(****)	—	—	—	172 (5.9)
District of Columbia	****(****)	****(****)	303 (8.6)	****(****)	231 (0.7)	234 (0.9)	231 (1.4)	232 (2.3)	217 (3.1)	227 (3.7)	221 (3.4)	224 (7.6)
DDESS	—	—	285 (4.0)	288 (2.1)	—	—	252 (4.5) *	267 (2.9)	—	—	264 (6.0)	269 (5.9)
DoDDS	—	—	284 (1.4)	287 (1.2)	—	—	255 (2.0)	261 (2.1)	—	—	268 (2.6)	271 (2.3)
Guam	257 (3.5)	267 (5.5)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	210 (1.9)	218 (2.9)	218 (4.9)	216 (4.4)

See footnotes at end of table. ▶

Table B.35: Data for Figure 3.19 State Scale Score Results by Race/Ethnicity, Grade 8 (continued)

State average mathematics scale scores by race/ethnicity for grade 8 public schools: 1990–2000

	Asian				American Indian			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	279 (5.4) !	287 (6.5)	~	288 (3.7)	244 (9.0) !	255 (2.9)	263 (3.3) !	261 (5.6)
Alabama	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Arizona †	****(****)	****(****)	****(****)	282 (4.5)	235 (2.5) !	252 (2.7)	254 (8.6) !	****(****)
Arkansas	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
California †	271 (2.8) ‡	277 (2.8)	279 (4.0)	282 (4.3)	****(****)	****(****)	****(****)	****(****)
Connecticut	****(****)	287 (7.9)	281 (6.2)	287 (4.2)	****(****)	****(****)	****(****)	****(****)
Georgia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Hawaii	252 (1.0) ‡	259 (1.1) *	264 (1.2)	263 (1.3)	****(****)	****(****)	****(****)	****(****)
Idaho †	****(****)	****(****)	—	****(****)	252 (4.9)	260 (4.1)	—	****(****)
Illinois †	280 (3.9)	—	—	****(****)	****(****)	—	—	****(****)
Indiana †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kansas †	—	—	—	****(****)	—	—	—	****(****)
Kentucky	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Louisiana	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maine †	—	****(****)	****(****)	****(****)	—	262 (4.4)	****(****)	****(****)
Maryland	291 (4.3) ‡	287 (4.6) ‡	306 (5.4) !	306 (3.7)	****(****)	****(****)	****(****)	****(****)
Massachusetts	—	****(****)	277 (6.4) *	295 (4.6)	—	****(****)	****(****)	****(****)
Michigan †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Minnesota †	270 (5.6)	****(****)	274 (5.1) !	****(****)	****(****)	****(****)	****(****)	****(****)
Mississippi	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Missouri	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Montana †	****(****)	—	****(****)	****(****)	257 (3.3)	—	265 (3.6)	253 (5.2)!
Nebraska	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Nevada	—	—	—	278 (2.8)	—	—	—	263 (4.4)
New Mexico	****(****)	****(****)	****(****)	****(****)	238 (1.4)	250 (2.9)	252 (2.6)	243 (4.9)!
New York †	278 (6.9) !	281 (6.7)	283 (5.9)	288 (4.1)	****(****)	****(****)	****(****)	****(****)
North Carolina	****(****)	****(****)	****(****)	****(****)	233 (4.3) !	****(****)	****(****)	****(****)
North Dakota	****(****)	****(****)	****(****)	****(****)	242 (2.6) ! ‡	262 (4.3) !	252 (3.8) !	258 (3.8)
Ohio	****(****)	****(****)	—	****(****)	****(****)	****(****)	—	****(****)
Oklahoma	****(****)	****(****)	—	****(****)	255 (2.5) ‡	262 (3.2)	—	264 (2.7)
Oregon †	277 (4.3)	—	285 (4.3)	281 (7.1)	253 (3.8)	—	257 (4.5)	****(****)
Rhode Island	****(****)	264 (3.4)	267 (4.7)	271 (4.9)	****(****)	****(****)	****(****)	****(****)
South Carolina	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Tennessee	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Texas	****(****)	301 (4.8)	299 (5.6) !	292 (4.3)	****(****)	****(****)	****(****)	****(****)
Utah	—	****(****)	274 (3.6)	281 (5.2)	—	****(****)	****(****)	****(****)
Vermont †	—	—	****(****)	****(****)	—	—	****(****)	****(****)
Virginia	295 (4.2)	281 (3.9) ‡	284 (4.6) *	300 (4.8)	****(****)	****(****)	****(****)	****(****)
West Virginia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Wyoming	****(****)	****(****)	****(****)	****(****)	257 (3.4)	251 (2.3) !	250 (5.4)	253 (5.6)!
Other Jurisdictions								
American Samoa	—	—	—	205 (5.3)	—	—	—	****(****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DDESS	—	—	****(****)	****(****)	—	—	****(****)	****(****)
DoDDS	—	—	280 (3.4)	283 (2.2)	—	—	****(****)	****(****)
Guam	235 (0.9)	237 (1.1)	242 (2.1)	236 (1.8)	****(****)	****(****)	****(****)	****(****)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

~ Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.36: Data for Figure 3.20 State *Proficient* Level Achievement Results by Race/Ethnicity, Grade 4

State percentages of students at or above the *Proficient* level in mathematics by race/ethnicity for grade 4 public schools: 1992–2000

	White			Black			Hispanic		
	1992	1996	2000	1992	1996	2000	1992	1996	2000
Nation	22 (1.5) *	26 (1.3) *	33 (1.6)	2 (0.7) *	5 (1.5)	5 (0.9)	5 (1.0) *	7 (1.0)	10 (1.5)
Alabama	15 (1.6) ‡	16 (1.6) *	23 (1.9)	1 (0.5) ‡	2 (0.6)	4 (0.7)	2 (1.4)	5 (1.9)	5 (2.0)
Arizona	20 (1.2) ‡	22 (2.1)	26 (2.1)	3 (2.6)	4 (3.3)	5 (2.5)	4 (0.8)	6 (1.3)	6 (1.3)
Arkansas	13 (1.0) ‡	18 (1.8)	18 (1.5)	1 (0.6)	2 (0.9)	2 (1.1)	1 (1.3)	3 (1.6)	6 (1.8)
California †	19 (1.8)	17 (2.4)	25 (2.5)	2 (1.1)	2 (1.2)	2 (1.3) !	4 (0.8)	4 (1.3)	5 (1.3)
Connecticut	31 (1.7) ‡	38 (1.8)	41 (1.9)	2 (1.3)	5 (1.7)	6 (1.7)	8 (1.9)	8 (2.0)	9 (1.4)
Georgia	24 (1.6)	20 (1.9) ‡	29 (2.1)	3 (0.8) ‡	2 (0.6) ‡	6 (1.0)	4 (1.6)	5 (1.9)	8 (2.7)
Hawaii	20 (2.2)	22 (2.3)	19 (2.0)	5 (2.3)	7 (2.5)	3 (1.8)	6 (1.3)	7 (1.6)	7 (1.7)
Idaho †	18 (1.1) ‡	—	24 (1.7)	****(****)	—	****(****)	5 (1.4)	—	8 (2.0)
Illinois †	—	—	32 (3.4)	—	—	5 (1.5)	—	—	8 (2.3)
Indiana †	18 (1.3) ‡	27 (1.7) *	34 (2.0)	2 (0.7) ‡	4 (1.4) ‡	14 (2.9)	3 (1.6) ‡	9 (2.7)	16 (4.6)
Iowa †	28 (1.3)	24 (1.5) *	30 (1.9)	2 (2.0) !	4 (2.5) !	****(****)	14 (3.3)	9 (2.5)	13 (4.1)
Kansas †	—	—	36 (2.5)	—	—	7 (3.7) !	—	—	11 (3.6)
Kentucky	14 (1.3) ‡	17 (1.3)	20 (1.4)	4 (2.0)	4 (1.4)	2 (0.8)	4 (2.6)	7 (2.4)	9 (5.1)
Louisiana	13 (1.4) ‡	13 (1.6) ‡	23 (2.3)	2 (0.5) ‡	2 (0.8) *	4 (0.8)	5 (1.9)	3 (1.9)	7 (2.9)
Maine †	28 (1.7)	29 (1.5)	25 (1.4)	****(****)	****(****)	****(****)	14 (5.0)	9 (4.5)	****(****)
Maryland	26 (1.6) ‡	32 (2.5)	36 (2.4)	3 (0.7)	4 (0.9)	5 (0.9)	10 (3.2)	12 (3.1)	10 (2.6)
Massachusetts	27 (1.6) ‡	28 (2.1) ‡	39 (1.7)	2 (1.5)	6 (2.7)	7 (2.5)	9 (2.5)	10 (2.8)	10 (1.8)
Michigan †	23 (1.9) ‡	28 (1.6) ‡	37 (2.2)	2 (1.3)	3 (1.1)	4 (1.6)	8 (2.3)	7 (1.9)	15 (3.7)
Minnesota †	28 (1.4) ‡	33 (1.7)	39 (1.9)	4 (1.9)	3 (2.2)	11 (3.1)	11 (2.5)	17 (3.7)	13 (3.9)
Mississippi	13 (1.3)	14 (1.4)	16 (1.5)	1 (0.4)	2 (0.6)	2 (0.6)	2 (1.3)	3 (1.7)	6 (2.0)
Missouri	22 (1.5) ‡	24 (1.4)	28 (1.8)	1 (0.8)	2 (0.8)	4 (1.3)	10 (3.2)	10 (3.0)	11 (2.9)
Montana †	—	25 (1.9)	28 (2.8)	—	****(****)	****(****)	—	13 (3.4)	12 (4.7)
Nebraska	24 (1.7)	27 (1.5)	29 (2.0)	4 (2.3)	5 (1.9)	6 (3.0)!	8 (3.4)	13 (2.6)	7 (3.4)
Nevada	—	18 (1.5)	23 (1.5)	—	2 (1.3)	5 (1.5)	—	7 (1.2)	8 (1.5)
New Mexico	19 (2.0)	23 (1.8)	22 (2.5)	3 (2.8)	3 (1.9)	****(****)	5 (1.2)	6 (1.0)	6 (1.0)
New York †	23 (1.9) ‡	27 (1.7)	34 (2.7)	4 (1.4)	5 (1.6)	5 (1.8)	5 (1.2)	8 (1.7)	7 (1.3)
North Carolina	18 (1.2) ‡	29 (1.7) ‡	38 (2.0)	2 (0.6) ‡	4 (0.7) ‡	9 (1.2)	7 (2.8)	10 (3.6)	13 (3.0)
North Dakota	23 (1.2)	26 (1.4)	27 (1.5)	****(****)	****(****)	****(****)	7 (3.0)	15 (6.2)	12 (4.0)
Ohio †	18 (1.4) ‡	—	32 (2.4)	3 (1.0)	—	3 (1.6)	7 (1.9)	—	12 (3.6)
Oklahoma	17 (1.4)	—	20 (1.5)	3 (1.3)	—	3 (1.1)	6 (2.8)	—	9 (2.0)
Oregon †	—	23 (1.5)	26 (1.9)	—	****(****)	****(****)	—	6 (1.6)	6 (1.9)
Rhode Island	17 (1.3) ‡	20 (1.4) ‡	30 (1.7)	2 (1.6)	3 (1.7)	4 (2.4)	2 (0.8) *	7 (2.0)	5 (1.3)
South Carolina	21 (1.7) ‡	19 (2.1) ‡	28 (1.6)	2 (0.5) *	2 (0.7)	4 (0.8)	6 (2.0)	5 (1.7)	12 (3.5)
Tennessee	13 (1.2) ‡	21 (1.9)	23 (1.8)	1 (0.6)	3 (1.0)	4 (1.2)	3 (2.2)	12 (4.2)	9 (2.9)
Texas	23 (2.0) ‡	40 (2.2)	41 (2.8)	3 (1.1) ‡	7 (2.0)	12 (2.6)	7 (1.3) ‡	11 (1.4)	14 (1.7)
Utah	21 (1.1) ‡	26 (1.4)	28 (1.5)	****(****)	****(****)	****(****)	7 (2.2)	7 (2.4)	8 (1.8)
Vermont †	—	24 (1.2) *	31 (2.3)	—	****(****)	****(****)	—	14 (4.1)	****(****)
Virginia	25 (2.0) ‡	25 (1.9) ‡	35 (2.1)	3 (0.9)	4 (0.8)	6 (1.2)	9 (3.3)	9 (3.1)	11 (2.6)
West Virginia	13 (1.0) ‡	20 (1.3)	19 (1.6)	2 (1.7)	7 (3.4)	6 (3.2)	5 (2.8)	9 (2.9)	13 (3.4)
Wyoming	21 (1.3) ‡	21 (1.3) ‡	28 (1.7)	****(****)	****(****)	****(****)	8 (1.7)	7 (2.1)	12 (2.7)
Other Jurisdictions									
American Samoa	—	—	****(****)	—	—	****(****)	—	—	▲ (0.8)
District of Columbia	52 (6.5)	49 (3.2)	49 (7.1)	3 (0.4)	2 (0.4)	2 (0.5)	2 (1.3)	4 (2.2)	4 (1.2)
DDESS	—	29 (2.4)	34 (2.7)	—	8 (2.2)	12 (3.3)	—	13 (2.9)	14 (3.3)
DoDDS	—	26 (1.8)	31 (1.6)	—	6 (1.3)	7 (1.6)	—	11 (2.2)	13 (1.8)
Guam	11 (1.9)	11 (4.3)	****(****)	2 (2.4)	****(****)	****(****)	2 (0.9)	1 (0.8)	1 (0.9)
Virgin Islands	—	—	****(****)	—	—	1 (0.7)	—	—	1 (0.7)

See footnotes at end of table. ▶

Table B.36: Data for Figure 3.20 State *Proficient* Level Achievement Results by Race/Ethnicity, Grade 4 (continued)

State percentages of students at or above the *Proficient* level in mathematics by race/ethnicity for grade 4 public schools: 1992–2000

	Asian			American Indian		
	1992	1996	2000	1992	1996	2000
Nation	30 (4.9)	24 (6.0)	~	10 (3.8)	8 (2.5)	13 (3.0)
Alabama	****(****)	**** (****)	****(****)	****(****)	****(****)	****(****)
Arizona	****(****)	****(****)	28 (7.8)	3 (1.8)	4 (2.7) !	4 (1.6)
Arkansas	****(****)	****(****)	****(****)	9 (4.0)	6 (2.5)	9 (5.0)
California †	21 (3.7)	17 (3.0)	25 (4.9)	11 (6.9)	****(****)	****(****)
Connecticut	****(****)	****(****)	45 (6.7)	****(****)	****(****)	****(****)
Georgia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Hawaii	15 (1.3)	17 (1.6)	15 (1.3)	****(****)	13 (5.0)	****(****)
Idaho †	****(****)	—	****(****)	5 (3.0)	—	****(****)
Illinois †	—	—	****(****)	—	—	****(****)
Indiana †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Iowa †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kansas †	—	—	****(****)	—	—	****(****)
Kentucky	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Louisiana	****(****)	****(****)	****(****)	****(****)	3 (2.7) !	****(****)
Maine †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maryland	32 (5.5)	49 (6.2)	40 (6.1)	****(****)	****(****)	****(****)
Massachusetts	29 (8.1)	35 (8.2)	41 (5.1)	****(****)	****(****)	****(****)
Michigan †	****(****)	****(****)	****(****)	9 (3.7)	11 (4.5)	****(****)
Minnesota †	****(****)	19 (4.7)	32 (5.4)	****(****)	16 (5.4)	****(****)
Mississippi	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Missouri	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Montana †	—	****(****)	****(****)	—	10 (2.2)	8 (2.8)
Nebraska	****(****)	****(****)	****(****)	****(****)	14 (6.0)	****(****)
Nevada	—	21 (5.7)	21 (3.9)	—	8 (2.9) !	7 (3.0)
New Mexico	****(****)	****(****)	****(****)	4 (2.6) !	2 (1.8) !	5 (2.0)
New York †	37 (6.3) !	32 (4.1)	47 (7.5)!	****(****)	****(****)	****(****)
North Carolina	****(****)	****(****)	****(****)	8 (4.2) !	****(****)	21 (5.5)!
North Dakota	****(****)	****(****)	****(****)	8 (3.6) !	7 (3.1)!	7 (3.3)
Ohio †	****(****)	—	****(****)	11 (5.2)	—	****(****)
Oklahoma	****(****)	—	****(****)	7 (2.1)	—	12 (2.6)
Oregon †	—	23 (5.2)	36 (7.3)	—	9 (3.9)	****(****)
Rhode Island	1 (1.5) ‡	16 (4.6)	21 (5.8)	****(****)	****(****)	****(****)
South Carolina	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Tennessee	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Texas	34 (9.5)	****(****)	48 (6.7)	****(****)	****(****)	****(****)
Utah	****(****)	****(****)	16 (5.1)	****(****)	10 (4.9)	****(****)
Vermont †	—	****(****)	****(****)	—	****(****)	****(****)
Virginia	26 (6.8)	39 (6.1)	45 (9.9)!	****(****)	****(****)	****(****)
West Virginia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Wyoming	****(****)	****(****)	****(****)	9 (3.3) !	7 (3.2)	18 (7.6)
Other Jurisdictions						
American Samoa	—	—	▲ (0.2)	—	—	****(****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DDESS	—	****(****)	23 (7.5)	—	****(****)	****(****)
DoDDS	—	24 (3.2)	27 (3.2)	—	13 (4.2)	10 (4.5)
Guam	4 (0.8)	3 (0.7)	2 (0.7)	****(****)	****(****)	****(****)
Virgin Islands	—	—	****(****)	—	—	****(****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

~ Special analyses raised concerns about the accuracy and precision of national grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.37: State *Basic* Level Achievement Results by Race/Ethnicity, Grade 4

State percentages of students at or above *Basic* in mathematics by race/ethnicity for grade 4 public schools: 1992–2000

	White			Black			Hispanic		
	1992	1996	2000	1992	1996	2000	1992	1996	2000
Nation	69 (1.4) *	74 (1.6)	78 (1.3)	22 (1.9) *	32 (3.4)	38 (2.6)	33 (2.3) *	40 (2.6)	47 (2.2)
Alabama	57 (2.3) ‡	64 (2.2) ‡	74 (2.2)	16 (1.4) ‡	21 (2.0) ‡	36 (2.2)	26 (5.1)	29 (4.2)	37 (5.0)
Arizona	69 (1.7) ‡	72 (2.3)	75 (1.7)	28 (6.1)	28 (5.6)	43 (6.4)	36 (2.1)	37 (3.2)	40 (3.2)
Arkansas	57 (1.6) ‡	66 (2.3)	68 (1.7)	18 (2.8)	21 (3.0)	28 (3.4)	29 (3.8)	36 (5.6)	39 (5.2)
California †	61 (2.6) ‡	63 (2.4)	71 (2.5)	21 (2.6)	18 (4.0)	25 (3.4) !	27 (2.1)	29 (2.9)	36 (3.1)
Connecticut	79 (1.2) ‡	86 (1.5)	88 (1.0)	24 (3.2) ‡	40 (5.0)	41 (3.9)	37 (4.3) ‡	42 (4.5)	53 (4.1)
Georgia	72 (1.8)	67 (2.0) ‡	75 (1.9)	27 (2.3) ‡	31 (2.7)	38 (2.2)	30 (4.3)	36 (4.8)	43 (5.8)
Hawaii	60 (2.4)	66 (2.8)	68 (3.2)	33 (5.9)	38 (5.5)	37 (7.9)	33 (3.5)	37 (2.9)	40 (3.4)
Idaho †	67 (1.7) ‡	—	76 (1.7)	****(****)	—	****(****)	36 (4.3) *	—	49 (4.7)
Illinois †	—	—	82 (2.9)	—	—	37 (3.5)	—	—	51 (3.7)
Indiana †	66 (1.5) ‡	78 (1.5) *	83 (1.4)	22 (3.7) ‡	36 (5.6)	51 (5.0)	42 (3.5) ‡	52 (5.1)	61 (6.3)
Iowa †	74 (1.4) ‡	77 (1.4)	81 (1.5)	29 (6.2) !	34 (5.6) !	****(****)	61 (5.7)	48 (5.7)	51 (7.9)
Kansas †	—	—	83 (2.2)	—	—	42 (8.6) !	—	—	54 (5.9)
Kentucky	54 (1.5) ‡	64 (1.9)	66 (1.8)	32 (3.9)	39 (4.1)	29 (3.3)	31 (5.1)	33 (7.2)	43 (6.9)
Louisiana	57 (2.6) ‡	63 (2.3) ‡	76 (2.0)	18 (1.7) ‡	24 (2.2) ‡	35 (2.6)	33 (6.5)	26 (3.8) *	45 (6.3)
Maine †	76 (1.4)	77 (1.6)	75 (1.8)	****(****)	****(****)	****(****)	63 (6.3)	57 (5.6)	****(****)
Maryland	70 (1.7) ‡	77 (1.8)	81 (1.7)	26 (1.9) ‡	30 (1.9)	36 (2.7)	45 (4.6)	43 (5.5)	47 (4.4)
Massachusetts	76 (1.4) ‡	78 (1.6) ‡	87 (1.4)	24 (5.4) ‡	39 (6.5)	47 (5.1)	41 (4.5)	46 (4.5)	47 (3.4)
Michigan †	70 (2.1) ‡	78 (1.7)	83 (1.9)	19 (3.5) ‡	30 (4.5)	32 (4.2)	43 (3.6)	42 (5.4)	49 (4.9)
Minnesota †	75 (1.6) ‡	81 (1.5)	84 (1.4)	28 (7.0)	28 (6.2)	46 (6.8)	44 (5.0)	55 (5.6)	54 (5.8)
Mississippi	58 (1.8) ‡	63 (2.4)	66 (2.1)	20 (1.5) ‡	24 (2.0)	27 (1.6)	19 (3.5) *	24 (4.5)	30 (4.1)
Missouri	70 (1.6) ‡	74 (1.5) ‡	82 (1.3)	26 (3.7)	31 (3.0)	34 (5.3)	44 (4.8)	50 (5.3)	54 (6.7)
Montana †	—	76 (1.7)	78 (2.4)	—	****(****)	****(****)	—	58 (5.3)	57 (6.2)
Nebraska	72 (1.7)	77 (1.6)	75 (1.9)	18 (3.8)	32 (3.4)	21 (5.4) !	47 (6.0)	43 (4.5)	45 (5.1)
Nevada	—	67 (2.1)	72 (1.6)	—	30 (4.1)	40 (4.5)	—	40 (3.2)	46 (3.2)
New Mexico	66 (2.3)	69 (2.0)	70 (2.5)	34 (8.4)	40 (10.0)	****(****)	36 (2.6)	38 (2.2)	42 (2.2)
New York †	71 (2.0) ‡	80 (1.6)	85 (2.1)	31 (4.0) *	37 (4.3)	44 (4.8)	33 (2.6) ‡	40 (3.3)	46 (3.1)
North Carolina	65 (1.6) ‡	77 (1.4) ‡	86 (1.3)	24 (2.3) ‡	37 (2.4) ‡	58 (3.0)	35 (5.8) *	43 (5.6)	56 (7.7)
North Dakota	75 (1.2)	77 (1.5)	79 (1.5)	****(****)	****(****)	****(****)	49 (7.4)	66 (8.9)	53 (6.6)
Ohio †	62 (1.6) ‡	—	82 (1.7)	23 (3.6) ‡	—	37 (3.8)	45 (5.1)	—	60 (5.7)
Oklahoma	66 (1.9) ‡	—	77 (1.7)	29 (3.9)	—	39 (7.0)	45 (4.2)	—	54 (4.3)
Oregon †	—	70 (2.2)	73 (2.3)	—	****(****)	****(****)	—	34 (4.3)	40 (5.0)
Rhode Island	63 (2.0) ‡	68 (2.1) ‡	79 (1.2)	20 (4.1) ‡	25 (4.6)	37 (4.3)	23 (3.3) *	35 (4.6)	33 (3.1)
South Carolina	66 (1.8) ‡	66 (2.2) ‡	77 (1.5)	23 (1.9) ‡	27 (2.5) *	37 (2.7)	33 (4.2) *	27 (5.4) *	46 (5.1)
Tennessee	58 (2.1) ‡	68 (1.9)	70 (1.8)	21 (2.6) *	28 (3.2)	31 (3.5)	22 (5.1) ‡	45 (6.0)	46 (7.9)
Texas	72 (2.1) ‡	85 (1.8)	89 (1.4)	29 (4.0) ‡	47 (3.0) *	60 (4.4)	43 (2.7) ‡	55 (3.1) ‡	68 (2.8)
Utah	69 (1.7) ‡	73 (1.6)	76 (1.5)	****(****)	****(****)	****(****)	47 (3.3)	46 (4.3)	42 (3.6)
Vermont †	—	69 (2.2) *	75 (2.1)	—	****(****)	****(****)	—	53 (6.4)	****(****)
Virginia	70 (1.9) ‡	73 (2.1) ‡	86 (1.4)	25 (2.1) ‡	34 (2.7) ‡	46 (3.2)	48 (5.6)	52 (6.4)	59 (6.5)
West Virginia	54 (1.5) ‡	66 (1.7)	70 (1.6)	40 (5.6)	36 (7.6)	39 (5.6)	37 (4.4) ‡	47 (4.8)	55 (5.0)
Wyoming	72 (1.5)	68 (1.6) ‡	77 (1.9)	****(****)	****(****)	****(****)	54 (3.9)	44 (3.9)	56 (5.0)
Other Jurisdictions									
American Samoa	—	—	****(****)	—	—	****(****)	—	—	6 (3.2)
District of Columbia	79 (4.6)	77 (3.0)	78 (4.4)	20 (1.0)	16 (0.8) ‡	21 (1.2)	14 (2.2)	18 (3.7)	22 (3.3)
DDESS	—	77 (1.9)	80 (2.2)	—	46 (4.8)	58 (6.0)	—	52 (4.5)	59 (3.2)
DoDDS	—	74 (1.6)	80 (2.0)	—	45 (2.7)	50 (3.3)	—	51 (3.3)	59 (3.5)
Guam	43 (3.8)	35 (6.2)	****(****)	23 (5.8)	****(****)	****(****)	16 (2.3)	13 (4.3)	10 (5.5)
Virgin Islands	—	—	****(****)	—	—	15 (3.7)	—	—	12 (3.8)

See footnotes at end of table. ▶

Table B.37: State *Basic* Level Achievement Results by Race/Ethnicity, Grade 4 (continued)

State percentages of students at or above *Basic* in mathematics by race/ethnicity for grade 4 public schools: 1992–2000

	Asian			American Indian		
	1992	1996	2000	1992	1996	2000
Nation	75 (3.5)	72 (5.5)	~	42 (5.3)	52 (6.1)	51 (6.1)
Alabama	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Arizona	****(****)	****(****)	77 (5.4)	25 (4.0)	32 (4.9) !	24 (3.9)
Arkansas	****(****)	****(****)	****(****)	52 (7.0)	45 (7.4)	49 (8.7)
California †	64 (3.2)	58 (6.8)	71 (5.9)	50 (9.3)	****(****)	****(****)
Connecticut	****(****)	****(****)	89 (4.7)	****(****)	****(****)	****(****)
Georgia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Hawaii	54 (2.1)	53 (2.2)	56 (2.1)	****(****)	50 (8.4)	****(****)
Idaho †	****(****)	—	****(****)	53 (6.0)	—	****(****)
Illinois †	—	—	****(****)	—	—	****(****)
Indiana †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Iowa †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kansas †	—	—	****(****)	—	—	****(****)
Kentucky	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Louisiana	****(****)	****(****)	****(****)	****(****)	35 (6.4) !	****(****)
Maine †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maryland	78 (4.2)	84 (5.7)	82 (6.1)	****(****)	****(****)	****(****)
Massachusetts	65 (8.8)	77 (7.9)	81 (5.1)	****(****)	****(****)	****(****)
Michigan †	****(****)	****(****)	****(****)	51 (7.0)	54 (7.0)	****(****)
Minnesota †	****(****)	61 (5.2)	77 (6.4)	****(****)	54 (7.6)	****(****)
Mississippi	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Missouri	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Montana †	—	****(****)	****(****)	—	43 (4.1)	49 (6.2)
Nebraska	****(****)	****(****)	****(****)	****(****)	54 (8.5)	****(****)
Nevada	—	64 (7.5)	64 (4.6)	—	52 (5.3) !	51 (6.8)
New Mexico	****(****)	****(****)	****(****)	42 (9.6) !	27 (4.7) !	30 (5.1)
New York †	72 (6.4) * !	78 (5.0)	90 (5.1) !	****(****)	****(****)	****(****)
North Carolina	****(****)	****(****)	****(****)	40 (9.8) ‡!	****(****)	77 (8.3) !
North Dakota	****(****)	****(****)	****(****)	47 (6.9) !	48 (8.9) !	42 (7.8)
Ohio †	****(****)	—	****(****)	58 (8.1)	—	****(****)
Oklahoma	****(****)	—	****(****)	48 (4.5) ‡	—	65 (3.4)
Oregon †	—	73 (6.4)	77 (5.9)	—	50 (6.5)	****(****)
Rhode Island	24 (5.4) ‡	48 (8.8)	55 (6.4)	****(****)	****(****)	****(****)
South Carolina	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Tennessee	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Texas	79 (4.5)	****(****)	90 (5.3)	****(****)	****(****)	****(****)
Utah	****(****)	****(****)	61 (6.3)	****(****)	46 (8.6)	****(****)
Vermont †	—	****(****)	****(****)	—	****(****)	****(****)
Virginia	82 (4.8)	80 (4.9)	88 (10.2) !	****(****)	****(****)	****(****)
West Virginia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Wyoming	****(****)	****(****)	****(****)	49 (7.0) !	47 (7.5)	69 (8.2)
Other Jurisdictions						
American Samoa	—	—	4 (1.8)	—	—	****(****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DDESS	—	****(****)	74 (9.6)	—	****(****)	****(****)
DoDDS	—	69 (4.2)	77 (2.1)	—	58 (9.2)	55 (10.6)
Guam	27 (1.7)	26 (1.5)	23 (2.3)	****(****)	****(****)	****(****)
Virgin Islands	—	—	****(****)	—	—	****(****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

~ Special analyses raised concerns about the accuracy and precision of the national grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.38: State Achievement Level Results by Race/Ethnicity, Grade 4

State percentages of students at or above mathematics achievement levels by race/ethnicity for grade 4 public schools: 2000

	White				Black				Hispanic			
	Below Basic	*At or Above Basic*	*At or Above Proficient*	*Advanced*	*Below Basic*	*At or Above Basic*	*At or Above Proficient*	*Advanced*	*Below Basic*	*At or Above Basic*	*At or Above Proficient*	*Advanced*
Nation	22 (1.3)	78 (1.3)	33 (1.6)	3 (0.4)	62 (2.6)	38 (2.6)	5 (0.9)	▲ (****)	53 (2.2)	47 (2.2)	10 (1.5)	1 (0.3)
Alabama	26 (2.2)	74 (2.2)	23 (1.9)	1 (0.4)	64 (2.2)	36 (2.2)	4 (0.7)	▲ (****)	63 (5.0)	37 (5.0)	5 (2.0)	0 (****)
Arizona	25 (1.7)	75 (1.7)	26 (2.1)	2 (0.9)	57 (6.4)	43 (6.4)	5 (2.5)	2 (****)	60 (3.2)	40 (3.2)	6 (1.3)	0 (****)
Arkansas	32 (1.7)	68 (1.7)	18 (1.5)	1 (0.4)	72 (3.4)	28 (3.4)	2 (1.1)	▲ (****)	61 (5.2)	39 (5.2)	6 (1.8)	▲ (****)
California †	29 (2.5)	71 (2.5)	25 (2.5)	1 (0.7)	75 (3.4) !	25 (3.4) !	2 (1.3) !	0 (****) !	64 (3.1)	36 (3.1)	5 (1.3)	▲ (****)
Connecticut	12 (1.0)	88 (1.0)	41 (1.9)	4 (0.7)	59 (3.9)	41 (3.9)	6 (1.7)	▲ (****)	47 (4.1)	53 (4.1)	9 (1.4)	▲ (****)
Georgia	25 (1.9)	75 (1.9)	29 (2.1)	2 (0.5)	62 (2.2)	38 (2.2)	6 (1.0)	▲ (****)	57 (5.8)	43 (5.8)	8 (2.7)	0 (****)
Hawaii	32 (3.2)	68 (3.2)	19 (2.0)	1 (0.6)	63 (7.9)	37 (7.9)	3 (1.8)	0 (****)	60 (3.4)	40 (3.4)	7 (1.7)	▲ (****)
Idaho †	24 (1.7)	76 (1.7)	24 (1.7)	1 (0.5)	****(****)	****(****)	****(****)	****(****)	51 (4.7)	49 (4.7)	8 (2.0)	▲ (****)
Illinois †	18 (2.9)	82 (2.9)	32 (3.4)	3 (1.1)	63 (3.5)	37 (3.5)	5 (1.5)	0 (****)	49 (3.7)	51 (3.7)	8 (2.3)	▲ (0.1)
Indiana †	17 (1.4)	83 (1.4)	34 (2.0)	3 (0.8)	49 (5.0) !	51 (5.0) !	14 (2.9) !	1 (****) !	39 (6.3)	61 (6.3)	16 (4.6)	1 (****)
Iowa †	19 (1.5)	81 (1.5)	30 (1.9)	2 (0.4)	****(****)	****(****)	****(****)	****(****)	49 (7.9)	51 (7.9)	13 (4.1)	▲ (****)
Kansas †	17 (2.2)	83 (2.2)	36 (2.5)	4 (0.9)	58 (8.6) !	42 (8.6) !	7 (3.7) !	1 (****) !	46 (5.9)	54 (5.9)	11 (3.6)	0 (****)
Kentucky	34 (1.8)	66 (1.8)	20 (1.4)	2 (0.3)	71 (3.3)	29 (3.3)	2 (0.8)	▲ (****)	57 (6.9)	43 (6.9)	9 (5.1)	▲ (****)
Louisiana	24 (2.0)	76 (2.0)	23 (2.3)	1 (0.4)	65 (2.6)	35 (2.6)	4 (0.8)	▲ (****)	55 (6.3)	45 (6.3)	7 (2.9)	▲ (****)
Maine †	25 (1.8)	75 (1.8)	25 (1.4)	2 (0.4)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maryland	19 (1.7)	81 (1.7)	36 (2.4)	4 (0.8)	64 (2.7)	36 (2.7)	5 (0.9)	▲ (****)	53 (4.4)	47 (4.4)	10 (2.6)	▲ (****)
Massachusetts	13 (1.4)	87 (1.4)	39 (1.7)	3 (0.6)	53 (5.1)	47 (5.1)	7 (2.5)	▲ (****)	53 (3.4)	47 (3.4)	10 (1.8)	1 (****)
Michigan †	17 (1.9)	83 (1.9)	37 (2.2)	4 (0.9)	68 (4.2)	32 (4.2)	4 (1.6)	▲ (****)	51 (4.9)	49 (4.9)	15 (3.7)	▲ (****)
Minnesota †	16 (1.4)	84 (1.4)	39 (1.9)	4 (0.8)	54 (6.8)	46 (6.8)	11 (3.1)	▲ (****)	46 (5.8)	54 (5.8)	13 (3.9)	0 (****)
Mississippi	34 (2.1)	66 (2.1)	16 (1.5)	1 (0.3)	73 (1.6)	27 (1.6)	2 (0.6)	0 (****)	70 (4.1)	30 (4.1)	6 (2.0)	▲ (****)
Missouri	18 (1.3)	82 (1.3)	28 (1.8)	2 (0.5)	66 (5.3)	34 (5.3)	4 (1.3)	▲ (****)	46 (6.7)	54 (6.7)	11 (2.9)	▲ (****)
Montana	22 (2.4)	78 (2.4)	28 (2.8)	2 (0.8)	****(****)	****(****)	****(****)	****(****)	43 (6.2)	57 (6.2)	12 (4.7)	▲ (****)
Nebraska	25 (1.9)	75 (1.9)	29 (2.0)	2 (0.6)	79 (5.4) !	21 (5.4) !	6 (3.0) !	▲ (****) !	55 (5.1)	45 (5.1)	7 (3.4)	▲ (****)
Nevada	28 (1.6)	72 (1.6)	23 (1.5)	1 (0.4)	60 (4.5)	40 (4.5)	5 (1.5)	▲ (****)	54 (3.2)	46 (3.2)	8 (1.5)	▲ (****)
New Mexico	30 (2.5)	70 (2.5)	22 (2.5)	1 (0.5)	****(****)	****(****)	****(****)	****(****)	58 (2.2)	42 (2.2)	6 (1.0)	▲ (****)
New York †	15 (2.1)	85 (2.1)	34 (2.7)	2 (0.7)	56 (4.8)	44 (4.8)	5 (1.8)	▲ (****)	54 (3.1)	46 (3.1)	7 (1.3)	▲ (****)
North Carolina	14 (1.3)	86 (1.3)	38 (2.0)	4 (0.6)	42 (3.0)	58 (3.0)	9 (1.2)	▲ (****)	44 (7.7)	56 (7.7)	13 (3.0)	1 (****)
North Dakota	21 (1.5)	79 (1.5)	27 (1.5)	2 (0.4)	****(****)	****(****)	****(****)	****(****)	47 (6.6)	53 (6.6)	12 (4.0)	▲ (****)
Ohio †	18 (1.7)	82 (1.7)	32 (2.4)	3 (0.6)	63 (3.8)	37 (3.8)	3 (1.6)	0 (****)	40 (5.7)	60 (5.7)	12 (3.6)	1 (0.7)
Oklahoma	23 (1.7)	77 (1.7)	20 (1.5)	1 (0.2)	61 (7.0)	39 (7.0)	3 (1.1)	▲ (****)	46 (4.3)	54 (4.3)	9 (2.0)	▲ (****)
Oregon †	27 (2.3)	73 (2.3)	26 (1.9)	3 (0.7)	****(****)	****(****)	****(****)	****(****)	60 (5.0)	40 (5.0)	6 (1.9)	▲ (****)
Rhode Island	21 (1.2)	79 (1.2)	30 (1.7)	3 (0.5)	63 (4.3)	37 (4.3)	4 (2.4)	▲ (****)	67 (3.1)	33 (3.1)	5 (1.3)	1 (****)
South Carolina	23 (1.5)	77 (1.5)	28 (1.6)	3 (0.5)	63 (2.7)	37 (2.7)	4 (0.8)	▲ (****)	54 (5.1)	46 (5.1)	12 (3.5)	1 (****)
Tennessee	30 (1.8)	70 (1.8)	23 (1.8)	2 (0.5)	69 (3.5)	31 (3.5)	4 (1.2)	▲ (****)	54 (7.9)	46 (7.9)	9 (2.9)	▲ (****)
Texas	11 (1.4)	89 (1.4)	41 (2.8)	4 (1.1)	40 (4.4)	60 (4.4)	12 (2.6)	▲ (****)	32 (2.8)	68 (2.8)	14 (1.7)	1 (0.3)
Utah	24 (1.5)	76 (1.5)	28 (1.5)	2 (0.3)	****(****)	****(****)	****(****)	****(****)	58 (3.6)	42 (3.6)	8 (1.8)	▲ (****)
Vermont †	25 (2.1)	75 (2.1)	31 (2.3)	4 (0.8)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Virginia	14 (1.4)	86 (1.4)	35 (2.1)	3 (1.0)	54 (3.2)	46 (3.2)	6 (1.2)	▲ (****)	41 (6.5)	59 (6.5)	11 (2.6)	▲ (****)
West Virginia	30 (1.6)	70 (1.6)	19 (1.6)	1 (0.3)	61 (5.6)	39 (5.6)	6 (3.2)	▲ (****)	45 (5.0)	55 (5.0)	13 (3.4)	▲ (****)
Wyoming	23 (1.9)	77 (1.9)	28 (1.7)	2 (0.5)	****(****)	****(****)	****(****)	****(****)	44 (5.0)	56 (5.0)	12 (2.7)	1 (****)
Other Jurisdictions												
American Samoa	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	94 (3.2)	6 (3.2)	▲ (****)	0 (****)
District of Columbia	22 (4.4)	78 (4.4)	49 (7.1)	12 (3.4)	79 (1.2)	21 (1.2)	2 (0.5)	▲ (****)	78 (3.3)	22 (3.3)	4 (1.2)	▲ (****)
DDESS	20 (2.2)	80 (2.2)	34 (2.7)	4 (1.3)	42 (6.0)	58 (6.0)	12 (3.3)	1 (0.5)	41 (3.2)	59 (3.2)	14 (3.3)	1 (****)
DoDDS	20 (2.0)	80 (2.0)	31 (1.6)	3 (0.6)	50 (3.3)	50 (3.3)	7 (1.6)	▲ (****)	41 (3.5)	59 (3.5)	13 (1.8)	▲ (****)
Guam	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	90 (5.5)	10 (5.5)	1 (****)	▲ (****)
Virgin Islands	****(****)	****(****)	****(****)	****(****)	85 (3.7)	15 (3.7)	1 (0.7)	▲ (****)	88 (3.8)	12 (3.8)	1 (****)	0 (****)

