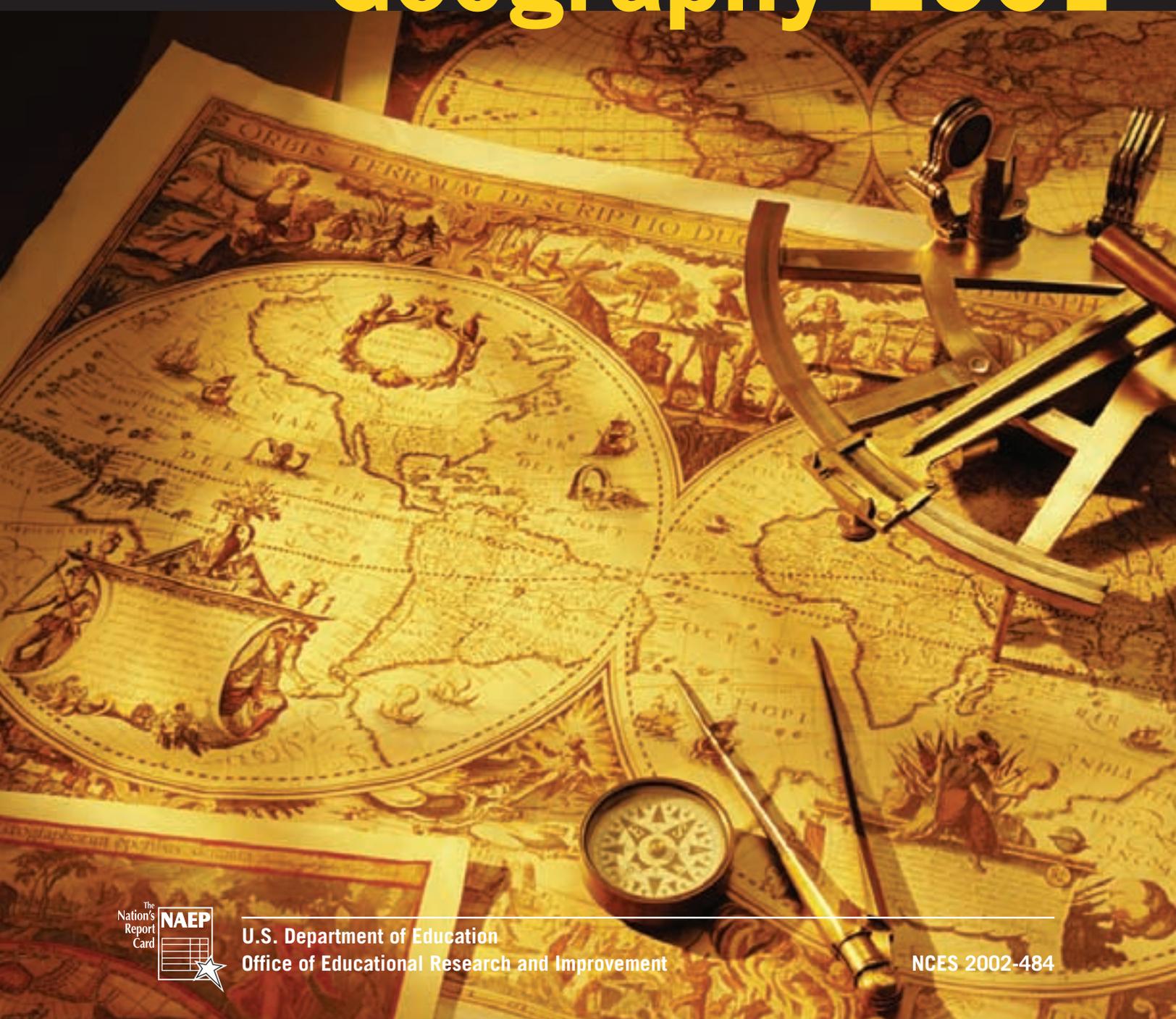




National Center for Education Statistics

# The Nation's Report Card Geography 2001



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

NCES 2002-484

## 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.

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National Center for Education Statistics

# The Nation's Report Card

## Geography 2001

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**June 2002**

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# E

## xecutive 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 2001, NAEP conducted a geography assessment of the nation's fourth-, eighth-, and twelfth-grade students.

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 2001 geography assessment for the nation. Results in 2001 are compared to results of the 1994 NAEP geography assessment, which was the preceding NAEP geography assessment and the only other geography assessment conducted under the current framework. Students' performance on the assessment is described in terms of average scores on a 0–500 scale and in terms of the percentage 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. They represent collective judgments of what students should know and be able to do.

### The Nation's Report Card

Major Findings at Grades 4, 8, and 12

Results for Student Subgroups

Classroom Contexts for Learning

Becoming a More Inclusive NAEP

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

In addition to providing average scores and achievement-level performance in geography for the nation's fourth-, eighth-, and twelfth-graders, this report provides results for subgroups of students at those grade levels defined by various background characteristics (such as gender, race/ethnicity, region, parents' education, etc.) and classroom contexts for learning. A summary of major findings from the 2001 NAEP geography 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. Readers are cautioned that the relationship between a contextual variable and student performance is not necessarily causal.

## Major Findings at Grades 4, 8, and 12

- Average geography scores for fourth- and eighth-graders were higher in 2001 than in 1994, while the performance of twelfth-graders was not significantly different.
- At both grades 4 and 8, score increases occurred among the lower-performing students (at the 10th and 25th percentiles).

- The 2001 geography assessment showed that 21 percent of fourth-graders, 30 percent of eighth-graders, and 25 percent of twelfth-graders performed at or above the *Proficient* level for their respective grades. These levels are identified by NAGB as those at which all students should perform.
- Both grades 4 and 8 showed an increase from 1994 to 2001 in the percentage of students at or above *Basic*. There were no significant changes in the percentage at or above *Proficient* at any grade.

## Results for Student Subgroups

In addition to overall results, NAEP reports on the performance of various subgroups of students. Observed differences between student subgroups in NAEP geography performance may reflect a range of socio-economic and educational factors not addressed in this report or by NAEP.

### Gender

- There was no statistically significant change at any grade in the average scores of either male or female students between 1994 and 2001.
- In 2001 as in 1994, male students at grades 4, 8, and 12 had higher average scores than female students.

### Race/Ethnicity

- At grade 4, Black students had higher average scores in 2001 than in 1994.
- In 2001, White, Asian/Pacific Islander, and American Indian students had higher average scores than Black and Hispanic students at all three grades.
- The 2001 results show a narrowing of the average score point difference between White students and Black students at grade 4.

### Region of the Country

- Between 1994 and 2001, the average scores of fourth-graders increased in the Northeast, and the average scores of eighth-graders increased in the Southeast.
- Fourth- and eighth-grade students in the Northeast and Central regions outperformed students in the West in 2001, and students in the Central region also outperformed their counterparts in the Southeast. Twelfth-graders in the Central region had higher average scores than twelfth-graders in the Southeast.

### Parents' Highest Level of Education

- Twelfth-graders whose parents had not graduated from high school had higher average scores in 2001 than in 1994.
- The higher the parental education level reported, the higher the average score attained by students at both grades 8 and 12 in 2001.

### Type of School

- Eighth-grade public school students had higher average scores in 2001 than in 1994.
- In 2001, nonpublic school students outperformed public school students at all three grades.
- In 2001, Catholic school students outperformed public school students at grades 4, 8, and 12. Apparent differences between public school and other nonpublic school students were not statistically significant.

### Type of Location

- In 2001, students in rural and urban fringe locations had higher average scores than central city students at grades 4, 8, and 12.

### Eligibility for Free/Reduced-Price Lunch

- At every grade in 2001, the average score for students who were eligible for the Free/Reduced-Price School Lunch program was lower than the average for students who were not eligible for the program (i.e., those above the poverty guidelines).

### Classroom 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 geography assessment.

### Teacher Preparation

- Ninety-three percent of fourth-grade students had teachers who indicated their graduate/undergraduate major or minor was elementary education, and about one-quarter (28 percent) of eighth-grade students had teachers who indicated they had a graduate/undergraduate major or minor in geography or geography education.
- A higher percentage of fourth-grade students in 2001 had teachers who reported they were very prepared to teach geography than did students in 1994. Forty-four percent of eighth-grade students in 2001 had teachers who reported they were very prepared to teach geography.

### Geography Skills Taught

- The percentage of eighth-grade students who studied maps and globes at least once or twice a week increased in 2001 as compared to 1994.
- There was an increase in the percentage of eighth- and twelfth-grade students who studied natural resources once or twice a week in 2001 as compared with 1994.
- The percentages of eighth-grade students who studied countries and cultures in their geography instruction at least once or twice a week were greater in 2001 than in 1994.

### Geography Course-Taking

- A higher percentage of eighth-graders in 2001 reported taking geography in sixth, seventh, and eighth grades than did their counterparts in 1994.
- The percentage of twelfth-grade students taking geography courses at each grade level during their high school years increased in 2001 from the percentage reported in 1994.
- In 2001 at grade 8, students who reported taking two or three years of geography had higher scores than those who took it for fewer years. Twelfth-graders who reported taking one year or less of geography had higher average scores than those who took 3 or 4 years of geography.

### Use of Computers

- Students at grades 4, 8, and 12 who used the Internet or CD-ROM materials to a small or moderate extent had higher scores than students who did not use these tools at all.

### Becoming a More Inclusive NAEP

In the 2001 geography assessment, the NAEP program used a split-sample design, so that trends in students' geography achievement could be reported across assessment years and, at the same time, the program could continue to examine the effects of including special-needs students assessed with accommodations. Included in this report is an overview of the second set of results that include special-needs students who required and were provided accommodations during the assessment administration.

- In the sample where accommodations were not permitted, between 44 and 48 percent of the special-needs students at each of the three grade levels (between 5 and 8 percent of all students) were excluded from NAEP testing by their schools. In the sample where accommodations were offered, between 23 and 24 percent of the special-needs students were excluded from the assessment (between 2 and 4 percent of the total sample).
- At grade 8, the average score when accommodations were permitted was lower than the average score when accommodations were not permitted. At grades 4 and 12, there were no statistically significant differences between the average scores of students when accommodations were permitted and when accommodations were not permitted.

# 1

## NAEP 2001 Geography Assessment

### Introduction

After more than 50 years during which geography was largely replaced by social studies in American public schools, geography education began to experience a revival during the 1980s and 1990s.<sup>1</sup> Contributing to the change was a growing belief in the relevance of geography to addressing economic, political, and environmental issues at the national and global level. Moreover, geography education was increasingly seen as an essential tool in the creation of effective citizens. This process gained momentum through the work of various organizations concerned with geography and geography education. These groups encouraged a more positive attitude toward geography and provided important guidance for reestablishing geography in the school curriculum.<sup>2</sup> Two surveys of geographic literacy, in 1988 and 1994, provided statistical evidence that student knowledge and skills fell far short of what was needed for responsible citizenship.<sup>3</sup> By the end of 1990, Congress had authorized development of a broad-based National Assessment of Educational Progress (NAEP) geography assessment at

### Chapter Focus

What is the NAEP geography assessment?

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

### Chapter Contents

Overview

Geography Framework

Geography Assessment

School and Student Samples

Reporting Results

NAEP Achievement Levels

Interpreting NAEP Results

This Report

<sup>1</sup> Salter, C. L. (1990). *Missing the magic carpet: The real significance of geographic ignorance*. Princeton, NJ: Educational Testing Service.

<sup>2</sup> Joint Committee on Geographic Education. (1984). *Guidelines for geographic education: Elementary and secondary schools*. Washington, DC: Association of American Geographers and the National Council for Geographic Education.

<sup>3</sup> Allen, R., Bettis, N., Kurfman, D., MacDonald, W., Mullis, I. V. S., & Salter, C. (1990). *The geography learning of high school seniors*. Princeton, NJ: National Assessment of Educational Progress, Educational Testing Service.

Persky, H. R., Reese, C. M., O'Sullivan, C. Y., Lazer, S., Moore, J. D., & Shakrani, S. (1996). *NAEP 1994 geography report card*. Washington, DC: National Center for Education Statistics, Office of Educational Research and Improvement, U.S. Department of Education.

grades 4, 8, and 12, and the President and nation's governors had declared geography to be one of five core subjects in their National Education Goals.

Progress toward increasing the prominence of geography in the elementary and secondary school curriculum has generally been good. The 1990s saw the publication of the *Geography Framework for the 1994 National Assessment of Educational Progress* and the NAEP geography assessment in 1994, the introduction of the National Geography Standards, and the institution of the National Geographic Alliance Network.<sup>4</sup> The alliance is a professional organization encouraged and supported with grants from the National Geographic Society Education Foundation. Geographic Alliances are present in all 50 states, and are comprised of primary, secondary, community college, and university geography educators interested in the enhancement of geography education. The number of states with geography standards has been increasing steadily as well. According to recent data collected by the National Geographic Society, 48 states plus the District of Columbia now have geography standards in place, 37 of which are based on the National Geography Standards. However, only 13 states require a geography course as a requirement for high school graduation. Moreover, in 27 states geography is not tested in mandated state examinations, while in some other states

the portion of mandated tests devoted to geography is very small. As a result, there could be little incentive for teachers to emphasize geography instruction when higher stakes are attached to other subjects.<sup>5</sup> The results from the 2001 NAEP geography assessment provide policymakers, educators, and the general public with a new, objective tool with which to evaluate the country's progress toward geographic literacy.

## Overview of the 2001 National Assessment of Educational Progress

For over 30 years, the National Assessment of Educational Progress (NAEP) has been authorized by Congress to collect, analyze, and report reliable and valid information about what American students know and can do in core subject areas. NAEP assesses the performance of public and nonpublic school students in grades 4, 8, and 12. In 2001, student performance in geography and U.S. history was assessed at all three grades. This report deals only with the results of the geography assessment.

All NAEP assessments are based on content frameworks developed through a national consensus process. The NAEP 2001 geography assessment was the second administration of an assessment based on the *Geography Framework for the 1994 National Assessment of Educational Progress*, which was originally developed for the 1994 assessment.<sup>6</sup> In both 1994 and 2001,

<sup>4</sup> National Assessment Governing Board. (1994). *Geography framework for the 1994 National Assessment of Educational Progress*. Washington, DC: Author.

Geography Education Standards Project. (1994). *Geography for life: National geography standards*. Washington, DC: National Geographic Research and Exploration.

<sup>5</sup> Munroe, S. and Smith, T. (1998). State geography standards. *Fordham Report*, 2(2), <http://www.edexcellence.net/standards/geography/geograph.htm>.

Dean, A. (2002). Unpublished data. National Geographic Education Foundation.

Council of Chief State School Officers. (2000). *Key state education policies on K-12 education: 2000*. Washington, DC: Author.

<sup>6</sup> National Assessment Governing Board. (1994). *Geography framework for the 1994 National Assessment of Educational Progress*. Washington, DC: Author.

assessments based on the framework were administered to national samples of fourth-, eighth-, and twelfth-graders.

This report describes the results of the 2001 geography assessment at grades 4, 8, and 12 and compares results in 2001 to those in 1994. Comparisons across assessment years are possible because the assessments were developed under the same basic framework and share a common set of geography questions. In addition, the populations of students were sampled and assessed using comparable procedures.

### The Geography Framework

Although NAEP had conducted a geography assessment at grade 12 in 1988, a more comprehensive NAEP geography framework was developed for the 1994 assessment. The new framework provided the operational specifications for both the 1994 and 2001 assessments. The development of the framework was managed by the Council of Chief State School Officers (CCSSO) and adopted by the National Assessment Governing Board (NAGB). Approximately 50 professional geographers, educators, administrators, and other interested individuals worked to achieve con-

sensus on the general goals as well as the specific language of the framework. In addition, several hundred educational experts and interested members of the public contributed to the process, either by participating in public hearings or by reviewing drafts. The framework document produced by this consensus process called for the assessment of a broad range of outcomes. It represented an ambitious vision both of what students should know and be able to do in geography, and of the ways in which those competencies should be tested.

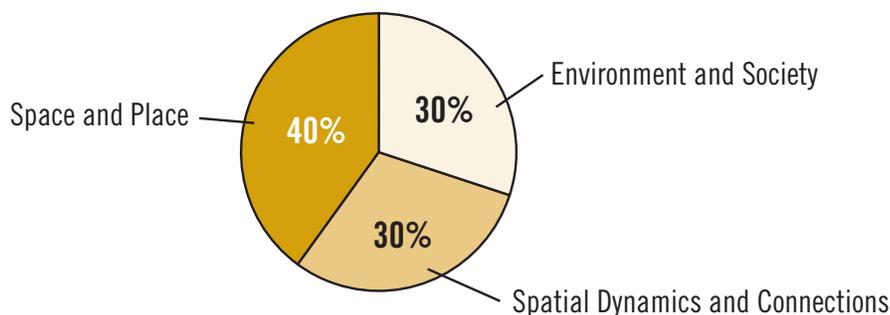
The geography framework is organized along two dimensions, a content dimension and a cognitive dimension. The content dimension forms the heart of the framework. It is divided into three main content areas covering the breadth of geography learning outcomes—knowledge and skills—that would flow from good geography instruction.

The geography framework specifies the percentage of assessment time to be devoted to each content area. Figure 1.1 shows how the assessment time is distributed for each of the three grades: 40

Figure 1.1

Distribution of Assessment Time

Distribution of assessment time by geography content area, grades 4, 8, and 12: 2001



SOURCE: National Assessment Governing Board, *Geography Framework for the 2001 National Assessment of Educational Progress*.

percent of assessment time goes to Space and Place, and 30 percent each to Environment and Society and to Spatial Dynamics and Connections. The percentages are important both because they guide the

development of test questions and because they determine how much weight each content area receives in computing overall test scores. Figure 1.2 provides descriptions of each content area.

Figure 1.2

Content Area Descriptions

Descriptions of the three geography content areas

**Space and Place:**

*Knowledge of geography as it relates to particular places on Earth, to spatial patterns on Earth's surface, and to physical and human processes that shape such spatial patterns.*

Space is the basic resource and organizing element for geography. Patterns that are illustrated on maps reflect both natural features and human activities. This content area requires students to distinguish between and understand the spatial distribution of physical and human characteristics. Students must locate significant features and places on Earth, recognize existing patterns in the distribution of features and places, and comprehend the reasons for the development and existence of these patterns.

**Environment and Society:**

*Knowledge of geography as it relates to the interactions between environment and society.*

Geography is an integrative discipline that focuses on the interrelationships between the physical environment and society. Human adaptation to and modification of the environment have economic and political implications. Understanding the nature, scale, and ramifications of such environmental transformations is fundamental in geography education, and is the core of this content area. Students must be aware that every environmental issue lends itself to many interpretations, depending on the people's perspectives. Students must consider such multiple perspectives as they evaluate decisions about issues, such as land use and resource development, because the results of such decisions often have complicated and unpredictable consequences. Learning to make wise decisions concerning the costs and benefits of environmental modification is an expressed goal of geography education.

**Spatial Dynamics and Connections:**

*Knowledge of geography as it relates to spatial connections among people, places, and regions.*

This content area explores critical problems in human interaction. It requires students to demonstrate comprehension of cultural, economic, and political regions and the connections among them. Students must understand how peoples and places are alike and how they differ. They should know that people of every country and every nation are increasingly connected to and dependent upon other peoples and places of the world for both human and natural resources. In this content area, students must demonstrate the knowledge that the world's resources are unevenly distributed, and an understanding of how this contributes to the movements of people, patterns of trade, and conflict.

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress*.

Three cognitive areas or levels comprise the cognitive dimension of the geography assessment. The framework labels them as Knowing, Understanding, and Applying, and defines them as follows.

**Knowing—What is it? Where is it?**

In this area, students are assessed on their ability to perform two related functions with respect to information: a) an observation function and b) a recall function. Students should be able to observe different elements of the landscape and answer questions by recalling, for example, the name of a place or a resource indigenous to a particular country or by finding information about trading patterns among several countries.

**Understanding—Why is it there? How did it get there? What is its significance?**

In this area, students attribute meaning to what has been observed and explain events. Putting events in context and explaining them requires students to see connections among diverse pieces of geographic information and to use that information to explain existing patterns and processes on Earth.

**Applying—How can knowledge and understanding be used to solve geographic problems?**

Applying geography knowledge and understanding requires a range of higher-order thinking skills. Students classify, hypothesize, use inductive and deductive reasoning, and form problem-solving models. They use many tools and skills of geography as they attempt to develop a comprehensive understanding en route to proposing viable solutions.

Student performance in the three cognitive areas was not reported on separate subscales. Rather, the three areas were used to help guide development of the assessment instrument. The percentages of assessment time to be devoted to each cognitive area, as specified in the framework, are displayed in table 1.1.

Together the content and cognitive dimensions of the assessment form a matrix in which each content area is measured at each cognitive level.

**Table 1.1 Geography Assessment Time Across Cognitive Areas**

Distribution of geography assessment time across cognitive areas, grades 4, 8, and 12: 2001

	<i>Knowing</i>	<i>Understanding</i>	<i>Applying</i>
<b>Grade 4</b>	45%	30%	25%
<b>Grade 8</b>	40%	30%	30%
<b>Grade 12</b>	30%	30%	40%

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress*.

## Geography Assessment Instruments

As the only federally authorized ongoing assessment of geography achievement, NAEP must reflect the spirit of the framework as well as the specifications provided by it. In order to achieve those goals, the assessment development process involved stages of review by measurement experts and a committee of teachers, teacher educators, and curriculum specialists expert in geography. All components of the assessment were evaluated for curricular relevance, developmental appropriateness, and fairness. The National Assessment Governing Board (NAGB) gave final approval for NAEP test questions. A list of the geography development committee members for the 2001 assessment is provided in appendix C.

The 2001 geography assessment booklets at grades 4, 8, and 12 contained either three or four sections: a set of general background questions, a set of subject-related background questions, and one or two sets, or “blocks,” of cognitive questions assessing knowledge and skills in geography. The general background questions are used to collect some important basic information about students. These questions tend to remain fairly constant across different NAEP assessments. The subject-related questions are designed for specific assessments or for assessments given in an individual year. The questions in the geography assessment asked students to give information about their school practices, such as the frequency with which they used the Internet or a CD-ROM to study geography, how often they received instruction in using maps and globes, and when they had

taken a geography course. All students participating in the geography assessment at a particular grade received the same background questions.

