

A photograph of two young students, a girl with glasses and a boy, both wearing light blue polo shirts, looking intently at a globe. The girl is on the left, pointing at the globe with her right hand. The boy is on the right, looking down at the globe. The background is blurred, showing what appears to be a classroom setting.

EMBARGOED until

July 19, 2011

11:00 a.m., EDT

The  
Nation's  
Report Card

# Geography 2010

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS AT GRADES 4, 8, AND 12

A close-up photograph of a globe, focusing on the North American continent. The globe is tilted, and the colors of the landmasses (green for land, blue for water) are visible. The text "UNITED STATES" is partially visible on the globe.

**ies** NATIONAL CENTER FOR  
EDUCATION STATISTICS  
Institute of Education Sciences

U.S. Department of Education  
NCES 2011-467



## Contents

- 1 Executive Summary
- 4 Introduction
- 7 Grade 4
- 20 Grade 8
- 35 Grade 12
- 48 Technical Notes
- 50 Appendix Tables

## What Is The Nation's Report Card™?

The Nation's Report Card™ informs the public about the academic achievement of elementary and secondary students in the United States. Report cards communicate the findings of the National Assessment of Educational Progress (NAEP), a continuing and nationally representative measure of achievement in various subjects over time.

Since 1969, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, U.S. history, civics, geography, and other subjects. NAEP collects and reports information on student performance for the nation, and for some subjects, results are also reported for states and selected urban districts. Thus, NAEP assessments play an integral role in our nation's evaluation of the condition and progress of education. Only academic achievement data and related contextual variables are collected. The privacy of individual students and their families is protected.

NAEP is a congressionally authorized project of the National Center for Education Statistics (NCES) within the Institute of Education Sciences of the U.S. Department of Education. The Commissioner of Education Statistics is responsible for carrying out the NAEP project. The National Assessment Governing Board oversees and sets policy for NAEP.

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# Executive Summary

Nationally representative samples of about 7,000 fourth-graders, 9,500 eighth-graders, and 10,000 twelfth-graders participated in the 2010 National Assessment of Educational Progress (NAEP) in geography. At each grade, students responded to questions designed to measure their knowledge of geography in the context of space and place, environment and society, and spatial dynamics and connections. Comparing the results from the 2010 assessment to the results from previous assessments in 1994 and 2001 shows how students' knowledge and skills in geography have changed over time.

## Students make progress in geography at grade 4 but not at grades 8 and 12

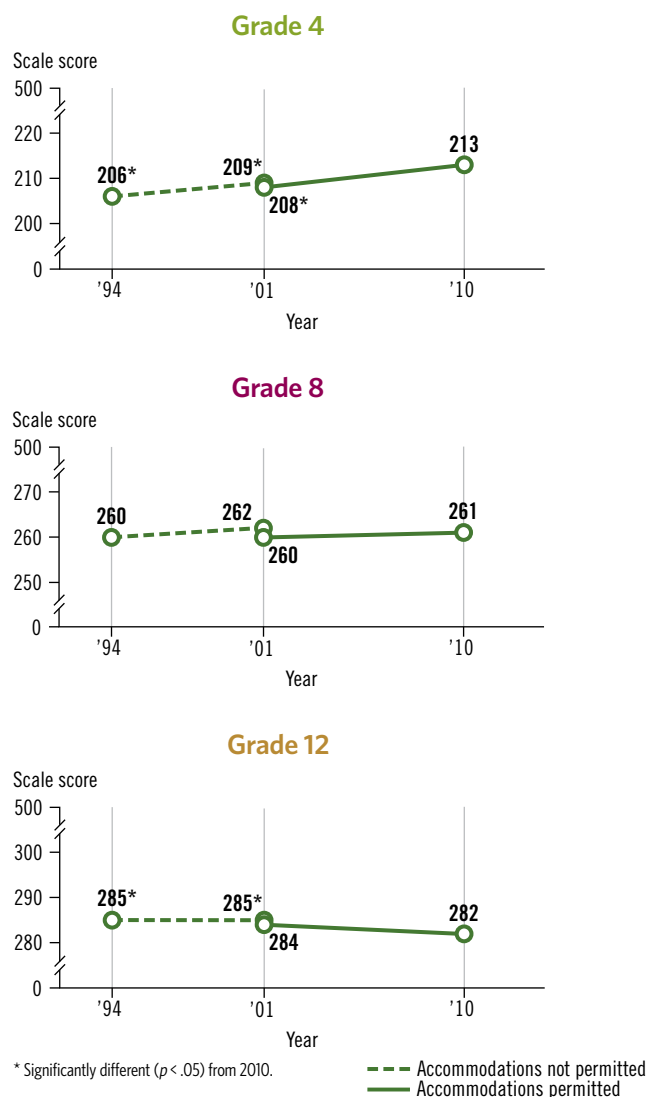
In comparison to earlier geography assessments in 1994 and 2001, the average score in 2010 was

- higher than the scores in both years at grade 4,
- not significantly different from the score in either year at grade 8, and
- not significantly different from the score in 2001 (accommodated sample) but lower than the score in 1994 at grade 12 (**figure A**).

### Scores for lowest-performing students increase from 1994 at all three grades

Although the overall average scores at grades 8 and 12 may not have increased, scores for the lowest-performing students (at the 10th percentile) were higher in 2010 than in 1994 at all three grades. In comparison to 1994, the score for students at the 10th percentile was 23 points higher at grade four, 7 points higher at grade eight, and 3 points higher at grade twelve.

**Figure A.** Trend in fourth-, eighth-, and twelfth-grade NAEP geography average scores



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.



## Percentages of fourth- and eighth-graders at or above *Basic* higher than in first assessment year

The NAEP *Basic* level denotes partial mastery of the knowledge and skills fundamental for proficient work at each grade. Seventy-nine percent of fourth-graders, 74 percent of eighth-graders, and 70 percent of twelfth-graders performed at or above the *Basic* level in geography in 2010 (**figure B**). The percentages of students at or above *Basic* in 2010 were higher than in 2001 and 1994 at grade 4, higher than in 1994 at grade 8, and not significantly different from the percentages in previous assessment years at grade 12.

## About one-quarter of students perform at or above the *Proficient* level in 2010

The *Proficient* level represents solid academic performance. Students reaching this level have demonstrated competency over challenging subject matter. Twenty-one percent of fourth-graders, 27 percent of eighth-graders, and 20 percent of twelfth-graders performed at or above the *Proficient* level on the 2010 geography assessment. At grades 4 and 8, the percentages of students at or above *Proficient* in 2010 were not significantly different from the percentages in 2001 and 1994. At grade 12, the percentage of students at or above *Proficient* was lower in 2010 than in earlier assessment years.

## Percentages of students at *Advanced* decrease from 1994 at grades 4 and 8

The *Advanced* level represents superior performance. Two percent of fourth-graders, 3 percent of eighth-graders, and 1 percent of twelfth-graders performed at the *Advanced* level on the 2010 geography assessment. The percentages of fourth- and eighth-graders at *Advanced* in 2010 were not significantly different from the percentages in 2001 but were lower than in 1994.

### Examples of knowledge demonstrated at each achievement level

#### *Basic*

- Recognize the purpose for a building structure shown in a photograph (grade 4).
- Identify which of four maps shows the most area (grade 8).
- Graph elevation on a contour map (grade 12).

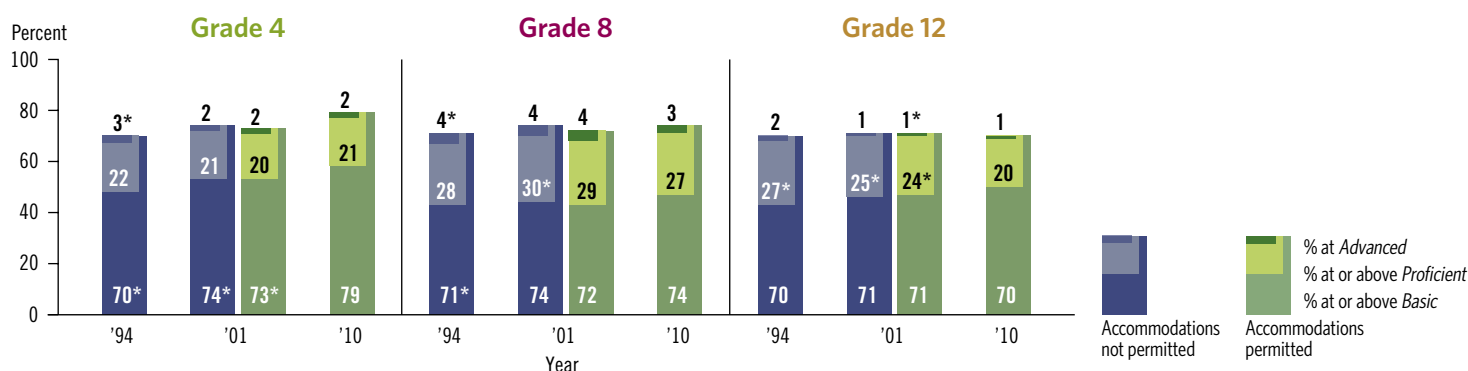
#### *Proficient*

- Recognize what prevents soil erosion (grade 4).
- Explain the effect of a monsoon in India (grade 8).
- Explain the rate of natural increase (grade 12).

#### *Advanced*

- Use a map to understand city development (grade 4).
- Describe the impact of a highway on a landscape (grade 8).
- Describe wetland functions (grade 12).

**Figure B.** Trend in fourth-, eighth-, and twelfth-grade NAEP geography achievement-level results



\* Significantly different ( $p < .05$ ) from 2010.

NOTE: For grade 12, the percentage at *Advanced* was lower in 2010 (0.67) than for the 2001 accommodations-permitted sample (1.42).

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

## White – Black score gaps narrow at grades 4 and 8

Black students made larger gains from 1994 to 2010 than White students at grades 4 and 8, narrowing the gap by 20 points at grade 4 and by 9 points at grade 8. Although scores for Hispanic students were higher in 2010 than in 2001 and 1994 at grades 4 and 8, only the fourth-grade gap between White and Hispanic students narrowed in 2010. At grade 12, there were no significant changes from 1994 to 2010 in the average scores for any of the racial/ethnic groups with samples large enough to report results.

## Male students score higher than female students at all three grades

In 2010, male students scored 4 points higher on average than female students at grades 4 and 8, and 5 points higher at grade 12. The gender gaps in 2010 were not significantly different from the gaps in previous assessment years.

Characteristic	Grade 4		Grade 8		Grade 12	
	Since 1994	Since 2001	Since 1994	Since 2001	Since 1994	Since 2001
<b>Overall</b>	▲	▲	◆	◆	▼	◆
<b>Race/ethnicity</b>						
White	▲	▲	▲	◆	◆	◆
Black	▲	▲	▲	▲	◆	◆
Hispanic	▲	▲	▲	▲	◆	◆
Asian/Pacific Islander	▲	◆	◆	◆	◆	◆
American Indian/ Alaska Native	‡	‡	◆	◆	‡	‡
<b>Gender</b>						
Male	▲	▲	◆	◆	▼	◆
Female	▲	▲	◆	◆	◆	◆
<b>Gaps</b>						
White – Black	Narrowed	Narrowed	Narrowed	Narrowed	◆	◆
White – Hispanic	Narrowed	Narrowed	◆	◆	◆	◆
Male – Female	◆	◆	◆	◆	◆	◆

▲ Indicates the score was higher in 2010.

▼ Indicates the score was lower in 2010.

◆ Indicates no significant change in the score or the gap in 2010.

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

### What are students studying in geography?

**47%** of fourth-graders had teachers who reported teaching about spatial dynamics and connections once or twice a month in 2010.

**64%** of eighth-graders reported studying about countries and cultures once a week or more in 2010.

**65%** of twelfth-graders reported studying about natural resources once a month or more in 2010.



# Introduction

As the world becomes more interconnected through technological advancement and shared concerns about economic, political, social, and environmental issues, the need for geographic knowledge increases. The 2010 National Assessment of Educational Progress (NAEP) geography assessments at grades 4, 8, and 12 measure the knowledge and skills students have acquired as part of their geography education.

## The Geography Framework

The National Assessment Governing Board oversees the development of NAEP frameworks that describe the specific knowledge and skills that should be assessed in each subject. Frameworks incorporate ideas and input from subject area experts, school administrators, policymakers, parents, and others. The *Geography Framework for the 2010 National Assessment of Educational Progress* describes the types of questions that should be included in the assessment and how they should be designed and scored.

The geography framework is structured around two primary dimensions: a *content dimension* and a *cognitive dimension*. Each question in the assessment has a content and a cognitive skills dimension.

**Content areas** serve to clarify the specifics of the subject matter that should be measured in the geography assessment.

**Space and place** questions measure students' knowledge of geography related to particular places on Earth, spatial patterns on Earth's surface, and physical and human processes that shape spatial patterns.

**Environment and society** questions measure students' knowledge of how people depend upon, adapt to, are affected by, and modify the natural environment.

**Spatial dynamics and connections** questions measure students' ability to understand geography as it relates to spatial variations and the connections among people and places.

The distribution of assessment time across the three content areas is the same at grades 4, 8, and 12 (40 percent space and place; 30 percent environment and society; and 30 percent spatial dynamics and connections).

**Cognitive areas** reflect the importance placed on learning geography concepts and vocabulary (knowing), so students may begin to think about what they mean (understanding) and apply them to real-world problems (applying).

**Knowing** questions ask: *What is it? Where is it?*

In this area, students are assessed on their ability to observe and recall. Students should be able to observe different elements of the landscape and answer questions about them. For example, they should be able to recall the name of a place or a resource indigenous to a particular country, or find information about trading patterns among several countries.

**Understanding** questions ask: *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 an event in their own words. Putting events in context and explaining them requires students to see connections among different pieces of geographic information, and to use that information to explain existing patterns and processes on Earth.

*Applying* questions ask: *How can knowledge and understanding be used to solve geographic problems?*

In this area, students classify, hypothesize, use inductive and deductive reasoning, and form problem-solving models. This cognitive area calls upon students to make use of many different tools and skills of geography as they attempt to develop a comprehensive understanding of a problem in order to propose viable solutions.

The proportion of the geography assessment devoted to each of the three cognitive areas differs by grade (**table 1**).

**Table 1.** Target percentage distribution of assessment time in NAEP geography, by cognitive areas and grade: 2010

Grade	Cognitive areas		
	Knowing	Understanding	Applying
Grade 4	45	30	25
Grade 8	40	30	30
Grade 12	30	30	40

More detailed information about the content and cognitive areas of the assessment is provided in the geography framework for 2010, which can be found at <http://www.nagb.org/publications/frameworks/gframework2010.pdf>.

## Reporting NAEP Results

The results from the 2010 geography assessment are based on nationally representative samples of public and nonpublic (private and Bureau of Indian Education schools) school students at grades 4, 8, and 12 (**table 2**). Unlike NAEP assessments in other subjects such as reading, mathematics, and science, the administration of the geography assessment was not designed to report results for individual states or large urban districts.

**Table 2.** Number of participating schools and students in NAEP geography assessment, by grade: 2010

Grade	Number of schools	Number of students
Grade 4	510	7,000
Grade 8	480	9,500
Grade 12	500	10,000

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

## Scale scores

NAEP geography results are reported as average scores on a 0–500 scale for each grade. Although the NAEP scale score ranges are identical for grades 4, 8, and 12, they were derived independently, and therefore scores cannot be compared across grades. NAEP scores also cannot be compared across subjects.

In addition to reporting an overall geography score for each grade, scale scores are reported at five percentiles to show trends in results for students performing at lower (10th and 25th percentiles), middle (50th percentile), and higher (75th and 90th percentiles) levels.

## Achievement levels

Based on recommendations from policymakers, educators, and members of the general public, the Governing Board sets specific achievement levels for each subject area and grade. Achievement levels are performance standards showing what students should know and be able to do. NAEP results are reported as percentages of students performing at or above the *Basic* and *Proficient* levels and at the *Advanced* level.

As provided by law, the National Center for Education Statistics (NCES), upon review of congressionally mandated evaluations of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted with caution. The NAEP achievement levels have been widely used by national and state officials.

### NAEP Achievement Levels

**Basic** denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.

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

**Advanced** represents superior performance.

## Interpreting the Results

### Changes in performance over time

National results from the 2010 geography assessment are compared to results from two earlier assessments in 1994 and 2001. NAEP reports results using widely accepted statistical standards; findings are reported based on a statistical significance level set at .05 with appropriate adjustments for multiple comparisons (see the Technical Notes for more information). An asterisk (\*) is used in tables and figures to indicate that an earlier year's score or percentage is significantly different from the 2010 results. Only those differences that are found to be statistically significant are discussed as higher or lower. The same standard applies when comparing the performance of one student group to another.



A significant increase or decrease in scores from one assessment year to the next is reliable evidence that student performance has changed. However, NAEP is not designed to identify the causes of these changes. Furthermore, the many factors that may influence average student achievement scores also change over time. These include educational policies and practices, available resources, and the demographic characteristics of the student body.

### Accommodations and exclusions in NAEP

It is important to assess all selected students from the target population, including students with disabilities (SD) and English language learners (ELL). To accomplish this goal, many of the same testing accommodations allowed on state testing (e.g., extra testing time or individual rather than group administration) are provided for SD and ELL students participating in NAEP. Accommodations were first made available for the geography assessment in 2001. Prior to 2001, no accommodations were provided in the NAEP geography assessment.

Because providing accommodations represented a change in testing conditions that could potentially affect the measurement of changes over time, split samples of students were

assessed nationally in 2001. One sample permitted accommodations, and the other did not. Although the results for both samples are presented in the tables and figures, the comparisons to 2001 in the text are based on just the accommodated samples. The split-sample study provides the basis for comparing results for accommodated (2010) and non-accommodated (1994) samples.

Even with the availability of accommodations, some students may still be excluded. See appendix **tables A-1** through **A-3** for the percentages of students accommodated and excluded at each of the three grades. More information about NAEP's policy on the inclusion of special-needs students is available at <http://nces.ed.gov/nationsreportcard/about/inclusion.asp>.