See footnotes at end of table. ▶

Table B.38: State Achievement Level Results by Race/Ethnicity, Grade 4 (continued)

State percentages of students at or above mathematics achievement levels by race/ethnicity for grade 4 public schools: 2000

	Asian				American Indian			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	~	~	~	~	49 (6.1)	51 (6.1)	13 (3.0)	1 (****)
Alabama	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Arizona	23 (5.4)	77 (5.4)	28 (7.8)	6 (3.5)	76 (3.9)	24 (3.9)	4 (1.6)	▲ (****)
Arkansas	****(****)	****(****)	****(****)	****(****)	51 (8.7)	49 (8.7)	9 (5.0)	1 (****)
California †	29 (5.9)	71 (5.9)	25 (4.9)	2 (1.2)	****(****)	****(****)	****(****)	****(****)
Connecticut	11 (4.7)	89 (4.7)	45 (6.7)	7 (3.0)	****(****)	****(****)	****(****)	****(****)
Georgia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Hawaii	44 (2.1)	56 (2.1)	15 (1.3)	1 (0.4)	****(****)	****(****)	****(****)	****(****)
Idaho †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Illinois †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Indiana †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Iowa †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kansas †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kentucky	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Louisiana	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maine †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maryland	18 (6.1)	82 (6.1)	40 (6.1)	6 (3.1)	****(****)	****(****)	****(****)	****(****)
Massachusetts	19 (5.1)	81 (5.1)	41 (5.1)	8 (3.6)	****(****)	****(****)	****(****)	****(****)
Michigan †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Minnesota †	23 (6.4)	77 (6.4)	32 (5.4)	4 (3.1)	****(****)	****(****)	****(****)	****(****)
Mississippi	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Missouri	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Montana †	****(****)	****(****)	****(****)	****(****)	51 (6.2)	49 (6.2)	8 (2.8)	0 (****)
Nebraska	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Nevada	36 (4.6)	64 (4.6)	21 (3.9)	2 (1.6)	49 (6.8)	51 (6.8)	7 (3.0)	0 (****)
New Mexico	****(****)	****(****)	****(****)	****(****)	70 (5.1)	30 (5.1)	5 (2.0)	0 (****)
New York †	10 (5.1) !	90 (5.1) !	47 (7.5) !	7 (3.7) !	****(****)	****(****)	****(****)	****(****)
North Carolina	****(****)	****(****)	****(****)	****(****)	23 (8.3) !	77 (8.3) !	21 (5.5) !	2 (****)!
North Dakota	****(****)	****(****)	****(****)	****(****)	58 (7.8)	42 (7.8)	7 (3.3)	0 (****)
Ohio †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Oklahoma	****(****)	****(****)	****(****)	****(****)	35 (3.4)	65 (3.4)	12 (2.6)	▲ (****)
Oregon †	23 (5.9)	77 (5.9)	36 (7.3)	12 (4.3)	****(****)	****(****)	****(****)	****(****)
Rhode Island	45 (6.4)	55 (6.4)	21 (5.8)	2 (****)	****(****)	****(****)	****(****)	****(****)
South Carolina	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Tennessee	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Texas	10 (5.3)	90 (5.3)	48 (6.7)	9 (4.8)	****(****)	****(****)	****(****)	****(****)
Utah	39 (6.3)	61 (6.3)	16 (5.1)	1 (****)	****(****)	****(****)	****(****)	****(****)
Vermont †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Virginia	12 (****) !	88 (****) !	45 (9.9) !	8 (3.6) !	****(****)	****(****)	****(****)	****(****)
West Virginia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Wyoming	****(****)	****(****)	****(****)	****(****)	31 (8.2)	69 (8.2)	18 (7.6)	1 (****)
Other Jurisdictions								
American Samoa	96 (1.8)	4 (1.8)	▲ (****)	0 (****)	****(****)	****(****)	****(****)	****(****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DDESS	26 (9.6)	74 (9.6)	23 (7.5)	2 (****)	****(****)	****(****)	****(****)	****(****)
DoDDS	23 (2.1)	77 (2.1)	27 (3.2)	2 (0.8)	45 (10.6)	55 (10.6)	10 (4.5)	▲ (****)
Guam	77 (2.3)	23 (2.3)	2 (0.7)	▲ (****)	****(****)	****(****)	****(****)	****(****)
Virgin Islands	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)

Standard errors of the estimated percentages and scale scores appear in parentheses.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

(****) Standard error estimates cannot be accurately determined.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

▲ Percentage is between 0.0 and 0.5.

~ Special analyses raised concerns about the accuracy and precision of the national grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.39: Data for Figure 3.21 State *Proficient* Level Achievement Results by Race/Ethnicity, Grade 8

State percentages of students at or above the *Proficient* level in mathematics by race/ethnicity for grade 8 public schools: 1990–2000

	White				Black				Hispanic			
	1990	1992	1996	2000	1990	1992	1996	2000	1990	1992	1996	2000
Nation	19 (1.4) *	26 (1.3) *	30 (1.5)	34 (1.3)	5 (1.1)	2 (0.7) *	4 (0.9)	5 (0.6)	5 (1.5) *	6 (0.8) *	8 (1.6)	9 (0.9)
Alabama	12 (1.0) ‡	15 (1.3) ‡	18 (2.7)	23 (2.0)	2 (0.6)	1 (0.4) *	1 (0.5)	4 (0.9)	4 (1.7)	1 (1.5)	6 (2.6)	6 (3.5)
Arizona †	18 (1.2) ‡	22 (1.7) ‡	25 (1.7)	31 (2.2)	4 (2.1)	4 (2.5)	5 (2.7)	8 (3.9)	4 (0.9)	5 (1.3)	6 (1.1)	8 (1.6)
Arkansas	12 (0.9) ‡	13 (1.0) ‡	17 (1.3)	19 (1.6)	1 (0.4)	2 (0.8)	2 (0.9)	2 (0.6)	2 (2.1)	3 (1.8)	****(****)	4 (2.9)
California †	19 (1.9) ‡	25 (2.2)	28 (2.3)	27 (2.0)	3 (1.3)	2 (1.2)	2 (1.4)	4 (1.8)	3 (0.7)	4 (1.0)	5 (0.8)	7 (2.4)
Connecticut	26 (1.1) ‡	32 (1.2) ‡	37 (1.6) *	44 (1.9)	4 (1.4)	3 (1.2)	4 (1.5)	4 (1.5)	4 (1.5)	4 (1.3)	8 (1.9)	9 (1.8)
Georgia	20 (1.7) ‡	19 (1.4) ‡	24 (2.6)	28 (1.5)	4 (0.8)	3 (0.6)	3 (0.8)	4 (0.8)	3 (1.6)	4 (2.9)	10 (4.2)	5 (2.1)
Hawaii	17 (2.8) ‡	18 (2.3) *	22 (3.5)	28 (3.6)	****(****)	****(****)	****(****)	8 (4.2)	4 (1.4)	4 (1.0)	8 (1.9)	5 (2.3)
Idaho †	19 (1.3) ‡	23 (1.2) ‡	—	30 (1.8)	****(****)	****(****)	—	****(****)	5 (1.8)	7 (2.0)	—	9 (2.4)
Illinois †	19 (1.6) ‡	—	—	38 (1.8)	3 (1.2)	—	—	7 (2.1)	3 (1.2) ‡	—	—	11 (2.4)
Indiana †	18 (1.1) ‡	22 (1.3) ‡	27 (1.8) *	35 (1.9)	2 (1.0)	3 (1.4)	2 (1.0)	7 (3.1)!	8 (3.2)	8 (2.9)	10 (3.1)	13 (3.9)
Kansas †	—	—	—	38 (2.1)	—	—	—	10 (4.2)	—	—	—	13 (3.6)
Kentucky	12 (0.9) ‡	15 (1.2) ‡	17 (1.3) *	23 (1.5)	2 (0.9)	4 (1.8)	2 (1.9)	7 (2.3)	1 (0.8)	4 (2.5)	****(****)	****(****)
Louisiana	8 (1.1) ‡	12 (1.6) ‡	12 (1.6) *	20 (2.0)	1 (0.4)	1 (0.4)	2 (0.5)	2 (0.6)	2 (1.5)	1 (0.7)	2 (1.7)	4 (2.0)
Maine †	—	26 (1.5) ‡	32 (1.7)	33 (1.5)	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Maryland	22 (1.4) ‡	29 (1.8) ‡	34 (2.8)	40 (1.8)	3 (0.8) *	3 (0.9) ‡	4 (1.0)	7 (1.3)	7 (1.7) *	4 (1.9) ‡	14 (3.7)	17 (4.4)
Massachusetts	— ‡	26 (1.4) ‡	32 (2.1)	37 (1.3)	—	6 (2.2)	8 (3.3)	8 (3.6)	—	4 (1.6) ‡	5 (2.2)	14 (3.1)
Michigan †	19 (1.3) ‡	24 (1.8) ‡	34 (1.8)	35 (2.0)	1 (0.6)	2 (0.7)	5 (2.0)	2 (1.0)	4 (1.9)	8 (3.0)	12 (4.6)	9 (3.8)
Minnesota †	25 (1.3) ‡	33 (1.2) ‡	37 (1.9)	42 (1.6)	8 (2.8)!	****(****)	6 (3.5)	****(****)	6 (2.3)	6 (2.5)	19 (6.4)	13 (4.3)
Mississippi	—	12 (1.3)	13 (1.6)	14 (1.3)	—	1 (0.4)	1 (0.3)	1 (0.4)	—	1 (0.7)	3 (1.7)	1 (1.0)
Missouri	—	22 (1.3)	25 (1.6)	25 (1.5)	—	3 (1.0)	4 (1.7)	5 (1.4)	—	9 (4.7)	10 (4.3)	10 (4.5)
Montana †	29 (1.5) ‡	—	36 (1.5)	40 (1.6)	****(****)	—	****(****)	****(****)	10 (5.2)	—	12 (4.1)	23 (6.6)
Nebraska	27 (1.4) ‡	29 (1.7)	34 (1.6)	34 (1.6)	2 (2.4)	2 (1.3)	7 (3.3)	8 (3.6)	4 (2.7)	10 (2.8)	7 (2.8)	11 (2.8)
Nevada	—	—	—	26 (1.3)	—	—	—	7 (2.2)	—	—	—	9 (1.1)
New Mexico	20 (2.0)	19 (1.5) ‡	28 (1.8)	26 (2.0)	****(****)	****(****)	****(****)	****(****)	4 (0.8)	5 (0.6)	6 (1.2)	6 (1.1)
New York †	21 (1.3) ‡	27 (1.7) ‡	31 (1.8)	36 (2.1)	4 (1.1)	4 (1.5)	4 (1.8)	10 (3.1)	5 (1.5) ‡	7 (1.7)	6 (1.4)	12 (2.3)
North Carolina	13 (1.0) ‡	16 (1.2) ‡	28 (1.6) ‡	41 (1.5)	2 (0.7) ‡	3 (0.8) ‡	5 (1.0)	7 (1.0)	1 (1.0) ‡	5 (3.9) *	7 (2.8)	18 (4.5)
North Dakota	29 (1.8)	31 (1.7)	35 (1.5)	33 (1.7)	****(****)	****(****)	****(****)	****(****)	7 (4.5)	****(****)	13 (4.9)	17 (6.8)
Ohio	17 (1.2) ‡	21 (1.5) ‡	—	34 (1.8)	2 (1.1) *	3 (0.8)	—	8 (2.2)	3 (2.5) ‡	5 (2.8) ‡	—	21 (4.6)
Oklahoma	16 (1.4) ‡	19 (1.2)	—	22 (1.2)	▲ (0.6) ‡	2 (0.9)	—	5 (1.6)	4 (2.2)	9 (2.9)	—	8 (2.6)
Oregon †	22 (1.2) ‡	—	29 (1.7)	34 (2.0)	****(****)	—	****(****)	15 (5.9)!	10 (3.0)	—	13 (3.7)	13 (4.3)
Rhode Island	17 (0.9) ‡	18 (1.3) ‡	24 (1.5)	29 (1.3)	2 (1.1)	2 (2.1)	7 (3.6)	6 (2.7)	2 (0.7)	2 (0.9)	4 (1.4)	4 (1.4)
South Carolina	—	23 (1.6)	22 (2.1)	28 (1.7)	—	3 (0.6)	3 (0.6)	4 (0.9)	—	2 (1.2)	4 (2.9)	9 (3.7)
Tennessee	—	15 (1.2) ‡	18 (1.5)	21 (1.6)	—	2 (0.8)	3 (1.2)	3 (1.2)	—	2 (1.8)	6 (2.7)	12 (6.9)
Texas	21 (1.8) ‡	27 (1.8) ‡	33 (1.8)	37 (2.1)	2 (1.1)	5 (1.4)	5 (1.7)	6 (2.0)	4 (1.0) ‡	7 (1.0) *	8 (1.4)	14 (2.0)
Utah	—	24 (1.2) *	27 (1.3)	28 (1.2)	—	****(****)	****(****)	****(****)	—	6 (2.6)	6 (1.8)	7 (2.2)
Vermont †	—	—	29 (1.4) ‡	33 (1.5)	—	—	****(****)	****(****)	—	—	****(****)	****(****)
Virginia	21 (1.9) ‡	24 (1.3) ‡	28 (1.4)	33 (1.8)	4 (1.0)	4 (1.1)	4 (0.8)	5 (1.2)	9 (3.5)	11 (4.0)	9 (3.4)	14 (3.4)
West Virginia	10 (0.8) ‡	10 (0.8) ‡	15 (0.9) *	19 (1.0)	2 (3.3)	3 (1.8)	2 (1.5)!	8 (3.7)	3 (2.6) *	2 (1.5) ‡	7 (4.2)	14 (4.0)
Wyoming	20 (1.1) ‡	23 (1.1)	24 (1.0)	27 (1.2)	****(****)	****(****)	****(****)	****(****)	7 (2.8)	9 (2.5)	8 (1.6)	10 (2.1)
Other Jurisdictions												
American Samoa	—	—	—	****(****)	—	—	—	****(****)	—	—	—	▲ (0.0)
District of Columbia	****(****)	****(****)	61 (9.2)	****(****)	1 (0.4) ‡	2 (0.6)	2 (0.6)	3 (0.6)	2 (1.1)	6 (3.1)	4 (1.5)	4 (2.0)
DDESS	—	—	34 (4.7)	38 (4.0)	—	—	8 (3.1)	17 (3.2)	—	—	18 (5.2)	16 (4.4)
DoDDS	—	—	32 (1.8)	36 (1.9)	—	—	6 (1.2)	10 (1.7)	—	—	15 (3.0)	18 (2.6)
Guam	10 (2.5)	19 (7.1)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	1 (0.5)	3 (1.3)	2 (1.4)	2 (1.5)

See footnotes at end of table. ▶

Table B.39: Data for Figure 3.21 State *Proficient* Level Achievement Results by Race/Ethnicity, Grade 8 (continued)

State percentages of students at or above the *Proficient* level in mathematics by race/ethnicity for grade 8 public schools: 1990–2000

	Asian				American Indian			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	32 (6.5)	38 (8.0)	~	40 (4.1)	****(****)	7 (3.3)	14 (5.4)	12 (3.6)
Alabama	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Arizona †	****(****)	****(****)	****(****)	35 (5.8)	▲ (0.5) !	6 (2.9)	9 (5.3) !	****(****)
Arkansas	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
California †	20 (3.1)	29 (3.3)	29 (4.1)	33 (5.4)	****(****)	****(****)	****(****)	****(****)
Connecticut	****(****)	45 (8.8)	35 (7.9)	38 (9.1)	****(****)	****(****)	****(****)	****(****)
Georgia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Hawaii	12 (0.8) *	15 (0.8)	17 (1.1)	16 (1.2)	****(****)	****(****)	****(****)	****(****)
Idaho †	****(****)	****(****)	—	****(****)	5 (5.9)	9 (4.6)	—	****(****)
Illinois †	32 (5.4)	—	—	****(****)	****(****)	—	—	****(****)
Indiana †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kansas †	—	—	—	****(****)	—	—	—	****(****)
Kentucky	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Louisiana	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maine †	—	****(****)	****(****)	****(****)	—	9 (4.6)	****(****)	****(****)
Maryland	47 (6.5) *	41 (6.3) ‡	62 (5.9) !	64 (4.6)	****(****)	****(****)	****(****)	****(****)
Massachusetts	—	****(****)	29 (6.5)	49 (6.5)	—	****(****)	****(****)	****(****)
Michigan †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Minnesota †	20 (5.6)	****(****)	27 (5.5) !	****(****)	****(****)	****(****)	****(****)	****(****)
Mississippi	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Missouri	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Montana †	****(****)	—	****(****)	****(****)	7 (2.5)	—	14 (2.6)	8 (2.9)!
Nebraska	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Nevada	—	—	—	26 (3.7)	—	—	—	11 (4.7)
New Mexico	****(****)	****(****)	****(****)	****(****)	2 (1.0)	1 (1.6)	6 (1.6)	4 (1.5)!
New York †	32 (6.2) !	33 (7.8)	35 (6.3)	42 (6.0)	****(****)	****(****)	****(****)	****(****)
North Carolina	****(****)	****(****)	****(****)	****(****)	2 (2.1) !	****(****)	****(****)	****(****)
North Dakota	****(****)	****(****)	****(****)	****(****)	2 (2.4) !	5 (3.0) !	7 (3.6) !	6 (3.0)
Ohio	****(****)	****(****)	—	****(****)	****(****)	****(****)	—	****(****)
Oklahoma	****(****)	****(****)	—	****(****)	6 (2.1)	12 (3.2)	—	8 (2.1)
Oregon †	28 (6.2)	—	34 (5.5)	35 (6.6)	6 (2.6)	—	10 (3.7)	****(****)
Rhode Island	****(****)	14 (3.3)	18 (5.5)	21 (6.7)	****(****)	****(****)	****(****)	****(****)
South Carolina	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Tennessee	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Texas	****(****)	57 (7.0)	57 (10.0) !	42 (7.1)	****(****)	****(****)	****(****)	****(****)
Utah	—	****(****)	24 (7.5)	35 (6.2)	—	****(****)	****(****)	****(****)
Vermont †	—	—	****(****)	****(****)	—	—	****(****)	****(****)
Virginia	41 (5.5)	32 (5.4)	38 (6.8)	49 (8.2)	****(****)	****(****)	****(****)	****(****)
West Virginia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Wyoming	****(****)	****(****)	****(****)	****(****)	5 (2.4)	1 (1.0) !	4 (2.5)	7 (3.9)!
Other Jurisdictions								
American Samoa	—	—	—	1 (0.8)	—	—	—	****(****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DDESS	—	—	****(****)	****(****)	—	—	****(****)	****(****)
DoDDS	—	—	24 (4.2)	30 (2.4)	—	—	****(****)	****(****)
Guam	4 (0.6)	6 (0.6)	6 (1.1)	4 (0.7)	****(****)	****(****)	****(****)	****(****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

~ Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.40: State *Basic* Level Achievement Results by Race/Ethnicity, Grade 8

State percentages of students at or above *Basic* in mathematics by race/ethnicity for grade 8 public schools: 1990–2000

	White				Black				Hispanic			
	1990	1992	1996	2000	1990	1992	1996	2000	1990	1992	1996	2000
Nation	60 (1.8) *	68 (1.4) *	73 (1.5)	77 (1.0)	22 (2.5) *	20 (2.0) *	27 (2.9)	32 (1.9)	31 (3.2) *	32 (2.1) *	37 (2.5)	40 (1.9)
Alabama	52 (1.8) ‡	53 (2.0) ‡	63 (3.2)	67 (2.0)	18 (2.0)	15 (1.7) ‡	17 (2.0)	24 (2.3)	15 (4.7)	12 (3.8) *	23 (5.0)	29 (7.3)
Arizona †	61 (1.7) ‡	68 (1.9) ‡	72 (1.8) *	78 (1.4)	30 (5.6)	31 (6.5)	34 (6.2)	39 (5.7)	27 (2.2) ‡	32 (3.7)	35 (2.6)	41 (3.3)
Arkansas	55 (1.4) ‡	55 (2.0) ‡	62 (1.8)	65 (2.0)	13 (1.3)	14 (1.9)	17 (2.9)	18 (2.1)	16 (5.0)	18 (4.5)	****(****)	25 (5.1)
California †	61 (2.2) ‡	69 (2.1)	71 (2.0)	71 (2.8)	19 (2.9)	21 (4.4)	25 (4.4)	25 (3.4)	23 (2.2) ‡	28 (2.1)	32 (2.4)	34 (3.2)
Connecticut	69 (1.5) ‡	77 (1.2) ‡	80 (1.4) ‡	86 (1.3)	28 (3.6)	27 (3.9)	29 (3.8)	31 (3.1)	23 (3.3) ‡	27 (3.2)	37 (2.5)	37 (3.4)
Georgia	62 (1.8) ‡	63 (2.1) ‡	68 (2.1)	73 (2.3)	25 (1.7)	24 (1.9)	24 (1.7)	30 (2.3)	20 (3.7) ‡	24 (8.7)	36 (6.6)	34 (4.6)
Hawaii	53 (2.5) ‡	57 (2.5)	62 (3.3)	66 (5.0)	****(****)	****(****)	****(****)	41 (8.9)	18 (3.2) ‡	29 (2.8)	35 (3.8)	37 (5.0)
Idaho †	66 (1.3) ‡	71 (1.0) ‡	—	76 (1.2)	****(****)	****(****)	—	****(****)	34 (4.7)	40 (4.3)	—	37 (6.8)
Illinois †	62 (1.8) ‡	—	—	81 (1.8)	20 (4.6) ‡	—	—	42 (4.2)	23 (3.8) ‡	—	—	51 (5.2)
Indiana †	62 (1.4) ‡	65 (1.6) ‡	74 (1.9) *	81 (1.5)	23 (3.9) ‡	27 (4.1) ‡	31 (4.4) *	48 (4.6) !	28 (4.1) ‡	41 (7.4)	44 (7.6)	57 (8.0)
Kansas †	—	—	—	83 (1.6)	—	—	—	42 (9.8)	—	—	—	51 (4.8)
Kentucky	47 (1.8) ‡	55 (1.5) ‡	60 (1.6) ‡	67 (1.7)	23 (3.4) ‡	25 (3.6) ‡	31 (4.0)	38 (3.9)	14 (3.8)	23 (5.7)	****(****)	****(****)
Louisiana	45 (2.0) ‡	52 (2.4) ‡	56 (1.8) ‡	71 (1.9)	13 (1.5) ‡	17 (1.9)	17 (2.0)	22 (1.9)	14 (3.7)	19 (3.7)	24 (4.6)	26 (4.9)
Maine †	—	73 (1.2) *	78 (1.6)	77 (1.6)	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Maryland	64 (1.8) ‡	70 (1.7) ‡	75 (1.9) *	81 (1.5)	23 (2.5) ‡	25 (2.1) ‡	26 (2.2) *	36 (2.6)	26 (3.2) ‡	29 (3.8) ‡	36 (5.2) *	57 (5.2)
Massachusetts	—	69 (1.7) ‡	75 (2.0) ‡	83 (1.5)	—	29 (4.5) *	35 (5.4)	43 (5.5)	—	25 (4.5) ‡	26 (5.5) ‡	49 (5.0)
Michigan †	62 (1.6) ‡	69 (1.8) ‡	77 (1.7)	79 (1.6)	13 (1.5) ‡	18 (2.7)	29 (4.6)	25 (3.2)	29 (4.0) ‡	38 (6.5)	37 (5.2)	51 (6.1)
Minnesota †	71 (1.1) ‡	77 (1.3) ‡	79 (1.3) *	84 (1.4)	22 (5.6) !	****(****)	33 (7.1)	****(****)	26 (5.7)	40 (7.0)	49 (7.7)	43 (7.7)
Mississippi	—	53 (2.0) *	56 (1.9)	59 (1.8)	—	14 (1.5) *	16 (1.3)	20 (1.7)	—	10 (3.5)	11 (2.9)	15 (4.4)
Missouri	—	69 (1.5)	70 (2.1)	75 (2.0)	—	25 (3.4)	26 (4.7)	29 (4.4)	—	34 (6.8)	48 (8.2)	41 (6.5)
Montana †	79 (1.6) ‡	—	79 (1.5)	84 (1.3)	****(****)	—	****(****)	****(****)	53 (6.2)	—	52 (6.5)	68 (7.2)
Nebraska	73 (1.5) ‡	76 (1.2)	80 (1.1)	79 (1.5)	19 (4.1)	19 (6.0)	40 (4.5)	31 (8.1)	41 (6.6)	41 (5.2)	44 (5.6)	44 (5.7)
Nevada	—	—	—	70 (1.5)	—	—	—	35 (3.3)	—	—	—	37 (2.1)
New Mexico	64 (2.1) ‡	66 (1.9)	72 (2.0)	72 (2.4)	****(****)	****(****)	****(****)	****(****)	31 (1.7) ‡	33 (1.8)	38 (1.9)	38 (2.1)
New York †	65 (1.6) ‡	73 (1.2) ‡	77 (1.8) ‡	85 (1.3)	20 (3.9) ‡	20 (4.4) ‡	32 (4.0)	44 (6.6)	24 (3.5) ‡	32 (4.4)	30 (3.6) *	47 (5.3)
North Carolina	50 (2.0) ‡	57 (1.5) ‡	69 (1.8) ‡	83 (1.4)	18 (1.5) ‡	24 (2.0) ‡	31 (2.5) ‡	42 (1.8)	10 (3.3) ‡	23 (6.2) ‡	41 (5.6)	57 (6.4)
North Dakota	79 (1.4)	80 (1.4)	80 (1.1)	80 (1.5)	****(****)	****(****)	****(****)	****(****)	37 (8.0)	****(****)	55 (8.5)	55 (7.2)
Ohio	59 (1.6) ‡	67 (2.1) ‡	—	81 (1.7)	17 (2.6) ‡	20 (2.7) ‡	—	41 (4.9)	21 (6.6) ‡	33 (4.6) ‡	—	58 (6.1)
Oklahoma	58 (2.0) ‡	66 (1.5)	—	71 (1.9)	20 (2.8)	22 (4.3)	—	33 (6.2)	34 (5.6)	41 (5.1)	—	45 (7.4)
Oregon †	65 (1.4) ‡	—	70 (1.6)	75 (1.9)	****(****)	—	****(****)	51 (9.2) !	38 (4.2)	—	46 (5.3)	50 (6.4)
Rhode Island	55 (1.2) ‡	63 (1.4) ‡	67 (1.6) *	73 (1.3)	14 (3.5) ‡	28 (4.3)	31 (5.0)	32 (4.4)	15 (3.2) ‡	18 (4.2) *	27 (5.8)	31 (3.4)
South Carolina	—	64 (1.5) ‡	65 (2.3)	71 (1.7)	—	25 (1.4) ‡	28 (1.9)	33 (2.6)	—	15 (2.9) ‡	26 (5.6)	34 (6.4)
Tennessee	—	56 (1.7) *	62 (2.1)	62 (2.0)	—	17 (2.7)	19 (2.9)	23 (2.7)	—	18 (5.4) *	32 (8.0)	38 (6.7)
Texas	64 (2.0) ‡	71 (2.0) ‡	78 (1.7)	83 (1.8)	18 (2.3) ‡	28 (3.0) *	31 (4.3)	40 (4.3)	29 (1.9) ‡	33 (1.7) ‡	42 (2.6) ‡	59 (2.9)
Utah	—	70 (1.2)	73 (1.3)	72 (1.3)	—	****(****)	****(****)	****(****)	—	40 (4.6)	45 (4.4)	38 (3.8)
Vermont †	—	—	74 (1.6)	76 (1.8)	—	—	****(****)	****(****)	—	—	****(****)	****(****)
Virginia	60 (1.9) ‡	66 (1.6) ‡	71 (1.8) ‡	78 (1.7)	26 (2.4) ‡	29 (3.0)	26 (3.3) *	38 (3.6)	31 (4.5) ‡	44 (4.4)	44 (7.3)	56 (4.9)
West Virginia	44 (1.1) ‡	49 (1.6) ‡	56 (1.7) ‡	64 (1.3)	18 (6.1) *	26 (5.9)	29 (6.3) !	37 (6.2)	19 (4.3) ‡	15 (5.4) ‡	30 (6.6)	46 (5.6)
Wyoming	67 (1.4) ‡	71 (1.2)	72 (1.2)	74 (1.2)	****(****)	****(****)	****(****)	****(****)	39 (3.9)	45 (4.5)	45 (5.0)	45 (4.9)
Other Jurisdictions												
American Samoa	—	—	—	****(****)	—	—	—	****(****)	—	—	—	1 (1.1)
District of Columbia	****(****)	****(****)	79 (6.3)	****(****)	15 (0.8) ‡	20 (1.3)	17 (1.5)	20 (2.3)	10 (2.3) ‡	19 (3.2)	16 (4.1)	23 (3.9)
DDESS	—	—	74 (5.5)	79 (3.1)	—	—	39 (6.0)	54 (5.3)	—	—	52 (7.7)	59 (8.7)
DoDDS	—	—	77 (2.2)	81 (1.7)	—	—	39 (3.8)	49 (3.0)	—	—	59 (4.2)	62 (4.7)
Guam	48 (5.3)	60 (7.7)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	6 (1.5)	15 (2.7)	16 (3.0)	14 (3.7)

See footnotes at end of table. ▶

Table B.40: State *Basic* Level Achievement Results by Race/Ethnicity, Grade 8 (continued)

State percentages of students at or above *Basic* in mathematics by race/ethnicity for grade 8 public schools: 1990–2000

	Asian				American Indian			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	71 (6.1) !	75 (5.4)	~	75 (3.9)	31 (9.7) !	38 (6.1)	50 (6.2) !	50 (8.8)
Alabama	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Arizona †	****(****)	****(****)	****(****)	71 (5.6)	18 (2.8) !	39 (5.1)	40 (9.9) !	****(****)
Arkansas	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
California †	59 (4.5)	65 (3.8)	67 (4.5)	72 (4.7)	****(****)	****(****)	****(****)	****(****)
Connecticut	****(****)	75 (7.1)	70 (7.8)	76 (6.3)	****(****)	****(****)	****(****)	****(****)
Georgia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Hawaii	40 (1.2) ‡	48 (1.5)	52 (1.7)	52 (1.6)	****(****)	****(****)	****(****)	****(****)
Idaho †	****(****)	****(****)	—	****(****)	36 (7.3)	46 (6.5)	—	****(****)
Illinois †	70 (6.0)	—	—	****(****)	****(****)	—	—	****(****)
Indiana †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kansas †	—	—	—	****(****)	—	—	—	****(****)
Kentucky	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Louisiana	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maine †	—	****(****)	****(****)	****(****)	—	49 (7.4)	****(****)	****(****)
Maryland	80 (4.2)	77 (5.0) *	86 (5.2) !	90 (3.1)	****(****)	****(****)	****(****)	****(****)
Massachusetts	—	****(****)	67 (7.1)	80 (4.0)	—	****(****)	****(****)	****(****)
Michigan †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Minnesota †	61 (5.9)	****(****)	60 (7.0) !	****(****)	****(****)	****(****)	****(****)	****(****)
Mississippi	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Missouri	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Montana †	****(****)	—	****(****)	****(****)	42 (6.0)	—	55 (5.3)	41 (7.0) !
Nebraska	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Nevada	—	—	—	71 (4.5)	—	—	—	56 (6.9)
New Mexico	****(****)	****(****)	****(****)	****(****)	22 (2.4)	33 (5.4)	37 (3.8)	30 (5.8) !
New York †	68 (7.0) !	69 (8.8)	75 (5.2)	77 (4.1)	****(****)	****(****)	****(****)	****(****)
North Carolina	****(****)	****(****)	****(****)	****(****)	18 (4.9) !	****(****)	****(****)	****(****)
North Dakota	****(****)	****(****)	****(****)	****(****)	26 (4.7) !	48 (11.6) !	36 (7.0) !	45 (5.1)
Ohio	****(****)	****(****)	—	****(****)	****(****)	****(****)	—	****(****)
Oklahoma	****(****)	****(****)	—	****(****)	44 (3.7) ‡	50 (5.1)	—	58 (4.2)
Oregon †	69 (5.4)	—	78 (7.1)	71 (7.2)	42 (5.2)	—	46 (6.7)	****(****)
Rhode Island	****(****)	59 (5.4)	56 (7.3)	62 (5.7)	****(****)	****(****)	****(****)	****(****)
South Carolina	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Tennessee	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Texas	****(****)	85 (4.6)	86 (5.5) !	83 (6.6)	****(****)	****(****)	****(****)	****(****)
Utah	—	****(****)	62 (7.1)	66 (8.2)	—	****(****)	****(****)	****(****)
Vermont †	—	—	****(****)	****(****)	—	—	****(****)	****(****)
Virginia	83 (4.5)	71 (5.3) ‡	74 (5.5) *	89 (3.1)	****(****)	****(****)	****(****)	****(****)
West Virginia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Wyoming	****(****)	****(****)	****(****)	****(****)	45 (6.7)	32 (4.4) !	35 (7.3)	42 (7.3) !
Other Jurisdictions								
American Samoa	—	—	—	9 (3.2)	—	—	—	****(****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DDESS	—	—	****(****)	****(****)	—	—	****(****)	****(****)
DoDDS	—	—	72 (3.8)	77 (3.4)	—	—	****(****)	****(****)
Guam	23 (1.2)	25 (1.5)	31 (2.2)	25 (1.6)	****(****)	****(****)	****(****)	****(****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

~ Special analyses raised concerns about the accuracy and precision of the national grade 8 Asian/Pacific Islander results in 1996. As a result, they are omitted from the body of this report. See appendix A for a more detailed discussion.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.41: State Achievement Level Results by Race/Ethnicity, Grade 8

State percentages of students at or above mathematics achievement levels by race/ethnicity for grade 8 public schools: 2000

