

# National Indian Education Study

## Part I: The Performance of American Indian and Alaska Native Fourth- and Eighth-Grade Students on NAEP 2005 Reading and Mathematics Assessments Statistical Analysis Report



NIIES

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## Part I: The Performance of American Indian and Alaska Native Fourth- and Eighth-Grade Students on NAEP 2005 Reading and Mathematics Assessments Statistical Analysis Report

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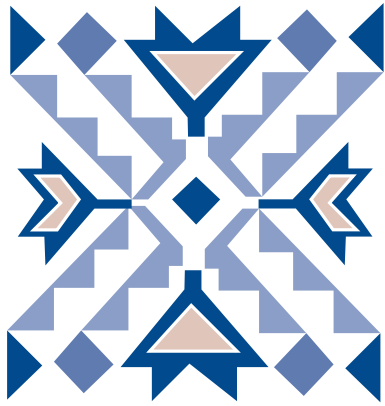
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# EXECUTIVE SUMMARY

The National Indian Education Study is a two-part study designed to describe the condition of education for American Indian/Alaska Native students in the United States. The study was conducted by the National Center for Education Statistics for the U.S. Department of Education, with the support of the Office of Indian Education. This report, Part I of the study, presents the performance of American Indian/Alaska Native students at grades 4 and 8 on the 2005 National Assessment of Educational Progress in reading and mathematics. Part II, a separate report, will present the results of a special survey of American Indian/Alaska Native students and schools, focusing on demographic and cultural factors.

A primary objective of the National Assessment of Educational Progress (NAEP) is to provide educators and policymakers reliable data on academic performance of students at the national, state, and local levels. NAEP serves as an integral part of our nation's evaluation of the condition and progress of education. The National Indian Education Study was conducted for the first time in 2005 as a part of NAEP, and in accordance with Title VII Part A of the Elementary and Secondary Education Act, 2001. This report is a summary of a compilation of comprehensive data on the academic achievement and progress of American Indian/Alaska Native students.

This report, Part I of the National Indian Education Study, presents the performance results of American Indian/Alaska Native students at grades 4 and 8 on the 2005 NAEP in reading and mathematics. In 2005, approximately 325,000 students (combined grades 4 and 8) participated in the reading assessment nationwide, and 334,000 participated in the mathematics assessment. Of these, approximately 7,200 American Indian/Alaska Native students participated in the reading assessment, and 7,300 participated in mathematics. The national sample includes students from both public and non-public schools (i.e., Bureau of Indian Affairs [BIA], Department of Defense Education Activity [DoDEA], and private schools).

In addition to the national sample, states with relatively large populations of American Indian/Alaska Native students were selected for this study. The states whose results are included in this report (Alaska, Arizona, Montana, New Mexico, North Dakota, Oklahoma, and South Dakota) are the seven states with the largest proportions of American Indians and Alaska Natives as a percentage of the state's total population. The state samples included only public and BIA schools.

Chapters 2 and 3 provide performance results for reading and mathematics and are divided into four sections: National Results, Results by Region of the Country, Selected State Results, and Student Group Results. In all of the sections, except for Selected State Results, the comparisons are generally between the performance results of American Indian/Alaska Native students and the performance results of students who are neither American Indian nor Alaska Native. In the section discussing state results, the comparisons are between the performance results of American Indian/Alaska Native students within each selected state and those of American Indian/Alaska Native students in each of the other selected states, and to the performance results of the national sample of American Indian/Alaska Native students. At the state level, the sample design did not permit comparisons to students who are not American

Indian or Alaska Native. Only differences that have been determined to be statistically significant at the .05 level after controlling for multiple comparisons are discussed in this report.

The Technical Notes section provides information about sampling, accommodations, interpreting statistical significance, and other technical features. The Data Appendix provides tables that support the findings provided in this report.

The data in this report provide a snapshot of American Indian/Alaska Native students' current performance. When considering these data, it should be noted that the results represent students from a variety of educational settings and that future NAEP assessments may reveal different patterns of performance. Further, NAEP does not collect information about students' prior educational experience, which contributes to present performance.

## Reading Results

### National

- At both grades 4 and 8, American Indian/Alaska Native students had a lower average score in reading than the average score for all other students in the nation (students who are neither American Indian nor Alaska Native).
- The percentages of students performing at or above *Basic* and at or above *Proficient* were lower for American Indian/Alaska Native students than those for all other students at both grades.

### Regional

- At grade 4, the average reading score for American Indian/Alaska Native students in each of the five regions was lower than the average score for all other students in the same region.
- At grade 8, American Indian/Alaska Native students in the North Central, Mountain, and Pacific regions had lower average scores than the average score for all other students in the same regions.

## Selected States

- At grade 4, American Indian/Alaska Native students in Oklahoma had a higher average score and a higher percentage performing at or above *Basic* than American Indian/Alaska Native students in the nation and in the other selected states. Compared to American Indian/Alaska Native students in the nation, American Indian/Alaska Native students in Alaska, Arizona, New Mexico, and South Dakota had lower average scores.
- At grade 8, compared to American Indian/Alaska Native students in the nation, American Indian/Alaska Native students in Oklahoma had a higher average score. American Indian/Alaska Native students in Alaska, Arizona, New Mexico, and South Dakota had lower average scores than American Indian/Alaska Native students in the nation. American Indian/Alaska Native students in Oklahoma had a higher average score than their peers in Alaska, Arizona, New Mexico, and South Dakota.

## Student Groups

- At both grades 4 and 8, compared to Black students in the nation, American Indian/Alaska Native students had a higher average score and a higher percentage performing at or above *Basic*. American Indian/Alaska Native students had a lower average score and a lower percentage performing at or above *Basic* than White and Asian/Pacific Islander students. No significant difference was found between the performance of Hispanic students and American Indian/Alaska Native students on either measure.
- At grade 4, the average scores and the percentages of American Indian/Alaska Native students performing at or above the *Basic* and *Proficient* levels were higher in urban fringe/large town and central city locations than in rural/small town locations. For all other students at both grades, reading performance was higher, on average, in urban fringe and rural locations than in central city locations.

## Mathematics Results

### National

- At both grades 4 and 8, American Indian/Alaska Native students had lower average scores in mathematics than the average score for all other students in the nation (students who are neither American Indian nor Alaska Native).
- The percentages of students performing at or above *Basic* and at or above *Proficient* were lower for American Indian/Alaska Native students than for all other students at both grades.

### Regional

- At grade 4, American Indian/Alaska Native students in each of the five regions had a lower average score than the average score for all other students in the same region.
- At grade 8, the average mathematics score for American Indian/Alaska Native students in each of the five regions was lower than the average score for all other students in the same region.

### Selected States

- At grade 4, compared to American Indian/Alaska Native students in the nation, the average scores for American Indian/Alaska Native students in Montana and Oklahoma were not significantly different; American Indian/Alaska Native students in all the other selected states had lower average scores. American Indian/Alaska Native students in Oklahoma had a higher percentage performing at or above *Basic* than American Indian/Alaska Native students in the nation. American Indian/Alaska Native students in Alaska, Arizona, New Mexico, and South Dakota had lower percentages performing at or above *Basic* than American Indian/Alaska Native students in the nation.
- At grade 8, American Indian/Alaska Native students in New Mexico and South Dakota had lower average scores and lower percentages performing at or above *Basic* than American Indian/Alaska Native students in the nation.



## Student Groups

- At grade 4, compared to Black students in the nation, American Indian/Alaska Native students had a higher average score and a higher percentage performing at or above *Basic*. American Indian/Alaska Native students performed lower on both measures than White students and Asian/Pacific Islander students.
- At grade 8, compared to Black students in the nation, American Indian/Alaska Native students had a higher average score and a higher percentage performing at or above *Basic*. Compared to Hispanic students, American Indian/Alaska Native students had a higher average score. American Indian/Alaska Native students had a lower average score and lower percentage performing at or above *Basic* than White students and Asian/Pacific Islander students.
- At both grades, the average scores of American Indian/Alaska Native students were higher in urban fringe and central city locations than in rural locations.

The second part of the National Indian Education Study is entitled *The Educational Experiences of Fourth- and Eighth-Grade American Indian and Alaska Native Students*. This report provides results from an in-depth survey of American Indian/Alaska Native students and their teachers, focusing on demographic factors, school culture and climate, the use of traditional culture and language in the home, student perceptions about school, and teacher qualifications and cultural preparation. Results from the questionnaires used in the survey report (Part II) will not be linked to data from this performance report (Part I). Future studies will aim to link student performance results with the survey data.



# Acknowledgments

The National Center for Education Statistics (NCES) conducted the National Indian Education Study (NIES) for the U.S. Department of Education, Office of Indian Education (OIE). The study was designed in consultation with a technical review panel composed of American Indian and Alaska Native educators and researchers from across the country.

The National Assessment of Educational Progress (NAEP) is directed by NCES and overseen by the National Assessment Governing Board. NAEP activities are carried out by Educational Testing Service (ETS), Pearson Educational Measurement, American Institutes for Research, Education Statistics Services Institute, and Westat.

The NAEP project at ETS is directed by Jay Campbell and John Mazzeo, with assistance from John Barone. Test development took place at ETS under the direction of Jeff Haberstroh, Patricia Donahue, and Gloria Dion. Sampling and data collection activities were conducted by Westat under the direction of Renee Slobasky, Nancy Caldwell, and William Buckles. Printing, distribution, scoring, and processing activities were conducted by Pearson Educational Measurement under the direction of Brad Thayer, Connie Smith, and Dianne Walsh.

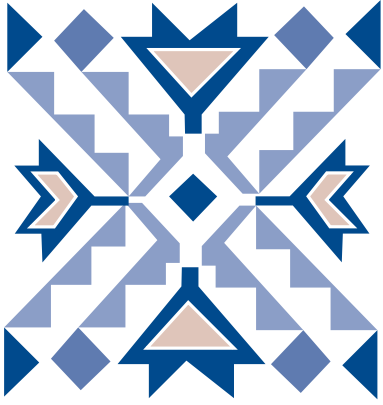
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Nancy Mead directed the reporting process with assistance from Wendy Grigg. The design and production of this report were overseen by Loretta Casalaina with assistance from Rick Hasney and Susan Mills. Ming Kuang coordinated the documentation and data-checking procedures with assistance from Kit Chan, Janice Goodis, and Karen Damiano. Janice Lukas coordinated the editorial procedures with assistance from Mary Daane and Linda Myers. The consistency review process was coordinated by Joanne O'Brien. The web version of the report was coordinated by Rick Hasney.

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Special thanks to the student artists whose works are featured on the cover. Clockwise from the top: *Loksi (Choctaw/Chickasaw for Turtle)* - Katie Johnson; *A Modern Ritual* - Heather Duggins; *My People* - Danica Engstrom; and *I Dance for My People* - Gabriell Lira.

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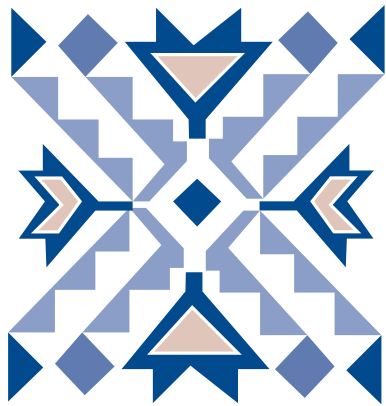
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# CHAPTER 1

## Introduction

The National Indian Education Study (NIES) is a two-part study designed to describe the condition of education for American Indian/Alaska Native students in the United States. The study was conducted by the National Center for Education Statistics (NCES) for the U.S. Department of Education, Office of Indian Education (OIE). This report, Part I of the study, presents the performance results of American Indian/Alaska Native students at grades 4 and 8 on the 2005 National Assessment of Educational Progress (NAEP) in reading and mathematics. Part II, a separate report, will present the results of a special survey of American Indian/Alaska Native students and schools, focusing on demographic and cultural factors.

## Context

The federal government has long been involved with American Indian/Alaska Native education. The 1972 Indian Education Act established a comprehensive approach to meeting the unique needs of American Indian and Alaska Native students. Continuity has been maintained through subsequent reauthorizing statutes. The latest amendments were made by the No Child Left Behind Act of 2001 (NCLB), which reauthorized the program in Title VII Part A of the Elementary and Secondary Education Act. A brief history of modern federal legislation regarding Indian education can be reviewed at <http://www.ed.gov/about/offices/list/oese/oie/history.html>.

In 1991, the report of the Indian Nations At Risk Task Force of the U.S. Department of Education documented an “at risk” status of Indian education, called for research-based strategies for addressing educational needs, and presented a comprehensive set of recommendations that were responsive to the complexities of improving American Indian schools and schooling toward the end of the 20th century (Indian Nations At Risk Task Force 1991).

As a follow-up to NCLB, President Bush signed Executive Order 13336 on April 30, 2004 (see <http://www.whitehouse.gov/news/releases/2004/04/20040430-3.html>). The purpose of this order was to assist American Indian/Alaska Native students in meeting the challenging student academic standards of NCLB. The order established an Interagency Working Group on American Indian and Alaska Native Education. The order also called for a study and report on the current status of American Indian/Alaska Native students, including a compilation of comprehensive data on the academic achievement and progress of American Indian/Alaska Native students. The present report is part of the compilation of information about education achievement called for by the executive order.

In the summer of 2005, NCES released two important studies which provide additional context for American Indian and Alaska Native education. *Status and Trends in the Education of American Indians and Alaska Natives* (Freeman and Fox 2005) provided a current and thorough description of demographic information (e.g., population growth, geographic distribution, tribes, socioeconomic data), educational information (e.g., enrollment in various school types, absenteeism and dropout rates, coursework), and social/educational environments (e.g., access to computers, leisure activities). It also included NAEP achievement data from 2003. This report can be accessed at <http://nces.ed.gov/pubs2005/2005108.pdf>. *American Indian and Alaska Native Children: Findings From the Base Year of the Early Childhood Longitudinal Study, Birth Cohort* (Flanagan and Park 2005) profiled American Indian and Alaska Native children born in the year 2001. When the children were about 9 months of age, the study interviewed parents (typically the mother), assessed children, and gathered information directly from the children's father. This report focused on the information gathered from American Indian and Alaska Native children and their families, providing basic demographic information on the children, information on some of their specific mental and physical skills, a brief profile of their experiences in child care, and some descriptive information on the percentage of children with fathers in their lives. This report can be accessed at <http://nces.ed.gov/pubs2005/2005116.pdf>.

## Purpose

American Indian/Alaska Native students represent about 1 percent of the total student population in the United States (Freeman and Fox 2005, p. 30). While sufficient for reliable reporting of national-level results, a typical NAEP American Indian/Alaska Native sample is not large enough to provide reliable results by state or by region, or for variables such as gender, eligibility for free/reduced-price school lunch, or type of geographic location of the schools. Because the purpose of the current study was to probe more deeply into the reading and mathematics achievement of American Indian/Alaska Native students, the NAEP samples for this population of students were increased to permit reporting of performance in greater detail.

The current report, focused on the NAEP performance of American Indian/Alaska Native fourth- and eighth-graders, is more limited in scope than the comprehensive social and educational status report of the Indian Nations At Risk Task Force of 1991 and the recent *Status and Trends* report. However, the present report does set a baseline for 21st century reading and mathematics performance of American Indian/Alaska Native students in grades 4 and 8. Future reports will build on this information to form a more complete picture of the status of education for American Indian/Alaska Native students in the United States.

## What Was Assessed?

### Reading

The NAEP reading framework specifies the assessment of reading in English in three contexts: reading for literary experience, reading to gain information, and reading to perform a task. Each context for reading is associated with a range of different types of texts that are included in the NAEP reading assessment. All three contexts for reading are assessed at grade 8, but reading to perform a task is not assessed at grade 4. The reading framework specifies four “aspects of reading” that represent the types of comprehension questions asked of students. Each comprehension question in the NAEP assessment measures one of the following four aspects of reading: 1) forming a general understanding, 2)

developing interpretation, 3) making reader/text connections, and 4) examining content and structure. All four aspects of reading are assessed at both grades 4 and 8 for each context for reading relevant to that grade. The reading framework specifies the percentage distribution of questions by grade level for each of the contexts for and aspects of reading.

The assessment contains reading materials that were drawn from sources commonly available to students both in and out of the school environment. These materials were considered to be representative of students' typical reading experiences. Each student in the assessment was asked to complete two 25-minute sections, each consisting of a reading passage and associated comprehension questions. A combination of multiple-choice and constructed-response questions was used to assess students' understanding of the passages. Constructed-response questions require students to provide their own written response to an open-ended question. Short constructed-response questions may require a response of only a sentence or two for the answer to be considered complete. Extended constructed-response questions, however, may require a response of a paragraph or more for the answer to receive full credit. Each constructed-response question has its own unique scoring guide that is used by trained scorers to rate students' responses. (See chapter 4 for more information about the Reading Framework.)

## Mathematics

The NAEP mathematics framework calls for questions based on five mathematics content areas: number properties and operations, measurement, geometry, data analysis and probability, and algebra. The mathematics framework classifies test items in two dimensions: content area and mathematical complexity. A combination of multiple-choice and constructed-response questions was used to assess students' mathematics performance. Short constructed-response questions ask students to provide the answer for a numerical problem or to briefly describe the solution to a problem. Longer constructed-response questions require students to produce both a solution and a justification, explanation, or interpretation for the solution. The framework incorporates the use of calculators (four-function at grade 4 and scientific at grade 8), rulers, protractors (grade 8), and manipulatives such as spinners and geomet-

ric shapes. The use of these ancillary materials and the use of calculators were incorporated into some parts of the assessment, but not all. Calculator use was permitted on approximately one-third of the test questions. (See chapter 4 for more information about the Mathematics Framework.)

## Sample Design

The NIES sample was designed as an augmentation of the 2005 NAEP reading and mathematics assessment samples of American Indian and Alaska Native students in the fourth and eighth grades. While American Indian and Alaska Native students have been sampled for inclusion in the nationally representative NAEP assessments administered in the past, the expanded sample provides more reliable estimates of American Indian and Alaska Native student performance on the NAEP reading and mathematics assessments.

The sample design for the 2005 NAEP reading and mathematics assessments consists of individual state samples and an aggregated national sample. The combined national sample comprises a nationally representative sample of students from public schools, private schools, Department of Defense Schools, and Bureau of Indian Affairs (BIA) schools. The expanded NIES sample permits the reporting of results for American Indian and Alaska Native students in the nation, in regions, and in selected states that were identified as having the largest proportion of American Indian and Alaska Native students as a percentage of the state's total population. In each of these selected states, more than 5 percent of the student population is American Indian or Alaska Native; almost 50 percent of the nation's American Indian and Alaska Native students reside in these states.

NAEP typically reports state-level results for fourth- and eighth-grade public school students only. In contrast, the state-level results reported in the NIES are for public school plus BIA school students. As noted above, the NIES focused on states with relatively high proportions of American Indian and Alaska Native students. The seven states that are discussed in this report are Alaska, Arizona, Montana, New Mexico, North Dakota, Oklahoma, and South Dakota. In addition to the national and state-level results, results for American Indian/Alaska Native students are also presented for 5 regions of the country.

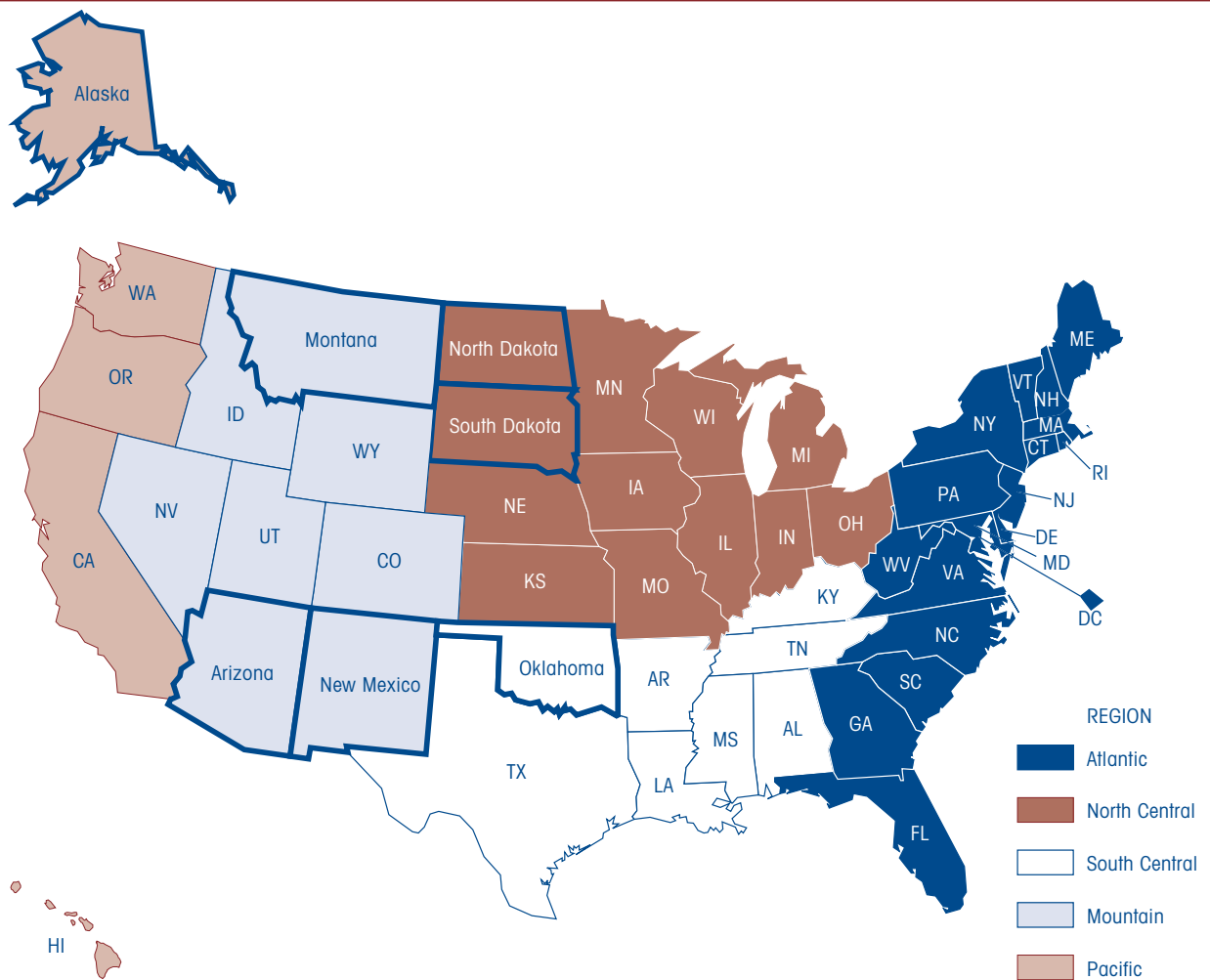
See figure 1-1 for a map of the regions and the selected states (shown by bold borders and fully spelled-out names).

In reading, nationally representative samples of about 166,000 fourth-grade and 159,000 eighth-grade students participated in the assessment nationwide. Of these, approximately 3,800 American Indian/Alaska Native students participated at grade 4, and approximately 3,400 American Indian/Alaska Native students participated at grade 8 (table A-1). At the regional level, the number of participating American Indian/Alaska Native students ranged from 200 to 1,200 students (table A-2). In the seven selected states, the number of American Indian/

Alaska Native students ranged from 200 to 600 students (table A-3). Student-weighted school participation rates ranged from 96 to 97 percent (table A-1).

In mathematics, about 172,000 fourth-grade and 162,000 eighth-grade students participated in the assessment nationwide. Of these, approximately 3,900 American Indian/Alaska Native students participated at grade 4, and approximately 3,500 American Indian/Alaska Native students participated at grade 8 (table A-1). At the regional level, the number of participating American Indian/Alaska Native students ranged from 200 to 1,200 students (table A-2). In the seven selected states, the number of American

**Figure 1-1.** Regions and selected states for the National Indian Education Study: 2005



NOTE: Selected states are shown with bold borders and fully spelled-out names. These states were identified by NAEP as having the largest proportion of American Indian/Alaska Native students as a percentage of the state's total population. Regions referenced in the figure were defined by NAEP exclusively for the 2005 National Indian Education Study.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

Indian/Alaska Native students ranged from 200 to 600 students (table A-3). Student-weighted school participation rates ranged from 96 to 97 percent (table A-1).

This report contains comparisons of American Indian/Alaska Native student performance to the performance of all other students in the nation or region (i.e., comparisons of American Indian and Alaska Native students to students who are neither American Indian nor Alaska Native).

In addition, the sections discussing state results present comparisons between the performance results of American Indian/Alaska Native students within each state and those of American Indian/Alaska Native students in each of the other selected states, and to the performance results of the national sample of American Indian/Alaska Native students. It should be noted that the national and regional results include American Indian and Alaska Native students in all schools (public, private, Department of Defense, and BIA), while the state results are based on samples of American Indian and Alaska Native students in public and BIA schools only; however, the percentage of American Indian and Alaska Native students who are enrolled in schools other than public and BIA schools nationally is very small (between 1 and 2 percent, unweighted).

## Understanding NAEP Results

Results in this report are presented in two ways: in terms of scale scores and as the percentage of students scoring at or above three benchmarks called achievement levels (see call-out box below). For

results to be presented in this report, each reporting group must meet minimum reporting standards, based on the size of the sample of students assessed. Reporting standards were met for schools and students in the nation, in the regions, and in the selected states.

## Scale Scores

NAEP scores are reported for grades 4 and 8 on a 0–500 scale. Scale score results also are presented for students at various percentiles. An examination of scores at different percentiles on the 0–500 scale indicates whether or not average score results are reflected in the performance of lower-, middle-, and higher-performing students. Item maps, presented in chapter 4, provide interpretive information about a scale score in terms of the skills and knowledge students with a certain score are likely to have. Items placed along the scale on an item map demonstrate how skills correspond to levels of performance. Scales are created for each subject and grade independently, so even when another subject's scale has the same numerical range (0–500), average scores should not be compared across subjects (e.g., average reading scores should not be compared to average mathematics scores), nor should comparisons be made of average scores across grade levels.

## Achievement Levels

NAEP results are reported at three achievement levels: *Basic*, *Proficient*, and *Advanced*. Achievement levels are performance standards showing what students should know and be able to do. They are

## NAEP Achievement-Level Descriptions

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

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

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

**Advanced**—signifies superior performance.

Detailed descriptions of the NAEP achievement levels for each subject and grade can be found on the NAGB website (<http://www.nagb.org/pubs/pubs.html>).

set by the National Assessment Governing Board (NAGB), based on recommendations from panels of educators and members of the public, to provide a context for interpreting student performance on NAEP. In this report, the achievement-level results are reported as percentages of students performing at or above *Basic* and at or above *Proficient*. 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. However, NCES and NAGB have affirmed the usefulness of these performance standards for understanding trends in achievement.

## Interpreting Results

A number of statistical standards are followed in NAEP reports for the public. For example, states and jurisdictions must achieve an 85 percent participation rate of sampled schools for the data to be reported publicly. Also, in order to assure statistically reliable results, categories with sample sizes of fewer than 62 students or 5 primary sampling units (schools) are not reported.