The geography assessment as a whole contained 91 questions at grade 4, 124 questions at grade 8, and 123 questions at grade 12. The grade 4 assessment was divided into six 25-minute blocks, while both the grade 8 and grade 12 assessments contained nine blocks, eight of which were 25-minute blocks and one of which was a 50-minute block. However, to reduce the burden on individuals, each student answered only a small portion of the total number of questions—either two 25-minute blocks or one 50-minute block. The 50-minute blocks administered at grades 8 and 12 focused on a particular geographic topic. In addition, one block at each grade was based entirely upon a student atlas that was provided to students. The assessment time for each grade, therefore, was 50 minutes plus the 10–15 minutes needed to complete the background questions.

Each block of geography questions consisted of both multiple-choice and “constructed-response” questions. (“Constructed response” is the term used to describe test questions in which students produce their own response, as distinct from multiple-choice questions, in which students choose an answer from one of several options.) Typically, a block will contain about 16–18 questions, but there is considerable variation depending on the balance between multiple-choice and constructed-response questions. Overall, more than 50 percent of student assessment time was devoted to the latter question

type. In addition, of the time reserved for constructed-response questions approximately 20 percent was used for “production” questions in which students engaged in such tasks as indicating place locations on outline maps, drawing routes between points on a map, and drawing maps and diagrams based upon written descriptions. Two types of constructed-response questions were used:

- short-constructed-response questions that required students to provide brief written answers of one or two sentences or complete a limited production task; and
- extended-constructed-response questions that required students to provide answers of a paragraph or more in length or engage in an extensive production task like producing a map.

Examples of multiple-choice, short- and extended-constructed-response and production questions are provided in chapter 6. Additional information about the design of the 2001 geography assessment is presented in appendix A.

## **Description of School and Student Samples**

The NAEP 2001 geography assessment included representative samples of both public and nonpublic schools. For the reporting sample, approximately 7,000 fourth-graders, 9,000 eighth-graders, and 9,000 twelfth-graders were assessed. The number of schools in the reporting sample were 365 at fourth grade, 369 at eighth grade, and 374 at twelfth grade. Each selected school that participated in the assessment and each student assessed represent a portion of the population of interest. For additional information on

sample sizes and participation rates, see appendix A.

This report contains two different sets of national results based on two reporting samples that differed in terms of whether or not accommodations were made available to special-needs students. The national results presented in chapters 2, 3, 4, and 6 of this report are based on a nationally representative sample that included special-needs students only if they could be assessed meaningfully without accommodations. These results can be compared to those from 1994 because accommodations were also not made available in that assessment year. Chapter 5 presents a second set of national results from 2001 for a representative sample that includes the performance of students who required and were provided with accommodations (e.g., bilingual dictionary, extended time, small group testing). No comparison of these results to those from 1994 can be made because of the inclusion of these accommodated special-needs students.

In the sample that did not permit accommodations, 8 percent of fourth-graders, 8 percent of eighth-graders, and 5 percent of twelfth-graders were excluded from the geography assessment in 2001. School staff familiar with these students made the determination, based upon NAEP’s inclusion criteria, that these students could not be assessed meaningfully without accommodations because of their disability and/or limited English proficiency. In 1994, 5 percent at both the fourth- and eighth-grades, and 3 percent at the twelfth-grade were excluded. Additional information regarding exclusion rates is provided in appendix A.

## Reporting the Assessment Results

Student performance on the NAEP geography assessment is presented in two ways: as average scores on the NAEP geography scale, and in terms of the percentage of students attaining NAEP geography achievement levels. The average scale scores are a measure of what students know and can do in geography. The achievement-level results indicate the degree to which students' performance meets expectations of what they should know and be able to do.

Average scale score results are presented on the NAEP geography composite scale, which ranges from 0–500. Students' responses on the NAEP 2001 geography assessment were analyzed to determine the percentages of students that responded correctly to each multiple-choice question and the percentages of students that responded at each score level for the constructed-response questions. Scales that summarize results for each of the three content areas described earlier were created. The composite scale is a weighted average of the separate subscales for the three content areas. The weight for each content area corresponds to its relative importance as prescribed in the NAEP geography framework. A full description of NAEP scale procedures can be found in the forthcoming *NAEP 2001 Technical Report*.

Achievement-level results are presented in terms of geography achievement levels

as authorized by the NAEP legislation and adopted by the National Assessment Governing Board (NAGB).<sup>7</sup> 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 geography 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.<sup>8</sup> The 2001 NAEP reauthorization reaffirmed many of the Board's statutory responsibilities, including developing “appropriate student achievement levels for each grade or age in each subject area to be tested . . .”<sup>9</sup> To follow this directive and achieve the mandate of the 1988 statute to “improve the form and use of NAEP results,” NAGB undertook the development of student performance standards called “achievement levels.” Since 1990 the Board has adopted achievement levels in mathematics, reading, U.S. history, 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

<sup>7</sup> No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act. Pub. L. No. 107-110 (H.R. 1).

National Assessment of Educational Progress Improvement Act of 1988. Pub. L. No. 100-297, 20, U.S.C. 1211.

<sup>8</sup> National Assessment of Educational Progress Improvement Act of 1988. Pub. L. No. 100-297, 20, U.S.C. 1211.

<sup>9</sup> No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act. Pub. L. No. 107-110 (H.R. 1).

performance. Students reaching this level demonstrate competency over challenging subject matter. The *Advanced* level presumes mastery of both the *Basic* and *Proficient* levels and superior performance. Figure 1.3 presents the policy definitions of the achievement levels that apply across all grades and subject areas. The policy definitions guided the development of the geography achievement levels, as well as

the achievement levels established in all other 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*.

Figure 1.3 Achievement Levels	Policy definitions of the three NAEP achievement levels
<i>Basic</i>	This level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
<i>Proficient</i>	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.
<i>Advanced</i>	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 geography. 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's approval, became a set of achievement-level descriptions and a set of achievement-level cut points on the 0–500 NAEP geography 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 geography achievement levels based upon the geography content framework.

## Achievement-Level Descriptions for Each Grade

Specific definitions of the *Basic*, *Proficient*, and *Advanced* geography 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 240 corresponds to the beginning of the grade 4 *Proficient* level of achievement.

Figure 1.4 Achievement Levels	Descriptions of NAEP geography achievement levels for grade 4
<b>Basic</b> (187)	Students should be able to use words or diagrams to define basic geography vocabulary; identify personal behaviors and perspectives related to the environment, and describe some environmental and cultural issues in their community; use visual and technology tools to access information; identify major geographic features on maps and globes; be able to read and draw simple maps, map keys, and legends; demonstrate how people depend upon, use, and adapt to the environment; and give examples of the movement of people, goods, services, and ideas from one place to another. In addition to demonstrating an understanding of how individuals are alike and different, they should demonstrate a knowledge of the ways people depend on each other.
<b>Proficient</b> (240)	Students should be able to use fundamental geographic knowledge and vocabulary to identify basic geographic patterns and processes; describe an environmental or cultural issue from more than one perspective; and read and interpret information from visual and technological tools such as photograph maps and globes, aerial photography, and satellite images. They should be able to use number and letter grids to plot specific locations; understand relative location terms; and sketch simple maps and describe and/or draw landscapes they have observed or studied. <i>Proficient</i> students should be able to illustrate how people depend upon, adapt to, and modify the environment, describe and/or illustrate geographic aspects of a region using fundamental geographic vocabulary and give reasons for current human migration; discuss the impact a location has upon cultural similarities and differences; and be able to demonstrate how an event in one location can have an impact upon another location.
<b>Advanced</b> (276)	Students should be able to use basic geographic knowledge and vocabulary to describe global patterns and processes; describe ways individuals can protect and enhance environmental quality; describe how modifications to the environment may have a variety of consequences; explain differing perspectives that apply to local environmental or cultural issues; and demonstrate an understanding of forces that result in migration, changing demographics, and boundary changes. They should be able to solve simple problems by applying information learned through working with visual and technological tools such as aerial and other photographs, maps and globes, atlases, news media, and computers. They should be able to construct models and sketch and label maps of their own state, the United States, and the world; use them to describe and compare differences, similarities, and patterns of change in landscapes; and be able to predict the impact a change one location can have on another. They should be able to analyze the ways individuals and groups interact.

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress*.

**Figure 1.5****Descriptions of NAEP geography achievement levels for grade 8****Achievement Levels****Basic**  
(242)

Students should possess fundamental knowledge and vocabulary of concepts relating to patterns, relationships, distance, directions, scale, boundary, site, and situation; solve fundamental locational questions using latitude and longitude; interpret simple map scales; identify continents and their physical features, oceans, and various cities; respond accurately to descriptive questions using information obtained by use of visual and technological tools such as geographic models and/or translate that information into words; explain differences between maps and globes; and find a wide range of information using an atlas or almanac. Students should be able to recognize and illustrate the relationships that exist between humans and their environments, and provide evidence showing how physical habitat can influence human activity. They should be able to define a region and identify its distinguishing characteristics. Finally, they should be able to demonstrate how the interaction that takes place between and among regions is related to the movement of people, goods, services, and ideas.

**Proficient**  
(282)

Students should possess a fundamental geographic vocabulary; understand geography's analytical concepts; solve locational questions requiring integration of information from two or more sources, such as atlases or globes; compare information presented at different scales; and identify a wide variety of physical and cultural features and describe regional patterns. Students should be able to respond accurately to interpretive questions using geography's visual and technological tools and translate that information into patterns; identify differences in map projections and select proper projections for various purposes; and develop a case study working with geography's analytical concepts. In addition, students should be able to describe the physical and cultural characteristics of places; explain how places change due to human activity; and explain and illustrate how the concept of regions can be used as a strategy for organizing and understanding Earth's surface. Students should be able to analyze and interpret data bases and case studies, as well as use information from maps to describe the role that regions play in influencing trade and migration patterns and cultural and political interaction.

**Advanced**  
(315)

Students should have a command of extensive geographic knowledge, analytical concepts, and vocabulary; be able to analyze spatial phenomena using a variety of sources with information presented at a variety of scales and show relationships between them; and use case studies for special analysis and to develop maps and other graphics. Students should be able to identify patterns of climate, vegetation, and population across Earth's surface and interpret relationships between and among these patterns, and use one category of a map or aerial photograph to predict other features of a place such as vegetation based on climate or population density based on topographic features. Students should also be able to relate the concept of region to specific places and explain how regions change over time due to a variety of factors. They should be able to profile a region of their own design using geographic concepts, tools, and skills.

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress*.

**Figure 1.6**

**Achievement Levels**

**Descriptions of NAEP geography achievement levels for grade 12**

***Basic***  
(270)

Students should possess a knowledge of concepts and terms commonly used in physical and human geography as well as skills enabling them to employ applicable units of measurement and scale when solving simple locational problems using maps and globes. They should be able to read maps; provide examples of plains, plateaus, hills, and mountains; and locate continents, major bodies of water, and selected countries and cities. They should be able to interpret geographic data and use visual and technological tools such as charts, tables, cartograms, and graphs; know the nature of and be able to identify several basic types of map projection; understand the basic physical structure of the planet; explain and apply concepts such as continental drift and plate tectonics; and describe geography's analytical concepts using case studies. Students should have a comprehensive understanding of spatial relationships including the ability to recognize patterns that exist across Earth in terms of phenomena, including climate regions, time zones, population distributions, availability of resources, vegetation zones, and transportation and communication networks. They should be able to develop data bases about specific places and provide a simple analysis about their importance.

***Proficient***  
(305)

Students should have an extensive understanding and knowledge of the concepts and terminology of physical and human geography. They should be able to use geographic concepts to analyze spatial phenomena and to discuss economic, political, and social factors that define and interpret space. They should be able to do this through the interpretation of maps and other visual and technological tools, through the analysis of case studies, the utilization of data bases, and the selection of appropriate research materials. Students should be able to design their own maps based on descriptive data; describe the physical and cultural attributes of major world regions; relate the spatial distribution of population to economic and environmental factors; and report both historical and contemporary events within a geographic framework using tools such as special purpose maps, and primary and secondary source materials.

***Advanced***  
(339)

Students should possess a comprehensive understanding of geographic knowledge and concepts; apply this knowledge to case studies; formulate hypotheses and test geographic models that demonstrate complex relationships between physical and human phenomena; apply a wide range of map skills; develop maps using fundamental cartographic principles including translating narratives about places and events into graphic representations, and use other visual and technological tools to perform locational analysis and interpret spatial relationships. Students should also be able to undertake sophisticated analysis from aerial photographs or satellite imagery and other visuals. *Advanced* students should be able to develop criteria assessing issues relating to human spatial organization and environmental stability and, through research skills and the application of critical thinking strategies, identify alternative solutions. They should be able to compile data bases from disparate pieces of information and from these data bases develop generalizations and speculations about outcomes when data change.

SOURCE: National Assessment Governing Board, *Geography Framework for the 1994 and 2001 National Assessment of Educational Progress*.

## The Trial Status of Achievement Levels

The 2001 NAEP reauthorization law requires that the achievement levels be used on a trial basis until the Commissioner of Education Statistics determines that the achievement levels are “reasonable, valid, and informative to the public.”<sup>10</sup> Until that determination is made, the law requires the Commissioner and the Board to state clearly the trial status of the achievement levels in all NAEP reports.

In 1993, the first of several congressionally mandated evaluations of the achievement-level-setting process concluded that the procedures used to set the achievement levels were flawed and that the percentage of students at or above any particular achievement-level cutpoint may be underestimated.<sup>11</sup> Others have critiqued these evaluations, asserting that the weight of the empirical evidence does not support such conclusions.<sup>12</sup>

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.<sup>13</sup> 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.”<sup>14</sup> 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.<sup>15</sup>*

The National Center for Education Statistics and the National Assessment Governing Board have sought and con-

<sup>10</sup> No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act. Pub. L. No. 107-110 (H.R. 1).

<sup>11</sup> 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.

<sup>12</sup> 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.

<sup>13</sup> American College Testing. (1995). *NAEP reading revisited: An evaluation of the 1992 achievement level descriptions*. Washington, DC: National Assessment Governing Board.

<sup>14</sup> 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.

<sup>15</sup> National Academy of Education. (1997). *Assessment in transition: Monitoring the nation’s educational progress* (p. 99). Mountain View, CA: Author.

tinue to seek new and better ways to set performance standards on NAEP.<sup>16</sup> 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.<sup>17</sup> Although new directions were presented and discussed, a proven alternative to the current process has not yet been identified. The Deputy 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.”<sup>18</sup>

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.”<sup>19</sup>

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 Deputy Commissioner believe that the achievement levels are useful for reporting trends in the educational achievement of students in the United States.<sup>20</sup> In fact, achievement-level results have been used in reports by the President of the United States, the Secretary of Education, state governors, legislators, and members of Congress. Government leaders in the nation and in more than 40 states use these results in their annual reports.

<sup>16</sup> 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.

<sup>17</sup> 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.

<sup>18</sup> 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, National Research Council. (p.182). Washington, DC: National Academy Press.

<sup>19</sup> *Ibid.*, page 176.

<sup>20</sup> 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.

However, based on the congressionally mandated evaluations so far, the Deputy Commissioner agrees with the National Academy’s recommendation that caution needs to be exercised in the use of the current achievement levels. Therefore, the Deputy Commissioner concludes that these achievement levels should continue to be used on a trial basis and should continue to be interpreted with caution.

### **Interpreting NAEP Results**

The average scores and percentages presented in this report are estimates based on samples of students rather than on entire populations. Moreover, the collection of questions used at each grade level is but a sample of the many questions that could have been asked to assess student knowledge of the framework content. As such, the results are subject to a measure of uncertainty, reflected in the standard error of the estimates—a range of a few points plus or minus the score—which accounts for potential score fluctuation due to sampling error and measurement error. 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. Estimates based on smaller subgroups are likely to have relatively large standard errors. As a consequence, some seemingly large differences may not be statistically significant. When this is the case, the term “apparent differences” is used in this report. 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 0.05 level with appropriate adjustments for multiple comparisons. The term “significant” identifies 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 student 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 affect performance in geography.

### **Overview of the Remaining Report**

The results in chapters 2, 4 and 6 of this report are based on the set of data with no accommodations offered to students. Findings are presented for the nation and for all the major reporting subgroups included in all NAEP report cards. Comparisons with results from the 1994 assessment are noted where the data permit. Chapter 4 examines contexts for learning geography in terms of classroom practices and student variables.

NAEP has sought to assess samples that are as inclusive as possible. Nevertheless, there has always been some exclusion of students with disabilities (SD) and limited English proficient (LEP) students who could not be assessed meaningfully without accommodations. Local school officials have made decisions about exclusion in accordance with explicit criteria provided by NAEP. In order to expand the proportion of students who can be assessed meaningfully, NAEP began in recent assessments to explore the use of accommodations with special-needs students. Chapter 5 presents an overview of a second set of results—those that include students who were provided accommodations during the test administration. By including these results in the nation’s geography report card, NAEP 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 6 provides sample assessment questions and student responses from the 2001 assessment. Also presented in chapter 6 are item maps that position selected question descriptions along the NAEP geography scale where they are likely to be answered successfully by students. The descriptions used on these item maps focus on the geography skills or knowledge needed to answer the question. The data presented in both chapters 4 and 6 are based on the set of results that did not include accommodated special-needs students.

This report also contains appendices that support or augment the results presented. Appendix A contains an overview of the NAEP geography framework and specifications, information on the national sample, 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 contains a list of the NAEP geography committee members.

# 2

## Average Scale Score and Achievement-Level Results for the Nation

### Overview

This chapter presents the NAEP 2001 geography assessment results for the nation at grades 4, 8, and 12. Student performance is described by average scale scores on the NAEP geography composite scale, which ranges from 0 to 500, and in terms of percentages of students who attained each of the three geography achievement levels: *Basic*,

*Proficient*, and *Advanced*. Results of the NAEP 2001 geography assessment are compared with results from the NAEP geography assessment given in 1994. This comparison is possible because the assessments share a common set of geography exercises based on the current geography framework and because the populations of students were sampled and assessed using comparable procedures. The results for this chapter are based on testing conditions comparable to those offered in 1994 when accommodations for special-needs students were not offered. Special-needs students who could participate without accommodations were included. A second set of results were obtained in 2001 that includes the

performance of students who required and were provided accommodations. Results for the 2001 assessment that include special-needs students tested with accommodations are presented in chapter 5.

### Chapter Focus

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

### Chapter Contents

Overview

Average Scale Score Results

Scale Scores by Percentile

Achievement-Level Results

## Average Scale Score Results

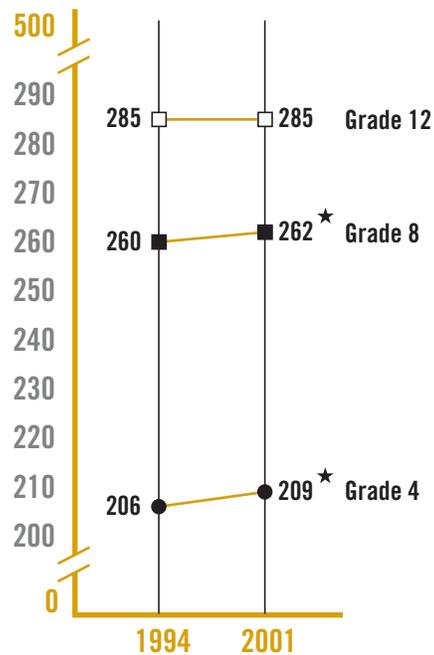
The results of the 2001 geography assessment show higher average scores than the results in 1994 at grades 4 and 8, and no statistically significant change at grade 12.

As seen in figure 2.1, the average score of fourth-graders rose from 206 to 209, and the average score of eighth-graders rose from 260 to 262.

Figure 2.1

Average geography scale scores, grades 4, 8, and 12: 1994 and 2001

National Scale Score Results



★ Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## Scale Scores by Percentile

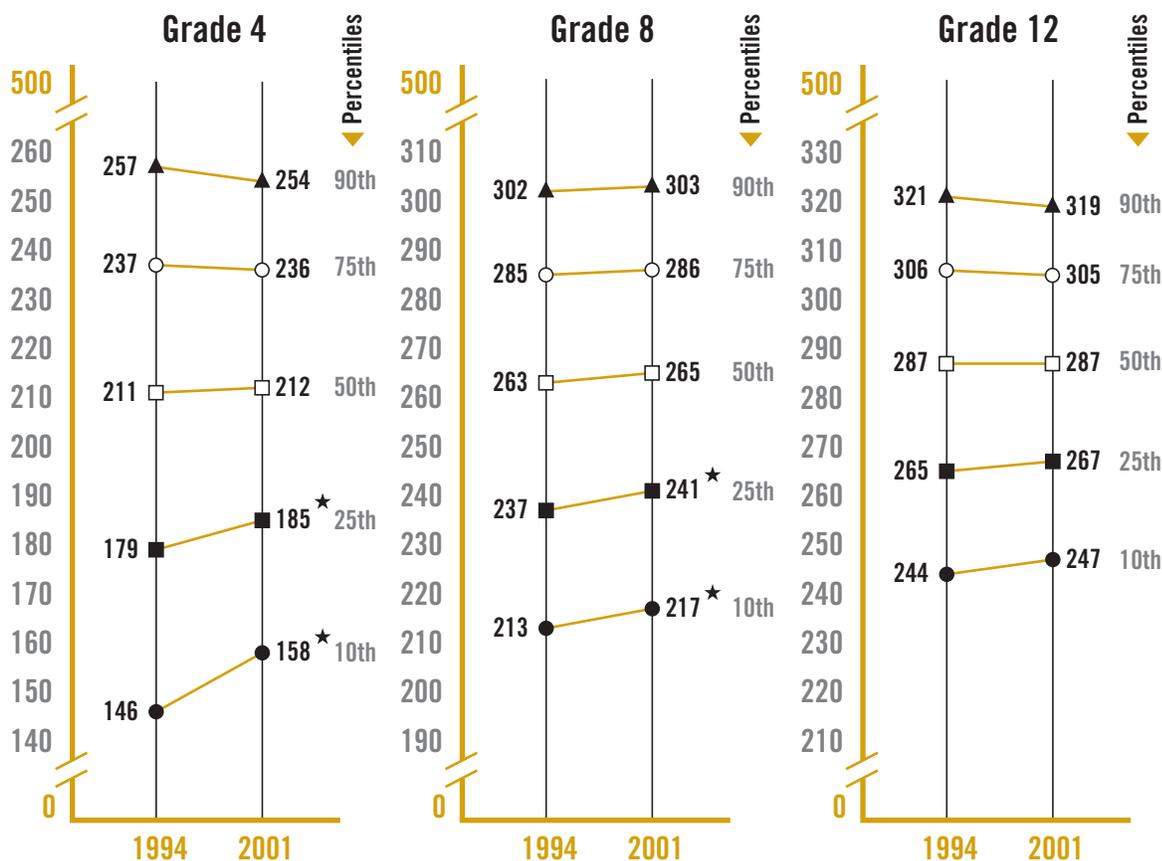
An examination of percentile scores provides additional information about student performance across the score distribution. The percentile indicates the percentage of students whose scores fell below a particular point on the NAEP geography scale. The advantage of viewing percentile scores is that they show how students with lower

or higher ability performed compared to the national average. In addition, the percentile data show whether trends in the national average scores are reflected in scores at other levels of the performance distribution. Figure 2.2 shows the geography scale scores for grades 4, 8, and 12 at the 10th, 25th, 50th, 75th, and 90th percentiles for the 1994 and 2001 assessments.