### Explore Additional Results

Not all of the data from the NAEP geography assessment are presented in this report. Additional results can be found on the Nation's Report Card website at [http://nationsreportcard.gov/geography\\_2010](http://nationsreportcard.gov/geography_2010) and in the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.



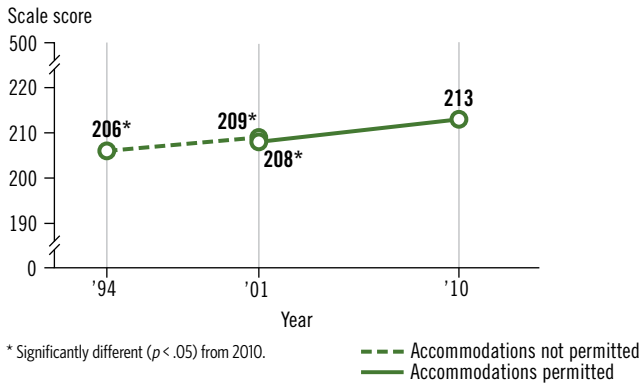


# GRADE 4

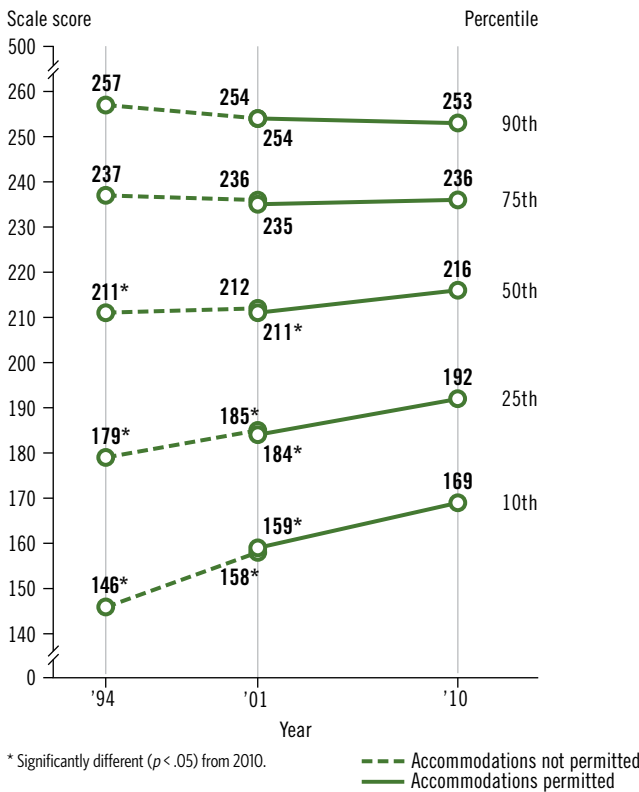
## Fourth-graders post highest average score to date

The average geography score for the nation's fourth-graders was higher in 2010 than in the previous assessments in 2001 and 1994. An increase in the percentage of students performing at or above the *Basic* level is due to improvements among lower- and middle-performing students (i.e., those at the 10th, 25th, and 50th percentiles). There were no corresponding increases among higher-performing students and no significant change in the percentage of students performing at or above the *Proficient* level. Increases in scores for both Black and Hispanic students contributed to the narrowing of the White – Black and the White – Hispanic score gaps from 2001 to 2010.

**Figure 1.** Trend in fourth-grade NAEP geography average scores



**Figure 2.** Trend in fourth-grade NAEP geography percentile scores



## Fourth-graders' performance continues to improve

The average geography score in 2010 for the nation's fourth-graders was higher than in previous assessment years (figure 1). Fourth-graders scored 5 points higher on average in 2010 than in 2001 and 7 points higher than in 1994.

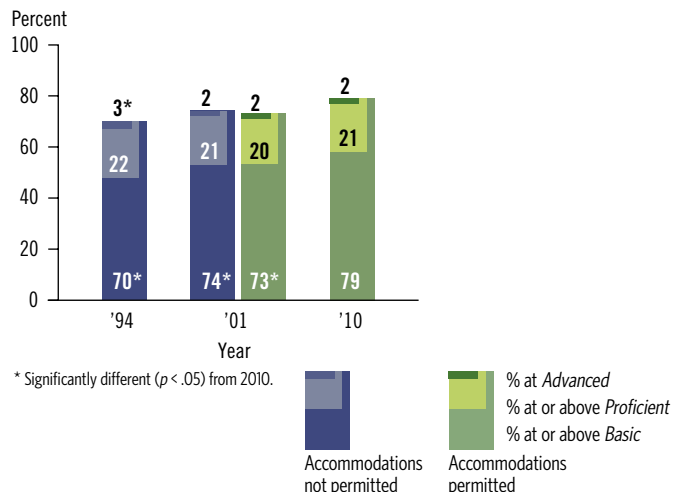
## Lower- and middle-performing students make gains

Scores for lower-performing students (at the 10th and the 25th percentiles) and middle-performing students (at the 50th percentile) were higher in 2010 than in 2001 and 1994 (figure 2). The 23-point gain from 1994 to 2010 at the 10th percentile was larger than the 13-point gain at the 25th percentile and the 4-point<sup>1</sup> gain at the 50th percentile over the same 16-year period. Scores for students performing at higher levels (at the 75th and 90th percentiles) in 2010 were not significantly different from the scores in previous assessment years.

Seventy-nine percent of students performed at or above the *Basic* level in 2010, and 21 percent performed at or above the *Proficient* level (figure 3). The percentage of students at or above *Basic* was higher in 2010 than in earlier assessment years, while there was no significant change in the percentage of students at or above *Proficient*. Two percent of students performed at the *Advanced* level in 2010, which was not significantly different from the percentage in 2001, but was lower than in 1994.

<sup>1</sup> The score-point gain is based on the difference between the unrounded scores as opposed to the rounded scores shown in the figure.

**Figure 3.** Trend in fourth-grade NAEP geography achievement-level results

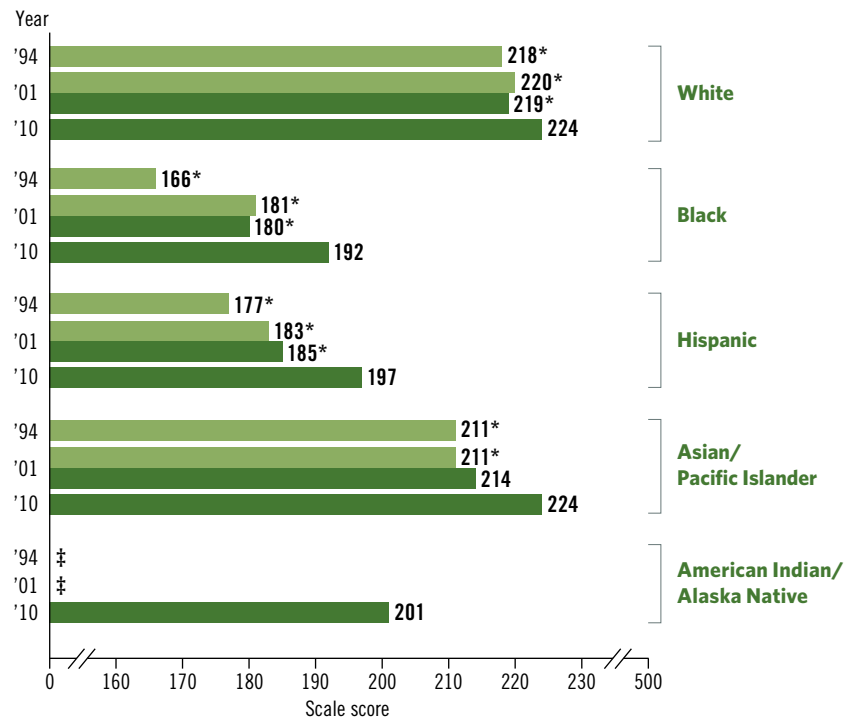


## Black and Hispanic students make greater gains from 1994 than White students

Average geography scores for White, Black, and Hispanic students were higher in 2010 than in 2001 and 1994 (figure 4). The 26-point score gain from 1994 to 2010 for Black students and the 19-point<sup>2</sup> score gain for Hispanic students were larger than the 6-point score gain for White students over the same period. There was no significant change in the average score for Asian/Pacific Islander students from 2001 to 2010 (see section on Interpreting Statistical Significance in the Technical Notes), although the score in 2010 was 13 points higher than in 1994.

In 2010, the average scores of White and Asian/Pacific Islander students were not significantly different from each other, and both groups scored higher on average than Black, Hispanic, and American Indian/Alaska Native students.

**Figure 4.** Trend in fourth-grade NAEP geography average scores, by race/ethnicity



§ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

\* Significantly different ( $p < .05$ ) from 2010.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

■ Accommodations not permitted  
■ Accommodations permitted





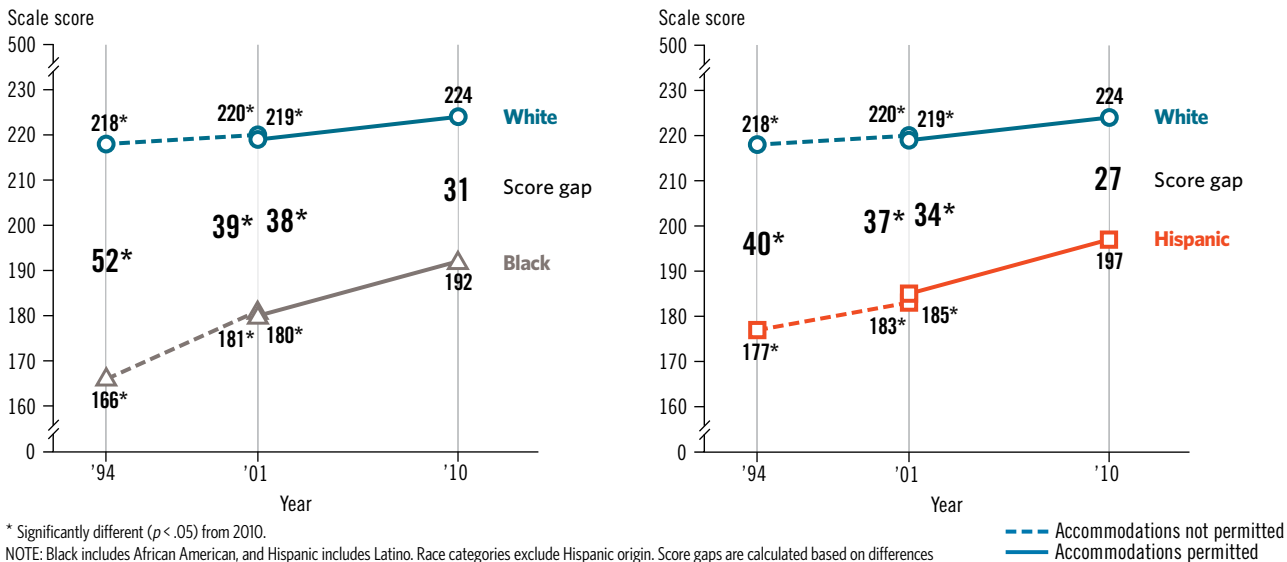
## Black and Hispanic students narrow gaps with White students

Gains made between 1994 and 2010 by Black and Hispanic fourth-graders contributed to a narrowing of the score gaps with their White peers. The White - Black gap in 2010 was 7 points smaller than the gap in 2001, and 20 points<sup>3</sup> smaller

than in 1994 (figure 5). The White - Hispanic gap in 2010 was 7 points smaller than the gap in 2001, and 13 points smaller than in 1994.

<sup>3</sup> The score-point difference is based on the difference between the unrounded scores as opposed to the rounded scores shown in the figure.

**Figure 5.** Trend in fourth-grade NAEP geography average scores and score gaps, by selected racial/ethnic groups



**Table 3.** Percentage distribution of students assessed in fourth-grade NAEP geography, by race/ethnicity: 1994, 2001, and 2010

Race/ethnicity	1994 <sup>1</sup>	2001	2010
White	72*	69*	57
Black	16	16	15
Hispanic	7*	11*	21
Asian/Pacific Islander	3*	2*	5
American Indian/Alaska Native	1	1	1

\* Significantly different ( $p < .05$ ) from 2010.

<sup>1</sup> Accommodations not permitted.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Detail may not sum to totals because results are not shown for students whose race/ethnicity was unclassified.

### Race/ethnicity proportions shift over time for grade 4

The percentage of White fourth-graders decreased in comparison to both 1994 and 2001, while the percentages of Hispanic and Asian/Pacific Islander students increased (table 3). The percentages of Black and American Indian/Alaska Native students have not changed significantly from 1994 to 2010.

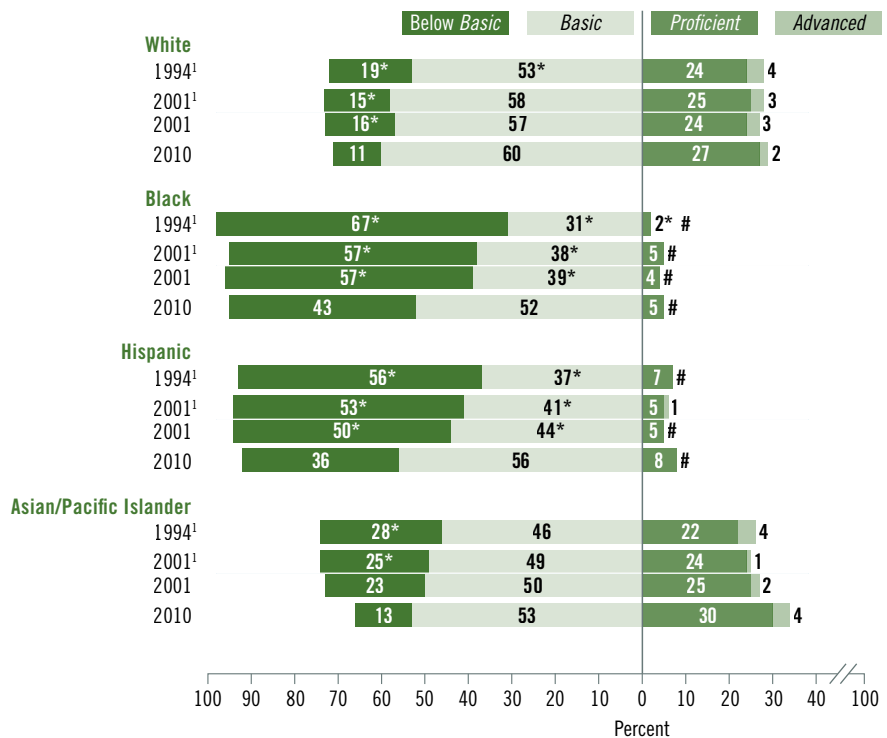


## Percentages of Black and Hispanic students at *Basic* increase in 2010

A closer look at the achievement-level results from the three assessment years shows the improvements that were made for racial/ethnic groups. The percentages of Black and Hispanic students performing at the *Basic* level were higher in 2010 than in 2001 and 1994 (figure 6). The percentage of White students at *Basic* did not change significantly from 2001 to 2010 but was higher in 2010 than in 1994.

The percentages of students performing at the *Proficient* level did not change significantly from 2001 to 2010 for any of the racial/ethnic groups; however, the percentage of Black students at *Proficient* was higher in 2010 than in 1994. There were no significant changes in the percentages of racial/ethnic groups performing at the *Advanced* level.

**Figure 6.** Trend in fourth-grade NAEP geography achievement-level results, by selected racial/ethnic groups



# Rounds to zero.

\* Significantly different ( $p < .05$ ) from 2010.

<sup>1</sup> Accommodations not permitted.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Detail may not sum to totals because of rounding.

### Additional Results for Student Groups

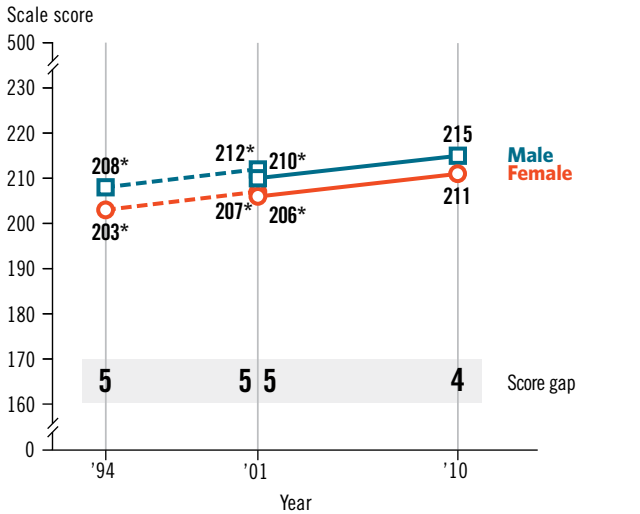
Achievement-level results and percentile scores provide additional insight into the performance of student groups. See appendix tables A-5 and A-6 for additional fourth-grade results for the student groups highlighted in this section. Similar NAEP results for other student groups can be found in the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.



## Male students score higher than female students

Male students scored 4 points higher on average than female students in 2010 (figure 7). Because male and female students made comparable gains in comparison to previous assessment years, there has been no significant change in the gender gap.

**Figure 7.** Trend in fourth-grade NAEP geography average scores and score gaps, by gender

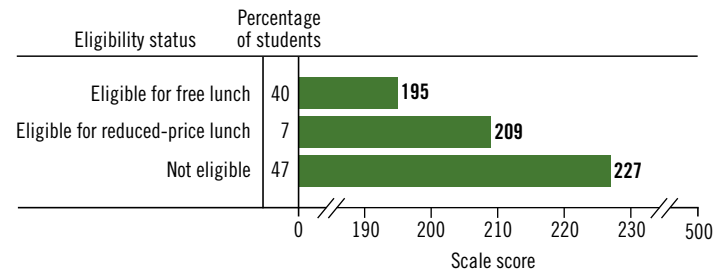


## Students' performance varies by family income level

NAEP uses students' eligibility for the National School Lunch Program as an indicator of low family income. Students from lower-income families are eligible for either free or reduced-price school lunches, while students from higher-income families are not (see the Technical Notes for eligibility criteria). Forty percent of fourth-graders were eligible for free school lunch in 2010, and 7 percent were eligible for reduced-price lunch (figure 8). Information on students' eligibility was not available for 7 percent of students.