Because NAEP is a sample survey, and because no test can measure achievement perfectly, each score or percentage is associated with a margin of error. Appropriate statistical tests are performed to determine whether differences between percentages of students, scale scores, and achievement-level percentages are statistically significant, that is, larger than the margin of error. Estimates based on smaller student groups are likely to have relatively large standard errors, because the smaller the sample, the less representative it is of the population in question. As a consequence, some differences that seem large may not be statistically significant. That is, it cannot be determined whether these differences are due to the particular makeup of the samples of students who were randomly selected, or to true differences in the population of interest.

Therefore, the reader is cautioned that only those differences that are discussed in the text, or that are indicated with asterisks in the figures and tables, have been determined to be statistically significant using the criteria established for this report. Differences between scale scores or percentages are calculated using unrounded numbers. In some

instances, the result of the subtraction differs from what would be obtained by subtracting the rounded values shown in the accompanying figure or table. A full discussion of the method by which statistical significance was determined for the comparisons discussed in this report is presented in the Technical Notes.

## Cautions in Interpretation

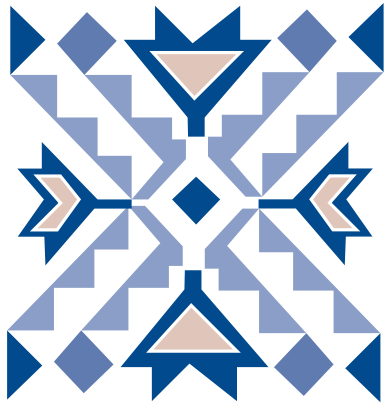
It is important to note that a relationship between a variable and measures of educational achievement, like the ones presented in this report, does not imply that a difference in the variable causes differences in educational achievement. There are many reasons why the performance of one group of students differs from another, including ones that are not measured in NAEP.

This report is purely descriptive in nature. Readers are cautioned not to draw causal inferences based solely on the results presented here. It is important to note that many of the grouping variables examined in this report (e.g., race/ethnicity, eligibility for free/reduced-price school lunch, type of school location) are correlated with one another, and complex interactions and relationships have not been explored here.

## About This Report

This report describes the reading and mathematics performance of American Indian/Alaska Native students at grades 4 and 8, based on data from the 2005 NAEP assessment. Chapter 2 examines reading results for the nation, for regions, for selected states, and for groups of students defined by race/ethnicity, eligibility for free/reduced-price school lunch, gender, type of school location, and student-reported level of parental education (grade 8 only). Chapter 3 provides mathematics results in the same categories. Chapter 4 presents information about the assessment design, including the frameworks, item maps, and sample questions for each of the respective assessments. The Technical Notes section discusses technical procedures and terms, and contains a table which shows the standard deviations of the scores of American Indian/Alaska Native students and of all other students for each subject and grade. The Data Appendix provides tables with additional details, including standard errors, for the data presented in figures in the text.





## CHAPTER 2

### Reading Results, Grades 4 and 8

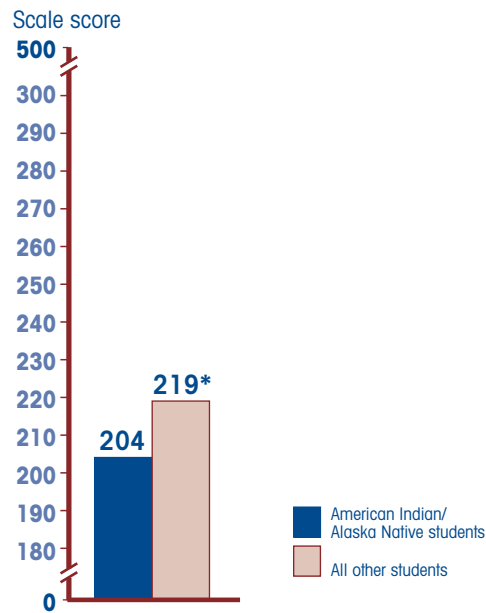
This chapter provides results from the 2005 NAEP reading assessment at grades 4 and 8 for the nation, for regions, for selected states, and for student groups.

#### National Results

Figures 2-1 and 2-3 show the average reading scores in 2005 for American Indian/Alaska Native students and all other students at grades 4 and 8, respectively. Figures 2-2 and 2-4 show the reading achievement-level results for each grade. In this report, the figures presenting achievement-level results show the percentage of students performing at or above *Proficient* in a bar nested within the bar representing the percentage at or above *Basic*, indicating that the percentage of students at or above *Basic* includes those performing at or above *Proficient*.

At both grades 4 and 8, American Indian/Alaska Native students scored lower, on average, in reading than the average of all other students in the nation (students who are neither American Indian nor Alaska Native). The percentages of students performing at or above *Basic* and at or above *Proficient* in reading were also lower for American Indian/Alaska Native students than for all other students at both grades.

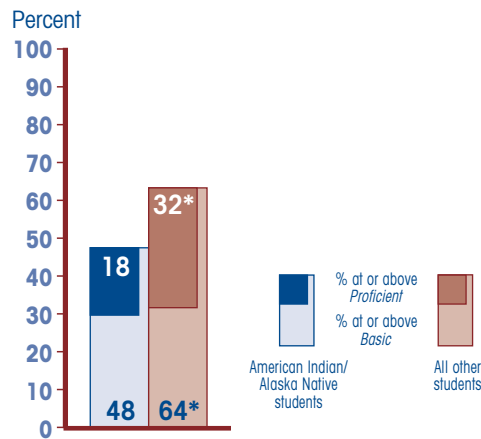
**Figure 2-1.** Average reading scale scores, by student group, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

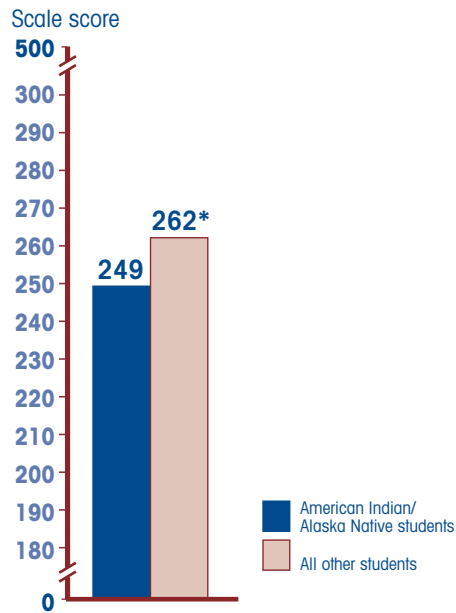
**Figure 2-2.** Reading achievement-level results, by student group, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

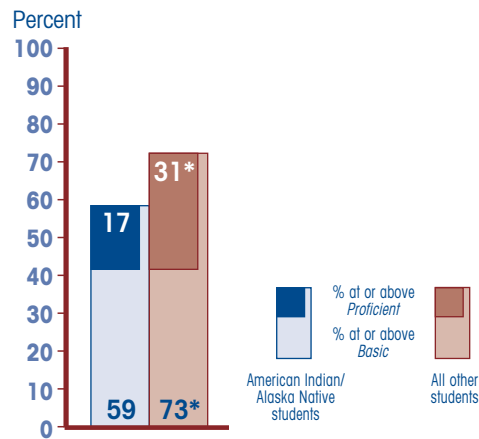
**Figure 2-3.** Average reading scale scores, by student group, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-4.** Reading achievement-level results, by student group, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

Table 2-1 presents the 2005 reading achievement-level results as the percentage of students performing within each achievement level at each grade. The percentages of students performing at *Proficient* and at *Advanced* were lower for American Indian/Alaska Native students than for all other students at both grades. At grade 4, the percentages of American Indian/Alaska Native students performing at *Basic* were also lower than for all other students.

## Comparing Scores Among Lower-, Middle-, and Higher-Performing Students

Examining performance of students at selected percentiles can indicate when the overall picture for students diverges by lower-, middle-, or higher-scoring students. A percentile indicates the percentage of students whose scores fell at or below a particular score on the NAEP reading scale. For example, the results presented in table 2-2 for students at grade 4 show that 50 percent of American Indian/Alaska Native students scored at or below 206 and 50 percent of all other students scored at or below 222. At each of the five percentiles analyzed, the score for American Indian/Alaska Native students was lower than the score for all other students at both grades 4 and 8.

**Table 2-1.** Achievement-level results in reading, by student group, grades 4 and 8: 2005

Student group	Percent			
	Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>
<b>Grade 4</b>				
American Indian/Alaska Native students	52	30	15	3
All other students	36*	33*	24*	8*
<b>Grade 8</b>				
American Indian/Alaska Native students	41	41	16	1
All other students	27*	42	28*	3*

\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

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

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table 2-2.** Reading scale scores at selected percentiles, by student group, grades 4 and 8: 2005

Student group	Percentile				
	10th	25th	50th	75th	90th
<b>Grade 4</b>					
American Indian/Alaska Native students	154	179	206	230	251
All other students	171*	196*	222*	244*	263*
<b>Grade 8</b>					
American Indian/Alaska Native students	204	227	251	273	292
All other students	216*	240*	265*	287*	305*

\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Results by Region of the Country

In addition to the national results, reading performance is reported for five regions: Atlantic, North Central, South Central, Mountain, and Pacific. These NIES regions, which differ from the typical regions used in other NAEP reports, are based on U.S. Census divisions, and are configured to align with the distribution of the American Indian/Alaska Native student population. The regional samples are composed of the samples for the states that make up each defined region (figure 1-1).

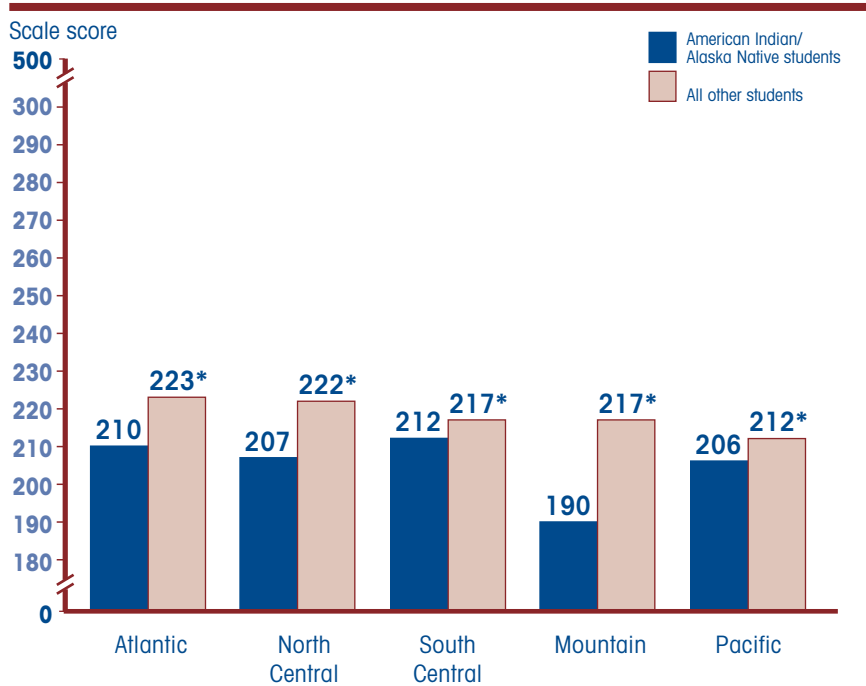
### Grade 4

As shown in figure 2-5, American Indian/Alaska Native students scored lower on average than all other students in all the regions.

The achievement-level results, presented in figure 2-6, show lower percentages of American Indian/Alaska Native students than all other students performing at or above *Basic* and at or above *Proficient* in the Atlantic, North Central, and Mountain regions.

The difference in average scores, or “score gap,” between all other students and American Indian/Alaska Native students is 15 points at the national level (figure 2-1). The score gap in the Mountain region (27 points) is greater than the gap in the nation, and the gaps in the South Central region (5 points) and in the Pacific region (6 points) are smaller than the gap in the nation. Comparing the performance differences within each

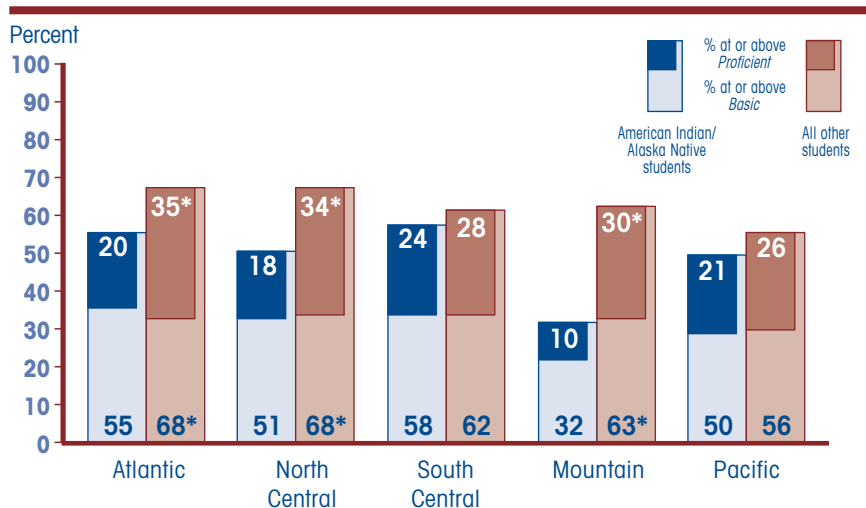
**Figure 2-5.** Average reading scale scores, by student group and region, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-6.** Reading achievement-level results, by student group and region, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

of the regions, the gap in the Mountain region is significantly larger than the gaps in the other four regions (figure 2-5).

### Grade 8

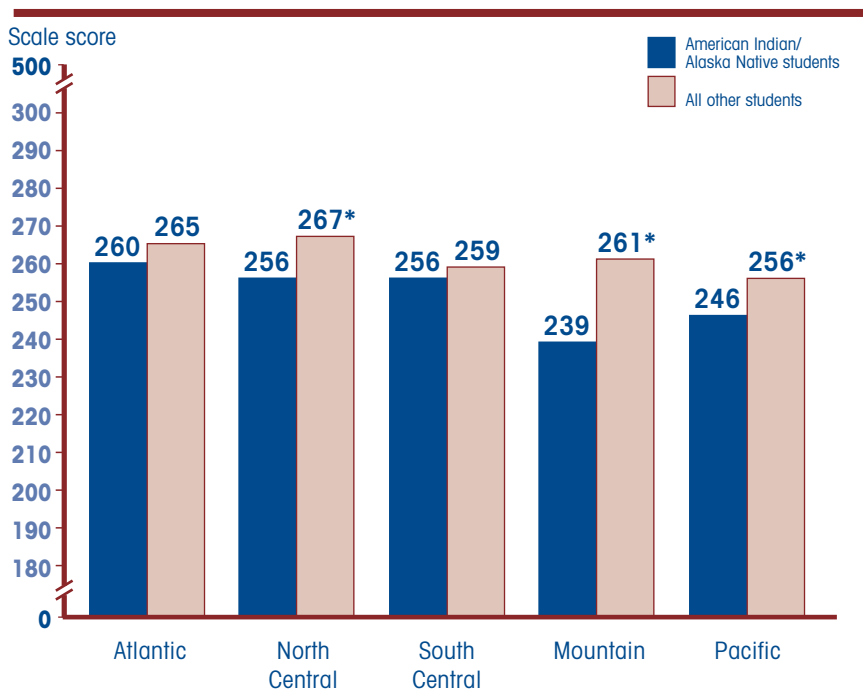
As shown in figure 2-7, American Indian/Alaska Native students in the North Central, Mountain, and Pacific regions had lower average reading scores than all other students in the same region. As shown in figure 2-8, lower percentages of American Indian/Alaska Native students than of all other students in the North Central, Mountain, and Pacific regions performed at or above *Basic* and at or above *Proficient*.

At the national level, the difference in average scores, or “score gap,” between all other students and American Indian/Alaska Native students is 13 points (figure 2-3). The score gap in the Mountain region (21 points) is greater than the gap in the nation, and the gaps in the South Central region (3 points) and in the Atlantic region (4 points) are smaller. Comparing the performance differences within each of the regions, the gap in the Mountain region is significantly larger than the gaps in the other four regions (figure 2-7).

### Selected State Results

Specific states with relatively large populations of American Indian/Alaska Native students were selected for this study. Readers are cautioned, however, to consider that each of the selected states represents a different educational context and that comparisons

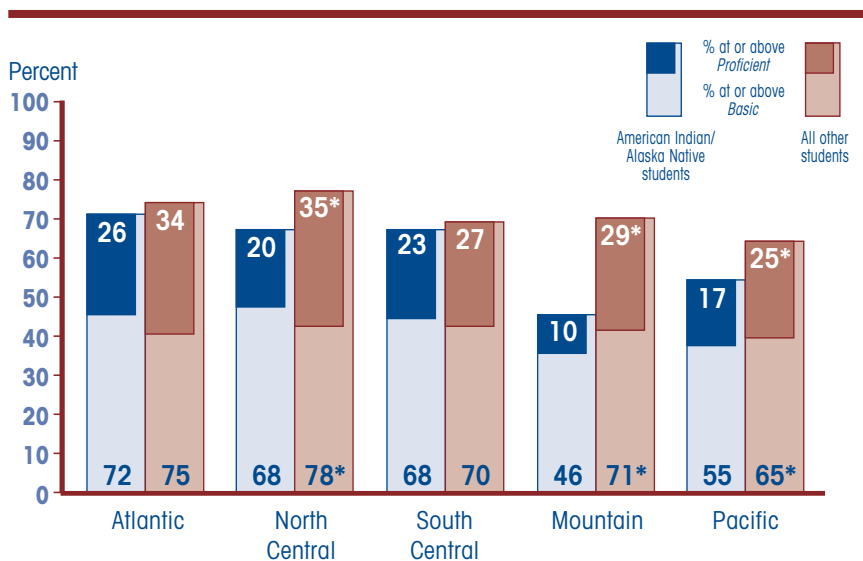
**Figure 2-7.** Average reading scale scores, by student group and region, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-8.** Reading achievement-level results, by student group and region, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

across states should be tempered by considerations of different school types, demographic factors, and socioeconomic factors.

When making comparisons across states, it is important to consider the variation in the exclusion rates. Although every effort is made to include as many students as possible, different states have different policies. States that are more inclusive—that is, they assess greater percentages of their students with disabilities and English language learners—may have lower average scores than states that exclude greater percentages of these students. Tables A-5 and A-6 show the exclusion rates for grade 4 and grade 8 reading.

Figures 2-9 and 2-13 show the average reading scores for American Indian/Alaska Native students at grades 4 and 8 for the selected states. The average score for American Indian/Alaska Native students in the nation is also given in each figure as a point of comparison. Figures 2-10 and 2-14 show the achievement-level results for each grade for the selected states, with American Indian/Alaska Native students in the nation again included as a comparison.

Figures 2-11 and 2-15 provide state-to-state comparisons for average scale scores at grades 4 and 8, and figures 2-12 and 2-16 show state-to-state comparisons of the percentage of students performing at or above *Basic*.

#### Grade 4

As shown in figure 2-9, grade 4 American Indian/Alaska Native students in Oklahoma scored higher on average than grade 4 American Indian/Alaska Native students in the nation. Compared to the American Indian/Alaska Native students in the nation, American Indian/Alaska Native students in Alaska, Arizona, New Mexico, and South Dakota scored lower on average. Higher percentages of American Indian/Alaska Native students in Oklahoma, as compared to American Indian/Alaska Native students in the nation, performed at or above *Basic*, as shown in figure 2-10. Lower percentages of American Indian/Alaska Native students in Alaska, Arizona, New Mexico, North Dakota, and South Dakota, as compared to American Indian/Alaska

Native students in the nation, performed at or above *Basic* and at or above *Proficient*.

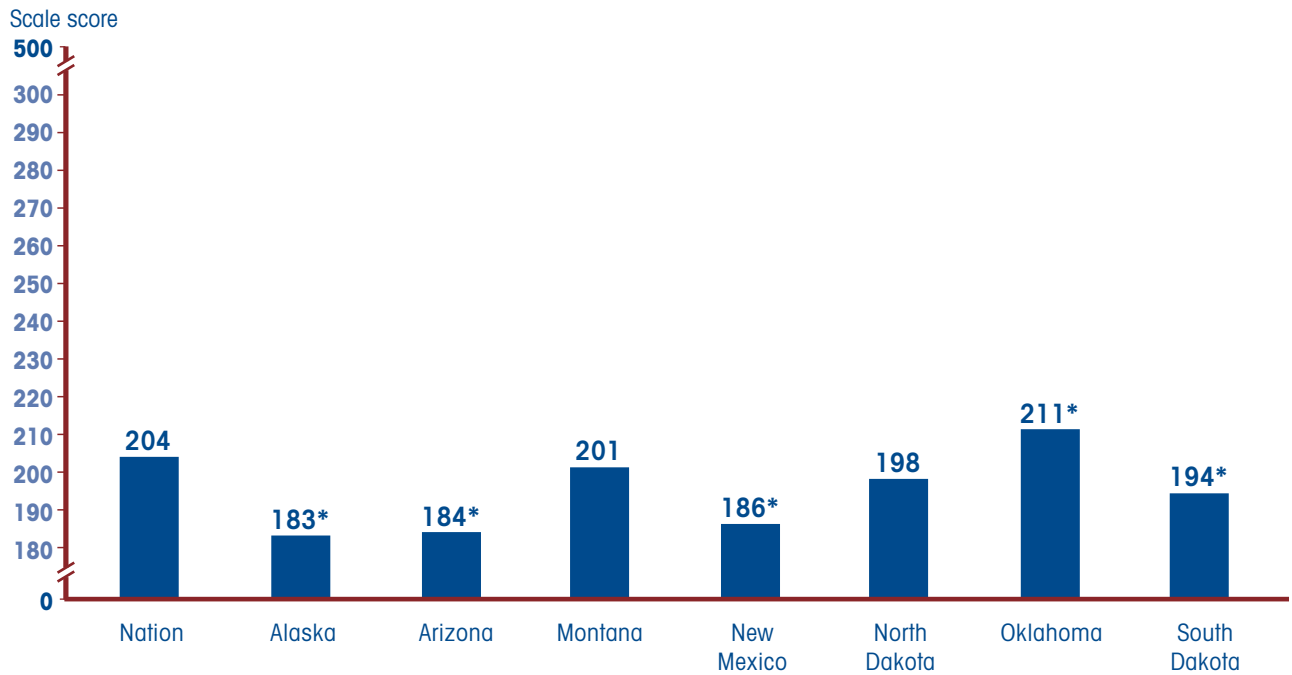
In the state-to-state comparisons, shown in figure 2-11, American Indian/Alaska Native students in Oklahoma scored higher on average than their peers in all the other selected states. American Indian/Alaska Native students in Montana, North Dakota, and South Dakota also scored higher on average than their peers in New Mexico and Alaska. American Indian/Alaska Native students in Montana also scored higher than their peers in Arizona. American Indian/Alaska Native students in Oklahoma had a higher percentage performing at or above *Basic* than their peers in the other selected states (figure 2-12). American Indian/Alaska Native students in Montana had a higher percentage performing at or above *Basic* than their peers in Alaska, Arizona, and New Mexico (figure 2-12).

#### Grade 8

Figure 2-13 shows that, compared to grade 8 American Indian/Alaska Native students in the nation, grade 8 American Indian/Alaska Native students in Alaska, Arizona, New Mexico, and South Dakota scored lower on average, and American Indian/Alaska Native students in Oklahoma scored higher. The achievement-level results (figure 2-14) show that American Indian/Alaska Native students in Oklahoma had higher percentages performing at or above *Basic* than American Indian/Alaska Native students in the nation. American Indian/Alaska Native students in Alaska, New Mexico, and South Dakota had lower percentages performing at or above *Basic* and at or above *Proficient* than American Indian/Alaska Native students in the nation.

Figure 2-15 shows that American Indian/Alaska Native students in Oklahoma had higher average scores than their peers in Arizona, Alaska, South Dakota, and New Mexico. American Indian/Alaska Native students in Montana and North Dakota had higher average scores than their peers in Alaska, New Mexico, and South Dakota. Figure 2-16 indicates that American Indian/Alaska Native students in Oklahoma had a higher percentage performing at or above *Basic* than their peers in Alaska, South Dakota, and New Mexico.

**Figure 2-9.** Average reading scale scores for American Indian/Alaska Native students only, by nation and selected states, grade 4: 2005

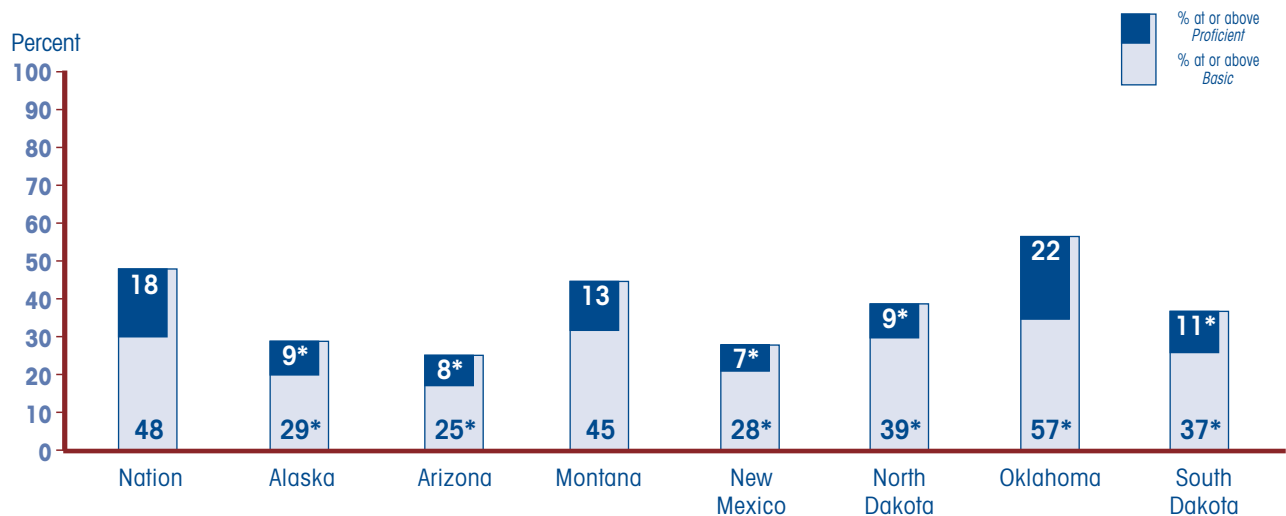


\* Significantly different from American Indian/Alaska Native students in the nation.

NOTE: National and state data presented in this figure represent American Indian and Alaska Native students only.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-10.** Reading achievement-level results for American Indian/Alaska Native students only, by nation and selected states, grade 4: 2005



\* Significantly different from American Indian/Alaska Native students in the nation.

NOTE: National and state data presented in this figure represent American Indian and Alaska Native students only.