Figure 2.2

Geography scale score percentiles, grades 4, 8, and 12: 1994 and 2001

National Performance Distribution



★ Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

At grades 4 and 8, scores at the two lowest percentiles (10th and 25th) were higher in 2001 than in 1994, suggesting that much of the improvement seen at grades 4 and 8 was concentrated among the lower-performing students. Other apparent changes at these two grades were not statistically significant. At grade 12, consistent with national average score results, none of the apparent differences in percentile scores was statistically significant.

### **Achievement-Level Results**

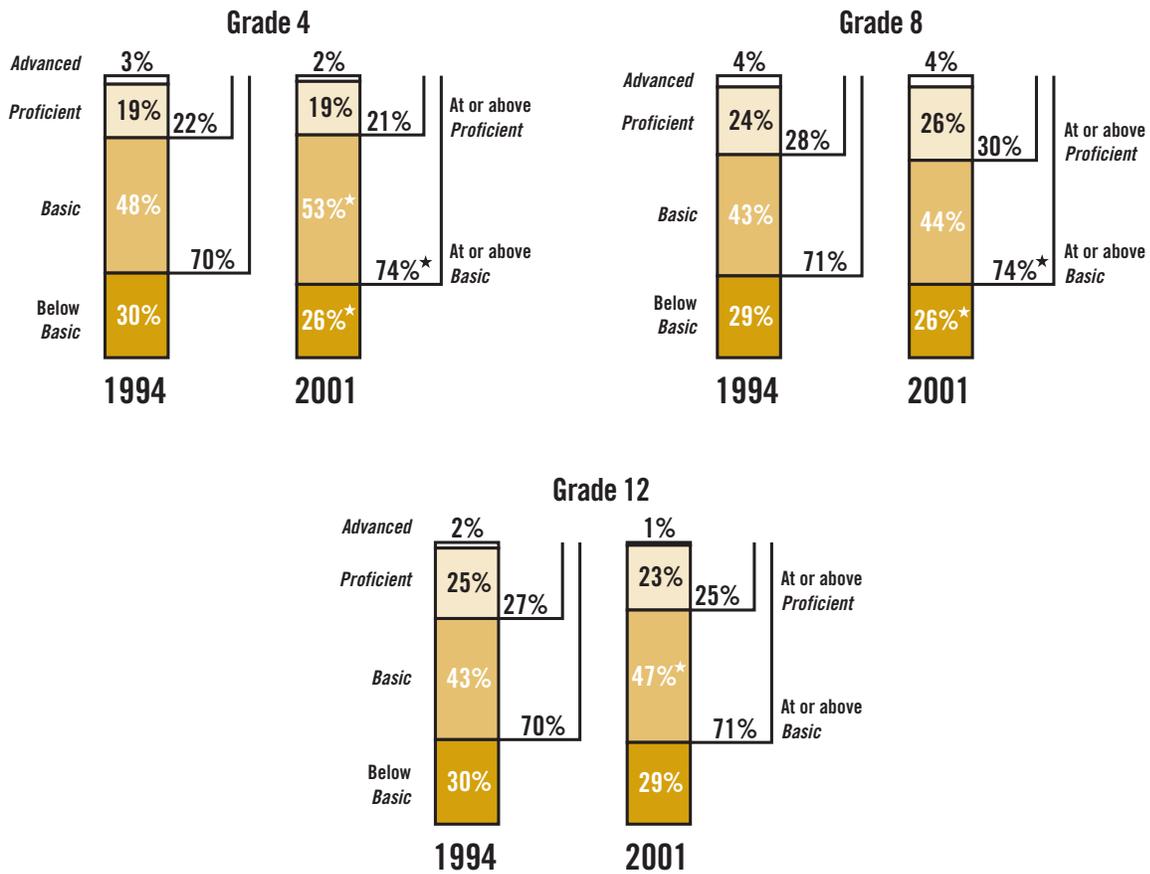
The results of student performance are not only reported using scores on the NAEP geography scale, but also using geography achievement levels. The achievement levels are performance standards adopted by the National Assessment Governing Board (NAGB), based on the collective judgments of experts about what students should be expected to know and be able to do. Viewing student 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. A discus-

sion of the trial status of achievement levels is in chapter 1.

Figure 2.3 presents achievement-level results for grades 4, 8, and 12. The results are shown in two ways: 1) the percentage of students within each achievement-level interval, and 2) the percentage of students at or above the *Basic* level and at or above the *Proficient* level. The text that follows discusses significant differences at or above *Basic* and *Proficient*, which are marked with \* in the figures. Differences within achievement levels are not discussed although they are shown in the figures. In reading figure 2.3, it is necessary to keep in mind that the percentages at or above specific achievement levels are cumulative. 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.

**Figure 2.3**  
National Achievement-  
Level Results

Percentage of students within and at or above geography achievement levels, grades 4, 8, and 12: 1994 and 2001



★ Significantly different from 1994.

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

The NAGB has identified the *Proficient* achievement level as the minimum level at which all students should perform. In 2001, 21 percent of fourth-graders, 30 percent of eighth-graders, and 25 percent of twelfth-graders were at or above the *Proficient* level. Across years, the improvement in performance seen in the fourth- and eighth-grade average scale scores is reflected in

achievement-level performance. Both grades show an increase from 1994 to 2001 in the percentage of students at or above *Basic* and a decrease in the percentage of students below *Basic*. As in 1994, only a small percentage of students at any grade reached the *Advanced* level in 2001: 2 percent at fourth grade, 4 percent at eighth grade, and 1 percent at twelfth grade.

# 3

## Average Scale Scores and Achievement-Level Results for Selected Subgroups

In addition to reporting on the performance of all students, NAEP also provides results for various subgroups of students at each grade. Examining subgroup results provides insight, not only into how these groups of students performed in comparison to one another, but also into how each group has progressed over time. In light of recent educational reform efforts that focus on improving the achievement of all students, the information presented in this chapter serves as a valuable indicator on the nation's progress in meeting its educational goals.

Results for the NAEP 2001 geography assessment are presented by gender, race/ethnicity, region of the country, parents' highest level of education, type of school, type of location, students' eligibility for the Free/Reduced-Price School Lunch program. For all subgroups except type of location and free/reduced-price school lunch eligibility, results of the 2001 assessment are compared with those of the 1994 assessment.

Differences reported in this chapter between demographic subgroups for the 2001 assessment and between the 2001 and 1994 assessments 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. Differences

### Chapter Focus

Are selected subgroups of students making progress in geography?

### Chapter Contents

Gender

Race/Ethnicity

Region of the Country

Parents' Education

Type of School

Type of Location

Eligibility for Free/Reduced-Price School Lunch Program

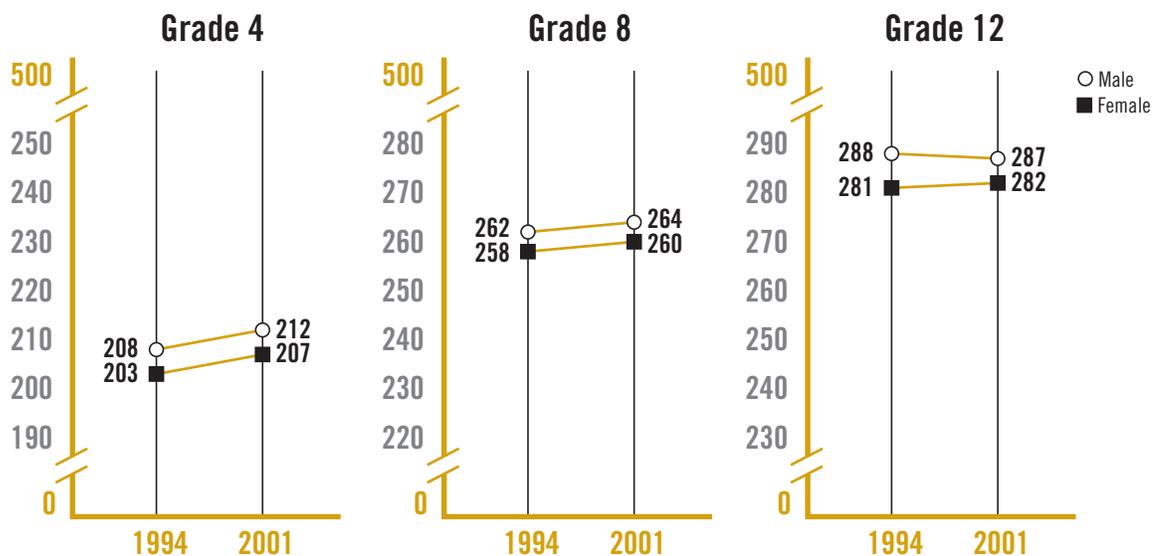
between groups and between assessment years are discussed only if they have been determined to be statistically significant. Throughout this chapter, differences between 1994 and 2001 are marked in the figures. Differences within 2001 are not marked, but where such differences are discussed in the text, they are statistically significant. Furthermore, the reader should bear in mind that differences in performance among subgroups of students may reflect a range of socioeconomic and educational factors not addressed in this report or by NAEP.

## Gender

Figure 3.1 presents average geography scores for male and female students across assessment years. There was no statistically significant change from 1994 to 2001 in the average scores of either male or female students at any of the three grades. Although the scale score differences across years by gender were similar to the change across years for the population as a whole, the smaller sample sizes and the generally larger standard errors in the two subgroups prevented the results of the statistical tests from reaching the “significant” level in

**Figure 3.1** Average geography scale scores by gender, grades 4, 8, and 12: 1994 and 2001

National Scale Score  
Results by Gender



SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

these comparisons. In 2001, male students at all three grades had higher average scores than female students, just as they had in 1994.

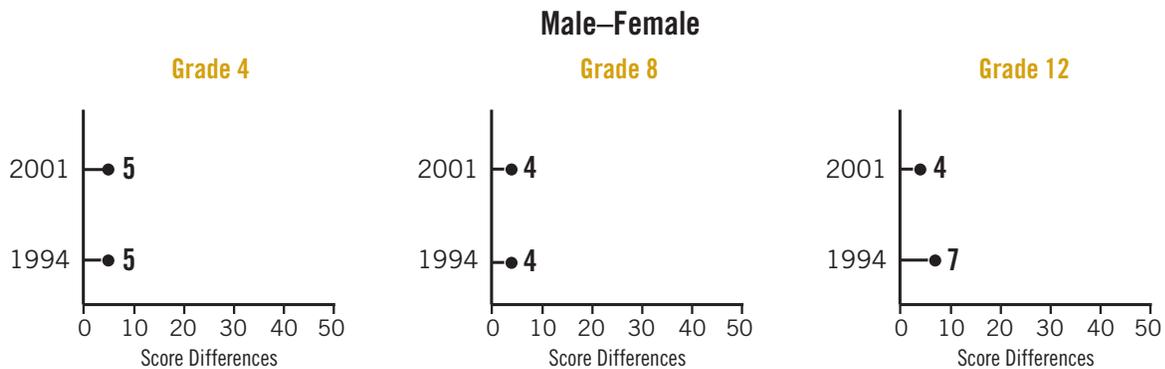
The performance of subgroups on the geography assessment can also be compared by determining if a difference or “gap” exists between subgroups’ average scores

and, if it does, whether that gap increases or decreases between assessment years. Figure 3.2 shows that there was no statistically significant change since 1994 in the differences between the average scores of male and female students at any of the three grades.

**Figure 3.2**

**National Scale Score Differences by Gender**

**Differences in average geography scale scores by gender, grades 4, 8, and 12: 1994 and 2001**



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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

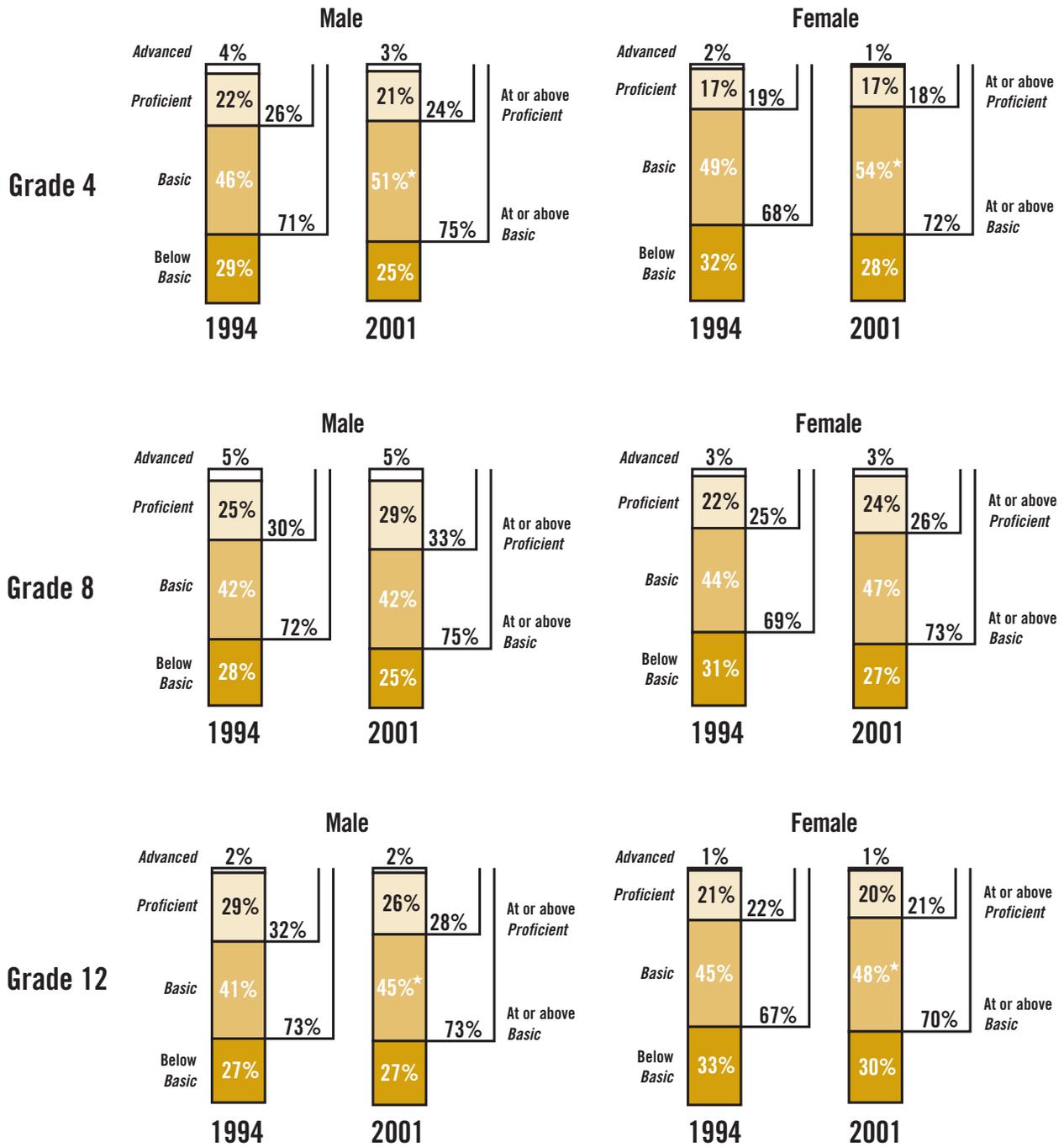
The percentages of male and female students at or above the geography achievement levels and within each achievement-level range are presented in figure 3.3. None of the apparent changes across years in the percentages of male and female students at or above *Basic* and at or above *Proficient* were statistically significant.

Looking at the differences in performance of male and female students in 2001 shows higher percentages of fourth- and eighth-grade male students at or above *Proficient* and at *Advanced* than their female counterparts. Among twelfth-graders, a higher percentage of male students than female students were at or above the *Basic* and *Proficient* levels.

**Figure 3.3**

**National Achievement-Level Results by Gender**

**Percentage of students within and at or above geography achievement levels by gender, grades 4, 8, and 12: 1994 and 2001**



★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding. SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## Race/Ethnicity

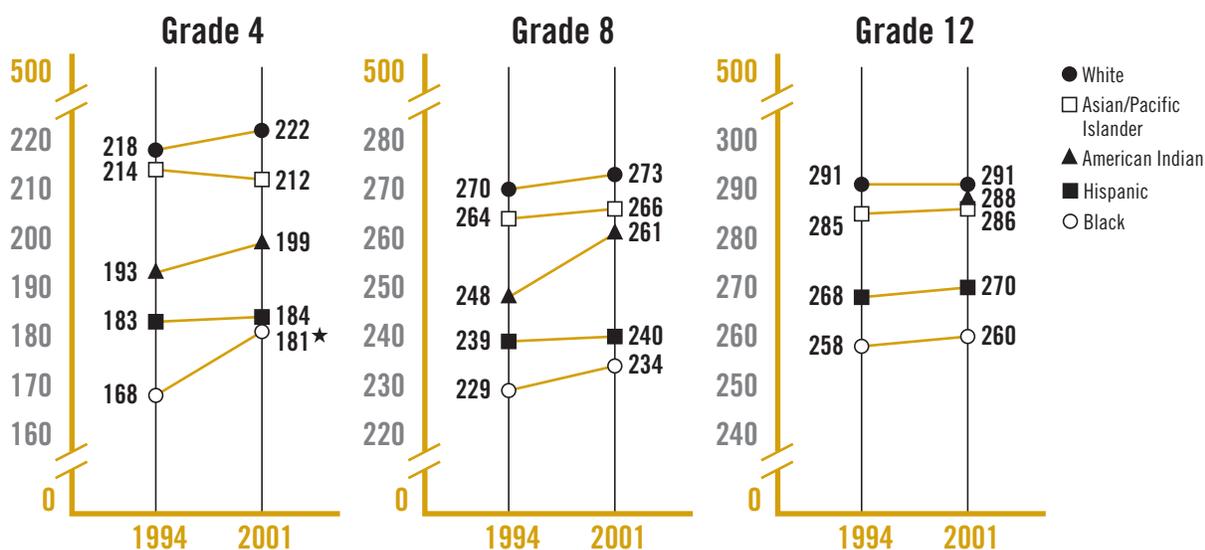
The background questionnaire administered with the NAEP geography assessment asked students to indicate the racial/ethnic subgroup that best described them. The mutually exclusive subgroup categories were White, Black, Hispanic, Asian/Pacific Islander, and American Indian (including Alaska Native). Figure 3.4 shows the average scores for the five subgroups at grades 4, 8, and 12. Only the results from the 2001 assessment are reported for

twelfth-grade American Indian students because the sample size in 1994 was insufficient to permit a reliable estimate. At grade 4, the average score of Black students increased from 168 in 1994 to 181 in 2001. There were no other statistically significant changes in average scores among the five racial/ethnic groups. The significance of the apparent gains for American Indian students at grades 4 and 8 could not be determined because of insufficient sample sizes.

**Figure 3.4**

**National Scale Score  
Results by Race/Ethnicity**

**Average geography scale scores by race/ethnicity, grades 4, 8, and 12:  
1994 and 2001**



★ Significantly different from 1994.

NOTE: Sample size was insufficient to permit a reliable estimate for American Indian students at grade 12 in 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Scale score differences among subgroups were evident at all three grades in 2001. At fourth grade, White students had higher scores, on average, than students from the other four racial/ethnic groups. Asian/Pacific Islander students outperformed Black, Hispanic, and American Indian

students, and American Indian students performed better than Black and Hispanic students.

At grade 8, White students had higher average scores than Black, Hispanic, and Asian/Pacific Islander students. Asian/Pacific Islander and American Indian

students outperformed Black and Hispanic students. Hispanic students had higher average scores than Black students.

Among twelfth-graders, White students, Asian/Pacific Islander students, and American Indian students had higher average scores than Black students and Hispanic students, and Hispanic students outperformed Black students. These differences should, however, 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

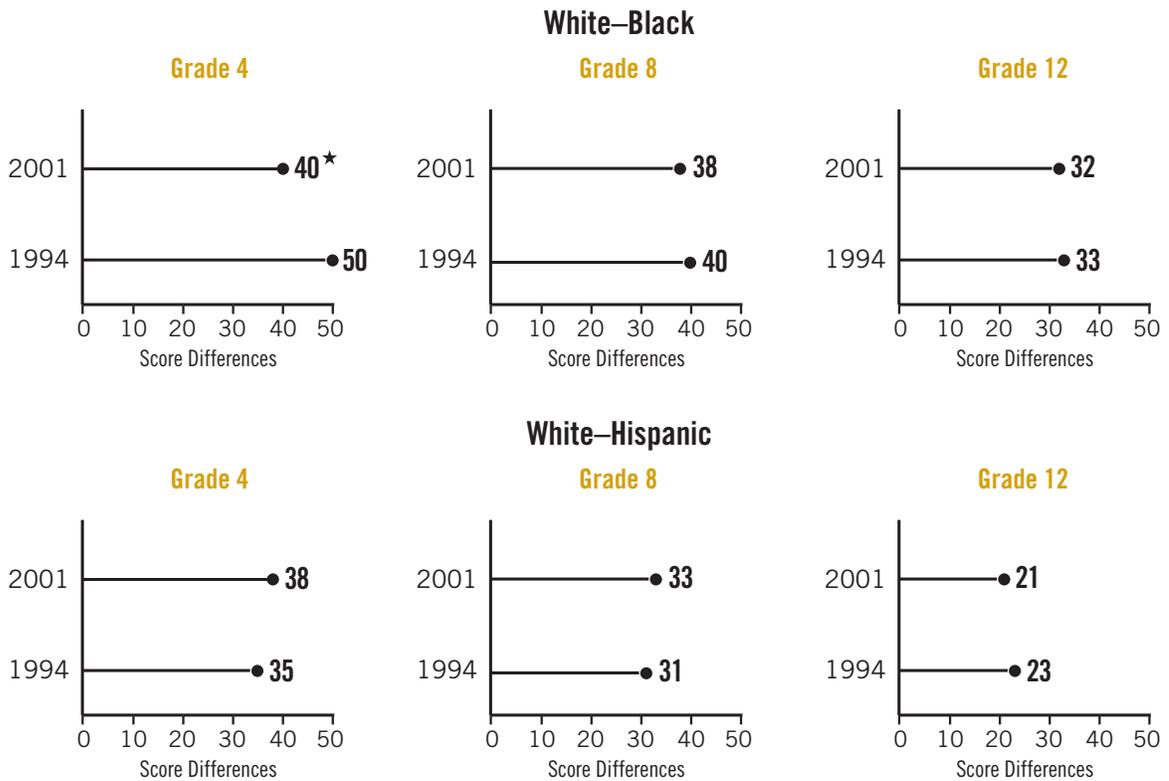
groups of students cannot be attributed solely to group identification. A complex array of educational and social factors interacts to affect average student performance.