	White				Black				Hispanic			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	23 (1.0)	77 (1.0)	34 (1.3)	6 (0.7)	68 (1.9)	32 (1.9)	5 (0.6)	▲(****)	60 (1.9)	40 (1.9)	9 (0.9)	1 (0.3)
Alabama	33 (2.0)	67 (2.0)	23 (2.0)	3 (0.8)	76 (2.3)	24 (2.3)	4 (0.9)	▲(****)	71 (7.3)	29 (7.3)	6 (3.5)	1 (****)
Arizona †	22 (1.4)	78 (1.4)	31 (2.2)	5 (0.8)	61 (5.7)	39 (5.7)	8 (3.9)	▲(****)	59 (3.3)	41 (3.3)	8 (1.6)	▲(****)
Arkansas	35 (2.0)	65 (2.0)	19 (1.6)	2 (0.5)	82 (2.1)	18 (2.1)	2 (0.6)	0 (****)	75 (5.1)	25 (5.1)	4 (****)	0 (****)
California †	29 (2.8)	71 (2.8)	27 (2.0)	4 (0.9)	75 (3.4)	25 (3.4)	4 (1.8)	1 (****)	66 (3.2)	34 (3.2)	7 (2.4)	▲(****)
Connecticut	14 (1.3)	86 (1.3)	44 (1.9)	8 (1.0)	69 (3.1)	31 (3.1)	4 (1.5)	▲(****)	63 (3.4)	37 (3.4)	9 (1.8)	1 (0.7)
Georgia	27 (2.3)	73 (2.3)	28 (1.5)	4 (0.7)	70 (2.3)	30 (2.3)	4 (0.8)	▲ (0.1)	66 (4.6)	34 (4.6)	5 (2.1)	▲(****)
Hawaii	34 (5.0)	66 (5.0)	28 (3.6)	5 (1.7)	59 (8.9)	41 (8.9)	8 (4.2)	0 (****)	63 (5.0)	37 (5.0)	5 (2.3)	▲(****)
Idaho †	24 (1.2)	76 (1.2)	30 (1.8)	4 (0.6)	****(****)	****(****)	****(****)	****(****)	63 (6.8)	37 (6.8)	9 (2.4)	▲(****)
Illinois †	19 (1.8)	81 (1.8)	38 (1.8)	6 (1.3)	58 (4.2)	42 (4.2)	7 (2.1)	▲(****)	49 (5.2)	51 (5.2)	11 (2.4)	▲(****)
Indiana †	19 (1.5)	81 (1.5)	35 (1.9)	6 (0.7)	52 (4.6) !	48 (4.6) !	7 (3.1) !	▲(****)!	43 (8.0)	57 (8.0)	13 (3.9)	1 (****)
Kansas †	17 (1.6)	83 (1.6)	38 (2.1)	4 (0.8)	58 (9.8)	42 (9.8)	10 (4.2)	1 (****)	49 (4.8)	51 (4.8)	13 (3.6)	2 (1.6)
Kentucky	33 (1.7)	67 (1.7)	23 (1.5)	3 (0.5)	62 (3.9)	38 (3.9)	7 (2.3)	1 (****)	****(****)	****(****)	****(****)	****(****)
Louisiana	29 (1.9)	71 (1.9)	20 (2.0)	1 (0.5)	78 (1.9)	22 (1.9)	2 (0.6)	▲(****)	74 (4.9)	26 (4.9)	4 (2.0)	▲(****)
Maine †	23 (1.6)	77 (1.6)	33 (1.5)	6 (0.7)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maryland	19 (1.5)	81 (1.5)	40 (1.8)	9 (1.1)	64 (2.6)	36 (2.6)	7 (1.3)	▲ (0.3)	43 (5.2)	57 (5.2)	17 (4.4)	3 (1.5)
Massachusetts	17 (1.5)	83 (1.5)	37 (1.3)	6 (0.7)	57 (5.5)	43 (5.5)	8 (3.6)	▲(****)	51 (5.0)	49 (5.0)	14 (3.1)	1 (1.0)
Michigan †	21 (1.6)	79 (1.6)	35 (2.0)	6 (0.8)	75 (3.2)	25 (3.2)	2 (1.0)	0 (****)	49 (6.1)	51 (6.1)	9 (3.8)	1 (****)
Minnesota †	16 (1.4)	84 (1.4)	42 (1.6)	7 (0.8)	****(****)	****(****)	****(****)	****(****)	57 (7.7)	43 (7.7)	13 (4.3)	1 (0.8)
Mississippi	41 (1.8)	59 (1.8)	14 (1.3)	1 (0.4)	80 (1.7)	20 (1.7)	1 (0.4)	0 (****)	85 (4.4)	15 (4.4)	1 (****)	0 (****)
Missouri	25 (2.0)	75 (2.0)	25 (1.5)	3 (0.4)	71 (4.4)	29 (4.4)	5 (1.4)	▲(****)	59 (6.5)	41 (6.5)	10 (4.5)	1 (****)
Montana †	16 (1.3)	84 (1.3)	40 (1.6)	6 (0.7)	****(****)	****(****)	****(****)	****(****)	32 (7.2)	68 (7.2)	23 (6.6)	3 (****)
Nebraska	21 (1.5)	79 (1.5)	34 (1.6)	5 (0.7)	69 (8.1)	31 (8.1)	8 (3.6)	1 (****)	56 (5.7)	44 (5.7)	11 (2.8)	1 (****)
Nevada	30 (1.5)	70 (1.5)	26 (1.3)	3 (0.5)	65 (3.3)	35 (3.3)	7 (2.2)	▲ (****)	63 (2.1)	37 (2.1)	9 (1.1)	▲(****)
New Mexico	28 (2.4)	72 (2.4)	26 (2.0)	3 (1.1)	****(****)	****(****)	****(****)	****(****)	62 (2.1)	38 (2.1)	6 (1.1)	▲(0.1)
New York †	15 (1.3)	85 (1.3)	36 (2.1)	6 (1.2)	56 (6.6)	44 (6.6)	10 (3.1)	1 (0.5)	53 (5.3)	47 (5.3)	12 (2.3)	2 (0.8)
North Carolina	17 (1.4)	83 (1.4)	41 (1.5)	8 (1.0)	58 (1.8)	42 (1.8)	7 (1.0)	1 (0.4)	43 (6.4)	57 (6.4)	18 (4.5)	3 (****)
North Dakota	20 (1.5)	80 (1.5)	33 (1.7)	5 (0.7)	****(****)	****(****)	****(****)	****(****)	45 (7.2)	55 (7.2)	17 (6.8)	1 (****)
Ohio	19 (1.7)	81 (1.7)	34 (1.8)	6 (0.9)	59 (4.9)	41 (4.9)	8 (2.2)	▲(****)	42 (6.1)	58 (6.1)	21 (4.6)	2 (****)
Oklahoma	29 (1.9)	71 (1.9)	22 (1.2)	2 (0.4)	67 (6.2)	33 (6.2)	5 (1.6)	0 (****)	55 (7.4)	45 (7.4)	8 (2.6)	1 (****)
Oregon †	25 (1.9)	75 (1.9)	34 (2.0)	6 (0.9)	49 (9.2) !	51 (9.2) !	15 (5.9) !	3 (****)!	50 (6.4)	50 (6.4)	13 (4.3)	1 (****)
Rhode Island	27 (1.3)	73 (1.3)	29 (1.3)	5 (0.7)	68 (4.4)	32 (4.4)	6 (2.7)	0 (****)	69 (3.4)	31 (3.4)	4 (1.4)	▲(****)
South Carolina	29 (1.7)	71 (1.7)	28 (1.7)	4 (0.7)	67 (2.6)	33 (2.6)	4 (0.9)	▲(****)	66 (6.4)	34 (6.4)	9 (3.7)	0 (****)
Tennessee	38 (2.0)	62 (2.0)	21 (1.6)	3 (0.5)	77 (2.7)	23 (2.7)	3 (1.2)	▲ (****)	62 (6.7)	38 (6.7)	12 (6.9)	1 (****)
Texas	17 (1.8)	83 (1.8)	37 (2.1)	4 (0.8)	60 (4.3)	40 (4.3)	6 (2.0)	▲(****)	41 (2.9)	59 (2.9)	14 (2.0)	1 (0.5)
Utah	28 (1.3)	72 (1.3)	28 (1.2)	3 (0.4)	****(****)	****(****)	****(****)	****(****)	62 (3.8)	38 (3.8)	7 (2.2)	▲(****)
Vermont †	24 (1.8)	76 (1.8)	33 (1.5)	6 (0.6)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Virginia	22 (1.7)	78 (1.7)	33 (1.8)	6 (0.8)	62 (3.6)	38 (3.6)	5 (1.2)	1 (0.3)	44 (4.9)	56 (4.9)	14 (3.4)	1 (****)
West Virginia	36 (1.3)	64 (1.3)	19 (1.0)	2 (0.5)	63 (6.2)	37 (6.2)	8 (3.7)	1 (****)	54 (5.6)	46 (5.6)	14 (4.0)	2 (****)
Wyoming	26 (1.2)	74 (1.2)	27 (1.2)	4 (0.6)	****(****)	****(****)	****(****)	****(****)	55 (4.9)	45 (4.9)	10 (2.1)	1 (****)
Other Jurisdictions												
American Samoa	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	99 (****)	1 (****)	0 (****)	0 (****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	80 (2.3)	20 (2.3)	3 (0.6)	▲ (0.2)	77 (3.9)	23 (3.9)	4 (2.0)	1 (****)
DDESS	21 (3.1)	79 (3.1)	38 (4.0)	10 (2.2)	46 (5.3)	54 (5.3)	17 (3.2)	3 (****)	41 (8.7)	59 (8.7)	16 (4.4)	3 (1.9)
DoDDS	19 (1.7)	81 (1.7)	36 (1.9)	6 (1.3)	51 (3.0)	49 (3.0)	10 (1.7)	1 (0.6)	38 (4.7)	62 (4.7)	18 (2.6)	3 (1.3)
Guam	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	86 (3.7)	14 (3.7)	2 (1.5)	▲(****)

See footnotes at end of table. ▶

Table B.41: State Achievement Level Results by Race/Ethnicity, Grade 8 (continued)

State percentages of students at or above mathematics achievement levels by race/ethnicity for grade 8 public schools: 2000

	Asian				American Indian			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	25 (3.9)	75 (3.9)	40 (4.1)	11 (2.8)	50 (8.8)	50 (8.8)	12 (3.6)	▲ (****)
Alabama	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Arizona †	29 (5.6)	71 (5.6)	35 (5.8)	7 (3.3)	****(****)	****(****)	****(****)	****(****)
Arkansas	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
California †	28 (4.7)	72 (4.7)	33 (5.4)	9 (2.5)	****(****)	****(****)	****(****)	****(****)
Connecticut	24 (6.3)	76 (6.3)	38 (9.1)	7 (3.5)	****(****)	****(****)	****(****)	****(****)
Georgia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Hawaii	48 (1.6)	52 (1.6)	16 (1.2)	2 (0.4)	****(****)	****(****)	****(****)	****(****)
Idaho †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Illinois †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Indiana †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kansas †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Kentucky	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Louisiana	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maine †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Maryland	10 (3.1)	90 (3.1)	64 (4.6)	21 (4.3)	****(****)	****(****)	****(****)	****(****)
Massachusetts	20 (4.0)	80 (4.0)	49 (6.5)	14 (4.6)	****(****)	****(****)	****(****)	****(****)
Michigan †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Minnesota †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Mississippi	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Missouri	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Montana †	****(****)	****(****)	****(****)	****(****)	59 (7.0) !	41 (7.0) !	8 (2.9) !	1 (****)!
Nebraska	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Nevada	29 (4.5)	71 (4.5)	26 (3.7)	4 (1.9)	44 (6.9)	56 (6.9)	11 (4.7)	0 (****)
New Mexico	****(****)	****(****)	****(****)	****(****)	70 (5.8) !	30 (5.8) !	4 (1.5) !	1 (****)!
New York †	23 (4.1)	77 (4.1)	42 (6.0)	8 (3.6)	****(****)	****(****)	****(****)	****(****)
North Carolina	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
North Dakota	****(****)	****(****)	****(****)	****(****)	55 (5.1)	45 (5.1)	6 (3.0)	▲ (****)
Ohio	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Oklahoma	****(****)	****(****)	****(****)	****(****)	42 (4.2)	58 (4.2)	8 (2.1)	▲ (****)
Oregon †	29 (7.2)	71 (7.2)	35 (6.6)	11 (4.2)	****(****)	****(****)	****(****)	****(****)
Rhode Island	38 (5.7)	62 (5.7)	21 (6.7)	3 (****)	****(****)	****(****)	****(****)	****(****)
South Carolina	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Tennessee	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Texas	17 (6.6)	83 (6.6)	42 (7.1)	9 (4.0)	****(****)	****(****)	****(****)	****(****)
Utah	34 (8.2)	66 (8.2)	35 (6.2)	5 (3.4)	****(****)	****(****)	****(****)	****(****)
Vermont †	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Virginia	11 (3.1)	89 (3.1)	49 (8.2)	14 (6.3)	****(****)	****(****)	****(****)	****(****)
West Virginia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
Wyoming	****(****)	****(****)	****(****)	****(****)	58 (7.3) !	42 (7.3) !	7 (3.9) !	1 (****)!
Other Jurisdictions								
American Samoa	91 (3.2)	9 (3.2)	1 (0.8)	▲ (****)	****(****)	****(****)	****(****)	****(****)
District of Columbia	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DDESS	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)	****(****)
DoDDS	23 (3.4)	77 (3.4)	30 (2.4)	4 (1.1)	****(****)	****(****)	****(****)	****(****)
Guam	75 (1.6)	25 (1.6)	4 (0.7)	▲ (0.3)	****(****)	****(****)	****(****)	****(****)

Standard errors of the estimated percentages appear in parentheses.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

(****) Standard error estimates cannot be accurately determined.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

▲ Percentage is between 0.0 and 0.5.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.42: State Scale Score Differences by Race/Ethnicity, Grade 4

Racial/ethnic gaps in state average mathematics scale scores for grade 4 public schools: 1992–2000

	White-Black			White-Hispanic		
	1992	1996	2000	1992	1996	2000
Nation	35 (1.7)	31 (2.7)	30 (2.0)	26 (1.8)	26 (2.4)	24 (1.9)
Alabama	30 (1.9) *	29 (2.0)	24 (1.9)	26 (4.2)	27 (3.4)	28 (3.6)
Arizona	27 (3.7)	29 (4.0)	23 (3.8)	22 (1.5)	25 (2.6)	27 (2.4)
Arkansas	29 (2.0)	30 (2.6)	27 (2.1)	23 (3.0)	21 (3.0)	20 (3.4)
California †	38 (3.7)	35 (3.4)	36 (3.2)	29 (2.4)	26 (3.0)	28 (2.8)
Connecticut	40 (2.8)	35 (3.0)	33 (2.5)	29 (2.9)	34 (3.3)	28 (2.5)
Georgia	32 (1.8)	24 (2.2)	26 (2.0)	31 (2.9)	23 (3.8)	24 (3.2)
Hawaii	19 (3.7)	21 (4.3)	21 (3.4)	20 (3.1)	24 (3.1)	20 (2.8)
Idaho †	****(****)	—	****(****)	20 (2.6)	—	18 (2.4)
Illinois †	—	—	31 (3.2)	—	—	23 (3.2)
Indiana †	29 (2.5)	27 (2.7)	22 (2.7)	15 (2.1)	18 (2.8)	18 (3.9)
Iowa †	38 (3.9)	26 (3.5)	****(****)	12 (2.7)	19 (3.1)	20 (4.2)
Kansas †	—	—	31 (5.5)	—	—	22 (3.0)
Kentucky	16 (2.7) *	19 (2.6)	25 (2.2)	18 (3.1)	22 (4.3)	18 (4.7)
Louisiana	31 (2.3)	27 (1.9)	26 (2.3)	18 (4.5)	29 (3.5)	20 (3.5)
Maine †	****(****)	****(****)	****(****)	13 (3.7)	15 (3.0)	****(****)
Maryland	34 (2.2)	35 (2.1)	33 (2.4)	22 (3.6)	28 (4.1)	27 (3.4)
Massachusetts	38 (3.2)	25 (3.5)	29 (3.1)	25 (2.8)	22 (2.7) *	31 (2.9)
Michigan †	41 (4.1)	34 (3.0)	38 (2.9)	22 (3.0)	28 (2.9)	29 (4.1)
Minnesota †	38 (3.1)	43 (4.6) *	29 (4.4)	24 (3.0)	17 (3.5)	25 (4.2)
Mississippi	28 (1.8)	25 (1.8)	25 (1.8)	33 (3.1) *	26 (3.2)	23 (3.0)
Missouri	32 (2.4)	29 (2.3)	33 (3.1)	20 (3.3)	16 (3.4)	23 (4.3)
Montana †	—	****(****)	****(****)	—	13 (2.8)	15 (4.3)
Nebraska	39 (2.7)	34 (3.7)	33 (4.0)	19 (3.3)	23 (3.4)	26 (4.0)
Nevada	—	29 (3.6)	22 (2.6)	—	19 (2.4)	19 (2.3)
New Mexico	22 (4.1)	23 (8.2)	****(****)	21 (2.0)	22 (2.0)	19 (2.5)
New York †	29 (3.0)	30 (2.9)	27 (2.6)	29 (2.6)	29 (2.5)	27 (2.3)
North Carolina	30 (1.7) *	29 (1.7) *	23 (1.7)	23 (4.3)	28 (4.4)	23 (3.8)
North Dakota	****(****)	****(****)	****(****)	15 (3.5)	10 (5.1)	20 (3.7)
Ohio †	27 (3.1)	—	29 (2.1)	15 (3.3)	—	19 (3.4)
Oklahoma	23 (2.7)	—	24 (5.4)	15 (2.6)	—	15 (2.3)
Oregon †	—	****(****)	****(****)	—	26 (2.8)	24 (3.0)
Rhode Island	32 (3.6)	32 (4.2)	33 (3.8)	32 (3.0)	25 (3.3) *	36 (2.9)
South Carolina	30 (1.6)	26 (2.0)	29 (2.1)	26 (2.9)	26 (3.2)	24 (3.9)
Tennessee	25 (2.2)	28 (2.7)	28 (3.2)	25 (4.2)	18 (4.6)	20 (5.4)
Texas	30 (2.5)	30 (2.3)	23 (2.8)	20 (2.5)	25 (2.2) *	19 (2.1)
Utah	****(****)	****(****)	****(****)	17 (2.3) *	22 (3.1)	26 (2.7)
Vermont †	—	****(****)	****(****)	—	13 (4.2)	****(****)
Virginia	31 (2.1)	26 (2.0)	27 (1.9)	16 (3.7)	16 (3.6)	20 (2.7)
West Virginia	13 (4.5)	20 (4.3)	19 (3.6)	12 (3.2)	15 (3.4)	14 (4.3)
Wyoming	****(****)	****(****)	****(****)	13 (2.0)	18 (3.4)	17 (2.7)
Other Jurisdictions						
American Samoa	—	—	****(****)	—	—	****(****)
District of Columbia	52 (4.2)	56 (4.0)	50 (4.8)	59 (4.7)	58 (6.0)	51 (5.9)
DDESS	—	22 (2.8)	18 (3.1)	—	19 (3.2)	17 (3.0)
DoDDS	—	21 (1.8)	21 (2.2)	—	16 (2.3)	17 (2.1)
Guam	22 (5.6)	****(****)	****(****)	25 (2.8)	23 (6.4)	****(****)
Virgin Islands	—	—	****(****)	—	—	****(****)

Standard errors of the estimated difference in scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

**** (****) Sample size is insufficient to permit a reliable estimate.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996 and 2000 Mathematics Assessments.

Table B.43: State Scale Score Differences by Race/Ethnicity, Grade 8

Racial/ethnic gaps in state average mathematics scale scores for grade 8 public schools: 1990-2000

	White-Black				White-Hispanic			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	32 (3.2)	40 (1.7)	39 (2.5)	39 (1.7)	27 (3.2)	31 (1.7)	31 (2.5)	33 (1.9)
Alabama	29 (1.9) *	33 (2.6)	38 (3.0)	36 (2.6)	36 (3.8)	43 (5.4)	40 (5.5)	36 (5.4)
Arizona †	26 (3.4)	24 (3.5)	24 (3.7)	34 (4.6)	29 (2.2)	28 (2.9)	27 (2.6)	32 (2.6)
Arkansas	33 (1.5)	34 (2.1)	35 (3.3)	37 (2.3)	35 (4.1)	36 (4.2)	****(****)	38 (6.0)
California †	39 (3.8)	42 (4.0)	40 (4.2)	37 (3.6)	35 (2.2)	36 (2.7)	33 (2.3)	32 (3.5)
Connecticut	37 (2.5) *	41 (3.0)	43 (2.5)	46 (2.4)	41 (2.8)	42 (2.6)	36 (2.1)	42 (3.6)
Georgia	31 (2.1)	29 (1.8)	36 (2.4)	34 (2.1)	40 (3.6)	37 (5.7)	30 (5.2)	33 (3.0)
Hawaii	****(****)	****(****)	****(****)	19 (6.4)	32 (3.2)	27 (2.7)	28 (4.3)	27 (5.5)
Idaho †	****(****)	****(****)	—	****(****)	25 (2.9)	23 (2.4)	—	32 (4.4)
Illinois †	38 (4.4)	—	—	33 (3.3)	34 (4.1)	—	—	27 (4.2)
Indiana †	28 (3.1)	30 (2.8)	33 (2.5)	27 (3.0)	26 (3.7)	24 (4.7)	26 (5.0)	23 (4.5)
Kansas †	—	—	—	31 (5.7)	—	—	—	27 (4.0)
Kentucky	20 (2.7)	23 (2.8)	21 (3.5)	22 (3.1)	32 (3.7)	32 (4.7)	****(****)	****(****)
Louisiana	29 (1.9) *	30 (2.7)	32 (2.2)	36 (2.2)	34 (4.4)	34 (3.9)	24 (3.7) *	39 (5.4)
Maine †	—	****(****)	****(****)	****(****)	—	****(****)	****(****)	****(****)
Maryland	35 (2.4)	39 (2.5)	42 (2.6)	41 (2.4)	36 (3.3)	37 (3.6) *	37 (4.6)	26 (4.5)
Massachusetts	—	34 (5.1)	33 (4.5)	34 (3.8)	—	37 (3.6)	41 (4.4)	30 (3.9)
Michigan †	40 (1.8)	44 (2.3)	39 (4.0)	44 (2.9)	28 (3.4)	28 (4.2)	36 (4.6)	28 (4.2)
Minnesota †	39 (4.8)	****(****)	39 (5.1)	****(****)	39 (5.1)	31 (3.9)	22 (6.1)	35 (5.2)
Mississippi	—	32 (1.9)	30 (1.8)	31 (1.9)	—	39 (3.4)	42 (3.5)	41 (4.9)
Missouri	—	34 (3.1)	35 (4.0)	36 (4.4)	—	25 (4.2)	19 (4.5)	30 (5.6)
Montana †	****(****)	—	****(****)	****(****)	21 (3.9)	—	30 (5.8) *	15 (4.6)
Nebraska	44 (5.3)	45 (4.8)	31 (3.4)	39 (4.6)	27 (4.3)	27 (3.3)	34 (4.3)	30 (3.9)
Nevada	—	—	—	26 (2.3)	—	—	—	26 (2.2)
New Mexico	****(****)	****(****)	****(****)	****(****)	25 (1.6)	24 (1.6)	28 (1.8)	27 (2.4)
New York †	38 (3.3)	47 (4.5) *	38 (3.3)	32 (4.5)	37 (3.1)	36 (4.9)	39 (3.0)	31 (5.2)
North Carolina	29 (1.9) *	28 (2.0) *	31 (2.1)	35 (1.8)	43 (3.5) ‡	28 (4.8)	25 (3.7)	22 (3.8)
North Dakota	****(****)	****(****)	****(****)	****(****)	36 (6.1)	****(****)	22 (5.1)	23 (6.8)
Ohio	36 (2.0)	40 (2.7)	—	32 (3.9)	32 (4.5) *	29 (4.9)	—	17 (4.4)
Oklahoma	32 (2.5)	34 (3.1)	—	29 (4.8)	22 (4.5)	20 (3.3)	—	23 (6.0)
Oregon †	****(****)	—	****(****)	24 (7.1)	20 (3.0)	—	20 (4.0)	25 (5.7)
Rhode Island	39 (3.2)	30 (3.0)	32 (4.0)	35 (3.4)	36 (2.5)	39 (2.8)	36 (4.3)	34 (3.0)
South Carolina	—	32 (1.5)	29 (2.2)	30 (2.3)	—	40 (2.8) *	39 (6.2)	29 (4.2)
Tennessee	—	31 (2.6)	36 (3.2)	34 (3.4)	—	38 (4.9)	25 (5.4)	25 (6.2)
Texas	38 (2.2)	35 (2.5)	35 (2.9)	36 (3.6)	28 (2.3)	30 (2.0) *	29 (2.2) *	22 (2.4)
Utah	—	****(****)	****(****)	****(****)	—	23 (2.4)	24 (3.1)	30 (3.3)
Vermont †	—	—	****(****)	****(****)	—	—	****(****)	****(****)
Virginia	29 (2.3)	30 (2.1)	35 (2.9)	33 (2.3)	29 (4.4)	21 (4.1)	22 (4.9)	19 (3.7)
West Virginia	23 (4.2)	17 (3.8)	20 (4.0)	21 (4.9)	26 (4.3)	29 (5.0)	22 (5.8)	16 (4.8)
Wyoming	****(****)	****(****)	****(****)	****(****)	20 (2.3)	20 (2.2)	22 (3.3)	26 (3.8)
Other Jurisdictions								
American Samoa	—	—	—	****(****)	—	—	—	****(****)
District of Columbia	****(****)	****(****)	73 (8.7)	****(****)	****(****)	****(****)	82 (9.3)	****(****)
DDESS	—	—	33 (6.1)	21 (3.6)	—	—	21 (7.3)	19 (6.3)
DoDDS	—	—	28 (2.5)	26 (2.4)	—	—	16 (2.9)	16 (2.6)
Guam	****(****)	****(****)	****(****)	****(****)	47 (4.0)	49 (6.2)	****(****)	****(****)

Standard errors of the estimated difference in scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

**** (****) Sample size is insufficient to permit a reliable estimate.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996 and 2000 Mathematics Assessments.

Table B.44: State Percentages of Students by Race/Ethnicity, Grade 4

State percentages of students by race/ethnicity for grade 4 public schools: 1992–2000

	White			Black			Hispanic		
	1992	1996	2000	1992	1996	2000	1992	1996	2000
Nation	69 (0.4)	66 (0.6)	64 (0.4)	17 (0.4)	15 (0.4)	15 (0.2)	10 (0.2)	14 (0.5)	16 (0.3)
Alabama	61 (2.5)	60 (2.1)	54 (2.6)	32 (2.3)	31 (2.0)	35 (2.4)	4 (0.6)	6 (0.6)	8 (0.8)
Arizona	56 (2.1)	56 (2.5)	52 (2.0)	4 (0.7)	4 (0.6)	5 (0.6)	29 (1.5)	29 (1.6)	31 (1.7)
Arkansas	69 (1.5)	69 (2.2)	64 (2.1)	21 (1.4)	20 (2.1)	23 (1.8)	6 (0.6)	6 (0.7)	8 (0.8)
California †	45 (2.0)	41 (2.3)	36 (2.5)	6 (0.7)	8 (1.0)	9 (1.8)	35 (1.7)	38 (2.2)	41 (2.6)
Connecticut	73 (1.4)	72 (1.5)	68 (1.8)	10 (1.1)	11 (1.5)	12 (1.2)	13 (1.1)	13 (1.1)	14 (1.0)
Georgia	56 (2.2)	57 (2.2)	49 (1.3)	35 (2.1)	31 (1.9)	38 (1.3)	6 (0.6)	8 (1.0)	9 (0.7)
Hawaii	21 (1.6)	18 (1.1)	17 (1.2)	4 (0.6)	4 (0.4)	4 (0.5)	11 (0.7)	12 (0.7)	12 (0.8)
Idaho †	84 (1.2)	—	80 (1.2)	1 (0.2)	—	1 (0.4)	11 (1.0)	—	15 (1.1)
Illinois †	—	—	53 (3.4)	—	—	20 (3.0)	—	—	23 (3.3)
Indiana †	82 (1.5)	82 (1.3)	82 (2.0)	10 (1.3)	9 (1.0)	8 (1.7)	5 (0.6)	6 (0.8)	6 (0.8)
Iowa †	90 (0.9)	88 (1.0)	86 (1.2)	2 (0.5)	3 (0.5)	3 (0.6)	5 (0.5)	6 (0.8)	7 (1.1)
Kansas †	—	—	75 (2.2)	—	—	7 (1.8)	—	—	13 (1.7)
Kentucky	85 (1.6)	85 (1.1)	82 (1.3)	9 (1.3)	9 (0.9)	11 (1.1)	4 (0.6)	4 (0.7)	4 (0.6)
Louisiana	50 (2.0)	49 (2.0)	50 (2.4)	43 (2.0)	40 (1.9)	41 (2.5)	5 (0.6)	7 (0.9)	6 (0.7)
Maine †	91 (0.7)	93 (0.8)	93 (0.8)	1 (0.1)	1 (0.3)	1 (0.3)	5 (0.6)	4 (0.6)	2 (0.4)
Maryland	59 (1.7)	53 (2.4)	50 (1.6)	30 (1.4)	34 (2.3)	35 (1.9)	6 (0.6)	7 (0.7)	9 (0.8)
Massachusetts	79 (1.6)	77 (1.9)	76 (1.5)	7 (0.8)	7 (0.8)	7 (1.2)	8 (0.8)	11 (1.2)	12 (1.0)
Michigan †	73 (1.8)	74 (2.3)	72 (2.3)	13 (1.7)	14 (2.2)	15 (2.1)	9 (0.9)	8 (0.6)	8 (1.2)
Minnesota †	85 (1.3)	83 (1.1)	79 (1.9)	3 (0.5)	4 (0.7)	6 (1.1)	7 (0.8)	6 (0.6)	8 (1.1)
Mississippi	40 (2.0)	45 (2.0)	46 (1.5)	52 (2.1)	47 (1.9)	44 (1.6)	6 (0.9)	5 (0.7)	8 (0.7)
Missouri	77 (1.7)	76 (1.7)	75 (1.3)	14 (1.7)	15 (1.5)	15 (1.2)	6 (0.5)	6 (0.6)	6 (0.7)
Montana †	—	79 (2.6)	77 (2.2)	—	1 (0.2)	1 (0.2)	—	7 (0.7)	9 (1.0)
Nebraska	84 (1.3)	81 (1.2)	75 (2.5)	6 (0.7)	6 (1.1)	5 (1.4)	7 (0.9)	9 (0.8)	14 (1.8)
Nevada	—	60 (1.4)	54 (1.8)	—	8 (1.1)	10 (1.2)	—	22 (1.0)	27 (1.4)
New Mexico	44 (2.4)	43 (2.5)	36 (2.0)	4 (0.5)	3 (0.5)	3 (0.5)	47 (2.0)	43 (1.6)	49 (2.2)
New York †	59 (2.2)	58 (1.6)	49 (2.4)	13 (1.6)	16 (1.4)	18 (2.1)	22 (1.7)	19 (1.4)	26 (2.0)
North Carolina	62 (1.7)	66 (1.6)	61 (1.8)	29 (1.3)	27 (1.7)	30 (1.5)	6 (0.7)	4 (0.6)	5 (0.6)
North Dakota	91 (1.0)	89 (1.3)	87 (1.1)	▲ (0.2)	1 (0.2)	2 (0.3)	4 (0.6)	5 (0.5)	4 (0.5)
Ohio †	79 (1.5)	—	74 (1.9)	11 (1.2)	—	15 (1.7)	6 (0.5)	—	7 (0.8)
Oklahoma	73 (1.5)	—	65 (1.8)	9 (1.2)	—	10 (1.6)	7 (0.8)	—	13 (1.0)
Oregon †	—	78 (1.5)	76 (1.4)	—	2 (0.4)	3 (0.7)	—	11 (1.1)	13 (1.2)
Rhode Island	78 (2.1)	76 (1.4)	71 (1.7)	6 (1.0)	6 (0.6)	6 (0.6)	11 (1.1)	13 (1.0)	17 (1.4)
South Carolina	55 (1.7)	54 (1.7)	53 (1.8)	37 (1.8)	37 (1.7)	38 (1.9)	6 (0.8)	6 (0.7)	6 (0.5)
Tennessee	69 (2.1)	72 (2.2)	72 (1.8)	23 (1.9)	21 (2.3)	22 (1.4)	5 (0.8)	4 (0.6)	4 (0.5)
Texas	49 (1.8)	49 (2.1)	44 (1.8)	14 (1.8)	14 (1.9)	15 (1.8)	34 (2.3)	33 (2.6)	36 (2.1)
Utah	86 (1.0)	82 (1.3)	79 (1.4)	1 (0.2)	1 (0.2)	2 (0.3)	10 (0.8)	12 (1.1)	13 (1.0)
Vermont †	—	88 (0.9)	92 (1.0)	—	2 (0.3)	1 (0.5)	—	7 (0.7)	4 (0.7)
Virginia	67 (1.4)	65 (2.0)	59 (1.8)	23 (1.3)	24 (1.8)	25 (1.5)	5 (0.6)	6 (0.7)	9 (0.8)
West Virginia	90 (0.9)	87 (1.0)	87 (1.1)	3 (0.4)	4 (0.7)	4 (0.7)	5 (0.8)	6 (0.7)	6 (0.8)
Wyoming	82 (1.4)	81 (1.3)	81 (1.2)	1 (0.2)	1 (0.3)	1 (0.3)	11 (0.9)	13 (1.0)	13 (1.2)
Other Jurisdictions									
American Samoa	—	—	8 (1.3)	—	—	6 (0.9)	—	—	29 (2.2)
District of Columbia	5 (0.4)	6 (0.4)	6 (0.4)	82 (0.6)	82 (0.7)	76 (1.0)	10 (0.4)	10 (0.7)	15 (0.9)
DDESS	—	49 (1.6)	46 (1.2)	—	25 (1.3)	26 (1.1)	—	18 (1.2)	19 (1.0)
DoDDS	—	48 (1.0)	46 (1.1)	—	18 (0.8)	18 (0.7)	—	16 (0.8)	16 (0.7)
Guam	12 (0.7)	8 (0.8)	6 (1.0)	4 (0.4)	4 (0.5)	2 (0.5)	20 (0.8)	22 (1.3)	12 (1.7)
Virgin Islands	—	—	2 (0.5)	—	—	73 (1.6)	—	—	21 (1.6)

See footnotes at end of table. ▶

Table B.44: State Percentages of Students by Race/Ethnicity, Grade 4 (continued)

State percentages of students by race/ethnicity for grade 4 public schools: 1992–2000

	Asian			American Indian		
	1992	1996	2000	1992	1996	2000
Nation	3 (0.3)	3 (0.2)	3 (0.3)	2 (0.2)	2 (0.2)	2 (0.2)
Alabama	1 (0.2)	1 (0.2)	1 (0.3)	2 (1.0)	2 (0.4)	2 (0.4)
Arizona	1 (0.2)	2 (0.4)	3 (0.4)	10 (1.7)	9 (2.3)	9 (0.9)
Arkansas	1 (0.2)	1 (0.3)	1 (0.2)	3 (0.4)	4 (0.5)	3 (0.5)
California †	11 (1.1)	10 (1.4)	11 (1.3)	3 (0.5)	2 (0.5)	3 (0.5)
Connecticut	2 (0.4)	2 (0.3)	3 (0.4)	1 (0.2)	1 (0.3)	2 (0.3)
Georgia	1 (0.2)	2 (0.4)	2 (0.4)	1 (0.3)	2 (0.3)	2 (0.3)
Hawaii	61 (2.1)	62 (1.5)	64 (1.7)	2 (0.3)	2 (0.3)	2 (0.2)
Idaho †	1 (0.2)	—	2 (0.3)	3 (0.3)	—	3 (0.5)
Illinois †	—	—	3 (1.3)	—	—	1 (0.2)
Indiana †	1 (0.2)	1 (0.2)	1 (0.4)	1 (0.3)	2 (0.3)	2 (0.5)
Iowa †	1 (0.3)	1 (0.2)	1 (0.3)	2 (0.3)	2 (0.3)	2 (0.4)
Kansas †	—	—	1 (0.4)	—	—	3 (0.6)
Kentucky	1 (0.2)	▲ (0.1)	1 (0.2)	2 (0.3)	1 (0.2)	2 (0.3)
Louisiana	2 (0.7)	1 (0.3)	1 (0.3)	1 (0.3)	3 (0.7)	2 (0.3)
Maine †	1 (0.2)	1 (0.2)	1 (0.2)	3 (0.5)	2 (0.3)	3 (0.5)
Maryland	4 (0.5)	4 (0.6)	3 (0.5)	2 (0.2)	2 (0.3)	2 (0.3)
Massachusetts	4 (0.7)	3 (0.7)	4 (0.5)	2 (0.2)	1 (0.2)	1 (0.3)
Michigan †	2 (0.3)	2 (0.3)	2 (0.4)	3 (0.4)	3 (0.4)	3 (0.4)
Minnesota †	2 (0.4)	4 (0.4)	5 (0.7)	2 (0.3)	3 (0.4)	2 (0.5)
Mississippi	1 (0.2)	1 (0.3)	1 (0.3)	1 (0.2)	1 (0.2)	2 (0.3)
Missouri	1 (0.2)	1 (0.3)	1 (0.2)	2 (0.4)	2 (0.3)	3 (0.5)
Montana †	—	1 (0.2)	1 (0.4)	—	12 (2.4)	11 (1.9)
Nebraska	1 (0.2)	1 (0.2)	2 (0.3)	2 (0.3)	3 (0.4)	4 (1.3)
Nevada	—	4 (0.6)	6 (0.6)	—	5 (1.0)	3 (0.4)
New Mexico	1 (0.3)	2 (0.3)	1 (0.3)	4 (1.3)	9 (2.3)	11 (1.7)
New York †	4 (0.8)	5 (0.6)	4 (1.1)	2 (0.4)	2 (0.5)	2 (0.4)
North Carolina	1 (0.2)	1 (0.4)	1 (0.3)	3 (0.9)	2 (0.4)	3 (1.0)
North Dakota	1 (0.2)	1 (0.2)	1 (0.2)	4 (0.8)	4 (1.1)	6 (0.9)
Ohio †	1 (0.3)	—	1 (0.3)	2 (0.4)	—	2 (0.4)
Oklahoma	1 (0.2)	—	1 (0.3)	10 (0.8)	—	11 (0.9)
Oregon †	—	5 (0.7)	4 (0.7)	—	4 (0.6)	4 (0.5)
Rhode Island	3 (0.4)	3 (0.5)	3 (0.5)	2 (0.3)	2 (0.3)	2 (0.4)
South Carolina	1 (0.2)	1 (0.3)	1 (0.1)	1 (0.3)	2 (0.3)	2 (0.4)
Tennessee	1 (0.4)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.3)	1 (0.3)
Texas	2 (0.4)	2 (0.3)	3 (0.6)	1 (0.2)	2 (0.3)	1 (0.3)
Utah	2 (0.3)	2 (0.3)	3 (0.4)	2 (0.3)	3 (0.4)	3 (0.8)
Vermont †	—	1 (0.2)	1 (0.3)	—	3 (0.4)	2 (0.6)
Virginia	3 (0.4)	3 (0.4)	4 (0.9)	1 (0.3)	2 (0.3)	2 (0.3)
West Virginia	1 (0.2)	1 (0.2)	1 (0.2)	2 (0.2)	2 (0.3)	2 (0.4)
Wyoming	1 (0.2)	1 (0.2)	1 (0.3)	5 (1.2)	3 (0.6)	4 (0.5)
Other Jurisdictions						
American Samoa	—	—	55 (2.2)	—	—	3 (0.7)
District of Columbia	1 (0.2)	1 (0.2)	1 (0.3)	2 (0.3)	1 (0.2)	2 (0.4)
DDESS	—	4 (0.6)	6 (0.7)	—	3 (0.6)	3 (0.5)
DoDDS	—	11 (0.7)	15 (1.1)	—	3 (0.4)	3 (0.3)
Guam	62 (1.0)	64 (1.4)	78 (2.1)	2 (0.4)	2 (0.3)	1 (0.5)
Virgin Islands	—	—	1 (0.3)	—	—	1 (0.4)