In 2010, fourth-graders who were eligible for free lunch scored 32 points lower on average than those not eligible. Students eligible for reduced-price lunch scored 18 points lower than those not eligible. The results from 2010 are not compared to those from earlier assessment years because of recent improvements in the quality of the data on students' eligibility.

**Figure 8.** Percentage of students and average scores in fourth-grade NAEP geography, by eligibility for free or reduced-price school lunch: 2010



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

## Teachers of about three-quarters of fourth-graders teach geography topics at least once a month

As part of the 2010 fourth-grade NAEP geography assessment, questionnaires were completed by the teachers of participating students. One of the questions asked teachers to report on how often they taught certain topics as part of geography instruction. Teachers selected one of four responses for each of the six geography topics: “never or hardly ever,” “once or twice a month,” “once or twice a week,” or “almost every day.”

For each of the six geography topics, about three-quarters or more of fourth-graders had teachers who reported teaching it once a month or more (**table 4**). With one exception, the percentage of students whose teachers reported teaching a

geography topic once or twice a month was higher than the percentages of students whose teachers taught it less often or more often. For example, the percentage of students whose teachers taught about other countries and cultures once or twice a month was higher than the percentages of students whose teachers reported never or hardly ever teaching the topic or doing so on a weekly or daily basis. The one exception was the use of maps and globes, for which the percentages of students whose teachers taught it once or twice a month and those whose teachers taught it once or twice a week were not significantly different.

**Table 4.** Percentage of students assessed in fourth-grade NAEP geography, by the frequency with which their teachers taught various topics as part of their geography instruction: 2010

Geography topics	Never or hardly ever	Once or twice a month	Once or twice a week	Almost every day
Other countries and cultures	26	47	24	3
Environmental issues	19	61	16	3
Use of maps and globes	1	41	42	16
Natural resources	15	58	22	4
Space and place	25	51	20	5
Spatial dynamics and connections	25	47	21	6

NOTE: Detail may not sum to totals because of rounding.



### Explore Additional Results

Results for other background questions from the fourth-grade student, teacher, and school questionnaires are available in the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.





# Assessment Content at Grade 4

In the elementary grades, geography is generally taught as part of social studies instruction. As in other disciplines, knowledge of geography is acquired progressively. Students in the fourth grade are expected to have a fundamental grasp of some geographic tools, analytical concepts, and skills. Compared to the assessments at grades 8 and 12, the questions in the fourth-grade assessment focus more on the United States than on global content. The distribution of assessment time across the three content areas is the same at grades 4, 8, and 12 (forty percent space and place; 30 percent environment and society; and 30 percent spatial dynamics and connections). The proportion of assessment time devoted to each of the three cognitive areas differs by grade. Forty-five percent of the fourth-grade assessment focuses on students' knowledge of geography concepts and vocabulary, 30 percent focuses on students' understanding, and 25 percent focuses on how well students are able to apply their knowledge and understanding in solving geographic problems.

Because the assessment covered a range of topics and included more questions than any one student could answer, each student took just a portion of the assessment. The 90 questions that made up the entire fourth-grade assessment were divided into six sections, each containing a mixture of multiple-choice and constructed-response questions. Each student responded to questions in two 25-minute sections.





## Geography Achievement-Level Descriptions for Grade 4

NAEP geography achievement-level descriptions outline expectations of student performance at each grade. The specific descriptions of what fourth-graders should know and be able to do at the *Basic*, *Proficient*, and *Advanced* levels in geography are presented below. NAEP achievement levels are cumulative; therefore, student performance at the *Proficient* level includes the competencies associated with the *Basic* level, and the *Advanced* level includes the skills and knowledge associated with both the *Basic* and the *Proficient* levels. The cut score indicating the lower end of the score range for each level is noted in parentheses.

### **Basic (187)**

Students should be able to use words or diagrams to define basic geographic vocabulary; identify personal behaviors and perspectives related to the environment, and describe some environmental and cultural issues in their community; use visual and technological 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.

### **Proficient (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 photographs, 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. Proficient 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.

### **Advanced (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 to 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 in one location can have on another. They should be able to analyze the ways individuals and groups interact.

## What Fourth-Graders Know and Can Do in Geography

The item map below is useful for understanding performance at different levels on the NAEP scale. The scale scores on the left represent the scores for students who were likely to get the items correct or complete. The cut score at the low end of the range for each achievement level is boxed. The descriptions of selected assessment questions indicating what students need to do to answer the question correctly, along with the corresponding NAEP geography content area, are listed on the right. For example, the map on this page

shows that fourth-graders performing at the *Basic* level with a score of 189 were likely to be able to use a map to identify an import and an export of the United States from or to Canada. Students performing at the *Proficient* level with a score of 254 were likely to be able to recognize what prevents soil erosion. Students performing at the *Advanced* level with a score of 310 were likely to be able to explain how an event affects people differently.

### GRADE 4 NAEP GEOGRAPHY ITEM MAP

	Scale score	Content area	Question description
<i>Advanced</i>	500		
	//		
	351	Spatial dynamics and connections	<i>Explain population growth in U.S. regions</i>
	324	Environment and society	Identify reasons for or against using pesticides <b>(shown on page 19)</b>
	310	Environment and society	Explain how an event affects people differently
	296	Spatial dynamics and connections	Identify differences between the city and the suburb and identify reasons for the differences
	293	Spatial dynamics and connections	<i>Identify the location where a major religion began</i>
<i>Proficient</i>	283	Space and place	<i>Use a map to understand city development</i>
	276		
	271	Space and place	<i>Identify the geographical feature shown in a photograph</i>
	267	Environment and society	<i>Recognize the reason for summer from a diagram</i>
	261	Space and place	<i>Identify a land feature of the Earth</i>
	257	Space and place	<i>Identify length of time of Earth's rotation</i>
	254	Environment and society	<i>Recognize what prevents soil erosion</i>
	253	Space and place	Use latitude to identify the location of an island
	251	Space and place	Create a weather map of South America <b>(shown on page 18)</b>
	246	Spatial dynamics and connections	<i>Identify a state capital location</i>
<i>Basic</i>	245	Space and place	<i>Identify the hemisphere shown on the map</i>
	242	Spatial dynamics and connections	<i>Understand the reason why wheat is exported and coffee is imported</i>
	240		
	239	Spatial dynamics and connections	<i>Identify a use for land in the Great Plains</i> <b>(shown on page 17)</b>
	227	Space and place	<i>Identify a rainforest location</i>
	217	Environment and society	<i>Recognize the purpose for a building structure shown in a photograph</i>
	208	Spatial dynamics and connections	<i>Recognize which is more likely to be found in a city than in a small town</i>
	189	Space and place	<i>Use a map to identify an import and an export of the United States from or to Canada</i>
	187		
	184	Space and place	<i>Interpret a precipitation chart</i>
	180	Space and place	<i>Recognize how land is used in the photograph</i>
	166	Environment and society	<i>Make a recommendation based on the weather map</i>
	//		
	0		

NOTE: Regular type denotes a constructed-response question. *Italic* type denotes a multiple-choice question. The position of a question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. For constructed-response questions, the question description represents students' performance rated as completely correct. Scale score ranges for geography achievement levels are referenced on the map.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2010 Geography Assessment.



## Geography Content Area: Spatial Dynamics and Connections

The most common use of land in the Great Plains region of the United States is for

- Ⓐ fishing
- Ⓑ farming
- Ⓒ mining
- Ⓓ recreation

This sample multiple-choice question from the 2010 geography assessment measures fourth-graders' knowledge of the physical and human elements that characterize a specific region. Fifty-five percent of students knew that farming is the most common use of land in the Great Plains region of the United States.

**Percentage of fourth-grade students in each response category: 2010**

Choice A	Choice B	Choice C	Choice D	Omitted
7	55	9	28	1

The table below shows the percentage of fourth-graders within each achievement level who answered this question correctly. For example, 55 percent of fourth-graders performing at the *Basic* level selected the correct answer choice.

**Percentage of fourth-grade students responding correctly at each achievement level: 2010**

Overall	Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>
55	22	55	86	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

### Explore Additional Sample Questions

More questions from the NAEP geography assessment can be found in the Questions Tool at: <http://nces.ed.gov/nationsreportcard/itmrslx/landing.aspx>.



## Geography Content Area: Space and Place

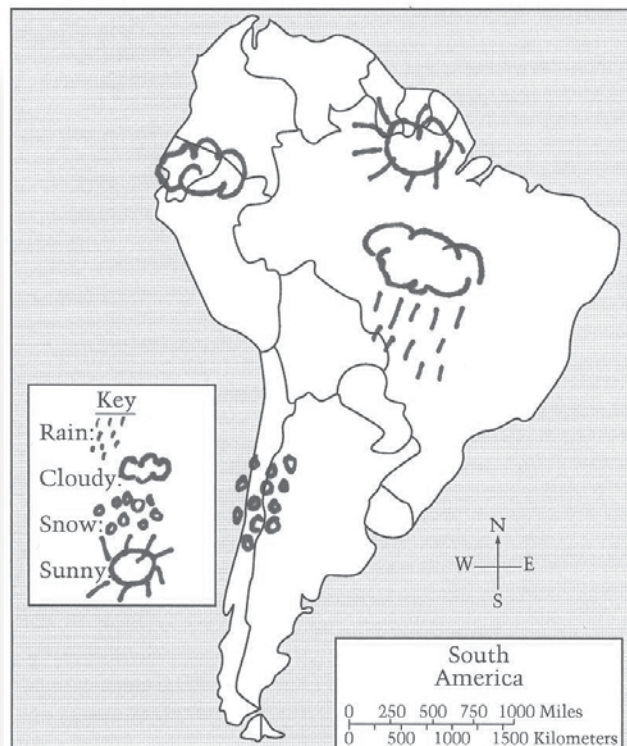
Create a weather map using the outline of South America below. Your map should include weather symbols that you draw in the key. Use your weather symbols to show the following information.

It is snowing in the southwest.

It is sunny in the northeast.

It is cloudy in the northwest.

It is cloudy and raining in the central region.



The sample student response shown above was rated "Complete" because it placed four appropriate symbols in the key, and the four symbols were placed correctly on the map. As shown in the table below, 38 percent of fourth-graders' responses to this question were rated "Complete."

### Percentage of fourth-grade students in each response category: 2010

Complete	Acceptable	Partial	Unacceptable	Omitted
38	27	17	9	8

NOTE: Detail may not sum to totals because the percentage of responses rated as "Off-task" is not shown. Off-task responses are those that do not provide any information related to the assessment task.

This sample constructed-response question measures fourth-graders' ability to understand the use of a map key and create one for a weather map. Responses to this question were rated using four scoring levels.

**Complete** responses placed four appropriate symbols in the key, and those four symbols were placed correctly on the map.

**Acceptable** responses placed two to four appropriate symbols in the key, and two to three of those symbols were placed correctly on the map.

**Partial** responses placed one to four appropriate symbols in the key, and zero to one of those symbols were placed correctly on the map.

**Unacceptable** responses did not place any appropriate symbols in the key, and if any symbols were placed on the map, they were uninterpretable since there was no key.

The following table shows the percentage of fourth-graders within each achievement level whose responses to this question were rated as "Complete." For example, among fourth-graders performing at the *Basic* level, 39 percent provided responses rated as "Complete."

### Percentage of fourth-grade students' responses rated as "Complete" at each achievement level: 2010

Overall	Below Basic	At Basic	At Proficient	At Advanced
38	6	39	70	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.





## Geography Content Area: Environment and Society

There are differences of opinion about using chemicals called pesticides to kill insects.

Give one reason in favor of using pesticides.

### COMPLETE RESPONSE:

To help keep farmers crops from being ate by bugs.

Give one reason against using pesticides.

### COMPLETE RESPONSE:

Because bird and other animals can get to the food, eat it and die.

This sample constructed-response question measures fourth-graders' ability to understand that there are both positive and negative consequences of using some types of technology. Responses to this question were rated using three scoring levels. Spelling and grammar were not considered in rating the responses.

**Complete** responses included one correct reason for the use of pesticides and one correct reason against their use.

**Partial** responses included one correct reason for the use of pesticides or one correct reason against the use of pesticides.

**Unacceptable** responses did not include a correct reason for or against the use of pesticides.

The sample student response shown to the left was rated "Complete" because it provided one correct reason for the use of pesticides and one correct reason for not using pesticides. Students gave a range of responses to both parts of the question, including that termites destroyed wood as a reason in favor of pesticides, and that pesticides harmed the environment as a reason against their use. As shown in the table below, 16 percent of fourth-graders' responses to this question received a "Complete" rating.

### Percentage of fourth-grade students in each response category: 2010

Complete	Partial	Unacceptable	Omitted
16	39	38	6

NOTE: Detail may not sum to totals because the percentage of responses rated as "Off-task" is not shown. Off-task responses are those that do not provide any information related to the assessment task.

The following table shows the percentage of fourth-graders within each achievement level whose responses to this question were rated as "Complete." For example, among fourth-graders performing at the *Basic* level, 16 percent of students provided responses rated as "Complete."

### Percentage of fourth-grade students' responses rated as "Complete" at each achievement level: 2010

Overall	Below Basic	At Basic	At Proficient	At Advanced
16	4	16	30	‡

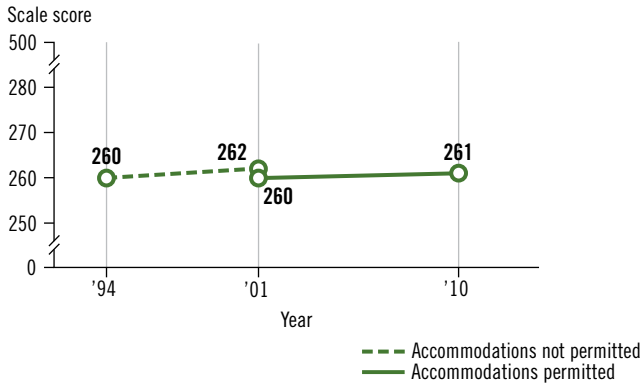
‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

# GRADE 8

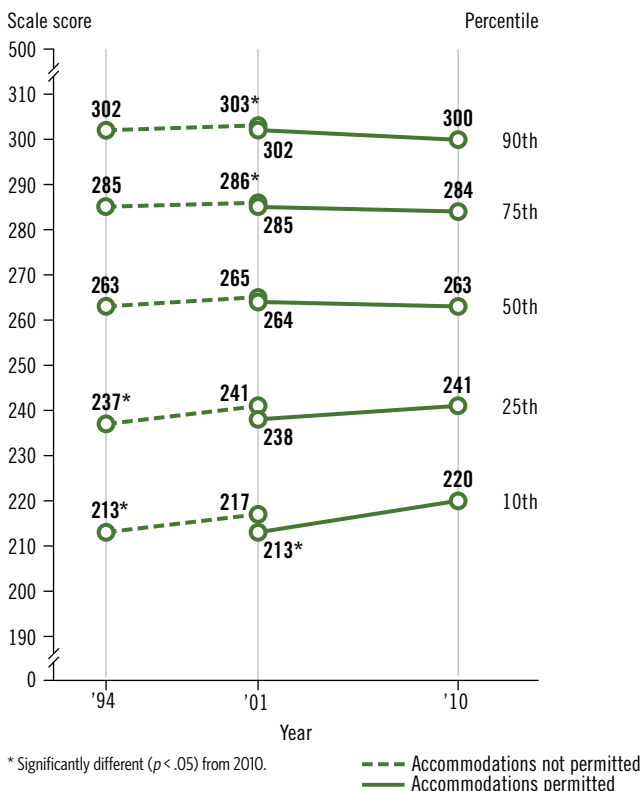
## No significant change in eighth-graders' performance

The average geography score in 2010 for the nation's eighth-graders was not significantly different from the scores in previous assessment years; however, the score for the lowest-performing students at the 10th percentile was higher in 2010 than in 2001 and 1994. Gains from 1994 to 2010 for Black students contributed to a narrowing of the White – Black score gap.

**Figure 9.** Trend in eighth-grade NAEP geography average scores



**Figure 10.** Trend in eighth-grade NAEP geography percentile scores



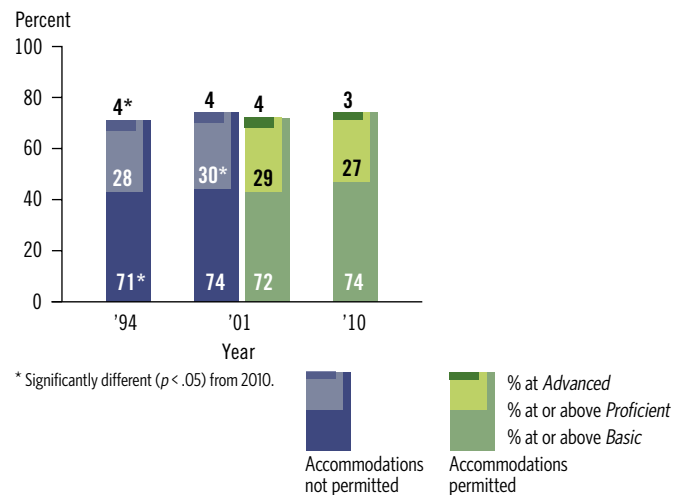
## Lower-performing students make gains from 1994

The average score on the NAEP geography assessment in 2010 at grade 8 was not significantly different from the scores on previous assessments in 2001 and 1994 (figure 9).

Although there was no significant change in the overall average score from 2001 to 2010, there was an increase over the same period in the score of students at the 10th percentile (figure 10). In comparison to 1994, scores in 2010 were higher for students at the 10th and 25th percentiles. There were no significant changes in the scores at the 50th, 75th, and 90th percentiles compared to previous assessment years.