Score differences between White students and Black students and between White students and Hispanic students are presented in figure 3.5. Results from the 2001 geography assessment show a narrowing of the score difference between White students and Black students at grade 4. Other apparent changes were not statistically significant.

**Figure 3.5**

**National Scale Score Differences by Race/Ethnicity**

**Differences in average geography scale scores by race/ethnicity, grades 4, 8, and 12: 1994 and 2001**



\* Significantly different from 1994.

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Achievement-level results for the racial/ethnic subgroups are presented in figures 3.6a, b, and c. At grade 4, the percentages of Black students and White students performing at or above the *Basic* level were higher in 2001 than in 1994. At grade 8, the percentage of White students at or above *Basic* was higher in 2001. There was no statistically significant change in the

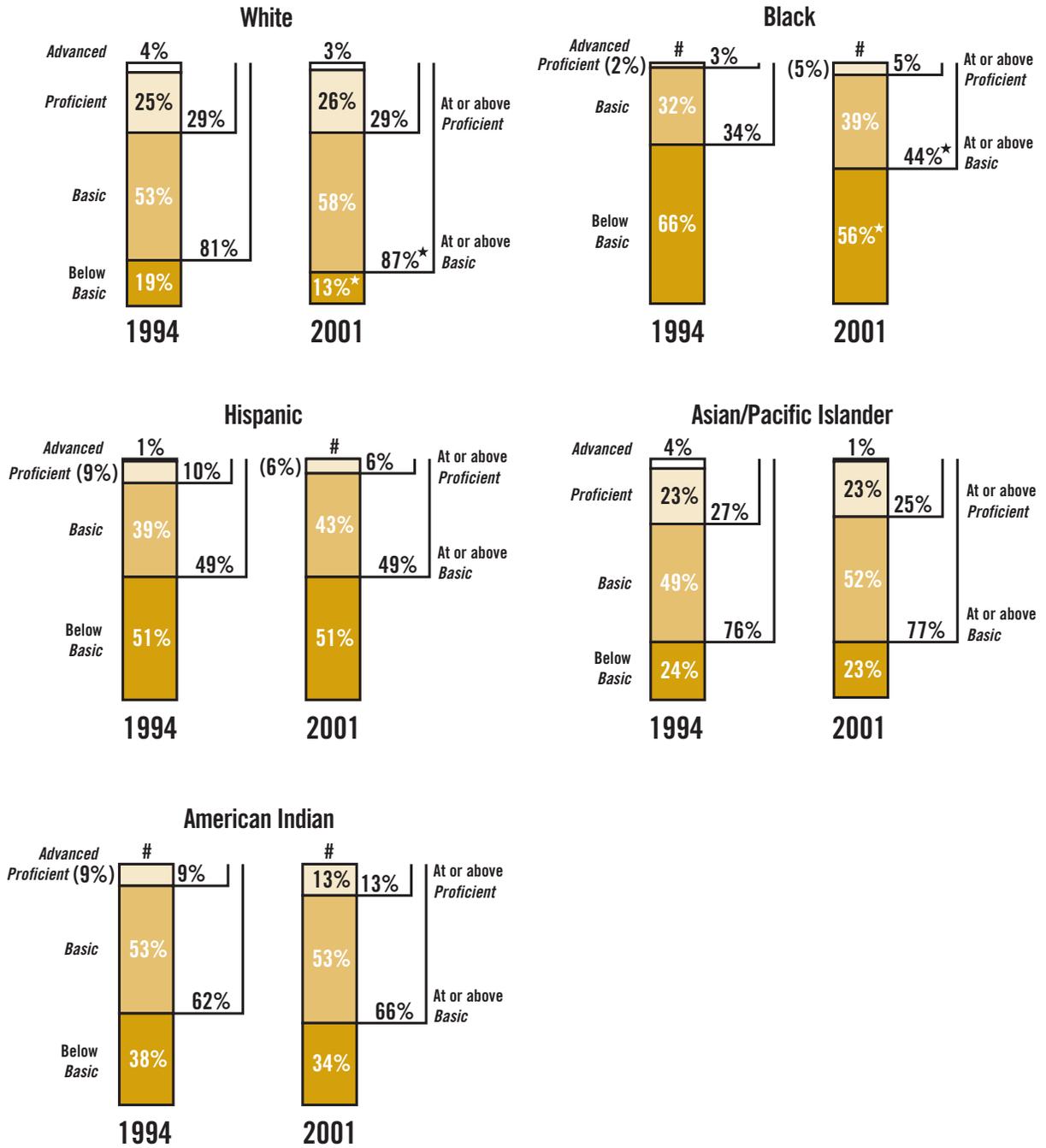
percentage of twelfth-grade students at or above the *Basic* and *Proficient* levels among any of the racial/ethnic groups.

Comparing the performance of subgroups in 2001 shows higher percentages of White and Asian/Pacific Islander students at or above the *Basic* and *Proficient* levels than Black and Hispanic students at all three grades.

**Figure 3.6a**

**National Achievement-Level Results by Race/Ethnicity**

**Percentage of students within and at or above geography achievement levels by race/ethnicity, grade 4: 1994 and 2001**



★ Significantly different from 1994.

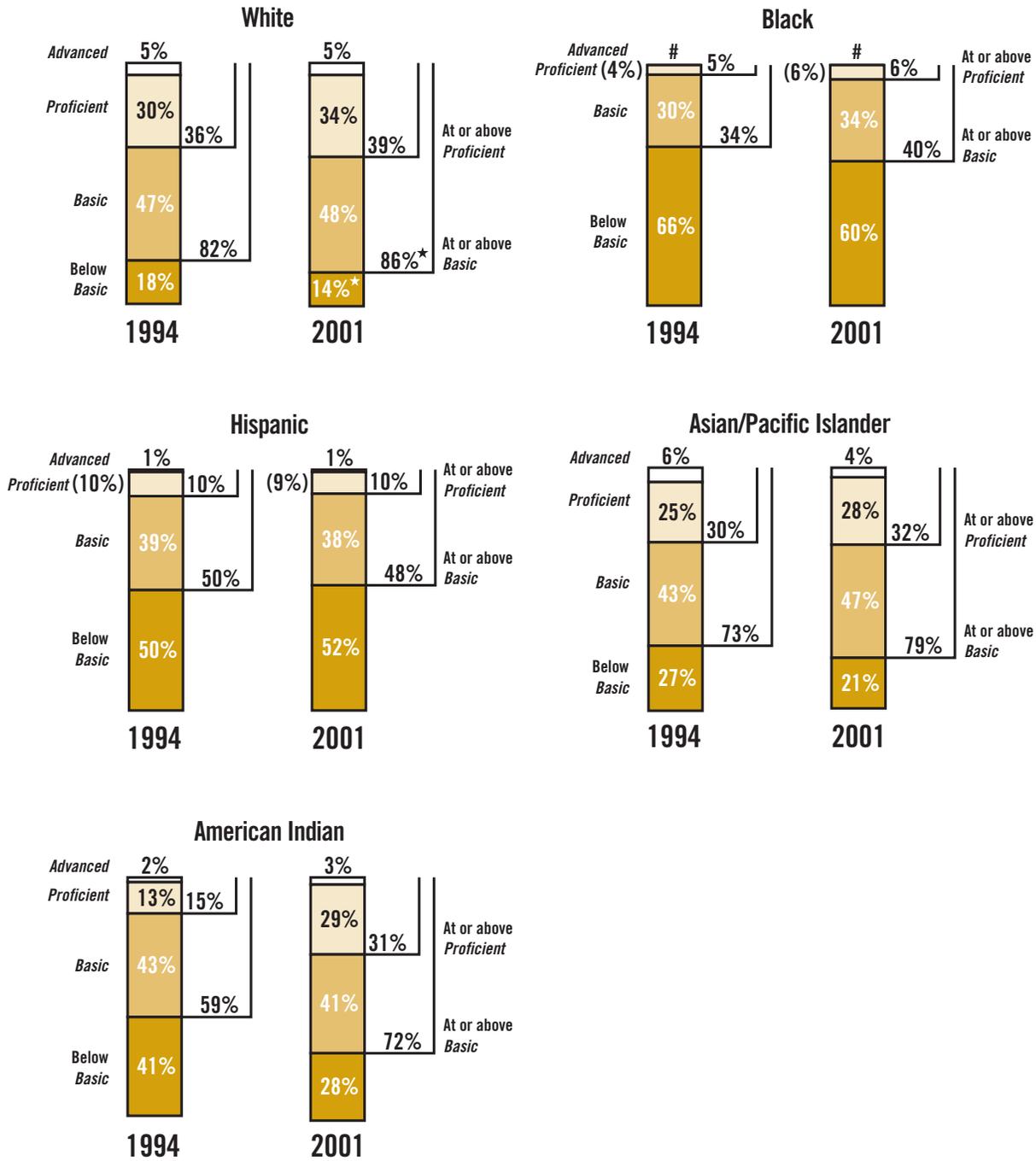
# Percentage is between 0.0 and 0.5.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

**Figure 3.6b**

**National Achievement-Level Results by Race/Ethnicity**

**Percentage of students within and at or above geography achievement levels by race/ethnicity, grade 8: 1994 and 2001**



★ Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

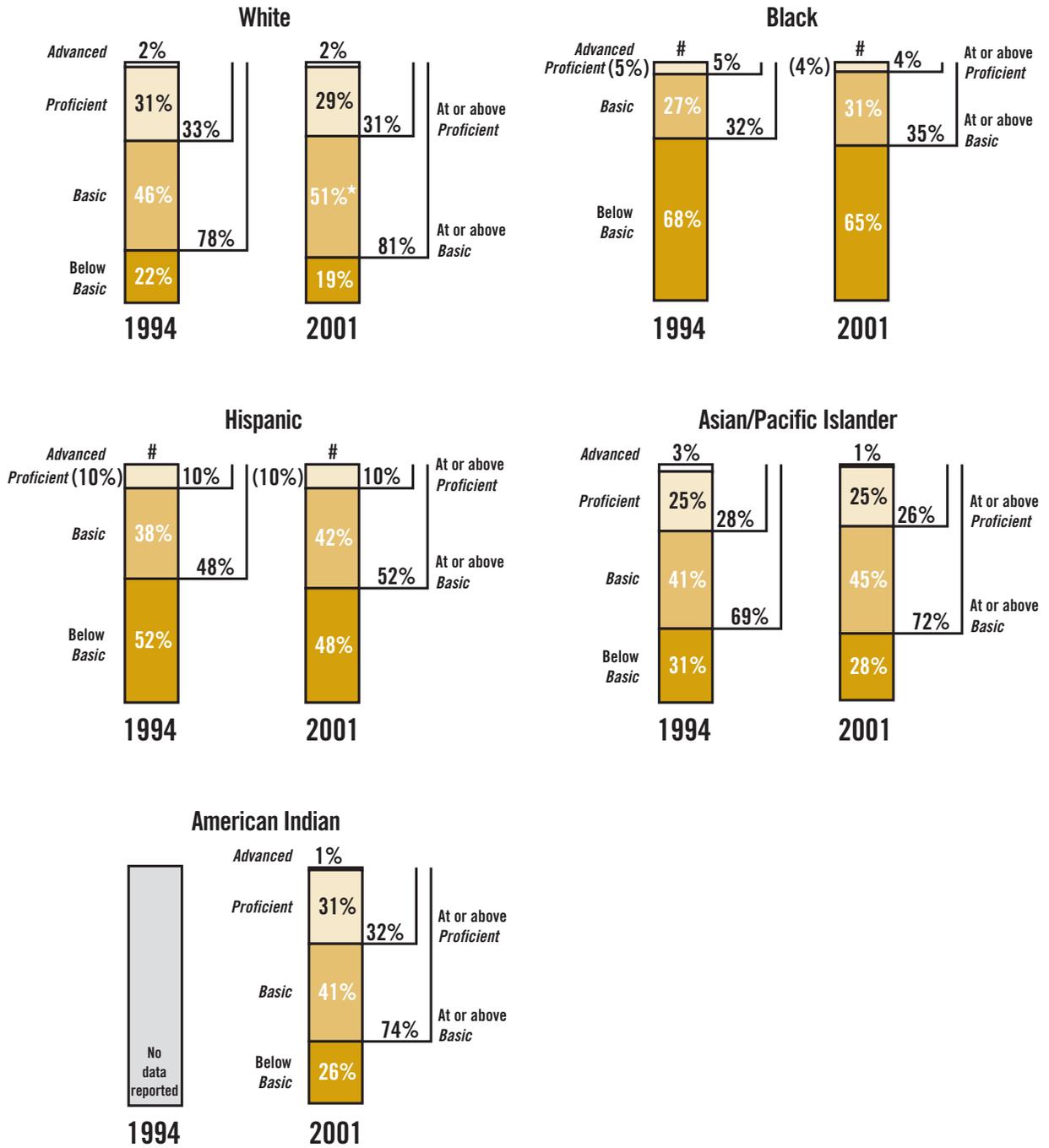
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

**Figure 3.6c**

**National Achievement-Level Results by Race/Ethnicity**

**Percentage of students within and at or above geography achievement levels by race/ethnicity, grade 12: 1994 and 2001**



★ Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

Sample size was insufficient to permit a reliable estimate for American Indian students at grade 12 in 1994.

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## Region of the Country

NAEP assessments traditionally provide results for four regions of the country: Northeast, Southeast, Central, and West. Appendix A (see page 137) contains a description of the states and other jurisdictions that make up each region.

Figure 3.7 shows scale score results by region of the country. Overall increases in average scores at grades 4 and 8 were not spread evenly across the four regions of the country. At grade 4, students in the Northeast region showed a gain in the average score between 1994 and 2001. At grade 8, students in the Southeast region showed a

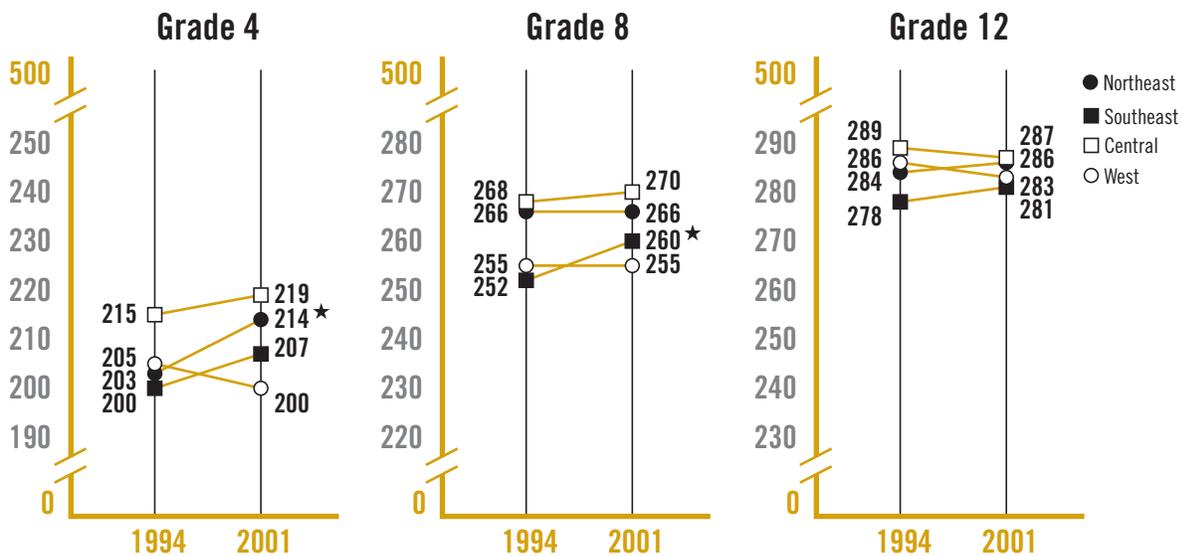
statistically significant increase. None of the other apparent changes between 1994 and 2001 in regional average scores were statistically significant.

In 2001, some differences in performance among regions are evident at all three grades. At grades 4 and 8, students in the Northeast and Central regions had higher average scores than their counterparts in the West. Students in the Central region outperformed students in the Southeast. Twelfth-graders in the Central region had higher average scores than twelfth-graders in the Southeast region.

**Figure 3.7**

**National Scale Score Results by Region of the Country**

**Average geography scale scores by region of the country, grades 4, 8, and 12: 1994 and 2001**



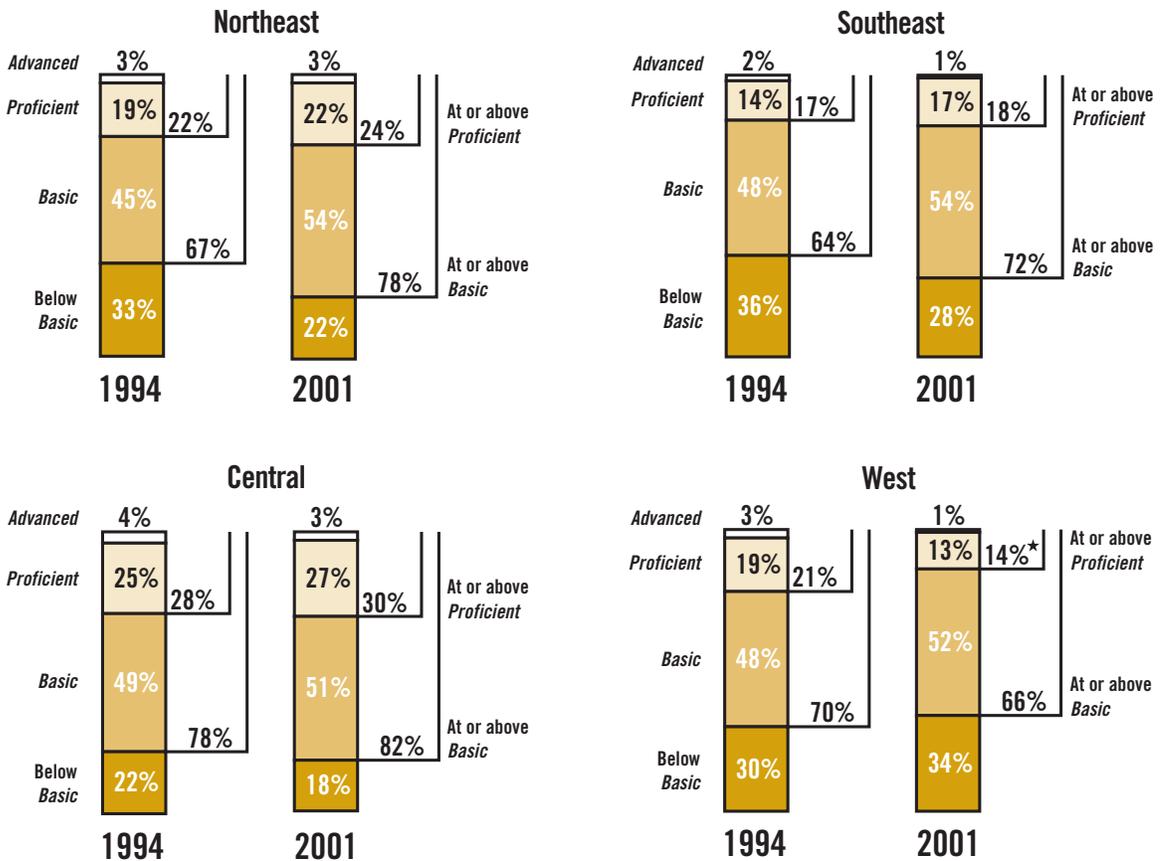
★ Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Achievement-level results for the four regions appear in figures 3.8a, b, and c. The percentage of fourth-grade students from the West performing at or above the *Proficient* level decreased between 1994 and 2001. Over the same period, the percentage of both eighth- and twelfth-graders in the Southeast performing at or above the *Basic* level increased.

Figures 3.8a, b, and c also show a number of differences in achievement-level performance among the four regions for the year 2001. At grades 4 and 8, there were higher percentages of students in the Northeast region and the Central region at or above *Basic* and at or above *Proficient* than in the West. At all three grades, the percentage of students at or above *Basic* and at or above *Proficient* was higher in the Central region than in the Southeast.