Standard errors of the estimated percentages appear in parentheses.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages may not add to 100 due to rounding.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.45: State Percentages of Students by Race/Ethnicity, Grade 8

State percentages of students by race/ethnicity for grade 8 public schools: 1990–2000

	White				Black				Hispanic			
	1990	1992	1996	2000	1990	1992	1996	2000	1990	1992	1996	2000
Nation	70 (0.5)	69 (0.4)	68 (0.5)	66 (0.5)	16 (0.3)	16 (0.2)	15 (0.4)	14 (0.2)	10 (0.4)	10 (0.3)	13 (0.3)	15 (0.2)
Alabama	64 (1.9)	61 (2.3)	59 (2.3)	63 (1.9)	29 (1.8)	32 (2.1)	34 (2.2)	31 (1.9)	5 (0.6)	4 (0.6)	4 (0.5)	4 (0.4)
Arizona †	59 (1.8)	60 (2.1)	58 (2.2)	54 (2.1)	3 (0.4)	4 (0.5)	3 (0.4)	4 (0.5)	29 (1.3)	28 (1.6)	30 (1.7)	35 (2.2)
Arkansas	72 (1.5)	72 (1.4)	74 (2.2)	69 (1.9)	22 (1.5)	22 (1.3)	20 (1.9)	23 (1.8)	4 (0.4)	4 (0.4)	3 (0.5)	5 (0.6)
California †	45 (1.8)	44 (1.8)	39 (2.1)	34 (2.5)	7 (0.8)	7 (1.1)	8 (0.8)	7 (1.0)	35 (1.4)	36 (1.7)	38 (1.8)	43 (2.4)
Connecticut	77 (1.5)	72 (1.6)	77 (1.4)	70 (1.7)	10 (1.0)	12 (1.1)	9 (1.0)	13 (1.1)	10 (0.9)	12 (0.9)	11 (1.0)	14 (1.5)
Georgia	59 (1.8)	59 (2.1)	57 (2.5)	56 (1.7)	33 (1.7)	35 (1.9)	36 (2.5)	37 (1.5)	6 (0.6)	4 (0.5)	4 (0.5)	4 (0.5)
Hawaii	18 (0.8)	17 (0.9)	15 (0.9)	13 (0.9)	2 (0.3)	3 (0.3)	3 (0.4)	2 (0.3)	10 (0.6)	11 (0.7)	11 (0.7)	10 (0.8)
Idaho †	90 (0.8)	88 (0.7)	—	84 (1.1)	▲ (0.1)	1 (0.2)	—	1 (0.3)	6 (0.6)	7 (0.6)	—	11 (1.0)
Illinois †	67 (1.9)	—	—	59 (3.0)	17 (1.9)	—	—	19 (3.1)	12 (1.4)	—	—	19 (2.3)
Indiana †	84 (1.2)	85 (1.3)	82 (1.5)	81 (2.6)	9 (1.2)	8 (1.1)	10 (1.2)	10 (2.0)	4 (0.7)	4 (0.6)	6 (0.8)	6 (1.2)
Kansas †	—	—	—	82 (1.4)	—	—	—	6 (1.0)	—	—	—	8 (0.8)
Kentucky	85 (1.1)	87 (1.0)	87 (1.0)	84 (1.4)	9 (1.0)	9 (1.0)	9 (0.9)	11 (1.2)	4 (0.5)	3 (0.4)	2 (0.4)	3 (0.4)
Louisiana	55 (2.1)	54 (1.7)	53 (2.3)	51 (2.0)	38 (1.9)	39 (1.5)	41 (2.4)	42 (2.1)	5 (0.6)	5 (0.5)	4 (0.6)	5 (0.6)
Maine †	—	94 (0.5)	95 (0.7)	92 (0.7)	—	▲ (0.1)	1 (0.2)	1 (0.3)	—	2 (0.3)	2 (0.3)	3 (0.4)
Maryland	59 (1.5)	60 (1.8)	55 (2.2)	55 (1.8)	28 (1.5)	29 (1.8)	33 (2.2)	32 (1.5)	7 (0.8)	6 (0.6)	5 (0.5)	7 (0.7)
Massachusetts	—	83 (1.1)	80 (1.6)	76 (1.5)	—	5 (1.0)	7 (1.0)	8 (1.0)	—	8 (1.5)	8 (1.0)	10 (1.1)
Michigan †	77 (1.4)	73 (1.6)	75 (2.3)	76 (2.2)	13 (1.1)	18 (1.9)	15 (2.1)	14 (2.0)	5 (0.6)	5 (0.8)	5 (0.6)	6 (0.9)
Minnesota †	90 (0.9)	91 (1.0)	86 (1.6)	85 (2.3)	2 (0.5)	2 (0.3)	4 (0.7)	3 (1.3)	3 (0.4)	3 (0.5)	3 (0.4)	6 (1.1)
Mississippi	—	49 (1.9)	48 (1.9)	54 (1.8)	—	44 (1.8)	45 (1.8)	40 (1.8)	—	6 (0.6)	5 (0.6)	4 (0.4)
Missouri	—	82 (1.5)	82 (1.2)	79 (1.5)	—	12 (1.4)	12 (1.0)	14 (1.3)	—	3 (0.3)	3 (0.5)	4 (0.6)
Montana †	87 (1.1)	—	84 (1.8)	86 (2.0)	▲ (0.1)	—	▲ (0.1)	1 (0.2)	3 (0.4)	—	5 (0.5)	4 (0.5)
Nebraska	88 (0.8)	87 (1.1)	87 (0.9)	84 (1.4)	5 (0.4)	5 (0.9)	4 (0.6)	4 (0.6)	5 (0.5)	6 (0.7)	6 (0.7)	9 (0.9)
Nevada	—	—	—	56 (0.8)	—	—	—	8 (0.5)	—	—	—	27 (0.9)
New Mexico	40 (1.3)	44 (1.5)	36 (1.7)	34 (1.8)	2 (0.4)	2 (0.4)	3 (0.5)	2 (0.4)	45 (1.3)	49 (1.4)	51 (1.7)	52 (1.9)
New York †	60 (1.9)	61 (2.7)	60 (2.4)	53 (2.4)	17 (1.6)	17 (2.2)	16 (1.8)	20 (2.4)	17 (1.7)	14 (2.0)	16 (1.3)	20 (2.1)
North Carolina	62 (1.7)	68 (1.4)	64 (1.8)	64 (1.8)	30 (1.3)	27 (1.3)	28 (1.2)	28 (1.6)	5 (0.5)	3 (0.3)	4 (0.5)	5 (0.6)
North Dakota	91 (1.4)	93 (0.8)	92 (0.9)	89 (1.1)	1 (0.3)	▲ (0.1)	1 (0.2)	1 (0.3)	3 (0.4)	3 (0.3)	3 (0.3)	3 (0.5)
Ohio	82 (0.9)	80 (1.9)	—	82 (1.6)	11 (0.8)	14 (1.7)	—	12 (1.4)	3 (0.4)	4 (0.5)	—	4 (0.5)
Oklahoma	74 (1.8)	75 (1.6)	—	70 (1.4)	11 (1.2)	8 (1.1)	—	9 (0.8)	5 (0.7)	6 (0.6)	—	7 (1.1)
Oregon †	85 (0.9)	—	82 (1.4)	80 (1.3)	1 (0.4)	—	3 (0.7)	3 (0.7)	7 (0.6)	—	8 (0.8)	9 (0.9)
Rhode Island	83 (0.8)	81 (0.7)	79 (0.7)	76 (0.9)	5 (0.5)	6 (0.6)	5 (0.5)	6 (0.4)	8 (0.5)	8 (0.4)	10 (0.5)	13 (0.7)
South Carolina	—	58 (1.5)	53 (1.8)	56 (1.8)	—	35 (1.3)	40 (1.8)	38 (1.8)	—	6 (0.6)	4 (0.4)	4 (0.5)
Tennessee	—	75 (2.0)	78 (1.3)	74 (1.6)	—	21 (2.1)	18 (1.2)	20 (1.6)	—	3 (0.3)	3 (0.5)	3 (0.3)
Texas	47 (2.1)	48 (1.9)	48 (2.0)	45 (1.8)	13 (1.3)	12 (1.6)	12 (1.3)	13 (1.5)	36 (2.1)	36 (2.0)	37 (2.2)	38 (2.0)
Utah	—	90 (0.9)	87 (0.8)	85 (1.0)	—	1 (0.2)	1 (0.2)	1 (0.2)	—	7 (0.6)	8 (0.7)	10 (0.6)
Vermont †	—	—	93 (0.7)	92 (0.7)	—	—	1 (0.2)	1 (0.3)	—	—	3 (0.4)	3 (0.4)
Virginia	68 (1.5)	69 (1.9)	66 (2.2)	63 (1.7)	23 (1.5)	22 (1.6)	24 (2.2)	24 (1.6)	5 (0.5)	5 (0.6)	5 (0.5)	6 (0.7)
West Virginia	90 (0.7)	91 (0.9)	92 (0.8)	91 (0.7)	3 (0.5)	4 (0.8)	3 (0.7)	4 (0.5)	4 (0.4)	3 (0.3)	3 (0.4)	3 (0.3)
Wyoming	86 (0.8)	86 (1.7)	86 (0.7)	84 (1.2)	1 (0.2)	1 (0.2)	1 (0.1)	1 (0.2)	9 (0.6)	9 (0.6)	9 (0.6)	10 (0.7)
Other Jurisdictions												
American Samoa	—	—	—	3 (0.8)	—	—	—	5 (1.2)	—	—	—	25 (2.5)
District of Columbia	3 (0.4)	3 (0.2)	4 (0.5)	4 (0.4)	84 (1.0)	85 (0.8)	83 (1.2)	82 (0.9)	10 (0.6)	10 (0.7)	10 (1.0)	11 (1.1)
DDESS	—	—	40 (1.9)	44 (1.8)	—	—	30 (1.8)	21 (1.2)	—	—	22 (1.5)	25 (1.5)
DoDDS	—	—	46 (1.1)	46 (1.1)	—	—	20 (1.0)	20 (0.9)	—	—	15 (0.7)	14 (0.9)
Guam	7 (0.7)	5 (0.5)	4 (0.5)	2 (0.4)	1 (0.4)	1 (0.3)	1 (0.4)	▲ (0.2)	19 (1.0)	15 (0.9)	17 (1.4)	13 (1.3)

See footnotes at end of table. ▶

Table B.45: State Percentages of Students by Race/Ethnicity, Grade 8 (continued)

State percentages of students by race/ethnicity for grade 8 public schools: 1990–2000

	Asian				American Indian			
	1990	1992	1996	2000	1990	1992	1996	2000
Nation	2 (0.5)	2 (0.2)	3 (0.3)	4 (0.4)	2 (0.7)	1 (0.2)	1 (0.3)	1 (0.2)
Alabama	1 (0.3)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)	2 (0.4)	2 (0.5)	2 (0.5)
Arizona †	2 (0.3)	2 (0.3)	2 (0.3)	4 (0.5)	7 (1.5)	6 (1.3)	6 (1.3)	3 (0.9)
Arkansas	1 (0.2)	1 (0.2)	1 (0.4)	2 (0.3)	2 (0.3)	1 (0.2)	1 (0.4)	1 (0.2)
California †	12 (1.1)	11 (1.0)	12 (1.3)	14 (1.6)	2 (0.4)	1 (0.2)	1 (0.3)	1 (0.3)
Connecticut	2 (0.3)	3 (0.4)	3 (0.4)	3 (0.4)	1 (0.2)	▲ (0.1)	1 (0.2)	1 (0.2)
Georgia	1 (0.2)	2 (0.3)	2 (0.4)	2 (0.4)	1 (0.1)	▲ (0.1)	1 (0.2)	1 (0.2)
Hawaii	67 (1.0)	66 (1.1)	67 (1.1)	73 (1.2)	1 (0.2)	1 (0.2)	2 (0.4)	1 (0.3)
Idaho †	1 (0.3)	1 (0.2)	—	2 (0.4)	2 (0.4)	3 (0.4)	—	2 (0.4)
Illinois †	3 (0.5)	—	—	3 (0.6)	1 (0.2)	—	—	▲ (0.1)
Indiana †	1 (0.3)	1 (0.2)	1 (0.2)	1 (0.3)	1 (0.3)	1 (0.2)	1 (0.2)	1 (0.2)
Kansas †	—	—	—	2 (0.4)	—	—	—	1 (0.4)
Kentucky	1 (0.2)	1 (0.2)	1 (0.1)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)
Louisiana	1 (0.2)	2 (0.4)	1 (0.3)	1 (0.3)	1 (0.3)	1 (0.2)	1 (0.4)	1 (0.4)
Maine †	—	1 (0.2)	1 (0.3)	1 (0.2)	—	3 (0.4)	2 (0.3)	2 (0.4)
Maryland	4 (0.7)	3 (0.5)	5 (1.0)	5 (0.5)	1 (0.3)	1 (0.2)	1 (0.3)	1 (0.3)
Massachusetts	—	2 (0.4)	5 (0.6)	5 (0.6)	—	1 (0.2)	1 (0.2)	1 (0.2)
Michigan †	2 (0.4)	1 (0.3)	2 (0.5)	2 (0.4)	2 (0.5)	2 (0.3)	1 (0.3)	1 (0.4)
Minnesota †	3 (0.4)	2 (0.3)	5 (1.0)	4 (0.8)	2 (0.5)	1 (0.4)	2 (0.5)	1 (0.4)
Mississippi	—	▲ (0.1)	1 (0.3)	1 (0.3)	—	1 (0.2)	▲ (0.1)	1 (0.2)
Missouri	—	1 (0.2)	1 (0.2)	2 (0.3)	—	2 (0.3)	1 (0.3)	1 (0.2)
Montana †	1 (0.3)	—	1 (0.4)	1 (0.3)	8 (1.1)	—	10 (1.7)	8 (1.8)
Nebraska	1 (0.2)	1 (0.2)	2 (0.2)	1 (0.4)	1 (0.2)	2 (0.4)	1 (0.3)	2 (0.4)
Nevada	—	—	—	7 (0.5)	—	—	—	2 (0.4)
New Mexico	1 (0.3)	1 (0.3)	1 (0.3)	1 (0.3)	11 (0.8)	4 (0.7)	9 (1.4)	11 (2.3)
New York †	4 (0.8)	4 (0.6)	6 (0.9)	6 (1.1)	1 (0.3)	1 (0.3)	2 (0.5)	1 (0.3)
North Carolina	1 (0.2)	1 (0.2)	2 (0.3)	2 (0.3)	3 (0.9)	2 (0.4)	2 (1.1)	2 (0.6)
North Dakota	1 (0.4)	1 (0.2)	1 (0.2)	1 (0.3)	5 (1.2)	3 (0.7)	3 (0.8)	5 (0.9)
Ohio	1 (0.3)	1 (0.2)	—	1 (0.3)	1 (0.3)	2 (0.3)	—	1 (0.3)
Oklahoma	2 (0.4)	2 (0.3)	—	2 (0.4)	9 (1.0)	10 (1.0)	—	12 (0.8)
Oregon †	3 (0.3)	—	4 (0.5)	5 (0.6)	4 (0.5)	—	4 (0.6)	3 (0.5)
Rhode Island	2 (0.3)	3 (0.4)	4 (0.3)	4 (0.5)	1 (0.2)	2 (0.3)	1 (0.3)	1 (0.3)
South Carolina	—	1 (0.2)	1 (0.4)	1 (0.2)	—	1 (0.2)	2 (0.3)	1 (0.3)
Tennessee	—	▲ (0.1)	1 (0.2)	2 (0.4)	—	1 (0.2)	1 (0.2)	1 (0.2)
Texas	2 (0.6)	3 (0.4)	3 (0.6)	4 (0.7)	1 (0.2)	1 (0.3)	1 (0.2)	▲ (0.1)
Utah	—	2 (0.3)	2 (0.2)	3 (0.4)	—	2 (0.2)	2 (0.2)	2 (0.5)
Vermont †	—	—	1 (0.3)	2 (0.3)	—	—	2 (0.4)	2 (0.3)
Virginia	4 (0.4)	4 (0.5)	4 (0.6)	5 (0.6)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)
West Virginia	1 (0.2)	▲ (0.1)	1 (0.1)	1 (0.2)	2 (0.3)	2 (0.3)	2 (0.3)	1 (0.3)
Wyoming	1 (0.2)	1 (0.2)	1 (0.1)	1 (0.3)	3 (0.4)	4 (1.6)	3 (0.4)	3 (0.9)
Other Jurisdictions								
American Samoa	—	—	—	66 (2.7)	—	—	—	2 (0.6)
District of Columbia	1 (0.2)	1 (0.2)	2 (0.4)	2 (0.4)	2 (0.3)	1 (0.3)	1 (0.3)	1 (0.2)
DDESS	—	—	4 (0.9)	6 (1.1)	—	—	2 (0.8)	3 (0.6)
DoDDS	—	—	13 (0.6)	17 (0.7)	—	—	2 (0.3)	2 (0.3)
Guam	72 (1.2)	76 (1.1)	76 (1.4)	84 (1.3)	1 (0.2)	1 (0.1)	▲ (0.2)	▲ (0.2)

Standard errors of the estimated percentages appear in parentheses.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages may not add to 100 due to rounding.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.46: Data for Figure 3.22 State Scale Score Results by Free/Reduced-Price Lunch, Grade 4

State average mathematics scale scores by student eligibility for free/reduced-price lunch program for grade 4 public schools: 1996–2000

	Eligible		Not eligible		Info not available	
	1996	2000	1996	2000	1996	2000
Nation	207 (2.0)	210 (1.0)	231 (1.1) *	236 (1.3)	230 (4.2) !	235 (2.3)
Alabama	199 (1.5) ‡	206 (1.4)	224 (1.6) ‡	230 (1.5)	214 (2.4) !*	227 (4.2) !
Arizona	202 (1.9)	205 (1.8)	230 (1.6)	231 (2.1)	218 (4.1) !	214 (5.9) !
Arkansas	204 (1.5)	206 (1.3)	227 (1.3)	229 (1.1)	****(****)	****(****)
California †	194 (2.4)	200 (1.9)	222 (1.9) *	229 (1.6)	216 (3.0) !	217 (6.0) !
Connecticut	207 (1.8) ‡	216 (1.9)	240 (1.1)	242 (1.1)	****(****)	225 (6.4) !
Georgia	201 (1.4)	204 (1.2)	226 (1.7) ‡	233 (1.4)	226 (6.5) !	223 (4.0) !
Hawaii	202 (2.0)	205 (1.6)	224 (1.2)	226 (1.5)	212 (7.5) !	212 (4.3) !
Idaho †	—	217 (1.8)	—	234 (1.3)	—	228 (4.7) !
Illinois †	—	209 (1.7)	—	235 (2.6)	—	231 (8.2) !
Indiana †	213 (1.4) ‡	222 (1.4)	236 (1.1) *	240 (1.3)	****(****)	231 (5.1) !
Iowa †	219 (1.6)	224 (1.8)	234 (1.1)	236 (1.3)	226 (6.0) !	232 (6.0) !
Kansas †	—	217 (2.2)	—	241 (1.3)	—	211 (6.5) !
Kentucky	209 (1.3)	210 (1.4)	230 (1.0)	231 (1.2)	218 (6.9) !	226 (10.3) !
Louisiana	200 (1.2) ‡	210 (1.6)	224 (1.5) ‡	233 (1.7)	214 (5.5) !	212 (3.8) !
Maine †	221 (1.4)	222 (1.4)	238 (1.2)	234 (0.9)	239 (4.4) !	235 (5.0) !
Maryland	199 (1.6)	204 (2.0)	233 (1.7)	233 (1.4)	204 (4.5) !	214 (6.2) !
Massachusetts	213 (1.4)	213 (1.9)	235 (1.4) ‡	243 (1.0)	229 (5.1) !	236 (4.9) !
Michigan †	210 (1.7)	211 (1.9)	234 (1.3) ‡	240 (1.3)	228 (8.0) !	218 (9.6) !
Minnesota †	218 (2.6)	220 (2.7)	238 (1.3)	240 (1.0)	227 (5.9) !*	250 (5.7) !
Mississippi	200 (1.2)	202 (1.2)	224 (1.5)	226 (1.4)	****(****)	213 (5.0) !
Missouri	210 (1.4)	213 (1.7)	233 (1.0) *	237 (1.1)	****(****)	233 (4.9) !
Montana †	217 (2.1)	217 (2.5)	234 (1.1)	236 (1.8)	223 (5.7) !	233 (4.4) !
Nebraska	213 (1.8)	210 (2.4)	235 (1.3)	235 (1.4)	235 (3.2) !	231 (6.7) !
Nevada	202 (2.9)	208 (1.6)	223 (2.3)	228 (1.1)	219 (1.7)	218 (4.9) !
New Mexico	203 (2.2)	205 (2.1)	227 (1.3)	227 (1.8)	221 (3.3) !	217 (5.8) !
New York †	206 (2.0) ‡	214 (1.4)	236 (1.1)	239 (1.9)	233 (5.5) !	236 (5.7) !
North Carolina	209 (1.7) ‡	220 (1.1)	234 (1.1) ‡	241 (1.2)	217 (5.7) ! ‡	237 (2.3) !
North Dakota	223 (2.5)	221 (2.0)	234 (1.1)	235 (0.9)	230 (3.0) !	230 (2.3)
Ohio †	—	217 (1.7)	—	239 (1.4)	—	231 (3.3) !
Oklahoma	—	217 (1.9)	—	234 (1.0)	—	225 (5.5) !
Oregon †	210 (1.6)	213 (2.3)	231 (1.5)	234 (1.7)	222 (4.9) !	232 (5.6) !
Rhode Island	204 (1.8)	206 (2.1)	229 (1.4) ‡	236 (1.1)	****(****)	219 (10.9) !
South Carolina	201 (1.3) ‡	208 (1.8)	226 (1.5) ‡	235 (1.0)	****(****)	205 (8.2) !
Tennessee	204 (1.7)	204 (2.0)	229 (1.4)	231 (1.5)	217 (8.1) !	226 (9.5) !
Texas	215 (1.4) ‡	222 (1.4)	240 (1.4)	242 (1.3)	228 (5.9) !	232 (4.6) !
Utah	216 (1.8)	215 (2.0)	231 (1.3)	233 (1.1)	226 (2.4) !	233 (3.3) !
Vermont †	210 (2.2)	216 (2.7)	231 (1.3) ‡	237 (1.8)	226 (2.6) !	237 (5.3) !
Virginia	206 (1.7) ‡	214 (1.4)	230 (1.3) ‡	237 (1.3)	228 (8.5) !	239 (3.8) !
West Virginia	213 (1.2)	217 (1.4)	232 (1.2)	232 (1.2)	231 (2.8) !	225 (4.8) !
Wyoming	213 (2.2) *	220 (1.9)	228 (1.3) ‡	234 (1.4)	224 (6.9) !	227 (2.8) !
Other Jurisdictions						
American Samoa	—	157 (3.8)	—	****(****)	—	****(****)
District of Columbia	178 (1.3) ‡	188 (1.4)	213 (1.6)	219 (2.9)	206 (2.8) *	198 (2.4)
DDESS	218 (1.6)	224 (1.8)	229 (1.5)	231 (1.6)	225 (2.7)	229 (3.9)
DoDDS	220 (2.4)	222 (1.1)	225 (1.2) *	229 (1.0)	222 (1.1) ‡	229 (1.2)
Guam	177 (2.0)	176 (2.9)	195 (1.8)	194 (3.1)	186 (3.2)	****(****)
Virgin Islands	—	183 (2.8)	—	****(****)	—	****(****)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

**** (****) Sample size is insufficient to permit a reliable estimate.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.47: Data for Figure 3.23 State Scale Score Results by Free/Reduced-Price Lunch, Grade 8

State average mathematics scale scores by student eligibility for free/reduced-price lunch program for grade 8 public schools: 1996–2000

	Eligible		Not eligible		Info not available	
	1996	2000	1996	2000	1996	2000
Nation	252 (1.5)	255 (1.2)	279 (1.5) *	285 (1.1)	278 (3.9) !	273 (2.1)
Alabama	237 (2.2)	243 (1.8)	270 (2.3)	275 (1.7)	254 (7.7) !	270 (7.8) !
Arizona †	254 (3.8)	252 (2.5)	277 (1.3)	280 (1.5)	264 (3.1)	276 (4.0) !
Arkansas	246 (2.7)	249 (2.1)	270 (1.4)	269 (1.5)	262 (4.7) !	269 (4.7) !
California †	246 (2.1)	242 (2.1)	276 (1.9)	273 (3.3)	261 (4.5)	273 (5.1) !
Connecticut	254 (3.3)	251 (4.0)	287 (1.1) ‡	292 (1.2)	275 (10.3) !	275 (6.8) !
Georgia	242 (1.5) ‡	248 (1.4)	273 (2.1)	278 (1.7)	271 (4.7) !	265 (2.6)
Hawaii	249 (1.5)	251 (2.0)	269 (1.2)	270 (1.6)	253 (3.5)	270 (4.5)
Idaho †	—	264 (2.7)	—	284 (1.4)	—	282 (2.3)
Illinois †	—	259 (3.1)	—	285 (1.5)	—	278 (4.5) !
Indiana †	256 (1.9) ‡	267 (2.3)	282 (1.4) ‡	288 (1.4)	****(****)	278 (5.8) !
Kansas †	—	267 (2.4)	—	290 (1.7)	—	285 (4.5) !
Kentucky	252 (1.3) *	257 (1.7)	276 (1.3) ‡	281 (1.5)	261 (4.1) !	****(****)
Louisiana	241 (1.8)	246 (2.0)	265 (1.5) ‡	276 (1.6)	250 (5.9) !	260 (3.5) !
Maine †	272 (2.2)	273 (2.1)	288 (1.3)	287 (1.3)	284 (4.7) !	283 (3.4) !
Maryland	243 (2.3) *	251 (2.2)	279 (2.4) *	286 (1.4)	274 (6.5) !	270 (6.0) !
Massachusetts	254 (2.5)	261 (2.9)	284 (1.5) *	289 (1.2)	269 (10.2) !	286 (5.6) !
Michigan †	257 (2.7)	256 (2.2)	284 (1.7)	286 (1.7)	272 (6.9) !	274 (7.4) !
Minnesota †	270 (1.8)	274 (3.4)	288 (1.3)	291 (1.4)	286 (6.4) !	294 (7.0) !
Mississippi	239 (1.6)	241 (2.0)	265 (1.2)	267 (1.6)	248 (6.2) !	256 (2.9) !
Missouri	259 (1.9)	256 (2.3)	280 (1.3)	280 (1.3)	264 (9.5) !	277 (6.6) !
Montana †	266 (2.6)	275 (2.8)	290 (1.0)	292 (1.2)	286 (2.2)	287 (4.1)
Nebraska	269 (1.9) *	262 (2.5)	288 (1.1)	288 (1.1)	288 (2.0)	****(****)
Nevada	—	248 (2.1)	—	275 (0.9)	—	275 (4.2)
New Mexico	251 (1.8)	250 (2.1)	272 (1.4)	272 (2.0)	265 (2.6)	258 (3.6)
New York †	253 (2.4)	261 (4.1)	282 (1.5)	286 (2.0)	271 (7.3) !	281 (5.3)
North Carolina	250 (1.8) ‡	261 (1.7)	277 (1.5) ‡	289 (1.3)	263 (5.0) !	272 (5.3) !
North Dakota	274 (2.0)	271 (2.7)	288 (0.9)	287 (1.3)	282 (3.0)	284 (2.1)
Ohio	—	262 (2.8)	—	289 (1.4)	—	273 (6.2) !
Oklahoma	—	259 (2.2)	—	280 (1.2)	—	275 (5.0) !
Oregon †	262 (2.1)	263 (2.8)	282 (1.5)	287 (1.9)	273 (3.7)	285 (3.0) !
Rhode Island	250 (2.2)	252 (1.8)	277 (0.9) ‡	283 (1.0)	249 (8.5)	269 (4.5)
South Carolina	246 (1.7) *	252 (1.7)	272 (1.6) *	278 (1.5)	****(****)	****(****)
Tennessee	246 (2.3)	244 (2.5)	271 (1.9)	274 (1.7)	262 (4.7) !	262 (4.6) !
Texas	252 (1.6) ‡	261 (2.0)	282 (1.5)	285 (1.7)	271 (3.6)	276 (6.3) !
Utah	268 (2.4)	262 (2.0)	280 (1.0)	281 (1.0)	276 (3.6)	269 (8.6)
Vermont †	266 (1.8)	266 (1.9)	283 (1.1) ‡	288 (1.2)	278 (3.1) !	283 (4.2) !
Virginia	246 (2.6) ‡	258 (2.0)	277 (1.3) ‡	282 (1.5)	277 (5.3) !	276 (7.6) !
West Virginia	254 (1.5) *	259 (1.4)	271 (1.1) ‡	278 (1.2)	274 (3.5) !	276 (3.5) !
Wyoming	262 (1.8)	265 (1.6)	277 (1.1)	281 (1.3)	285 (4.0)	274 (7.6) !
Other Jurisdictions						
American Samoa	—	195 (4.3)	—	****(****)	—	****(****)
District of Columbia	226 (1.8)	227 (2.1)	245 (2.4) ‡	261 (3.3)	234 (2.7)	230 (4.3)
DOESS	260 (4.5)	268 (2.7)	276 (2.8)	281 (3.0)	269 (4.1)	281 (5.9)
DoDDS	267 (3.6)	271 (2.3)	276 (1.3)	280 (1.6)	275 (1.4)	279 (2.0)
Guam	217 (3.7)	216 (4.2)	243 (1.9)	238 (2.2)	****(****)	****(****)

Standard errors of the estimated scale scores appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

**** (****) Sample size is insufficient to permit a reliable estimate.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.48: Data for Figure 3.24 State *Proficient* Level Achievement Results by Free/Reduced-Price Lunch, Grade 4

State percentages of students at or above *Proficient* in mathematics by student eligibility for free/ reduced-price lunch program for grade 4 public schools: 1996–2000

	Eligible		Not eligible		Info not available	
	1996	2000	1996	2000	1996	2000
Nation	8 (1.2)	9 (0.8)	25 (1.4) *	33 (1.6)	28 (5.4)	35 (3.4)
Alabama	3 (0.7)	5 (0.9)	18 (1.9)	24 (2.0)	9 (4.7) !	22 (5.3) !
Arizona	5 (1.0)	7 (1.0)	24 (2.3)	26 (2.7)	14 (3.6) !	12 (3.6) !
Arkansas	6 (0.9)	5 (0.7)	20 (1.9)	21 (1.8)	****(****)	****(****)
California †	4 (1.2)	5 (1.1)	17 (2.6)	25 (2.1)	12 (2.5) !	19 (5.9) !
Connecticut	7 (1.2)	11 (1.7)	38 (2.1)	40 (2.0)	****(****)	24 (6.8) !
Georgia	3 (0.7)	5 (0.8)	20 (2.0) ‡	29 (2.0)	24 (7.4) !	21 (4.7) !
Hawaii	7 (1.0)	6 (0.9)	23 (1.5)	22 (2.0)	13 (4.6) !	11 (3.8) !
Idaho †	—	13 (1.7)	—	28 (2.2)	—	20 (3.5) !
Illinois †	—	7 (1.3)	—	30 (4.0)	—	31 (10.3) !
Indiana †	8 (1.4) *	14 (2.2)	30 (2.0) *	37 (2.1)	****(****)	31 (5.6) !
Iowa †	13 (1.5)	17 (2.3)	27 (1.8)	32 (2.2)	20 (6.2) !	27 (6.5) !
Kansas †	—	13 (2.3)	—	40 (2.5)	—	15 (4.9) !
Kentucky	7 (0.9)	7 (0.7)	24 (1.7)	26 (1.8)	9 (3.1) !	28 (6.2) !
Louisiana	3 (0.6) ‡	7 (1.0)	15 (1.9) ‡	27 (3.0)	10 (5.7) !	10 (2.5) !
Maine †	13 (1.7)	14 (1.7)	34 (1.7)	29 (1.6)	35 (9.3) !	32 (7.8) !
Maryland	5 (0.8)	7 (1.2)	31 (2.4)	31 (2.1)	8 (2.9) !	18 (5.1) !
Massachusetts	8 (1.4)	9 (1.3)	30 (2.4) ‡	42 (1.9)	26 (7.0) !	41 (7.1) !
Michigan †	8 (1.4)	11 (1.8)	30 (1.8) *	38 (2.1)	28 (7.7) !	15 (8.5) !
Minnesota †	14 (1.7)	15 (2.6)	35 (1.9)	40 (1.9)	26 (6.5) !	55 (10.0) !
Mississippi	3 (0.5)	4 (0.7)	17 (2.1)	18 (1.9)	****(****)	11 (3.2) !
Missouri	7 (1.2)	9 (1.7)	27 (1.6)	31 (2.0)	****(****)	24 (6.4) !
Montana †	13 (2.0)	10 (2.6)	29 (1.9)	32 (3.4)	15 (5.1) !	30 (7.0) !
Nebraska	12 (1.3)	11 (1.8)	30 (1.8)	31 (2.2)	32 (5.9) !	27 (7.2) !
Nevada	4 (1.2)	6 (1.1)	17 (2.7)	22 (1.5)	15 (1.5)	14 (4.4) !
New Mexico	5 (0.9)	5 (1.0)	21 (1.7)	22 (2.5)	20 (3.5) !	14 (5.3) !
New York †	7 (1.2)	8 (1.3)	29 (1.9)	36 (2.8)	28 (5.8) !	29 (11.1) !
North Carolina	7 (1.3) *	12 (1.4)	30 (1.9) ‡	39 (2.1)	17 (4.3) !*	34 (5.8) !
North Dakota	15 (1.9)	16 (1.9)	28 (1.5)	29 (1.7)	21 (3.8) !	25 (2.7)
Ohio †	—	11 (1.9)	—	35 (2.9)	—	24 (6.0) !
Oklahoma	—	8 (1.2)	—	25 (1.7)	—	15 (4.9) !
Oregon †	9 (1.1)	11 (1.6)	27 (1.6)	30 (2.3)	22 (6.2) !	31 (7.4) !
Rhode Island	5 (0.9)	7 (1.0)	24 (1.8) ‡	33 (1.7)	****(****)	16 (8.6) !
South Carolina	4 (0.8) *	7 (1.0)	20 (2.2) ‡	31 (1.8)	****(****)	11 (4.9) !
Tennessee	6 (0.9)	6 (0.9)	23 (2.1)	27 (2.1)	18 (7.4) !	23 (14.6) !
Texas	9 (1.1)	13 (1.5)	39 (2.1)	40 (2.7)	22 (6.9) !	27 (5.5) !
Utah	13 (1.8)	13 (1.7)	27 (1.8)	29 (1.6)	23 (3.4) !	28 (5.6) !
Vermont †	9 (1.4)	15 (2.7)	28 (1.5)	34 (3.0)	24 (4.2) !	37 (6.9) !
Virginia	5 (0.9)	9 (1.2)	25 (1.9)	32 (2.1)	28 (11.2) !	37 (6.0) !
West Virginia	10 (1.3)	11 (1.7)	27 (1.6)	25 (2.0)	25 (6.4) !	18 (5.5) !
Wyoming	10 (1.6)	16 (2.0)	23 (1.6) *	30 (2.1)	22 (8.6) !	23 (3.4) !
Other Jurisdictions						
American Samoa	—	▲ (0.4)	—	****(****)	—	****(****)
District of Columbia	1 (0.2)	2 (0.7)	19 (1.8)	22 (2.6)	11 (2.2)	11 (2.1)
DDESS	14 (1.6)	18 (2.2)	26 (3.0)	28 (2.2)	21 (3.2)	25 (3.8)
DoDDS	15 (2.6)	17 (2.4)	21 (1.7)	24 (1.4)	18 (1.7)	23 (1.6)
Guam	1 (0.5)	1 (0.5)	5 (1.0)	4 (1.5)	3 (2.0)	****(****)
Virgin Islands	—	1 (0.6)	—	****(****)	—	****(****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

**** (****) Sample size is insufficient to permit a reliable estimate.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.49: State *Basic* Level Achievement Results by Free/Reduced-Price Lunch, Grade 4

State percentage of students at or above *Basic* in mathematics by student eligibility for free/reduced-price lunch program for grade 4 public schools: 1996–2000