Seventy-four percent of eighth-graders performed at or above the *Basic* level in 2010, and 27 percent performed at or above the *Proficient* level (figure 11). The percentage of students at or above *Basic* was not significantly different from the percentage in 2001 but was higher than in 1994. There was no significant change in the percentage of students at or above *Proficient* in comparison to previous assessment years. Three percent of students performed at the *Advanced* level in 2010, which was not significantly different from the percentage in 2001, but was lower than in 1994.

**Figure 11.** Trend in eighth-grade NAEP geography achievement-level results





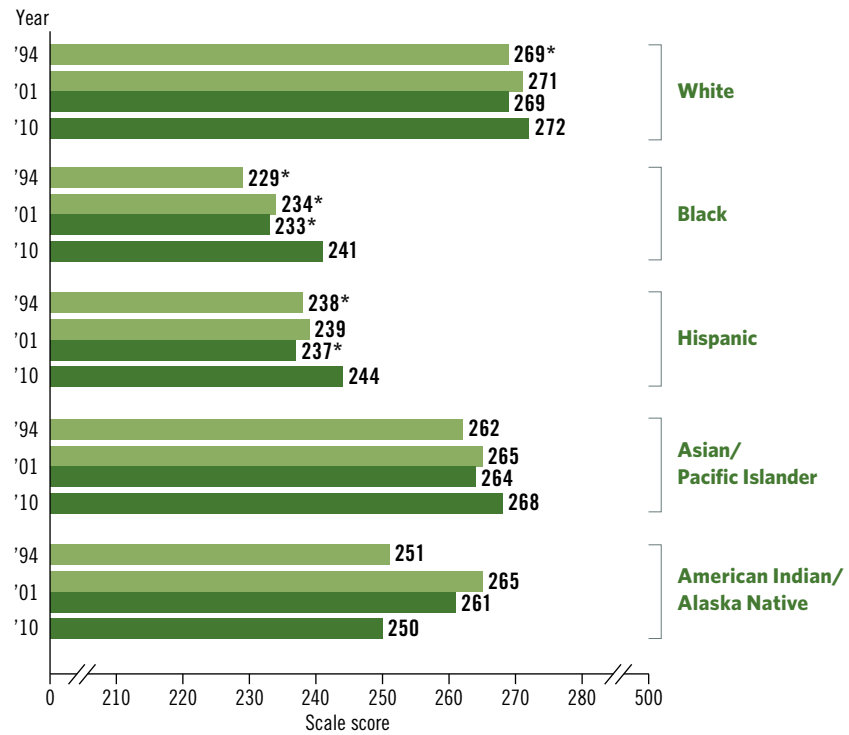
## Black students make greater gain from first assessment year than White students

The average scores for Black and Hispanic students were higher in 2010 than in both previous assessment years (figure 12). The average score for White students in 2010 was not significantly different from the score in 2001 but was higher than the score in 1994. The 12-point increase in the average score for Black students from 1994 to 2010 was larger than the 3-point score gain made by White students over the same period. There were no significant changes in the average scores for Asian/Pacific Islander and American Indian/Alaska Native students.

Although not shown here, scores increased from 1994 to 2010 for Black students at the 10th, 25th, 50th, 75th, and 90th percentiles. Scores were higher in 2010 than in 1994 for White and Hispanic students at the 10th and 25th percentiles, but not significantly different at the 50th, 75th, and 90th percentiles (see appendix table A-8).

In 2010, the average scores for White and Asian/Pacific Islander students were not significantly different from each other, and both were higher than the scores for Black, Hispanic, and American Indian/Alaska Native students.

**Figure 12.** Trend in eighth-grade NAEP geography average scores, by race/ethnicity



\* Significantly different ( $p < .05$ ) from 2010.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

■ Accommodations not permitted  
■ Accommodations permitted



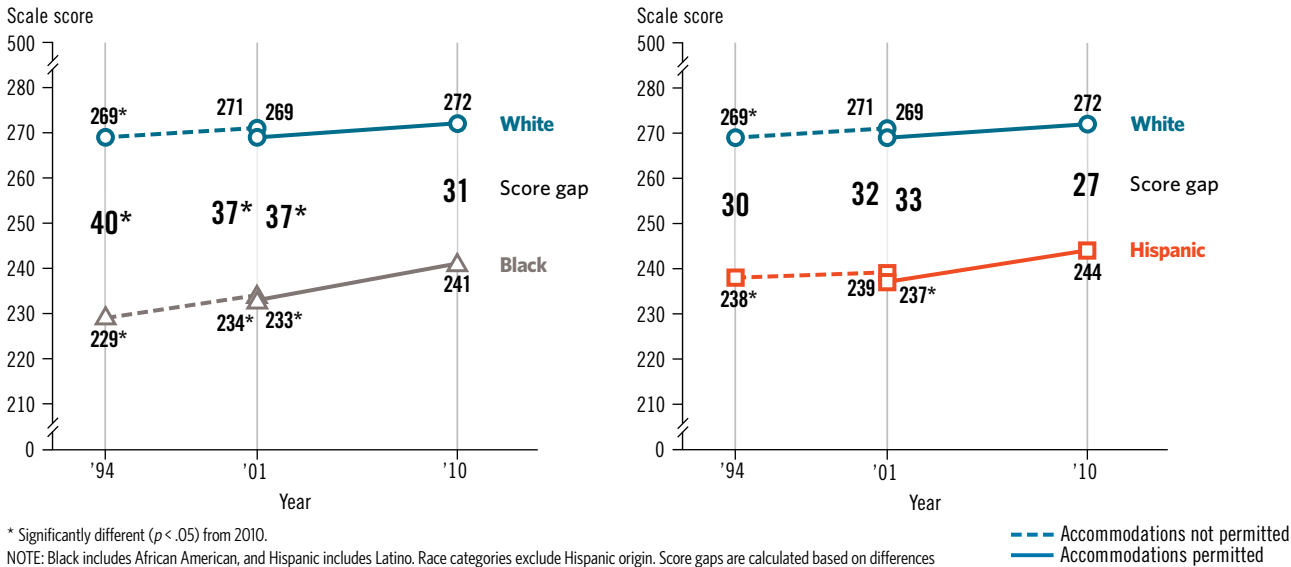


## White – Black gap narrows

The 31-point gap in average geography scores between White and Black students was narrower than the gaps in both 2001 and 1994 (figure 13). The 27-point score gap between White

and Hispanic students in 2010 was not significantly different from the score gap in either 2001 or 1994.

**Figure 13.** Trend in eighth-grade NAEP geography average scores and score gaps, by selected racial/ethnic groups



**Table 5.** Percentage distribution of students assessed in eighth-grade NAEP geography, by race/ethnicity: 1994, 2001, and 2010

Race/ethnicity	1994 <sup>1</sup>	2001	2010
White	72*	69*	59
Black	15	14	15
Hispanic	8*	11*	20
Asian/Pacific Islander	3*	4	5
American Indian/Alaska Native	1	1	1

\* Significantly different ( $p < .05$ ) from 2010.

<sup>1</sup> Accommodations not permitted.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Detail may not sum to totals because results are not shown for students whose race/ethnicity was unclassified.

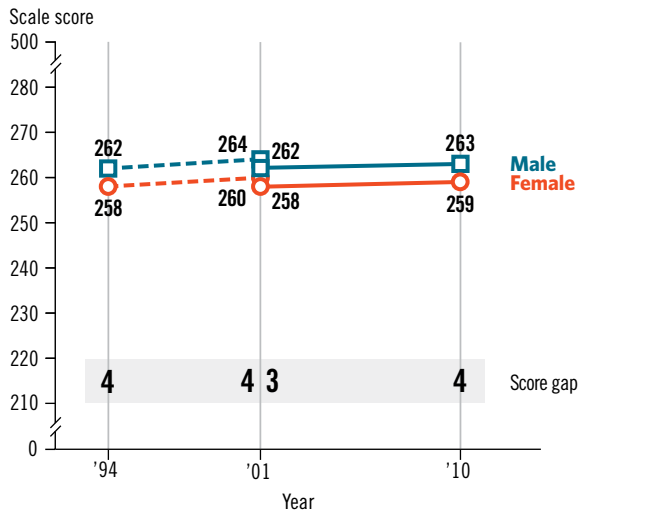
## Race/ethnicity proportions shift over time for grade 8

The percentage of White eighth-graders was smaller in 2010 than in 2001 and 1994, while the percentage of Hispanic students was larger (table 5). The percentage of Asian/Pacific Islander students in 2010 was not significantly different from 2001, but was larger than in 1994. The percentages of Black and American Indian/Alaska Native students have not changed significantly from 1994 to 2010.

## Male students score higher than female students

Male students scored 4 points higher on average than female students in 2010 (figure 14). There was no significant change in the score of either male or female students in comparison to earlier assessment years.

**Figure 14.** Trend in eighth-grade NAEP geography average scores and score gaps, by gender



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

--- Accommodations not permitted  
— Accommodations permitted

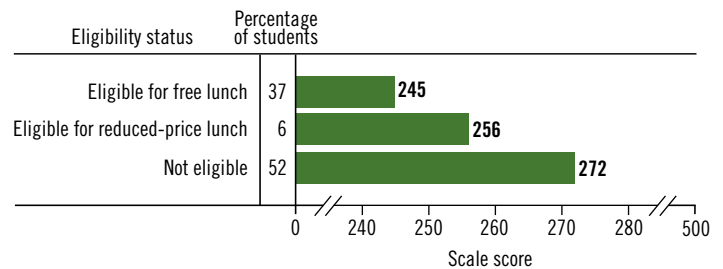
### Additional Results for Student Groups

Achievement-level results and percentile scores provide additional insight into the performance of student groups. See appendix tables A-7 and A-8 for additional eighth-grade results for the student groups highlighted in this section. Similar NAEP results for other student groups can be found in the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.

## Students' performance varies by family income level

Thirty-seven percent of eighth-graders were eligible for free school lunch in 2010, and 6 percent were eligible for reduced-price lunch (figure 15). Students who were not eligible scored 16 points higher on average than students eligible for reduced-price school lunch, who in turn scored 11 points higher than those eligible for free lunch.

**Figure 15.** Percentage of students and average scores in eighth-grade NAEP geography, by eligibility for free or reduced-price school lunch: 2010



NOTE: Detail may not sum to totals because results are not shown for the "Information not available" category.



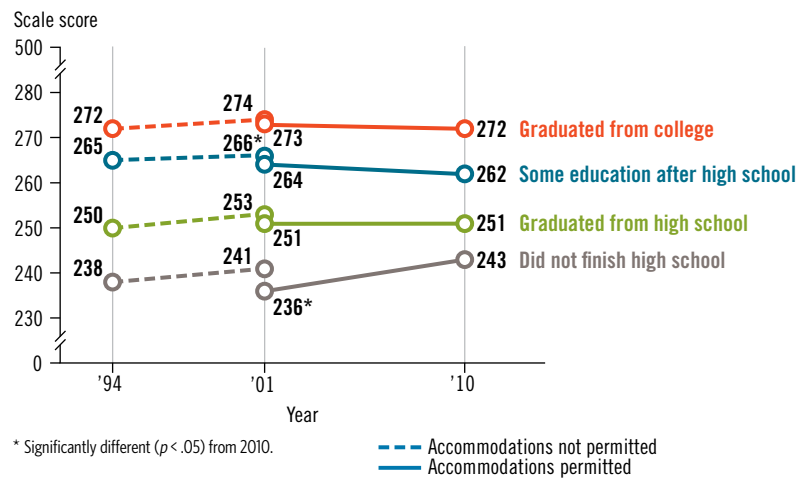
## Higher levels of parental education associated with higher scores

Eighth-graders were asked to report the highest level of education completed by each parent. Five response options—did not finish high school, graduated from high school, some education after high school, graduated from college, and “I don’t know”—were offered. Results are reported for the highest level of education for either parent.

Scores in 2010 were higher for students who reported higher levels of parental education than for those who reported lower levels (figure 16). For example, students whose parents graduated from college scored higher on average than those whose parents had some education after high school, who in turn scored higher than those whose parents’ highest level of education was high school.

Students whose parents did not finish high school scored 7 points higher in 2010 than in 2001, while there were no significant changes in scores for students who reported other levels of parental education.

**Figure 16.** Trend in eighth-grade NAEP geography average scores, by highest level of parental education

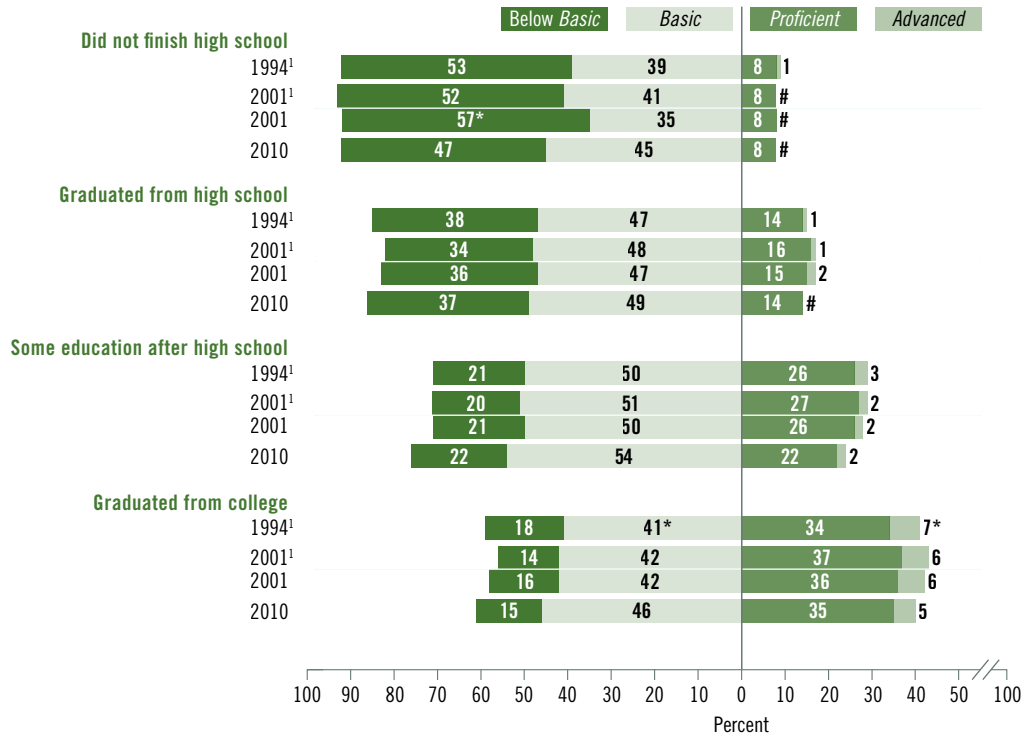


SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

## Percentage at *Advanced* decreases from 1994 for students whose parents graduated from college

A closer look at the achievement-level results by level of parental education shows a decrease from 2001 to 2010 in the percentage below *Basic* for students whose parents did not finish high school (figure 17). There was no significant change in the percentage at *Basic* for these students. The percentage at *Advanced* was lower in 2010 than in 1994 for students whose parents graduated from college.

**Figure 17.** Achievement-level results in eighth-grade NAEP geography, by highest level of parental education: 1994, 2001, and 2010



# Rounds to zero.  
 \* Significantly different ( $p < .05$ ) from 2010.  
<sup>1</sup> Accommodations not permitted.  
 NOTE: Detail may not sum to totals because of rounding.

**Table 6.** Percentage of students assessed in eighth-grade NAEP geography, by highest level of parental education: 1994, 2001, and 2010

Parental education level	1994 <sup>1</sup>	2001	2010
Did not finish high school	7	6*	8
Graduated from high school	22*	18	17
Some education after high school	19*	19	17
Graduated from college	42*	47	48
Don't know	10	10	10

\* Significantly different ( $p < .05$ ) from 2010.  
<sup>1</sup> Accommodations not permitted.

### Percentage of students with college-educated parents increases from 1994

The percentage of eighth-graders who reported at least one parent graduated from college increased from 42 percent in 1994 to 48 percent in 2010 (table 6). The percentages of students whose parents' highest level of education was high school graduation or some education after high school decreased over the same period. Eight percent of students reported in 2010 that neither parent finished high school, which was higher than the percentage in 2001, but not significantly different from the percentage in 1994.



## Sixty-four percent of students report studying countries and cultures once a week or more in 2010

As part of the eighth-grade student questionnaire, students were asked how often they studied certain geography topics including natural resources, countries and cultures, and environmental issues. Students selected one of four responses for each of the three topics: “never or hardly ever,” “once or twice a month,” “once or twice a week,” or “almost every day.” The data were collapsed into two categories in order to compare the percentages of students reporting more frequent study of a topic (weekly or daily) and those reporting less frequent study (never or hardly ever or monthly).

In 2010, approximately one-third of students reported studying about natural resources or environmental issues once a week or

more, and almost two-thirds reported studying about countries and cultures once a week or more (table 7). Because the same question was asked of eighth-graders assessed in 1994 and 2001, the percentages can be compared over time. The percentage of students studying natural resources once a week or more in 2010 was lower than in 2001, but not significantly different from the percentage in 1994. The percentages of students studying countries and cultures or environmental issues once a week or more were not significantly different from the percentages in 2001 and were higher than the percentages in 1994.

**Table 7.** Percentage of students assessed in eighth-grade NAEP geography, by how often they studied various geography topics in school: 1994, 2001, and 2010

Geography topics	Twice a month or less			Once a week or more		
	1994 <sup>1</sup>	2001	2010	1994 <sup>1</sup>	2001	2010
Natural resources	70	67*	70	30	33*	30
Countries and cultures	48*	37	36	52*	63	64
Environmental issues	67*	65	63	33*	35	37

\* Significantly different ( $p < .05$ ) from 2010.

<sup>1</sup> Accommodations not permitted.