**Figure 3.8a**  
National Achievement-Level Results by Region of the Country  
Percentage of students within and at or above geography achievement levels by region of the country, grade 4: 1994 and 2001



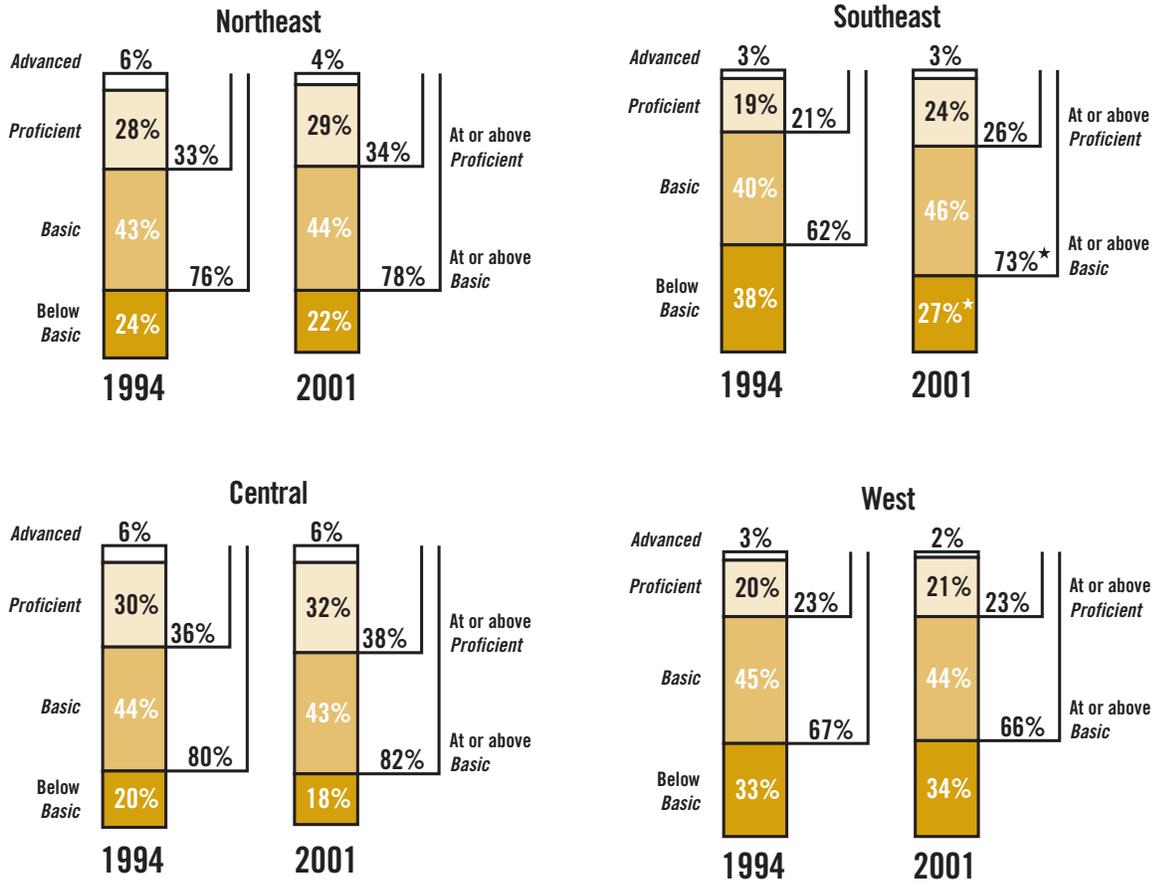
★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

**Figure 3.8b**

**National Achievement-Level Results by Region of the Country**

**Percentage of students within and at or above geography achievement levels by region of the country, grade 8: 1994 and 2001**



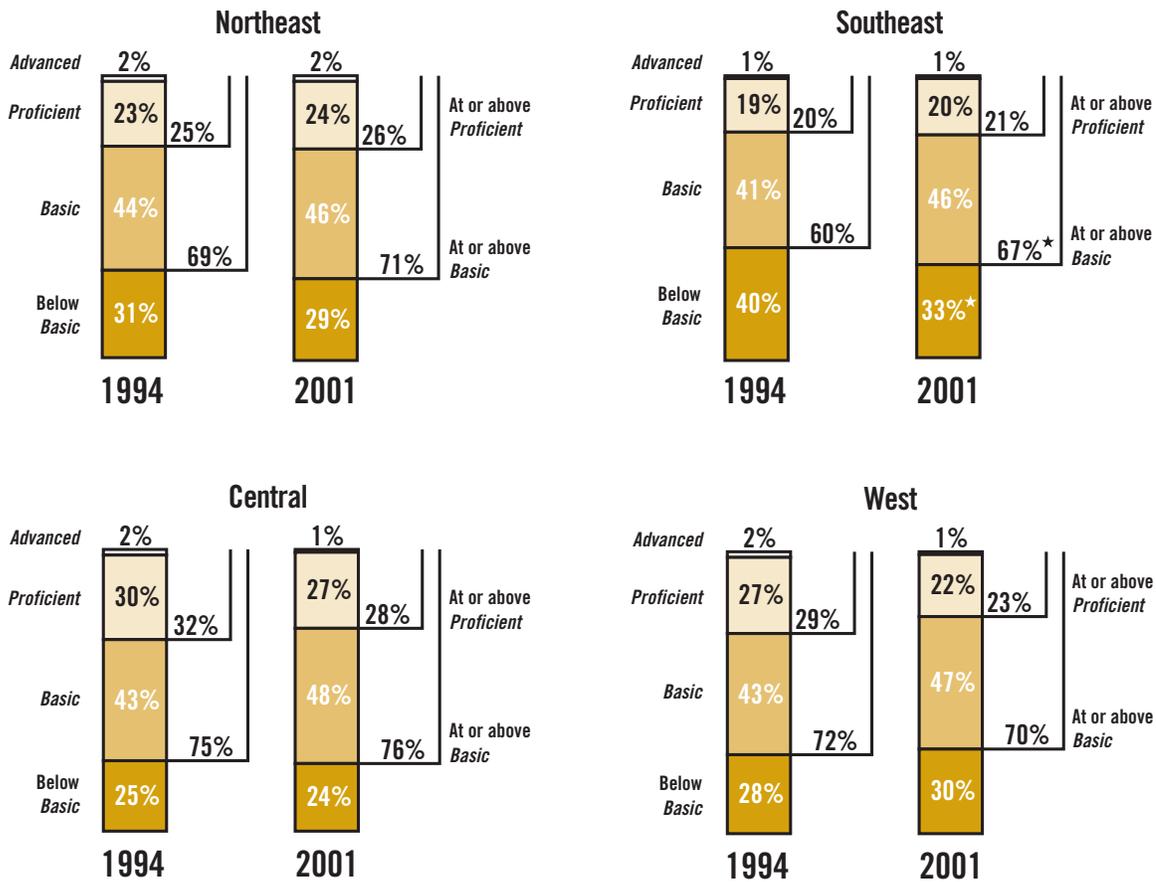
★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

**Figure 3.8c**

**National Achievement-Level Results by Region of the Country**

**Percentage of students within and at or above geography achievement levels by region of the country, grade 12: 1994 and 2001**



★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding. SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

### Parents' Highest Level of Education

Eighth- and twelfth-grade students who participated in the NAEP geography assessment were asked to indicate the highest level of education completed by each parent. Students chose from among four options: 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.” The analysis here uses the highest education level reported for either parent. Data were not collected at grade 4 because in previous NAEP assessments fourth-graders’ responses about their parents’ education were unreliable and contained a large percentage of “I don’t know” responses.

The scale score results for student-reported parent education level appear in figure 3.9. In 2001, nearly one-half of all students at both grades reported that at least one of their parents graduated from college (48 percent at grade 8 and 46 percent at grade 12). In the case of grade 8, that percentage is a statistically significant increase over 1994. Only a small percentage of students at either grade reported that their parents had not graduated from high school (6 percent at grade 8 and 7 percent at grade 12). Additional information on the percentage of students reporting

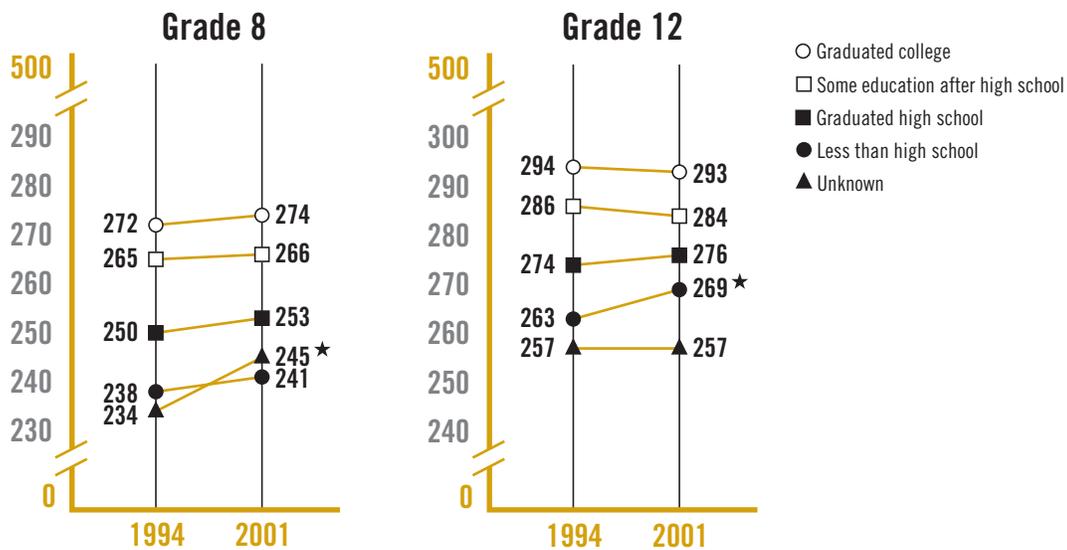
parents' highest level of education is available in appendix B.

Twelfth-graders who reported that their parents had not graduated from high school had higher average scores in 2001 than in 1994. The results for both grades in 2001 reveal a pattern similar to that from the 1994 geography assessment and from other NAEP assessments. Overall there is a positive relationship between student-reported parental education and student achievement: the higher the parental education level reported, the higher the average score.

**Figure 3.9**

**National Scale Score Results by Parents' Education**

**Average geography scale scores by parents' highest level of education, grades 8 and 12: 1994 and 2001**



\* Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

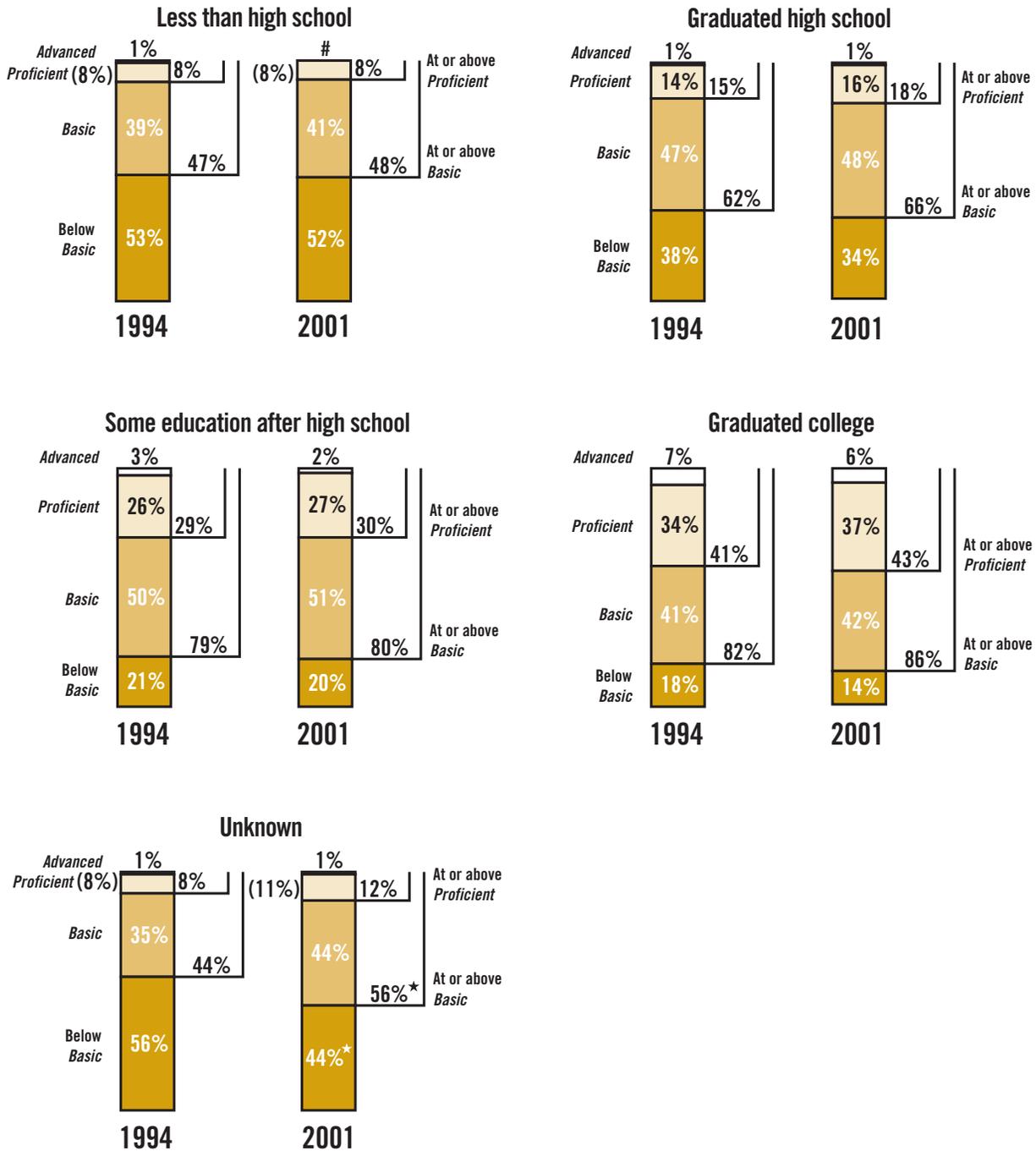
Achievement-level results by level of parental education are presented in figures 3.10a and b. As with the average scale score results, the 2001 achievement-level results show a general pattern of higher percentages of eighth- and twelfth-grade students at or above the *Basic* and *Proficient* levels as the reported level of parental

education level increased. The one exception to the pattern was at grade 12, where the percentage of students at or above *Proficient* did not differ significantly between those students who reported that their parents graduated high school and those who reported their parents did not.

**Figure 3.10a**

**National Achievement-Level Results by Parents' Education**

**Percentage of students within and at or above geography achievement levels by parents' highest level of education, grade 8: 1994 and 2001**



★ Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

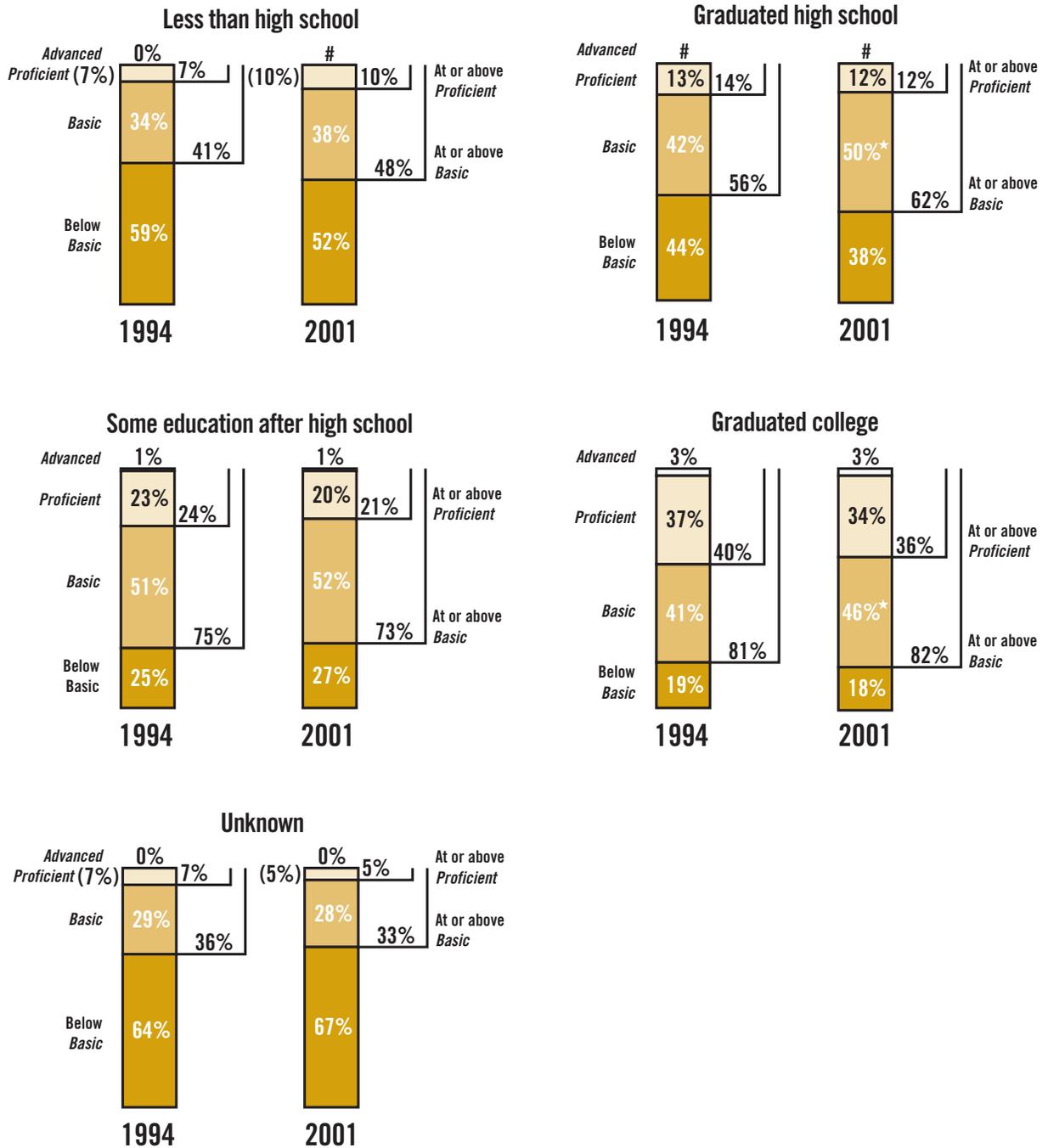
NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

**Figure 3.10b**

**National Achievement-Level Results by Parents' Education**

**Percentage of students within and at or above geography achievement levels by parents' highest level of education, grade 12: 1994 and 2001**



★ Significantly different from 1994.

# Percentage is between 0.0 and 0.5.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## Type of School

The schools that participate in the NAEP assessment are classified as either public or nonpublic. A further distinction is then made within the nonpublic classification between nonpublic Catholic schools and other nonpublic schools. In 2001, as in previous NAEP assessments, fourth-, eighth-, and twelfth-grade students attending nonpublic schools had higher average scores than did their public school peers. However, readers are cautioned against making assumptions about the relative quality of public- and nonpublic-school instruction based on these findings. Socio-

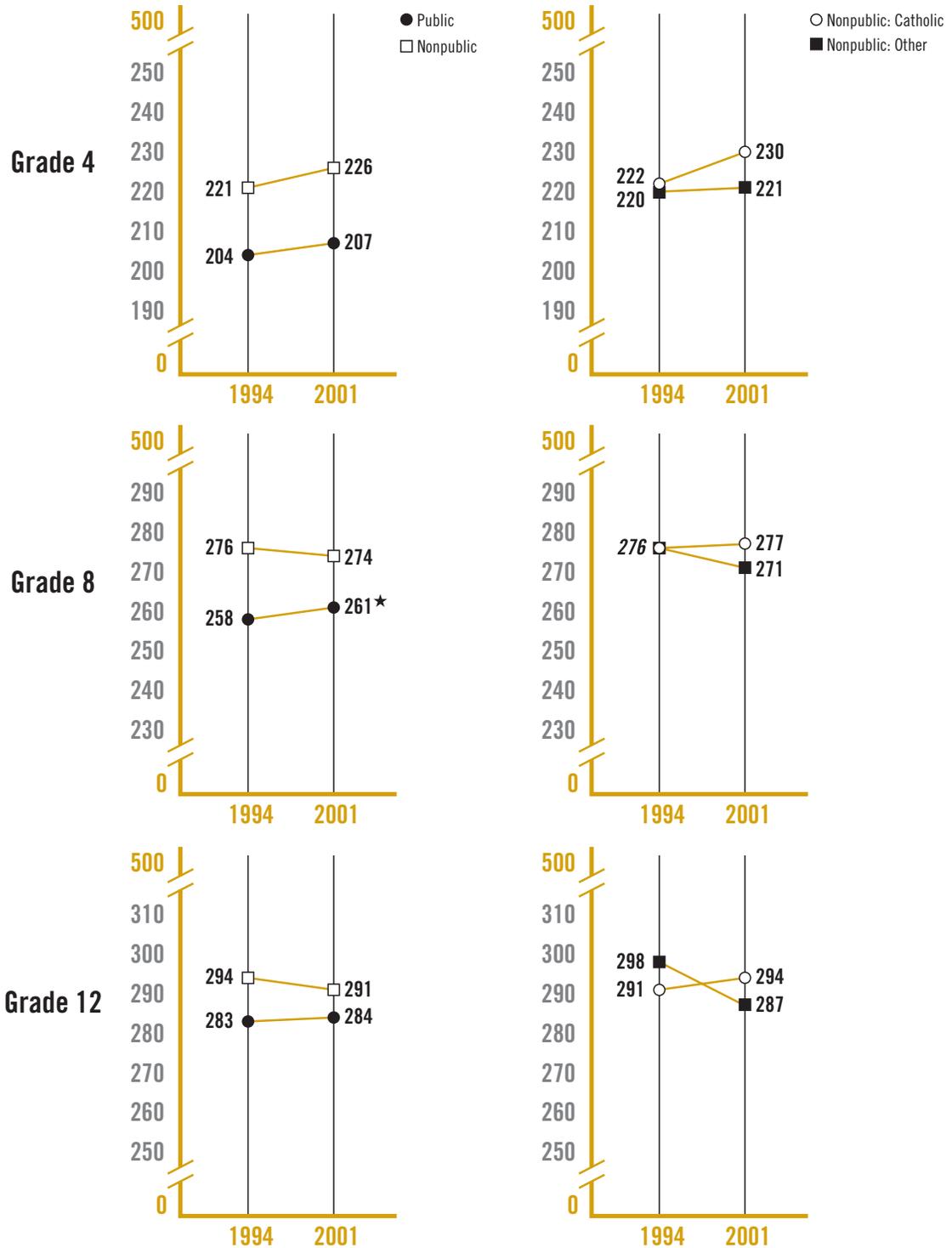
economic and sociological factors that may affect student performance should also be considered when interpreting the results.