	Eligible		Not eligible		Info not available	
	1996	2000	1996	2000	1996	2000
Nation	41 (2.6)	46 (1.5)	73 (1.8) *	79 (1.4)	72 (5.6) !	77 (3.3)
Alabama	30 (2.3) ‡	39 (2.3)	66 (2.5) ‡	76 (2.2)	51 (5.0) *!	69 (6.6) !
Arizona	34 (2.8)	40 (2.5)	75 (2.4)	75 (2.8)	58 (6.3) !	53 (7.9) !
Arkansas	37 (2.2)	41 (2.4)	70 (2.1)	73 (1.9)	****(****)	****(****)
California †	26 (2.9) *	35 (2.4)	63 (2.7) *	72 (2.3)	54 (5.6) !	54 (8.8) !
Connecticut	42 (2.6) *	53 (3.3)	85 (1.4)	87 (1.2)	****(****)	63 (8.7) !
Georgia	33 (2.3)	37 (1.9)	68 (2.4) ‡	77 (2.1)	66 (9.0) !	60 (4.9) !
Hawaii	37 (2.4)	40 (2.2)	64 (1.7)	70 (2.4)	48 (7.1) !	51 (7.6) !
Idaho †	—	59 (2.3)	—	80 (1.8)	—	74 (7.6) !
Illinois †	—	43 (2.9)	—	80 (2.7)	—	71 (10.1) !
Indiana †	49 (2.8) ‡	64 (2.8)	82 (1.6)	85 (1.5)	****(****)	70 (8.3) !
Iowa †	59 (3.0)	66 (3.0)	81 (1.4)	82 (1.8)	70 (9.8) !	76 (8.5) !
Kansas †	—	57 (3.7)	—	87 (1.8)	—	50 (11.0) !
Kentucky	46 (2.3)	46 (2.2)	73 (1.8)	74 (2.1)	58 (12.1) !	69 (10.7) !
Louisiana	31 (1.9) ‡	45 (2.4)	66 (2.8) ‡	79 (2.3)	47 (8.0) !	49 (6.6) !
Maine †	61 (2.6)	64 (2.8)	82 (1.5)	79 (1.8)	82 (4.4) !	80 (4.8) !
Maryland	32 (2.6)	37 (2.7)	73 (1.9)	75 (1.8)	37 (6.8) !	51 (9.6) !
Massachusetts	50 (2.4)	51 (2.9)	79 (1.7) ‡	90 (1.2)	70 (7.3) !	75 (6.8) !
Michigan †	47 (2.9)	48 (3.1)	79 (2.0)	83 (1.7)	67 (10.6) !	59 (13.2) !
Minnesota †	59 (4.2)	60 (4.3)	82 (1.6)	85 (1.2)	70 (6.8) !	89 (5.8) !
Mississippi	28 (2.0)	33 (2.1)	67 (2.1)	67 (2.2)	****(****)	49 (8.2) !
Missouri	45 (2.4)	51 (2.6)	78 (1.5) *	83 (1.4)	****(****)	83 (5.7) !
Montana †	57 (3.3)	58 (4.3)	79 (1.6)	81 (2.6)	67 (9.5) !	77 (7.3) !
Nebraska	52 (2.9)	45 (3.7)	79 (1.7)	79 (1.8)	80 (3.9) !	74 (8.8) !
Nevada	35 (3.6)	43 (2.7)	64 (2.9)	71 (1.7)	59 (2.6)	55 (8.6) !
New Mexico	35 (2.9)	38 (2.8)	70 (1.8)	71 (3.0)	59 (4.4) !	53 (9.2) !
New York †	41 (2.4)	49 (2.5)	83 (1.6)	85 (2.7)	80 (7.7) !	82 (7.5) !
North Carolina	45 (2.7) ‡	61 (2.7)	77 (1.3) ‡	86 (1.4)	57 (7.5) *!	81 (4.8) !
North Dakota	65 (4.5)	63 (4.2)	79 (1.6)	81 (1.5)	76 (5.0) !	74 (3.9)
Ohio †	—	55 (3.6)	—	84 (1.9)	—	76 (4.9) !
Oklahoma	—	57 (2.8)	—	83 (1.7)	—	67 (9.1) !
Oregon †	47 (2.8)	51 (3.9)	74 (2.2)	77 (2.2)	62 (7.1) !	72 (6.8) !
Rhode Island	40 (2.5)	44 (2.4)	72 (2.2) ‡	82 (1.5)	****(****)	57 (13.4) !
South Carolina	31 (2.3) ‡	44 (2.4)	68 (2.2) ‡	78 (1.7)	****(****)	43 (8.7) !
Tennessee	38 (2.4)	40 (2.1)	72 (2.0)	74 (2.0)	52 (12.6) !	65 (11.8) !
Texas	52 (2.8) ‡	66 (2.5)	84 (1.6)	87 (1.6)	71 (8.7) !	74 (6.4) !
Utah	55 (2.7)	53 (3.1)	75 (1.9)	77 (1.5)	68 (3.4) !	77 (4.8) !
Vermont †	50 (4.3)	54 (3.5)	74 (1.5)	80 (2.2)	66 (4.6) !	79 (8.9) !
Virginia	39 (2.9) *	50 (2.9)	72 (2.1) ‡	83 (1.6)	69 (11.3) !	82 (5.1) !
West Virginia	49 (1.9) ‡	57 (2.3)	76 (1.9)	77 (1.4)	74 (3.6) !	73 (9.0) !
Wyoming	50 (2.4) ‡	62 (3.0)	71 (1.8) ‡	79 (2.3)	65 (8.3) !	71 (5.9) !
Other Jurisdictions						
American Samoa	—	5 (1.4)	—	****(****)	—	****(****)
District of Columbia	11 (0.9) ‡	18 (1.2)	49 (2.3)	58 (3.7)	34 (3.5)	30 (2.8)
DDESS	56 (3.8)	65 (3.5)	69 (2.0)	73 (2.5)	66 (3.7)	72 (7.2)
DoDDS	60 (4.3)	63 (2.0)	66 (1.6) ‡	72 (1.5)	64 (2.1) ‡	71 (1.7)
Guam	13 (1.8)	15 (1.8)	29 (2.5)	29 (3.5)	24 (5.9)	****(****)
Virgin Islands	—	15 (3.2)	—	****(****)	—	****(****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

**** (****) Sample size is insufficient to permit a reliable estimate.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.50: State Achievement Level Results by Free/Reduced-Price Lunch, Grade 4

State percentages of students at or above mathematics achievement levels by eligibility for free/reduced-price lunch program for grade 4 public schools: 2000

	Eligible				Not eligible			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	54 (1.5)	46 (1.5)	9 (0.8)	▲ (0.1)	21 (1.4)	79 (1.4)	33 (1.6)	4 (0.6)
Alabama	61 (2.3)	39 (2.3)	5 (0.9)	▲ (0.2)	24 (2.2)	76 (2.2)	24 (2.0)	1 (0.4)
Arizona	60 (2.5)	40 (2.5)	7 (1.0)	▲ (****)	25 (2.8)	75 (2.8)	26 (2.7)	3 (0.9)
Arkansas	59 (2.4)	41 (2.4)	5 (0.7)	▲ (****)	27 (1.9)	73 (1.9)	21 (1.8)	1 (0.5)
California †	65 (2.4)	35 (2.4)	5 (1.1)	▲ (****)	28 (2.3)	72 (2.3)	25 (2.1)	2 (0.7)
Connecticut	47 (3.3)	53 (3.3)	11 (1.7)	▲ (****)	13 (1.2)	87 (1.2)	40 (2.0)	4 (0.7)
Georgia	63 (1.9)	37 (1.9)	5 (0.8)	▲ (****)	23 (2.1)	77 (2.1)	29 (2.0)	2 (0.5)
Hawaii	60 (2.2)	40 (2.2)	6 (0.9)	▲ (****)	30 (2.4)	70 (2.4)	22 (2.0)	1 (0.5)
Idaho †	41 (2.3)	59 (2.3)	13 (1.7)	▲ (0.2)	20 (1.8)	80 (1.8)	28 (2.2)	2 (0.7)
Illinois †	57 (2.9)	43 (2.9)	7 (1.3)	▲ (****)	20 (2.7)	80 (2.7)	30 (4.0)	2 (1.1)
Indiana †	36 (2.8)	64 (2.8)	14 (2.2)	▲ (****)	15 (1.5)	85 (1.5)	37 (2.1)	3 (1.0)
Iowa †	34 (3.0)	66 (3.0)	17 (2.3)	1 (0.7)	18 (1.8)	82 (1.8)	32 (2.2)	2 (0.4)
Kansas †	43 (3.7)	57 (3.7)	13 (2.3)	▲ (****)	13 (1.8)	87 (1.8)	40 (2.5)	4 (1.1)
Kentucky	54 (2.2)	46 (2.2)	7 (0.7)	▲ (****)	26 (2.1)	74 (2.1)	26 (1.8)	3 (0.5)
Louisiana	55 (2.4)	45 (2.4)	7 (1.0)	▲ (****)	21 (2.3)	79 (2.3)	27 (3.0)	2 (0.5)
Maine †	36 (2.8)	64 (2.8)	14 (1.7)	1 (0.3)	21 (1.8)	79 (1.8)	29 (1.6)	3 (0.6)
Maryland	63 (2.7)	37 (2.7)	7 (1.2)	▲ (****)	25 (1.8)	75 (1.8)	31 (2.1)	4 (0.7)
Massachusetts	49 (2.9)	51 (2.9)	9 (1.3)	1 (****)	10 (1.2)	90 (1.2)	42 (1.9)	4 (0.7)
Michigan †	52 (3.1)	48 (3.1)	11 (1.8)	▲ (****)	17 (1.7)	83 (1.7)	38 (2.1)	5 (0.9)
Minnesota †	40 (4.3)	60 (4.3)	15 (2.6)	1 (****)	15 (1.2)	85 (1.2)	40 (1.9)	4 (0.6)
Mississippi	67 (2.1)	33 (2.1)	4 (0.7)	▲ (****)	33 (2.2)	67 (2.2)	18 (1.9)	1 (0.6)
Missouri	49 (2.6)	51 (2.6)	9 (1.7)	▲ (****)	17 (1.4)	83 (1.4)	31 (2.0)	3 (0.6)
Montana †	42 (4.3)	58 (4.3)	10 (2.6)	▲ (****)	19 (2.6)	81 (2.6)	32 (3.4)	3 (1.0)
Nebraska	55 (3.7)	45 (3.7)	11 (1.8)	1 (0.5)	21 (1.8)	79 (1.8)	31 (2.2)	3 (0.6)
Nevada	57 (2.7)	43 (2.7)	6 (1.1)	▲ (****)	29 (1.7)	71 (1.7)	22 (1.5)	1 (0.3)
New Mexico	62 (2.8)	38 (2.8)	5 (1.0)	▲ (0.2)	29 (3.0)	71 (3.0)	22 (2.5)	2 (0.6)
New York †	51 (2.5)	49 (2.5)	8 (1.3)	▲ (****)	15 (2.7)	85 (2.7)	36 (2.8)	3 (0.8)
North Carolina	39 (2.7)	61 (2.7)	12 (1.4)	▲ (****)	14 (1.4)	86 (1.4)	39 (2.1)	5 (0.6)
North Dakota	37 (4.2)	63 (4.2)	16 (1.9)	1 (0.6)	19 (1.5)	81 (1.5)	29 (1.7)	3 (0.5)
Ohio †	45 (3.6)	55 (3.6)	11 (1.9)	▲ (****)	16 (1.9)	84 (1.9)	35 (2.9)	3 (0.8)
Oklahoma	43 (2.8)	57 (2.8)	8 (1.2)	▲ (****)	17 (1.7)	83 (1.7)	25 (1.7)	1 (0.2)
Oregon †	49 (3.9)	51 (3.9)	11 (1.6)	▲ (****)	23 (2.2)	77 (2.2)	30 (2.3)	4 (0.9)
Rhode Island	56 (2.4)	44 (2.4)	7 (1.0)	1 (****)	18 (1.5)	82 (1.5)	33 (1.7)	3 (0.6)
South Carolina	56 (2.4)	44 (2.4)	7 (1.0)	▲ (****)	22 (1.7)	78 (1.7)	31 (1.8)	3 (0.6)
Tennessee	60 (2.1)	40 (2.1)	6 (0.9)	▲ (****)	26 (2.0)	74 (2.0)	27 (2.1)	2 (0.6)
Texas	34 (2.5)	66 (2.5)	13 (1.5)	▲ (0.2)	13 (1.6)	87 (1.6)	40 (2.7)	4 (1.0)
Utah	47 (3.1)	53 (3.1)	13 (1.7)	1 (0.4)	23 (1.5)	77 (1.5)	29 (1.6)	2 (0.4)
Vermont †	46 (3.5)	54 (3.5)	15 (2.7)	1 (0.5)	20 (2.2)	80 (2.2)	34 (3.0)	5 (1.0)
Virginia	50 (2.9)	50 (2.9)	9 (1.2)	1 (****)	17 (1.6)	83 (1.6)	32 (2.1)	3 (0.9)
West Virginia	43 (2.3)	57 (2.3)	11 (1.7)	▲ (0.2)	23 (1.4)	77 (1.4)	25 (2.0)	2 (0.5)
Wyoming	38 (3.0)	62 (3.0)	16 (2.0)	1 (0.7)	21 (2.3)	79 (2.3)	30 (2.1)	2 (0.6)
Other Jurisdictions								
American Samoa	95 (1.4)	5 (1.4)	▲ (****)	0 (****)	****(****)	****(****)	****(****)	****(****)
District of Columbia	82 (1.2)	18 (1.2)	2 (0.7)	▲ (****)	42 (3.7)	58 (3.7)	22 (2.6)	3 (1.4)
DDESS	35 (3.5)	65 (3.5)	18 (2.2)	1 (0.7)	27 (2.5)	73 (2.5)	28 (2.2)	4 (1.1)
DoDDS	37 (2.0)	63 (2.0)	17 (2.4)	1 (****)	28 (1.5)	72 (1.5)	24 (1.4)	2 (0.5)
Guam	85 (1.8)	15 (1.8)	1 (0.5)	▲ (****)	71 (3.5)	29 (3.5)	4 (1.5)	1 (****)
Virgin Islands	85 (3.2)	15 (3.2)	1 (0.6)	▲(****)	****(****)	****(****)	****(****)	****(****)

See footnotes at end of table. ▶

Table B.50: State Achievement Level Results by Free/Reduced-Price Lunch, Grade 4 (continued)

State percentages of students at or above mathematics achievement levels by eligibility for free/ reduced-price lunch program for grade 4 public schools: 2000

	Not available			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	23 (3.3)	77 (3.3)	35 (3.4)	3 (0.9)
Alabama	31 (6.6) !	69 (6.6) !	22 (5.3) !	2 (****) !
Arizona	47 (7.9) !	53 (7.9) !	12 (3.6) !	1 (0.7) !
Arkansas	****(****)	****(****)	****(****)	****(****)
California †	46 (8.8) !	54 (8.8) !	19 (5.9) !	1 (****) !
Connecticut	37 (8.7) !	63 (8.7) !	24 (6.8) !	2 (1.5) !
Georgia	40 (4.9) !	60 (4.9) !	21 (4.7) !	2 (1.0) !
Hawaii	49 (7.6) !	51 (7.6) !	11 (3.8) !	0 (****) !
Idaho †	26 (7.6) !	74 (7.6) !	20 (3.5) !	1 (****) !
Illinois †	29 (10.1) !	71 (10.1) !	31 (10.3) !	4 (****) !
Indiana †	30 (8.3) !	70 (8.3) !	31 (5.6) !	5 (2.1) !
Iowa †	24 (8.5) !	76 (8.5) !	27 (6.5) !	2 (****) !
Kansas †	50 (11.0) !	50 (11.0) !	15 (4.9) !	1 (****) !
Kentucky	31 (10.7) !	69 (10.7) !	28 (6.2) !	2 (1.3) !
Louisiana	51 (6.6) !	49 (6.6) !	10 (2.5) !	▲ (****) !
Maine †	20 (4.8) !	80 (4.8) !	32 (7.8) !	3 (****) !
Maryland	49 (9.6) !	51 (9.6) !	18 (5.1) !	1 (****) !
Massachusetts	25 (6.8) !	75 (6.8) !	41 (7.1) !	3 (1.5) !
Michigan †	41 (13.2) !	59 (13.2) !	15 (8.5) !	1 (****) !
Minnesota †	11 (5.8) !	89 (5.8) !	55 (10.0) !	13 (5.0) !
Mississippi	51 (8.2) !	49 (8.2) !	11 (3.2) !	▲ (****) !
Missouri	17 (5.7) !	83 (5.7) !	24 (6.4) !	1 (****) !
Montana †	23 (7.3) !	77 (7.3) !	30 (7.0) !	1 (****) !
Nebraska	26 (8.8) !	74 (8.8) !	27 (7.2) !	2 (****) !
Nevada	45 (8.6) !	55 (8.6) !	14 (4.4) !	1 (****) !
New Mexico	47 (9.2) !	53 (9.2) !	14 (5.3) !	1 (****) !
New York †	18 (7.5) !	82 (7.5) !	29 (11.1) !	2 (****) !
North Carolina	19 (4.8) !	81 (4.8) !	34 (5.8) !	3 (1.5) !
North Dakota	26 (3.9)	74 (3.9)	25 (2.7)	2 (0.7)
Ohio †	24 (4.9) !	76 (4.9) !	24 (6.0) !	1 (****) !
Oklahoma	33 (9.1) !	67 (9.1) !	15 (4.9) !	1 (****) !
Oregon †	28 (6.8) !	72 (6.8) !	31 (7.4) !	4 (1.8) !
Rhode Island	43 (13.4) !	57 (13.4) !	16 (8.6) !	1 (****) !
South Carolina	57 (8.7) !	43 (8.7) !	11 (4.9) !	1 (****) !
Tennessee	35 (11.8) !	65 (11.8) !	23 (14.6) !	2 (****) !
Texas	26 (6.4) !	74 (6.4) !	27 (5.5) !	3 (1.0) !
Utah	23 (4.8) !	77 (4.8) !	28 (5.6) !	2 (****) !
Vermont †	21 (8.9) !	79 (8.9) !	37 (6.9) !	5 (****) !
Virginia	18 (5.1) !	82 (5.1) !	37 (6.0) !	4 (1.5) !
West Virginia	27 (9.0) !	73 (9.0) !	18 (5.5) !	▲ (****) !
Wyoming	29 (5.9) !	71 (5.9) !	23 (3.4) !	1 (****) !
Other Jurisdictions				
American Samoa	****(****)	****(****)	****(****)	****(****)
District of Columbia	70 (2.8)	30 (2.8)	11 (2.1)	2 (0.7)
DDESS	28 (7.2)	72 (7.2)	25 (3.8)	3 (1.6)
DoDDS	29 (1.7)	71 (1.7)	23 (1.6)	2 (0.8)
Guam	****(****)	****(****)	****(****)	****(****)
Virgin Islands	****(****)	****(****)	****(****)	****(****)

Standard errors of the estimated percentages appear in parentheses.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

(****) Standard error estimates cannot be accurately determined.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

▲ Percentage is between 0.0 and 0.5.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.51: Data for Figure 3.25 State *Proficient* Level Achievement Results by Free/Reduced-Price Lunch, Grade 8

State percentages of students at or above *Proficient* in mathematics by student eligibility for free/ reduced-price lunch program for grade 8 public schools: 1996–2000

	Eligible		Not eligible		Info not available	
	1996	2000	1996	2000	1996	2000
Nation	8 (1.1)	10 (0.9)	29 (1.7)	35 (1.5)	29 (4.6)	26 (2.3)
Alabama	2 (0.6)	5 (1.0)	18 (2.6)	23 (2.1)	7 (2.0) !	21 (8.9) !
Arizona †	8 (1.8)	9 (1.8)	24 (1.8)	27 (2.4)	16 (2.7)	24 (4.4) !
Arkansas	5 (1.1)	7 (1.3)	18 (1.5)	18 (1.8)	12 (4.9) !	20 (5.3) !
California †	5 (1.1)	4 (1.1)	26 (2.3)	24 (2.5)	15 (3.8)	26 (5.6) !
Connecticut	9 (2.3)	7 (1.5)	36 (1.6)	42 (1.9)	34 (8.7) !	29 (5.7) !
Georgia	3 (0.8)	5 (0.8)	22 (2.8)	27 (1.9)	22 (4.2) !	17 (2.5)
Hawaii	7 (1.3)	8 (1.2)	21 (1.3)	21 (1.7)	8 (1.9) *	22 (3.6)
Idaho †	—	17 (2.2)	—	32 (2.2)	—	29 (4.5)
Illinois †	—	12 (2.2)	—	34 (1.9)	—	25 (6.4) !
Indiana †	8 (1.7)	13 (1.8)	28 (1.7) *	36 (1.9)	****(****)	26 (7.5) !
Kansas †	—	17 (2.7)	—	41 (2.1)	—	36 (6.1) !
Kentucky	4 (1.1) *	8 (1.1)	23 (1.8) *	29 (2.1)	12 (3.2) !	****(****)
Louisiana	3 (0.8)	4 (0.8)	12 (1.8) *	22 (2.4)	7 (4.3) !	10 (2.7) !
Maine †	18 (2.8)	20 (2.7)	35 (1.8)	36 (1.7)	30 (8.2) !	31 (3.7) !
Maryland	6 (1.2)	7 (1.4)	31 (3.1)	37 (1.8)	26 (6.5) !	25 (5.4) !
Massachusetts	7 (1.5)	11 (2.3)	33 (2.2)	38 (1.5)	24 (7.4) !	35 (7.0) !
Michigan †	10 (1.8)	9 (1.9)	34 (2.1)	35 (2.1)	28 (5.4) !	27 (7.1) !
Minnesota †	20 (2.2)	27 (3.3)	37 (1.7)	42 (1.6)	41 (8.8) !	50 (10.0) !
Mississippi	2 (0.5)	3 (0.6)	13 (1.7)	14 (1.4)	7 (3.7) !	9 (1.8) !
Missouri	9 (1.8)	9 (1.8)	27 (1.4)	26 (1.6)	17 (7.3) !	26 (6.2) !
Montana †	17 (2.7)	25 (3.0)	38 (1.5)	43 (1.7)	34 (4.6)	37 (4.7)
Nebraska	19 (2.6)	15 (2.3)	35 (1.7)	36 (1.9)	34 (3.7)	****(****)
Nevada	—	6 (1.3)	—	24 (1.0)	—	25 (5.3)
New Mexico	7 (0.9)	6 (1.1)	21 (1.8)	21 (1.8)	17 (2.9)	15 (2.0)
New York †	10 (1.5)	12 (2.4)	29 (2.1)	34 (2.4)	28 (6.3) !	32 (5.4)
North Carolina	6 (1.0) *	13 (1.7)	28 (1.7) ‡	38 (1.6)	14 (4.2) !	21 (5.4) !
North Dakota	22 (2.5)	21 (2.8)	38 (1.6)	35 (1.9)	33 (4.2)	31 (3.2)
Ohio	—	10 (2.1)	—	36 (1.8)	—	24 (6.9) !
Oklahoma	—	8 (1.5)	—	26 (1.6)	—	21 (5.3) !
Oregon †	12 (2.1)	16 (2.6)	32 (1.9)	37 (2.5)	23 (4.1)	35 (4.4) !
Rhode Island	8 (1.8)	7 (1.3)	26 (1.6) *	31 (1.3)	10 (4.1)	18 (5.0)
South Carolina	5 (1.2)	6 (1.1)	21 (1.7) *	27 (1.7)	****(****)	****(****)
Tennessee	5 (1.0)	7 (1.2)	19 (1.9)	23 (1.9)	14 (4.0) !	12 (4.1) !
Texas	6 (1.2)	11 (1.6)	31 (1.9)	34 (2.0)	18 (4.4)	26 (5.5) !
Utah	17 (2.0)	15 (1.8)	27 (1.3)	29 (1.3)	24 (4.5)	24 (5.7)
Vermont †	16 (2.1)	14 (2.1)	31 (1.5) *	38 (1.7)	21 (4.3) !	32 (6.0) !
Virginia	5 (1.2)	8 (1.6)	26 (1.4)	31 (1.6)	25 (5.9) !	27 (7.6) !
West Virginia	6 (1.1)	8 (1.2)	18 (1.3) ‡	25 (1.4)	22 (5.5) !	22 (4.0) !
Wyoming	11 (1.5)	15 (1.5)	24 (1.3)	28 (1.4)	34 (4.1)	21 (6.4) !
Other Jurisdictions						
American Samoa	—	1 (0.5)	—	****(****)	—	****(****)
District of Columbia	2 (0.8)	2 (0.4)	12 (2.1)	18 (2.6)	4 (0.8)	5 (1.1)
DDESS	14 (3.5)	16 (3.7)	27 (3.4)	31 (3.3)	21 (4.9)	32 (5.7)
DoDDS	17 (3.8)	18 (3.3)	23 (1.6)	27 (2.1)	24 (1.7)	29 (2.2)
Guam	1 (1.1)	1 (0.8)	7 (1.0)	5 (1.0)	****(****)	****(****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

**** (****) Sample size is insufficient to permit a reliable estimate.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.52: State Basic Level Achievement Results by Free/Reduced-Price Lunch, Grade 8

State percentage of students at or above *Basic* in mathematics by student eligibility for free/reduced-price lunch program for grade 8 public schools: 1996–2000

	Eligible		Not eligible		Info not available	
	1996	2000	1996	2000	1996	2000
Nation	39 (1.8)	44 (1.7)	71 (1.7) *	76 (1.0)	69 (4.2) !	63 (2.7)
Alabama	22 (2.2)	30 (2.8)	60 (2.8)	66 (2.2)	43 (11.7) !	60 (7.5) !
Arizona †	37 (4.1)	40 (3.5)	70 (1.8)	73 (1.9)	54 (4.0)	69 (4.3) !
Arkansas	33 (3.5)	37 (2.6)	62 (2.0)	61 (2.2)	51 (7.6) !	59 (6.7) !
California †	32 (2.5)	30 (2.7)	67 (2.3)	64 (3.9)	49 (5.0)	64 (5.0) !
Connecticut	40 (4.4)	36 (3.3)	79 (1.5)	83 (1.3)	66 (11.8) !	64 (8.4) !
Georgia	26 (1.8)	32 (2.7)	64 (2.4)	69 (2.1)	60 (5.9) !	55 (3.7)
Hawaii	35 (2.7)	38 (2.3)	59 (1.9)	60 (2.1)	42 (4.1) *	62 (4.6)
Idaho †	—	54 (3.6)	—	78 (1.6)	—	77 (3.7)
Illinois †	—	47 (3.9)	—	77 (1.9)	—	70 (6.0) !
Indiana †	42 (3.4) *	58 (4.5)	76 (1.8) *	81 (1.7)	****(****)	71 (5.9) !
Kansas †	—	58 (3.7)	—	84 (2.0)	—	78 (6.1) !
Kentucky	38 (2.1) *	45 (2.3)	68 (1.8) *	75 (1.8)	50 (4.3) !	****(****)
Louisiana	24 (2.4) *	32 (2.3)	54 (2.0) ‡	69 (2.5)	36 (6.8) !	48 (5.5) !
Maine †	64 (2.9)	65 (3.1)	81 (1.5)	80 (1.8)	80 (6.6) !	78 (4.2) !
Maryland	28 (2.7) *	39 (2.9)	68 (2.1) ‡	76 (1.5)	60 (8.6) !	57 (6.3) !
Massachusetts	41 (3.7)	52 (3.8)	76 (1.9) *	82 (1.4)	59 (11.4) !	78 (7.0) !
Michigan †	45 (4.1)	45 (2.8)	75 (2.0)	79 (1.8)	60 (7.7) !	60 (9.7) !
Minnesota †	60 (2.4)	65 (4.2)	80 (1.5)	84 (2.0)	72 (6.1) !	80 (7.8) !
Mississippi	20 (1.5)	26 (2.4)	55 (2.0)	57 (2.2)	32 (11.2) !	43 (4.4) !
Missouri	46 (2.9)	46 (3.2)	72 (2.1)	74 (1.9)	55 (11.1) !	70 (8.5) !
Montana †	55 (3.3) *	68 (3.6)	82 (1.6)	84 (1.7)	79 (2.5)	81 (4.9)
Nebraska	60 (2.4)	53 (2.8)	81 (1.1)	82 (1.6)	84 (3.5)	****(****)
Nevada	—	35 (2.6)	—	66 (1.4)	—	65 (5.9)
New Mexico	36 (2.1)	38 (2.2)	64 (2.3)	64 (2.9)	53 (3.5)	48 (3.1)
New York †	42 (3.1)	50 (4.8)	75 (2.0)	81 (2.8)	58 (8.4) !	72 (6.2)
North Carolina	36 (2.4) ‡	49 (2.7)	66 (2.1) ‡	80 (1.5)	50 (7.5) !	61 (5.0) !
North Dakota	67 (2.9)	64 (3.3)	82 (1.3)	82 (1.9)	75 (4.0)	77 (2.9)
Ohio	—	50 (4.5)	—	83 (1.7)	—	64 (7.3) !
Oklahoma	—	49 (2.8)	—	74 (1.8)	—	71 (5.6) !
Oregon †	50 (3.1)	51 (3.7)	74 (1.8)	78 (1.8)	64 (3.5)	77 (4.2) !
Rhode Island	38 (2.8)	39 (2.0)	70 (1.7) *	75 (1.2)	34 (7.2) *	60 (5.9)
South Carolina	30 (1.8) *	36 (2.3)	63 (2.4) *	70 (2.0)	****(****)	****(****)
Tennessee	32 (3.0)	33 (2.9)	63 (2.5)	64 (2.2)	46 (5.9) !	51 (5.7) !
Texas	36 (2.3) ‡	53 (2.9)	74 (1.9)	79 (2.5)	66 (5.8)	70 (7.9) !
Utah	58 (3.2)	51 (2.9)	74 (1.5)	74 (1.3)	67 (3.4)	62 (7.4)
Vermont †	55 (3.3)	58 (3.2)	76 (1.9)	80 (1.8)	75 (3.6) !	75 (7.2) !
Virginia	29 (3.0) ‡	46 (3.1)	67 (1.8) *	74 (1.9)	67 (5.9) !	66 (9.8) !
West Virginia	39 (2.4) ‡	48 (1.8)	62 (1.7) ‡	70 (1.7)	62 (6.0) !	67 (4.3) !
Wyoming	54 (3.2)	56 (2.2)	72 (1.3)	75 (1.6)	78 (5.0)	67 (10.9) !
Other Jurisdictions						
American Samoa	—	7 (2.0)	—	****(****)	—	****(****)
District of Columbia	14 (1.1)	16 (1.8)	30 (2.3) ‡	47 (4.5)	21 (3.1)	21 (3.0)
DDESS	48 (5.6)	59 (4.1)	64 (4.6)	71 (4.3)	56 (4.5)	69 (4.9)
DoDDS	56 (5.2)	62 (4.1)	66 (2.3)	73 (1.9)	67 (1.7)	71 (2.5)
Guam	11 (2.7)	12 (2.3)	33 (1.8)	27 (1.8)	****(****)	****(****)

Standard errors of the estimated percentages appear in parentheses.

* Significantly different from 2000 if only one jurisdiction or the nation is being examined.

‡ Significantly different from 2000 when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

**** (****) Sample size is insufficient to permit a reliable estimate.

— Indicates that the jurisdiction did not participate.

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.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.53: State Achievement Level Results by Free/Reduced-Price Lunch, Grade 8

State percentages of students at or above mathematics achievement levels by eligibility for free/reduced-price lunch program for grade 8 public schools: 2000

	Eligible				Not eligible			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	56 (1.7)	44 (1.7)	10 (0.9)	1 (0.3)	24 (1.0)	76 (1.0)	35 (1.5)	7 (0.8)
Alabama	70 (2.8)	30 (2.8)	5 (1.0)	1 (0.3)	34 (2.2)	66 (2.2)	23 (2.1)	3 (0.8)
Arizona †	60 (3.5)	40 (3.5)	9 (1.8)	1 (****)	27 (1.9)	73 (1.9)	27 (2.4)	4 (0.8)
Arkansas	63 (2.6)	37 (2.6)	7 (1.3)	▲ (****)	39 (2.2)	61 (2.2)	18 (1.8)	2 (0.6)
California †	70 (2.7)	30 (2.7)	4 (1.1)	0 (****)	36 (3.9)	64 (3.9)	24 (2.5)	4 (1.0)
Connecticut	64 (3.3)	36 (3.3)	7 (1.5)	1 (0.3)	17 (1.3)	83 (1.3)	42 (1.9)	8 (1.0)
Georgia	68 (2.7)	32 (2.7)	5 (0.8)	▲ (****)	31 (2.1)	69 (2.1)	27 (1.9)	4 (0.8)
Hawaii	62 (2.3)	38 (2.3)	8 (1.2)	1 (0.5)	40 (2.1)	60 (2.1)	21 (1.7)	3 (0.7)
Idaho †	46 (3.6)	54 (3.6)	17 (2.2)	2 (0.7)	22 (1.6)	78 (1.6)	32 (2.2)	4 (0.8)
Illinois †	53 (3.9)	47 (3.9)	12 (2.2)	1 (0.4)	23 (1.9)	77 (1.9)	34 (1.9)	5 (1.1)
Indiana †	42 (4.5)	58 (4.5)	13 (1.8)	1 (****)	19 (1.7)	81 (1.7)	36 (1.9)	6 (0.8)
Kansas †	42 (3.7)	58 (3.7)	17 (2.7)	1 (0.9)	16 (2.0)	84 (2.0)	41 (2.1)	5 (0.9)
Kentucky	55 (2.3)	45 (2.3)	8 (1.1)	1 (0.3)	25 (1.8)	75 (1.8)	29 (2.1)	4 (0.8)
Louisiana	68 (2.3)	32 (2.3)	4 (0.8)	▲ (0.2)	31 (2.5)	69 (2.5)	22 (2.4)	2 (0.8)
Maine †	35 (3.1)	65 (3.1)	20 (2.7)	2 (0.7)	20 (1.8)	80 (1.8)	36 (1.7)	7 (1.0)
Maryland	61 (2.9)	39 (2.9)	7 (1.4)	▲ (0.3)	24 (1.5)	76 (1.5)	37 (1.8)	9 (0.8)
Massachusetts	48 (3.8)	52 (3.8)	11 (2.3)	1 (0.6)	18 (1.4)	82 (1.4)	38 (1.5)	7 (0.8)
Michigan †	55 (2.8)	45 (2.8)	9 (1.9)	1 (****)	21 (1.8)	79 (1.8)	35 (2.1)	6 (0.9)
Minnesota †	35 (4.2)	65 (4.2)	27 (3.3)	4 (1.6)	16 (2.0)	84 (2.0)	42 (1.6)	7 (1.0)
Mississippi	74 (2.4)	26 (2.4)	3 (0.6)	▲ (****)	43 (2.2)	57 (2.2)	14 (1.4)	2 (0.6)
Missouri	54 (3.2)	46 (3.2)	9 (1.8)	1 (0.5)	26 (1.9)	74 (1.9)	26 (1.6)	3 (0.4)
Montana †	32 (3.6)	68 (3.6)	25 (3.0)	2 (0.8)	16 (1.7)	84 (1.7)	43 (1.7)	7 (1.0)
Nebraska	47 (2.8)	53 (2.8)	15 (2.3)	2 (1.0)	18 (1.6)	82 (1.6)	36 (1.9)	5 (1.0)
Nevada	65 (2.6)	35 (2.6)	6 (1.3)	▲ (****)	34 (1.4)	66 (1.4)	24 (1.0)	3 (0.5)
New Mexico	62 (2.2)	38 (2.2)	6 (1.1)	▲ (****)	36 (2.9)	64 (2.9)	21 (1.8)	2 (0.7)
New York †	50 (4.8)	50 (4.8)	12 (2.4)	1 (0.6)	19 (2.8)	81 (2.8)	34 (2.4)	5 (1.2)
North Carolina	51 (2.7)	49 (2.7)	13 (1.7)	1 (0.5)	20 (1.5)	80 (1.5)	38 (1.6)	8 (1.1)
North Dakota	36 (3.3)	64 (3.3)	21 (2.8)	2 (1.0)	18 (1.9)	82 (1.9)	35 (1.9)	5 (0.7)
Ohio	50 (4.5)	50 (4.5)	10 (2.1)	1 (0.4)	17 (1.7)	83 (1.7)	36 (1.8)	6 (1.1)
Oklahoma	51 (2.8)	49 (2.8)	8 (1.5)	▲ (****)	26 (1.8)	74 (1.8)	26 (1.6)	3 (0.6)
Oregon †	49 (3.7)	51 (3.7)	16 (2.6)	2 (1.2)	22 (1.8)	78 (1.8)	37 (2.5)	7 (1.0)
Rhode Island	61 (2.0)	39 (2.0)	7 (1.3)	1 (0.5)	25 (1.2)	75 (1.2)	31 (1.3)	5 (0.8)
South Carolina	64 (2.3)	36 (2.3)	6 (1.1)	1 (0.3)	30 (2.0)	70 (2.0)	27 (1.7)	4 (0.6)
Tennessee	67 (2.9)	33 (2.9)	7 (1.2)	▲ (****)	36 (2.2)	64 (2.2)	23 (1.9)	4 (0.6)
Texas	47 (2.9)	53 (2.9)	11 (1.6)	▲ (0.3)	21 (2.5)	79 (2.5)	34 (2.0)	4 (0.8)
Utah	49 (2.9)	51 (2.9)	15 (1.8)	1 (0.7)	26 (1.3)	74 (1.3)	29 (1.3)	3 (0.6)
Vermont †	42 (3.2)	58 (3.2)	14 (2.1)	2 (0.9)	20 (1.8)	80 (1.8)	38 (1.7)	7 (0.7)
Virginia	54 (3.1)	46 (3.1)	8 (1.6)	1 (0.4)	26 (1.9)	74 (1.9)	31 (1.6)	6 (1.0)
West Virginia	52 (1.8)	48 (1.8)	8 (1.2)	▲ (****)	30 (1.7)	70 (1.7)	25 (1.4)	4 (0.6)
Wyoming	44 (2.2)	56 (2.2)	15 (1.5)	1 (0.7)	25 (1.6)	75 (1.6)	28 (1.4)	4 (0.7)
Other Jurisdictions								
American Samoa	93 (2.0)	7 (2.0)	1 (0.5)	▲ (****)	****(****)	****(****)	****(****)	****(****)
District of Columbia	84 (1.8)	16 (1.8)	2 (0.4)	▲ (****)	53 (4.5)	47 (4.5)	18 (2.6)	4 (1.8)
DDESS	41 (4.1)	59 (4.1)	16 (3.7)	2 (1.7)	29 (4.3)	71 (4.3)	31 (3.3)	8 (2.2)
DoDDS	38 (4.1)	62 (4.1)	18 (3.3)	2 (0.9)	27 (1.9)	73 (1.9)	27 (2.1)	5 (1.2)
Guam	88 (2.3)	12 (2.3)	1 (0.8)	▲ (****)	73 (1.8)	27 (1.8)	5 (1.0)	1 (0.3)

See footnotes at end of table. ▶

Table B.53: State Achievement Level Results by Free/Reduced-Price Lunch, Grade 8 (continued)

State percentages of students at or above mathematics achievement levels by eligibility for free/reduced-price lunch program for grade 8 public schools: 2000

	Not available			
	Below *Basic*	At or Above *Basic*	At or Above *Proficient*	*Advanced*
Nation	37 (2.7)	63 (2.7)	26 (2.3)	4 (1.0)
Alabama	40 (7.5) !	60 (7.5) !	21 (8.9) !	4 (****) !
Arizona †	31 (4.3) !	69 (4.3) !	24 (4.4) !	4 (1.7) !
Arkansas	41 (6.7) !	59 (6.7) !	20 (5.3) !	2 (****) !
California †	36 (5.0) !	64 (5.0) !	26 (5.6) !	5 (2.4) !
Connecticut	36 (8.4) !	64 (8.4) !	29 (5.7) !	6 (1.9) !
Georgia	45 (3.7)	55 (3.7)	17 (2.5)	2 (0.5)
Hawaii	38 (4.6)	62 (4.6)	22 (3.6)	3 (1.2)
Idaho †	23 (3.7)	77 (3.7)	29 (4.5)	3 (2.0)
Illinois †	30 (6.0) !	70 (6.0) !	25 (6.4) !	3 (2.3) !
Indiana †	29 (5.9) !	71 (5.9) !	26 (7.5) !	4 (2.7) !
Kansas †	22 (6.1) !	78 (6.1) !	36 (6.1) !	4 (1.5) !
Kentucky	****(****)	****(****)	****(****)	****(****)
Louisiana	52 (5.5) !	48 (5.5) !	10 (2.7) !	1 (0.4) !
Maine †	22 (4.2) !	78 (4.2) !	31 (3.7) !	7 (2.4) !
Maryland	43 (6.3) !	57 (6.3) !	25 (5.4) !	5 (2.5) !
Massachusetts	22 (7.0) !	78 (7.0) !	35 (7.0) !	6 (2.6) !
Michigan †	40 (9.7) !	60 (9.7) !	27 (7.1) !	4 (2.4) !
Minnesota †	20 (7.8) !	80 (7.8) !	50 (10.0) !	9 (4.3) !
Mississippi	57 (4.4) !	43 (4.4) !	9 (1.8) !	1 (****) !
Missouri	30 (8.5) !	70 (8.5) !	26 (6.2) !	4 (1.3) !
Montana †	19 (4.9)	81 (4.9)	37 (4.7)	6 (1.5)
Nebraska	****(****)	****(****)	****(****)	****(****)
Nevada	35 (5.9)	65 (5.9)	25 (5.3)	5 (2.6)
New Mexico	52 (3.1)	48 (3.1)	15 (2.0)	2 (0.6)
New York †	28 (6.2)	72 (6.2)	32 (5.4)	5 (2.1) !
North Carolina	39 (5.0) !	61 (5.0) !	21 (5.4) !	3 (2.1) !
North Dakota	23 (2.9)	77 (2.9)	31 (3.2)	4 (1.5)
Ohio	36 (7.3) !	64 (7.3) !	24 (6.9) !	3 (1.3) !
Oklahoma	29 (5.6) !	71 (5.6) !	21 (5.3) !	2 (1.4) !
Oregon †	23 (4.2) !	77 (4.2) !	35 (4.4) !	7 (2.1) !
Rhode Island	40 (5.9)	60 (5.9)	18 (5.0)	2 (0.9)
South Carolina	****(****)	****(****)	****(****)	****(****)
Tennessee	49 (5.7) !	51 (5.7) !	12 (4.1) !	1 (****)
Texas	30 (7.9) !	70 (7.9) !	26 (5.5) !	2 (1.0) !
Utah	38 (7.4)	62 (7.4)	24 (5.7)	5 (1.7)
Vermont †	25 (7.2) !	75 (7.2) !	32 (6.0) !	6 (2.1) !
Virginia	34 (9.8) !	66 (9.8) !	27 (7.6) !	5 (2.8) !
West Virginia	33 (4.3) !	67 (4.3) !	22 (4.0) !	4 (2.2) !
Wyoming	33 (10.9) !	67 (10.9) !	21 (6.4) !	4 (2.8) !
Other Jurisdictions				
American Samoa	****(****)	****(****)	****(****)	****(****)
District of Columbia	79 (3.0)	21 (3.0)	5 (1.1)	1 (0.5)
DDESS	31 (4.9)	69 (4.9)	32 (5.7)	8 (4.5)
DoDDS	29 (2.5)	71 (2.5)	29 (2.2)	5 (1.2)
Guam	****(****)	****(****)	****(****)	****(****)

Standard errors of the estimated percentages appear in parentheses.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

(****) Standard error estimates cannot be accurately determined.