### Explore Additional Results

Results for other background questions from the eighth-grade student, teacher, and school questionnaires are available in the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

# Assessment Content at Grade 8

In middle school, geography is often taught as a separate subject of study or a separate unit of instruction within social studies. Content is aimed at helping students recognize the regionalization as well as the physical characteristics of Earth and the cultural characteristics of those who inhabit it. At grade 8, students are expected to have a more detailed understanding of the three content areas than at grade 4 and be able to apply geographic tools, analytical concepts, and skills to a broader range of contexts. Students at grade 8 are also expected to know and understand content on a more global scale than at grade 4. The distribution of assessment time across the three content areas is the same at grades 4, 8, and 12 (forty percent space and place; 30 percent environment and society; and 30 percent spatial dynamics and connections). The proportion of assessment time devoted to each of the three cognitive areas differs by grade. Forty percent of the eighth-grade assessment focuses on students' knowledge of geography concepts and vocabulary, 30 percent focuses on students' understanding, and 30 percent focuses on how well students are able to apply their knowledge and understanding in solving geographic problems.

The 124 questions that made up the entire eighth-grade assessment were divided into seven sections, each containing a mixture of multiple-choice and constructed-response questions. Each student responded to questions in either two 25-minute sections or one 50-minute section.



## Geography Achievement-Level Descriptions for Grade 8

NAEP geography achievement-level descriptions outline certain expectations of student performance. The specific descriptions of what eighth-graders should know and be able to do at the *Basic*, *Proficient*, and *Advanced* levels in geography are presented below. NAEP achievement levels are cumulative; therefore, student performance at the *Proficient* level includes the competencies associated with the *Basic* level, and the *Advanced* level includes the skills and knowledge associated with both the *Basic* and the *Proficient* levels. The cut score indicating the lower end of the score range for each level is noted in parentheses.

### **Basic (242)**

Students should possess fundamental knowledge and vocabulary of concepts relating to patterns, relationships, distance, direction, 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 countries and 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 databases 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 spatial 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.



## What Eighth-Graders Know and Can Do in Geography

The item map below illustrates the range of geography knowledge and skills demonstrated by eighth-graders. The scale scores on the left represent the scores for students who were likely to get the items correct or complete. The cut score at the low end of the range for each achievement level is boxed. The descriptions of selected assessment questions indicating what students need to do to answer the question correctly, along with the corresponding NAEP geography

content area, are listed on the right. For example, the map on this page shows that eighth-graders performing at the *Basic* level with a score of 269 were likely to be able to identify which of four maps shows the most area. Students performing at the *Proficient* level with a score of 285 were likely to be able to explain the effect of a monsoon in India. Students performing at the *Advanced* level with a score of 332 were likely to be able to describe the impact of a highway on a landscape.

### GRADE 8 NAEP GEOGRAPHY ITEM MAP

	Scale score	Content area	Question description
<i>Advanced</i>	500		
	//		
	419	Spatial dynamics and connections	<i>Understand the indication of different populations on a map</i>
	412	Space and place	<i>Identify the reason for the trend shown on a graph</i>
	404	Space and place	Identify landforms on a diagram
	390	Environment and society	Describe changes in steel mills over time
	361	Spatial dynamics and connections	Use the passage to explain reasons for immigration to America
	346	Space and place	<i>Identify where the landform is found in a photograph</i>
	344	Spatial dynamics and connections	Explain urban population changes based on a graph <b>(shown on pages 32 and 33)</b>
	332	Environment and society	Describe the impact of a highway on a landscape
	324	Environment and society	<i>Identify a true statement about the American Southwest</i>
	321	Spatial dynamics and connections	<i>Identify a similarity between Los Angeles and San Antonio</i>
<i>Proficient</i>	<b>315</b>		
	313	Space and place	Explain and describe travel over time
	307	Environment and society	<i>Recognize why the Great Plains sod houses were built</i> <b>(shown on page 34)</b>
	300	Space and place	<i>Understand the change in the central business district</i>
	297	Environment and society	<i>Identify a cause of ozone depletion</i>
	295	Spatial dynamics and connections	<i>Recognize a cause for out migration</i>
	288	Environment and society	<i>Use a map to identify the lake near the dam</i>
	285	Environment and society	<i>Explain the effect of a monsoon in India</i>
<i>Basic</i>	<b>282</b>		
	273	Spatial dynamics and connections	<i>Identify a factor that contributed to the U.S. westward expansion</i>
	269	Space and place	<i>Identify which of four maps shows the most area</i> <b>(shown on page 31)</b>
	257	Space and place	<i>Use a map to identify a physical point in Australia</i>
	249	Spatial dynamics and connections	<i>Identify the land use shown in a photograph</i>
	<b>242</b>		
	225	Space and place	<i>Use a map to identify who the United States traded with most</i>
	217	Space and place	<i>Locate Antarctica on a map</i>
	183	Space and place	<i>Identify the effect of the sun's heat on water</i>
	//		
0			

NOTE: Regular type denotes a constructed-response question. *Italic* type denotes a multiple-choice question. The position of a question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. For constructed-response questions, the question description represents students' performance rated as completely correct. Scale score ranges for geography achievement levels are referenced on the map.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2010 Geography Assessment.





## Geography Content Area: Space and Place



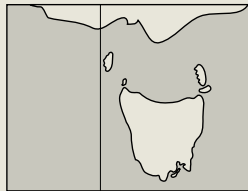
Map 1



Map 2



Map 3



Map 4

Different scales were used to draw the maps above. Which map shows the largest area?

- ☐ A Map 1
- ☐ B Map 2
- ☐ C Map 3
- ☐ D Map 4

This sample multiple-choice question from the 2010 geography assessment measures eighth-graders' ability to interpret information about maps drawn at different scales. Seventy percent of students knew that Map 1 showed the largest area of the four maps.

Percentage of eighth-grade students in each response category: 2010

Choice A	Choice B	Choice C	Choice D	Omitted
70	21	1	7	#

# Rounds to zero.

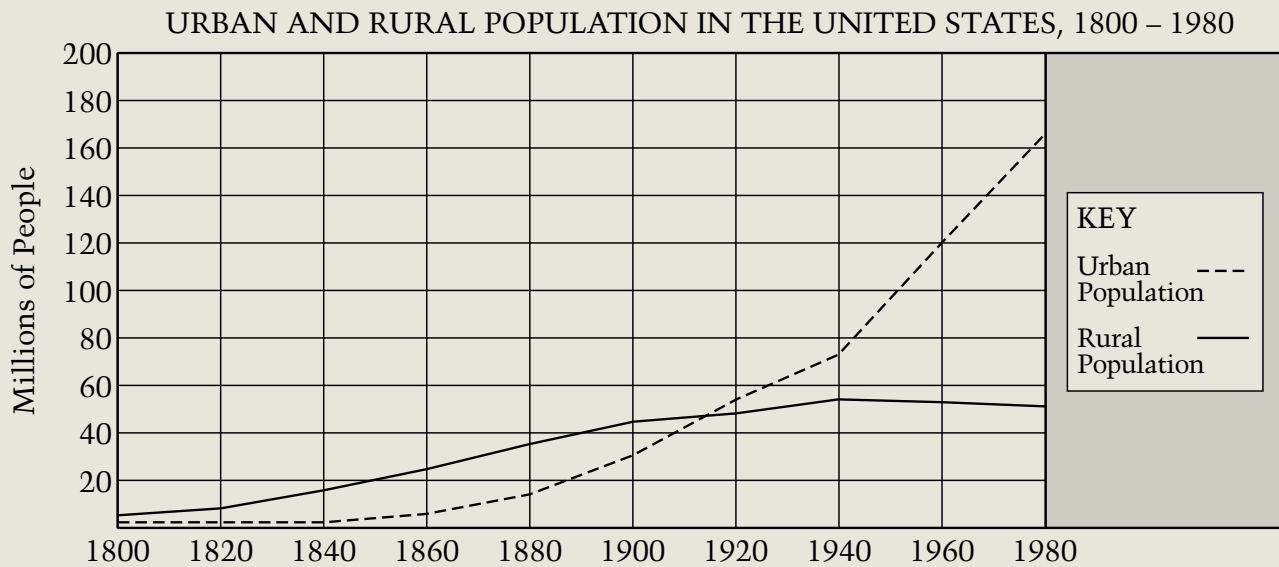
NOTE: Detail may not sum to totals because of rounding.

The table below shows the percentage of eighth-graders within each achievement level who answered this question correctly. For example, 71 percent of eighth-graders at the *Basic* level chose the correct answer.

Percentage of eighth-grade students responding correctly at each achievement level: 2010

Overall	Below Basic	At Basic	At Proficient	At Advanced
70	47	71	92	99

## Geography Content Area: Spatial Dynamics and Connections



Give two specific reasons that explain why the population changes shown in the graph have occurred.

**COMPLETE RESPONSE:**

As more and more people moved to the U.S. many chose to live in cities because there are more people and more things to do, there may be more jobs offered in the city and when people immigrate, they may chose to stay in the place where they landed; a city

This sample constructed-response question (shown on the previous page) measures eighth-graders' ability to interpret a graph depicting changes in the population over time and provide reasons for these changes. Responses to this question were rated using three scoring levels. Spelling and grammar were not considered in rating the responses.

**Complete** responses provided two reasons that explained why the population shifted from rural to urban areas as shown in the graph.

**Partial** responses provided one reason that explained why the population shifted from rural to urban areas as shown in the graph.

**Unacceptable** responses did not provide any significant factor contributing to the shift of population from rural to urban areas as shown in the graph.

The sample student response shown on the previous page was rated "Complete" because it provided two reasons for the population shift from rural to urban areas over the years shown in the graph: there were more job opportunities in cities, and many people stayed in the cities where they first immigrated. Other credited responses that explained population shifts from rural to urban areas during this period included the loss of rural

jobs due to the mechanization of agriculture, and urban sprawl, which expanded city limits and their urban populations. As shown in the table below, 4 percent of eighth-graders' responses to this question were rated "Complete."

**Percentage of eighth-grade students in each response category: 2010**

Complete	Partial	Unacceptable	Omitted
4	26	64	5

NOTE: Detail may not sum to totals because the percentage of responses rated as "Off-task" is not shown. Off-task responses are those that do not provide any information related to the assessment task.

The following table shows the percentage of eighth-graders within each achievement level whose responses to this question were rated as "Complete." For example, among eighth-graders performing at the *Basic* level, 2 percent of students provided "Complete" responses.

**Percentage of eighth-grade students' responses rated as "Complete" at each achievement level: 2010**

Overall	Below Basic	At Basic	At Proficient	At Advanced
4	#	2	9	30

# Rounds to zero.





## Geography Content Area: Environment and Society



Fred Hultstrand History in Pictures Collection.  
NDIRS-NDSU, Fargo ND.

Early settlers on the North American Great Plains used sod to build houses such as the one shown above primarily because

- Ⓐ they did not have experience building with wood
- Ⓑ sod offered greater protection than wood from cold weather
- Ⓒ there was little wood available for building
- Ⓓ wood houses were vulnerable to prairie fires

This sample multiple-choice question measures eighth-graders' knowledge of how different societies adapt to or modify the environment to meet their needs. Forty-eight percent of students knew that sod was used to build houses on the North American Great Plains because there was little wood available for building.

Percentage of eighth-grade students in each response category: 2010

Choice A	Choice B	Choice C	Choice D	Omitted
10	27	48	15	#

# Rounds to zero.

The table below shows the percentage of eighth-graders within each achievement level who answered this question correctly. For example, 45 percent of eighth-graders at the *Basic* level chose the correct answer.

Percentage of eighth-grade students responding correctly at each achievement level: 2010

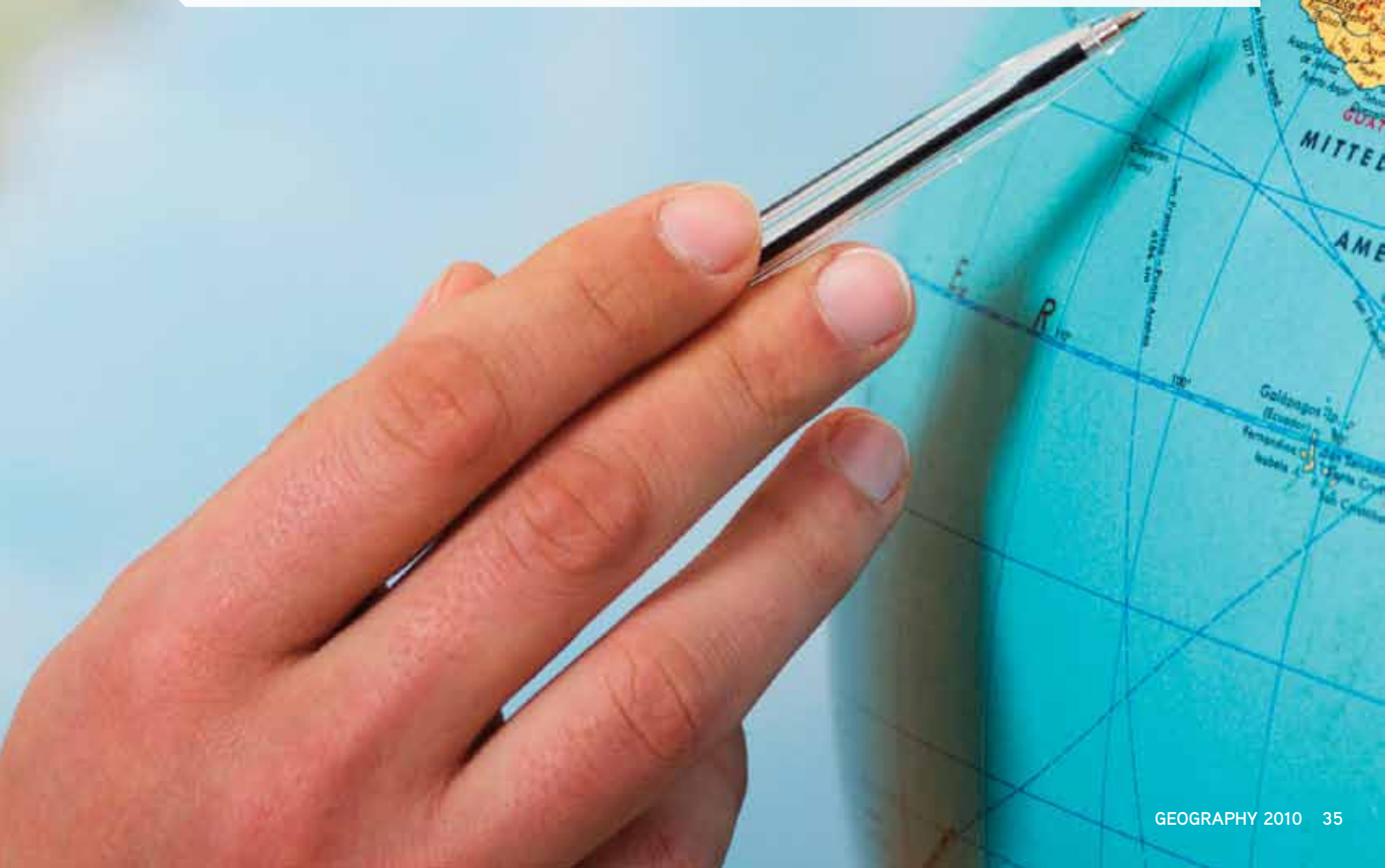
Overall	Below <i>Basic</i>	<i>At Basic</i>	<i>At Proficient</i>	<i>At Advanced</i>
48	33	45	64	87



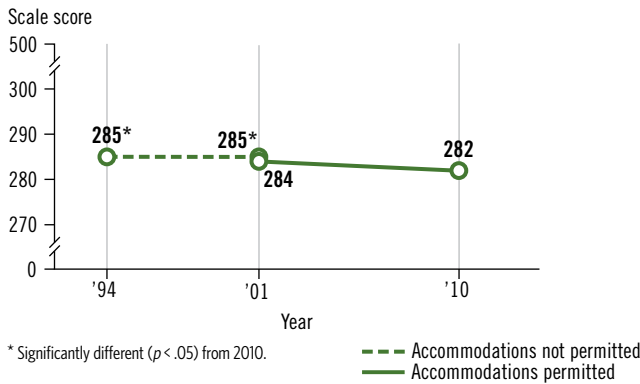
# GRADE 12

## Twelfth-grade performance declines from 1994

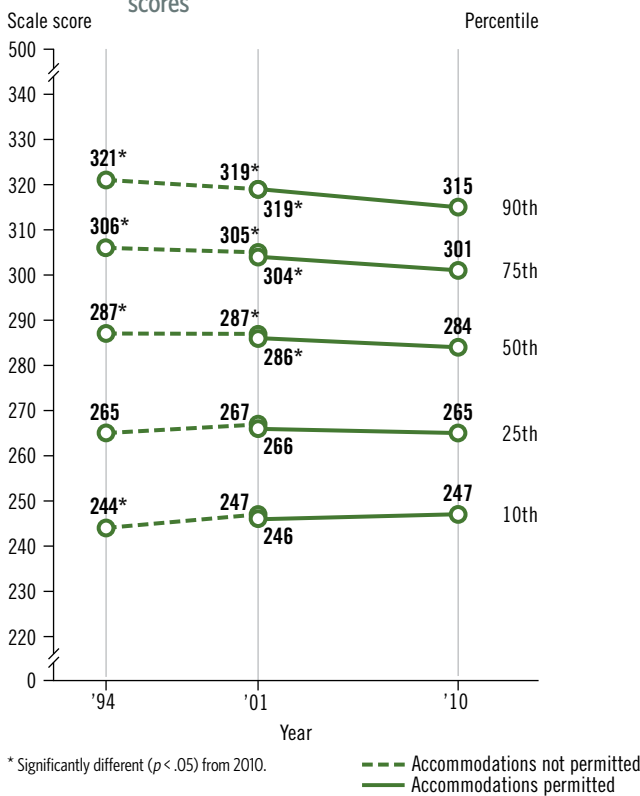
The percentage of twelfth-graders performing at or above the *Basic* level in 2010 did not change significantly in comparison to 2001 or 1994; however, the percentage at or above *Proficient* was lower in 2010 than in the two earlier assessment years. The average geography score for the nation's twelfth-graders in 2010 was not significantly different from the score in 2001 but was lower than in 1994.