Figure 3.11 shows average geography scores by type of school. At grade 8, public school students had higher average scores in 2001 than in 1994. All other apparent differences across years were not statistically significant. The data for performance in 2001 reveal that, at all three grades, students from Catholic schools had higher average scores than students from public schools. The apparent differences between students in public schools and other nonpublic schools were not statistically different.

Figure 3.11

National Scale Score  
Results by Type of  
School

Average geography scale scores by type of school, grades 4, 8, and 12:  
1994 and 2001



\* Significantly different from 1994.

NOTE: Italicized scale score values indicate that two or more groups had the same rounded average score. The average scores, when rounded, were the same for Nonpublic: Catholic and Nonpublic: Other at grade 8 in 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

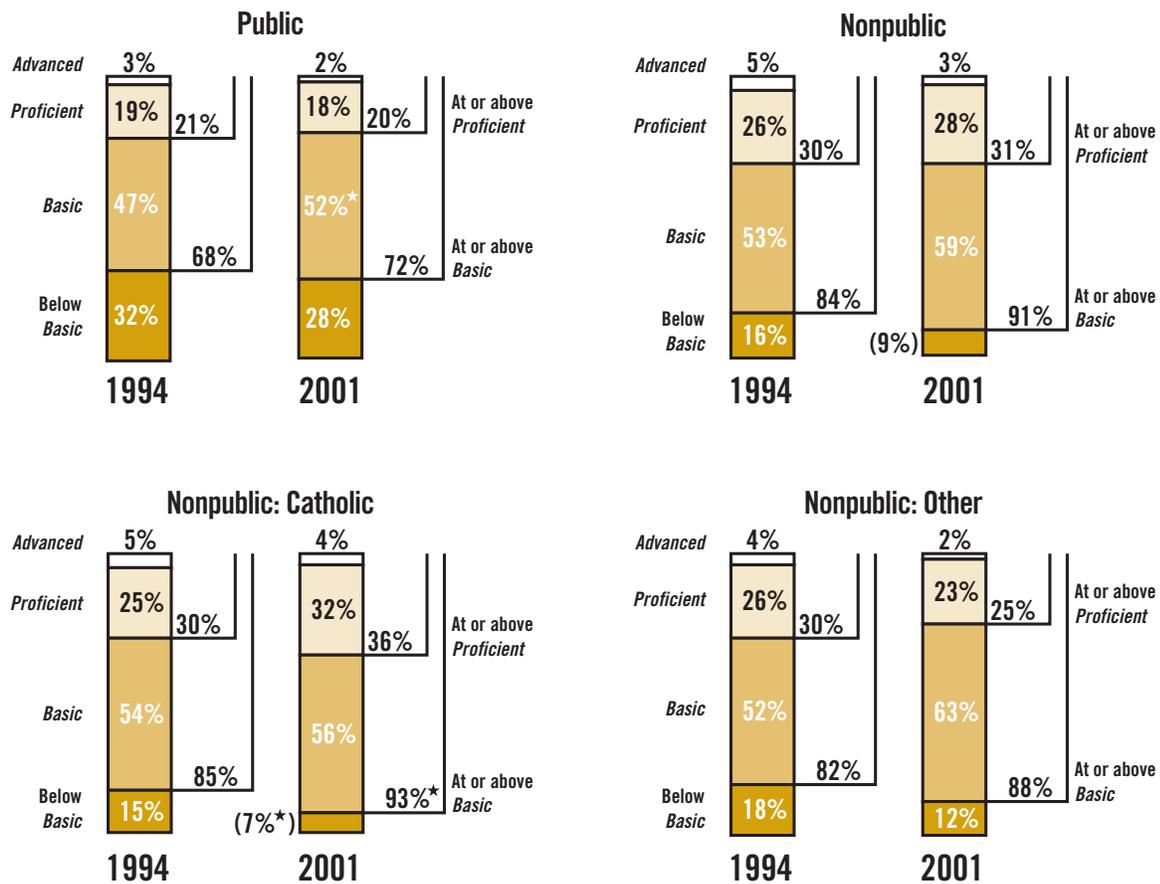
Achievement-level results by type of school are presented in figures 3.12a, b, and c. At grade 4, the percentage of Catholic school students performing at or above the *Basic* level increased between 1994 and 2001. At grade 8, the percentage of public school students at or above the *Basic* level increased across years.

In 2001 there were a number of differences in achievement-level performance between subgroups. At all three grades, there were higher percentages of nonpublic school students and, more specifically, Catholic school students at or above the *Basic* and *Proficient* levels than public school students.

**Figure 3.12a**

**National Achievement-Level Results by Type of School**

**Percentage of students within and at or above geography achievement levels by type of school, grade 4: 1994 and 2001**



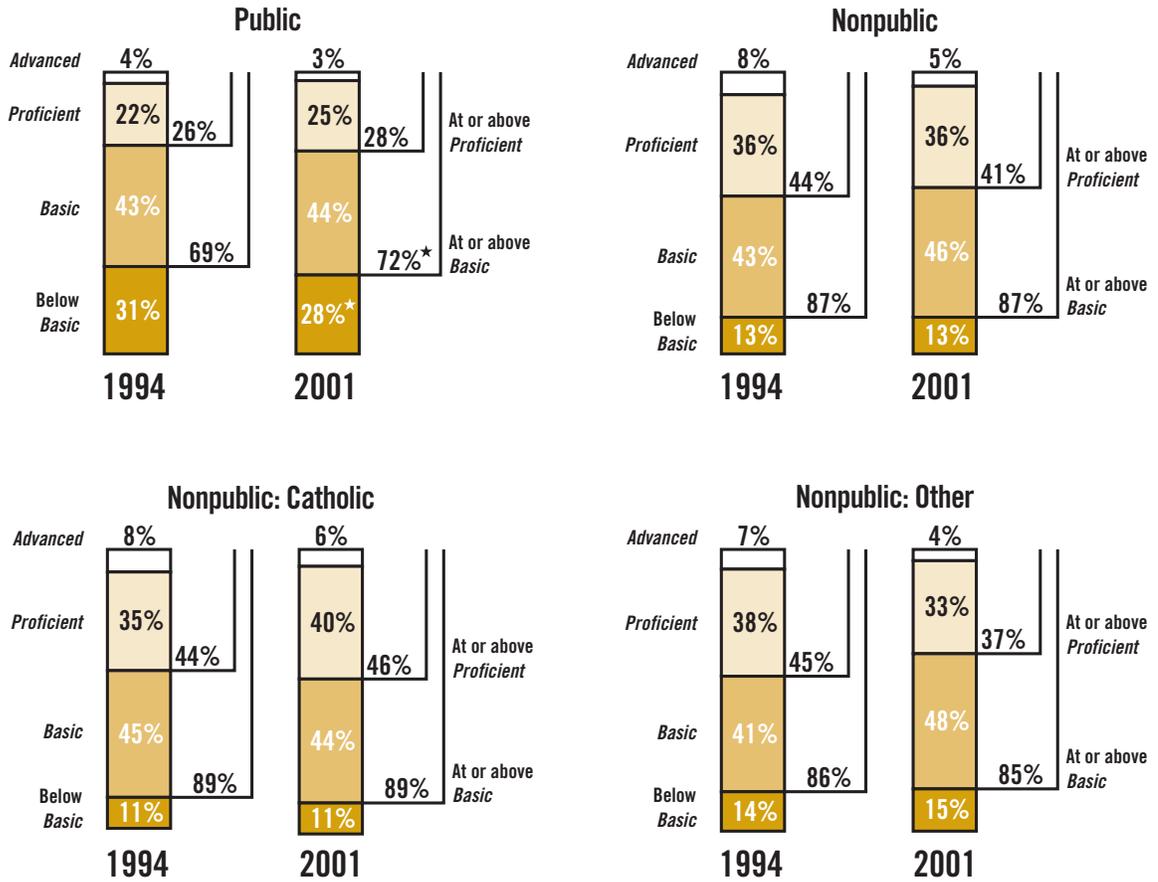
★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

**Figure 3.12b**

**National Achievement-Level Results by Type of School**

**Percentage of students within and at or above geography achievement levels by type of school, grade 8: 1994 and 2001**



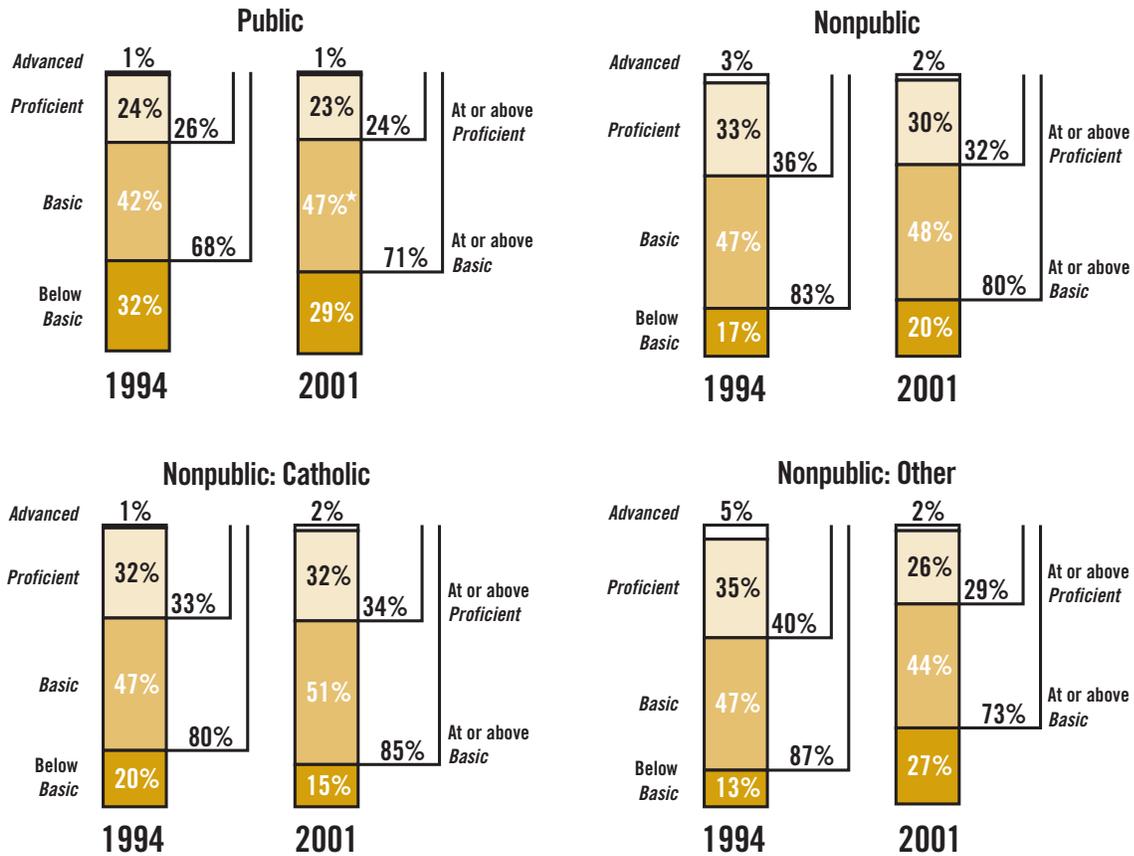
★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

**Figure 3.12c**

**National Achievement-Level Results by Type of School**

**Percentage of students within and at or above geography achievement levels by type of school, grade 12: 1994 and 2001**



★ Significantly different from 1994.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## 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 new methods used by NCES to identify the type of location assigned to each school in the Common Core of Data, schools were not classified in exactly the same way

in 2001 as in 1994. Therefore, comparisons between the two assessment years are not possible, and only the data from the 2001 assessment are reported. More information on the definitions of the 2001 assessment classifications for location type appears in appendix A.

The performance of students by type of school location is shown in table 3.1. At all three grades, students attending schools in rural and urban fringe locations had higher average scale scores than students in central city schools.

**Table 3.1 National Scale Score Results by Type of Location**

Average geography scale scores by type of school location, grades 4, 8, and 12: 2001

	Central city	Urban fringe/large town	Rural/small town
Grade 4	199	212	215
Grade 8	255	265	265
Grade 12	279	288	284

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

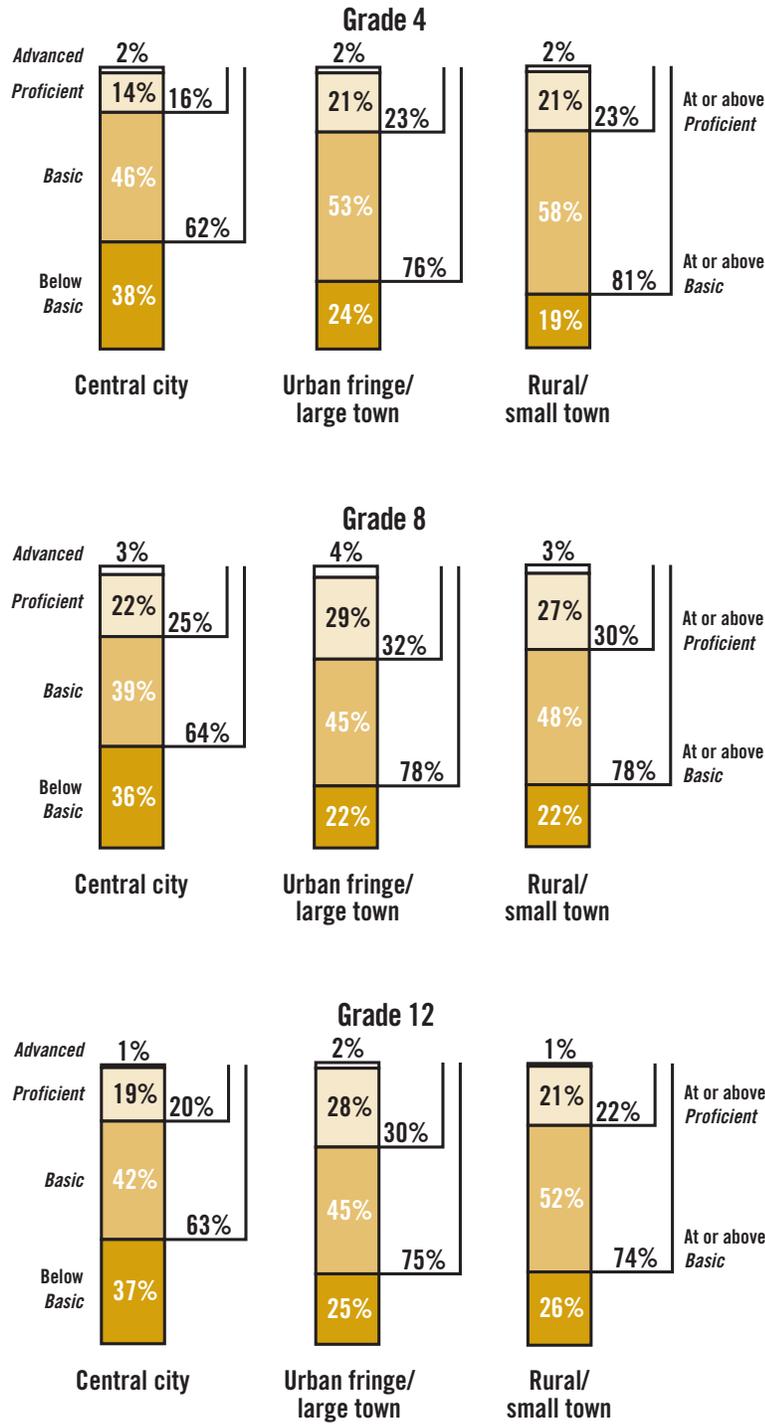
Achievement-level results by type of school location appear in figure 3.13. At grade 4, higher percentages of urban fringe and rural students performed at or above *Basic* and at or above *Proficient* than did their central city counterparts. There were higher percentages of eighth-graders from urban fringe and rural locations at or above *Basic* than those from central city locations. There were also higher percentages of

students at or above *Proficient* in urban fringe locations than central city locations. At grade 12, higher percentages of urban fringe and rural students than central city students performed at or above the *Basic* level, and there were higher percentages of students at or above *Proficient* in urban fringe locations than in central city or rural locations.

**Figure 3.13**

**National Achievement-Level Results by Type of Location**

**Percentage of students within and at or above geography achievement levels by type of school location, grades 4, 8, and 12: 2001**



NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

## Free/Reduced-Price School Lunch Program Eligibility

Funded by the U.S. Department of Agriculture (USDA) as part of the National School Lunch Program, the Free/Reduced-Price School 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.<sup>1</sup> NAEP first began collecting data on student eligibility for this program in 1996; therefore cross-year comparisons back to 1994 are not possible.

Table 3.2 presents the average scale score results for grades 4, 8, and 12. The scores for the substantial number of students for whom eligibility information is not available appear in the “Info not available” column (see the percentages for each category in the table B.18). Students whose schools do not participate in the Free/Reduced-Price School Lunch program are included in this category. At each grade, students eligible for the Free/Reduced-Price School Lunch program (i.e., those meeting the poverty guidelines) had lower average scores than did ineligible students and students for whom information was not available.

**Table 3.2 National Scale Score Results by Free/Reduced-Price School Lunch Eligibility**

Average geography scale scores by student eligibility for Free/Reduced-Price School Lunch program, grades 4, 8, and 12: 2001

	Eligible	Not eligible	Info not available
Grade 4	186	221	218
Grade 8	242	270	266
Grade 12	269	287	289

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

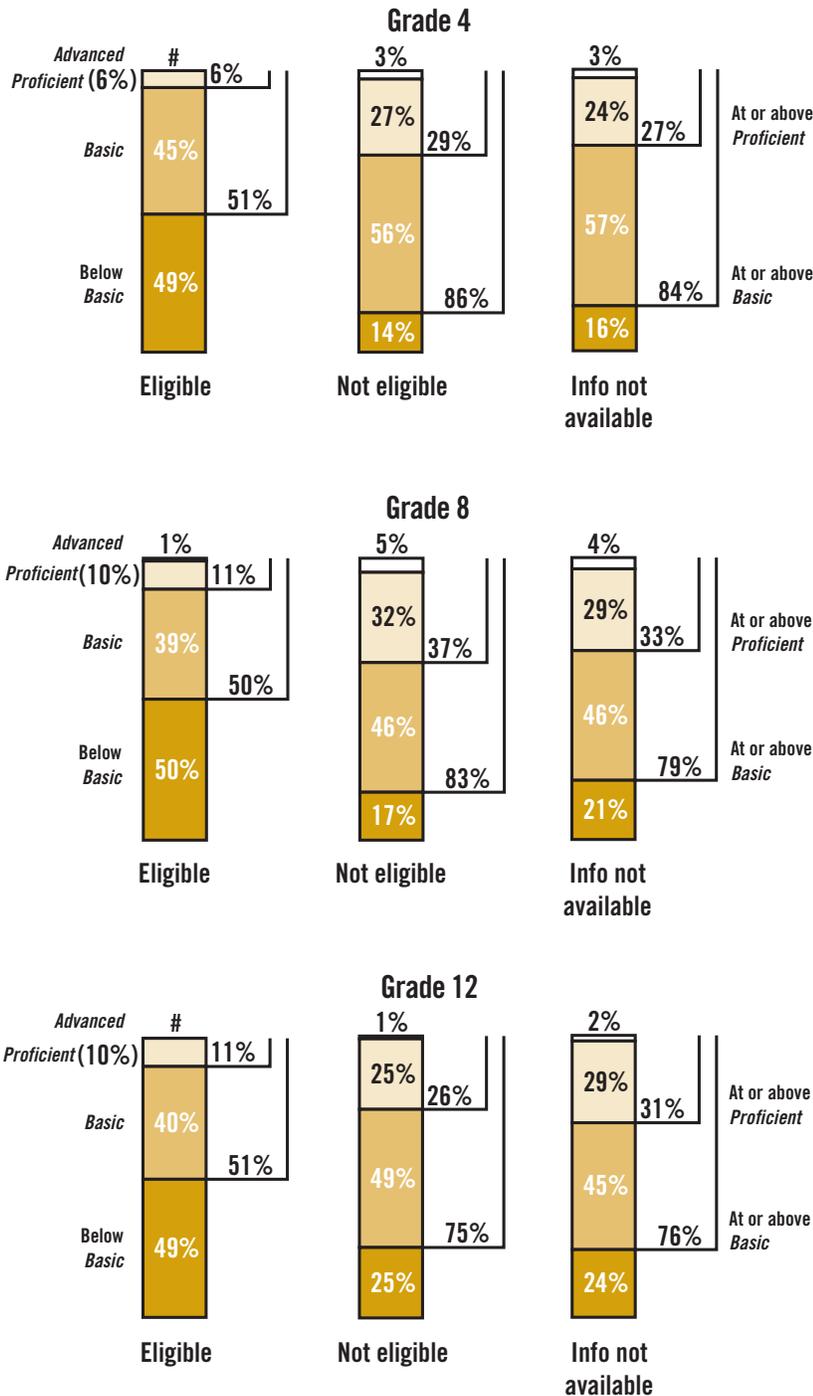
Achievement-level results reflected the scale score results, as seen in figure 3.14. At all three grades, higher percentages of students who were ineligible for the Free/Reduced-Price School Lunch program or for whom information was not available

were at or above *Basic* and at or above *Proficient* than were students who were eligible for the lunch program. At grade 8, this pattern extended to the *Advanced* achievement level.

<sup>1</sup> U.S. General Services Administration. (2001). *Catalog of federal domestic assistance*. Washington, DC: Executive Office of the President, Office of Management and Budget. <http://www.cfda.gov/default.htm>.

**Figure 3.14**  
National Achievement-  
Level Results by Free/  
Reduced-Price School  
Lunch Program Eligibility

Percentage of students within and at or above geography achievement levels by Free/Reduced-Price School Lunch program eligibility, grades 4, 8, and 12: 2001



# Percentage is between 0.0 and 0.5.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.



# 4

## Classroom Contexts for Learning

This chapter examines teacher and student variables related to the teaching and learning of geography, such as teacher preparedness and classroom practices, student interest in geography, and the context in which students learn the concepts of geography. The results presented in this chapter are based on teachers' and students' responses to questionnaires administered as part of the NAEP 2001

geography assessment. NAEP administers background and instructional questionnaires to students at grades 4, 8, and 12 and to the teachers of participating fourth- and eighth-grade students. Teachers at grade 12 were not administered a questionnaire because of the difficulty of linking

students to teachers across the diversity of courses at this grade level. In this examination of contexts for learning, students are the unit of analysis. Thus, for questions answered by students, the percentage of students choosing each response option is presented. For questions answered by teachers, the percentage of students whose teachers chose each option is presented. Students' average NAEP geography scores

for each response are also presented in order to examine the relationship between each variable and students' geography performance. Readers are reminded that the relationship between a contextual variable and geography performance is not necessarily causal. Many factors contribute to student performance. NAEP data can identify relationships between contextual variables and student performance, but cannot explain why the relationships exist.