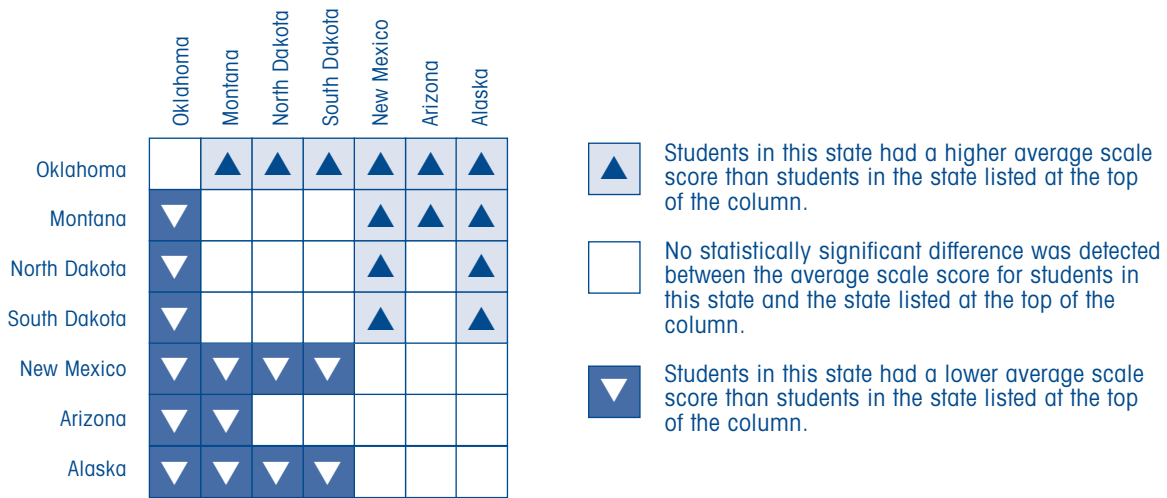
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.



Figures 2-11 and 2-12 compare average scores and percentages of grade 4 American Indian/Alaska

Native students performing at or above *Basic* in each state to those in each other state.

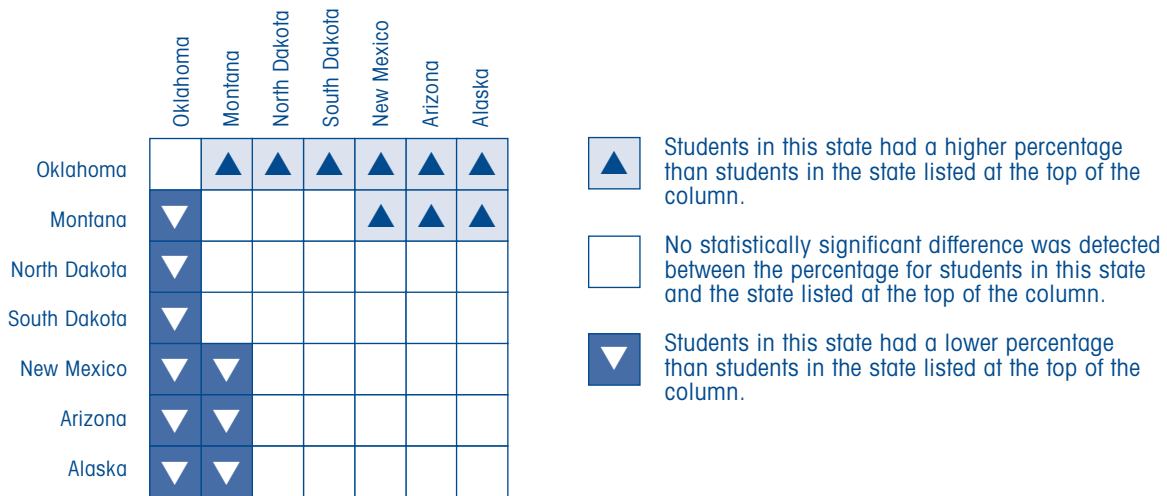
**Figure 2-11.** Cross-state comparison of average reading scale scores for American Indian/Alaska Native students, grade 4: 2005



NOTE: Read across the row corresponding to a state listed to the left of the chart. Match the shading intensity (and arrow direction) to the chart's key to determine whether the average score for students in this state was found to be higher than (up arrow), not significantly different from (blank cell), or lower than (down arrow) the average score for students in the state in the column heading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

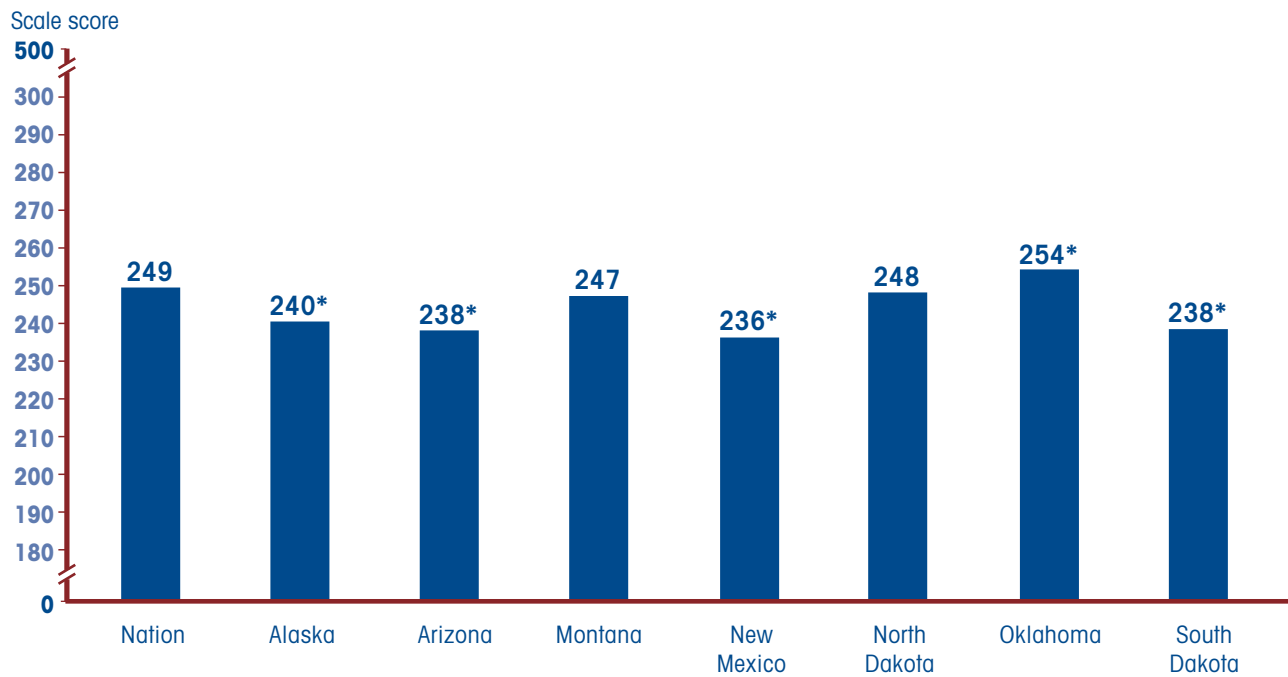
**Figure 2-12.** Cross-state comparison of the percentages of American Indian/Alaska Native students performing at or above *Basic* in reading, grade 4: 2005



NOTE: Read across the row corresponding to a state listed to the left of the chart. Match the shading intensity (and arrow direction) to the chart's key to determine whether the percentage of students in this state performing at or above *Basic* was found to be higher than (up arrow), not significantly different from (blank cell), or lower than (down arrow) the percentage of students performing at or above *Basic* in the state in the column heading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-13.** Average reading scale scores for American Indian/Alaska Native students only, by nation and selected states, grade 8: 2005

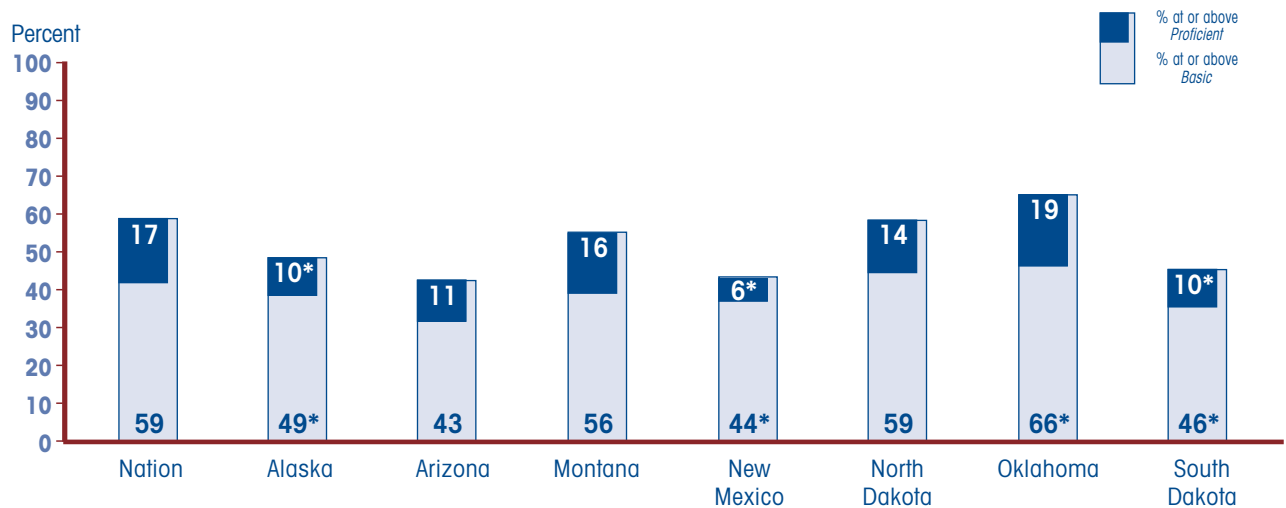


\* Significantly different from American Indian/Alaska Native students in the nation.

NOTE: National and state data presented in this figure represent American Indian and Alaska Native students only.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-14.** Reading achievement-level results for American Indian/Alaska Native students only, by nation and selected states, grade 8: 2005



\* Significantly different from American Indian/Alaska Native students in the nation.

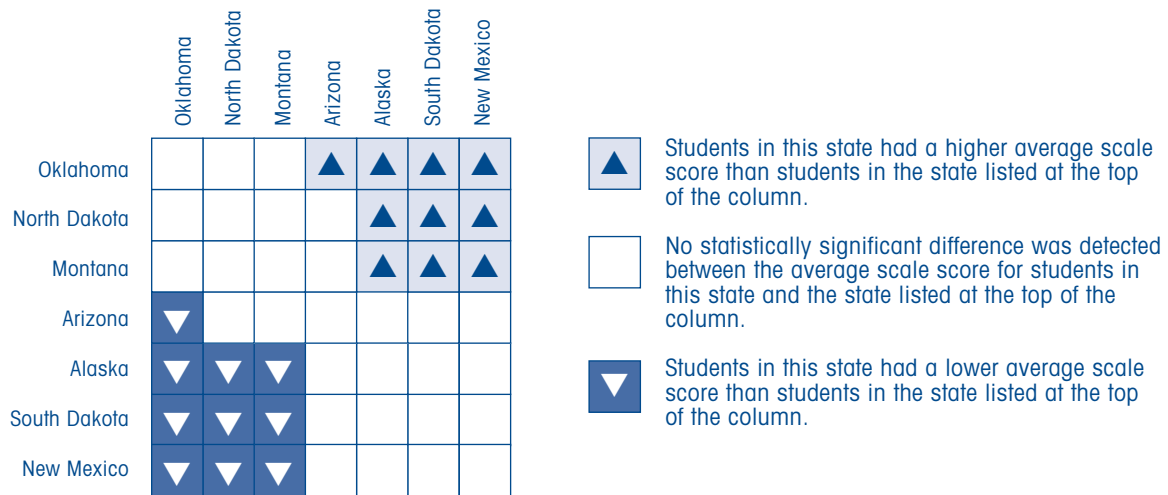
NOTE: National and state data presented in this figure represent American Indian and Alaska Native students only.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

Figures 2-15 and 2-16 compare average scores and percentages of grade 8 American Indian/Alaska

Native students performing at or above *Basic* in each state to those in each other state.

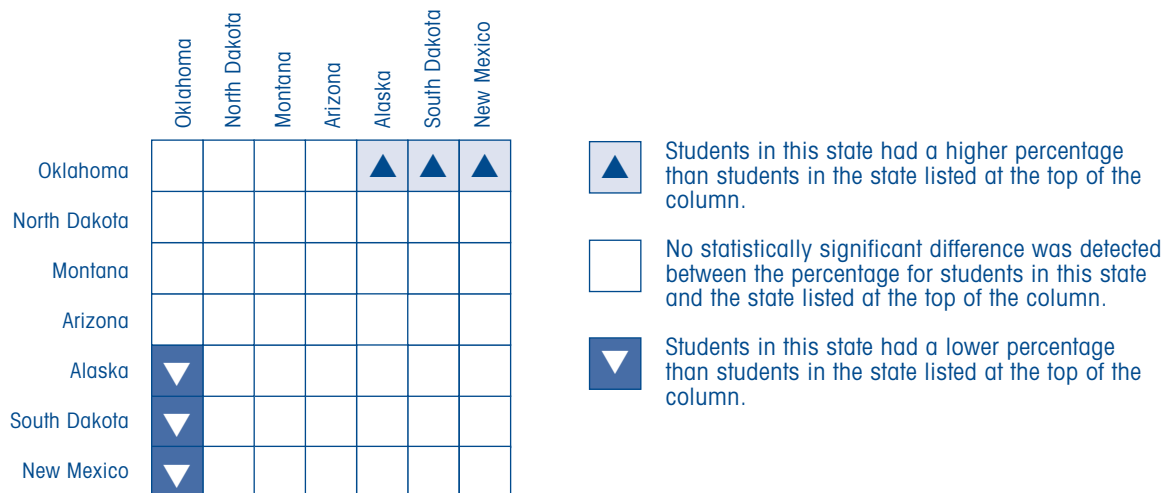
**Figure 2-15.** Cross-state comparison of average reading scale scores for American Indian/Alaska Native students, grade 8: 2005



NOTE: Read across the row corresponding to a state listed to the left of the chart. Match the shading intensity (and arrow direction) to the chart's key to determine whether the average score for students in this state was found to be higher than (up arrow), not significantly different from (blank cell), or lower than (down arrow) the average score for students in the state in the column heading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-16.** Cross-state comparison of the percentages of American Indian/Alaska Native students performing at or above *Basic* in reading, grade 8: 2005



NOTE: Read across the row corresponding to a state listed to the left of the chart. Match the shading intensity (and arrow direction) to the chart's key to determine whether the percentage of students in this state performing at or above *Basic* was found to be higher than (up arrow), not significantly different from (blank cell), or lower than (down arrow) the percentage of students performing at or above *Basic* in the state in the column heading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Student Group Results

In addition to reporting on the performance of American Indian/Alaska Native and other students overall and by region or state, NAEP also provides results for a variety of student groups for each grade level assessed.

This section includes average reading scale score and achievement-level results for groups of American Indian/Alaska Native and other students in the nation at grades 4 and 8. Results are reported by

- race/ethnicity,
- students' eligibility for free/reduced-price school lunch,
- gender,
- type of school location, and
- parents' highest level of education (grade 8 only).

This report is purely descriptive in nature, and the reader is cautioned not to draw causal inferences based solely on the results presented here. The reader should bear in mind that the estimated average scale score for a group of students does not reflect the entire range of performance (i.e., the variability) within that group. A significant difference between average scores for two groups does not indicate that all students in one group have higher scores than all students in the second group; indeed, there may be substantial overlap in individual students' scores across the two groups. In addition, differences in group performance cannot be ascribed solely to the students' group identification. Average student performance is affected by the interaction of a complex set of educational, cultural, and social factors

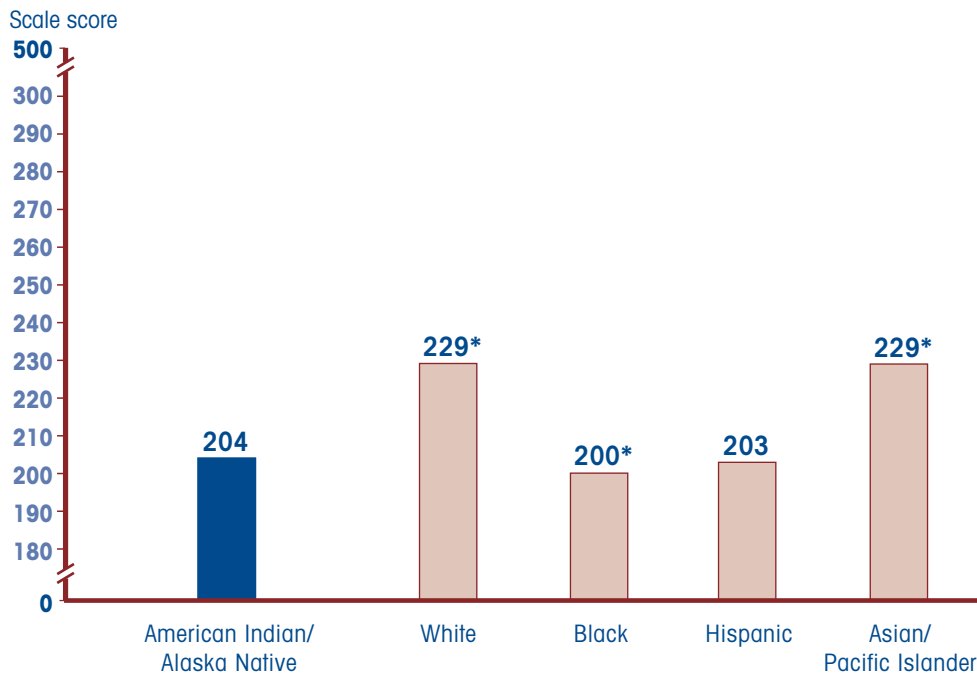
not discussed in this report nor addressed by NAEP assessments. It is important to note that many of the grouping variables examined in this report (e.g., race/ethnicity, eligibility for free/reduced-price school lunch, type of school location) are correlated with one another, and complex interactions and relationships have not been explored here.

### Race/Ethnicity

NAEP reports data on student race/ethnicity based on information obtained from school records. Figures 2-17 through 2-20 show results for five mutually exclusive categories: American Indian/Alaska Native, White, Black, Hispanic, and Asian/Pacific Islander. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. For information about the performance of students not classified in one of these categories, visit <http://nces.ed.gov/nationsreportcard/nde>.

At both grades 4 and 8, compared to Black students in the nation, American Indian/Alaska Native students had higher average scores (figures 2-17 and 2-19) and higher percentages performing at or above *Basic* and at or above *Proficient* (figures 2-18 and 2-20). American Indian/Alaska Native students had lower average scores (figures 2-17 and 2-19) and lower percentages performing at or above *Basic* and at or above *Proficient* (figures 2-18 and 2-20) than White and Asian/Pacific Islander students, while no significant difference was found between the performance of Hispanic students and American Indian/Alaska Native students on any measure (grade 4: figures 2-17 and 2-18; grade 8: figures 2-19 and 2-20).

**Figure 2-17.** Average reading scale scores, by race/ethnicity, grade 4: 2005

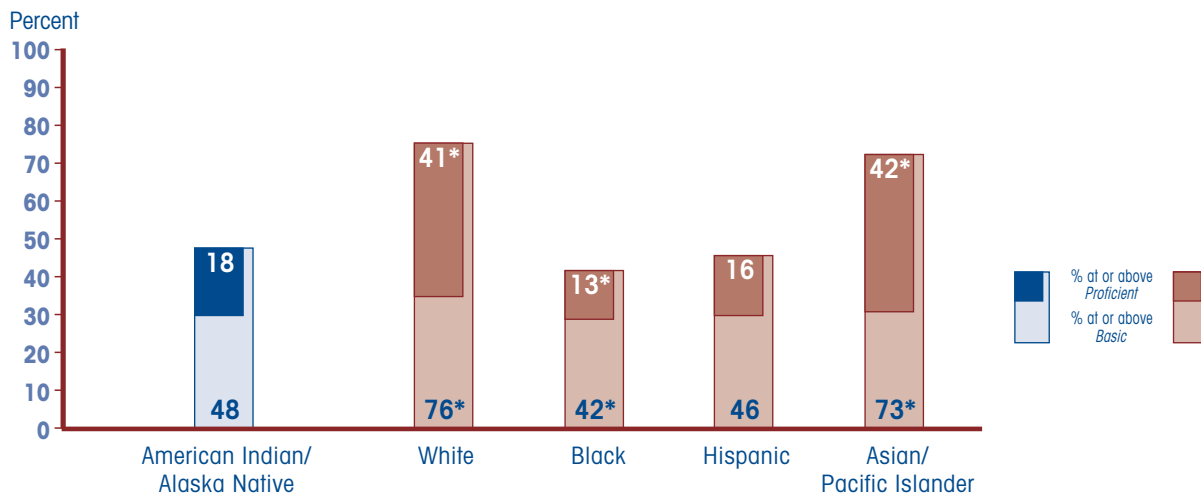


\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. 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), 2005 National Indian Education Study.

**Figure 2-18.** Reading achievement-level results, by race/ethnicity, grade 4: 2005

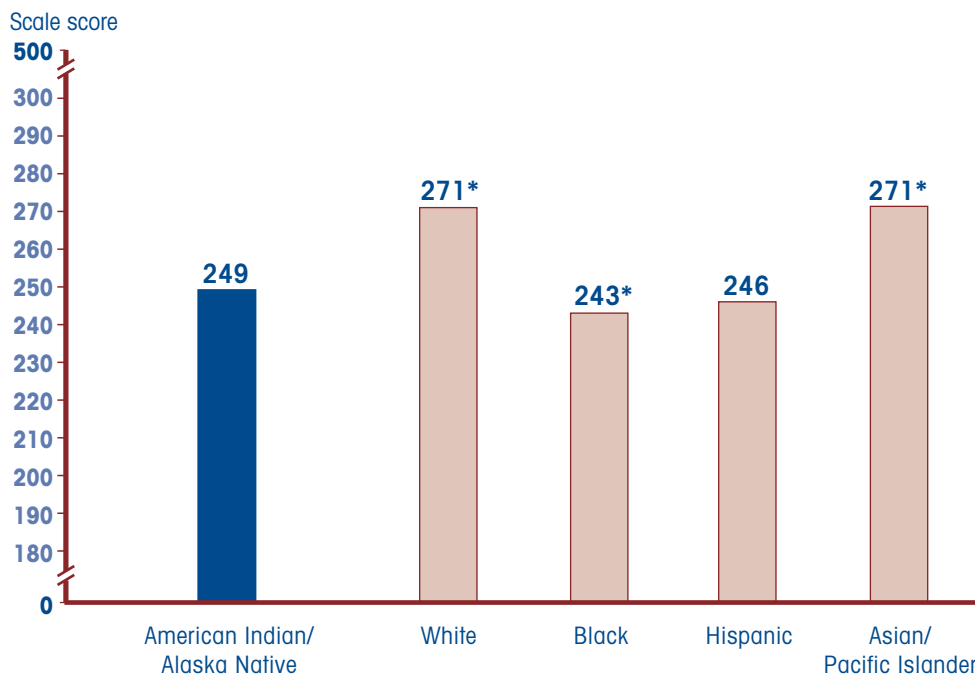


\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. 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), 2005 National Indian Education Study.

**Figure 2-19.** Average reading scale scores, by race/ethnicity, grade 8: 2005

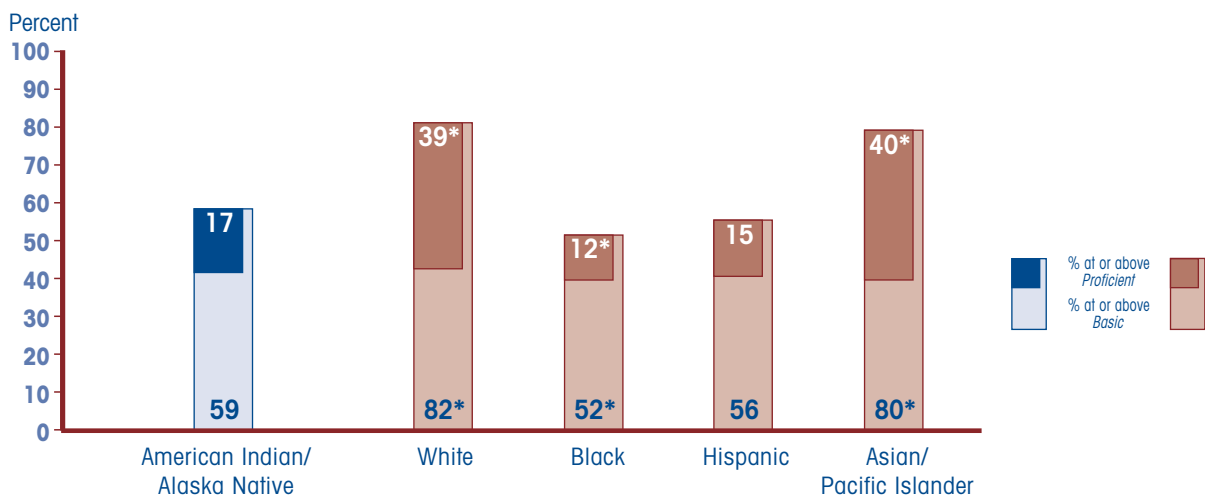


\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. 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), 2005 National Indian Education Study.

**Figure 2-20.** Reading achievement-level results, by race/ethnicity, grade 8: 2005



\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. 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), 2005 National Indian Education Study.

## Eligibility for Free/Reduced-Price School Lunch

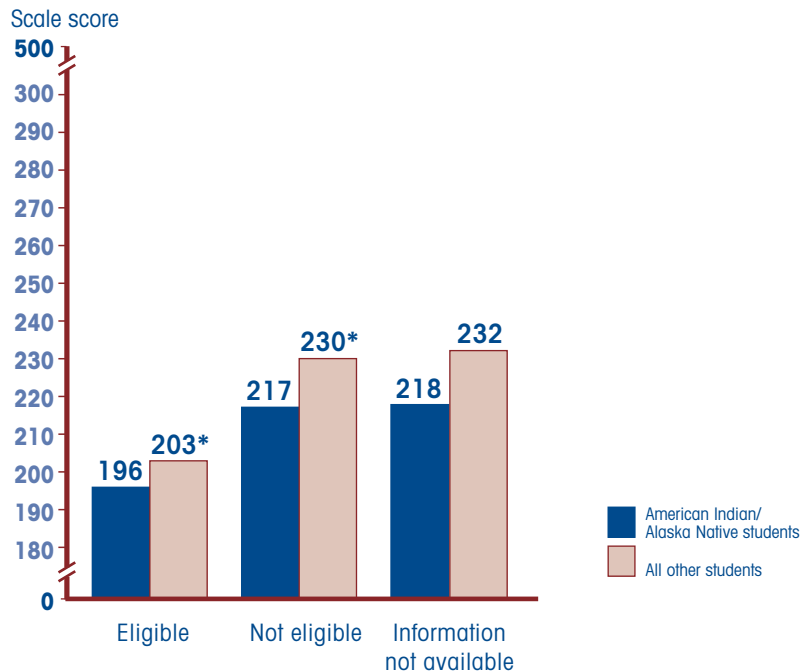
An indicator of a student's socio-economic status is whether or not that student is eligible for free or reduced-price lunch under the National School Lunch Program. Children from families with incomes at or below 130 percent of the poverty level are eligible for free meals. Those with incomes between 130 percent and 185 percent of the poverty level are eligible for reduced-price meals. (For the period July 1, 2004, through June 30, 2005, for a family of four, 130 percent of the poverty level was \$24,505, and 185 percent was \$34,873. See <http://www.fns.usda.gov/cnd/lunch> for more information.)