**Figure 18.** Trend in twelfth-grade NAEP geography average scores



**Figure 19.** Trend in twelfth-grade NAEP geography percentile scores



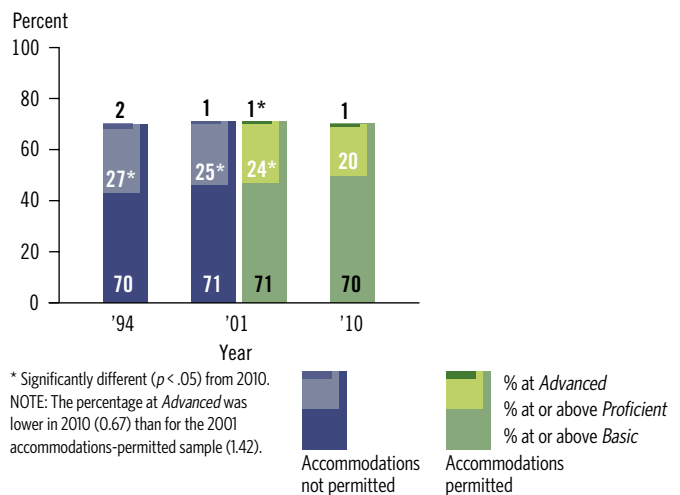
## Twelfth-grade score lower than in 1994

The average score on the NAEP geography assessment in 2010 at grade 12 did not change significantly from the score in 2001 but was lower than the score in 1994 (figure 18). Scores at the 50th, 75th, and 90th percentiles were lower in 2010 than in 2001 and 1994; however, the score at the 10th percentile was higher in 2010 than in 1994 (figure 19).

## Proportion of students at or above Proficient decreases since 2001

Seventy percent of students performed at or above the *Basic* level in 2010, and 20 percent performed at or above the *Proficient* level (figure 20). The percentage of students at or above *Basic* in 2010 was not significantly different from the percentages in 2001 or 1994; however, the percentage at or above *Proficient* was lower than in earlier assessment years. Although the percentage of twelfth-graders at the *Advanced* level rounded to 1 percent in both 2001 and 2010, the percentage in 2010 (0.67) was lower than in 2001 (1.42).

**Figure 20.** Trend in twelfth-grade NAEP geography achievement-level results



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

## No significant change in performance of racial/ethnic groups from first assessment year

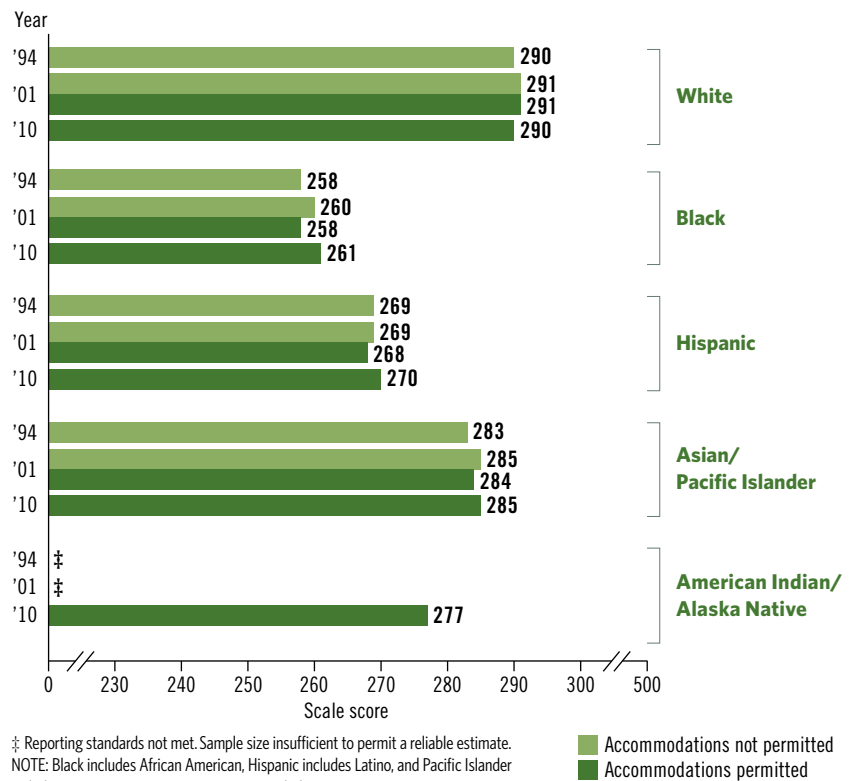
There were no significant changes in the average scores from 1994 to 2010 for any of the racial/ethnic groups with samples large enough to report scores (**figure 21**).

Among the five racial/ethnic groups that NAEP reports on, White students scored highest on average in 2010, and Black students scored lowest. Asian/Pacific Islander students scored higher on average than American Indian/Alaska Native students, who in turn scored higher than Hispanic students.

### Additional Results for Student Groups

Achievement-level results and percentile scores provide additional insight into the performance of student groups. See appendix **tables A-9** and **A-10** for additional twelfth-grade results for the student groups highlighted in this section. Similar NAEP results for other student groups can be found in the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.

**Figure 21.** Trend in twelfth-grade NAEP geography average scores, by race/ethnicity

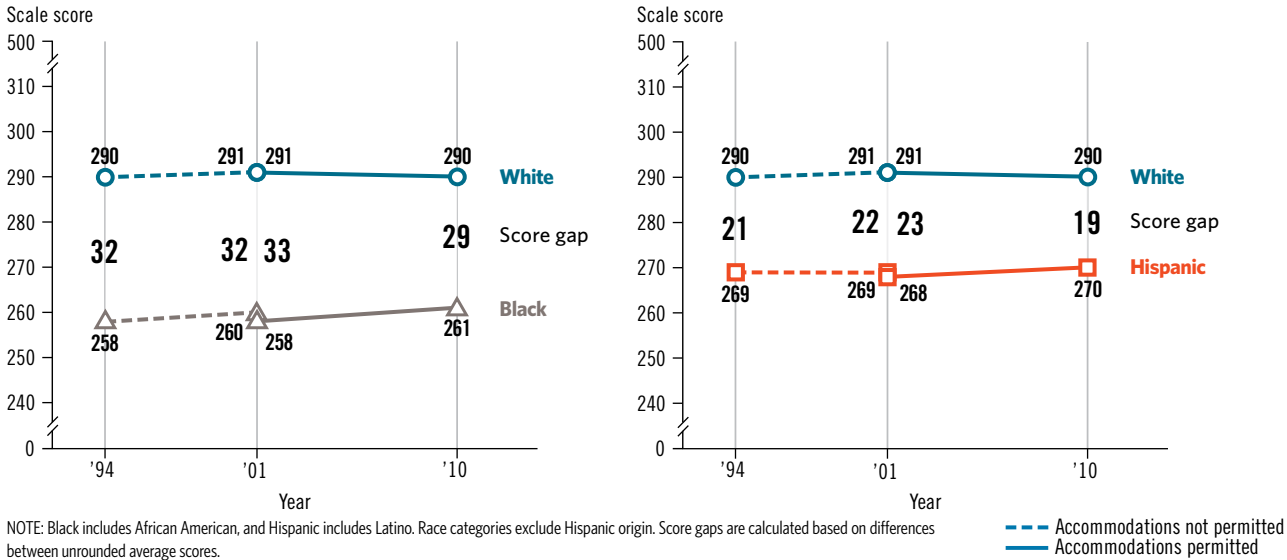


SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

## Racial/ethnic gaps persist

In 2010, White students scored 29 points higher on average in geography than Black students and 19 points higher than Hispanic students (figure 22). There was no significant change in either gap in comparison to earlier assessment years.

**Figure 22.** Trend in twelfth-grade NAEP geography average scores and score gaps, by selected racial/ethnic groups



**Table 8.** Percentage distribution of students assessed in twelfth-grade NAEP geography, by race/ethnicity: 1994, 2001, and 2010

Race/ethnicity	1994 <sup>1</sup>	2001	2010
White	76*	72*	62
Black	12	13	13
Hispanic	7*	9*	16
Asian/Pacific Islander	4*	4*	6
American Indian/Alaska Native	1	1	1

\* Significantly different ( $p < .05$ ) from 2010.

<sup>1</sup> Accommodations not permitted.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Detail may not sum to totals because results are not shown for students whose race/ethnicity was unclassified.

### Race/ethnicity proportions shift over time for grade 12

The percentage of White twelfth-grade students decreased in comparison to 1994 and 2001, while the percentages of Hispanic and Asian/Pacific Islander students increased over the same period (table 8). The percentages of Black and American Indian/Alaska Native students have not changed significantly from 1994 to 2010.

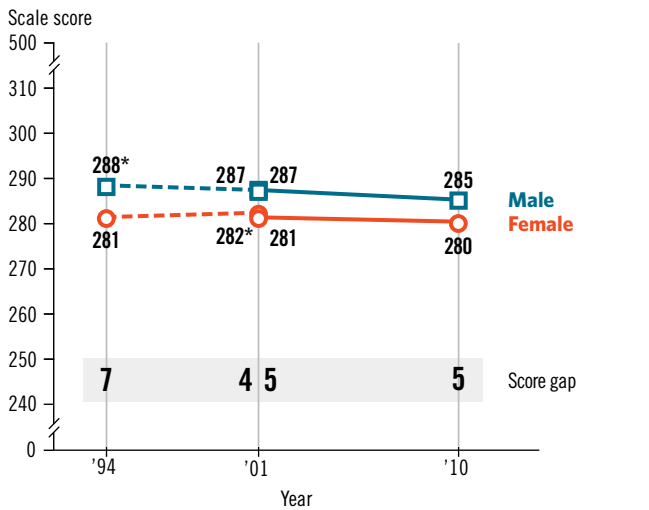


## Male students score higher than female students

Male students scored higher on average than female students in 2010 (**figure 23**). The 5-point score gap between the two groups in 2010 was not significantly different from the gaps in previous assessment years.

The average score for male students decreased from 1994 to 2010, while there was no significant change in the score for female students over the same period.

**Figure 23.** Trend in twelfth-grade NAEP geography average scores and score gaps, by gender



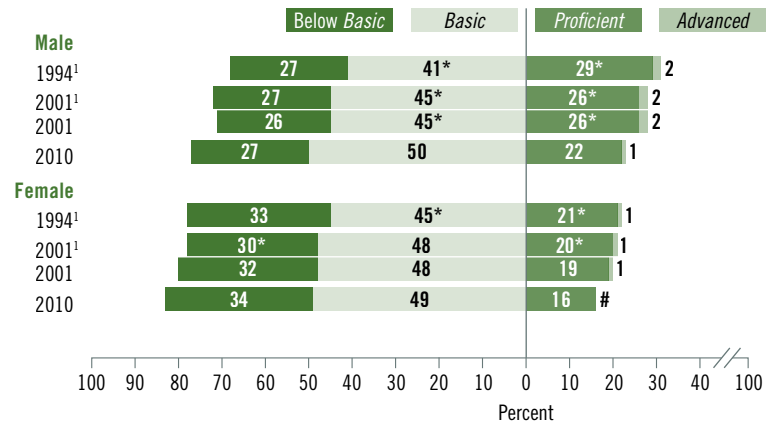
\* Significantly different ( $p < .05$ ) from 2010.  
NOTE: Score gaps are calculated based on differences between unrounded average scores.

--- Accommodations not permitted  
— Accommodations permitted

A closer look at achievement-level results shows at what levels performance is changing for male and female students. The percentage of students performing at the *Basic* level in 2010 was higher than in 2001 for male students and not significantly different from 2001 for female students (**figure 24**). The percentage at *Basic* was higher in 2010 than in 1994 for both groups.

The percentage at *Proficient* in 2010 was lower than in 2001 for male students and not significantly different for female students. Both male and female students had a lower percentage at *Proficient* in 2010 than in 1994.

**Figure 24.** Trend in twelfth-grade NAEP geography achievement-level results, by gender



# Rounds to zero.  
\* Significantly different ( $p < .05$ ) from 2010.  
<sup>1</sup> Accommodations not permitted.

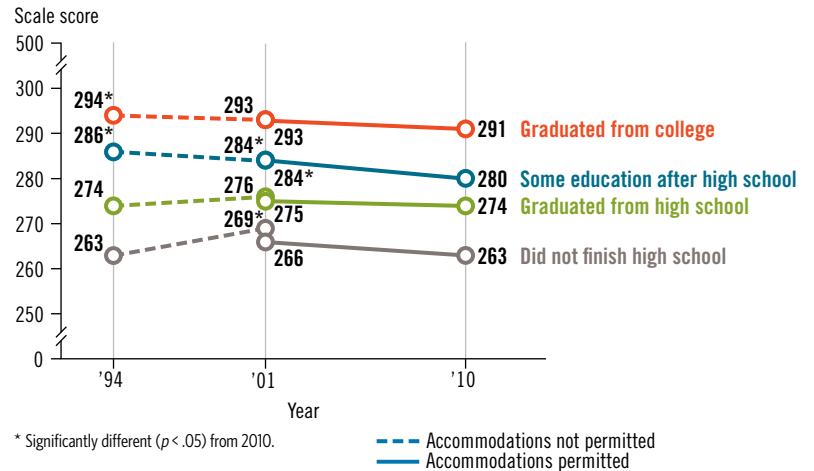


## Scores decrease from 1994 for students whose parents continued their education after high school

Students who reported that the highest level of education completed by either parent was some education after high school scored lower in 2010 than in 2001 and 1994 (**figure 25**). The average score in 2010 for students whose parents graduated from college was not significantly different from the score in 2001 but was lower than in 1994.

In 2010, scores were higher on average for students who reported higher levels of parental education than students reporting lower levels. For example, students whose parents graduated from college had higher scores than those whose parents had some education after high school, who in turn scored higher than those whose parents' highest level of education was high school.

**Figure 25.** Trend in twelfth-grade NAEP geography average scores, by highest level of parental education



**Table 9.** Percentage of students assessed in twelfth-grade NAEP geography, by highest level of parental education: 1994, 2001, and 2010

Parental education level	1994 <sup>1</sup>	2001	2010
Did not finish high school	7*	7*	8
Graduated from high school	22*	20*	17
Some education after high school	25*	25*	22
Graduated from college	44*	46*	49
Don't know	3	3	3

\* Significantly different ( $p < .05$ ) from 2010.

<sup>1</sup> Accommodations not permitted.

NOTE: Detail may not sum to totals because of rounding.

### About one-half of twelfth-graders report parents completed college

In 2010, forty-nine percent of twelfth-graders reported that at least one parent graduated from college, which was higher than the percentages in 2001 and 1994 (**table 9**). The percentage of students whose parents did not finish high school was also higher in 2010 than in previous assessment years. The percentages whose parents graduated from high school or had some education after high school were lower in 2010 than in 2001 or 1994.

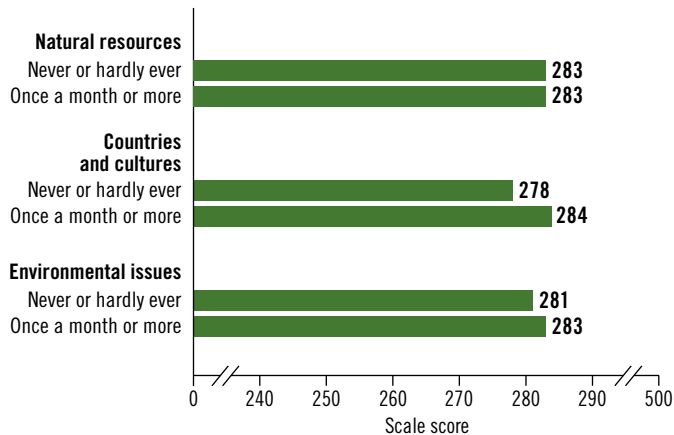
## More than one-half of twelfth-graders study geography topics once a month or more

As part of the twelfth-grade student questionnaire, students were asked how often they studied natural resources, countries and cultures, and environmental issues in school. Students selected one of four responses for each of the three topics: "never or hardly ever," "once or twice a month," "once or twice a week," or "almost every day." Data were combined for students who reported studying a topic monthly, weekly, or daily so that the results for students who had some regular exposure to the topic could be compared to results for students who reported never or hardly ever studying it.

In 2010, students who reported studying countries and cultures once a month or more scored higher on average than those who reported never or hardly ever studying it (figure 26). The pattern in results was similar for students studying environmental issues. There was no significant difference in the scores for students who never or hardly ever studied natural resources and those who studied it once a month or more.

**Figure 26.** Average scores in twelfth-grade NAEP geography, by students' responses to a question about how often they have studied various geography topics in school: 2010

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



Over three-quarters of the students reported studying about countries and cultures or environmental issues once a month or more in 2010. Almost two-thirds reported studying about natural resources once a month or more (table 10).

Because the same question was asked of twelfth-graders assessed in 1994 and 2001, the percentages can be compared over time. For all three geography topics, the percentages of students studying them once a month or more were higher in 2010 than in previous assessment years.

**Table 10.** Percentage of students assessed in twelfth-grade NAEP geography, by how often they studied various geography topics in school: 1994, 2001, and 2010

Geography topics	Never or hardly ever			Once a month or more		
	1994 <sup>1</sup>	2001	2010	1994 <sup>1</sup>	2001	2010
Natural resources	45*	39*	35	55*	61*	65
Countries and cultures	28*	19*	16	72*	81*	84
Environmental issues	37*	30*	24	63*	70*	76

\* Significantly different ( $p < .05$ ) from 2010.

<sup>1</sup> Accommodations not permitted.

### Explore Additional Results

Results for other background questions from the twelfth-grade student, teacher, and school questionnaires are available in the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.