### Chapter Focus

How does teacher preparedness relate to students' geography performance?

How do classroom activities and computer use relate to student achievement?

### Chapter Contents

Teacher Background and Preparedness

Geography Skills Taught

Extent of Geography Instruction

Computer Use

Student Interest in Geography

## Teacher Background and Preparedness to Teach Geography

Competency in geography is positively associated with extent of geography education and begins with well-prepared teachers.<sup>1</sup> Teachers of geography in grades 4, 8, and 12 approach instruction with varied backgrounds in geography or social studies, which necessarily results in diverse learning experiences for their students. Research on teaching and learning shows that the extent of a teacher's knowledge of a subject can have a marked effect on the quality of teaching or even the willingness to teach that subject.<sup>2</sup> A number of educators are concerned that poorly trained geography teachers—those teaching “out of field”—may lack the knowledge or skills to provide students with the knowledge necessary to meet geography standards.<sup>3</sup> Thus, it is instructive to explore the educational backgrounds of the teachers who are currently teaching geography to the nation's fourth- and eighth-grade students.

As part of the NAEP 2001 assessment, teachers of participating students in grades 4 and 8 were asked about their undergraduate and graduate majors and minors. The NAEP teacher questionnaire gave fourth- and eighth-grade teachers a number of different majors/minors from which

to choose. Table 4.1 shows results for five majors/minors asked of elementary teachers and four majors/minors asked of eighth-grade teachers. Both the fourth- and eighth-grade teachers were asked if they had a major or minor in geography or geography education, history or history education, general social science or social studies education, or other social science (for example, political science, economics, sociology, psychology, anthropology). Fourth-grade teachers were also asked whether they had a major or minor in elementary education. Although teachers were asked separately about their undergraduate and graduate education, and about whether they had majored or minored in each subject, the data are presented here in a simplified form. The first column in table 4.1 shows the percentages and average scores of students whose geography teachers either majored or minored or had a special emphasis in a subject at either the undergraduate or graduate level. The second column shows the corresponding data for students whose teachers did not indicate that major or minor. Note that the columns can sum to more than 100 percent because it is possible for college students to complete more than one major or minor.

1 Geography Education Standards Project. (1994). *Geography for life: national geography standards*. Washington, DC: National Geographic Research and Exploration.

2 Gregg, M. (2001). River views of beginning pre-service teachers: content knowledge use. *Journal of Geography* 100, 61–68.

Brophy, J. (1991). Advances in research on teaching. (Vol. 2) *Teacher's knowledge of subject matter as it relates to their teaching practice*. Greenwich, CT: JAI Press.

Reynolds, M. C., Ed. (1989). *Knowledge base for the beginning teacher*. Oxford: Pergamon Press.

3 Rynne, E. (1997) The continuing mismatch between student's undergraduate experience and the teaching demands of the geography classroom: experience of pre-service secondary geography teachers. *Journal of Geography in Higher Education* 21, 65–77.

At grade 4, nearly all students (93 percent) had teachers who majored or minored in elementary education in undergraduate or graduate school. While 15 to 20 percent of students were taught by teachers who had a social studies or history major or minor, only 7 percent of fourth-graders were taught by teachers who had majored or minored in geography. Average geography scores for fourth-grade students taught by

teachers with an elementary education major or minor were higher than those taught by teachers who did not.

At grade 8, just over one-quarter (28 percent) of students were taught by teachers with a graduate or undergraduate major or minor in geography. Within this grade, there was no statistically significant relationship between teachers' major/minor and their students' NAEP geography scores.

**Table 4.1**  
**Percentage of students and average geography scale scores by teachers' reported undergraduate/graduate major and minor/special emphasis, grades 4 and 8: 2001**

Grades  
**4 & 8**

Teachers' Majors/Minors

*Did you have a major, minor, or special emphasis in any of the following subjects as part of your **undergraduate** or **graduate** course work?*

**Grade 4**

	Yes	No
Geography or geography education	7 204	93 210
History or history education	15 206	85 211
Social science or social studies education	20 208	80 210
Other social science	57 210	43 209
Elementary education	93 <b>211</b>	7 <b>197</b>

**Grade 8**

Geography or geography education	28 263	72 263
History or history education	71 263	29 261
Social science or social studies education	55 263	45 262
Other social science	51 261	49 264

At grade 4, students whose teachers majored in elementary education had higher average scores than those whose teachers did not.

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

Teachers of fourth- and eighth-grade students participating in the geography assessment were asked how prepared they felt they were to teach geography. The question was asked in both 1994 and 2001, so cross-year comparisons are possible. Table 4.2 shows that a higher percentage of the fourth-grade students in 2001 had teachers who reported they were very prepared to teach geography (31 percent) than did students in 1994 (23 percent). These results may be associated with the increase in workshops in geography offered to teachers through various geographic organizations, and an increase in the literature available to teachers related to teaching geographic concepts.<sup>4</sup> In addition, there has been a call for geographers as a group, specifically college and university faculty, to develop an open dialogue with

K-12 teachers that would aid in providing elementary and high school teachers with the teaching tools necessary for them to enter the classroom with some degree of confidence.<sup>5</sup>

In 2001, approximately 84 percent of fourth-grade students were taught by teachers who reported that they were very prepared or adequately prepared to teach geography. Only 1 percent of fourth-grade students had teachers who reported they were unprepared to teach geography. Approximately 87 percent of eighth-grade students had teachers who reported they were at least adequately prepared to teach geography, and only 2 percent had teachers who felt unprepared. The level of teachers' self-reported preparedness had no statistically significant relationship to students' average geography scores.

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<sup>4</sup> Gibbs, G. (1999). Improving teaching, learning, and assessment. *Journal of Geography in Higher Education* 23, 147–155.

McDougall, W. A. (2001). Why geography matters. *American Educator* 25, 10–15.

McAlonan, S., Hotchkiss, H., Roark, K., Kenney, M., & Jackson, J. (2001) *Making standards work! Geography. A teacher's guide to contextual learning: integrating academic content standards with career development and workplace competencies*. Denver: Colorado State Department of Education.

<sup>5</sup> Bettis, N. C. (2001). Assessment issues in geographic education for the twenty-first century. *Journal of Geography* 100, 172–174.

Welford, M. & Fouberg, E.H. (2000). Theory and research in geography education. *Journal of Geography* 99, 183–184.

**Table 4.2**

**Percentage of students and average geography scale scores by teachers' reports on how well prepared they felt they were to teach geography, grades 4 and 8: 1994 and 2001**

Grades  
**4 & 8**

**Teachers' Preparedness to Teach Geography**

*Regardless of whether you are currently teaching the topic, how well prepared do you feel you are to teach geography at the elementary/middle school level?*

**Grade 4**

	1994	2001
Very prepared	23 209	31* 211
Adequately prepared	57 206	53 210
Somewhat prepared	18 207	15 206
Unprepared	2 200	1 209

**Grade 8**

Very prepared	36 260	44 263
Adequately prepared	48 262	43 262
Somewhat prepared	13 265	11 261
Unprepared	2 260	2 264

The percentage of fourth-graders whose teachers reported they were very prepared to teach geography increased between 1994 and 2001.

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

\* Significantly different from 1994.

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## Geography Skills and Topics Taught in Grade 4

Many of the instructional guides and standards for geography education emphasize the importance of using maps and globes as tools to visualize space and gain a spatial perspective—necessary skills for an understanding of and competency in geography.<sup>6</sup> A number of articles also discuss the importance of exposing children to cultural geography, and environmental geography.<sup>7,8</sup> As part of the 1994 and 2001 NAEP geography assessments, fourth-grade teachers were asked about the frequency with which they taught about maps and globes, natural resources, foreign countries and cultures, and environmental issues as a part of geography instruction. The results are displayed in table 4.3.

There were a few changes between 1994 and 2001 in the frequency of instruction reported by teachers of fourth-grade students in these four skill and topic areas. The percentage of fourth-grade students whose teachers reported they never taught about natural resources increased from 9 percent in 1994 to 14 percent in 2001, while the percentage of students whose teachers reported teaching about natural resources as frequently as once or twice

weekly decreased from 38 percent to 31 percent. These data may suggest that the topic of natural resources has lost favor during the past decade in teaching geography to fourth-graders.

Of the four skills and topics, maps and globes were most frequently used during geography instruction during 2001. Approximately three-quarters of fourth-grade students received instruction about maps and globes on at least a weekly basis, according to their teachers. However, less than one-half of the students had teachers who included natural resources as part of instruction once a week or more, and only about one-quarter received instruction in foreign countries and cultures and environmental issues at least once a week. Twenty-nine percent of students received no instruction in foreign countries and cultures. Readers should be aware that teachers were asked only to indicate the frequency and not the total amount of time they devoted to the skills and topics discussed here “as part of geography instruction.” Therefore, students may have received more instruction in these four areas than is readily apparent from the percentages shown, though not necessarily from a geographic perspective.

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<sup>6</sup> Oldakowski, R. K. (2001). Activities to develop a spatial perspective among students in introductory geography courses. *Journal of Geography* 100, 243–250.

Thompson, G. (1999). I thought the world was flat, like the maps showed it! *Social Education* 63, 269–271.

Trifonoff, K. M. (1998). Introducing thematic maps in the primary grades. *Social Studies and the Young Learner* 11, 17–22.

<sup>7</sup> Crampton, J. (1998). A regional geography class in a distributed learning environment. *Journal of Higher Education* 22, 417–423.

<sup>8</sup> Graf, M. (2000). *The world's best places: classroom explorations in geography & environmental science*. Portsmouth, NH: Heinemann.

Steinberg, P. E. (1997). Political geography and the environment. *Journal of Geography* 96, 113–118.

**Table 4.3**

**Percentage of students and average geography scale scores by teachers' reports on frequency of instruction of selected skills and topics, grade 4: 1994 and 2001**

Grade  
**4**

Frequency of Instruction in Fourth-Grade Geography Skills and Topics

*How often do you teach the following skills and topics as a part of geography instruction with this class?*

**Using maps and globes**

	1994	2001
Almost every day	29 210	28 213
Once or twice a week	54 208	47 209
Once or twice a month	17 199	22 206
Never or hardly ever	1 ***	3 209

**Natural resources**

Almost every day	9 201	9 217
Once or twice a week	38 209	31* 208
Once or twice a month	44 208	46 210
Never or hardly ever	9 198	14* 208

Natural resources topics were taught less frequently in 2001.

**Foreign countries and cultures**

Almost every day	6 206	3 206
Once or twice a week	19 203	23 208
Once or twice a month	43 208	45 209
Never or hardly ever	32 209	29 212

**Environmental issues**

Almost every day	4 201	7 212
Once or twice a week	27 206	21 205
Once or twice a month	56 208	56 211
Never or hardly ever	13 208	16 211

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

\* Significantly different from 1994.

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

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## Geography Skills Taught in Grades 8 and 12

Eighth- and twelfth-grade students participating in the 1994 and 2001 geography assessments were asked about the frequency with which they studied the following skills and topics in school: using maps and globes, natural resources (for example, oil, forests, and water), countries and cultures, and environmental issues (for example, pollution and recycling). The results of these questions are shown in tables 4.4a and 4.4b.

At grade 8, students in 2001 reported having devoted more time to two of the four areas than did their counterparts in 1994. Approximately 46 percent of students reported using maps and globes at least once or twice a week compared to 39 percent in 1994. At the same time, the percentage that reported never using maps and globes dropped from 28 percent to 21 percent. For the topic of countries and cultures, approximately 63 percent of students in 2001 said they studied it one or two times per week or more compared to 52 percent in 1994, and the percentage that reported never studying it fell from 20 to 13 percent.

The geography performance of eighth-graders varied somewhat depending on the amount of time they spent studying each topic, but in general, higher frequency of study did not translate into significantly higher performance. In the case of maps and globes and natural resources, students performed best when they studied the topics once or twice a month. Students who studied natural resources and environmental issues almost every day had lower

average scores than students who studied these topics less frequently or never. Students who never studied countries and cultures had lower average scores than students who did study that topic.

Twelfth-graders' reports indicated a general increase between 1994 and 2001 in the amount of time they spent studying the four geography skills and topics listed in the beginning of this section. The easiest way to see this change among the data in table 4.4b is to note that the percentage of students responding "never" declined for each of the four topics (from 40 percent to 36 percent for maps and globes, from 45 percent to 39 percent for natural resources, from 28 percent to 19 percent for countries and cultures, and from 37 percent to 30 percent for environmental issues, respectively). But as these results also show, a substantial percentage of twelfth-graders still did not study these topics in 2001.

Again, as was seen at the eighth-grade level, more instruction was not necessarily linked to better student performance. Students who reported studying maps and globes and natural resources almost every day had lower average scores than students who reported less frequent study. The same was true with the study of environmental issues except that the performance of students in the "almost every day" and "never" categories did not differ significantly. The one instructional topic that did have a somewhat positive relationship to twelfth-graders' geography scores was countries and cultures. Students studying countries and cultures at least once a month outperformed those who never studied countries and cultures.

**Table 4.4a**

**Percentage of students and average geography scale scores by students' reports on frequency of instruction of selected skills and topics, grade 8: 1994 and 2001**

Grade **8**

Frequency of Instruction in Eighth-Grade Geography Skills and Topics

*How often have you studied the following geography skills and topics in school?*

**Using maps and globes**

	1994	2001
Almost every day	9 261	12 * 259
Once or twice a week	30 264	34 * 264
Once or twice a month	33 263	33 268
Never or hardly ever	28 253	21 * 258

**Natural resources**

Almost every day	9 251	9 249
Once or twice a week	21 259	24 * 262
Once or twice a month	36 265	35 269
Never or hardly ever	34 260	32 263

**Countries and cultures**

Almost every day	23 260	31 * 264
Once or twice a week	29 261	32 * 266
Once or twice a month	28 264	24 * 263
Never or hardly ever	20 256	13 * 254

**Environmental issues**

Almost every day	12 258	11 254
Once or twice a week	21 260	24 * 265
Once or twice a month	33 263	33 267
Never or hardly ever	34 260	32 262

Students performed best when instruction on these topics was once or twice a month.

Eighth-graders who never studied countries and cultures had lower scores than those who did.

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

\* Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

**Table 4.4b**

**Percentage of students and average geography scale scores by students' reports on frequency of instruction of selected skills and topics, grade 12: 1994 and 2001**

Grade **12**

Frequency of Instruction in Twelfth-Grade Geography Skills and Topics

<i>How often have you studied the following geography skills and topics in school?</i>	1994	2001
<b>Using maps and globes</b>		
Almost every day	7 284	6 277
Once or twice a week	22 288	24 285
Once or twice a month	31 286	34 * 287
Never or hardly ever	40 283	36 * 284
<b>Natural resources</b>		
Almost every day	7 282	7 275
Once or twice a week	18 286	22 * 283
Once or twice a month	31 288	32 288
Never or hardly ever	45 284	39 * 285
<b>Countries and cultures</b>		
Almost every day	16 287	20 * 286
Once or twice a week	26 288	32 * 288
Once or twice a month	30 286	29 286
Never or hardly ever	28 280	19 * 277
<b>Environmental issues</b>		
Almost every day	11 284	11 279
Once or twice a week	22 288	26 * 286
Once or twice a month	30 288	33 * 289
Never or hardly ever	37 282	30 * 282

All topics received more frequent instruction in 2001.

Students who never studied countries and cultures scored lower than those who did.

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

\* Significantly different from 1994.

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## **The Extent of Students' Social Studies and Geography Instruction**

As part of the NAEP 2001 geography assessment, eighth- and twelfth-grade students were asked a series of questions concerning the amount of geography instruction they had received. The results for the student responses are shown in tables 4.5 and 4.6 and are summarized below.

### **Geography Course Taking at Grades 8 and 12**

Eighth-grade students were asked whether they had previously taken a geography course in grades 6 and 7, and whether they were currently enrolled in a geography course in eighth grade. The results of their answers to these questions are presented in cumulative form in table 4.5. This table

shows the percentages and average scores of eighth-grade students who reported taking zero, one, two, and three years of geography from the sixth through eighth grades. In total, about 59 percent of eighth-grade students in 2001 took two or three years of geography. In 2001, 63 percent of eighth-graders reported taking a geography course in eighth grade (data not shown). A higher percentage of students in 2001 than in 1994 reported taking three years of geography and, conversely, a lower percentage in 2001 than in 1994 reported taking no geography courses. In addition, there was a positive association in 2001 between more course-taking and higher geography scores. Students who took three years of course work had higher scores, on average, than those who took two years. Those students who took two years had higher scores than those who took one year.

**Table 4.5**

**Percentage of students and average geography scale scores by students' reports on grades in which geography was taken since the 6th grade, grade 8: 1994 and 2001**

Grade **8**

**Eighth-Grade Frequency of Geography Course Taking**

<i>Did you take or do you expect to take a geography course in 6th, 7th, or 8th grade?</i>	1994	2001
<b>Number of grades selected</b>		
None	18 250	12 * 255
One	30 257	20 * 256
Two	14 269	16 263
Three	26 274	43 * 272
Don't know	13 243	9 * 246

More frequent course taking was associated with higher scores for eighth-graders.

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

\* Significantly different from 1994.

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

Twelfth-grade students were asked whether they had previously taken a geography course in grades 9, 10, 11, or were currently enrolled in a geography course. Table 4.6 displays percentages of twelfth-grade students and their average geography scores by their cumulative amount of high school geography course-taking. Twelfth-graders in 2001 were more likely to report having taken three and four courses than their counterparts in 1994. The majority of twelfth-grade students (73 percent) indicated they were not currently taking geography in twelfth grade (data not shown). While taking more years of geography was related to higher geography

scores for the eighth-graders in table 4.5, this pattern did not hold for the twelfth-grade data in table 4.6. In fact, those who reported taking no geography courses in high school had higher average scores than those who had taken 2, 3, or 4 years, and were not significantly different from those who took one year of geography. About one-half of the twelfth-grade students (53 percent) took one year or less of geography in high school. This group may represent students who are following a different academic curriculum than the students who reported taking geography in multiple years.

**Table 4.6**

**Percentage of students and average geography scale scores by students' reports on grades in which geography was taken since 9th grade, grade 12: 1994 and 2001**

Grade **12**

Twelfth-Grade  
Frequency of  
Geography Course  
Taking

<i>Did you take or do you expect to take a geography course in 9th, 10th, 11th, or 12th grade?</i>	1994	2001
<b>Number of grades selected</b>		
None	31 286	21 * 289
One	35 288	32 288
Two	16 286	15 285
Three	10 281	18 * 280
Four	5 277	10 * 281
Don't know	3 268	3 265

Students taking one year or less of geography had higher scores, on average, than students taking 3 or 4 years.

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

\* Significantly different from 1994.

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

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.

## The Use of Computers in the Social Studies Classroom in Grades 4 And 8

Computers can be used to enhance geography instruction. The role of information and communication technologies in the classroom is to effectively supplement, not replace, human contact in the teaching and learning process.<sup>9</sup> Some research has shown that there is a quantifiable improvement in student understanding of geographic concepts when computers are used to enhance the learning experience.<sup>10</sup> The use of computers in geography instruction can also be employed to increase critical thinking skills for oral and written presentations, as well as for specific topics in geography.<sup>11</sup> While most geography instruction takes place under the curriculum category of “social studies,” such instruction also takes place in classes with geography titles. The 2001 NAEP geography assessment asked teachers of fourth- and eighth-grade students how frequently computers were used when working on social studies to locate and retrieve social studies information through the Internet, look up social studies information in CD-ROM reference works, use exploration or

simulation software, and organize social studies information using spreadsheets or databases. Table 4.7 presents results corresponding with teachers’ reports on the frequency of these activities.

According to their teachers, the majority of fourth-grade students used computers for the four tasks either to a small extent or not at all. At fourth grade, students occasionally retrieved information through the Internet and used CD-ROMs for reference, but only rarely used exploration/simulation software or spreadsheets and databases. Nearly two-thirds of fourth-graders used the Internet or CD-ROMs to at least a small extent while less than half used simulation software or spreadsheets/databases at least to a small extent. However, 34 percent and 37 percent of students, respectively, did not engage in these computer activities at all. Students who used the Internet and CD-ROMs to either a small or a moderate extent had higher average scores than students who did not use them at all, and students who used simulation software to a small extent outperformed students who did not use such software.

---

<sup>9</sup> Shepard, I. (1998). *Teaching and learning geography with information and communication technologies*. Cheltenham, UK: Cheltenham and Gloucester College of Higher Education

Crampton, J. W. (1999). Integrating the web and the geography curriculum: the Bosnian virtual fieldtrip. *Journal of Geography* 98, 155–168.

<sup>10</sup> Mosely, W. G. (2001). Computer assisted comprehension of distant worlds: understanding hunger dynamics in Africa. *Journal of Geography* 100, 32–45.

<sup>11</sup> Sharma, M. B. & Elbow, G. S. (2000). *Using internet primary sources to teach critical thinking skills in geography*. Westport, CT: Greenwood Professional Guides in School Librarianship.

Cross, J. A. (1997). Natural hazards and disaster information on the internet. *Journal of Geography* 96, 307–314.

Barta-Smith, N. A. & Hathaway, J. T. (2000). Making cyberspaces into cyberplaces. *Journey of Geography* 99, 253–265.

**Table 4.7a**

Percentage of students and average geography scale scores by teachers' reports on computer use for social studies instruction, grade 4: 2001

Grade  
**4**

Fourth-Grade  
Computer Use

When students in this class work on social studies, to what extent do they use computers to do each of the following?

2001

**Grade 4**

*Use CD-ROM to look up reference works*

Not at all	37 205
Small extent	47 211
Moderate extent	14 216
Large extent	2 214

*Retrieve information through the Internet*

Not at all	34 203
Small extent	45 212
Moderate extent	17 216
Large extent	4 211

*Use exploration/simulation software*

Not at all	54 207
Small extent	37 213
Moderate extent	8 211
Large extent	1 ***

*Organize information using spreadsheets/databases*

Not at all	89 209
Small extent	9 213
Moderate extent	1 213
Large extent	# ***

Fourth-graders who did not use these technologies had lower scores than those who used them to a small or moderate extent.