Among grade 4 reading students, 65 percent of American Indian/Alaska Native students were eligible for free or reduced-price lunch, and 41 percent of all other students were eligible. Among grade 8 reading students, 60 percent of American Indian/Alaska Native students were eligible for free or reduced-price lunch, and 36 percent of all other students were eligible (table A-14). If school records were not available or if the school did not participate in the program, the student was classified as "Information not available."

### Grade 4

As shown in figure 2-21, the average score for American Indian/Alaska Native students who were eligible for free or reduced-price lunch was lower than the average score for other

**Figure 2-21.** Average reading scale scores, by student group and eligibility for free/reduced-price school lunch, grade 4: 2005

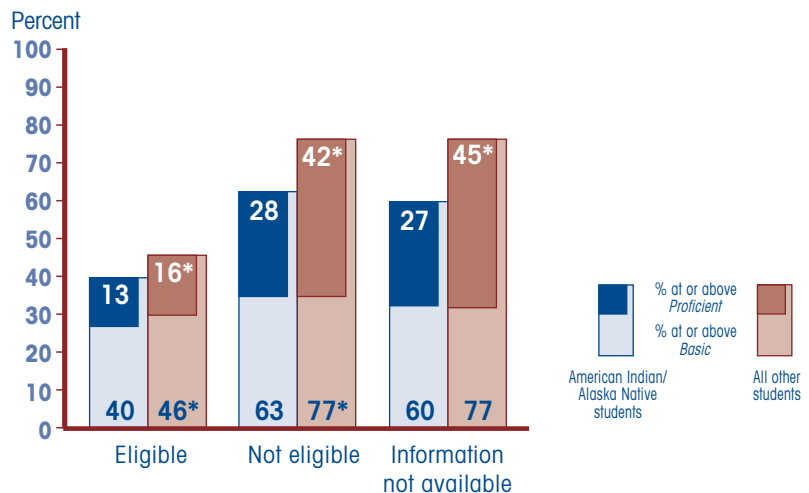


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-22.** Reading achievement-level results, by student group and eligibility for free/reduced-price school lunch, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

eligible students. Similarly, achievement-level results (percentages at or above *Basic* and at or above *Proficient*) were lower for eligible American Indian/Alaska Native students than for all other students (figure 2-22).

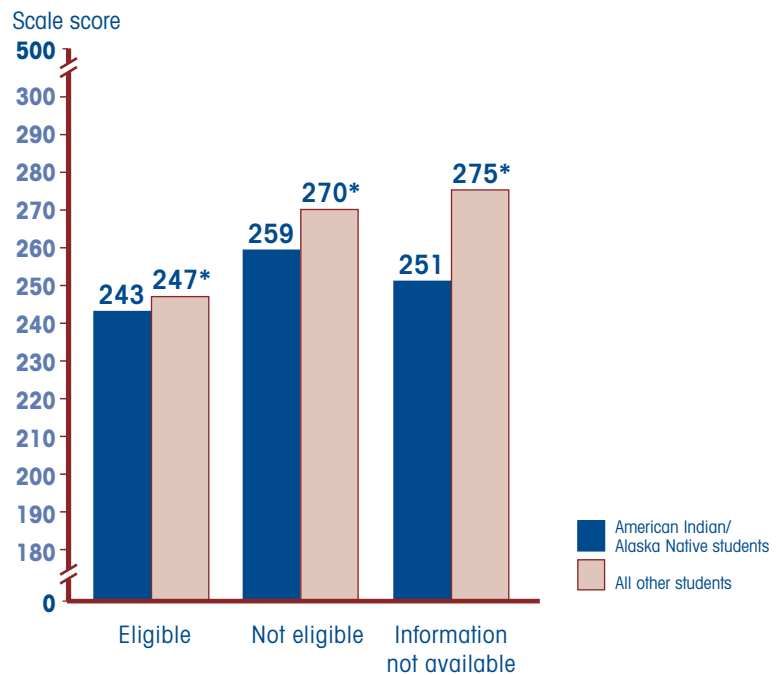
Figure 2-21 shows that the performance gap between students who were not eligible for free/reduced-price lunch and students who were eligible was 21 points among American Indian/Alaska Native students, while it was wider among all other students (27 points).

### Grade 8

Figure 2-23 shows that American Indian/Alaska Native students eligible for free/reduced-price lunch scored lower on average than all other students in the nation who were eligible. The percentages of eligible American Indian/Alaska Native students performing at or above *Basic* and at or above *Proficient* were not significantly different from the percentages of all other students performing at those respective achievement levels (figure 2-24).

Figure 2-23 shows that the performance gap between not eligible and eligible students was narrower for American Indian/Alaska Native students (16 points) than for all other students (23 points).

**Figure 2-23.** Average reading scale scores, by student group and eligibility for free/reduced-price school lunch, grade 8: 2005

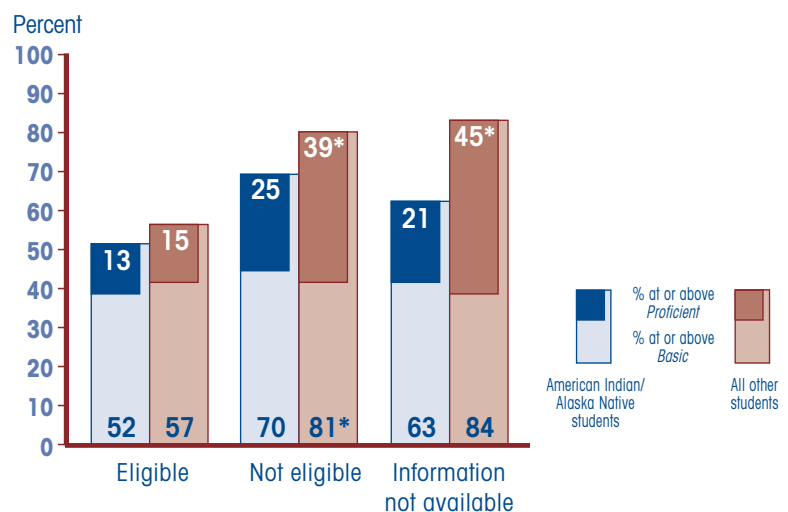


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-24.** Reading achievement-level results, by student group and eligibility for free/reduced-price school lunch, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.



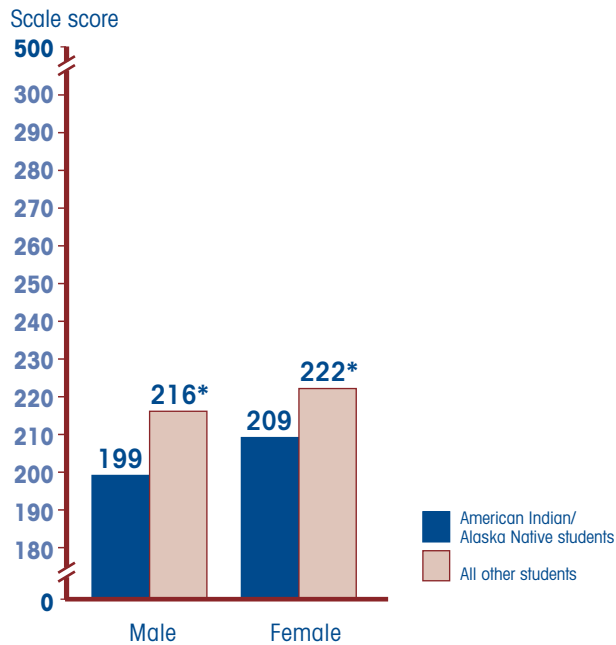
## Gender

Figures 2-25 and 2-26 show the average reading scores and percentages at or above *Basic* and at or above *Proficient* by gender at grade 4. Figures 2-27 and 2-28 show these results for grade 8.

At both grades 4 and 8, compared to all other students of the same gender, both male and female American Indian/Alaska Native students had lower average scores (figures 2-25 and 2-27) and percentages at or above *Basic* and at or above *Proficient* (figures 2-26 and 2-28).

The female-male performance gap at grade 4 was 10 points among American Indian/Alaska Native students and 6 points among all other students (figure 2-25). At grade 8, the female-male performance gap was 9 points among American Indian/Alaska Native students and 10 points among all other students (figure 2-27). These gaps, compared to one another, were not significantly different at either grade.

**Figure 2-25.** Average reading scale scores, by student group and gender, grade 4: 2005

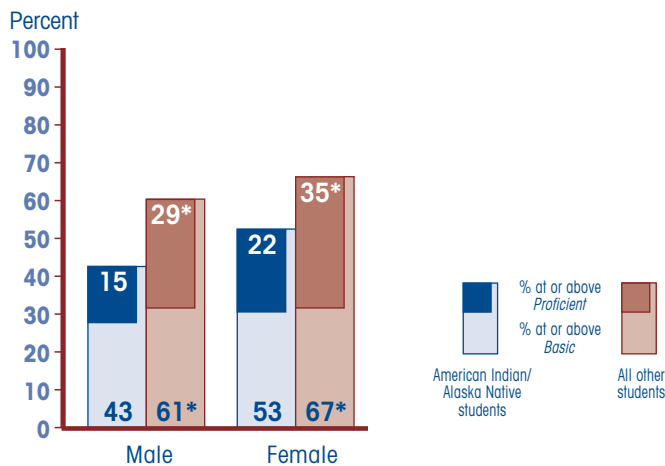


\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-26.** Reading achievement-level results, by student group and gender, grade 4: 2005

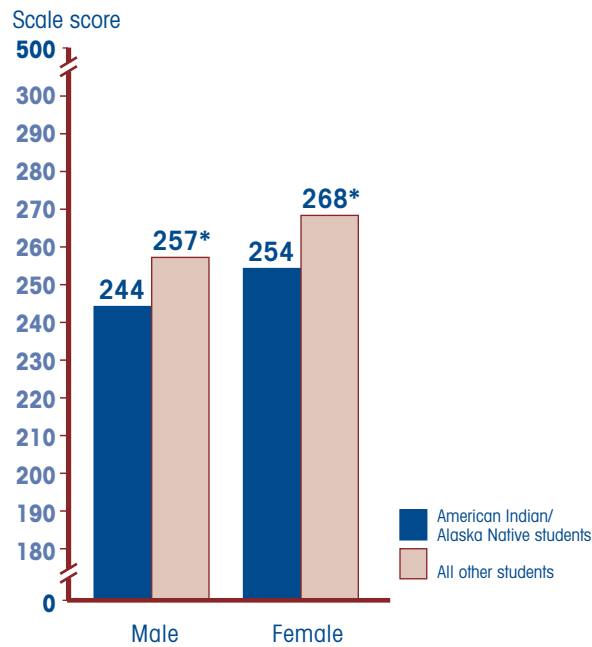


\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-27.** Average reading scale scores, by student group and gender, grade 8: 2005

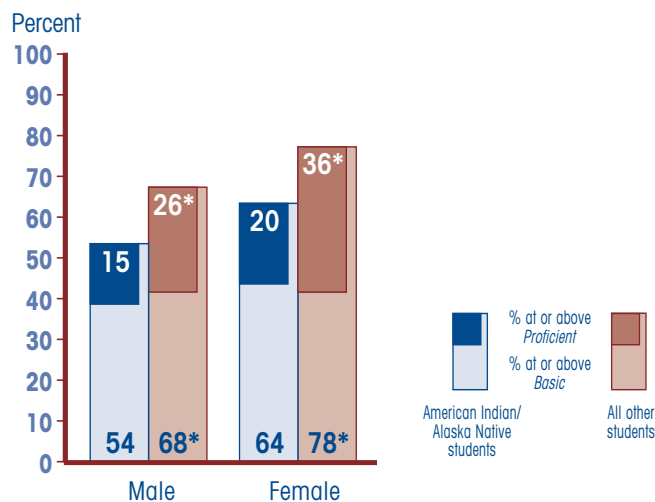


\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-28.** Reading achievement-level results, by student group and gender, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Type of School Location

Results from the 2005 reading assessment are also reported for students attending schools in three mutually exclusive location types: central city, urban fringe/urban fringe/large town, and rural/small town. (See “Understanding NAEP Reporting Groups” in the Technical Notes for more detail.)

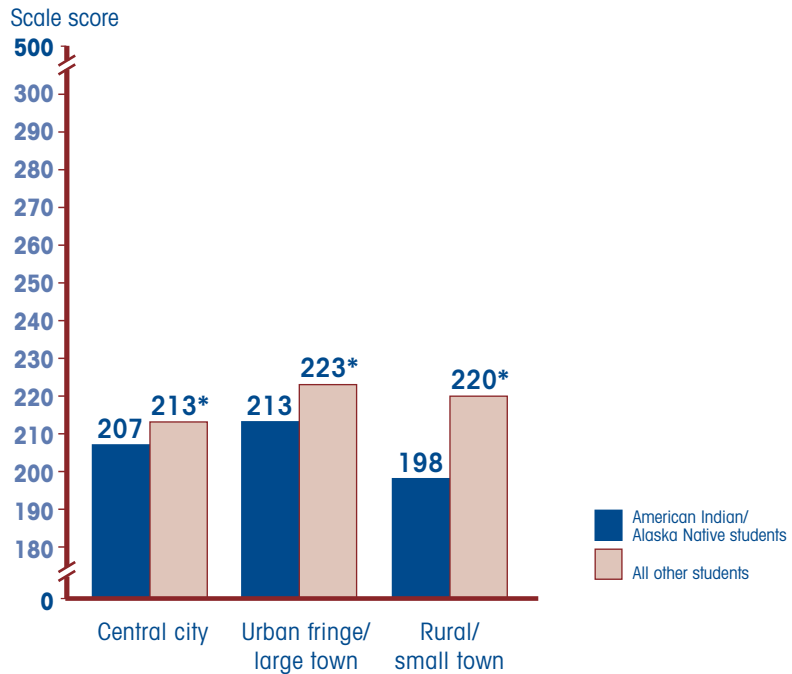
### Grade 4

As shown in figures 2-29 and 2-30, in all three school location categories, grade 4 American Indian/Alaska Native students had lower average scores and lower percentages performing at or above *Proficient* than all other students. In urban fringe/large town and rural/small town locations, American Indian/Alaska Native students also had lower percentages performing at or above *Basic* than all other students (figure 2-30).

At grade 4, both the average scores and the percentages of American Indian/Alaska Native students performing at or above the *Basic* and *Proficient* levels were higher in urban fringe and central city locations than in rural/small town locations (figures 2-29 and 2-30).

For all other students, reading performance was higher in urban fringe and rural locations than in central city locations (figures 2-29 and 2-30).

**Figure 2-29.** Average reading scale scores, by student group and type of school location, grade 4: 2005

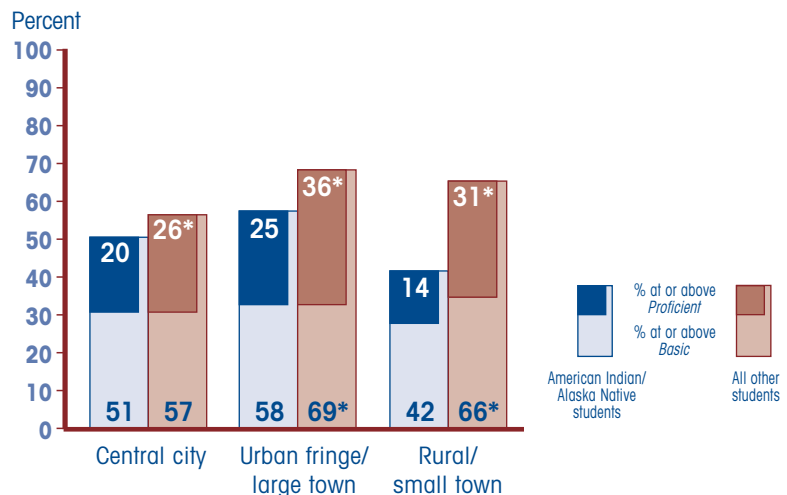


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-30.** Reading achievement-level results, by student group and type of school location, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample.

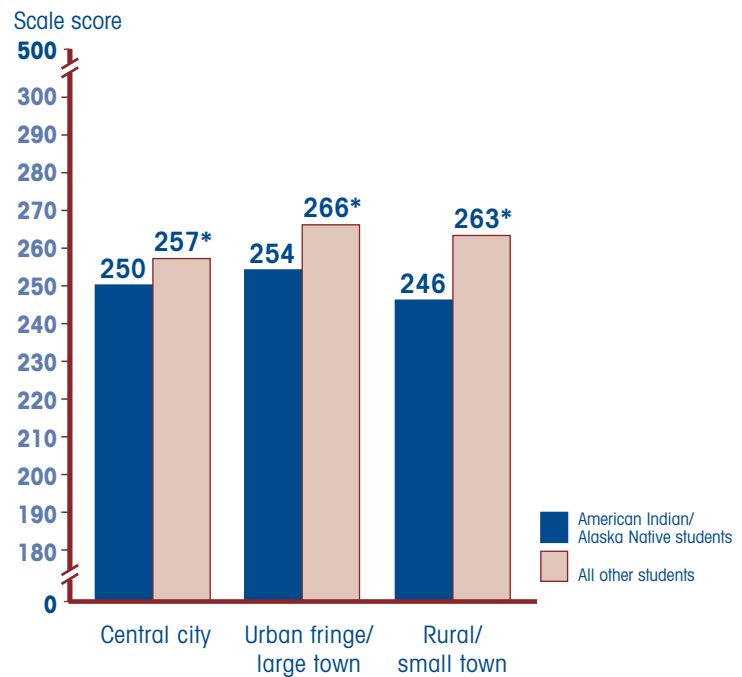
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Grade 8

As shown in figures 2-31 and 2-32, grade 8 American Indian/Alaska Native students had lower average scores and lower percentages performing at or above *Basic* and at or above *Proficient* than all other students in each of the school location categories.

There were no significant differences in reading performance (average scores and percentages at or above *Basic* and at or above *Proficient*) for American Indian/Alaska Native students across the three types of school locations. For all other students, reading performance was higher on all three measures in urban fringe and rural locations than in central city locations.

**Figure 2-31.** Average reading scale scores, by student group and type of school location, grade 8: 2005

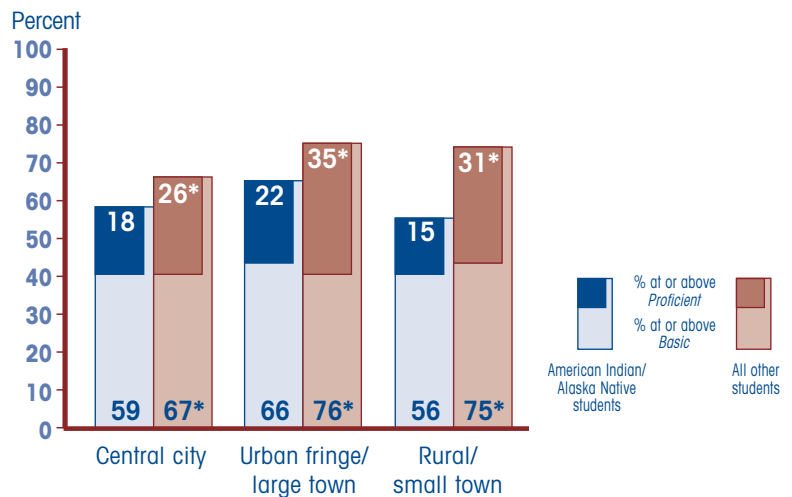


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 2-32.** Reading achievement-level results, by student group and type of school location, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Parental Education (grade 8 only)

Earlier NAEP reports have shown that across all ages and subject areas, students who reported higher parental education levels tended to have higher assessment scores, on average (Braswell et al. 2005; Donahue, Daane, and Jin 2005).

In the assessment background questionnaires, eighth-grade students were asked to identify the highest level of education attained by each of their parents. The student indicated how far each parent progressed in school, choosing from the following categories:

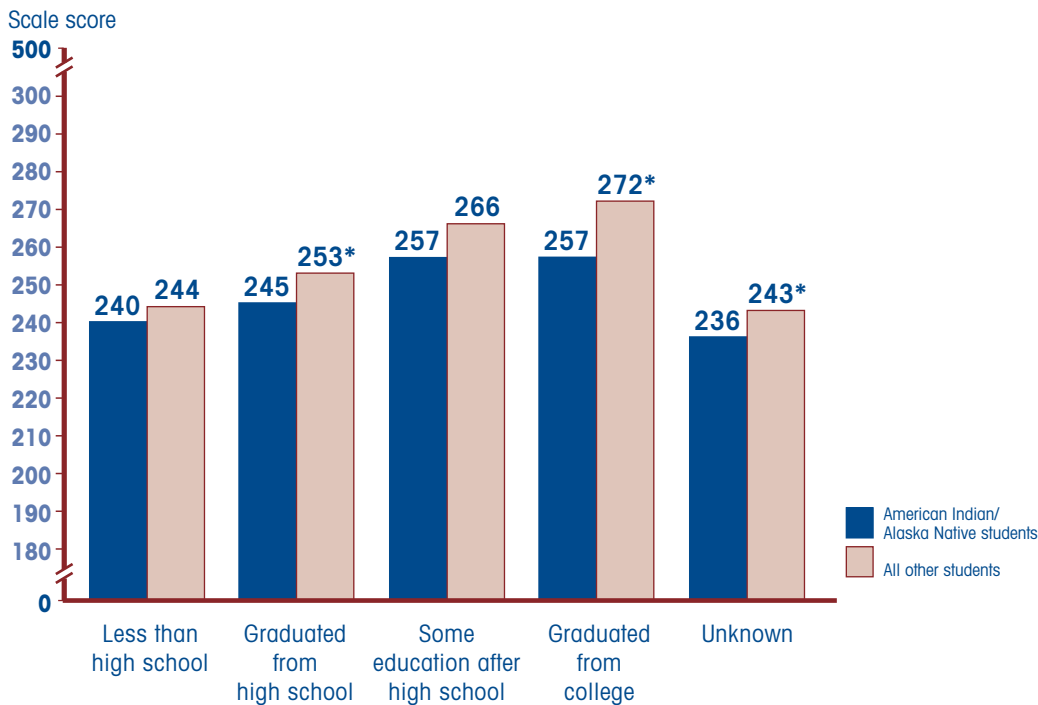
- did not finish high school,
- graduated from high school,
- some education after high school,
- graduated from college, and
- I don't know.

The highest education level of either parent is used in this report.

As figures 2-33 and 2-34 show, the average scores and achievement-level percentages of American Indian/Alaska Native students who reported that their parents' highest level of education was "graduated from high school" or "graduated from college" were lower than the performance of all other students reporting the corresponding levels of parental education. The performance measures for American Indian/Alaska Native students who reported a parent with "some education after high school" and "graduated from college" did not differ statistically from one another. In contrast, among students who are not American Indian or Alaska Native, those who reported a parent had "graduated from college" had higher average scores and higher achievement-level results than those who reported a parent with "some education after high school."

For more information, see the Technical Notes section and table A-17 in the Data Appendix.

**Figure 2-33.** Average reading scale scores, by student group and student-reported highest level of education of either parent, grade 8: 2005

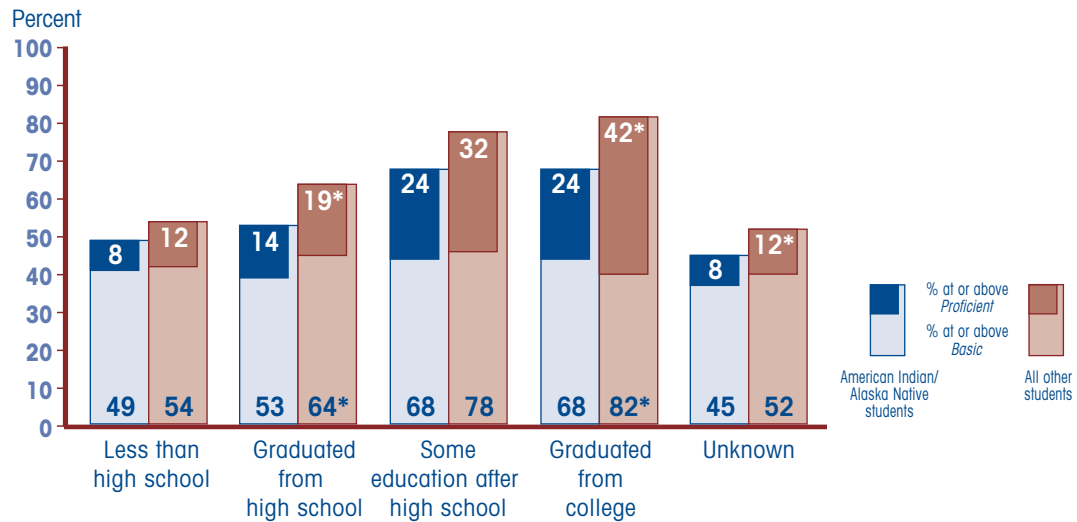


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same parental education category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

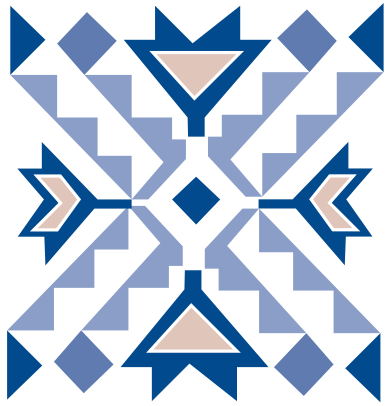
**Figure 2-34.** Reading achievement-level results, by student group and student-reported highest level of education of either parent, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same parental education category.  
 NOTE: Results are based on the national NAEP sample.  
 SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**For additional information regarding results presented in this chapter, see the following tables in the Data Appendix:**

- Table A-9 Data for figures 2-1 through 2-4, and table 2-1 (national results: average scores and percentages at achievement levels)
- Table A-10 Data for table 2-2 (national results: percentiles)
- Table A-11 Data for figures 2-5 through 2-8 (regional results)
- Table A-12 Data for figures 2-9 through 2-16 (selected state results)
- Table A-13 Data for figures 2-17 through 2-20 (race/ethnicity results)
- Table A-14 Data for figures 2-21 through 2-24 (eligibility for free/reduced-price lunch results)
- Table A-15 Data for figures 2-25 through 2-28 (gender results)
- Table A-16 Data for figures 2-29 through 2-32 (school location results)
- Table A-17 Data for figures 2-33 through 2-34 (student-reported parental education)



## CHAPTER 3

### Mathematics Results, Grades 4 and 8

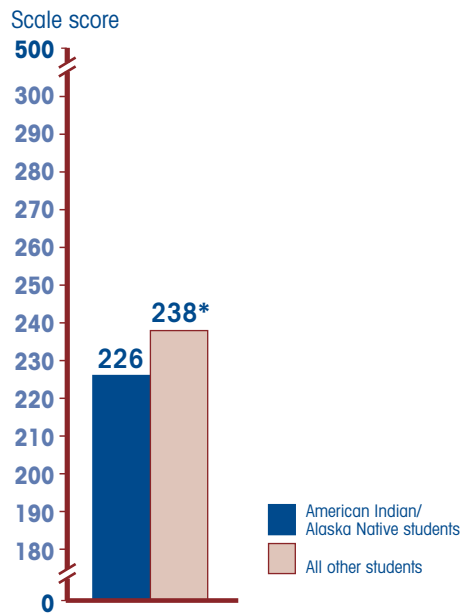
This chapter provides results from the 2005 NAEP mathematics assessment at grades 4 and 8 for the nation, for regions, for selected states, and for student groups.