# Assessment Content at Grade 12

In high school, geography is generally not mandated as a separate course, but high schools are increasingly offering geography as an alternative to other social studies courses and teaching it within the social studies curriculum. In addition, science and Earth science courses contain a substantial amount of physical geography subject matter. The distribution of assessment time across the three content areas is the same at grades 4, 8, and 12 (forty percent space and place; 30 percent environment and society; and 30 percent spatial dynamics and connections). The proportion of assessment time devoted to each of the three cognitive areas differs by grade. Thirty percent of the twelfth-grade assessment focuses on students' knowledge of geography concepts and vocabulary, 30 percent focuses on students' understanding, and 40 percent focuses on how well students are able to apply their knowledge and understanding in solving geographic problems.

The 123 questions that made up the entire twelfth-grade assessment were divided into seven sections, each containing a mixture of multiple-choice and constructed-response questions. Each student responded to questions in either two 25-minute sections or one 50-minute section.





## Geography Achievement-Level Descriptions for Grade 12

NAEP geography achievement-level descriptions outline certain expectations of student performance. The specific descriptions of what twelfth-graders should know and be able to do at the *Basic*, *Proficient*, and *Advanced* levels in geography are presented below. NAEP achievement levels are cumulative; therefore, student performance at the *Proficient* level includes the competencies associated with the *Basic* level, and the *Advanced* level includes the skills and knowledge associated with both the *Basic* and the *Proficient* levels. The cut score indicating the lower end of the score range for each level is noted in parentheses.

### **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 projections; 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 databases 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, the analysis of case studies, the utilization of databases, 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 databases from disparate pieces of information and from these data develop generalizations and speculations about outcomes when data change.

# What Twelfth-Graders Know and Can Do in Geography

The item map below illustrates the range of geography knowledge and skills demonstrated by twelfth-graders. The scale scores on the left represent the scores for students who were likely to get the items correct or complete. The cut score at the lower end of the range for each achievement level is boxed. The descriptions of selected assessment questions indicating what students need to do to answer the question correctly, along with the corresponding NAEP geography

content area, are listed on the right. For example, the map on this page shows that twelfth-graders performing at the *Basic* level with a score of 286 were likely to be able to identify an activity that emits greenhouse gases. Students at the *Proficient* level with a score of 335 were likely to be able to explain why terraced farming is suited to particular terrains. Students at the *Advanced* level with a score of 350 were likely to be able to describe the functions of wetlands.

## GRADE 12 NAEP GEOGRAPHY ITEM MAP

	Scale score	Content area	Question description
<i>Advanced</i>	500		
	//		
	400	Space and place	Use a map to explain the reasons for large populations along the coast
	384	Space and place	Draw a cross section of South America
	357	Spatial dynamics and connections	Use a diagram to describe reasons for the location of a business district
	350	Environment and society	Describe wetland functions
	349	Space and place	Identify a correct conclusion about the United Nations Gender Empowerment Index
	347	Environment and society	Use a table to explain the population density in Australia and Libya (shown on page 47)
<i>Proficient</i>	341	Spatial dynamics and connections	Explain why the United States exports and imports
	339		
	337	Space and place	Explain population according to a population pyramid
	335	Environment and society	Understand terraced farming
	331	Space and place	Identify the profile of the continent
	327	Spatial dynamics and connections	Identify a U.S. geographic barrier
	322	Space and place	Explain the rate of natural increase
	313	Spatial dynamics and connections	Recognize regional characteristics
<i>Basic</i>	310	Environment and society	Explain why Mali is considered overpopulated
	307	Space and place	Understand how the Great Lakes were formed (shown on page 46)
	305		
	304	Space and place	Graph elevation on a contour map
	298	Spatial dynamics and connections	Understand the economies of developing countries (shown on page 45)
	288	Space and place	Understand time zones
	286	Environment and society	Identify an activity that emits greenhouse gases
	275	Space and place	Identify the map that best represents landmasses
	270		
	264	Environment and society	Understand an environmental cartoon
	259	Space and place	Identify the spread of religion
	246	Space and place	Identify which erosion agent caused the landform
	//		
	0		

NOTE: Regular type denotes a constructed-response question. *Italic* type denotes a multiple-choice question. The position of a question on the scale represents the scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. For constructed-response questions, the question description represents students' performance rated as completely correct. Scale score ranges for geography achievement levels are referenced on the map.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2010 Geography Assessment.

## Geography Content Area: Spatial Dynamics and Connections

Which statement is true about the economies of most developing countries?

- Ⓐ Their exports are often limited to a few agricultural products or raw materials.
- Ⓑ They produce a wide variety of high-technology goods.
- Ⓒ Their imports are often limited to manufactured goods.
- Ⓓ Their manufacturing sectors are usually well developed.

This sample multiple-choice question from the 2010 geography assessment measures twelfth-graders' ability to predict potential economic activities for regions based on an understanding of spatial interaction. Fifty-nine percent of students knew that developing countries' exports were often limited to a few agricultural products or raw materials.

**Percentage of twelfth-grade students in each response category: 2010**

Choice A	Choice B	Choice C	Choice D	Omitted
59	11	19	11	#

# Rounds to zero.

The table below shows the percentage of twelfth-graders within each achievement level who answered this question correctly. For example, 63 percent of twelfth-graders at the *Basic* level chose the correct answer.

**Percentage of twelfth-grade students responding correctly at each achievement level: 2010**

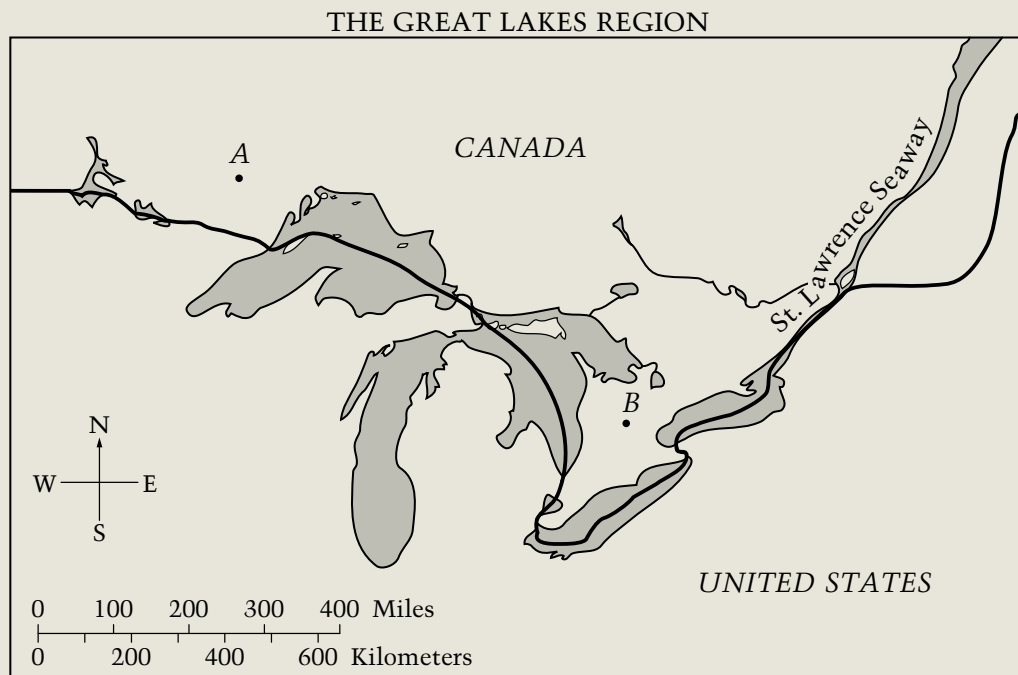
Overall	Below Basic	At Basic	At Proficient	At Advanced
59	35	63	87	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2010 Geography Assessment.

## Geography Content Area: Space and Place



How were the Great Lakes formed?

- ☐ A Glaciation
- ☐ B Volcanic activity
- ☐ C Soil deposition
- ☐ D Erosion

This sample multiple-choice question measures twelfth-graders' ability to identify a process that shapes landforms. Fifty-six percent of students knew that the Great Lakes were formed by glaciation.

**Percentage of twelfth-grade students in each response category: 2010**

Choice A	Choice B	Choice C	Choice D	Omitted
56	7	10	26	#

# Rounds to zero.

NOTE: Detail may not sum to totals because of rounding.

The table below shows the percentage of twelfth-graders within each achievement level who answered this question correctly. For example, 57 percent of twelfth-graders at the *Basic* level chose the correct answer.

**Percentage of twelfth-grade students responding correctly at each achievement level: 2010**

Overall	Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>
56	34	57	83	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2010 Geography Assessment.



## Geography Content Area: Environment and Society

<u>Country</u>	<u>Population per Square Mile</u>
Australia	6
Libya	6

Give one major reason for the population densities of Australia and Libya shown above. Explain your reason.

### COMPLETE RESPONSE:

Both of these countries are covered mostly by desert. Libya is dominated by the uninhabitable Sahara Desert, and very few people live in the Australian outback, which comprises most of the continent.

This sample constructed-response question measures twelfth-graders' ability to explain how the population density of regions depends upon interrelated factors, such as the availability of natural resources and climatic characteristics. Responses to this question were rated using three scoring levels. Spelling and grammar were not considered in rating the responses.

**Complete** responses gave one major reason for the population densities of Australia and Libya and explained the reason.

**Partial** responses showed an understanding of the table but were unable to explain any significant reason for the population densities.

**Unacceptable** responses did not explain that both countries have low population densities or give any reason.

The sample student response shown above was rated "Complete" because it gave one reason for the population densities of Australia and Libya and adequately explained the reason. The response indicated that Australia and Libya have low population densities and also explained why these places

were desolate. Other credited responses may have mentioned that the land was poor for farming, or was dry or barren. As shown in the table below, 5 percent of twelfth-graders' responses to this question were rated "Complete."

### Percentage of twelfth-grade students in each response category: 2010

Complete	Partial	Unacceptable	Omitted
5	20	62	11

NOTE: Detail may not sum to totals because the percentage of responses rated as "Off-task" is not shown. Off-task responses are those that do not provide any information related to the assessment task.

The following table shows the percentage of twelfth-graders within each achievement level whose responses to this question were rated as "Complete." For example, among twelfth-graders performing at the *Basic* level, 3 percent of students provided responses rated as "Complete."

### Percentage of twelfth-grade students' responses rated as "Complete" at each achievement level: 2010

Overall	Below Basic	At Basic	At Proficient	At Advanced
5	1	3	15	‡

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

# Technical Notes

## Sampling and Weighting

The schools and students participating in NAEP assessments are selected to be representative of all schools nationally. The results from the assessed students are combined to provide accurate estimates of the overall performance of students in both public and nonpublic schools in the nation. More information on sampling can be found at <http://nces.ed.gov/nationsreportcard/about/nathow.asp>.

Because each school that participated in the assessment, and each student assessed, represents a portion of the population of interest, the results are weighted to account for the disproportionate representation of the selected sample. This includes the oversampling of schools with high concentrations of students from certain racial/ethnic groups and the lower sampling rates of students who attend very small schools.

## School and Student Participation

To ensure unbiased samples, NAEP statistical standards require that participation rates for original school samples be 70 percent or higher to report national results separately for public and private schools. In instances where participation rates meet the 70 percent criterion but fall below 85 percent, a nonresponse bias analysis is conducted to determine if the

responding sample is not representative of the population, thereby introducing the potential for nonresponse bias. The numbers of participating schools and students along with the weighted participation rates for the 2010 geography assessment are presented in **table TN-1**. Participation rate standards were not met for private schools at grades 4 and 12; therefore, results for private schools are not reported separately at those grades.

Nonresponse bias analyses were conducted for the private school samples at all three grades. The results of these analyses showed that, while the original responding school samples may not have been fully representative, including substitute schools and adjusting the sampling weights to account for school nonresponse were at least partially effective in reducing the potential for nonresponse bias. After school substitution and nonresponse adjustments, a remaining potential bias at grade 8 was that schools in the Midwest were somewhat overrepresented in the final sample of private schools (32 percent in the responding sample compared to 29 percent in the full sample) and Northeast schools were somewhat underrepresented (16 percent compared to 21 percent in the full sample). At grade 12, the application of nonresponse weight adjustments actually increased the potential bias with respect to school size, size of school attended by the average student, and estimated grade

**Table TN-1.** School and student participation rates in NAEP geography, by grade and type of school: 2010

Grade and type of school	School participation		Student participation	
	Student-weighted percent	Number of schools participating	Student-weighted percent	Number of students assessed
<b>Grade 4</b>				
<b>Nation</b>	<b>96</b>	<b>510</b>	<b>95</b>	<b>7,000</b>
Public	99	440	95	6,500
Private	68	70	96	500
<b>Grade 8</b>				
<b>Nation</b>	<b>96</b>	<b>480</b>	<b>93</b>	<b>9,500</b>
Public	99	400	93	8,800
Private	74	80	95	800
<b>Grade 12</b>				
<b>Nation</b>	<b>89</b>	<b>500</b>	<b>83</b>	<b>10,000</b>
Public	91	420	83	8,800
Private	67	80	90	1,200

NOTE: The number of schools is rounded to the nearest ten. The number of students is rounded to the nearest hundred. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2010 Geography Assessment.

enrollment, suggesting that there remains a significant potential for nonresponse bias for grade 12 private schools. The phenomenon that nonresponse adjustments potentially increase biases related to school size appears to be explained by the fact that it was larger non-Catholic private schools that did not respond, and so adjustments made to address the underrepresentation of those schools resulted in overrepresenting small schools at the expense of larger ones (a mean estimated grade enrollment of 38 in the responding sample compared to a full sample mean of 46).

An analysis was also performed to examine the potential for nonresponse bias introduced through student nonresponse in grade 12 public schools, where the weighted student response rate was 83 percent. The analysis showed that the sample of responding students differed from the original student sample with respect to gender, relative age, and student disability status. After adjusting the sampling weights to account for student nonresponse, there was no evidence of substantial bias, with the nonresponse-adjusted estimates for three variables—race/ethnicity, student disability (SD) status, and English language learner (ELL) status—differing from the unadjusted estimates by 1 percent or less.

## Interpreting Statistical Significance

Comparisons over time or between groups are based on statistical tests that consider both the size of the differences and the standard errors of the two statistics being compared. Standard errors are margins of error, and estimates based on smaller groups are likely to have larger margins of error. The size of the standard errors may also be influenced by other factors such as how representative the assessed students are of the entire population.

When an estimate has a large standard error, a numerical difference that seems large may not be statistically significant. Differences of the same magnitude may or may not be statistically significant depending upon the size of the standard errors of the estimates. For example, a 5-point change in the average score for White fourth-graders may be statistically significant, while a 10-point change for Asian/Pacific Islander students may not be. Standard errors for the estimates presented in this report are available at <http://nces.ed.gov/nationsreportcard/naepdata/>.

To ensure that significant differences in NAEP data reflect actual differences and not mere chance, error rates need to be controlled when making multiple simultaneous comparisons. The more comparisons that are made (e.g., comparing the performance of White, Black, Hispanic, Asian/Pacific Islander, and American Indian/Alaska Native students), the higher the probability of finding significant differences by chance. In NAEP, the Benjamini-Hochberg False Discovery

Rate (FDR) procedure is used to control the expected proportion of falsely rejected hypotheses relative to the number of comparisons that are conducted. A detailed explanation of this procedure can be found at <http://nces.ed.gov/nationsreportcard/tdw/analysis/infer.asp>. NAEP employs a number of rules to determine the number of comparisons conducted, which in most cases is simply the number of possible statistical tests. However, there is an exception where the FDR is not applied: when comparing multiple years, the number of years does not count toward the number of comparisons.

## Race/Ethnicity

The results presented in this report by students' race/ethnicity are based on information obtained from school records and may differ from the results presented in earlier geography reports in which students' race/ethnicity was based on students' self-identification.

## National School Lunch Program

NAEP collects data on student eligibility for the National School Lunch Program (NSLP) as an indicator of low family income. Under the guidelines of NSLP, children from families with incomes below 130 percent of the poverty level are eligible for free meals. Those from families with incomes between 130 and 185 percent of the poverty level are eligible for reduced-price meals. (For the period July 1, 2009, through June 30, 2010, for a family of four, 130 percent of the poverty level was \$28,665, and 185 percent was \$40,793.)

Some schools provide free meals to all students irrespective of individual eligibility, using their own funds to cover the costs of non-eligible students. Under special provisions of the National School Lunch Act intended to reduce the administrative burden of determining student eligibility every year, schools can be reimbursed based on eligibility data for a single base year. Participating schools might have high percentages of eligible students and report all students as eligible for free lunch. Because of the improved quality of data on students' eligibility for NSLP, the percentage of students for whom information was not available has decreased compared to the percentages reported prior to the 2010 assessment. Therefore, trend comparisons are not made to results from previous assessment years in this report. For more information on NSLP, visit <http://www.fns.usda.gov/cnd/lunch/>.

As students' eligibility for free or reduced-price school lunch may be underreported at grade 12, the results are not included in this report but are available on the NAEP Data Explorer at <http://nces.ed.gov/nationsreportcard/naepdata/>.

# Appendix Tables

**Table A-1.** Percentage of students with disabilities (SD) and/or English language learners (ELL) identified, excluded, and assessed in NAEP geography, as a percentage of all students, by grade and SD/ELL category: 1994, 2001, and 2010

Grade and SD/ELL category	Accommodations not permitted		Accommodations permitted	
	1994	2001	2001	2010
<b>Grade 4</b>				
<b>SD and/or ELL</b>				
Identified	14	16	17	22
Excluded	5	8	4	2
Assessed	8	8	13	20
Without accommodations	8	8	6	7
With accommodations	†	†	7	13
<b>SD</b>				
Identified	10	11	13	13
Excluded	4	6	3	2
Assessed	6	4	10	12
Without accommodations	6	4	3	2
With accommodations	†	†	7	9
<b>ELL</b>				
Identified	4	6	5	10
Excluded	1	2	2	#
Assessed	3	4	4	10
Without accommodations	3	4	3	5
With accommodations	†	†	1	4
<b>Grade 8</b>				
<b>SD and/or ELL</b>				
Identified	10	16	16	17
Excluded	5	8	4	1
Assessed	5	8	12	16
Without accommodations	5	8	7	4
With accommodations	†	†	5	12
<b>SD</b>				
Identified	8	12	12	12
Excluded	4	7	3	1
Assessed	4	6	10	11
Without accommodations	4	6	4	1
With accommodations	†	†	5	10
<b>ELL</b>				
Identified	2	4	4	6
Excluded	1	1	1	#
Assessed	1	3	3	6
Without accommodations	1	3	3	3
With accommodations	†	†	#	3
<b>Grade 12</b>				
<b>SD and/or ELL</b>				
Identified	8	11	10	14
Excluded	3	5	2	2
Assessed	4	6	8	12
Without accommodations	4	6	5	3
With accommodations	†	†	3	9
<b>SD</b>				
Identified	6	8	8	11
Excluded	3	4	2	2
Assessed	3	4	6	9
Without accommodations	3	4	3	1
With accommodations	†	†	3	7
<b>ELL</b>				
Identified	2	3	2	4
Excluded	#	1	#	#
Assessed	1	2	2	3
Without accommodations	1	2	2	2
With accommodations	†	†	#	2

† Not applicable. Accommodations were not permitted in this assessment year.