**** (****) Sample size is insufficient to permit a reliable estimate.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

▲ Percentage is between 0.0 and 0.5.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.54: State Percentages of Students by Free/Reduced-Price Lunch, Grade 4

State percentages of students by eligibility for free/reduced-price lunch program for grade 4 public schools: 1996–2000

	Eligible		Not eligible		Info not available	
	1996	2000	1996	2000	1996	2000
Nation	34 (1.6)	35 (1.1)	52 (2.5)	52 (2.4)	13 (3.1)	13 (2.4)
Alabama	49 (2.1)	51 (2.3)	48 (2.2)	44 (2.4)	3 (1.5)	6 (2.0)
Arizona	36 (2.8)	40 (2.5)	44 (4.2)	49 (3.0)	20 (4.8)	11 (3.1)
Arkansas	45 (2.1)	51 (2.0)	52 (2.2)	47 (2.1)	3 (1.9)	2 (1.4)
California †	44 (2.8)	49 (3.4)	40 (3.1)	40 (3.3)	16 (3.7)	12 (3.3)
Connecticut	25 (1.4)	24 (2.1)	72 (2.2)	67 (2.6)	3 (1.8)	9 (2.3)
Georgia	44 (2.2)	42 (2.1)	49 (2.6)	45 (2.8)	7 (2.6)	13 (3.3)
Hawaii	40 (1.9)	46 (2.1)	57 (2.0)	49 (2.0)	3 (1.5)	5 (2.0)
Idaho †	—	41 (1.7)	—	52 (3.0)	—	7 (2.9)
Illinois †	—	37 (3.1)	—	52 (3.9)	—	12 (3.9)
Indiana †	29 (1.9)	25 (2.1)	69 (2.2)	65 (2.9)	2 (1.2)	10 (3.1)
Iowa †	31 (2.2)	26 (1.6)	64 (2.5)	69 (2.1)	5 (2.1)	5 (1.9)
Kansas †	—	34 (2.5)	—	62 (2.7)	—	4 (2.0)
Kentucky	47 (2.1)	47 (1.9)	51 (2.2)	48 (2.3)	3 (1.4)	5 (2.2)
Louisiana	58 (2.4)	53 (3.1)	32 (2.4)	32 (2.4)	10 (3.0)	14 (3.5)
Maine †	32 (1.7)	31 (1.3)	62 (2.5)	64 (1.8)	6 (2.4)	5 (1.5)
Maryland	32 (1.9)	32 (2.1)	64 (2.3)	58 (2.5)	4 (1.3)	10 (2.7)
Massachusetts	24 (2.4)	26 (2.2)	66 (3.2)	67 (2.5)	11 (2.6)	7 (2.4)
Michigan †	31 (2.1)	27 (2.4)	62 (2.9)	68 (2.5)	7 (2.9)	4 (2.0)
Minnesota †	22 (1.9)	27 (2.1)	65 (2.4)	68 (3.0)	13 (3.1)	6 (2.5)
Mississippi	64 (2.2)	58 (2.1)	35 (2.0)	32 (1.9)	1 (****)	10 (2.9)
Missouri	36 (2.0)	34 (1.9)	63 (2.1)	62 (2.5)	1 (0.6)	5 (2.1)
Montana †	35 (2.0)	31 (3.1)	60 (2.5)	53 (4.2)	5 (1.8)	16 (3.9)
Nebraska	33 (1.7)	34 (2.8)	57 (2.5)	61 (3.5)	10 (2.5)	6 (2.5)
Nevada	15 (2.3)	34 (2.1)	28 (3.6)	60 (2.4)	57 (4.8)	6 (2.0)
New Mexico	50 (3.0)	54 (3.1)	37 (2.7)	34 (2.8)	13 (2.7)	12 (3.4)
New York †	44 (2.0)	49 (2.6)	49 (3.0)	48 (3.0)	7 (2.6)	4 (1.9)
North Carolina	34 (1.5)	40 (2.2)	58 (2.2)	55 (2.5)	8 (2.2)	5 (1.1)
North Dakota	24 (1.3)	24 (1.7)	65 (2.4)	58 (2.4)	11 (2.4)	18 (2.6)
Ohio †	—	34 (2.4)	—	57 (2.8)	—	9 (2.8)
Oklahoma	—	49 (2.5)	—	45 (2.6)	—	5 (2.0)
Oregon †	31 (2.6)	35 (3.0)	60 (3.1)	58 (3.0)	9 (2.9)	8 (2.8)
Rhode Island	34 (2.3)	35 (1.9)	65 (2.4)	60 (2.1)	1 (****)	4 (1.8)
South Carolina	52 (1.7)	50 (2.1)	48 (1.7)	46 (2.1)	▲ (0.1)	4 (2.4)
Tennessee	36 (2.6)	41 (2.0)	59 (2.1)	57 (2.1)	5 (2.2)	2 (1.4)
Texas	43 (3.1)	43 (2.9)	52 (3.0)	48 (3.2)	6 (2.3)	9 (2.6)
Utah	27 (2.0)	31 (2.0)	60 (2.4)	64 (2.5)	13 (2.8)	6 (2.2)
Vermont †	26 (1.6)	26 (1.9)	65 (2.3)	66 (2.5)	9 (2.1)	8 (2.4)
Virginia	31 (1.8)	30 (2.2)	65 (2.4)	61 (2.9)	4 (1.7)	10 (2.9)
West Virginia	46 (1.7)	47 (2.1)	49 (1.9)	49 (2.2)	5 (2.2)	5 (1.9)
Wyoming	33 (1.5)	32 (2.1)	64 (2.0)	60 (3.0)	3 (1.4)	8 (2.6)
Other Jurisdictions						
American Samoa	—	100 (****)	—	0 (****)	—	0 (****)
District of Columbia	74 (0.6)	71 (1.3)	21 (0.5)	11 (0.6)	5 (0.3)	18 (1.5)
DDESS	35 (0.9)	38 (1.4)	38 (0.9)	49 (1.3)	27 (0.4)	13 (0.8)
DoDDS	12 (0.9)	20 (0.8)	36 (1.6)	49 (1.2)	52 (2.1)	30 (1.1)
Guam	35 (1.4)	56 (1.9)	59 (1.4)	39 (2.4)	6 (0.3)	5 (2.6)
Virgin Islands	—	100 (****)	—	0 (****)	—	0 (****)

Standard errors of the estimated percentages appear in parentheses.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

(****) Standard error estimates cannot be accurately determined.

— Indicates that the jurisdiction did not participate.

▲ Percentage is between 0.0 and 0.5.

NOTE: Percentages may not add to 100 due to rounding.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.55: State Percentages of Students by Free/Reduced-Price Lunch, Grade 8

State percentages of students by eligibility for free/reduced-price lunch program for grade 8 public schools: 1996–2000

	Eligible		Not eligible		Info not available	
	1996	2000	1996	2000	1996	2000
Nation	30 (1.5)	28 (1.0)	56 (2.6)	55 (1.8)	14 (3.1)	16 (2.1)
Alabama	39 (2.4)	39 (2.3)	59 (2.5)	52 (2.9)	2 (0.8)	9 (2.8)
Arizona †	27 (2.4)	31 (2.9)	50 (3.4)	54 (3.5)	23 (3.9)	15 (3.4)
Arkansas	32 (1.9)	38 (1.9)	60 (2.7)	55 (2.0)	7 (3.2)	7 (2.0)
California †	36 (2.5)	35 (3.2)	47 (3.5)	49 (4.3)	17 (3.2)	16 (4.2)
Connecticut	21 (2.2)	19 (2.7)	74 (2.4)	68 (2.7)	5 (1.7)	13 (2.8)
Georgia	32 (2.2)	29 (2.1)	54 (3.2)	49 (2.8)	14 (3.5)	22 (3.6)
Hawaii	30 (1.3)	38 (1.3)	65 (1.3)	52 (1.2)	5 (0.4)	10 (0.8)
Idaho †	—	29 (1.2)	—	62 (1.5)	—	9 (1.5)
Illinois †	—	30 (2.6)	—	65 (3.0)	—	5 (1.6)
Indiana †	23 (1.5)	18 (2.0)	77 (1.7)	71 (3.5)	1 (0.6)	11 (3.3)
Kansas †	—	24 (1.6)	—	64 (3.9)	—	11 (4.1)
Kentucky	34 (1.7)	40 (2.1)	58 (2.0)	58 (2.1)	8 (2.4)	1 (****)
Louisiana	48 (2.6)	50 (2.8)	44 (2.3)	37 (2.5)	8 (2.5)	14 (3.3)
Maine †	22 (1.2)	23 (1.6)	73 (2.0)	71 (2.0)	6 (2.1)	6 (1.9)
Maryland	25 (1.6)	22 (1.7)	70 (2.2)	63 (3.4)	5 (2.1)	15 (3.9)
Massachusetts	18 (1.3)	20 (1.7)	75 (2.3)	74 (2.4)	7 (2.3)	6 (1.7)
Michigan †	20 (1.9)	21 (1.7)	66 (2.8)	68 (3.1)	14 (3.2)	11 (3.1)
Minnesota †	20 (1.4)	21 (2.0)	65 (3.7)	72 (3.1)	15 (4.1)	7 (3.2)
Mississippi	53 (1.7)	46 (2.5)	42 (2.0)	43 (2.2)	5 (2.2)	12 (3.0)
Missouri	26 (1.3)	27 (1.6)	66 (2.5)	65 (2.5)	8 (3.0)	8 (2.5)
Montana †	25 (1.9)	25 (1.8)	59 (2.1)	55 (2.4)	16 (1.9)	20 (2.8)
Nebraska	27 (1.0)	28 (1.6)	69 (1.2)	69 (2.6)	5 (0.9)	3 (1.7)
Nevada	—	26 (0.9)	—	71 (0.9)	—	3 (0.3)
New Mexico	42 (1.7)	40 (2.1)	43 (2.0)	35 (2.3)	15 (1.8)	25 (2.9)
New York †	37 (2.5)	34 (2.7)	54 (2.8)	42 (4.4)	9 (2.7)	23 (4.6)
North Carolina	31 (1.9)	28 (1.5)	62 (2.4)	66 (1.9)	7 (2.2)	6 (1.8)
North Dakota	24 (1.3)	23 (1.3)	67 (1.5)	62 (1.7)	9 (1.6)	15 (1.7)
Ohio	—	16 (1.5)	—	74 (2.9)	—	10 (3.0)
Oklahoma	—	39 (2.2)	—	53 (2.3)	—	8 (2.1)
Oregon †	22 (1.7)	24 (1.9)	62 (2.3)	60 (3.2)	16 (2.7)	16 (3.8)
Rhode Island	26 (0.8)	28 (1.0)	70 (0.8)	66 (1.1)	4 (0.3)	5 (0.5)
South Carolina	44 (1.9)	42 (1.9)	55 (1.8)	55 (1.7)	1 (****)	2 (1.4)
Tennessee	27 (2.0)	33 (1.8)	64 (2.7)	63 (1.9)	8 (2.8)	4 (1.1)
Texas	37 (2.2)	41 (2.1)	57 (2.7)	53 (2.4)	6 (1.3)	6 (2.2)
Utah	20 (1.3)	22 (1.3)	70 (1.9)	67 (1.8)	10 (1.7)	10 (2.0)
Vermont †	19 (1.2)	19 (1.4)	73 (1.7)	71 (2.2)	8 (1.9)	9 (2.3)
Virginia	23 (1.9)	21 (1.4)	67 (3.0)	71 (2.4)	10 (3.1)	8 (2.6)
West Virginia	36 (1.3)	38 (2.1)	61 (1.7)	56 (2.2)	4 (1.7)	7 (2.0)
Wyoming	21 (0.8)	24 (1.1)	73 (0.8)	72 (1.4)	6 (0.6)	4 (1.2)
Other Jurisdictions						
American Samoa	—	96 (2.2)	—	0 (****)	—	4 (2.2)
District Of Columbia	55 (1.1)	60 (1.2)	30 (1.0)	21 (1.1)	15 (0.6)	19 (0.6)
DDESS	29 (1.8)	31 (2.0)	40 (1.8)	48 (1.8)	31 (1.5)	21 (0.8)
DoDDS	8 (0.5)	15 (0.8)	47 (1.0)	51 (1.1)	44 (1.0)	34 (0.8)
Guam	17 (1.3)	19 (1.3)	82 (1.4)	75 (1.6)	1 (0.3)	6 (0.7)

Standard errors of the estimated percentages appear in parentheses.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

(****) Standard error estimates cannot be accurately determined.

— Indicates that the jurisdiction did not participate.

NOTE: Percentages may not add to 100 due to rounding.

DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.

DoDDS: Department of Defense Dependents Schools (Overseas).

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.56: Data for Table 4.1 Comparison of Two Sets of National Scale Score Results

National average mathematics scale scores by type of results, grades 4, 8, and 12: 1996–2000

	Accommodation not permitted	Accommodation permitted
Grade 4		
1996	224 (0.9) *	224 (0.8) *
2000	228 (0.9)	226 (0.7)
Grade 8		
1996	272 (1.1) *	271 (0.9) *
2000	275 (0.8)	274 (0.7)
Grade 12		
1996	304 (1.0) *	302 (1.0) †
2000	301 (0.9)	300 (1.0)

Standard errors of the estimated scale scores appear in parentheses.
* Significantly different from 2000.
† Significantly different from the sample where accommodations were not permitted.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.57: Data for Table 4.2 Comparison of Two Sets of National Achievement Level Results

Percentage of students within each mathematics achievement level range and at or above achievement levels by type of results, grades 4, 8, and 12: 1996–2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
1996: Accommodations were						
not permitted	36 (1.2) *	43 (0.9)	19 (0.8) *	2 (0.3)	64 (1.2) *	21 (0.9) *
permitted	36 (1.1)	43 (1.0)	19 (0.8) *	2 (0.3)	64 (1.1)	21 (1.0) *
2000: Accommodations were						
not permitted	31 (1.1)	43 (0.8)	23 (0.9)	3 (0.3)	69 (1.1)	26 (1.1)
permitted	33 (1.1) †	42 (1.1)	22 (0.8)	3 (0.3)	67 (1.1) †	25 (0.9)
Grade 8						
1996: Accommodations were						
not permitted	38 (1.1) *	39 (1.0)	20 (0.8) *	4 (0.5)	62 (1.1) *	24 (1.1) *
permitted	39 (1.0) *	38 (1.0)	20 (0.8) *	4 (0.5)	61 (1.0) *	23 (0.9) *
2000: Accommodations were						
not permitted	34 (0.8)	38 (0.8)	22 (0.7)	5 (0.5)	66 (0.8)	27 (0.9)
permitted	35 (0.8)	38 (0.7)	22 (0.6)	5 (0.4)	65 (0.8)	27 (0.8)
Grade 12						
1996: Accommodations were						
not permitted	31 (1.3) *	53 (1.1) *	14 (0.9)	2 (0.3)	69 (1.3) *	16 (1.1)
permitted	34 (1.1) †	50 (0.7) †	14 (0.7)	2 (0.3)	66 (1.1) †	16 (0.9)
2000: Accommodations were						
not permitted	35 (1.1)	48 (0.9)	14 (0.8)	2 (0.3)	65 (1.1)	17 (0.9)
permitted	36 (1.1)	48 (1.0)	14 (0.7)	2 (0.4)	64 (1.1)	16 (0.9)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
† Significantly different from the sample where accommodations were not permitted.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.58: Comparison of Two Sets of National Scale Score Results by Gender

National average mathematics scale scores by gender and type of results, grades 4, 8, and 12: 1996–2000

	Male		Female	
	Not permitted	*Permitted*	*Not Permitted*	*Permitted*
Grade 4				
1996	226 (1.1) *	225 (0.9) *	222 (1.0) *	224 (1.0)
2000	229 (1.0)	228 (0.8)	226 (0.9)	225 (0.8)
Grade 8				
1996	272 (1.4) *	272 (1.0) *	272 (1.1)	270 (1.0) *
2000	277 (0.9)	275 (0.8) †	274 (0.9)	273 (0.8)
Grade 12				
1996	305 (1.1)	303 (1.2)	303 (1.1) *	300 (1.2) †
2000	303 (1.1)	302 (1.2)	299 (0.9)	299 (1.0)

Standard errors of the estimated scale scores appear in parentheses.
* Significantly different from 2000.
† Significantly different from the sample where accommodations were not permitted.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.59: Comparison of Two Sets of National Achievement Level Results by Gender

Percentage of students within each mathematics achievement level range and at or above achievement levels by gender and type of results, grades 4, 8, and 12: 1996–2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
Male						
1996: Accommodations were						
not permitted	35 (1.6) *	41 (1.6)	21 (1.0) *	3 (0.4)	65 (1.6) *	24 (1.1) *
permitted	36 (1.1)	42 (1.3)	20 (1.0) *	3 (0.6)	64 (1.1)	22 (1.2) *
2000: Accommodations were						
not permitted	30 (1.1)	41 (1.0)	25 (1.0)	3 (0.4)	70 (1.1)	28 (1.2)
permitted	32 (1.2)	41 (1.2)	23 (1.0)	4 (0.4)	68 (1.2)	27 (1.1)
Female						
1996: Accommodations were						
not permitted	37 (1.6) *	44 (1.3)	17 (1.0) *	1 (0.3)	63 (1.6) *	19 (1.1) *
permitted	36 (1.3)	44 (1.3)	19 (1.3)	2 (0.3)	64 (1.3)	20 (1.3)
2000: Accommodations were						
not permitted	32 (1.2)	44 (0.9)	22 (1.1)	2 (0.3)	68 (1.2)	24 (1.2)
permitted	35 (1.4)	43 (1.4)	20 (1.0)	2 (0.3)	65 (1.4)	22 (1.1)
Grade 8						
Male						
1996: Accommodations were						
not permitted	38 (1.7) *	37 (1.8)	20 (1.2)	4 (0.7)	62 (1.7) *	25 (1.5) *
permitted	38 (1.2) *	37 (1.3)	20 (1.0)	4 (0.7)	62 (1.2) *	25 (1.2) *
2000: Accommodations were						
not permitted	33 (0.9)	37 (1.0)	24 (0.8)	6 (0.6)	67 (0.9)	29 (1.1)
permitted	35 (1.0)	37 (0.9)	23 (0.8)	6 (0.5)	65 (1.0)	28 (1.0)
Female						
1996: Accommodations were						
not permitted	37 (1.3)	41 (1.2)	19 (1.0)	3 (0.6)	63 (1.3)	23 (1.2)
permitted	39 (1.2) *	39 (1.1)	19 (0.9)	3 (0.6)	61 (1.2) *	22 (1.1) *
2000: Accommodations were						
not permitted	35 (1.0)	40 (0.8)	21 (0.8)	4 (0.5)	65 (1.0)	25 (1.0)
permitted	36 (1.0)	39 (0.9)	21 (0.8)	4 (0.5)	64 (1.0)	25 (0.9)
Grade 12						
Male						
1996: Accommodations were						
not permitted	30 (1.4) *	51 (1.3) *	16 (1.2)	3 (0.4)	70 (1.4) *	18 (1.3)
permitted	33 (1.4) †	49 (1.1)	15 (0.9)	3 (0.5)	67 (1.4) †	18 (1.0)
2000: Accommodations were						
not permitted	34 (1.3)	46 (1.1)	17 (0.8)	3 (0.5)	66 (1.3)	20 (1.0)
permitted	35 (1.3)	46 (1.3)	16 (0.9)	3 (0.5)	65 (1.3)	19 (1.1)
Female						
1996: Accommodations were						
not permitted	31 (1.5) *	54 (1.4) *	13 (1.1)	1 (0.3)	69 (1.5) *	14 (1.2)
permitted	35 (1.4) †	51 (0.9) †	13 (1.1)	1 (0.3)	65 (1.4) †	14 (1.1)
2000: Accommodations were						
not permitted	36 (1.2)	50 (1.1)	13 (1.1)	1 (0.3)	64 (1.2)	14 (1.1)
permitted	37 (1.4)	49 (1.5)	12 (0.9)	1 (0.4)	63 (1.4)	14 (1.0)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
† Significantly different from the sample where accommodations were not permitted.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.60: Comparison of Two Sets of National Scale Score Results by Race/Ethnicity

National average mathematics scale scores by race/ethnicity and type of results, grades 4, 8, and 12: 1996–2000

	White		Black		Hispanic		Asian Pacific Islander		American Indian	
	Not permitted	*Permitted*	*Not permitted*	*Permitted*	*Not permitted*	*Permitted*	*Not permitted*	*Permitted*	*Not permitted*	*Permitted*
Grade 4										
1996	232 (0.9)	233 (0.9)	200 (2.3)	198 (1.4) *	206 (2.1)	207 (1.6)	232 (4.1)	236 (4.1)	216 (2.3)	213 (3.9)
2000	236 (1.0)	235 (0.8)	205 (1.6)	204 (1.2)	212 (1.5)	209 (1.4)	—	—	216 (2.1)	218 (2.3)
Grade 8										
1996	282 (1.2) *	281 (1.0) *	243 (2.0)	239 (1.7) *	251 (2.0)	250 (1.5)	—	—	264 (3.0) !	262 (4.4)
2000	286 (0.8)	284 (0.8)	247 (1.4)	245 (1.2)	253 (1.5)	252 (1.2)	289 (3.4)	289 (3.1)	255 (8.3) !	256 (4.7)
Grade 12										
1996	311 (1.0)	309 (1.2)	280 (2.2)	276 (1.6)	287 (1.8)	284 (1.8)	319 (4.8)	310 (2.3)	279 (8.9) !	**** (****)
2000	308 (1.0)	307 (1.1)	274 (1.9)	273 (2.0)	283 (2.1)	281 (1.9)	319 (2.8)	317 (3.3)	293 (4.4)	292 (3.9)

Standard errors of the estimated scale scores appear in parentheses.
* Significantly different from 2000.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
**** (****) 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 the body of this report. See appendix A for a more detailed discussion.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.61: Comparison of Two Sets of National Achievement Level Results by Race/Ethnicity

Percentage of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity and type of results, grades 4, 8, and 12: 1996–2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 4						
White						
1996: Accommodations were						
not permitted	24 (1.4)	48 (1.0)	25 (1.1) *	3 (0.4)	76 (1.4)	28 (1.2) *
permitted	23 (1.2)	49 (1.2)	25 (1.2)	3 (0.5)	77 (1.2)	28 (1.3)
2000: Accommodations were						
not permitted	20 (1.1)	46 (1.2)	30 (1.2)	3 (0.4)	80 (1.1)	34 (1.4)
permitted	22 (1.3)	46 (1.5)	29 (1.1)	3 (0.4)	78 (1.3)	32 (1.2)
Black						
1996: Accommodations were						
not permitted	68 (3.2)	27 (2.4)	5 (1.4)	▲ (0.1)	32 (3.2)	5 (1.4)
permitted	73 (2.0) *	24 (1.7) *	3 (0.6)	▲ (****)	27 (2.0) *	3 (0.6)
2000: Accommodations were						
not permitted	61 (2.5)	33 (2.2)	5 (0.9)	▲ (****)	39 (2.5)	5 (0.9)
permitted	63 (2.2)	33 (1.8)	4 (0.9)	▲ (****)	37 (2.2)	4 (0.8)
Hispanic						
1996: Accommodations were						
not permitted	59 (2.4)	34 (2.2)	7 (0.9)	▲ (****)	41 (2.4)	8 (1.0)
permitted	60 (2.2)	33 (2.0)	7 (1.1)	▲ (****)	40 (2.2)	7 (1.1)
2000: Accommodations were						
not permitted	52 (2.1)	38 (1.7)	10 (1.3)	1 (0.2)	48 (2.1)	10 (1.3)
permitted	55 (2.2)	36 (1.8)	8 (1.0)	▲ (0.2)	45 (2.2)	9 (1.1)
Asian/Pacific Islander						
1996: Accommodations were						
not permitted	27 (5.0)	47 (5.1)	21 (4.1)	5 (2.4)	73 (5.0)	26 (5.3)
permitted	25 (5.2)	42 (4.6)	27 (4.4)	7 (3.2)	75 (5.2)	33 (5.9)
2000: Accommodations were						
not permitted	—	—	—	—	—	—
permitted	—	—	—	—	—	—
American Indian						
1996: Accommodations were						
not permitted	48 (5.7)	44 (5.5)	7 (2.7)	1 (****)	52 (5.7)	8 (2.5)
permitted	49 (7.1)	40 (4.8)	11 (4.9)	▲ (****)	51 (7.1)	11 (5.0)
2000: Accommodations were						
not permitted	47 (5.8)	39 (6.2)	13 (2.7)	1 (****)	53 (5.8)	14 (2.9)
permitted	43 (4.0)	42 (3.9)	14 (3.3)	1 (****)	57 (4.0)	16 (3.3)

See footnotes at end of table. ▶

Table B.61: Comparison of Two Sets of National Achievement Level Results by Race/Ethnicity (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity and type of results, grades 4, 8, and 12: 1996–2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 8						
White						
1996: Accommodations were						
not permitted	26 (1.3)	43 (1.2)	25 (1.0)	5 (0.7)	74 (1.3)	31 (1.4)
permitted	27 (1.3)	43 (1.4)	25 (1.1)	5 (0.6)	73 (1.3)	30 (1.2) *
2000: Accommodations were						
not permitted	23 (0.9)	43 (1.0)	28 (1.0)	7 (0.6)	77 (0.9)	35 (1.2)
permitted	24 (0.9)	42 (0.9)	28 (0.9)	6 (0.5)	76 (0.9)	34 (1.0)
Black						
1996: Accommodations were						
not permitted	72 (2.8)	24 (2.6)	4 (0.9)	▲ (****)	28 (2.8)	4 (0.9)
permitted	75 (1.8) *	21 (1.5)	3 (0.7)	▲ (****)	25 (1.8) *	3 (0.7)
2000: Accommodations were						
not permitted	68 (1.8)	27 (1.6)	5 (0.6)	▲ (0.2)	32 (1.8)	6 (0.6)
permitted	69 (1.5)	26 (1.4)	5 (0.6)	▲ (0.1)	31 (1.5)	5 (0.6)
Hispanic						
1996: Accommodations were						
not permitted	61 (2.5)	30 (2.4)	8 (1.4)	1 (0.6)	39 (2.5)	9 (1.6)
permitted	62 (1.9)	30 (1.6)	7 (1.2)	1 (0.4)	38 (1.9)	8 (1.1)
2000: Accommodations were						
not permitted	59 (1.9)	32 (1.4)	9 (0.8)	1 (0.3)	41 (1.9)	10 (0.9)
permitted	59 (1.6)	32 (1.3)	8 (0.7)	1 (0.2)	41 (1.6)	9 (0.7)
Asian/Pacific Islander						
1996: Accommodations were						
not permitted	—	—	—	—	—	—
permitted	—	—	—	—	—	—
2000: Accommodations were						
not permitted	24 (3.5)	35 (3.4)	29 (2.8)	12 (2.6)	76 (3.5)	41 (3.7)
permitted	24 (2.5)	36 (2.9)	29 (2.4)	11 (2.5)	76 (2.5)	40 (3.8)
American Indian						
1996: Accommodations were						
not permitted	49 (6.2) !	38 (7.0) !	11 (5.9) !	2 (****)	51 (6.2) !	13 (5.0) !
permitted	47 (7.0)	39 (7.4)	12 (4.8)	2 (****)	53 (7.0)	14 (5.1)
2000: Accommodations were						
not permitted	58 (9.6) !	34 (6.9) !	8 (3.8) !	▲ (****)	42 (9.6) !	9 (3.9) !
permitted	56 (7.1)	36 (4.5)	8 (4.7)	▲ (****)	44 (7.1)	8 (4.7)

See footnotes at end of table. ▶

317

Table B.61: Comparison of Two Sets of National Achievement Level Results by Race/Ethnicity (continued)

Percentage of students within each mathematics achievement level range and at or above achievement levels by race/ethnicity and type of results, grades 4, 8, and 12: 1996–2000

	Below *Basic*	At *Basic*	At *Proficient*	At *Advanced*	At or above *Basic*	At or above *Proficient*
Grade 12						
White						
1996: Accommodations were						
not permitted	21 (1.3)	59 (1.4) *	17 (1.1)	2 (0.4)	79 (1.3)	20 (1.3)
permitted	24 (1.3) †	56 (1.0)	17 (0.9)	3 (0.4)	76 (1.3) †	20 (1.1)
2000: Accommodations were						
not permitted	26 (1.2)	54 (1.2)	18 (1.1)	3 (0.4)	74 (1.2)	20 (1.2)
permitted	27 (1.3)	53 (1.1)	17 (0.9)	3 (0.5)	73 (1.3)	20 (1.1)
Black						
1996: Accommodations were						
not permitted	62 (3.3)	34 (2.7)	4 (1.0)	▲ (0.1)	38 (3.3)	4 (1.0)
permitted	66 (2.4)	31 (2.1)	3 (0.7)	▲ (****)	34 (2.4)	3 (0.7)
2000: Accommodations were						
not permitted	69 (2.6)	28 (2.4)	2 (0.6)	▲ (****)	31 (2.6)	3 (0.6)
permitted	70 (2.5)	28 (2.3)	2 (0.6)	▲ (****)	30 (2.5)	2 (0.6)
Hispanic						
1996: Accommodations were						
not permitted	50 (3.6)	44 (3.8)	6 (1.1)	▲ (****)	50 (3.6)	6 (1.1)
permitted	56 (2.7)	38 (2.4)	6 (1.1)	▲ (****)	44 (2.7)	6 (1.0)
2000: Accommodations were						
not permitted	56 (3.1)	39 (2.7)	4 (0.8)	▲ (0.1)	44 (3.1)	4 (0.7)
permitted	57 (2.6)	39 (2.2)	4 (0.9)	▲ (0.1)	43 (2.6)	4 (0.9)
Asian/Pacific Islander						
1996: Accommodations were						
not permitted	19 (4.3)	48 (4.6)	26 (4.9)	7 (2.8)	81 (4.3)	33 (6.3)
permitted	26 (2.6)	51 (3.3)	18 (2.9)	5 (1.6)	74 (2.6)	23 (3.0)
2000: Accommodations were						
not permitted	20 (2.6)	46 (3.1)	28 (3.2)	7 (2.5)	80 (2.6)	34 (3.8)
permitted	22 (2.9)	47 (4.0)	25 (3.5)	7 (3.5)	78 (2.9)	32 (4.7)
American Indian						
1996: Accommodations were						
not permitted	66 (16.0) !	31 (13.7) !	3 (****)	▲ (****)	34 (16.0) !	3 (****)
permitted	**** (****)	**** (****)	**** (****)	**** (****)	**** (****)	**** (****)
2000: Accommodations were						
not permitted	43 (5.7)	47 (7.9)	10 (4.8)	▲ (****)	57 (5.7)	10 (4.8)
permitted	46 (6.0)	44 (6.7)	9 (3.5)	▲ (****)	54 (6.0)	9 (3.4)

Standard errors of the estimated percentages appear in parentheses.
* Significantly different from 2000.
† Significantly different from the sample where accommodations were not permitted.
— 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 the body of this report. See appendix A for a more detailed discussion.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
(****) Standard error estimates cannot be accurately determined.
**** (****) Sample size is insufficient to permit a reliable estimate.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages within each mathematics achievement level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.62: Data for Table 4.3 Comparison of Two Sets of State Scale Score Results, Grade 4

State average mathematics scale scores by type of results for grade 4 public schools: 2000

	Accommodations not permitted	Accommodations permitted
Nation	226 (1.0)	225 (0.8)
Alabama	218 (1.4)	217 (1.2)
Arizona	219 (1.4)	219 (1.3)
Arkansas	217 (1.1)	216 (1.1)
California †	214 (1.8)	213 (1.6)
Connecticut	234 (1.2)	234 (1.1)
Georgia	220 (1.1)	219 (1.1)
Hawaii	216 (1.1)	216 (1.0)
Idaho †	227 (1.2)	224 (1.4) *
Illinois †	225 (1.9)	223 (1.9)
Indiana †	234 (1.1)	233 (1.1)
Iowa †	233 (1.3)	231 (1.2)
Kansas †	232 (1.5)	232 (1.6)
Kentucky	221 (1.2)	219 (1.4)
Louisiana	218 (1.4)	218 (1.4)
Maine †	231 (0.9)	230 (1.0)
Maryland	222 (1.3)	222 (1.2)
Massachusetts	235 (1.1)	233 (1.2)
Michigan †	231 (1.4)	229 (1.6) *
Minnesota †	235 (1.3)	234 (1.3)
Mississippi	211 (1.1)	211 (1.1)
Missouri	229 (1.2)	228 (1.2)
Montana †	230 (1.8)	228 (1.7)
Nebraska	226 (1.7)	225 (1.8)
Nevada	220 (1.2)	220 (1.0)
New Mexico	214 (1.5)	213 (1.5)
New York †	227 (1.3)	225 (1.4)
North Carolina	232 (1.0)	230 (1.1) *
North Dakota	231 (0.9)	230 (1.2)
Ohio †	231 (1.3)	230 (1.5)
Oklahoma	225 (1.3)	224 (1.0)
Oregon †	227 (1.6)	224 (1.8) *
Rhode Island	225 (1.2)	224 (1.1)
South Carolina	220 (1.4)	220 (1.4)
Tennessee	220 (1.5)	220 (1.4)
Texas	233 (1.2)	231 (1.1)
Utah	227 (1.2)	227 (1.3)
Vermont †	232 (1.6)	232 (1.6)
Virginia	230 (1.3)	230 (1.0)
West Virginia	225 (1.2)	223 (1.3)
Wyoming	229 (1.3)	229 (1.1)
Other Jurisdictions		
American Samoa	157 (3.9)	152 (2.5)
District of Columbia	193 (1.2)	192 (1.1)
DDESS	228 (1.2)	228 (1.4)
DoDDS	228 (0.7)	226 (0.9)
Guam	184 (2.3)	184 (1.7)
Virgin Islands	183 (2.8)	181 (1.8)