#### National Results

Figures 3-1 and 3-3 show the average mathematics scores for American Indian/Alaska Native students and all other students at grades 4 and 8, respectively. Figures 3-2 and 3-4 show the mathematics achievement-level results for each grade. The figures presenting achievement-level results show the percentage of students performing at or above *Proficient* in a bar nested within the bar representing the percentage at or above *Basic*, indicating that the percentage of students at or above *Basic* includes those performing at or above *Proficient*.

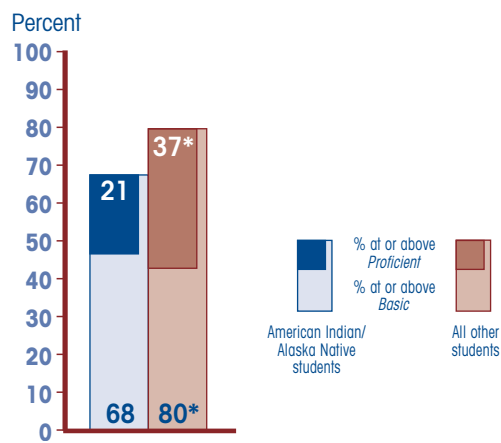
At both grades 4 and 8, American Indian/Alaska Native students scored lower, on average, in mathematics than the average of all other students in the nation (students who are neither American Indian nor Alaska Native). The percentages of students performing at or above *Basic* and at or above *Proficient* in mathematics were also lower for American Indian/Alaska Native students than for all other students at both grades.

**Figure 3-1.** Average mathematics scale scores, by student group, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students. SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

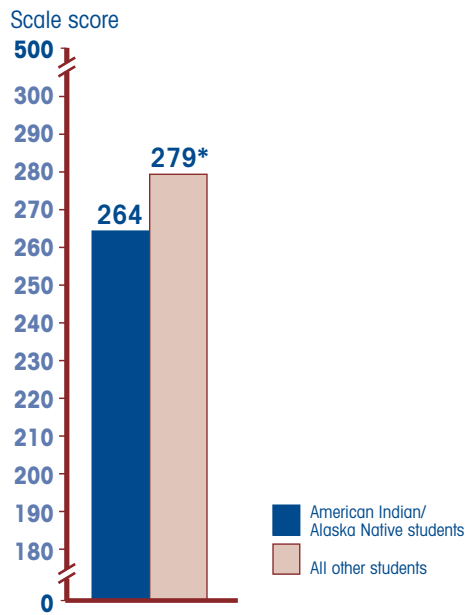
**Figure 3-2.** Mathematics achievement-level results, by student group, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students. SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

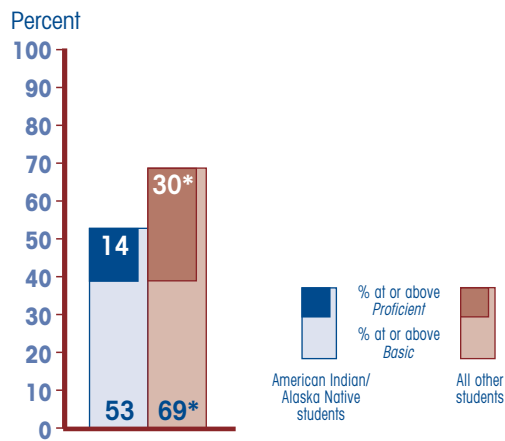


**Figure 3-3.** Average mathematics scale scores, by student group, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students. SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-4.** Mathematics achievement-level results, by student group, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students. SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

Table 3-1 presents the mathematics achievement-level results as the percentage of students performing within each achievement level at each grade. While the percentages of students performing at *Proficient* and at *Advanced* were lower for American Indian/Alaska Native students than for all other students at both grades, there were no significant differences in the percentages of students performing at *Basic* at grade 4 or at grade 8.

### Comparing Scores Among Lower-, Middle-, and Higher-Performing Students

Examining performance of students at selected percentiles can indicate when the overall picture for students diverges by lower-, middle-, or higher-scoring students. A percentile indicates the percentage of students whose scores fell at or below a particular score on the NAEP mathematics scale. For example, the results presented in table 3-2 for students at grade 4 show that 50 percent of American Indian/Alaska Native students scored at or below 227 and 50 percent of all other students scored at or below 240. At each of the five percentiles analyzed, the score for American Indian/Alaska Native students was lower than the score for all other students at both grades 4 and 8.

**Table 3-1.** Achievement-level results in mathematics, by student group, grades 4 and 8: 2005

Student group	Percent			
	<i>Below Basic</i>	<i>At Basic</i>	<i>At Proficient</i>	<i>At Advanced</i>
<b>Grade 4</b>				
American Indian/Alaska Native students	32	47	19	2
All other students	20*	44	31*	5*
<b>Grade 8</b>				
American Indian/Alaska Native students	47	40	12	2
All other students	31*	39	24*	6*

\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

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

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table 3-2.** Mathematics scale scores at selected percentiles, by student group, grades 4 and 8: 2005

Student group	Percentile				
	10th	25th	50th	75th	90th
<b>Grade 4</b>					
American Indian/Alaska Native students	190	208	227	246	261
All other students	201*	220*	240*	258*	273*
<b>Grade 8</b>					
American Indian/Alaska Native students	221	243	265	286	304
All other students	232*	256*	280*	304*	324*

\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Results by Region of the Country

In addition to the national results, mathematics performance is reported for five regions: Atlantic, North Central, South Central, Mountain, and Pacific. These NIES regions, which differ from the typical regions used in other NAEP reports, are based on U.S. Census divisions, and are configured to align with the distribution of the American Indian/Alaska Native student population. The regional samples are composed of the samples for the states that make up each defined region (figure 1-1).

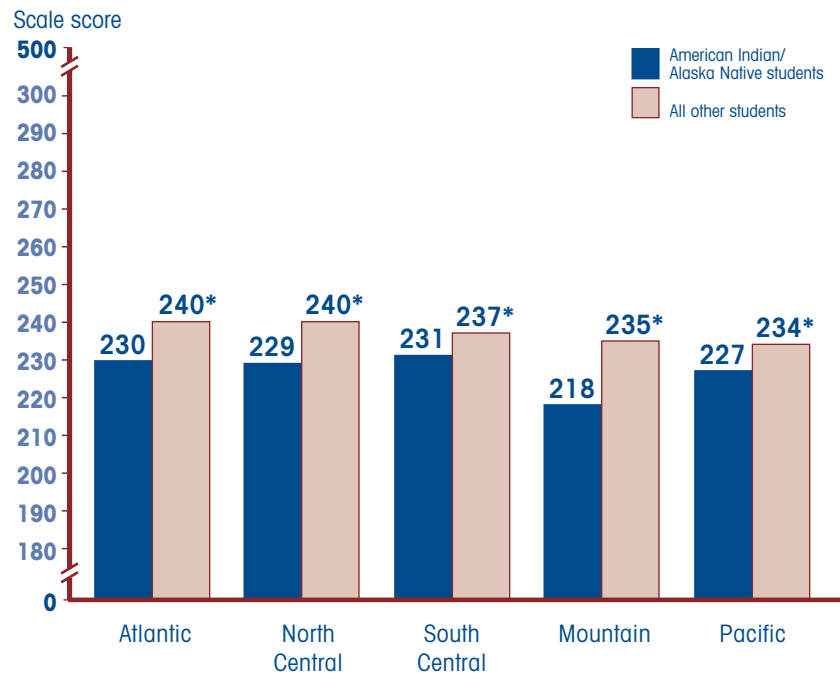
### Grade 4

As shown in figure 3-5, American Indian/Alaska Native students scored lower on average than all other students (students who are neither American Indian nor Alaska Native) in all the regions.

The achievement-level results, presented in figure 3-6, show lower percentages of American Indian/Alaska Native students than all other students performing at or above *Basic* in the North Central and Mountain regions, and lower percentages of American Indian/Alaska Native students performing at or above *Proficient* in all five of the regions.

The difference in average scores, or “score gap,” between all other students and American Indian/Alaska Native students is 12 points at the national level (figure 3-1). The score gap in the Mountain region (17 points) is greater than the gap in the

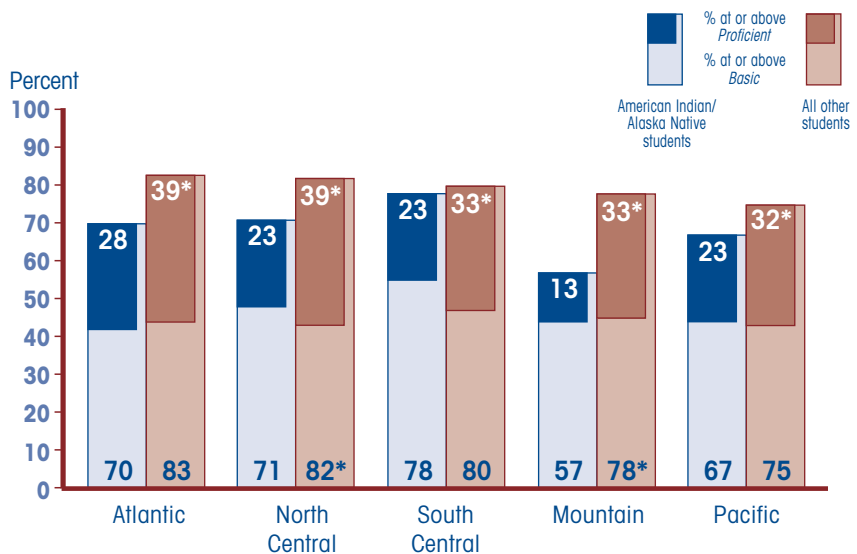
**Figure 3-5.** Average mathematics scale scores, by student group and region, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-6.** Mathematics achievement-level results, by student group and region, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

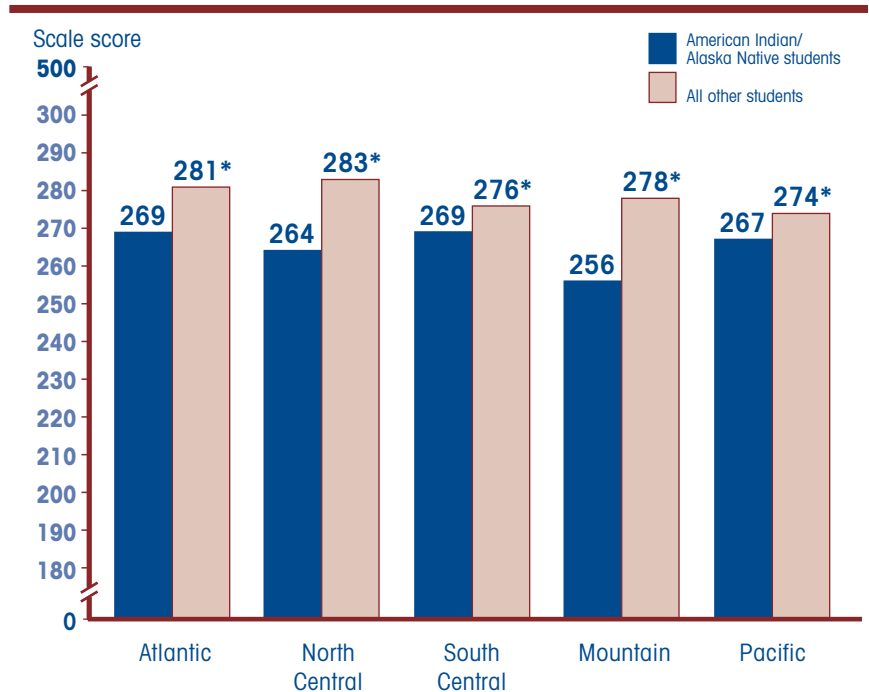
nation, and the gap in the South Central region (5 points) is smaller. Comparing the performance differences within each of the regions, the gaps in the South Central and Pacific regions are smaller than the gap in the Mountain region (figure 3-5).

### Grade 8

As shown in figure 3-7, the average mathematics score for American Indian/Alaska Native students in each of the five regions was lower than the average score for all other students in the same region. As shown in figure 3-8, lower percentages of American Indian/Alaska Native students than all other students performed at or above *Basic* and at or above *Proficient* in the Atlantic, North Central, and Mountain regions. Lower percentages of American Indian/Alaska Native students in the South Central and Pacific regions performed at or above *Proficient* than all other students in the same region.

At the national level, the difference in average scores, or “score gap,” between all other students and American Indian/Alaska Native students is 15 points (figure 3-3). The score gap in the Mountain region (22 points) is greater than the gap in the nation, and the gaps in the South Central region (6 points) and in the Pacific region (6 points) are smaller. Comparing the performance differences within each of the regions, the gaps in the Mountain and in the North Central regions are larger than the gaps in the South Central or Pacific regions (figure 3-7).

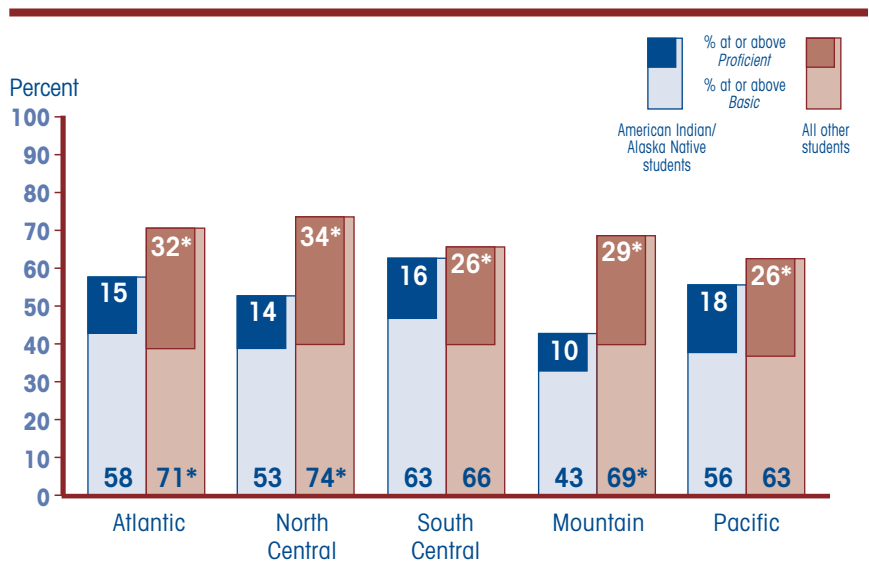
**Figure 3-7.** Average mathematics scale scores, by student group and region, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-8.** Mathematics achievement-level results, by student group and region, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Selected State Results

Specific states with relatively large populations of American Indian/Alaska Native students were selected for this study. Readers are cautioned, however, to consider that each of the selected states represents a different educational context and that comparisons across states should be tempered by considerations of different school types, demographic factors, and socioeconomic factors.

When making comparisons across states, it is important to consider the variation in the exclusion rates. Although every effort is made to include as many students as possible, different states have different policies. States that are more inclusive—that is, they assess greater percentages of their students with disabilities and English language learners—may have lower average scores than states that exclude greater percentages of these students. Tables A-7 and A-8 show the exclusion rates for grade 4 and grade 8 mathematics.

Figures 3-9 and 3-13 show the average mathematics scores for American Indian/Alaska Native students at grades 4 and 8, respectively, for the selected states. The average score for American Indian/Alaska Native students in the nation is also given in each figure as a point of comparison. Figures 3-10 and 3-14 show the achievement-level results for each grade for the selected states, with American Indian/Alaska Native students in the nation again included as a comparison.

Figures 3-11 and 3-15 provide state-to-state comparisons for average scale scores at grades 4 and 8, respectively, and figures 3-12 and 3-16 show state-to-state comparisons of the percentage of students performing at or above *Basic*.

### Grade 4

As shown in figure 3-9, American Indian/Alaska Native students in all the selected states, except for Montana and Oklahoma, had lower average scores than American Indian/Alaska Native students in the nation. The achievement-level results presented

in figure 3-10 show that American Indian/Alaska Native students in Oklahoma had higher percentages performing at or above *Basic* than American Indian/Alaska Native students in the nation. American Indian/Alaska Native students in Alaska, Arizona, New Mexico, and South Dakota had lower percentages performing at or above *Basic* and at or above *Proficient* than American Indian/Alaska Native students in the nation. American Indian/Alaska Native students in North Dakota had a lower percentage performing at or above *Proficient* than American Indian/Alaska Native students in the nation.

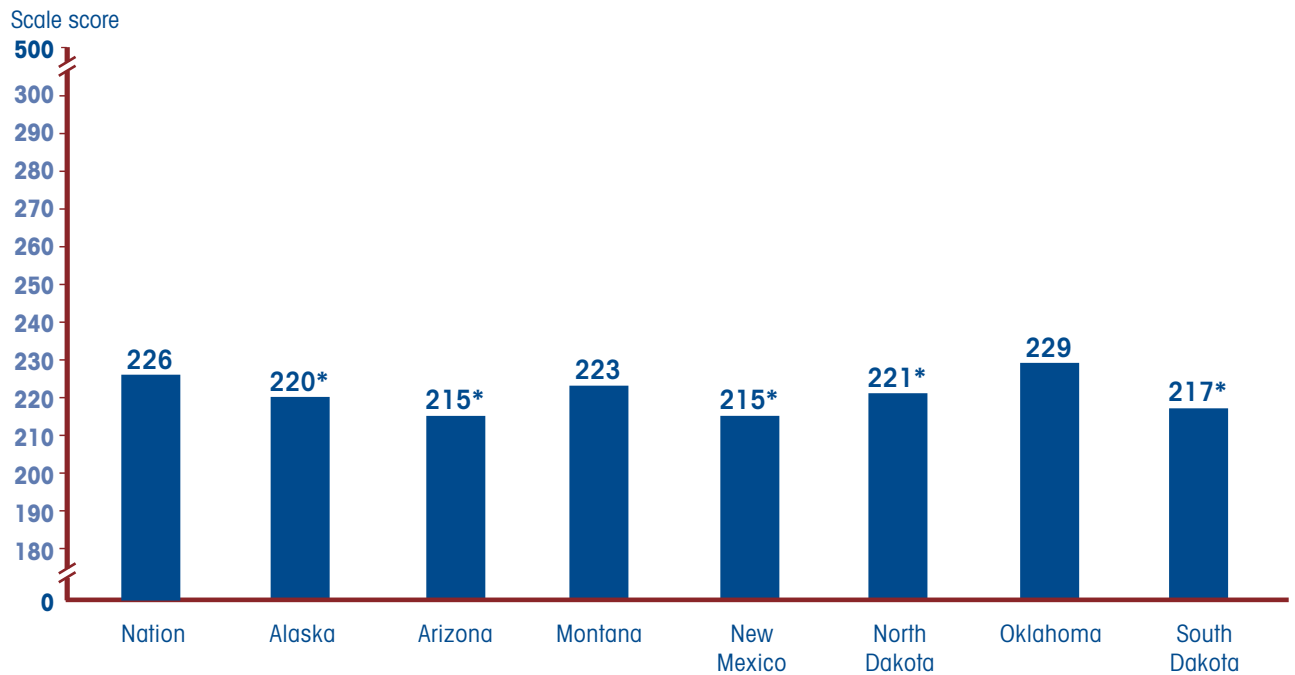
In the state-to-state comparisons shown in figures 3-11 and 3-12, American Indian/Alaska Native students in Oklahoma had higher average scores than American Indian/Alaska Native students in all the other selected states, except for Montana. American Indian/Alaska Native students in Alaska, Montana, and North Dakota also had higher average scores than American Indian/Alaska Native students in New Mexico. American Indian/Alaska Native students in Oklahoma had a higher percentage performing at or above *Basic* than their peers in the other selected states.

### Grade 8

Figure 3-13 shows that American Indian/Alaska Native students in New Mexico and South Dakota had lower average scores than American Indian/Alaska Native students in the nation. As shown in figure 3-14, American Indian/Alaska Native students in New Mexico and South Dakota had lower percentages performing at or above *Basic* and at or above *Proficient* than American Indian/Alaska Native students in the nation.

Figures 3-15 and 3-16 show that American Indian/Alaska Native students in Oklahoma had higher average scores and higher percentages performing at or above *Basic* than their peers in Montana, New Mexico, North Dakota, and South Dakota. American Indian/Alaska Native students in Alaska performed higher than their peers in New Mexico and South Dakota on both measures.

**Figure 3-9.** Average mathematics scale scores for American Indian/Alaska Native students only, by nation and selected states, grade 4: 2005

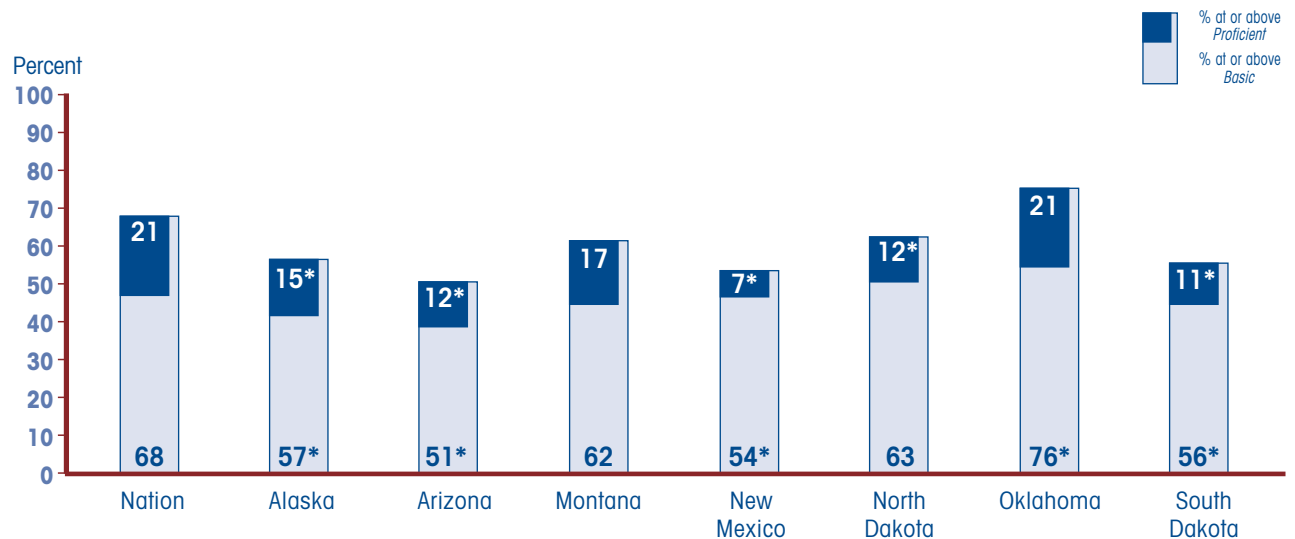


\* Significantly different from American Indian/Alaska Native students in the nation.

NOTE: National and state data presented in this figure represent American Indian and Alaska Native students only.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-10.** Mathematics achievement-level results for American Indian/Alaska Native students only, by nation and selected states, grade 4: 2005



\* Significantly different from American Indian/Alaska Native students in the nation.

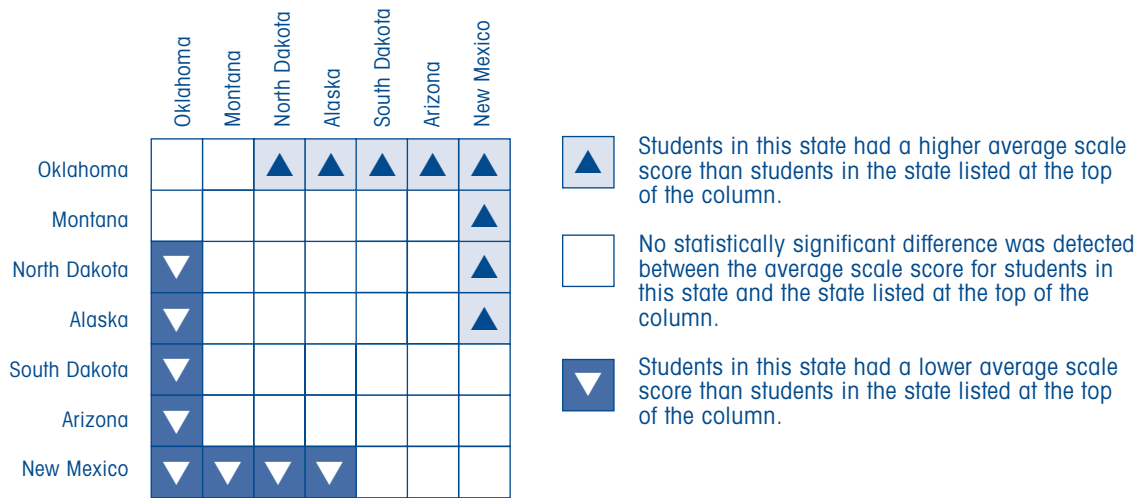
NOTE: National and state data presented in this figure represent American Indian and Alaska Native students only.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

Figures 3-11 and 3-12 compare average scores and percentages of grade 4 American Indian/Alaska

Native students performing at or above *Basic* in each state to those in each other state.