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: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

**Table 4.7b**

**Percentage of students and average geography scale scores by teachers' reports on computer use for social studies instruction, grade 8: 2001**

Grade

8

Eighth-Grade  
Computer Use

*When students in this class work on social studies, to what extent do they use computers to do each of the following?*

2001

**Grade 8**

*Use CD-ROM to look up reference works*

Not at all	31 258
Small extent	48 263
Moderate extent	17 266
Large extent	4 268

*Retrieve information through the Internet*

Not at all	20 255
Small extent	47 261
Moderate extent	29 266
Large extent	4 273

*Use exploration/simulation software*

Not at all	62 261
Small extent	32 265
Moderate extent	5 259
Large extent	1 257

*Organize information using spreadsheets/databases*

Not at all	74 261
Small extent	22 266
Moderate extent	2 262
Large extent	1 249

Eighth-graders who did not use these technologies had lower scores than those who used them to a small or moderate extent.

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: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

At the eighth-grade level, the pattern of frequency of use of the information technology tools was similar to that in grade 4: information retrieval through the Internet and use of CD-ROMs for reference occurred to a small or moderate extent for two-thirds to three-quarters of the students, while exploration/simulation software and spreadsheets/databases were rarely used. Twenty-nine percent of eighth-grade students used the Internet to a moderate extent for social studies and 47 percent used it to a small extent, according to their teachers. Forty-eight percent used CD-ROMs to a small extent, nearly one-third (32 percent) used simulation software to a small extent, and 22 percent used spreadsheets or databases to a small extent. About three-quarters of students in eighth grade (74 percent) did not use spreadsheets or databases at all.

Greater usage of the Internet and CD-ROMs was generally associated with higher performance among eighth-graders. Students whose teachers reported a large extent of Internet usage had higher average scores than students who used the Internet to a small extent or not at all. Students who used the Internet or CD-ROMs to a moderate or small extent had higher scores than students who did not use these tools at all.

## **The Use of Computers in Grade 12**

Twelfth-grade students participating in the 2001 NAEP geography assessment also answered questions on the extent of use of several types of computer technology. In answering the questions, students were to consider both work in class and homework assignments. The results are shown in table 4.8.

Forty-two percent of students used a CD or the Internet for research to at least a moderate extent. About one-third of students (32 percent) used these tools to a small extent, and 26 percent did not use them at all. Students who reported using a CD or the Internet for research to a small or moderate extent had higher average scores than those who never used them, and moderate use was associated with higher scores than a small amount of use. There was no statistically significant difference between the average scores of students using CDs and the Internet to a moderate extent and those of students using them to a large extent.

Thirty-four percent of twelfth-grade students reported some use of simulation software. Twenty-three percent used it to a small extent, 9 percent to a moderate extent, and 2 percent to a large extent. The 66 percent of the students who reported not using simulation software at all had higher average scores than students who reported using it to any extent.

Thirty percent of the students reported using a computer to a small extent to put history or geography information into tables, charts, or graphs. Sixteen percent of students used a computer to a moderate or large extent for this purpose and over one-half (55 percent) of students never used a computer for this purpose. Students who reported carrying on these activities to a small extent had higher average scores than those who engaged in them either more or not at all. Students who said they did not do these activities at all outperformed students who did them to a large extent.

**Table 4.8**

**Percentage of students and average geography scale scores by students' reports on computer use for history and geography, grade 12: 2001**

Grade **12**

Twelfth-Grade  
Computer Use

	2001
<i>Think about all the courses since the 9th grade in which you have studied history or geography. To what extent have you used computers to do the following? For this question include both work in class and homework assignments.</i>	
<b>Research projects using a CD or the Internet</b>	
Not at all	26 274
Small extent	32 285
Moderate extent	29 290
Large extent	13 292
<b>Use exploration/simulation software</b>	
Not at all	66 287
Small extent	23 281
Moderate extent	9 276
Large extent	2 278
<b>Tables, charts, or graphs on the computer</b>	
Not at all	55 284
Small extent	30 288
Moderate extent	12 281
Large extent	4 277

Students who used electronic information retrieval had higher scores than those who did not.

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: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

## Student Interest in Geography Grades 8 and 12

Interest in geography may increase a student's efforts to learn the subject, either in school or independently. The NAEP 2001 assessment asked students in grades 8 and 12 to indicate whether geography was one of their favorite subjects, whether they like most other subjects better than geography, or whether they never studied geography. As shown in table 4.9, most eighth-grade students in 2001 preferred subjects other than geography. Only 20 percent indicated that geography was one of their favorites. However, these students

outperformed students who liked other subjects better.

At grade 12, the percentage of students who preferred subjects other than geography increased from 63 percent to 72 percent between 1994 and 2001 even as the percentage of students who reported never taking a geography class declined (from 23 percent to 13 percent). Only 15 percent of students in 2001 chose geography as one of their favorite subjects. However, those students had higher average scores than the students who did not favor geography.

**Table 4.9**

**Percentage of students and average geography scale scores by students' reports on how much they like studying geography, grades 8 and 12: 1994 and 2001**

Grades  
**8 & 12**

How Much Eighth- and Twelfth-Grade Students Like Geography

How much do you like studying geography?	1994	2001
<b>Grade 8</b>		
One of my favorite subjects	19 274	20 275
Like other subjects better	67 260	69 263
Never studied geography	14 241	11* 247
<b>Grade 12</b>		
One of my favorite subjects	14 297	15 293
Like other subjects better	63 285	72* 285
Never studied geography	23 277	13* 278

Students who favored geography had the highest scores.

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

\* Significantly different from 1994.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 and 2001 Geography Assessments.



# 5

## Becoming a More Inclusive National Assessment

In its efforts to assess a representative sample of all students in the nation, NAEP has consistently striven to include special-needs students—those with disabilities (SD) and/or limited English proficiency (LEP). A certain percentage of such students, however, has always been excluded because they could not be assessed meaningfully without accommodations. Schools that participate in NAEP have

been permitted to exclude certain students who have been classified as having a disability under the Individuals with Disabilities Education Act (IDEA), based upon their Individualized Education Programs (IEP) and Section 504 of the Rehabilitation Act of 1973. Similarly, schools have been permitted to exclude some students they identify as being limited English proficient.<sup>1</sup>

In order to assess a more inclusive sample, and in an attempt to remain consistent with state- and district-level testing policies that increasingly offer accommodations to special-needs students, NAEP began to explore the use of accommodations in the 1996 and 1998 assessments. A split-sample design was used to identify a portion of schools that could provide accommodations to their special-needs students who required them, and a portion of schools in which accommodations would not be offered (the standard administration procedure prior to 1996). The split-sample

### Chapter Focus

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

### Chapter Contents

Two Sets of 2001 Geography Results

Results for the Nation

National Results by Gender

National Results by Race/Ethnicity

<sup>1</sup> See appendix A for a description of specific criteria provided to assist them in making exclusion decisions.

design made it possible to study the effects on NAEP results of including special-needs students who required and were provided accommodations, while at the same time, obtaining results that were comparable to those from previous assessments. Based on research conducted and published since that time, it was determined that NAEP could begin a transition to reporting results that included the performance of accommodated special-needs students.<sup>2</sup> It is anticipated that in the near future, NAEP will only report results that include accommodated special-needs students.

## Two Sets of 2001 NAEP Geography Results

This report is the first to display two different sets of NAEP geography 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 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.6, page 124 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 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.

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 sample, no accommodations were permitted; all students were assessed under the same conditions that were the basis for reporting results from the 1994 NAEP geography assessment. In another sample, accommodations were permitted for SD and/or LEP 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.

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2 Olson, J. F. & 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.

The permitted accommodations included, but were not limited to, the following:

- one-on-one testing;
- bilingual dictionary;
- small-group testing;
- extended time;
- oral reading of questions/directions; and
- use of an aide for transcribing responses.

(See appendix A, table A.7, page 126, for greater detail on the numbers and percentages of students accommodated by accommodation type in the 2001 assessment.)

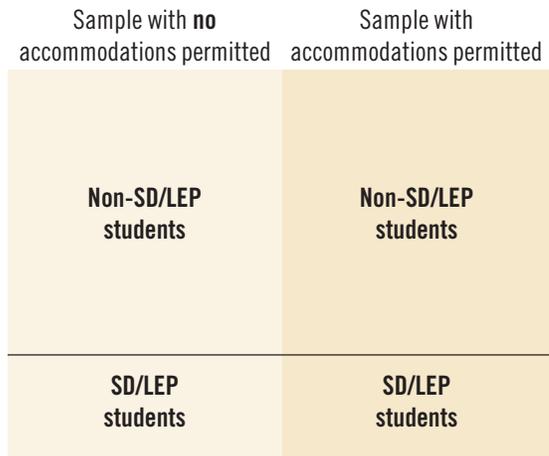
Figure 5.1 provides a visual representation of how the two sets of results were based on the two samples in 2001. Included in both sets of results (accommodations not permitted and accommodations permitted) are those students from both

samples of schools who were not identified as either SD and/or LEP. In addition, the first set of results (accommodations not permitted) includes SD and/or LEP students from the sample of schools where accommodations were not permitted (see middle portion of figure 5.1). This is the set of results that allows for trend comparisons back to 1994 and are presented in the other chapters of this report.

The second set of results, accommodations permitted (see bottom portion of figure 5.1), includes SD and/or 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 geography assessment.

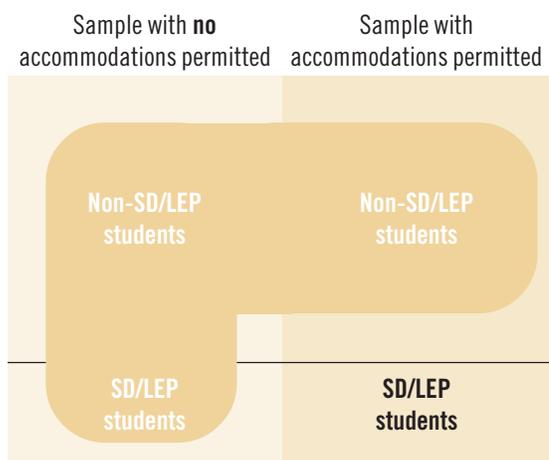
**Figure 5.1 Split-Sample Design**

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



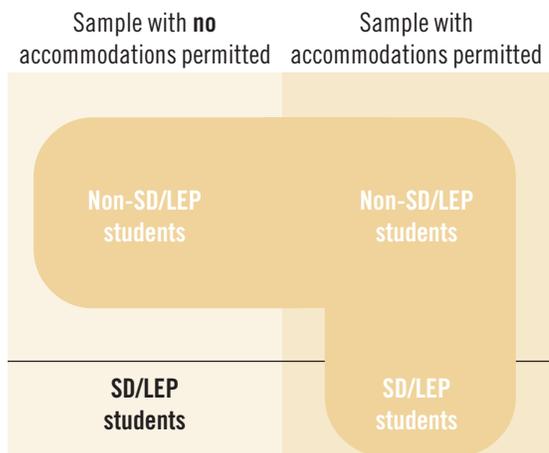
**Split-sample design**

The national sample was split. In part of the schools, accommodations were not permitted for students with disabilities (SD) and limited English proficient (LEP) students. 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 2001 sample where accommodations were not permitted, 16 percent of the students in fourth grade, 16 percent in eighth grade, and 11 percent in twelfth grade were identified by their schools as having special needs (i.e., either as SD or LEP students). In the other sample where accommodations were offered, 17 percent of the students in the fourth grade, 16 percent of students in the eighth grade, and 10 percent in the twelfth grade were identified as having special needs. In the sample where accommodations were not permitted, between 44 and 48 percent of the special-needs students at each of the three grade levels (between 5 and 8 percent of all students—see appendix A, table A.5, page 123) were excluded from NAEP testing by their schools. In the sample where accommodations were offered, between 23 and 24 percent of the special-needs students were excluded from the assessment (between 2 and 4 percent of the total sample).

Because the split-sample design was not used in 1994, trend data for accommodated students are not available. Therefore, this chapter compares only the two sets of results from the 2001 geography assess-

ment. Overall results are provided for the nation and for student subgroups by gender and by race/ethnicity. These results are discussed in terms of statistically significant differences between the two sets of results and differences between subgroups of students within each set of results. Throughout this chapter, the assessment results that include SD and/or 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/or 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 5.1 displays the average geography scale scores for the nation in 2001 for two sets of results: 1) accommodations not permitted, and 2) accommodations permitted. There were no statistically significant differences in the average scores between the two sets of results at grades 4 and 12. At grade 8, however, the average score when accommodations were permitted was lower than the average score when accommodations were not permitted.

**Table 5.1 Comparison of Two Sets of National Scale Score Results**

National average geography scale scores by type of results, grades 4, 8, and 12: 2001

	Accommodations not permitted	Accommodations permitted
<b>Grade 4</b>	209	208
<b>Grade 8</b>	262	260 †
<b>Grade 12</b>	285	284

† Significantly different from the sample where accommodations were not permitted.

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

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 including the performance of these students would tend to lower the overall results. This assumption appears to have been justified only in the observed difference between the two sets of geography results in 2001 in grade 8, 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 performance ranges (i.e., below *Basic* and *Basic*), when students were assessed with accommodations.

Table 5.2 shows the percentages of students attaining each of the achievement levels. The percentages are similar across the two sets of results for grades 4 and 12; apparent differences between the accommodations-not-permitted and the accommodations-permitted results were not significantly different. At grade 8, however, the percentage of students at or above *Basic* was higher when accommodations were not permitted than when they were permitted.

**Table 5.2 Comparison of Two Sets of National Achievement-Level Results**

Percentage of students within and at or above geography achievement levels by type of results, grades 4, 8, and 12: 2001

	Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>						
<i>Accommodations were not permitted</i>	26	53	19	2	74	21
<i>Accommodations were permitted</i>	27	52	19	2	73	20
<b>Grade 8</b>						
<i>Accommodations were not permitted</i>	26	44	26	4	74	30
<i>Accommodations were permitted</i>	28 †	43	25	4	72 †	29
<b>Grade 12</b>						
<i>Accommodations were not permitted</i>	29	47	23	1	71	25
<i>Accommodations were permitted</i>	29	47	23	1	71	24

† Significantly different from the sample where accommodations were not permitted.  
 NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

**National Results by Gender  
 Accommodations Not Permitted and  
 Accommodations Permitted**

The average geography scale scores by gender for both sets of results in 2001 are

provided in table 5.3. Male students at grade 8 had higher geography scores when accommodations were not permitted than when accommodations were permitted.

**Table 5.3 Comparison of Two Sets of National Scale Score Results by Gender**

National average geography scale scores by gender and type of results, grades 4, 8, and 12: 2001

	Male	Female
<b>Grade 4</b>		
<i>Accommodations were not permitted</i>	212	207
<i>Accommodations were permitted</i>	210	206
<b>Grade 8</b>		
<i>Accommodations were not permitted</i>	264	260
<i>Accommodations were permitted</i>	262 †	258
<b>Grade 12</b>		
<i>Accommodations were not permitted</i>	287	282
<i>Accommodations were permitted</i>	287	281

† Significantly different from the sample where accommodations were not permitted.  
 SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

As noted in chapter 3, in 2001, male students at all three grades where accommodations were not offered had higher scale scores than female students. The same pattern continued where accommodations were offered—male students had higher average scale scores than female students in all three grades.

The percentages of male and female students attaining the *Basic*, *Proficient*, and *Advanced* levels are provided in table 5.4. Comparing the two sets of results in 2001, there were no statistically significant differences by accommodation status in the percentages of male or female students attaining each of the achievement levels at grades 4, 8, or 12.

**Table 5.4 Comparison of Two Sets of National Achievement-Level Results by Gender**

Percentage of students within and at or above geography achievement levels by gender and type of results, grades 4, 8, and 12: 2001

	Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>						
<b>Male</b>						
<i>Accommodations were not permitted</i>	25	51	21	3	75	24
<i>Accommodations were permitted</i>	26	51	21	3	74	23
<b>Female</b>						
<i>Accommodations were not permitted</i>	28	54	17	1	72	18
<i>Accommodations were permitted</i>	29	54	16	1	71	18
<b>Grade 8</b>						
<b>Male</b>						
<i>Accommodations were not permitted</i>	25	42	29	5	75	33
<i>Accommodations were permitted</i>	27	41	27	4	73	32
<b>Female</b>						
<i>Accommodations were not permitted</i>	27	47	24	3	73	26
<i>Accommodations were permitted</i>	29	45	23	3	71	26
<b>Grade 12</b>						
<b>Male</b>						
<i>Accommodations were not permitted</i>	27	45	26	2	73	28
<i>Accommodations were permitted</i>	26	45	26	2	74	28
<b>Female</b>						
<i>Accommodations were not permitted</i>	30	48	20	1	70	21
<i>Accommodations were permitted</i>	32	48	19	1	68	20

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding. SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

## National Results by Race/Ethnicity

### Accommodations Not Permitted and Accommodations Permitted

NAEP assessments across academic subjects have typically reported large score differ-

ences according to race and ethnic group membership. If SD and/or LEP students are over-represented in a particular racial or ethnic group, that group's assessment scores may decrease. Table 5.5 provides the

average geography scale scores for each of the race/ethnicity categories for the two sets of results in 2001. There were no statistically significant differences in average

scores for any racial/ethnic group at any grade, between the samples where accommodations were not permitted and where accommodations were permitted.

**Table 5.5 Comparison of Two Sets of National Scale Score Results by Race/Ethnicity**

National average geography scale scores by race/ethnicity and type of results, grades 4, 8, and 12: 2001

	White	Black	Hispanic	Asian/Pacific Islander	American Indian
<b>Grade 4</b>					
<i>Accommodations were not permitted</i>	222	181	184	212	199
<i>Accommodations were permitted</i>	220	181	185	216	199
<b>Grade 8</b>					
<i>Accommodations were not permitted</i>	273	234	240	266	261
<i>Accommodations were permitted</i>	271	232	238	267	259
<b>Grade 12</b>					
<i>Accommodations were not permitted</i>	291	260	270	286	288
<i>Accommodations were permitted</i>	292	258	269	285	286

SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.

As noted in chapter 3, a pattern of performance differences by race/ethnicity can be seen in the accommodations-not-permitted results in 2001. Both White and Asian/Pacific Islander students at all three grades scored higher, on average, than Black and Hispanic students. The same pattern can be observed at all three grades in the accommodations-permitted results. In addition, Hispanic students had higher scores than Black students regardless of accommodations condition at grades 8 and 12. At grade 4, however, regardless of accommodation conditions, there was no significant difference between the scores of Black and Hispanic students.

The relative standing of the performance of American Indian students changes by grade level. At grade 4, American Indian students had lower average scores than White students regardless of accommodation condition. At grades 8 and 12, however, the scores of American Indian students were not significantly different than White students within either accommodation condition.

The percentages of students in each race/ethnicity category who attained the *Basic*, *Proficient*, and *Advanced* levels are provided in table 5.6. No statistically significant differences were found at any of the three grades between the accommodations-not-permitted results and the accommodations-permitted results for the percentages of students attaining each of the achievement levels in 2001.

**Table 5.6 Comparison of Two Sets of National Achievement-Level Results by Race/Ethnicity**

Percentage of students within and at or above geography achievement levels by race/ethnicity and type of results, grades 4, 8, and 12: 2001

	Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>						
<b>White</b>						
<i>Accommodations were not permitted</i>	13	58	26	3	87	29
<i>Accommodations were permitted</i>	15	57	25	3	85	28
<b>Black</b>						
<i>Accommodations were not permitted</i>	56	39	5	#	44	5
<i>Accommodations were permitted</i>	56	40	4	#	44	4
<b>Hispanic</b>						
<i>Accommodations were not permitted</i>	51	43	6	#	49	6
<i>Accommodations were permitted</i>	49	45	5	#	51	6
<b>Asian/Pacific Islander</b>						
<i>Accommodations were not permitted</i>	23	52	23	1	77	25
<i>Accommodations were permitted</i>	18	57	24	2	82	25
<b>American Indian</b>						
<i>Accommodations were not permitted</i>	34	53	13	#	66	13
<i>Accommodations were permitted</i>	37	51	12	#	63	12
<b>Grade 8</b>						
<b>White</b>						
<i>Accommodations were not permitted</i>	14	48	34	5	86	39
<i>Accommodations were permitted</i>	16	46	33	5	84	38
<b>Black</b>						
<i>Accommodations were not permitted</i>	60	34	6	#	40	6
<i>Accommodations were permitted</i>	62	32	6	#	38	6
<b>Hispanic</b>						
<i>Accommodations were not permitted</i>	52	38	9	1	48	10
<i>Accommodations were permitted</i>	54	37	9	1	46	9
<b>Asian/Pacific Islander</b>						
<i>Accommodations were not permitted</i>	21	47	28	4	79	32
<i>Accommodations were permitted</i>	20	49	28	4	80	32
<b>American Indian</b>						
<i>Accommodations were not permitted</i>	28	41	29	3	72	31
<i>Accommodations were permitted</i>	30	46	21	3	70	24
<b>Grade 12</b>						
<b>White</b>						
<i>Accommodations were not permitted</i>	19	51	29	2	81	31
<i>Accommodations were permitted</i>	19	51	29	2	81	31
<b>Black</b>						
<i>Accommodations were not permitted</i>	65	31	4	#	35	4
<i>Accommodations were permitted</i>	67	30	3	#	33	3
<b>Hispanic</b>						
<i>Accommodations were not permitted</i>	48	42	10	#	52	10
<i>Accommodations were permitted</i>	50	42	9	#	50	9
<b>Asian/Pacific Islander</b>						
<i>Accommodations were not permitted</i>	28	45	25	1	72	26
<i>Accommodations were permitted</i>	29	46	23	1	71	25
<b>American Indian</b>						
<i>Accommodations were not permitted</i>	26	41	31	1	74	32
<i>Accommodations were permitted</i>	29	41	29	1	71	30

# Percentage is between 0.0 and 0.5.

NOTE: Percentages within each geography achievement-level range may not add to 100, or to the exact percentages at or above achievement levels, due to rounding.  
SOURCE: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 Geography Assessment.