Standard errors of the estimated scale scores appear in parentheses.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
*Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction or the nation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.63: Data for Table 4.4 Comparison of Two Sets of State Scale Score Results, Grade 8

State average mathematics scale scores by type of results for grade 8 public schools: 2000

	Accommodations not permitted	Accommodations permitted
Nation	274 (0.8)	273 (0.8)
Alabama	262 (1.8)	264 (1.8)
Arizona †	271 (1.5)	269 (1.8)
Arkansas	261 (1.4)	257 (1.5) *
California †	262 (2.0)	260 (2.1)
Connecticut	282 (1.4)	281 (1.3)
Georgia	266 (1.3)	265 (1.2)
Hawaii	263 (1.3)	262 (1.4)
Idaho †	278 (1.3)	277 (1.0)
Illinois †	277 (1.6)	275 (1.7)
Indiana †	283 (1.4)	281 (1.4) *
Kansas †	284 (1.4)	283 (1.7)
Kentucky	272 (1.4)	270 (1.3) *
Louisiana	259 (1.5)	259 (1.5)
Maine †	284 (1.2)	281 (1.1) *
Maryland	276 (1.4)	272 (1.7) ‡
Massachusetts	283 (1.3)	279 (1.5) ‡
Michigan †	278 (1.6)	277 (1.9)
Minnesota †	288 (1.4)	287 (1.4)
Mississippi	254 (1.3)	254 (1.1)
Missouri	274 (1.5)	271 (1.5) ‡
Montana †	287 (1.2)	285 (1.4)
Nebraska	281 (1.1)	280 (1.2)
Nevada	268 (0.9)	265 (0.8) ‡
New Mexico	260 (1.7)	259 (1.3)
New York †	276 (2.1)	271 (2.2) ‡
North Carolina	280 (1.1)	276 (1.3) ‡
North Dakota	283 (1.1)	282 (1.1)
Ohio	283 (1.5)	281 (1.6) *
Oklahoma	272 (1.5)	270 (1.3)
Oregon †	281 (1.6)	280 (1.5)
Rhode Island	273 (1.1)	269 (1.3) *
South Carolina	266 (1.4)	265 (1.5)
Tennessee	263 (1.7)	262 (1.5)
Texas	275 (1.5)	273 (1.6)
Utah	275 (1.2)	274 (1.2) *
Vermont †	283 (1.1)	281 (1.5)
Virginia	277 (1.5)	275 (1.3)
West Virginia	271 (1.0)	266 (1.2) ‡
Wyoming	277 (1.2)	276 (1.0)
Other Jurisdictions		
American Samoa	195 (4.5)	192 (5.5)
District of Columbia	234 (2.2)	235 (1.1)
DDESS	277 (2.3)	274 (1.8)
DoDDS	278 (1.0)	278 (1.1)
Guam	233 (2.2)	234 (2.6)

Standard errors of the estimated scale scores appear in parentheses.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
*Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction or the nation.
‡ Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction and when using a multiple comparison procedure based on all jurisdictions that participated both years.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.64: Data for Table 4.5 Comparison of Two Sets of State *Proficient* Level Results, Grade 4

Percentage of students at or above the *Proficient* level in mathematics by state and type of results for grade 4 public schools: 2000

	Accommodations not permitted	Accommodations permitted
Nation	25 (1.2)	23 (1.0)
Alabama	14 (1.3)	13 (1.4)
Arizona	17 (1.6)	16 (1.4)
Arkansas	13 (1.1)	14 (1.0)
California †	15 (1.4)	13 (1.3) *
Connecticut	32 (1.6)	31 (1.7)
Georgia	18 (1.1)	17 (1.1)
Hawaii	14 (1.0)	14 (1.1)
Idaho †	21 (1.6)	20 (1.5)
Illinois †	21 (2.5)	20 (2.3)
Indiana †	31 (1.6)	30 (1.6)
Iowa †	28 (1.9)	26 (1.4)
Kansas †	30 (2.1)	29 (1.9)
Kentucky	17 (1.2)	17 (1.1)
Louisiana	14 (1.4)	14 (1.3)
Maine †	25 (1.3)	23 (1.5)
Maryland	22 (1.4)	21 (1.3)
Massachusetts	33 (1.6)	31 (1.5)
Michigan †	29 (1.8)	28 (2.0)
Minnesota †	34 (1.8)	33 (1.8)
Mississippi	9 (0.9)	9 (0.9)
Missouri	23 (1.6)	23 (1.4)
Montana †	25 (2.5)	24 (2.1)
Nebraska	24 (1.9)	24 (2.0)
Nevada	16 (1.1)	16 (0.8)
New Mexico	12 (1.0)	12 (1.1)
New York †	22 (1.6)	21 (1.8)
North Carolina	28 (1.5)	25 (1.4) *
North Dakota	25 (1.3)	25 (1.5)
Ohio †	26 (2.1)	25 (2.1)
Oklahoma	16 (1.2)	16 (1.2)
Oregon †	23 (1.8)	23 (1.8)
Rhode Island	23 (1.3)	22 (1.2)
South Carolina	18 (1.2)	18 (1.3)
Tennessee	18 (1.5)	18 (1.4)
Texas	27 (1.8)	25 (1.8)
Utah	24 (1.3)	23 (1.4)
Vermont †	29 (2.2)	29 (2.2)
Virginia	25 (1.6)	24 (1.4)
West Virginia	18 (1.6)	17 (1.3)
Wyoming	25 (1.5)	25 (1.4)
Other Jurisdictions		
American Samoa	▲ (0.4)	▲ (0.3)
District of Columbia	6 (0.8)	5 (0.5)
DDESS	24 (1.8)	23 (1.9)
DoDDS	22 (1.1)	21 (1.5)
Guam	2 (0.6)	2 (0.6)
Virgin Islands	1 (0.6)	1 (0.7)

Standard errors of the estimated percentages appear in parentheses.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
*Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction or the nation.
▲ Percentage is between 0.0 and 0.5.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.65: Data for Table 4.6 Comparison of Two Sets of State *Proficient* Level Results, Grade 8

Percentage of students at or above the *Proficient* level in mathematics by state and type of results for grade 8 public schools: 2000

	Accommodations not permitted	Accommodations permitted
Nation	26 (1.0)	26 (0.9)
Alabama	16 (1.6)	16 (1.5)
Arizona †	21 (1.6)	20 (1.5)
Arkansas	14 (1.2)	13 (0.9)
California †	18 (1.6)	17 (1.8)
Connecticut	34 (1.5)	33 (1.3)
Georgia	19 (1.1)	19 (1.1)
Hawaii	16 (1.3)	16 (1.0)
Idaho †	27 (1.7)	26 (1.3)
Illinois †	27 (1.4)	26 (1.6)
Indiana †	31 (1.9)	29 (1.8)
Kansas †	34 (1.9)	34 (1.7)
Kentucky	21 (1.5)	20 (1.5)
Louisiana	12 (1.2)	11 (1.1)
Maine †	32 (1.4)	30 (1.5)
Maryland	29 (1.4)	27 (1.3) *
Massachusetts	32 (1.3)	30 (1.3)
Michigan †	28 (1.9)	28 (2.1)
Minnesota †	40 (1.6)	39 (1.7)
Mississippi	8 (0.7)	9 (0.8)
Missouri	22 (1.4)	21 (1.3)
Montana †	37 (1.6)	36 (1.5)
Nebraska	31 (1.6)	30 (1.6)
Nevada	20 (0.9)	18 (0.9)
New Mexico	13 (1.0)	12 (0.9)
New York †	26 (1.9)	24 (1.9)
North Carolina	30 (1.3)	27 (1.4) *
North Dakota	31 (1.5)	30 (1.3)
Ohio	31 (1.7)	30 (1.5)
Oklahoma	19 (1.2)	18 (1.1)
Oregon †	32 (1.9)	31 (1.7)
Rhode Island	24 (1.0)	22 (1.0)
South Carolina	18 (1.2)	17 (1.2)
Tennessee	17 (1.4)	16 (1.3)
Texas	24 (1.4)	24 (1.7)
Utah	26 (1.2)	25 (1.1)
Vermont †	32 (1.5)	31 (1.4)
Virginia	26 (1.5)	25 (1.3)
West Virginia	18 (0.9)	17 (1.0)
Wyoming	25 (1.1)	23 (1.0)
Other Jurisdictions		
American Samoa	1 (0.5)	1 (0.5)
District of Columbia	6 (0.8)	6 (0.6)
DDESS	27 (2.8)	24 (2.3)
DoDDS	27 (1.2)	27 (2.0)
Guam	4 (0.8)	4 (0.7)

Standard errors of the estimated percentages appear in parentheses.
† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.
*Significantly different from the sample where accommodations were not permitted when examining only one jurisdiction or the nation.
DDESS: Department of Defense Domestic Dependent Elementary and Secondary Schools.
DoDDS: Department of Defense Dependents Schools (Overseas).
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.66: Data for Table 5.1 Teacher Certification

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on area of certification: 1992–2000

Grade 4	1992	1996	2000
Elementary or middle/junior high school education (general)			
Yes	97 (0.6) *	95 (1.1)	95 (0.7)
	220 (0.8)	225 (1.0)	228 (1.0)
No	3 (0.6) *	5 (1.0)	5 (0.7)
	217 (3.8) !	218 (5.4) !	217 (2.9)
Not Offered	▲ (****)	▲ (****)	▲ (****)
	**** (****)	**** (****)	**** (****)
Elementary Mathematics			
Yes	—	40 (3.2) *	30 (2.4)
	—	225 (2.0)	228 (1.7)
No	—	37 (3.1) *	49 (2.4)
	—	222 (1.7)	228 (1.5)
Not Offered	—	23 (2.5)	21 (1.8)
	—	227 (2.1)	232 (1.7)
Middle/junior high school or secondary mathematics			
Yes	15 (2.3)	14 (2.3)	11 (1.2)
	219 (2.7)	227 (4.0)	225 (2.9)
No	85 (2.3)	84 (2.4)	86 (1.4)
	221 (1.1)	224 (1.1)	229 (1.1)
Not Offered	1 (0.4) *	2 (0.7)	3 (0.6)
	**** (****)	234 (4.6) !	233 (3.1)

Grade 8	1992	1996	2000
Elementary or middle/junior high school education (general)			
Yes	62 (2.8)	63 (3.3)	60 (2.2)
	268 (1.2)	271 (1.8)	275 (1.1)
No	36 (2.8)	36 (3.3)	40 (2.2)
	272 (2.2)	276 (2.0)	280 (1.5)
Not Offered	2 (0.8)	1 (0.4)	▲ (0.1)
	280 (5.0) !	**** (****)	**** (****)
Elementary Mathematics			
Yes	—	26 (3.7)	24 (2.0)
	—	274 (3.0)	277 (1.8)
No	—	65 (3.7)	67 (2.2)
	—	275 (1.6)	279 (1.3)
Not Offered	—	8 (1.8)	9 (1.0)
	—	278 (3.8) !	277 (2.7)
Middle/junior high school or secondary math			
Yes	83 (1.8)	85 (1.8) *	78 (1.5)
	270 (1.3)	276 (1.5)	281 (1.0)
No	17 (1.9)	14 (1.8) *	19 (1.4)
	266 (2.6)	267 (3.6)	267 (1.7)
Not Offered	▲ (0.3) *	1 (****)	3 (0.6)
	**** (****)	**** (****)	285 (7.5) !

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
(****) Standard error estimates cannot be accurately determined.
**** (****) Sample size is insufficient to permit a reliable estimate.
— Comparable data were not available.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996, and 2000 Mathematics Assessments.

Table B.67: Data for Table 5.2 Teachers' Undergraduate Major

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on undergraduate major: 1996–2000

Grade 4	1996		2000	
	Yes	No	Yes	No
Education	44 (2.5) 227 (1.4)	56 (2.5) 222 (1.3)	38 (2.0) 228 (1.3)	62 (2.0) 227 (1.1)
Elementary education	79 (1.7) 226 (1.1)	21 (1.7) 218 (2.1)	75 (1.5) 228 (1.0)	25 (1.5) 226 (1.7)
Secondary education	4 (0.9) 228 (3.1) !	96 (0.9) 224 (1.0)	3 (0.6) 234 (4.6)	97 (0.6) 227 (1.0)
Mathematics	7 (1.3) 218 (3.8)	93 (1.3) 225 (1.0)	4 (0.8) 227 (3.9)	96 (0.8) 228 (1.0)
Mathematics education	6 (1.1) 232 (4.4)	94 (1.1) 224 (1.0)	4 (0.7) 233 (2.8)	96 (0.7) 227 (1.0)

Grade 8	1996		2000	
	Yes	No	Yes	No
Education	31 (2.9) 273 (2.2)	69 (2.9) 274 (1.5)	30 (1.8) 277 (1.3)	70 (1.8) 277 (1.1)
Elementary education	25 (2.9) 271 (2.9)	75 (2.9) 274 (1.4)	31 (1.8) 275 (1.4)	69 (1.8) 277 (1.0)
Secondary education	33 (3.2) 276 (2.2)	67 (3.2) 272 (1.4)	29 (1.9) 278 (1.6)	71 (1.9) 276 (1.0)
Mathematics	44 (2.8) 278 (2.1)	56 (2.8) 269 (1.6)	43 (2.3) 282 (1.1)	57 (2.3) 273 (1.1)
Mathematics education	22 (2.6) 273 (3.2)	78 (2.6) 273 (1.4)	26 (1.7) 281 (1.5)	74 (1.7) 275 (1.1)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.68: Data for Table 5.3 Teachers' Preparedness

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on how well prepared they were to teach certain topics: 2000

Grade 4	Very Well Prepared	Moderately Well Prepared	Not Very Well Prepared	Not Prepared
Number Sense	74 (1.4)	25 (1.4)	▲ (0.2)	▲ (****)
	228 (1.0)	225 (1.9)	218 (7.3) !	**** (****)
Measurement	62 (1.8)	36 (1.8)	2 (0.5)	0 (****)
	229 (1.1)	226 (1.6)	226 (2.7) !	**** (****)
Geometry	51 (2.3)	43 (2.3)	6 (0.9)	▲ (0.0)
	228 (1.2)	227 (1.6)	225 (3.5)	**** (****)
Data Analysis	34 (1.7)	46 (1.8)	17 (1.3)	3 (0.5)
	229 (1.4)	227 (1.2)	226 (2.2)	228 (2.9)
Algebra	36 (2.0)	45 (2.1)	16 (1.6)	3 (0.5)
	229 (1.3)	227 (1.3)	227 (2.3)	223 (3.7)

Grade 8	Very Well Prepared	Moderately Well Prepared	Not Very Well Prepared	Not Prepared
Number Sense	84 (1.4)	15 (1.4)	▲ (0.1)	▲ (****)
	279 (0.9)	267 (2.9)	269 (13.3) !	**** (****)
Measurement	74 (1.7)	24 (1.7)	2 (0.3)	▲ (****)
	279 (0.9)	272 (1.9)	265 (8.5) !	**** (****)
Geometry	64 (2.0)	32 (2.0)	4 (0.6)	▲ (0.1)
	280 (1.0)	274 (1.5)	258 (4.2)	**** (****)
Data Analysis	61 (1.8)	33 (1.8)	6 (0.8)	1 (0.2)
	280 (1.1)	272 (1.6)	272 (3.6)	247 (9.7) !
Algebra	84 (1.4)	14 (1.3)	2 (0.5)	▲ (0.1)
	279 (0.9)	267 (2.8)	250 (5.2) !	**** (****)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
(****) Standard error estimates cannot be accurately determined.
**** (****) Sample size is insufficient to permit a reliable estimate.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.69: Data for Table 5.4 Teaching Experience

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on the number of years of experience teaching mathematics: 1996–2000

Grade 4	1996	2000
Two years or less	11 (1.4) 221 (2.1)	15 (1.1) 224 (1.7)
Three to five years	15 (1.8) 218 (2.9)	17 (1.2) 228 (2.1)
Six to ten years	26 (1.9) * 227 (1.6)	18 (1.5) 226 (1.5)
Eleven to twenty-four years	33 (2.5) 224 (1.3)	32 (1.8) 228 (1.3)
Twenty-five years or more	15 (1.9) 229 (2.5)	18 (1.5) 231 (2.6)

Grade 8	1996	2000
Two years or less	13 (1.8) 267 (2.2)	18 (1.9) 270 (2.4)
Three to five years	13 (1.9) 271 (2.5)	16 (1.6) 277 (2.5)
Six to ten years	20 (2.4) 272 (2.8)	19 (1.4) 276 (2.0)
Eleven to twenty-four years	37 (3.5) 276 (1.8)	32 (1.8) 278 (1.4)
Twenty-five years or more	17 (2.5) 277 (4.3)	15 (1.5) 282 (2.5)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.70: Data for Table 5.5 Teacher Familiarity with NCTM Standards

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on their level of knowledge about the NCTM standards: 1996–2000

Grade 4	1996	2000
Very knowledgeable	5 (1.1)	6 (0.9)
	236 (4.5)	234 (2.7)
Knowledgeable	17 (1.9)	16 (1.4)
	223 (1.9)	227 (2.0)
Somewhat knowledgeable	32 (2.1) *	41 (2.2)
	224 (1.5)	227 (1.3)
Little or no knowledge	46 (2.3) *	36 (2.1)
	223 (1.5)	227 (1.3)

Grade 8	1996	2000
Very knowledgeable	16 (2.4)	22 (2.0)
	282 (2.2)	282 (2.0)
Knowledgeable	32 (3.5) *	40 (1.8)
	276 (2.1)	277 (1.3)
Somewhat knowledgeable	33 (2.9) *	25 (1.7)
	270 (2.7)	278 (1.6)
Little or no knowledge	19 (2.4) *	13 (1.1)
	267 (2.3)	265 (2.6)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.71: Data for Table 5.6 Calculator Usage

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on calculator usage: 1990–2000

Grade 4	1990	1992	1996	2000
How often do students use a calculator				
Everyday	—	1 (0.4) *	5 (0.9)	5 (1.0)
	—	209 (11.1) !	228 (4.7)	230 (5.1)
Weekly	—	15 (1.9)	28 (2.2)	21 (2.3)
	—	225 (3.0)	229 (1.7)	230 (2.1)
Monthly	—	32 (2.0)	42 (2.4)	37 (2.1)
	—	222 (1.5)	224 (1.4)	230 (1.3)
Never/Hardly Ever	—	51 (2.5) *	26 (2.4) *	37 (2.1)
	—	217 (1.2)	219 (2.0)	225 (1.4)
Do you provide instruction in the use of calculators				
Yes	—	62 (2.7) *	81 (1.9) *	75 (1.8)
	—	221 (1.3)	225 (1.0)	229 (1.2)
No	—	38 (2.7) *	19 (1.9) *	25 (1.8)
	—	216 (1.5)	219 (2.4)	227 (1.5)
Do you permit unrestricted use of calculators				
Yes	—	5 (1.1) *	13 (1.8)	12 (1.3)
	—	220 (5.6) !	225 (3.0)	229 (2.9)
No	—	95 (1.1) *	87 (1.8)	88 (1.3)
	—	219 (0.9)	224 (1.1)	228 (1.0)
Do you permit calculator use on tests				
Yes	2 (0.8) *	5 (1.1) *	10 (1.7)	11 (1.5)
	**** (****)	228 (4.2) !	223 (2.2)	228 (2.4)
No	98 (0.8) *	95 (1.1) *	90 (1.7)	89 (1.5)
	215 (1.1)	219 (0.9)	224 (1.0)	228 (1.1)

Grade 8	1990	1992	1996	2000
How often do students use a calculator				
Everyday	—	34 (2.7) *	55 (2.7)	48 (2.0)
	—	280 (1.7)	281 (1.7)	283 (1.3)
Weekly	—	22 (2.1)	21 (2.5)	23 (1.6)
	—	269 (2.2)	271 (3.0)	275 (1.9)
Monthly	—	21 (2.0) *	14 (2.1)	15 (1.2)
	—	259 (2.2)	263 (3.1)	267 (1.7)
Never/Hardly Ever	—	24 (2.4) *	9 (1.5)	14 (1.4)
	—	265 (1.9)	256 (3.9)	268 (2.6)
Do you provide instruction in the use of calculators				
Yes	—	—	83 (3.0)	80 (1.5)
	—	—	274 (1.2)	277 (0.8)
No	—	—	17 (3.0)	20 (1.5)
	—	—	273 (3.3)	274 (2.2)
Do you permit unrestricted use of calculators				
Yes	—	30 (2.3)	47 (2.9) *	33 (1.9)
	—	281 (2.2)	280 (1.9)	281 (1.7)
No	—	70 (2.3)	53 (2.9) *	67 (1.9)
	—	264 (1.3)	268 (1.7)	274 (1.0)
Do you permit calculator use on tests				
Yes	32 (4.1) *	48 (3.0) *	67 (2.6)	65 (1.9)
	272 (2.8)	276 (1.8)	280 (1.5)	281 (1.1)
No	68 (4.1) *	52 (3.0) *	33 (2.6)	35 (1.9)
	259 (1.7)	263 (1.4)	262 (1.9)	269 (1.6)

The percentage of students is listed first with the corresponding average scale score presented below. Standard errors of the estimated percentages and scale scores appear in parentheses.

* Significantly different from 2000.

! The nature of the sample does not allow accurate determination of the variability of the statistic.

**** (****) Sample size is insufficient to permit a reliable estimate.

NOTE: Percentages may not add to 100 due to rounding.

— Comparable data were not available.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.72: Data for Table 5.7 Availability of Computers

Percentage of students and their average mathematics scale scores by school reports on the availability of computers at grades 4, 8, and 12:1996–2000

Grade 4	1996		2000	
	Yes	No	Yes	No
Available at all times in classrooms	61 (3.6) *	39 (3.6) *	83 (2.2)	17 (2.2)
	226 (1.3)	221 (2.3)	228 (1.1)	225 (2.2)
Grouped in computer lab but available	78 (3.1)	22 (3.1)	83 (2.6)	17 (2.6)
	224 (1.5)	223 (2.4)	229 (1.1)	226 (2.3)
Available to bring to classrooms	42 (4.2) *	58 (4.2) *	27 (3.0)	73 (3.0)
	226 (1.8)	222 (1.7)	227 (2.1)	230 (1.2)

Grade 8	1996		2000	
	Yes	No	Yes	No
Available at all times in classrooms	30 (3.9) *	70 (3.9) *	52 (2.1)	48 (2.1)
	275 (2.9)	272 (1.4)	274 (1.2)	278 (1.6)
Grouped in computer lab but available	87 (2.7)	13 (2.7)	92 (1.4)	8 (1.4)
	273 (1.3)	271 (3.4)	277 (1.0)	275 (4.0)
Available to bring to classrooms	49 (4.7) *	51 (4.7) *	37 (2.6)	63 (2.6)
	274 (1.8)	272 (1.8)	276 (1.8)	276 (1.6)

Grade 12	1996		2000	
	Yes	No	Yes	No
Available at all times in classrooms	18 (2.7) *	82 (2.7) *	43 (3.5)	57 (3.5)
	304 (2.4)	304 (1.3)	301 (1.8)	302 (1.4)
Grouped in computer lab but available	97 (1.2)	3 (1.2)	95 (1.4)	5 (1.4)
	304 (1.1)	298 (4.8) !	302 (1.0)	287 (4.7) !
Available to bring to classrooms	47 (3.3) *	53 (3.3) *	36 (3.7)	64 (3.7)
	306 (1.8)	302 (1.4)	304 (1.8)	300 (1.4)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.73: Data for Table 5.8 Instructional Use of Computers

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on their primary use of computers for mathematics instruction: 1996–2000

Grade 4	1996	2000
Drill	27 (2.1) 223 (2.0)	24 (1.9) 229 (1.7)
Demonstrate new math topics	2 (0.6) 222 (7.5) !	3 (0.7) 234 (4.1) !
Play math learning games	41 (2.5) 226 (1.5)	42 (2.4) 228 (1.7)
Simulations and applications	6 (1.1) 225 (3.6)	5 (1.1) 230 (4.6) !
Not used	25 (2.6) 222 (2.8)	26 (1.7) 227 (1.8)

Grade 8	1996	2000
Drill	16 (2.2) 270 (4.2)	15 (1.8) 271 (2.6)
Demonstrate new math topics	4 (1.3) 280 (3.8) !	8 (1.1) 281 (2.8)
Play math learning games	13 (2.1) 267 (3.8)	14 (1.6) 271 (2.4)
Simulations and applications	12 (2.6) 281 (4.1) !	12 (1.2) 281 (2.5)
Not used	54 (3.5) 272 (1.3)	52 (2.4) 278 (1.3)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.74: Data for Table 5.9 Eighth-Grade Algebra

Percentage of eighth-graders and average mathematics scale scores by school reports on whether or not an algebra course was offered to eighth-grade students for high school credit: 1996-2000

Grade 8	1996	2000
Yes	80 (3.6) 275 (1.4)	82 (2.1) 277 (1.0)
No	20 (3.6) 267 (2.7)	18 (2.1) 272 (3.6)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.75: Data for Table 5.10 Time on Mathematics Instruction

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on the amount of instruction time spent on mathematics each week: 1992-2000

Grade 4	**1992**	**1996**	**2000**
Two and one-half hours or less	5 (0.8) 224 (3.2)	6 (1.1) 228 (2.4)	7 (0.9) 222 (3.0)
More than two and one-half hours but less than 4 hours	25 (1.8) 224 (1.9)	26 (2.3) 226 (1.7)	20 (1.8) 228 (2.0)
Four hours or more	71 (2.1) 217 (1.0)	68 (2.6) 223 (1.0)	73 (2.0) 229 (1.1)

Grade 8	**1992**	**1996**	**2000**
Two and one-half hours or less	13 (1.9) 270 (3.6)	20 (2.8) * 269 (2.6)	12 (1.6) 273 (3.6)
More than two and one-half hours but less than 4 hours	55 (2.6) 270 (1.4)	47 (3.1) 275 (1.7)	49 (2.0) 279 (1.3)
Four hours or more	32 (2.8) 268 (2.0)	33 (3.1) 274 (2.7)	40 (1.7) 274 (1.4)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996 and 2000 Mathematics Assessments.

Table B.76: Data for Table 5.11 Mathematics Homework Assigned

Percentage of fourth- and eighth-graders and average mathematics scale score by teachers' reports on the amount of mathematics homework assigned per day: 1992–2000

Grade 4	1992	1996	2000
None	6 (1.3)	4 (0.8)	6 (1.4)
	222 (2.4) !	232 (3.8)	231 (3.5) !
15 Minutes	52 (1.8)	50 (2.3)	47 (2.1)
	222 (1.3)	226 (1.4)	230 (1.3)
30 Minutes	37 (2.3)	40 (2.3)	40 (1.8)
	218 (1.5)	222 (1.6)	227 (1.3)
45 Minutes	4 (0.9)	4 (1.0)	5 (0.8)
	203 (4.7) !	214 (5.2) !	212 (3.1)
1 Hour	1 (0.4)	1 (0.5)	1 (0.2)
	**** (****)	206 (4.8) !	219 (6.9) !
More than 1 hour	▲ (0.3)	1 (0.4)	1 (0.3)
	**** (****)	**** (****)	**** (****)

Grade 8	1992	1996	2000
None	3 (0.7)	2 (0.6)	2 (0.6)
	238 (5.1) !	241 (7.7) !	255 (7.1) !
15 Minutes	29 (2.0)	30 (2.5)	25 (1.7)
	263 (1.7)	266 (2.2)	269 (1.7)
30 Minutes	49 (2.5)	54 (2.5)	55 (1.9)
	269 (1.4)	276 (1.6)	276 (1.1)
45 Minutes	16 (1.9)	10 (1.1) *	15 (1.1)
	282 (3.3)	284 (3.5)	290 (2.1)
1 Hour	4 (0.8)	4 (0.8)	3 (0.5)
	289 (5.1) !	284 (3.7)	298 (5.6)
More than 1 hour	▲ (0.1)	1 (0.2)	▲ (0.1)
	**** (****)	273 (14.6) !	**** (****)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
**** (****) Sample size is insufficient to permit a reliable estimate.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996 and 2000 Mathematics Assessments.

Table B.77: Data for Table 6.1 Classroom Activities

Percentage of students and average mathematics scale scores by students' reports on how often they do certain classroom activities at grades 4, 8, and 12: 1996–2000

Grade 4	1996	2000
Do math problems from textbook		
Everyday	57 (1.5) 227 (1.0)	56 (1.2) 230 (0.9)
Weekly	21 (1.0) 223 (1.5)	21 (0.7) 228 (1.3)
Monthly	6 (0.5) 221 (2.1)	7 (0.4) 230 (2.0)
Never/Hardly Ever	15 (1.0) 217 (2.2)	16 (0.7) 221 (1.6)
Talk with other students during class about how to solve problems		
Everyday	21 (0.8) 218 (1.5)	19 (0.7) 222 (1.5)
Weekly	18 (0.6) * 224 (1.5)	22 (0.6) 229 (1.3)
Monthly	12 (0.4) * 230 (1.4)	15 (0.5) 235 (1.2)
Never/Hardly Ever	49 (1.2) * 226 (0.8)	44 (0.9) 229 (0.9)
Use a calculator for mathematics		
Everyday	10 (0.6) 207 (1.8)	10 (0.6) 214 (1.7)
Weekly	23 (1.0) 225 (1.2)	20 (0.7) 228 (1.3)
Monthly	26 (0.8) 234 (1.0)	25 (0.9) 238 (1.0)
Never/Hardly Ever	41 (1.4) 222 (1.1)	45 (1.3) 228 (0.9)

Grade 8	1996	2000
Do math problems from textbook		
Everyday	76 (1.4) * 277 (1.2)	72 (1.1) 281 (0.9)
Weekly	15 (1.0) * 261 (2.0)	18 (0.9) 265 (1.5)
Monthly	3 (0.3) * 257 (3.8)	4 (0.3) 268 (2.6)
Never/Hardly Ever	7 (1.1) 256 (3.7)	6 (0.5) 255 (2.8)
Talk with other students during class about how to solve problems		
Everyday	31 (0.9) * 270 (1.6)	38 (0.8) 277 (0.9)
Weekly	17 (0.8) * 273 (1.7)	27 (0.6) 278 (1.1)
Monthly	13 (0.5) 274 (1.7)	13 (0.3) 279 (1.2)
Never/Hardly Ever	39 (1.0) * 273 (1.0)	22 (0.7) 269 (1.1)
Use a calculator for mathematics		
Everyday	48 (2.3) 280 (1.5)	48 (1.4) 282 (1.1)
Weekly	26 (1.3) 268 (1.3)	25 (0.7) 274 (0.9)
Monthly	14 (0.9) 267 (1.8)	13 (0.7) 272 (1.3)
Never/Hardly Ever	12 (1.0) 258 (2.2)	13 (0.9) 263 (1.5)

See footnotes at end of table. ▶

Table B.77: Data for Table 6.1 Classroom Activities (continued)

Percentage of students and average mathematics scale scores by students' reports on how often they do certain classroom activities at grades 4, 8, and 12: 1996–2000

Grade 12	1996	2000
Do math problems from textbook		
Everyday	71 (0.8) * 311 (1.0)	65 (1.1) 309 (0.8)
Weekly	10 (0.5) * 293 (1.9)	13 (0.5) 293 (2.3)
Monthly	3 (0.3) 284 (3.0)	4 (0.3) 286 (2.5)
Never/Hardly Ever	16 (0.7) * 286 (1.5)	18 (0.9) 283 (1.7)
Talk with other students during class about how to solve problems		
Everyday	23 (0.7) * 307 (1.3)	42 (0.9) 309 (0.9)
Weekly	15 (0.6) * 306 (1.9)	24 (0.6) 306 (1.4)
Monthly	13 (0.5) * 307 (1.5)	9 (0.4) 300 (1.7)
Never/Hardly Ever	50 (1.1) * 302 (1.0)	24 (0.8) 285 (1.2)
Use a calculator for mathematics		
Everyday	69 (0.9) 311 (1.1)	69 (1.0) 309 (0.8)
Weekly	15 (0.6) 294 (1.3)	14 (0.6) 289 (1.5)
Monthly	7 (0.4) 285 (2.1)	6 (0.4) 283 (2.4)
Never/Hardly Ever	9 (0.5) 283 (1.8)	11 (0.6) 279 (1.9)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.78: Data for Table 6.2 Frequency of Calculator Use

Percentage of students and average mathematics scale scores by students' reports on reports on how often they use a calculator for mathematics activities at grades 4, 8, and 12: 1996–2000

Grade 4	1996	2000
Classwork		
Everyday	33 (1.0) * 208 (1.0)	24 (0.7) 210 (1.2)
Weekly	17 (1.2) 227 (1.6)	14 (0.7) 230 (1.6)
Monthly	17 (0.7) 241 (1.5)	17 (0.7) 240 (1.3)
Never/Hardly Ever	34 (1.3) * 232 (1.1)	44 (1.2) 235 (0.8)
Homework		
Everyday	30 (0.8) * 208 (1.2)	24 (0.6) 211 (1.2)
Weekly	16 (0.6) 223 (1.1)	16 (0.6) 222 (1.5)
Monthly	14 (0.4) * 236 (1.5)	15 (0.5) 238 (1.3)
Never/Hardly Ever	40 (1.0) * 234 (0.9)	45 (0.9) 238 (0.9)
Tests and Quizzes		
Everyday	5 (0.3) 198 (1.8)	4 (0.2) 202 (2.1)
Weekly	17 (0.8) * 210 (1.5)	15 (0.5) 213 (1.3)
Monthly	18 (0.8) * 220 (1.4)	13 (0.6) 222 (2.0)
Never/Hardly Ever	60 (1.0) * 233 (0.8)	68 (0.8) 236 (0.8)

Grade 8	1996	2000
Classwork		
Everyday	58 (1.7) * 271 (1.5)	44 (1.5) 279 (1.1)
Weekly	21 (0.8) * 275 (1.5)	25 (0.8) 276 (0.9)
Monthly	9 (0.7) * 277 (2.1)	12 (0.6) 275 (1.3)
Never/Hardly Ever	13 (0.9) * 269 (1.7)	18 (1.1) 268 (1.5)
Homework		
Everyday	52 (1.8) * 274 (1.7)	41 (1.4) 283 (1.0)
Weekly	24 (0.9) 271 (1.3)	26 (0.7) 274 (1.1)
Monthly	10 (0.7) * 275 (1.8)	13 (0.6) 275 (1.3)
Never/Hardly Ever	14 (0.8) * 266 (1.4)	21 (0.8) 265 (1.2)
Tests and Quizzes		
Always	—	24 (1.2) 292 (1.3)
Sometimes	—	45 (1.3) 274 (0.9)
Never	—	31 (1.6) 267 (1.3)

See footnotes at end of table. ▶

Table B.78: Data for Table 6.2 Frequency of Calculator Use (continued)

Percentage of students and average mathematics scale scores by students' reports on reports on how often they use a calculator for mathematics activities at grades 4, 8, and 12: 1996-2000

Grade 12	1996	2000
Classwork		
Everyday	68 (1.1) 309 (1.0)	68 (0.9) 308 (0.9)
Weekly	14 (0.7) 302 (1.8)	14 (0.5) 292 (1.7)
Monthly	4 (0.3) 290 (2.8)	3 (0.2) 286 (3.4)
Never/Hardly Ever	14 (0.7) 287 (1.5)	14 (0.8) 283 (1.9)
Homework		
Everyday	61 (1.2) 312 (1.0)	61 (1.2) 310 (0.8)
Weekly	16 (0.6) 296 (1.6)	15 (0.5) 293 (1.7)
Monthly	5 (0.4) 291 (2.6)	5 (0.4) 291 (2.7)
Never/Hardly Ever	18 (0.7) 287 (1.1)	19 (0.9) 283 (1.7)
Tests and Quizzes		
Always	—	58 (1.2) 309 (0.8)
Sometimes	—	29 (1.1) 296 (1.7)
Never	—	13 (0.7) 280 (1.8)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
— Comparable data were not available
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.79: Data for Table 6.3 Availability of a Calculator for Schoolwork

Percentage of students and average mathematics scale scores by fourth-grade students' reports on whether or not they have a calculator for schoolwork: 1992-2000

Grade 4	1992	1996	2000
Yes	46 (1.2) * 221 (0.9)	62 (1.5) * 227 (0.9)	55 (1.3) 231 (1.0)
No	54 (1.2) * 219 (0.8)	38 (1.5) * 225 (1.1)	45 (1.3) 227 (1.0)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1996 and 2000 Mathematics Assessments.

Table B.80: Data for Table 6.4 Type of Calculator Used

Percentage of students and average mathematics scale scores by students' reports on whether or not they use a particular type of calculator at grades 8 and 12: 1996-2000

Grade 8	1996	2000
Scientific		
Yes	61 (2.1) *	67 (1.0)
	277 (1.3)	279 (0.8)
No	39 (2.1) *	33 (1.0)
	265 (1.3)	269 (1.2)
Graphing		
Yes	11 (1.1) *	18 (1.2)
	275 (2.7)	286 (1.7)
No	89 (1.1) *	82 (1.2)
	272 (1.1)	273 (0.7)
Symbol Manipulator		
Yes	—	9 (0.3)
		259 (1.7)
No	—	91 (0.3)
		277 (0.7)

Grade 12	1996	2000
Scientific		
Yes	70 (0.9)	68 (1.0)
	305 (0.9)	299 (0.9)
No	30 (0.9)	32 (1.0)
	303 (2.1)	306 (1.6)
Graphing		
Yes	51 (1.8) *	62 (1.7)
	316 (1.1)	311 (1.1)
No	49 (1.8) *	38 (1.7)
	292 (1.0)	286 (1.1)
Symbol Manipulator		
Yes	—	15 (0.6)
		301 (2.2)
No	—	85 (0.6)
		302 (0.8)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
— Comparable data were not available
NOTE: Percentages may not add to 100 due to rounding
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Mathematics Assessments.