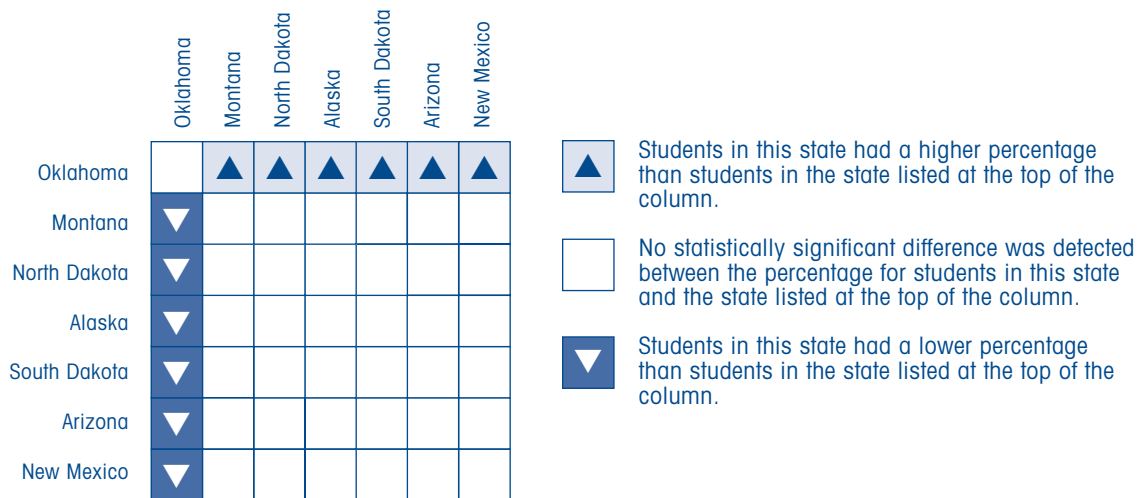
**Figure 3-11.** Cross-state comparison of average mathematics scale scores for American Indian/Alaska Native students, grade 4: 2005



NOTE: Read across the row corresponding to a state listed to the left of the chart. Match the shading intensity (and arrow direction) to the chart's key to determine whether the average score for students in this state was found to be higher than (up arrow), not significantly different from (blank cell), or lower than (down arrow) the average score for students in the state in the column heading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

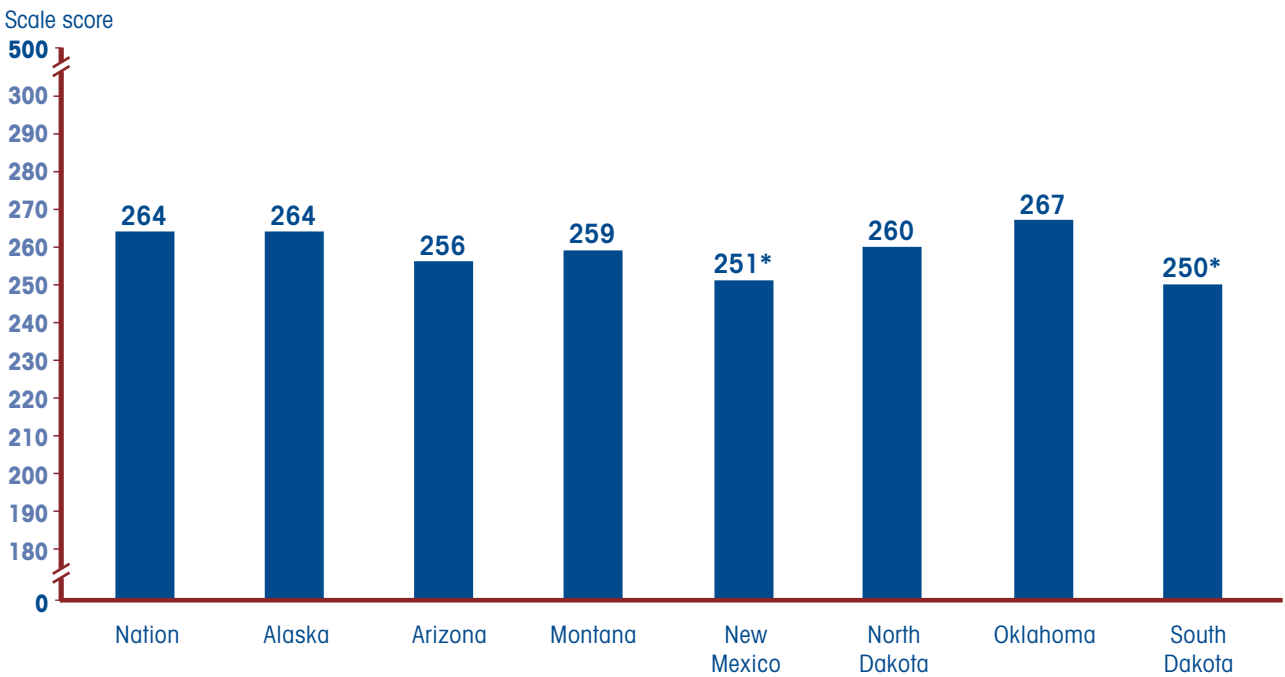
**Figure 3-12.** Cross-state comparison of the percentages of American Indian/Alaska Native students performing at or above *Basic* in mathematics, grade 4: 2005



NOTE: Read across the row corresponding to a state listed to the left of the chart. Match the shading intensity (and arrow direction) to the chart's key to determine whether the percentage of students in this state performing at or above *Basic* was found to be higher than (up arrow), not significantly different from (blank cell), or lower than (down arrow) the percentage of students performing at or above *Basic* in the state in the column heading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-13.** Average mathematics scale scores for American Indian/Alaska Native students only, by nation and selected states, grade 8: 2005

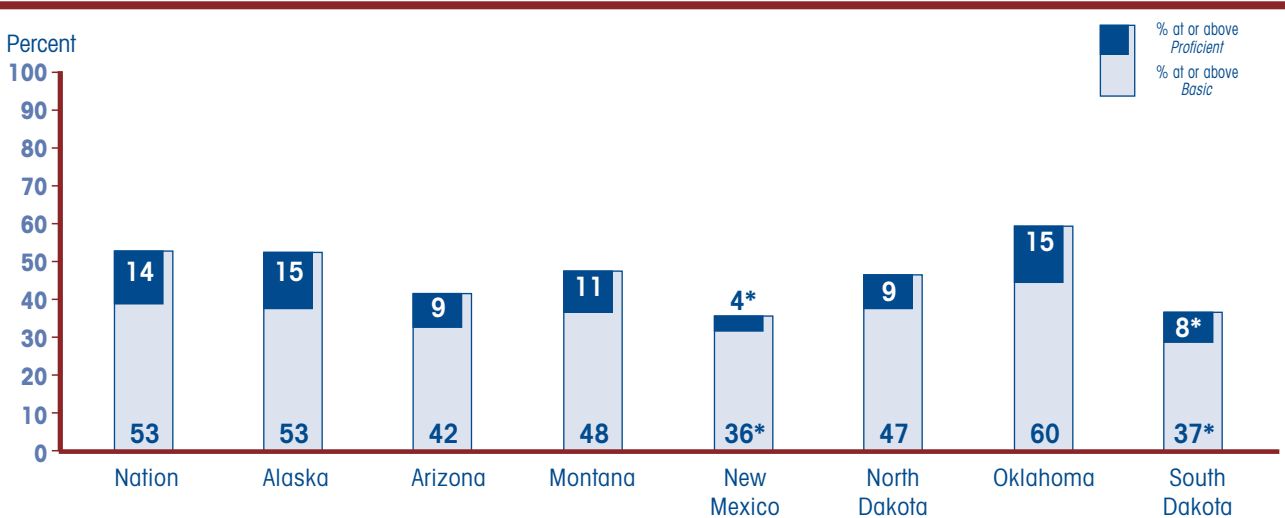


\* Significantly different from American Indian/Alaska Native students in the nation.

NOTE: National and state data presented in this figure represent American Indian and Alaska Native students only.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-14.** Mathematics achievement-level results for American Indian/Alaska Native students only, by nation and selected states, grade 8: 2005



\* Significantly different from American Indian/Alaska Native students in the nation.

NOTE: National and state data presented in this figure represent American Indian and Alaska Native students only.

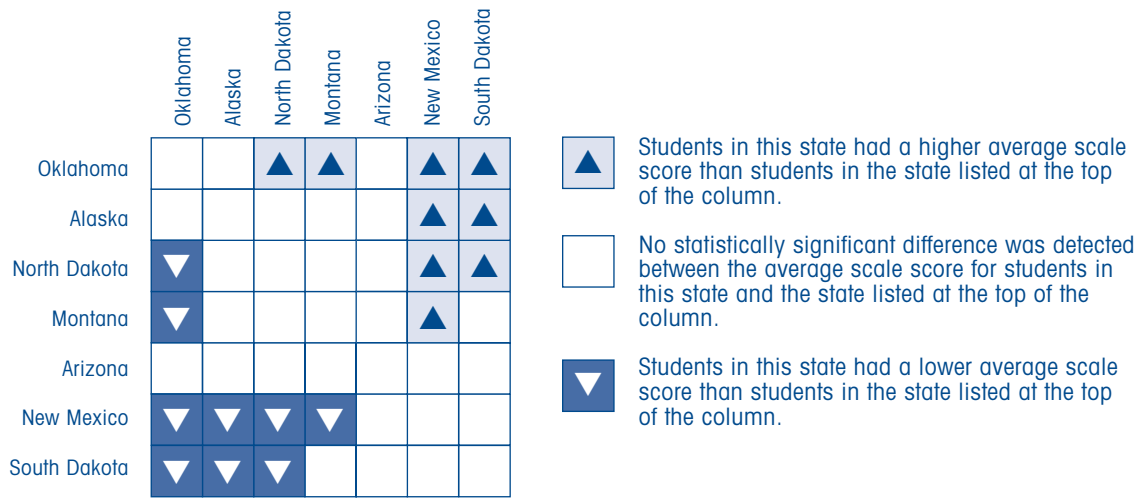
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.



Figures 3-15 and 3-16 compare average scores and percentages of grade 8 American Indian/Alaska

Native students performing at or above *Basic* in each state to those in each other state.

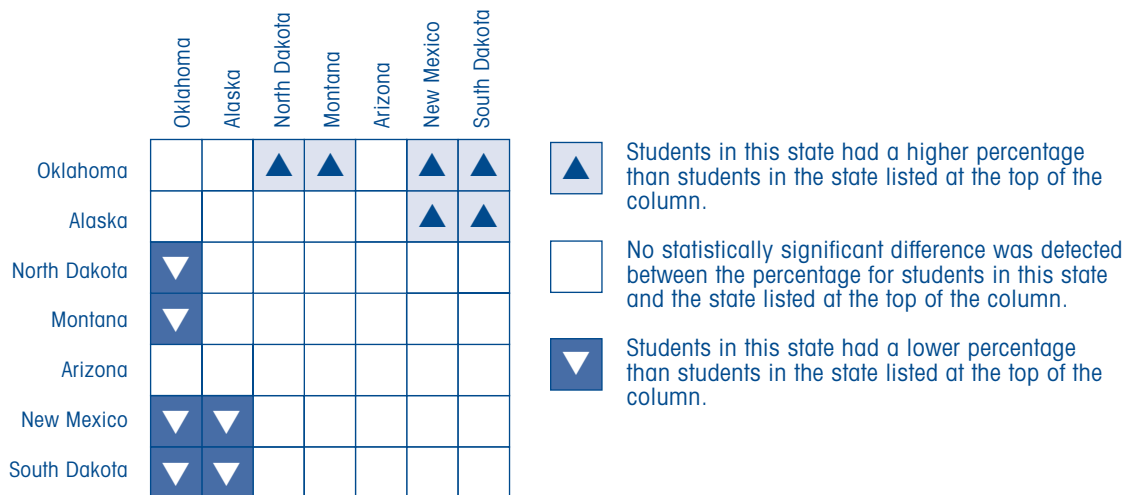
**Figure 3-15.** Cross-state comparison of average mathematics scale scores for American Indian/Alaska Native students, grade 8: 2005



NOTE: Read across the row corresponding to a state listed to the left of the chart. Match the shading intensity (and arrow direction) to the chart's key to determine whether the average score for students in this state was found to be higher than (up arrow), not significantly different from (blank cell), or lower than (down arrow) the average score for students in the state in the column heading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-16.** Cross-state comparison of the percentages of American Indian/Alaska Native students performing at or above *Basic* in mathematics, grade 8: 2005



NOTE: Read across the row corresponding to a state listed to the left of the chart. Match the shading intensity (and arrow direction) to the chart's key to determine whether the percentage of students in this state performing at or above *Basic* was found to be higher than (up arrow), not significantly different from (blank cell), or lower than (down arrow) the percentage of students performing at or above *Basic* in the state in the column heading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Student Group Results

In addition to reporting on the performance of American Indian/Alaska Native and other students overall and by region or state, NAEP also provides results for a variety of student groups for each grade level assessed.

This section includes average mathematics scale score and achievement-level results for groups of American Indian/Alaska Native and other students in the nation at grades 4 and 8. Results are reported by

- race/ethnicity,
- students' eligibility for free/reduced-price school lunch,
- gender,
- type of school location, and
- parents' highest level of education (grade 8 only).

This report is purely descriptive in nature, and the reader is cautioned not to draw causal inferences based solely on the results presented here. The reader should bear in mind that the estimated average scale score for a group of students does not reflect the entire range of performance (i.e., the variability) within that group. A significant difference between average scores for two groups does not indicate that all students in one group have higher scores than all students in the second group; indeed, there may be substantial overlap in individual students' scores across the two groups. In addition, differences in group performance cannot be ascribed solely to the students' group identification. Average student performance is affected by the interaction of a complex set of educational, cultural, and social factors not discussed in this report nor addressed by NAEP assessments. It is important to note that many of the grouping variables examined in this report (e.g., race/ethnicity, eligibility for free/reduced-price school

lunch, type of school location) are correlated with one another, and complex interactions and relationships have not been explored here.

### Race/Ethnicity

NAEP reports data on student race/ethnicity based on information obtained from school records. Figures 3-17 through 3-20 show results for five mutually exclusive categories: American Indian/Alaska Native, White, Black, Hispanic, and Asian/Pacific Islander. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. For information about the performance of students not classified in one of these categories, visit <http://nces.ed.gov/nationsreportcard/nde>.

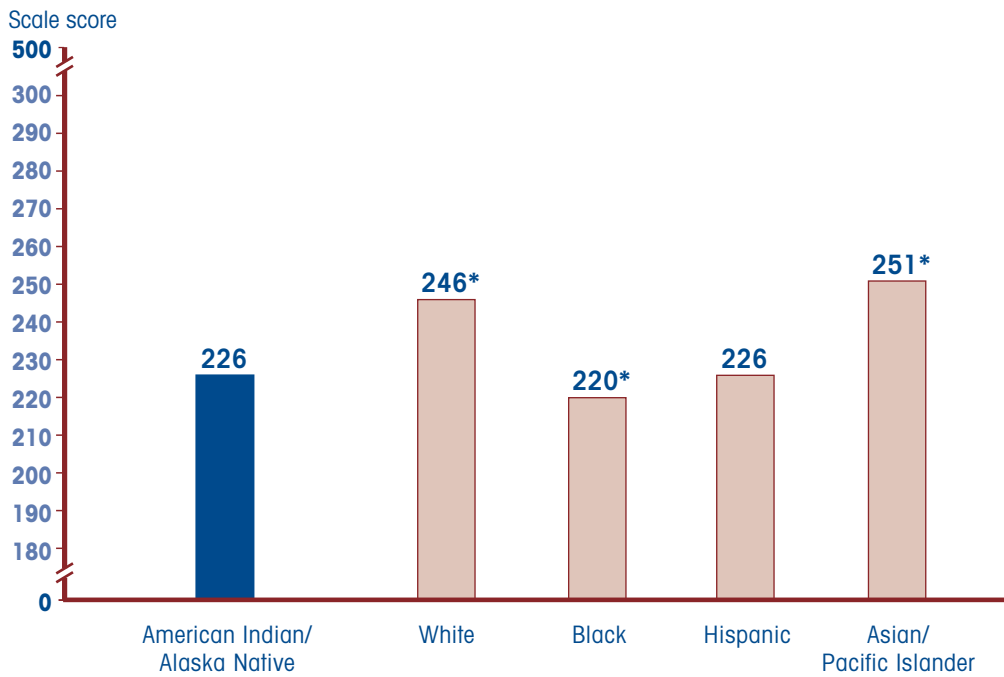
### Grade 4

Compared to Black students in the nation, American Indian/Alaska Native students had higher average scores (figure 3-17) and higher percentages performing at or above *Basic* and at or above *Proficient* (figure 3-18). American Indian/Alaska Native students had lower average scores and lower percentages performing at or above *Basic* and at or above *Proficient* than White and Asian/Pacific Islander students. No significant difference was found between the performance of Hispanic students and American Indian/Alaska Native students on any measure.

### Grade 8

Compared to Black students in the nation, American Indian/Alaska Native students had higher average scores (figure 3-19) and higher percentages performing at or above *Basic* and at or above *Proficient* (figure 3-20). Compared to Hispanic students, American Indian/Alaska Native students had higher average scores. American Indian/Alaska Native students had lower average scores and lower percentages performing at or above *Basic* and at or above *Proficient* than White and Asian/Pacific Islander students.

**Figure 3-17.** Average mathematics scale scores, by race/ethnicity, grade 4: 2005

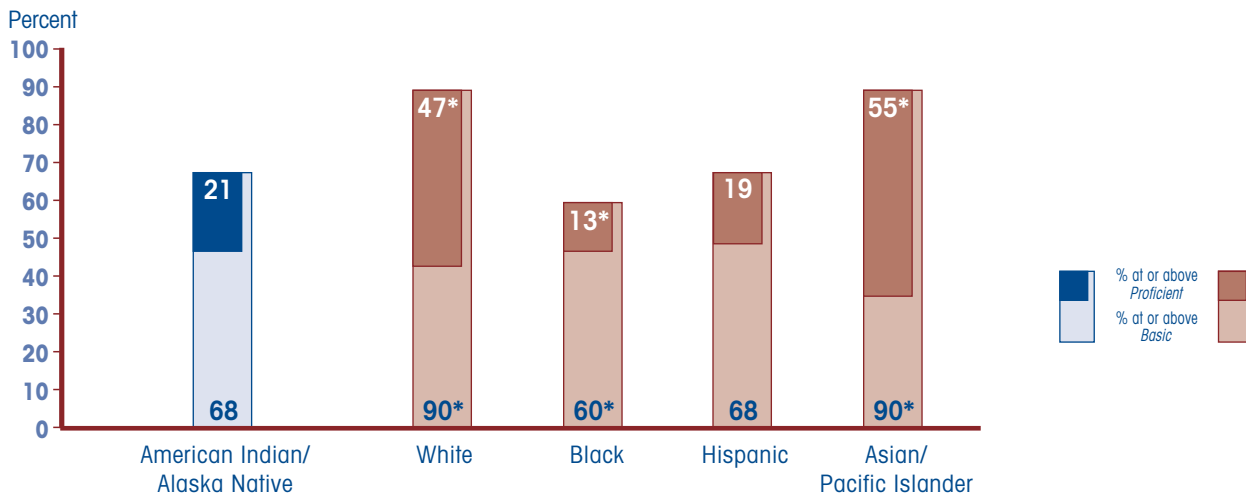


\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. 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), 2005 National Indian Education Study.

**Figure 3-18.** Mathematics achievement-level results, by race/ethnicity, grade 4: 2005

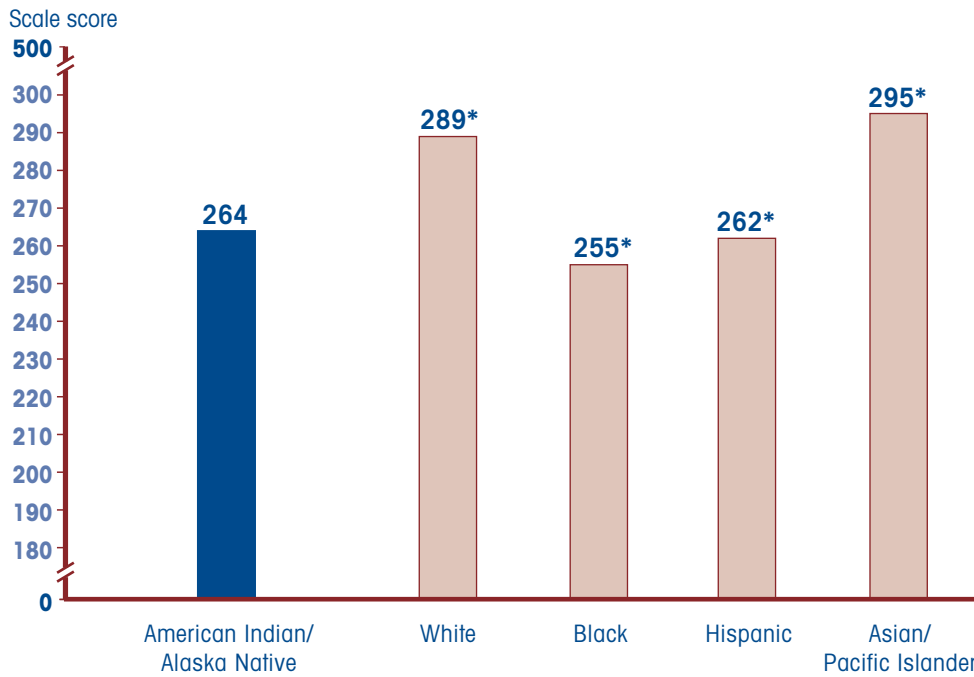


\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. 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), 2005 National Indian Education Study.

**Figure 3-19.** Average mathematics scale scores, by race/ethnicity, grade 8: 2005

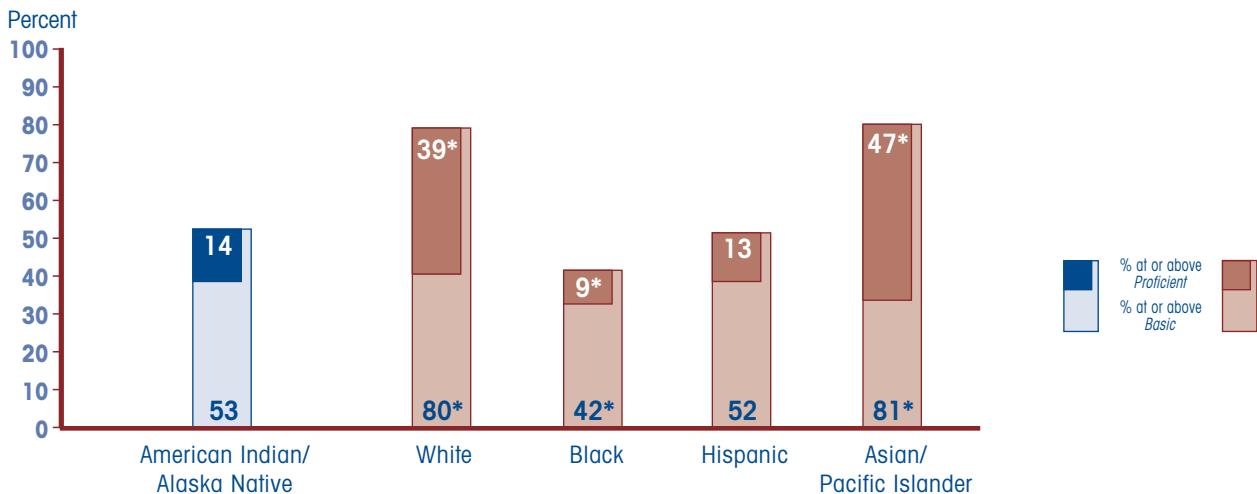


\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. 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), 2005 National Indian Education Study.

**Figure 3-20.** Mathematics achievement-level results, by race/ethnicity, grade 8: 2005



\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. 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), 2005 National Indian Education Study.

## Eligibility for Free/Reduced-Price School Lunch

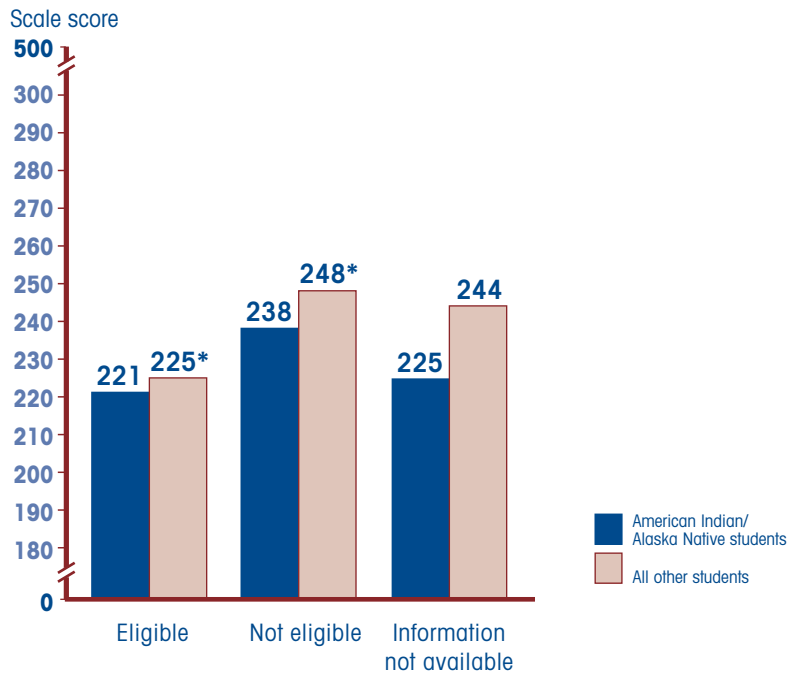
An indicator of a student's socio-economic status is whether or not that student is eligible for free or reduced-price lunch under the National School Lunch Program (NSLP). Children from families with incomes at or below 130 percent of the poverty level are eligible for free meals. Those with incomes between 130 percent and 185 percent of the poverty level are eligible for reduced-price meals. (For the period July 1, 2004, through June 30, 2005, for a family of four, 130 percent of the poverty level was \$24,505, and 185 percent was \$34,873. See <http://www.fns.usda.gov/cnd/lunch> for more information.)

Among grade 4 mathematics students, 64 percent of American Indian/Alaska Native students were eligible for free or reduced-price lunch, and 42 percent of all other students were eligible. Among grade 8 mathematics students, 64 percent of American Indian/Alaska Native students were eligible for free or reduced-price lunch, and 36 percent of all other students were eligible (table A-23). If school records were not available or if the school did not participate in the program, the student was classified as "Information not available."

### Grade 4

As shown in figure 3-21, the average score for American Indian/Alaska Native students who were eligible for free or reduced-price lunch was lower than the average score for other

**Figure 3-21.** Average mathematics scale scores, by student group and eligibility for free/reduced-price school lunch, grade 4: 2005

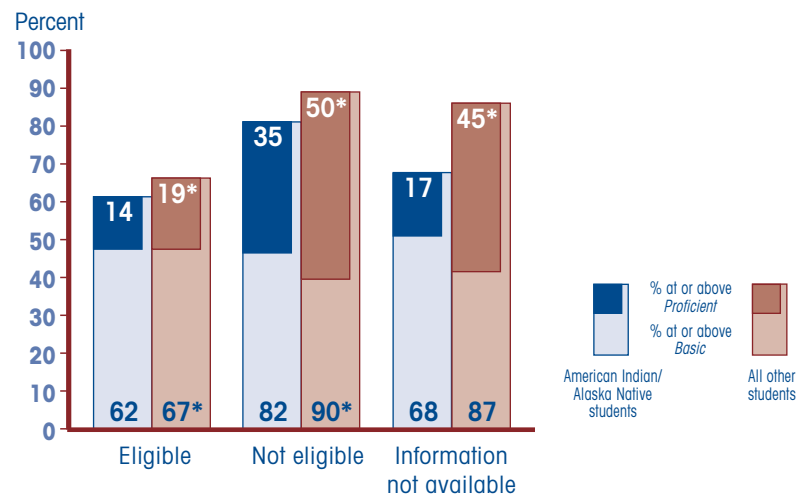


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-22.** Mathematics achievement-level results, by student group and eligibility for free/reduced-price school lunch, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

eligible students. Similarly, for the eligible students, the achievement-level results (percentages at or above *Basic* and at or above *Proficient*) were lower for American Indian/Alaska Native students than for all other students (figure 3-22).