# Rounds to zero.

NOTE: Students identified as both SD and ELL were counted only once under the combined SD and/or ELL category, but were counted separately under the SD and ELL categories. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.



**Table A-2.** Percentage of students with disabilities (SD) and/or English language learners (ELL) identified, excluded, and assessed in NAEP geography, as a percentage of students within their racial/ethnic group, by grade and SD/ELL category: 2010

SD/ELL category	Grade 4			Grade 8			Grade 12		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
<b>SD and/or ELL</b>									
Identified	15	16	46	13	16	31	11	16	22
Excluded	2	2	2	1	2	2	2	3	2
Assessed	13	14	44	12	14	29	9	13	20
Without accommodations	3	3	22	2	2	13	1	2	8
With accommodations	10	11	22	11	13	16	8	11	12
<b>SD</b>									
Identified	14	14	11	13	15	11	11	14	10
Excluded	2	2	2	1	2	2	2	3	2
Assessed	13	13	9	12	13	10	9	12	8
Without accommodations	3	2	1	2	1	2	1	2	1
With accommodations	10	10	8	10	12	8	8	10	6
<b>ELL</b>									
Identified	1	2	39	1	1	23	#	1	15
Excluded	#	#	1	#	#	1	#	#	1
Assessed	1	2	38	1	1	22	#	1	14
Without accommodations	#	1	21	#	#	12	#	#	7
With accommodations	1	1	17	1	1	10	#	1	7

# Rounds to zero.

NOTE: Black includes African American, and Hispanic includes Latino. Race categories exclude Hispanic origin. Results are not shown for all racial/ethnic groups. Students identified as both SD and ELL were counted only once under the combined SD and/or ELL category, but were counted separately under the SD and ELL categories. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2010 Geography Assessment.

**Table A-3.** Percentage of students identified as students with disabilities (SD) and/or English language learners (ELL) excluded and assessed in NAEP geography, as a percentage of identified SD and/or ELL students, by grade and SD/ELL category: 2010

Grade and SD/ELL category	Percentage of identified SD and/or ELL students			
	Excluded	Assessed	Assessed without accommodations	Assessed with accommodations
<b>Grade 4</b>				
SD and/or ELL	8	92	33	59
SD	12	88	18	70
ELL	4	96	51	45
<b>Grade 8</b>				
SD and/or ELL	8	92	24	68
SD	10	90	12	78
ELL	6	94	48	46
<b>Grade 12</b>				
SD and/or ELL	15	85	21	64
SD	18	82	13	69
ELL	8	92	44	48

NOTE: Students identified as both SD and ELL were counted only once under the combined SD and/or ELL category, but were counted separately under the SD and ELL categories. Detail may not sum to totals because of rounding.  
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2010 Geography Assessment.

**Table A-4.** Average scores and achievement-level results in NAEP geography, by grade and status as students with disabilities (SD) or English language learners (ELL): 2001 and 2010

Grade and SD/ELL category	Average scale score		Percentage of students					
			At or above <i>Basic</i>		At or above <i>Proficient</i>		At <i>Advanced</i>	
	2001	2010	2001	2010	2001	2010	2001	2010
<b>Grade 4</b>								
SD	183*	191	48	56	6	7	#	#
Not SD	211*	216	76*	82	22	23	2	2
ELL	166*	183	29*	47	1	3	#	#
Not ELL	210*	216	75*	82	21	23	2	2
<b>Grade 8</b>								
SD	227*	237	34*	45	7	8	1	1
Not SD	264	264	76	78	31	29	4	3
ELL	216	223	20	26	2	3	#	#
Not ELL	262	263	74	77	30	28	4	3
<b>Grade 12</b>								
SD	255*	261	32	39	4	6	#	#
Not SD	286	284	73	73	25*	21	1*	1
ELL	246	247	19	18	1	#	#	#
Not ELL	285	283	72	71	25*	21	1*	1

# Rounds to zero.

\* Significantly different ( $p < .05$ ) from 2010.

NOTE: The results for students with disabilities and English language learners are based on students who were assessed and cannot be generalized to the total population of such students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2001 and 2010 Geography Assessments.

**Table A-5.** Achievement-level results for fourth-grade students in NAEP geography, by selected characteristics: 1994, 2001, and 2010

Characteristic	Percentage of students											
	At or above <i>Basic</i>				At or above <i>Proficient</i>				At <i>Advanced</i>			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1994	2001	2001	2010	1994	2001	2001	2010	1994	2001	2001	2010
<b>Race/ethnicity</b>												
White	81*	85*	84*	89	28	27	27	29	4	3	3	2
Black	33*	43*	43*	57	2*	5	4	5	#	#	#	#
Hispanic	44*	47*	50*	64	7	6	5	8	#	1	#	#
Asian/Pacific Islander	72*	75*	77	87	26	25	26	34	4	1	2	4
American Indian/Alaska Native	‡	‡	‡	68	‡	‡	‡	11	‡	‡	‡	#
<b>Gender</b>												
Male	71*	75*	74*	80	26	24	23	24	4	3	3	2
Female	68*	72*	71*	78	19	18	18	18	2	1	1	1
<b>Eligibility for free or reduced-price school lunch</b>												
Eligible for free lunch	—	—	—	62	—	—	—	6	—	—	—	#
Eligible for reduced-price lunch	—	—	—	77	—	—	—	15	—	—	—	1
Not eligible	—	—	—	92	—	—	—	33	—	—	—	3
Information not available	—	—	—	90	—	—	—	36	—	—	—	4

— Not available. Results for 1994 and 2001 are not reported because of the improved quality of the data on students' eligibility for the school lunch program in 2010.

# Rounds to zero.

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

\* Significantly different ( $p < .05$ ) from 2010.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.



**Table A-6.** Percentile scores for fourth-grade students in NAEP geography, by selected characteristics: 1994, 2001, and 2010

Percentile and year	Race/ethnicity					Gender		Eligibility for free or reduced-price school lunch				
	Asian/ Pacific Islander					American Indian/ Alaska Native	Male	Female	Eligible for free lunch	Eligible for reduced- price lunch	Not eligible	Information not available
	White	Black	Hispanic									
<b>10th percentile</b>												
<b>Accommodations not permitted</b>												
1994	169*	109*	115*	156*	‡	145*	146*	—	—	—	—	—
2001	179*	134*	130*	160	‡	159*	158*	—	—	—	—	—
<b>Accommodations permitted</b>												
2001	177*	135*	137*	166	‡	159*	158*	—	—	—	—	—
2010	186	154	154	181	160	169	168	155	170	191	188	188
<b>25th percentile</b>												
<b>Accommodations not permitted</b>												
1994	195*	138*	146*	182*	‡	181*	177*	—	—	—	—	—
2001	200*	157*	156*	186*	‡	188*	184*	—	—	—	—	—
<b>Accommodations permitted</b>												
2001	198*	157*	161*	190*	‡	186*	183*	—	—	—	—	—
2010	206	172	176	206	180	193	190	175	188	210	210	211
<b>50th percentile</b>												
<b>Accommodations not permitted</b>												
1994	221*	168*	179*	215	‡	214	209	—	—	—	—	—
2001	222	181*	185*	214*	‡	215	210	—	—	—	—	—
<b>Accommodations permitted</b>												
2001	221*	181*	187*	218	‡	213*	208*	—	—	—	—	—
2010	226	192	198	228	204	218	213	196	210	229	231	231
<b>75th percentile</b>												
<b>Accommodations not permitted</b>												
1994	243	197*	211	241	‡	241	234	—	—	—	—	—
2001	242	205	211	240	‡	239	233	—	—	—	—	—
<b>Accommodations permitted</b>												
2001	242	204*	210*	241	‡	238	232	—	—	—	—	—
2010	243	213	219	247	224	239	234	217	230	245	248	248
<b>90th percentile</b>												
<b>Accommodations not permitted</b>												
1994	262	219*	235	261	‡	261	253	—	—	—	—	—
2001	259	227	231	254	‡	258	251	—	—	—	—	—
<b>Accommodations permitted</b>												
2001	258	226	231	255	‡	257	250	—	—	—	—	—
2010	258	231	236	262	243	256	250	233	246	260	264	264

— Not available. Results for 1994 and 2001 are not reported because of the improved quality of the data on students' eligibility for the school lunch program in 2010.

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

\* Significantly different ( $p < .05$ ) from 2010.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

**Table A-7.** Achievement-level results for eighth-grade students in NAEP geography, by selected characteristics: 1994, 2001, and 2010

Characteristic	Percentage of students											
	At or above <i>Basic</i>				At or above <i>Proficient</i>				At <i>Advanced</i>			
	Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted		Accommodations not permitted		Accommodations permitted	
	1994	2001	2001	2010	1994	2001	2001	2010	1994	2001	2001	2010
<b>Race/ethnicity</b>												
White	81*	85	82	86	35	38	36	37	5	5	5	4
Black	34*	40*	39*	49	5	7	6	6	#	#	#	#
Hispanic	49	47*	45*	55	8	9	9	9	1	1	1	#
Asian/Pacific Islander	72	77	77	80	29	31	31	35	6	4	4	5
American Indian/Alaska Native	62	78	74	62	19	29	27	14	4	3	4	#
<b>Gender</b>												
Male	72	75	73	75	30	33	32	30	5	5	4	4
Female	69	73	71	73	25	26	26	24	3*	3	3	2
<b>Eligibility for free or reduced-price school lunch</b>												
Eligible for free lunch	—	—	—	55	—	—	—	10	—	—	—	#
Eligible for reduced-price lunch	—	—	—	71	—	—	—	16	—	—	—	1
Not eligible	—	—	—	86	—	—	—	39	—	—	—	4
Information not available	—	—	—	89	—	—	—	43	—	—	—	6
<b>Highest level of parental education</b>												
Did not finish high school	47	48	43*	53	8	8	8	8	1	#	#	#
Graduated from high school	62	66	64	63	15	18	17	14	1	1	2	#
Some education after high school	79	80	79	78	29	30*	29	24	3	2	2	2
Graduated from college	82	86	84	85	41	43	42	40	7*	6	6	5

— Not available. Results for 1994 and 2001 are not reported because of the improved quality of the data on students' eligibility for the school lunch program in 2010.

# Rounds to zero.

\* Significantly different ( $p < .05$ ) from 2010.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

**Table A-8.** Percentile scores for eighth-grade students in NAEP geography, by selected characteristics: 1994, 2001, and 2010

Percentile and year	Race/ethnicity					Gender		Eligibility for free or reduced-price school lunch				Highest level of parental education				
	White	Black	Hispanic	Asian/ Pacific Islander	American Indian/ Alaska Native	Male	Female	Eligible for free lunch	Eligible for reduced- price lunch	Not eligible	Information not available	Did not finish high school	Graduated from high school	Some education after high school	Graduated from college	
10th percentile Accommodations not permitted	1994	228*	188*	193*	215	202	212*	—	—	—	—	195	207	226	227*	
	2001	234	194*	197	221	225	216	—	—	—	—	201	212	229	234	
	Accommodations permitted	2001	230	191*	193	222	215	213*	—	—	—	—	193*	208	227	231
		2010	236	205	204	227	214	219	206	222	236	240	206	213	226	234
25th percentile Accommodations not permitted	1994	249*	208*	217*	239	228	236*	—	—	—	—	216	228	246	252	
	2001	254	213*	218*	244	245	240	—	—	—	—	221	233	248	257	
	Accommodations permitted	2001	251	211*	214*	245	241	237	—	—	—	—	214*	230	246	254
		2010	254	224	225	247	232	240	226	239	255	259	225	232	245	255
50th percentile Accommodations not permitted	1994	271	229*	241	264	254	260	—	—	—	—	240	253	268	276	
	2001	273	234*	240*	266	268	263	—	—	—	—	241	255	268	277	
	Accommodations permitted	2001	272	233*	237*	266	262	262	—	—	—	—	236	253	267	276
		2010	273	242	246	271	250	261	246	256	274	277	244	252	263	275
75th percentile Accommodations not permitted	1994	290	250*	262	287	275	282	—	—	—	—	260	273	285	295	
	2001	292	256	262	288	285	283	—	—	—	—	262	275	286*	295	
	Accommodations permitted	2001	291	256	260	287	283	282	—	—	—	—	259	274	285	295
		2010	291	260	266	290	268	281	265	274	292	295	262	271	281	293
90th percentile Accommodations not permitted	1994	306	269*	279	306	291	300	—	—	—	—	278	289	300	311*	
	2001	306	276	280	304	302	299	—	—	—	—	279	292	300	309	
	Accommodations permitted	2001	306	275	280	303	301	298	—	—	—	—	278	291	299	309
		2010	305	276	281	307	288	297	282	290	305	309	279	287	296	307

— Not available. Results for 1994 and 2001 are not reported because of the improved quality of the data on students' eligibility for the school lunch program in 2010.

\* Significantly different ( $p < .05$ ) from 2010.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.

**Table A-9.** Achievement-level results for twelfth-grade students in NAEP geography, by selected characteristics: 1994, 2001, and 2010

Characteristic	Percentage of students											
	At or above <i>Basic</i>				At or above <i>Proficient</i>				At <i>Advanced</i>			
	Accommodations not permitted	Accommodations permitted	2001	2010	Accommodations not permitted	Accommodations permitted	2001	2010	Accommodations not permitted	Accommodations permitted	2001	2010
	1994	2001	2001	2010	1994	2001	2001	2010	1994	2001	2001	2010
<b>Race/ethnicity</b>												
White	78*	81	81	81	32*	30	30	27	2	2	2*	1
Black	33	35	33	36	5	4	4	3	#	#	#	#
Hispanic	48	49	48	52	10	7	6	8	#	#	#	#
Asian/Pacific Islander	67	70	70	73	26	27	24	23	2	1	2	1
American Indian/Alaska Native	‡	‡	‡	62	‡	‡	‡	13	‡	‡	‡	#
<b>Gender</b>												
Male	73	73	74	73	32*	28*	28*	23	2	2	2	1
Female	67	70*	68	66	22*	21*	20*	17	1	1	1	#
<b>Highest level of parental education</b>												
Did not finish high school	41	48	45	42	7	10*	8	4	#	#	#	#
Graduated from high school	56	62	60	58	14	12	12	10	#	#	#	#
Some education after high school	75*	73	72	69	24*	21*	21*	15	1	1	1	#
Graduated from college	81	82	82	81	40*	36*	35*	30	3*	3	3	1

# Rounds to zero.

‡ Reporting standards not met. Sample size insufficient to permit a reliable estimate.

\* Significantly different ( $p < .05$ ) from 2010.

NOTE: Black includes African American, Hispanic, includes Latino and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.



**Table A-10.** Percentile scores for twelfth-grade students in NAEP geography, by selected characteristics: 1994, 2001, and 2010

Percentile and year	Race/ethnicity					Gender		Highest level of parental education			
	White	Black	Hispanic	Asian/ Pacific Islander	American Indian/ Alaska Native	Male	Female	Did not finish high school	Graduated from high school	Some education after high school	Graduated from college
<b>10th percentile</b>											
<b>Accommodations not permitted</b>											
1994	253*	222	233	239	‡	247	242	226	237	251	257
2001	258	225	236	245	‡	247	246	234	242	249	258
<b>Accommodations permitted</b>											
2001	258	223	234	244	‡	248	244	232	239	250	258
2010	259	229	238	251	247	250	245	230	240	249	258
<b>25th percentile</b>											
<b>Accommodations not permitted</b>											
1994	273	240	250	261	‡	267	262	243	254	270	277
2001	275	242	252	264	‡	268	265	250	259	268	277
<b>Accommodations permitted</b>											
2001	275	240	251	265	‡	269	264	248	258	267	277
2010	275	244	254	268	262	268	263	248	257	265	275
<b>50th percentile</b>											
<b>Accommodations not permitted</b>											
1994	293	258	269	287	‡	291*	284	263	274	288*	298*
2001	293	260	270	288	‡	290*	284*	269	278	286*	296
<b>Accommodations permitted</b>											
2001	293	258	269	287	‡	290	284	267	277	286*	296*
2010	291	261	271	287	278	286	281	265	276	282	292
<b>75th percentile</b>											
<b>Accommodations not permitted</b>											
1994	310*	277	289	306	‡	310*	303*	285	295	304*	315*
2001	309	278	287	306	‡	307*	302*	288*	295	302*	312*
<b>Accommodations permitted</b>											
2001	309	277	286	304	‡	307*	301*	285*	295*	302*	312*
2010	306	277	287	303	296	303	298	280	292	297	308
<b>90th percentile</b>											
<b>Accommodations not permitted</b>											
1994	323*	295	305	320	‡	325*	317*	300	310	317	327*
2001	322	293	301	320	‡	322*	316*	305*	307	315	325
<b>Accommodations permitted</b>											
2001	321	293	300	319	‡	321*	315	302*	307	315	325
2010	319	291	302	318	307	318	312	294	305	311	320

‡: Reporting standards not met. Sample size insufficient to permit a reliable estimate.

\* Significantly different ( $p < .05$ ) from 2010.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994, 2001, and 2010 Geography Assessments.





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