Table B.81: Data for Table 6.5 Current Eighth-Grade Mathematics Course

Percentage of students and average mathematics scale scores by eighth-grade students' reports on what mathematics class they are currently taking: 2000

Grade 8	2000
All Students	
Eighth-grade mathematics	37 (1.5) 264 (1.4)
Prealgebra	31 (1.1) 270 (1.1)
First-year algebra	25 (0.9) 301 (1.1)
Geometry	2 (0.2) 295 (5.7)
Second-year algebra	1 (0.2) 291 (5.8)
Integrated or sequential math	2 (0.3) 296 (4.4)
Other math class	3 (0.3) 247 (3.6)
Male	
Eighth-grade mathematics	38 (1.4) 265 (1.6)
Prealgebra	29 (1.3) 272 (1.4)
First-year algebra	25 (1.0) 302 (1.2)
Geometry	2 (0.3) 296 (7.2)
Second-year algebra	2 (0.3) 293 (7.8)
Integrated or sequential math	2 (0.4) 298 (5.8)
Other math class	3 (0.3) 248 (4.4)
Female	
Eighth-grade mathematics	36 (1.6) 263 (1.4)
Prealgebra	32 (1.3) 268 (1.2)
First-year algebra	25 (1.1) 299 (1.3)
Geometry	1 (0.2) 294 (7.4)
Second-year algebra	1 (0.2) 287 (5.5)
Integrated or sequential math	2 (0.4) 293 (6.0)
Other math class	3 (0.4) 246 (4.7)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.82: Data for Table 6.6 Twelfth-Grade Course-Taking Patterns

Percentage of students and average mathematics scale scores by twelfth-grade students' reports on mathematics courses taken since eighth grade: 2000

Grade 12	Not Taken	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
1. General mathematics	36 (1.2)	53 (1.2)	5 (0.4)	2 (0.2)	2 (0.3)	3 (0.3)
	318 (1.0)	296 (0.9)	274 (2.5)	276 (3.9)	276 (3.3)	288 (3.0)
2. Business mathematics	80 (1.0)	2 (0.2)	4 (0.3)	3 (0.3)	4 (0.4)	7 (0.6)
	306 (1.0)	285 (2.9)	280 (2.9)	283 (2.5)	291 (2.2)	289 (2.0)
3. Applied mathematics	82 (0.8)	4 (0.3)	5 (0.5)	3 (0.3)	3 (0.2)	3 (0.4)
	307 (1.0)	294 (2.5)	276 (2.2)	278 (2.9)	280 (3.4)	290 (4.1)
4. Introduction to algebra	26 (1.0)	42 (1.1)	23 (0.9)	6 (0.4)	2 (0.3)	1 (0.2)
	317 (1.5)	310 (0.9)	285 (1.2)	267 (1.9)	270 (3.3)	263 (3.1)
5. Algebra I	6 (0.5)	23 (1.0)	50 (1.4)	16 (1.0)	4 (0.3)	1 (0.2)
	283 (4.1)	328 (1.2)	303 (0.8)	283 (1.5)	274 (2.5)	269 (4.3)
6. Geometry	12 (0.8)	2 (0.4)	20 (1.2)	44 (1.3)	16 (0.8)	5 (0.4)
	271 (1.9)	339 (5.2)	330 (1.1)	306 (0.9)	291 (1.6)	280 (2.1)
7. Algebra II	20 (0.8)	1 (0.2)	6 (0.6)	27 (1.1)	36 (1.1)	10 (0.7)
	276 (1.3)	306 (9.8) !	328 (2.9)	323 (1.2)	305 (1.0)	290 (1.6)
8. Trigonometry	74 (1.5)	▲ (0.1)	▲ (0.1)	3 (0.5)	12 (0.9)	10 (0.7)
	299 (1.2)	**** (****)	300 (12.2)	332 (3.7)	324 (1.5)	307 (1.7)
9. Precalculus	63 (1.4)	▲ (0.1)	▲ (0.1)	2 (0.5)	18 (1.1)	17 (0.8)
	291 (0.9)	**** (****)	**** (****)	335 (5.2) !	336 (1.4)	318 (1.3)
10. Unified, integrated, or	89 (1.1)	1 (0.3)	2 (0.2)	2 (0.4)	4 (0.4)	3 (0.2)
sequential mathematics	304 (1.0)	276 (6.1) !	281 (3.2)	303 (6.3)	304 (3.2)	307 (4.0)
11. Statistics	82 (1.2)	1 (0.2)	2 (0.2)	2 (0.3)	5 (0.4)	8 (0.8)
	303 (0.9)	275 (3.6)	289 (5.7)	300 (5.3)	311 (2.7)	317 (3.3)
12. Discrete/finite mathematics	95 (0.4)	1 (0.1)	1 (0.1)	1 (0.1)	1 (0.2)	2 (0.3)
	304 (1.0)	272 (6.2) !	**** (****)	288 (9.4)	302 (8.2)	315 (4.2)
13. Calculus	82 (0.8)	▲ (0.1)	▲ (0.1)	▲ (0.1)	2 (0.3)	16 (0.7)
	297 (0.9)	**** (****)	**** (****)	**** (****)	329 (5.7)	342 (1.4)
14. Other	83 (0.7)	1 (0.2)	2 (0.2)	2 (0.2)	4 (0.3)	8 (0.6)
	305 (1.1)	288 (5.8)	288 (4.7)	288 (3.7)	296 (3.2)	302 (1.8)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
**** (****) Sample size is insufficient to permit a reliable estimate.
! The nature of the sample does not allow accurate determination of the variability of the statistic.
▲ Percentage is between 0.0 and 0.5.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.83: Data for Table 6.7 Mathematics Courses Taken at Grade 12 vs. Performance

Percentage of students and average mathematics scale scores by course groupings based on twelfth-grade students reports on courses taken since eighth grade: 2000

	Group I	Group II	Group III	Group IV
Grade 12	15 (0.6) 275 (1.4)	4 (0.4) 282 (2.3)	32 (0.9) 294 (0.9)	50 (1.1) 318 (1.0)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.84: Data for Table 6.8 Time Spent on Mathematics Homework

Percentage of students and average mathematics scale scores by students' reports on time spent per day on mathematics homework at grades 4, 8, and 12: 2000

Grade 4	2000
None	6 (0.5) 228 (2.6)
15 minutes	44 (0.8) 232 (0.9)
30 minutes	28 (0.6) 230 (1.0)
45 minutes	10 (0.4) 224 (1.4)
One hour	8 (0.3) 217 (1.7)
More than one hour	4 (0.2) 217 (2.1)

Grade 8	2000
None	9 (0.5) 265 (1.7)
15 minutes	32 (0.7) 280 (1.0)
30 minutes	34 (0.6) 277 (1.0)
45 minutes	14 (0.4) 278 (1.3)
One hour	8 (0.3) 274 (1.7)
More than one hour	3 (0.2) 271 (2.7)

Grade 12	2000
Not taking math this year	29 (1.1) 293 (1.2)
None	12 (0.7) 290 (2.0)
15 minutes	16 (0.7) 307 (1.4)
30 minutes	20 (0.7) 308 (1.5)
45 minutes	11 (0.4) 310 (1.6)
One hour	8 (0.5) 311 (1.5)
More than one hour	4 (0.3) 309 (2.5)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.85: Data for Table 6.9 Time Spent Working at a Part-Time Job

Percentage of students and average mathematics scale scores by twelfth-grade students' reports on hours spent at a part-time job: 2000

Grade 12	2000
None	29 (0.8) 306 (1.4)
Less than six hours	5 (0.3) 312 (2.7)
Six to ten hours	10 (0.4) 308 (1.8)
Eleven to fifteen hours	12 (0.5) 308 (1.2)
Sixteen to twenty hours	17 (0.6) 305 (1.5)
Twenty-one to twenty-five hours	13 (0.6) 296 (1.6)
Twenty-six to thirty hours	8 (0.4) 292 (1.6)
More than thirty hours	6 (0.3) 287 (1.8)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessment.

Table B.86: Data for Table 6.10 Mathematics Preparedness at Grade 12

Percentage of students and average mathematics scale scores by students' reports on the amount of time spent watching television each day at grades 4, 8, and 12: 1990-2000

Grade 4	1990	1992	1996	2000
One hour or less	19 (0.8) *	21 (0.7) *	25 (1.1) *	28 (0.6)
	213 (2.2)	223 (1.4)	225 (1.5)	230 (1.2)
Two or three hours	36 (1.1) *	36 (0.7) *	36 (0.7) *	39 (0.7)
	220 (1.4)	226 (0.9)	230 (1.1)	233 (1.0)
Four hours or more	44 (1.3) *	43 (0.7) *	39 (1.0) *	33 (0.9)
	208 (1.0)	213 (0.8)	217 (1.2)	219 (1.0)
Grade 8	**1990**	**1992**	**1996**	**2000**
One hour or less	13 (0.7) *	17 (0.5) *	18 (0.6) *	20 (0.5)
	270 (2.2)	279 (1.9)	278 (2.3)	285 (1.5)
Two or three hours	44 (1.2) *	46 (0.5)	46 (0.9)	47 (0.5)
	267 (1.4)	275 (1.0)	277 (0.9)	280 (0.9)
Four hours or more	43 (1.4) *	37 (0.7) *	37 (1.0) *	33 (0.5)
	256 (1.3)	256 (0.8)	262 (1.1)	264 (0.8)
Grade 12	**1990**	**1992**	**1996**	**2000**
One hour or less	33 (1.2)	33 (0.8) *	34 (1.1)	36 (0.7)
	304 (1.4)	309 (1.2)	314 (1.2)	310 (1.1)
Two or three hours	47 (1.1)	46 (0.8)	46 (0.9)	46 (0.6)
	295 (1.4)	300 (0.9)	304 (1.2)	301 (0.9)
Four hours or more	20 (0.9)	20 (0.8) *	20 (0.6) *	18 (0.5)
	278 (1.5)	284 (1.2)	288 (1.3)	285 (1.2)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

Table B.87: Data for Table 6.11 Students' Attitudes Toward Mathematics

Percentage of students and average mathematics scale scores by students' reports on their attitudes toward mathematics at grades 4, 8, and 12: 1990–2000

Grade 4	1990	1992	1996	2000
I like Math				
Agree	70 (1.0) 215 (1.1)	71 (0.8) 222 (0.8)	69 (0.9) 226 (0.9)	70 (0.7) 231 (0.9)
Undecided	16 (0.8) 213 (1.8)	16 (0.6) 221 (1.2)	17 (0.6) 225 (1.8)	16 (0.6) 229 (1.2)
Disagree	14 (0.9) 204 (1.5)	12 (0.5) 209 (1.1)	14 (0.8) 219 (1.5)	14 (0.5) 221 (1.3)
Math is useful for solving problems				
Agree	63 (1.1) * 216 (1.3)	66 (1.0) * 224 (0.8)	69 (0.8) 229 (0.9)	71 (0.7) 234 (0.9)
Undecided	22 (0.9) * 213 (1.5)	21 (0.8) * 219 (1.2)	17 (0.7) 222 (1.4)	18 (0.6) 225 (1.2)
Disagree	14 (0.8) * 203 (1.6)	13 (0.5) * 208 (1.5)	14 (0.6) * 213 (1.9)	11 (0.4) 217 (1.4)
Math is mostly memorizing facts				
Agree	—	57 (1.0) * 218 (0.8)	54 (0.8) 221 (0.9)	52 (0.8) 225 (0.8)
Undecided	—	28 (0.8) 225 (1.2)	25 (0.6) * 228 (1.2)	27 (0.5) 233 (1.1)
Disagree	—	16 (0.6) * 224 (1.4)	21 (0.8) 235 (1.4)	21 (0.7) 240 (1.3)
Only one way to solve a problem				
Agree	—	—	17 (0.6) 207 (1.5)	16 (0.6) 212 (1.4)
Undecided	—	—	20 (0.7) 221 (1.5)	19 (0.6) 225 (1.1)
Disagree	—	—	63 (0.9) 232 (0.9)	65 (0.9) 236 (0.8)

See footnotes at end of table. ▶

Table B.87: Data for Table 6.11 Students' Attitudes Toward Mathematics (continued)

Percentage of students and average mathematics scale scores by students' reports on their attitudes toward mathematics at grades 4, 8, and 12: 1990-2000

Grade 8	1990	1992	1996	2000
I like Math				
Agree	57 (1.6) 267 (1.4)	57 (0.9) * 273 (1.0)	56 (1.1) 277 (1.2)	54 (0.6) 282 (0.9)
Undecided	22 (0.8) 261 (1.7)	20 (0.6) 268 (1.2)	21 (0.8) 271 (1.5)	21 (0.5) 277 (1.0)
Disagree	21 (1.3) * 254 (2.1)	23 (0.7) * 260 (1.6)	23 (0.7) * 263 (1.4)	26 (0.5) 267 (1.0)
Math is useful for solving problems				
Agree	76 (1.1) 266 (1.3)	81 (0.6) * 271 (0.9)	80 (0.7) * 275 (0.8)	75 (0.6) 279 (0.7)
Undecided	15 (0.8) 262 (2.1)	12 (0.4) * 269 (1.7)	12 (0.5) * 274 (2.6)	15 (0.4) 280 (1.7)
Disagree	9 (0.8) 245 (3.0)	7 (0.4) * 259 (2.1)	8 (0.4) * 259 (2.1)	10 (0.4) 269 (1.7)
Math is mostly memorizing facts				
Agree	—	44 (0.7) * 259 (0.8)	41 (0.8) * 263 (0.9)	37 (0.7) 268 (0.7)
Undecided	—	26 (0.6) * 273 (1.2)	28 (0.6) 275 (1.3)	28 (0.5) 278 (1.0)
Disagree	—	30 (0.7) * 283 (1.4)	31 (0.9) * 284 (1.6)	35 (0.6) 289 (1.1)
Only one way to solve a problem				
Agree	—	—	8 (0.5) 246 (2.2)	9 (0.4) 255 (1.6)
Undecided	—	—	14 (0.6) 264 (1.7)	13 (0.4) 268 (1.5)
Disagree	—	—	78 (0.8) 277 (0.9)	78 (0.6) 282 (0.7)

See footnotes at end of table. ▶

Table B.87: Data for Table 6.11 Students' Attitudes Toward Mathematics (continued)

Percentage of students and average mathematics scale scores by students' reports on their attitudes toward mathematics at grades 4, 8, and 12: 1990–2000

Grade 12	1990	1992	1996	2000
I like Math				
Agree	54 (1.4) *	51 (0.9) *	50 (0.8) *	47 (0.8)
	304 (1.4)	308 (1.1)	313 (1.2)	312 (1.0)
Undecided	17 (0.7)	17 (0.6)	17 (0.6)	17 (0.5)
	286 (2.0)	297 (1.5)	301 (1.5)	298 (1.5)
Disagree	29 (1.1) *	32 (0.7) *	33 (0.8) *	37 (0.7)
	284 (1.3)	288 (1.0)	293 (1.1)	289 (1.1)
Math is useful for solving problems				
Agree	73 (1.1) *	71 (0.6) *	70 (0.8) *	61 (0.8)
	298 (1.3)	302 (0.9)	307 (1.1)	305 (0.9)
Undecided	15 (0.8) *	18 (0.5) *	16 (0.6) *	19 (0.5)
	289 (1.7)	298 (1.3)	301 (1.4)	302 (1.4)
Disagree	12 (0.7) *	12 (0.5) *	14 (0.6) *	19 (0.6)
	286 (2.0)	292 (1.4)	296 (1.8)	292 (1.7)
Math is mostly memorizing facts				
Agree	—	41 (0.9) *	35 (0.9)	36 (0.8)
		288 (1.0)	292 (1.0)	290 (1.0)
Undecided	—	20 (0.6) *	21 (0.5)	22 (0.6)
		297 (1.1)	299 (1.2)	297 (1.2)
Disagree	—	39 (0.9) *	44 (1.0)	42 (0.8)
		314 (1.0)	317 (1.2)	314 (1.1)
Only one way to solve a problem				
Agree	—	—	6 (0.4)	6 (0.3)
			291 (2.2)	284 (2.6)
Undecided	—	—	12 (0.5)	12 (0.5)
			290 (1.6)	288 (1.9)
Disagree	—	—	82 (0.7)	83 (0.6)
			308 (1.0)	305 (0.9)
Would not study math if given choice				
Agree	—	—	31 (0.8) *	37 (0.8)
			295 (1.1)	293 (1.1)
Undecided	—	—	22 (0.6) *	19 (0.6)
			301 (1.3)	299 (1.2)
Disagree	—	—	47 (0.9) *	43 (0.8)
			312 (1.1)	311 (1.1)

The percentage of students is listed first with the corresponding average scale score presented below.
Standard errors of the estimated percentages and scale scores appear in parentheses.
* Significantly different from 2000.
— Comparable data were not available
NOTE: Percentages may not add to 100 due to rounding.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, and 2000 Mathematics Assessments.

C

Appendix C
State-Level Contextual Variables

To help better place results from the NAEP 2000 state assessment program into context, this appendix presents selected state-level data from sources other than NAEP. These data are taken from the *Digest of Education Statistics 2000.*

Appendix Contents

Appendix Focus

State school system characteristics

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347

Table C.1a: School System Characteristics from Non-NAEP Sources

	Estimated total and school-age resident population: 1999 (estimates as of July 1)[1]		Enrollment in public elementary and secondary schools: Fall 1998[2]		
	Total, all ages (in thousands)	5- to 17-year olds (in thousands)	Total	Kindergarten through grade 8	Grades 9 to 12
Nation	272,691	51,257	46,534,687	33,343,787	13,190,900
Alabama	4,370	775	747,970	542,340	205,630
Alaska	620	147	135,373	96,979	38,394
Arizona	4,778	949	848,262	622,747	225,515
Arkansas	2,551	483	452,256	319,232	133,024
California	33,145	6,424	5,925,964	4,269,853	1,656,111
Colorado	4,056	777	699,135	501,449	197,686
Connecticut	3,282	610	544,698	399,381	145,317
Delaware	754	132	113,262	79,955	33,307
District of Columbia	519	68	71,889	56,712	15,177
Florida	15,111	2,618	2,337,633	1,704,024	633,609
Georgia	7,788	1,477	1,401,291	1,029,386	371,905
Hawaii	1,185	209	188,069	134,685	53,384
Idaho	1,252	258	244,722	168,604	76,118
Illinois	12,128	2,304	2,011,530	1,451,579	559,951
Indiana	5,943	1,115	988,094	696,832	291,262
Iowa	2,869	537	498,214	336,696	161,518
Kansas	2,654	515	472,353	327,474	144,879
Kentucky	3,961	706	655,687	464,567	191,120
Louisiana	4,372	876	768,734	558,473	210,261
Maine	1,253	223	210,503	150,860	59,643
Maryland	5,172	963	841,671	606,560	235,111
Massachusetts	6,175	1,076	962,317	704,624	257,693
Michigan	9,864	1,906	1,720,266	1,245,299	474,967
Minnesota	4,776	950	855,119	585,553	269,566
Mississippi	2,769	550	502,379	365,497	136,882
Missouri	5,468	1,036	912,445	650,545	261,900
Montana	883	171	159,988	109,535	50,453
Nebraska	1,666	329	291,140	199,754	91,386
Nevada	1,809	348	311,061	229,275	81,786
New Hampshire	1,201	231	204,713	146,722	57,991
New Jersey	8,143	1,460	1,268,996	936,428	332,568
New Mexico	1,740	364	328,753	232,485	96,268
New York	18,197	3,227	2,877,143	2,028,167	848,976
North Carolina	7,651	1,407	1,254,821	920,838	333,983
North Dakota	634	121	114,597	76,860	37,737
Ohio	11,257	2,104	1,842,559	1,301,438	541,121
Oklahoma	3,358	649	628,492	447,906	180,586
Oregon	3,316	608	542,809	379,770	163,039
Pennsylvania	11,994	2,140	1,816,414	1,267,226	549,188
Rhode Island	991	179	154,785	112,483	42,302
South Carolina	3,886	702	664,592	477,850	186,742
South Dakota	733	148	132,495	90,887	41,608
Tennessee	5,484	974	905,442	664,570	240,872
Texas	20,044	4,080	3,945,367	2,868,209	1,077,158
Utah	2,130	497	481,176	328,522	152,654
Vermont	594	107	105,120	73,257	31,863
Virginia	6,873	1,214	1,124,022	815,266	308,756
Washington	5,756	1,096	998,053	695,950	302,103
West Virginia	1,807	303	297,530	205,840	91,690
Wisconsin	5,250	1,016	879,542	600,703	278,839
Wyoming	480	96	95,241	63,940	31,301

[1] U.S. Department of Commerce, Bureau of Census, *Current Population Reports*, Series P-25, No. 1095 at the national level, CPH-L-74 (1990 data); and unpublished data.
[2] U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys.

Table C.1b: School System Characteristics from Non-NAEP Sources

	Poverty status of 5- to 17-year olds: 1998[1]		Number of children (birth to age 21) served under state-operated Individuals with Disabilities Education Act and Chapter 1 of the Education Consolidation and Improvement Act Programs[2]	
	Number in Poverty (in thousands)	Percent in Poverty	1998-99 School Year	Percent Change: 1990-91 to 1998-99
Nation	9,167	17.8	6,055,343	27.2
Alabama	156	21.8	99,813	5.1
Alaska	13	9.0	17,712	20.1
Arizona	222	23.6	88,598	54.8
Arkansas	57	13.1	59,110	23.6
California	1,459	22.3	623,651	32.9
Colorado	93	12.5	75,037	31.4
Connecticut	82	13.4	76,740	18.9
Delaware	24	15.7	16,233	13.6
District of Columbia	33	46.0	8,162	29.8
Florida	474	20.5	345,171	46.3
Georgia	377	24.7	155,754	52.7
Hawaii	32	14.5	20,551	56.1
Idaho	50	17.4	27,553	25.1
Illinois	308	12.16	281,915	17.9
Indiana	140	12.6	146,559	27.8
Iowa	73	14.2	70,958	16.9
Kansas	59	13.26	58,425	29.2
Kentucky	118	16.7	87,973	10.8
Louisiana	244	29.8	95,245	29.3
Maine	27	12.0	34,294	22.5
Maryland	66	8.10	111,688	22.4
Massachusetts	163	15.0	168,964	9.3
Michigan	311	14.8	208,403	24.8
Minnesota	130	12.6	106,194	31.3
Mississippi	108	19.3	61,778	1.4
Missouri	136	14.4	131,565	29.0
Montana	42	21.2	18,797	9.7
Nebraska	54	14.8	43,400	32.5
Nevada	49	12.8	33,319	80.7
New Hampshire	34	13.3	27,502	39.9
New Jersey	194	13.2	210,114	15.9
New Mexico	101	23.5	52,113	44.6
New York	848	28.9	432,320	40.6
North Carolina	277	21.3	165,333	34.3
North Dakota	28	17.2	13,181	5.4
Ohio	339	16.0	230,155	12.0
Oklahoma	120	19.9	80,289	22.3
Oregon	121	19.4	69,919	26.8
Pennsylvania	382	18.0	227,771	3.8
Rhode Island	36	20.5	27,911	32.4
South Carolina	129	17.6	99,033	27.3
South Dakota	13	9.2	15,702	4.8
Tennessee	156	14.5	128,273	22.3
Texas	809	20.1	486,749	38.8
Utah	55	11.8	55,252	15.7
Vermont	13	12.2	12,709	3.6
Virginia	92	7.9	153,716	34.9
Washington	118	10.8	114,144	33.7
West Virginia	65	25.7	49,934	15.8
Wisconsin	109	11.5	116,328	33.8
Wyoming	13	13.0	13,333	19.0

[1] U.S. Department of Commerce, Bureau of the Census, *Decennial Census, Minority Economic Profiles*, unpublished data; and *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.: 1998," P60-201.

[2] 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.

349

Table C.1c: School System Characteristics from Non-NAEP Sources

	Elementary and secondary education expenditures per pupil: 1997-98[1]	Estimated annual salaries of teachers in public elementary and secondary schools by state: 1998-99[2]	Pupil-teacher ratios in public elementary and secondary schools: Fall 1998[3]
Nation	$6,189	$40,582	16.5 ‡
Alabama	4,849	35,820	15.7 ‡
Alaska	8,271	46,845	16.7
Arizona	4,595	35,025	20
Arkansas	4,708	32,350	16.2
California	5,644	45,400	21 ‡
Colorado	5,656	38,025	17.7
Connecticut	8,904	51,584	14
Delaware	7,420	43,164	16
District of Columbia	8,393	47,150	13.9
Florida	5,552	35,196	18.4
Georgia	5,647	39,675	15.8
Hawaii	5,858	40,377	17.7
Idaho	4,721	34,063	18.2
Illinois	6,242	45,569	16.5
Indiana	6,318	41,163	17
Iowa	5,998	34,927	15.2
Kansas	5,727	37,405	14.8
Kentucky	5,213	35,526	16.1
Louisiana	5,188	32,510	16.6
Maine	6,742	34,906	13.2
Maryland	7,034	42,526	16.9
Massachusetts	7,778	45,075	13.8
Michigan	7,050	48,207	18.5 ‡
Minnesota	6,388	39,458	16.9
Mississippi	4,288	29,530	16.1
Missouri	5,565	34,746	14.7
Montana	5,724	31,356	15.7
Nebraska	5,958	32,880	14.3
Nevada	5,295	38,883	18.9
New Hampshire	6,156	37,405	15.4
New Jersey	9,643	51,193	13.8
New Mexico	5,005	32,398	16.5
New York	8,852	49,437	14.6
North Carolina	5,257	36,098	15.8
North Dakota	5,056	28,976	14.4
Ohio	6,198	40,566	16.2
Oklahoma	5,033	31,149	15.4
Oregon	6,419	42,833	20
Pennsylvania	7,209	48,457	16.4
Rhode Island	7,928	45,650	13.9
South Carolina	5,320	34,506	15.2 ‡
South Dakota	4,669	28,552	14.3
Tennessee	4,937	36,500	15.3 ‡
Texas	5,444	35,041	15.2
Utah	3,969	32,950	22.4
Vermont	7,075	36,800	12.8
Virginia	6,067	37,475	14.2 ‡
Washington	6,040	38,692	20.1
West Virginia	6,323	34,244	14.2
Wisconsin	7,123	40,657	14.4
Wyoming	6,218	33,500	14.2

NOTE: Constant 1997-98 dollars based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor, adjusted to a school year basis. These data do not reflect differences in inflation rates from state to state. Beginning in 1980-81, expenditures for state administration are excluded. Beginning in 1988-89, survey was expanded and coverage of state expenditures for public school districts was improved. Some data revised from previously published figures.

‡ Includes imputations for underreporting.

[1] U.S. Department of Education, National Center for Education Statistics, *Revenues and expenditures for public elementary and secondary schools, statistics of state school systems, and common core of data surveys.*

[2] National Education Association, *Estimates of School Statistics*; and unpublished data (© 2000 by the National Education Association. All rights reserved).

[3] U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys.

D

Appendix D
Sample Items

The following pages present sample questions from the 1996 NAEP mathematics assessment. For questions in the constructed-response format, sample student responses are included. Three sample questions are provided at each grade level. Each question is accompanied by a brief description of the content tested by the question.

Appendix Contents

Student Questions from Grades 4, 8, and 12

Samples of Students' Responses to Constructed-response Questions

Appendix Focus

Sample questions with commentary

351

Grade 4 Sample Question 1:

N stands for the number of stamps John had. He gave 12 stamps to his sister. Which expression tells how many stamps John has now?

Ⓐ $N + 12$

● $N - 12$

Ⓒ $12 - N$

Ⓓ $12 \times N$

Sample question 1 is a multiple-choice question classified in the algebra and functions content strand. Young students are prepared for the abstract world of algebra by early exposure to concepts that help them make the transition from concrete numbers to abstract expressions. This question, which required students to recognize that N stands for the total number of stamps John had, puts the concept of a variable in a setting that fourth-graders can understand.

Grade 4 Sample Question 2:

Brett needs to cut a piece of string into four equal pieces without using a ruler or other measuring instrument.

Write directions to tell Brett how to do this.

Sample question 2 is a short constructed-response question classified in the measurement content strand. This question asks students to describe how to cut a piece of string into four equal pieces without using a ruler or other measuring instrument. The expected solution was to fold the string in half, cut it, then fold each of these two pieces in half and cut them. The question was scored using a three-point scoring guide ("Unsatisfactory," "Partial," or "Satisfactory"). A sample "Satisfactory" response is shown below.

Sample "Satisfactory" Response:

Write directions to tell Brett how to do this.

Fold it untell the makes two equal parts cut it. Then fold it again cut it.

353

Grade 4 Sample Question 3:

Sam can purchase his lunch at school. Each day he wants to have juice that costs 50¢, a sandwich that costs 90¢, and fruit that costs 35¢. His mother has only $1.00 bills. What is the least number of $1.00 bills that his mother should give him so he will have enough money to buy lunch for 5 days?

Sample question 3 is a short constructed-response question classified in the number sense, properties, and operations strand. Students were required to show their work. To answer the question satisfactorily, the student must complete three steps: 1) add the three amounts shown to get the total spent each day, 2) multiply by 5 to get the total needed for five days ($8.75), and 3) understand that nine $1.00 bills would be needed to satisfy the conditions stated in the question. This question was in a part of the assessment that permitted the use of a calculator, but it is evident from the work shown below that this student could answer the question without the use of a calculator.

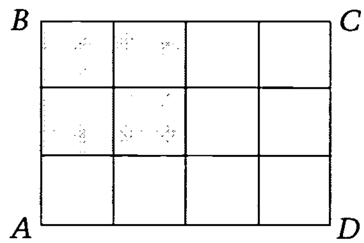
A "Satisfactory" response to this question gives the correct answer of nine dollar bills.

Sample "Satisfactory" Response:

¢50
¢90
-¢35
$1.75
x5
$8.75

9 dollar bills

Grade 8 Sample Question 4:



In the figure above, what fraction of rectangle $ABCD$ is shaded?

Ⓐ $\frac{1}{6}$

Ⓑ $\frac{1}{5}$

Ⓒ $\frac{1}{4}$

● $\frac{1}{3}$

Ⓔ $\frac{1}{2}$

Sample question 4 is a multiple-choice question classified in the number sense, properties, and operations strand. This question required students to recognize what fraction of a rectangle is shaded. Note that none of the numerators in the answer choices involves the number 4.

Grade 8 Sample Question 5:

A plumber charges customers $48 for each hour worked plus an additional $9 for travel. If h represents the number of hours worked, which of the following expressions could be used to calculate the plumber's total charge in dollars?

Ⓐ $48 + 9 + h$

Ⓑ $48 \times 9 \times h$

Ⓒ $48 + (9 \times h)$

Ⓓ $(48 \times 9) + h$

● $(48 \times h) + 9$

Sample question 5 is a multiple-choice question classified in the algebra and functions content strand. This question required students to translate a word problem into an algebraic expression. In a formal algebra class, students are expected to set up equations with expressions like the one in choice E (the correct answer) and then determine, for example, the value of h if the plumber's total charge was $297.

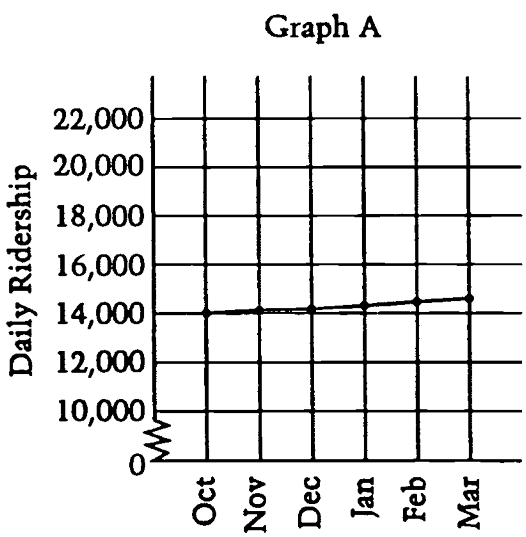
Grade 8 Sample Question 6:

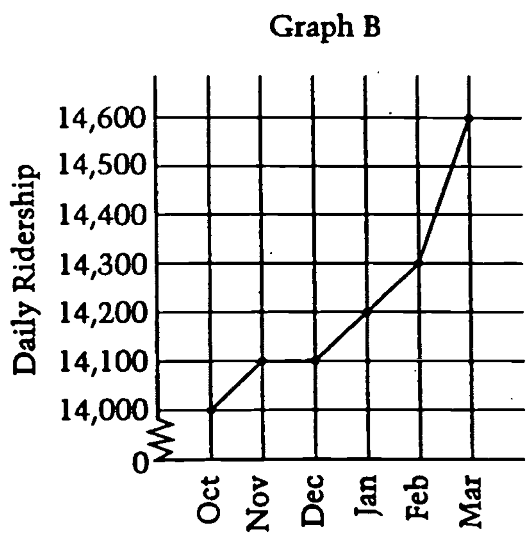
This question requires you to show your work and explain your reasoning. You may use drawings, words, and numbers in your explanation. Your answer should be clear enough so that another person could read it and understand your thinking. It is important that you show all of your work.

METRO RAIL COMPANY

Month	Daily Ridership
October	14,000
November	14,100
December	14,100
January	14,200
February	14,300
March	14,600

The data in the table above has been correctly represented by both graphs shown below.





Which graph would be best to help convince others that the Metro Rail Company made a lot more money from ticket sales in March than in October?

Explain your reason for making this selection.

Why might people who thought that there was little difference between October and March ticket sales consider the graph you chose to be misleading?

357

Sample question 6 is an extended constructed-response question classified in the data analysis, statistics, and probability strand. This question was one of the more difficult eighth-grade questions used in 1996. It required students to demonstrate skills that are both part of the junior high school mathematics curriculum and relevant to everyday life. It shows two accurately drawn graphs of the same data that appear to suggest very different conclusions. A complete answer to the question indicates ability to critically evaluate information presented in a graph. Students' responses were scored using a four-point scoring guide ("Unsatisfactory," "Partial," "Satisfactory," or "Complete"). A "Complete" response to this question received a score of 4 on the 4-point scale, while a "Satisfactory" response received a score of 3. Examples of both levels of response are shown below. Note that the sample "Complete" response appears to confuse 600 riders with \$600, but it seems clear from the first part of the student's explanation that daily ridership was the focus.

Sample "Complete" Response:

A "Complete" response to this question gives the correct response, Graph B, and provides a complete explanation.

graph b

Because it has a smaller scale for daily ridership it looks like a greater increase

because it appears its increased a lot when its only increased \$600

Sample "Satisfactory" Response:

A "Satisfactory" response to this question gives the correct response, Graph B, but provides an incomplete but partially correct explanation.

Graph B because it shows how the graph goes up so much.

because it shows a big jump because all they did was make each square worth more ridership

Grade 12 Sample Question 7:

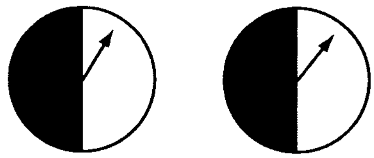
$$4 \times \square = \square \text{ and } \square \times 3 = \square$$

What number if placed in each box above would make both equations true?

- ● 0
- Ⓑ 1
- Ⓒ 2
- Ⓓ 3
- Ⓔ 4

Sample question 7 is a multiple-choice question classified in the algebra and functions strand. This question, a fairly easy one for twelfth-graders, required students to find a value that would make both equations true. To solve the problem, students could either use a formal algebraic solution process or simply substitute each of the choices until they found the correct answer.

Grade 12 Sample Question 8:



The two fair spinners shown above are part of a carnival game. A player wins a prize ony when <u>both</u> arrows land on black after each spinner has been spun once.

James thinks he has a 50-50 chance of winning. Do you agree?

Ⓐ Yes Ⓑ No

Justify your answer.

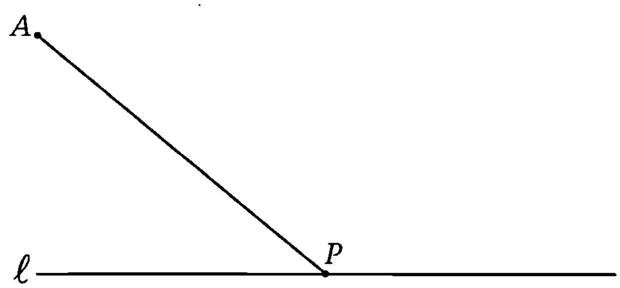
Sample question 8 is a short constructed-response question classified in the data, statistics, and probability strand. The question asks students to evaluate a person's chances of winning a game involving spinners. Students' responses were scored using a three-point scoring guide ("Unsatisfactory," "Partial," or "Satisfactory"). A "Satisfactory" answer is "No" because there are four equally likely outcomes: black, black; black, white; white, black; and white, white. Only black, black will win, so the actual chance of winning is 1 in 4 or 25 percent. No credit was given for a "No" response without any reasonable justification.

Sample "Satisfactory" Response:

He only has a 1/4 chance because you must multiply the 2 1/2 chances from each individual spinner.

Grade 12 Sample Question 9:

In the figure below, use the protractor to draw a line m through point P perpendicular to segment AP. In the answer space provided, give the measure of the smaller angle formed by lines ℓ and m.

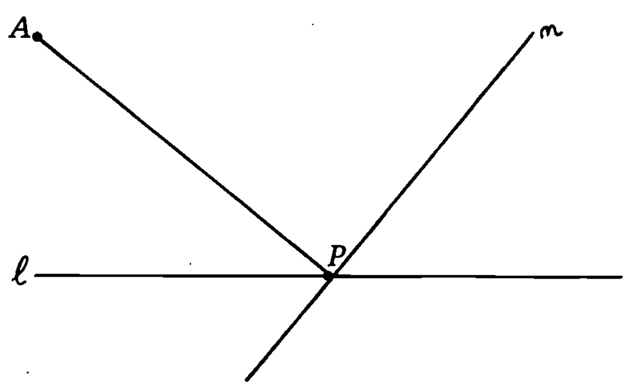


Answer: ______________________

Sample question 9 is a short constructed-response question classified in the geometry content strand. This question was scored as either "Incorrect" or "Correct," with no partial credit. In order to answer this question, students needed to draw a line perpendicular to the given line, and then measure one of the angles. This is an example of a NAEP question that requires students to use a tool, such as a protractor or ruler.

Sample "Satisfactory" Response

The following student's response received the highest score, Satisfactory. Both line m and the degree measure of the smaller angle are correct.



Answer: 50°

361

E

Appendix E
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362

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