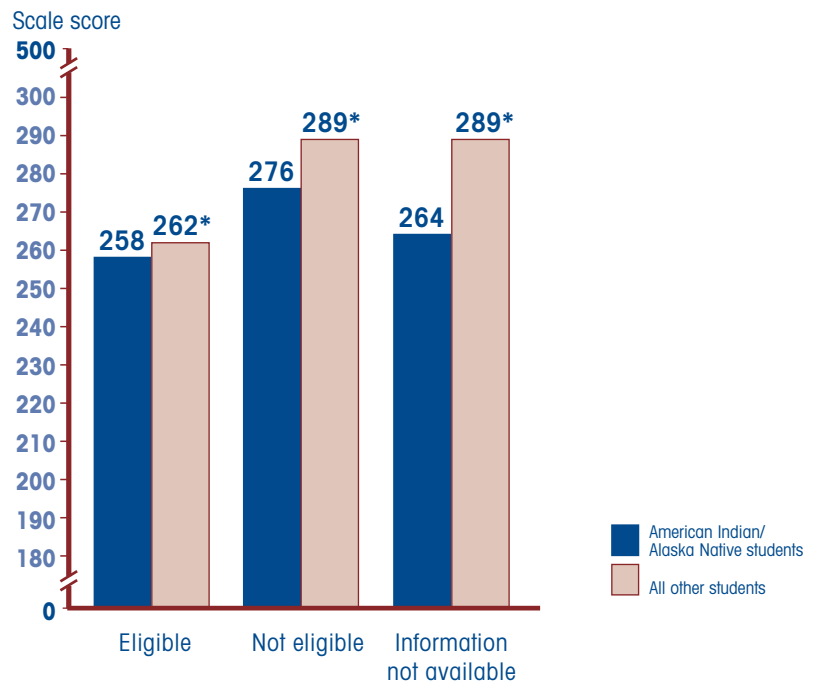
Figure 3-21 shows that the performance gap between not eligible and eligible students was 17 points among American Indian/Alaska Native students, while it was wider among all other students (22 points).

### Grade 8

Figure 3-23 shows that, compared to all other students in the nation who were eligible for free or reduced-price lunch, American Indian/Alaska Native students who were eligible had a lower average score. The percentage of American Indian/Alaska Native students eligible for free or reduced-price lunch who performed at or above *Basic* was lower than the percentage of all other students who were eligible (figure 3-24).

Figure 3-23 shows that the performance gap between not eligible and eligible students was 18 points among American Indian/Alaska Native students, while it was greater among all other students (27 points).

**Figure 3-23.** Average mathematics scale scores, by student group and eligibility for free/reduced-price school lunch, grade 8: 2005

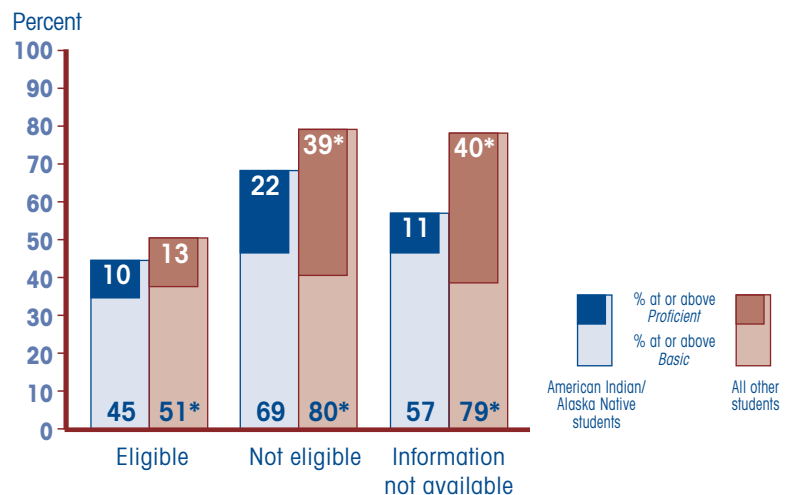


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-24.** Mathematics achievement-level results, by student group and eligibility for free/reduced-price school lunch, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

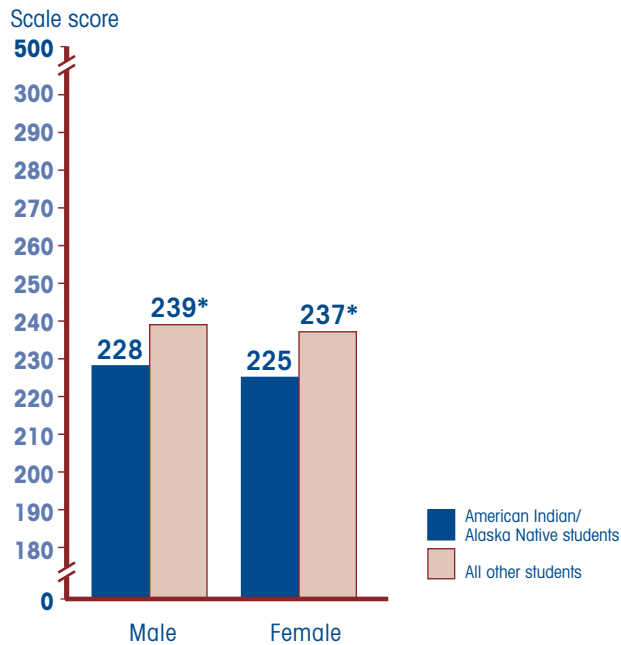
## Gender

Figures 3-25 and 3-26 show the average mathematics scores and percentages at or above *Basic* and at or above *Proficient* by gender at grade 4. Figures 3-27 and 3-28 show these results for grade 8.

At both grades 4 and 8, compared to all other students of the same gender, both male and female American Indian/Alaska Native students had lower average scores (figures 3-25 and 3-27) and percentages at or above *Basic* and at or above *Proficient* (figures 3-26 and 3-28).

At both grades, the performance gap between male and female students was 3 points among American Indian/Alaska Native students and 2 points among all other students (figures 3-25 and 3-27). These gaps, compared to one another, were not significantly different at either grade.

**Figure 3-25.** Average mathematics scale scores, by student group and gender, grade 4: 2005

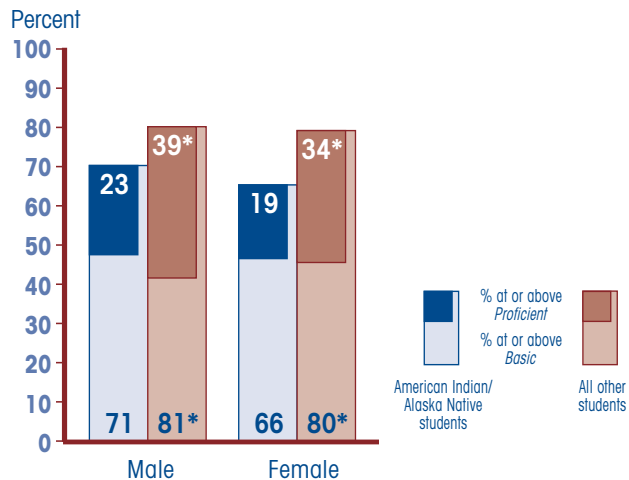


\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-26.** Mathematics achievement-level results, by student group and gender, grade 4: 2005

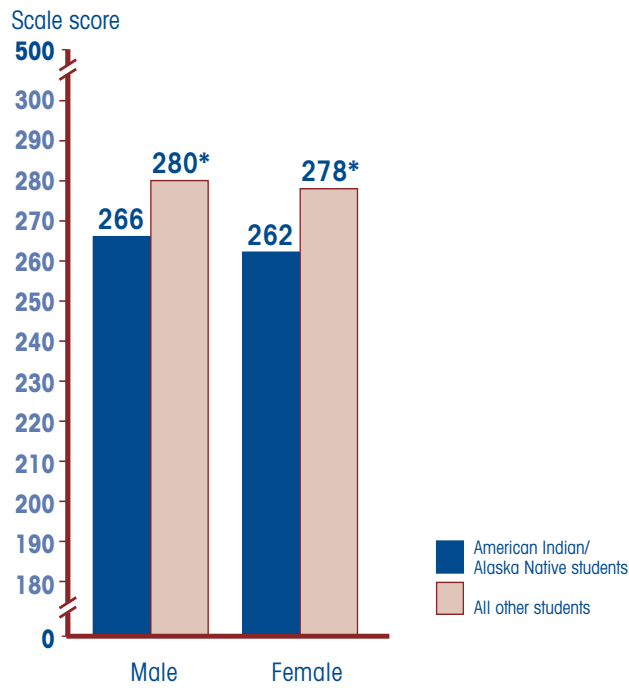


\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-27.** Average mathematics scale scores, by student group and gender, grade 8: 2005

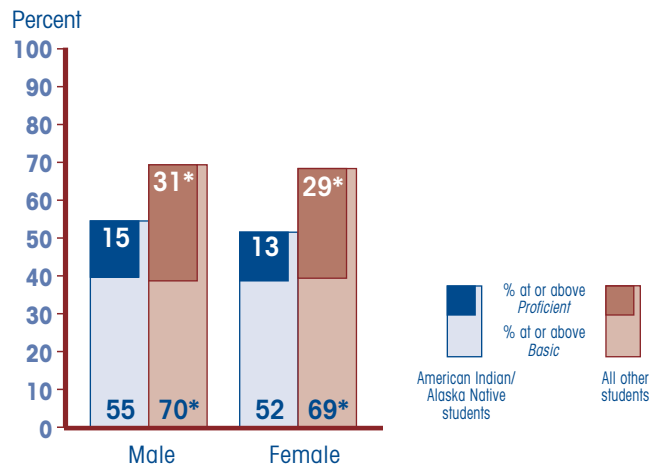


\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-28.** Mathematics achievement-level results, by student group and gender, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.



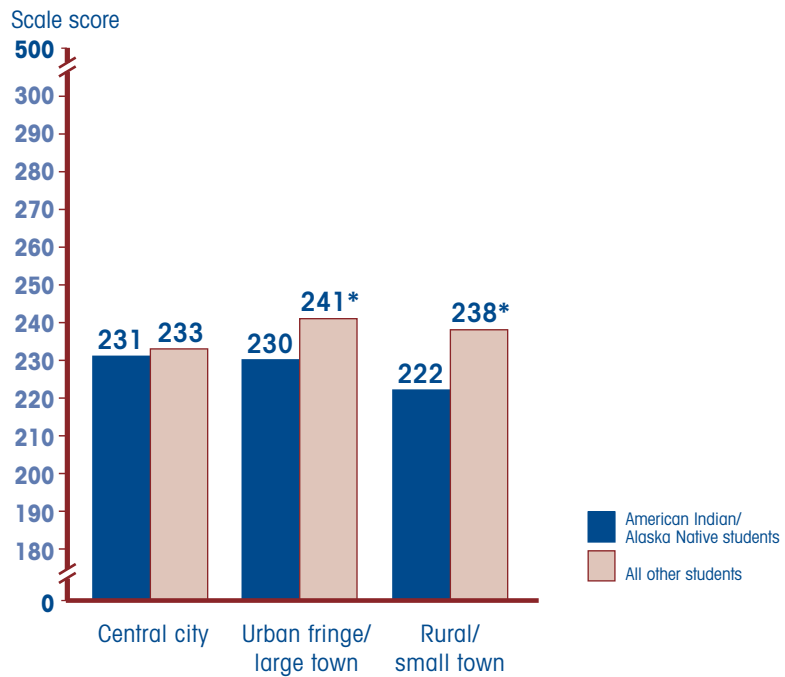
## Type of School Location

Results from the 2005 mathematics assessment are also reported for students attending schools in three mutually exclusive location types: central city, urban fringe/large town, and rural/small town. (See “Understanding NAEP Reporting Groups” in the Technical Notes for more detail.)

### Grade 4

As shown in figures 3-29 and 3-30, in urban fringe and rural locations, American Indian/Alaska Native students had lower average scores (figure 3-29) and lower percentages performing at or above *Basic* and at or above *Proficient* than all other students (figure 3-30).

**Figure 3-29.** Average mathematics scale scores, by student group and type of school location, grade 4: 2005

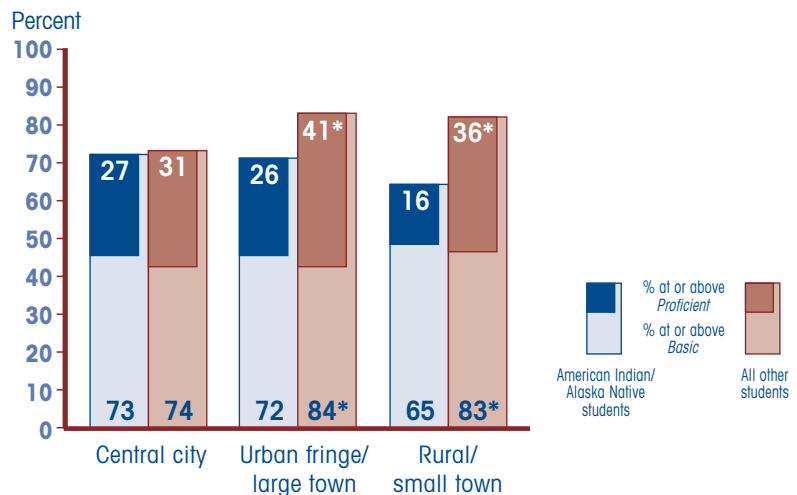


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-30.** Mathematics achievement-level results, by student group and type of school location, grade 4: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample.

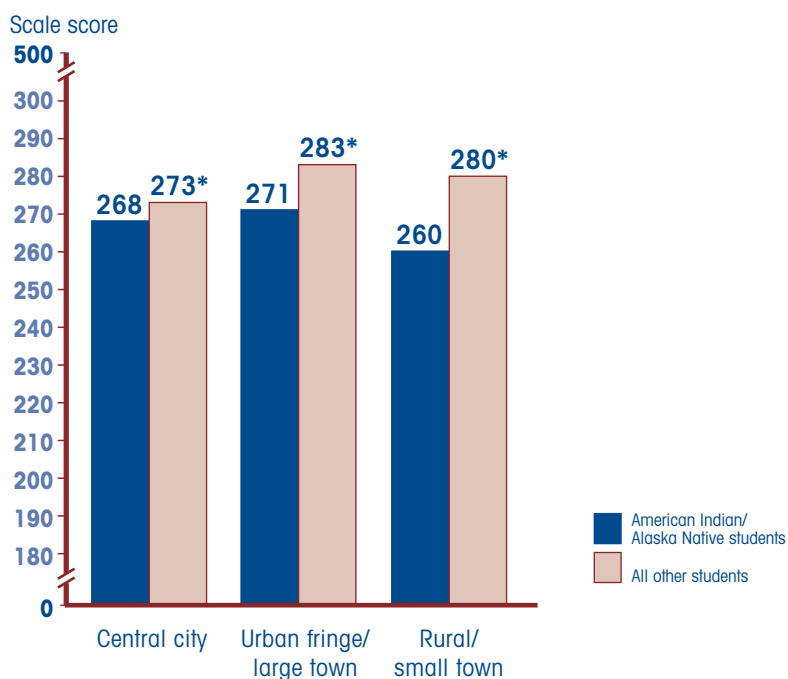
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Grade 8

Figures 3-31 and 3-32 show that, in all three types of school locations, American Indian/Alaska Native students had lower average scores and lower percentages performing at or above *Proficient* than all other students. In urban fringe and rural locations, American Indian/Alaska Native students had lower percentages performing at or above *Basic*.

At both grades, the average scores of American Indian/Alaska Native students were higher in urban fringe and central city locations than in rural locations. For all other students, average scores were higher in urban fringe and rural locations than in central city locations.

**Figure 3-31.** Average mathematics scale scores, by student group and type of school location, grade 8: 2005

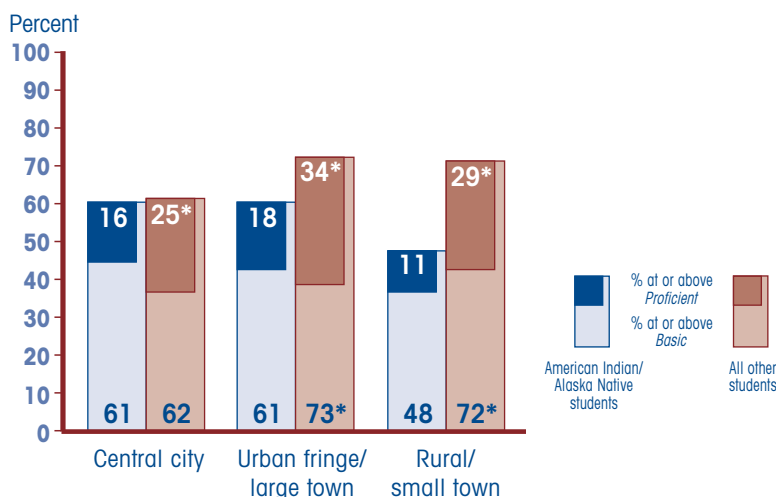


\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Figure 3-32.** Mathematics achievement-level results, by student group and type of school location, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

### Parental Education (grade 8 only)

Earlier NAEP reports have shown that across all ages and subject areas, students who reported higher parental education levels tended to have higher assessment scores, on average (Braswell et al. 2005; Donahue, Daane, and Jin 2005).

In the assessment background questionnaires, eighth-grade students were asked to identify the highest level of education attained by their parents. The student indicated how far each parent progressed in school, choosing from the following categories:

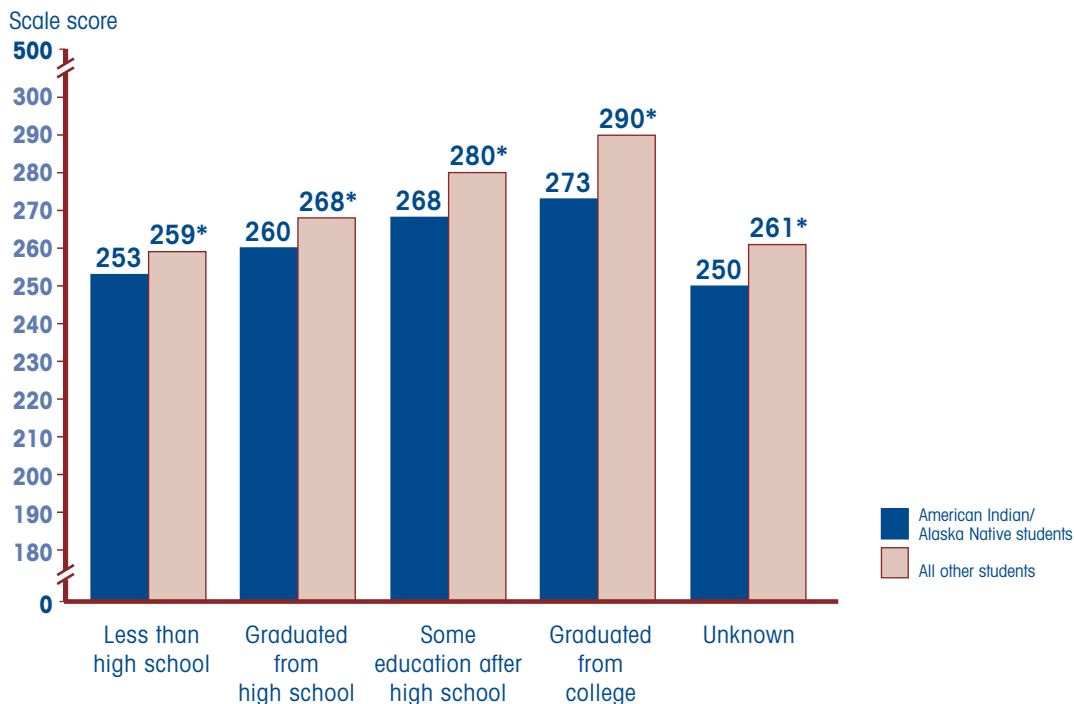
- did not finish high school,
- graduated from high school,
- some education after high school,
- graduated from college, and
- I don't know.

The highest education level of either parent is used in these results.

As figures 3-33 and 3-34 show, the average scores and achievement-level performance (percentage at or above *Basic* and at or above *Proficient*) of American Indian/Alaska Native students were lower than the performance of all other students in all of the reported parental education categories.

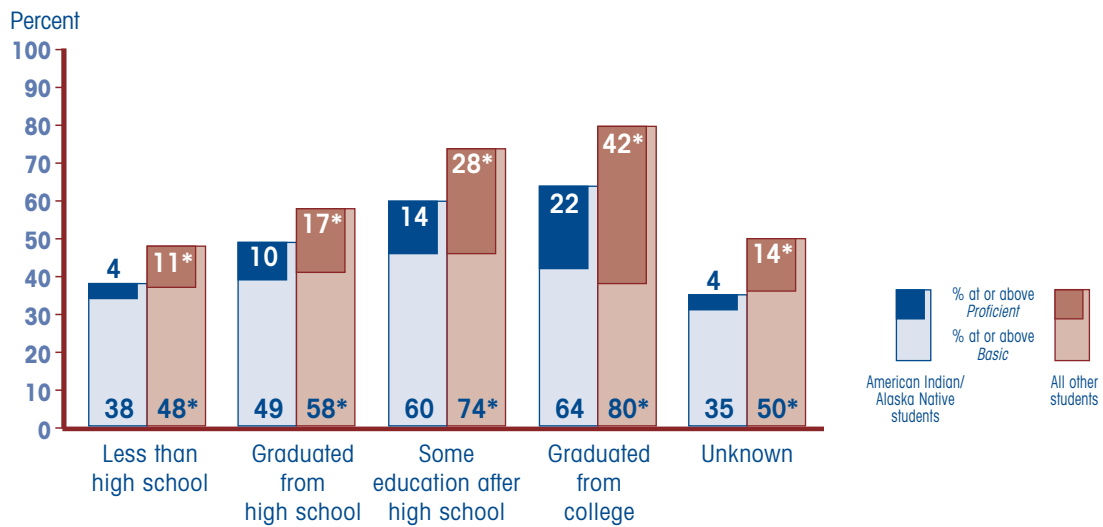
For more information, see the Technical Notes section and table A-26 in the Data Appendix.

**Figure 3-33.** Average mathematics scale scores, by student group and student-reported highest level of education of either parent, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same parental education category.  
NOTE: Results are based on the national NAEP sample.  
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

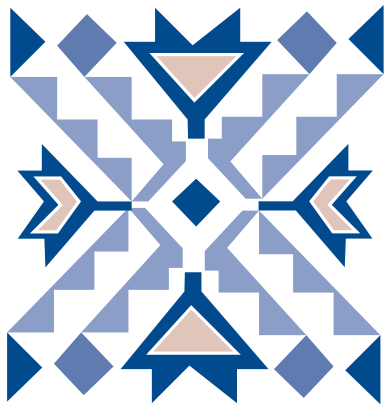
**Figure 3-34.** Mathematics achievement-level results, by student group and student-reported highest level of education of either parent, grade 8: 2005



\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same parental education category.  
 NOTE: Results are based on the national NAEP sample.  
 SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**For additional information regarding results presented in this chapter, see the following tables in the Data Appendix:**

- Table A-18 Data for figures 3-1 through 3-4, and table 3-1 (national results: average scores and percentages at achievement levels)
- Table A-19 Data for table 3-2 (national results: percentiles)
- Table A-20 Data for figures 3-5 through 3-8 (regional results)
- Table A-21 Data for figures 3-9 through 3-16 (selected state results)
- Table A-22 Data for figures 3-17 through 3-20 (race/ethnicity results)
- Table A-23 Data for figures 3-21 through 3-24 (eligibility for free/reduced-price lunch results)
- Table A-24 Data for figures 3-25 through 3-28 (gender results)
- Table A-25 Data for figures 3-29 through 3-32 (school location results)
- Table A-26 Data for figures 3-33 through 3-34 (student-reported parental education)



## CHAPTER 4

### Frameworks, Item Maps, and Sample Questions

#### Grade 4 Reading Assessment Framework

The content of the NAEP reading assessment is based on a framework, which describes in detail how reading in English should be assessed by NAEP. The current NAEP reading framework was first used for the 1992 assessment and has continued to be used through 2005.

This framework, developed through a comprehensive national consultative process and adopted by NAGB, provides a broad definition of reading that includes developing a general understanding of written text, thinking about texts, and using various texts for different purposes. In addition, it views reading as an interactive and dynamic process involving the reader, the text, and the context of the reading experience. The framework specifies that the fourth-grade reading assessment should measure reading performance in two dimensions: contexts for reading and aspects of reading.

#### Item Maps

The item maps presented on page 54 (grade 4) and page 58 (grade 8) illustrate the knowledge and skills demonstrated by students performing at different score points on the 2005 NAEP reading assessment. In order to provide additional context, the cut scores for the three NAEP achievement levels are marked on the item maps. The map location for each question represents the probability that, for a given score point, 65 percent of the students for a constructed-response question or 74 percent of the students for a multiple-choice question answered that question successfully. For constructed-response questions, responses may be completely or partially correct; therefore, different types of responses to the same question could map onto the scale at different score levels.

**Contexts for reading.** Because different contexts for reading lead to real differences in what readers do, the NAEP reading framework specifies that fourth-graders be assessed in two different contexts. One context, reading for literary experience, is assessed by having fourth-graders read literary materials like short stories, legends, and myths. For the other context, reading for information, fourth-graders are assessed with informational pieces like magazine articles and biographies. The framework calls for these two contexts to be represented in the fourth-grade assessment in the following proportions:

Reading for literary experience	Reading for information
55%	45%

**Aspects of reading.** Each comprehension question in the NAEP assessment measures one of the following four aspects of reading: forming a general understanding, developing interpretation, making reader/text connections, and examining content and structure. In forming a general understanding, readers must consider the text as a whole and provide a global understanding of it. As readers engage in developing interpretation, they must extend their initial impressions to develop a more complete understanding. When making reader/text connections, the reader must connect information

in the text with knowledge and experience. Finally, examining content and structure requires evaluating critically and understanding the effect of different text features. The framework calls for students' assessment time to be divided among these aspects in the following proportions:

Forming a general understanding and Developing interpretation	Making reader/text connections	Examining content and structure
60%	15%	25%

The fourth-grade reading assessment consists of ten 25-minute sections. Each section contains a reading passage or pair of passages accompanied by a set of comprehension questions. As specified in the framework, the fourth-grade passages range in length from 250 to 800 words. The comprehension questions are formatted as either multiple choice or constructed response. Multiple-choice questions require students to select an answer from four options, while constructed-response questions require students to write either short or extended answers. Each student receives only a portion of the entire assessment, consisting of a booklet containing two 25-minute sections of reading passages and comprehension questions.

## Grade 4 Reading Achievement-Level Descriptions

Reading achievement-level descriptions are based on NAGB achievement-level policy descriptions with subject- and grade-specific information added. The

following descriptions are abbreviated versions of the full achievement-level descriptions for grade 4 reading. The full descriptions can be found at <http://www.nagb.org/pubs/readingbook.pdf>.

**Basic:** Fourth-grade students performing at the *Basic* level should demonstrate an understanding of the overall meaning of what they read. When reading text appropriate for fourth-graders, they should be able to make relatively obvious connections between the text and their own experiences and extend the ideas in the text by making simple inferences.

**Proficient:** Fourth-grade students performing at the *Proficient* level should be able to demonstrate an overall understanding of the text, providing inferential as well as literal information. When reading text appropriate to fourth grade, they should be able to extend the ideas in the text by making inferences, drawing conclusions, and making connections to their own experiences. The connection between the text and what the student infers should be clear.

**Advanced:** Fourth-grade students performing at the *Advanced* level should be able to generalize about topics in the reading selection and demonstrate an awareness of how authors compose and use literary devices. When reading text appropriate to fourth grade, they should be able to judge text critically and, in general, to give thorough answers that indicate careful thought.

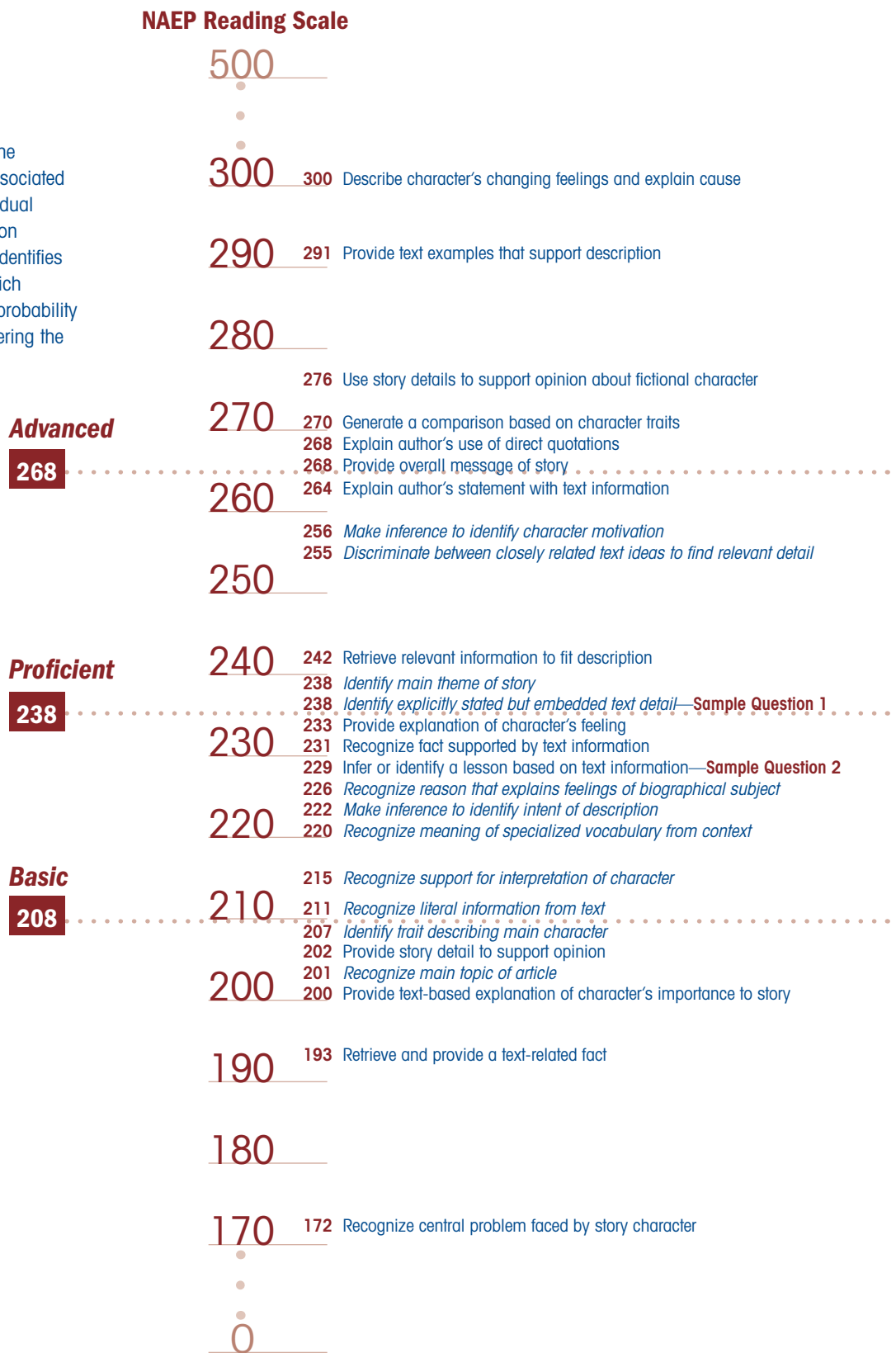
## Cut Scores

Cut scores represent the minimum score required for performance at each NAEP achievement level. NAEP cut scores were determined through a standard-setting process that convened a cross-section of educators and interested citizens from across the nation. The group was asked to determine what students should know and be able to do relative to a body of content reflected in the reading framework. NAGB then adopted a set of cut scores on the 0–500 scale that define the lower boundaries of the *Basic*, *Proficient*, and *Advanced* achievement levels. The reading cut scores, which appear on the item maps, are as follows:

	Grade 4	Grade 8
<i>Basic</i>	208	243
<i>Proficient</i>	238	281
<i>Advanced</i>	268	323

## Grade 4 Reading Item Map

This map describes the knowledge or skill associated with answering individual reading comprehension questions. The map identifies the score point at which students had a high probability of successfully answering the question.<sup>1</sup>



<sup>1</sup> Each grade 4 reading question in the 2005 reading assessment was mapped onto the NAEP 0–500 reading scale. The position of a question on the scale represents the average scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for reading achievement levels are referenced on the map. For constructed-response questions, the question description represents students' performance of the scoring level being mapped.

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

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Reading Assessment.



## Grade 4 Reading Sample Questions

The following sample questions assessed students' comprehension of an article entitled, *Dr. Shannon Lucid: Space Pioneer*, which describes the remarkable achievements of one of the few women to explore

outer space, Shannon Lucid. The article discusses how, in 1996, Dr. Lucid spent over six months in space aboard Mir, a Russian vessel, researching how long-term space travel affects the human body. Shannon Lucid is presented as a courageous woman who pursued her dreams.

### Sample Grade 4 Multiple-Choice Question

**Sample question 1** is a multiple-choice question, which asked students to recognize a detail from the passage.

1. According to the passage, what was the purpose of the space station Mir program?
  - A To learn how the body reacts to long-term travel in space
  - B To observe how people from different cultures live together
  - C To see what the seasons look like from outer space
  - D To take pictures of the Earth and of water currents

*65 percent of fourth-graders answered this question correctly.*

### Sample Grade 4 Short Constructed-Response Question

**Sample question 2** is a short constructed-response question, which asked students to make an inference about a lesson that can be learned and support that inference with information from the passage. Responses to this task were rated according to a three-level scoring guide in one of the following categories: "Evidence of full comprehension," "Evidence of partial comprehension," "Evidence of little or no comprehension." This sample response was rated as "Evidence of full comprehension."

2. What is one lesson that could be learned from reading this passage? Use information from the passage to support your answer.

*dreams don't only come true in fairy tales because Dr. Lucid really want to be an astronaut and she finally did become an astronaut.*

*58 percent of fourth-graders wrote responses rated as "Evidence of full comprehension."*

## Grade 8 Reading Assessment Framework

As at grade 4, the reading framework for grade 8 describes in detail how reading should be assessed, and has been the basis for developing the assessment's content since 1992. Although the general definition of reading is the same at grade 8, the framework calls for expanded contexts for reading and a different proportion of assessment time devoted to the four aspects of reading. These differences between the two grades reflect the developmental differences between fourth- and eighth-grade students and the different expectations for students in reading.

**Contexts for reading.** In addition to the two contexts assessed at grade 4, the framework calls for the assessment of a third context at grade 8 to reflect the changing demands on readers at this grade level. Reading for literary experience is assessed by having eighth-graders read literary materials like short stories, excerpts from novels, poems, and historical fiction. Reading for information is assessed by having eighth-graders read informational pieces like newspaper and magazine articles, biographies, essays, and excerpts from textbooks. The third context added at grade 8, reading to perform a task, is assessed by having eighth-graders read and respond to practical texts like bus or train schedules, directions, documents, forms, and charts. The framework calls for these three contexts to be represented in the eighth-grade assessment in the following proportions:

Reading for literary experience	Reading for information	Reading to perform a task
40%	40%	20%

**Aspects of reading.** As at grade 4, each comprehension question in the eighth-grade assessment measures one of four aspects of reading. In forming a general understanding, readers must consider the text as a whole and provide a global understanding of it. As readers engage in developing interpretation, they must extend their initial impressions to develop a more complete understanding. When making reader/text connections, the reader must connect information in the text with knowledge and experience. Finally, examining content and structure requires evaluating critically and understanding the effect of different text features. In comparison to grade 4, the framework calls for eighth-graders' assessment time to be divided among these aspects in slightly different proportions. The proportion devoted to each aspect is shown below.

Forming a general understanding and Developing interpretation	Making reader/text connections	Examining content and structure
55%	15%	30%

The eighth-grade reading assessment consists of twelve 25-minute sections and one 50-minute section. Each section contains a reading passage or pair of passages accompanied by a set of comprehension questions. As specified in the framework, the eighth-grade passages range in length from 400 to 1,000 words. As at grade 4, the comprehension questions are formatted as either multiple choice or constructed response. Multiple-choice questions require students to select an answer from four options, while constructed-response questions require students to write either short or extended answers. Each student receives only a portion of the entire assessment, containing either two 25-minute sections or one 50-minute section of reading passages and comprehension questions.

### For More Information...

The complete reading framework is available on the NAGB website (<http://www.nagb.org/pubs/pubs.html>). For full text of questions, including passages and sample responses and statistics, visit the NAEP questions tool at <http://nces.ed.gov/nationsreportcard/itmrls/>.

## Grade 8 Reading Achievement-Level Descriptions

Reading achievement-level descriptions are based on NAGB achievement-level policy descriptions with

subject- and grade-specific information added. The following descriptions are abbreviated versions of the full achievement-level descriptions for grade 8 reading. The full descriptions can be found at <http://www.nagb.org/pubs/readingbook.pdf>.

**Basic:** Eighth-grade students performing at the *Basic* level should demonstrate a literal understanding of what they read and be able to make some interpretations. When reading text appropriate to eighth grade, they should be able to identify specific aspects of the text that reflect overall meaning, extend the ideas in the text by making simple inferences, recognize and relate interpretations and connections among ideas in the text to personal experience, and draw conclusions based on the text.

**Proficient:** Eighth-grade students performing at the *Proficient* level should be able to show an overall understanding of the text, including inferential as well as literal information. When reading text appropriate to eighth grade, they should be able to extend the ideas in the text by making clear inferences from it, by drawing conclusions, and by making connections to their own experiences—including other reading experiences. *Proficient* eighth-graders should be able to identify some of the devices authors use in composing text.

**Advanced:** Eighth-grade students performing at the *Advanced* level should be able to describe the more abstract themes and ideas of the overall text. When reading text appropriate to eighth grade, they should be able to analyze both meaning and form and support their analyses explicitly with examples from the text; they should be able to extend text information by relating it to their experiences and to world events. At this level, student responses should be thorough, thoughtful, and extensive.



## Grade 8 Reading Item Map

This map describes the knowledge or skill associated with answering individual reading comprehension questions. The map identifies the score point at which students had a high probability of successfully answering the question.<sup>1</sup>

### Advanced

323

### Proficient

281

### Basic

243

## NAEP Reading Scale

500

340

330

320

310

300

290

280

270

260

250

240

230

220

0

336 Use examples to compare poetic language to everyday speech

332 Negotiate dense text to retrieve relevant explanatory facts

327 Explain action in narrative poem with textual support—**Sample Question 3**

325 Provide specific explication of poetic lines

323 Explain the meaning of an image in a poem

318 Extend text information to generate related question

301 Describe difficulty of a task in a different context

300 Provide support for judgment

299 *Recognize author's device to convey information*

297 *Recognize meaning of poetic comparison*

295 Use metaphor to interpret character

284 Apply text information to hypothetical situation and explain

284 *Recognize what story action reveals about character*

279 Relate text information to hypothetical situation

278 Infer character's action from plot outcome

275 Use task directions and prior knowledge to make a comparison

267 Provide supporting details to explain author's statement

262 *Use context to identify meaning of vocabulary*

261 *Identify causal relation between historical events*

260 *Identify appropriate text recommendation for a specific situation*

254 Explain reason for major event

253 Make inference based on supporting details to identify feeling

248 *Recognize information included by author to persuade*

248 Provide specific text information to support a generalization

247 *Locate specific information in detailed document*

237 *Recognize significance of article's central idea*

234 Provide partial or general explication of poetic lines

232 *Identify characterization of speaker in poem—Sample Question 4*

228 *Recognize an explicitly stated supporting detail*

<sup>1</sup> Each grade 8 reading question in the 2005 reading assessment was mapped onto the NAEP 0–500 reading scale. The position of a question on the scale represents the average scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for reading achievement levels are referenced on the map. For constructed-response questions, the question description represents students' performance at the scoring level being mapped.

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

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Reading Assessment.

## Grade 8 Reading Sample Questions

The following sample questions assessed students' comprehension of a narrative poem by Elizabeth Bishop entitled, *The Fish*. The narrator of the poem tells about catching a tremendous and very old

fish. The poet uses powerful and visual language to describe the fish's appearance, and to convey that the fish is wise and venerable. Impressed and moved by the fish's appearance and seeming ability to evade capture (as evidenced by five old hooks in its mouth), the narrator is inspired to let the fish go.

### Sample Grade 8 Short Constructed-Response Question

**Sample question 3** is a short constructed-response question, which asked students to explain the action of a character in a narrative poem and provide textual support. Responses to this task were rated according to a three-level scoring guide in one of the following categories: "Evidence of full comprehension," "Evidence of partial comprehension," "Evidence of little or no comprehension." This sample response was rated as "Evidence of full comprehension."

3. Why does the person let the fish go? What in the poem makes you think so?

I think he let it go because it was tired and old, and it was caught many times. What make me think that was the five hooks in its mouth and the fact it didn't fight.

*29 percent of eighth-graders wrote responses rated as "Evidence of full comprehension."*

### Sample Grade 8 Multiple-Choice Question

**Sample question 4** is a multiple-choice question which asked students to use their understanding of the poem to infer characteristics about the speaker.

4. Which of the following best describes the person speaking in the poem?
- Thoughtful and observant
  - Tired and victorious
  - Grim and sullen
  - Frightened and lonely

*82 percent of eighth-graders answered this question correctly.*

## Grade 4 Mathematics Assessment Framework

The content of the NAEP mathematics assessment is based on a framework, which describes in detail how mathematics should be assessed by NAEP. The current NAEP mathematics framework was first used for the 1990 assessment and has continued to be used through 2005. It was developed through a comprehensive national consultative process and adopted by NAGB. The framework calls for the assessment of mathematics within five content areas and at different levels of complexity.

**Mathematics content areas.** In order to ensure that NAEP assesses an appropriate balance of content, the framework defines five broad areas of mathematical content. The content areas assessed at grade 4 are number properties and operations, measurement, geometry, data analysis and probability, and algebra. The framework calls for the test questions at grade 4 to be distributed across the five content areas in the following proportions:

Number properties and operations	Measurement	Geometry
40%	20%	15%
Data analysis and probability	Algebra	
10%	15%	

**Mathematical complexity.** The framework also calls for an assessment that measures different levels of mathematical complexity to make sure that NAEP assesses a variety of ways of knowing and doing mathematics. The level of complexity of a test question is determined by the demands that it places on students. For example, test questions with a high level of complexity at grade 4 might ask students to solve a problem in more than one way. According to the framework, the ideal balance for the assessment is that half the score is based on items of moderate complexity, with the remainder of the score based equally on items of low and high complexity.

Revisions were made to the framework for the 1996 assessment and again for the 2005 assessment. The names of some of the content areas changed in 2005, but there remains a consistent focus on the five key areas. The framework reflects current curricular emphases and objectives, while continuing a connection to previous frameworks. This connection allows the trend line at grade 4 that started with the 1990 assessment to be maintained.

The grade 4 mathematics assessment consists of ten 25-minute sections of mathematics questions. Each section contains 14 to 20 questions. The questions are both multiple choice and constructed response. Multiple-choice questions require students to select an answer from four options, while constructed-response questions require students to write either short or extended answers. Each student receives only a portion of the entire assessment, consisting of a booklet containing two 25-minute sections of mathematics questions.

### Item Maps

The item maps presented on page 62 (grade 4) and page 66 (grade 8) illustrate the knowledge and skills demonstrated by students performing at different score points on the 2005 NAEP mathematics assessment. In order to provide additional context, the cut scores for the three NAEP achievement levels are marked on the item maps. The map location for each question represents the probability that, for a given score point, 65 percent of the students for a constructed-response question, 74 percent of the students for a four-option multiple-choice question, or 72 percent of the students for a five-option multiple-choice question answered that question successfully. For constructed-response questions, only responses considered to be completely correct are shown on the item maps.

## Grade 4 Mathematics Achievement-Level Descriptions

Mathematics achievement-level descriptions are based on NAGB achievement-level policy descriptions with subject- and grade-specific

information added. The following descriptions are abbreviated versions of the full achievement-level descriptions for grade 4 mathematics. The full descriptions can be found at <http://www.nagb.org/pubs/mathbook.pdf>.

**Basic:** Fourth-grade students performing at the *Basic* level should be able to estimate and use basic facts to perform simple computations with whole numbers, show some understanding of fractions and decimals, and solve some simple real-world problems in all NAEP content areas. Students at this level should be able to use—though not always accurately—four-function calculators, rulers, and geometric shapes. Their written responses will often be minimal and presented without supporting information.

**Proficient:** Fourth-grade students performing at the *Proficient* level should be able to use whole numbers to estimate, compute, and determine whether results are reasonable. They should have a conceptual understanding of fractions and decimals; be able to solve real-world problems in all NAEP content areas; and use four-function calculators, rulers, and geometric shapes appropriately. Students performing at the *Proficient* level should employ problem-solving strategies such as identifying and using appropriate information. Their written solutions should be organized and presented both with supporting information and explanations of how they were achieved.

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

### Cut Scores

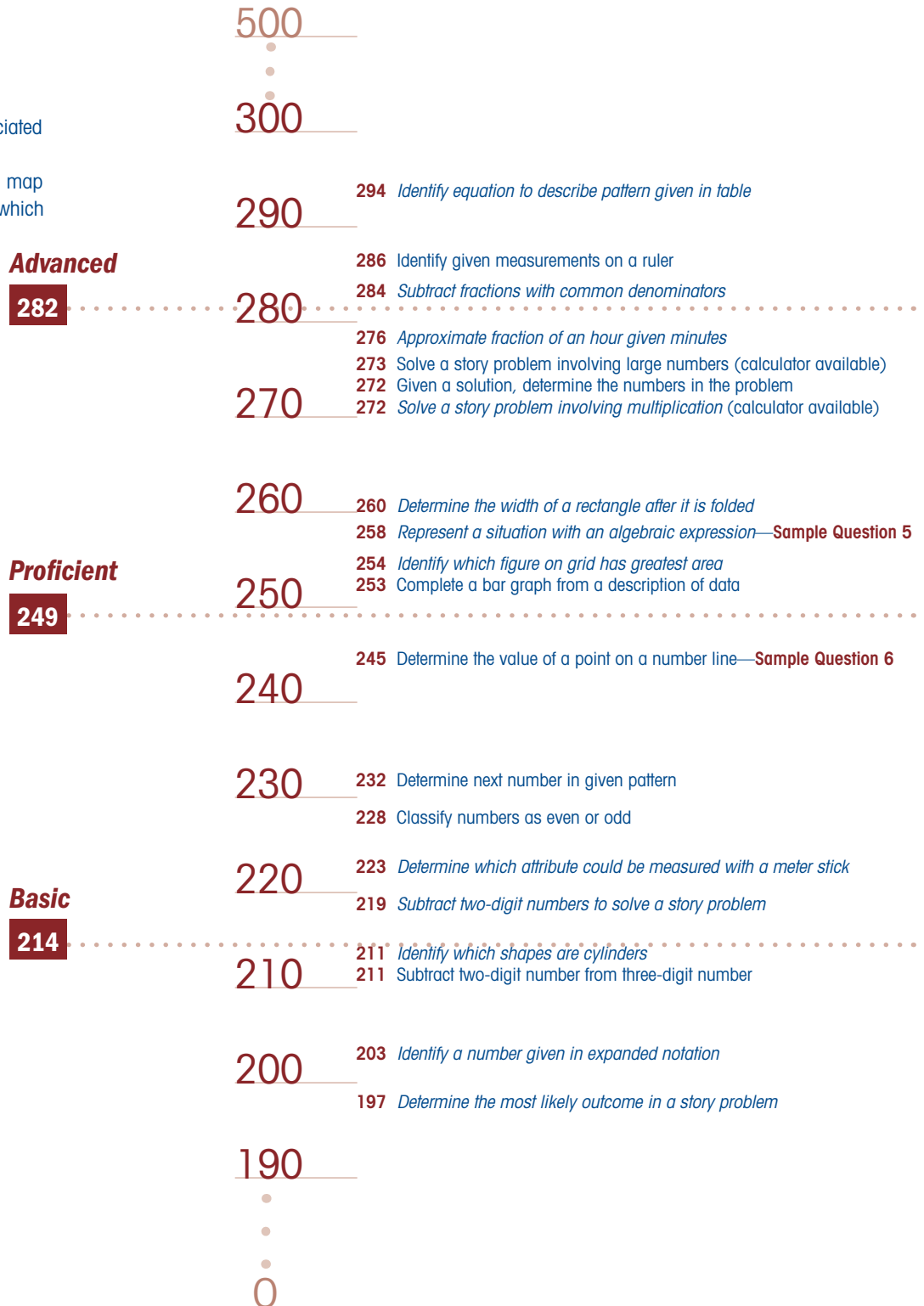
Cut scores represent the minimum score required for performance at each NAEP achievement level. NAEP cut scores were determined through a standard-setting process that convened a cross-section of educators and interested citizens from across the nation. The group was asked to determine what students should know and be able to do relative to a body of content reflected in the mathematics framework. NAGB then adopted a set of cut scores on the 0–500 scale that define the lower boundaries of the *Basic*, *Proficient*, and *Advanced* achievement levels. The mathematics cut scores, which appear on the item maps, are as follows:

	Grade 4	Grade 8
<i>Basic</i>	214	262
<i>Proficient</i>	249	299
<i>Advanced</i>	282	333

# Grade 4 Mathematics Item Map

This map describes the knowledge or skill associated with answering individual mathematics questions. The map identifies the score point at which students had a high probability of successfully answering the question.<sup>1</sup>

## NAEP Mathematics Scale



<sup>1</sup> Each grade 4 mathematics question in the 2005 mathematics assessment was mapped onto the NAEP 0–500 mathematics scale. The position of a question on the scale represents the average scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, or a 74 percent probability of correctly answering a four-option multiple-choice question. Only selected questions are presented. Scale score ranges for mathematics achievement levels are referenced on the map. For constructed-response questions, the question description represents students’ performance rated as completely correct.

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

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessment.



## Grade 4 Mathematics Sample Questions

### Sample Grade 4 Multiple-Choice Question

**Sample question 5** is a multiple-choice question in the algebra content area. This question asked students to represent a given situation with an algebraic expression.

5.  $N$  stands for the number of hours of sleep Ken gets each night. Which of the following represents the number of hours of sleep Ken gets in 1 week?

A  $N + 7$

B  $N - 7$

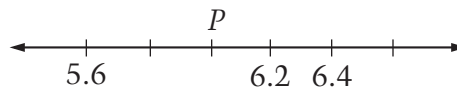
C  $N \times 7$

D  $N \div 7$

*61 percent of fourth-graders answered this question correctly.*

### Sample Grade 4 Short Constructed-Response Question

**Sample question 6** is a short constructed-response question in the number properties and operations content area. This question asked students to identify the point indicated on a number line. The response shown here would have been rated correct.



6. On the number line above, what number would be located at point  $P$ ?

Answer: 6.0

*56 percent of fourth-graders wrote correct responses.*

## Grade 8 Mathematics Assessment Framework

As at grade 4, the content of the mathematics assessment at grade 8 is based on a framework that describes in detail how mathematics should be assessed by NAEP. The current NAEP mathematics framework was first used for the 1990 assessment and has continued to date to be the basis for the assessment content. It was developed through a comprehensive national consultative process and adopted by NAGB. The framework calls for the assessment of mathematics within five content areas and at different levels of complexity.

**Mathematics content areas.** In order to ensure that NAEP assesses an appropriate balance of content, the framework defines five broad areas of mathematical content. The content areas assessed at grade 8 are the same as those assessed at grade 4: number properties and operations, measurement, geometry, data analysis and probability, and algebra. At grade 8, however, the emphasis placed on each content area is different from that at grade 4, to reflect differences in curricular emphasis at the two grades. The framework calls for the eighth-grade test questions to be distributed across the five content areas in the following proportions:

Number properties and operations	Measurement	Geometry
20%	15%	20%
Data analysis and probability	Algebra	
15%	30%	

**Mathematical complexity.** As at grade 4, the framework calls for an assessment at grade 8 that measures different levels of mathematical complexity, to make sure that NAEP assesses a variety of ways of knowing and doing mathematics. The level of complexity of a test question is determined by the demands that it places on students. For example, test questions at grade 8 with a high level of complexity might ask students to provide a mathematical justification. According to the framework, the ideal balance for the assessment is that half the score is based on items of moderate complexity, with the remainder of the score based equally on items of low and high complexity.

Revisions were made to the framework for the 1996 assessment and again for the 2005 assessment. For example, the names of some of the content areas changed in 2005, but there remains a consistent focus on the five key areas. The framework reflects current curricular emphases and objectives, while continuing a connection to previous frameworks. This connection allows the trend line at grade 8 that started with the 1990 assessment to be maintained.

The grade 8 mathematics assessment consists of ten 25-minute sections of mathematics questions. Each section contains 16 to 21 questions. The questions are either multiple choice or constructed response. Multiple-choice questions require students to select an answer from four or five options, while constructed-response questions require students to write either short or extended answers. Each student receives only a portion of the entire assessment, consisting of a booklet containing two 25-minute sections of mathematics questions.

### For More Information...

The complete mathematics framework is available on the NAGB website (<http://www.nagb.org/pubs/pubs.html>). To view more questions, including sample responses and statistics, visit the NAEP questions tool at <http://nces.ed.gov/nationsreportcard/itmrls/>.

## Grade 8 Mathematics Achievement-Level Descriptions

Mathematics achievement-level descriptions are based on NAGB achievement-level policy descrip-

tions with subject- and grade-specific information added. The following descriptions are abbreviated versions of the full achievement-level descriptions for grade 8 mathematics. The full descriptions can be found at <http://www.nagb.org/pubs/mathbook.pdf>.

**Basic:** Eighth-grade students performing at the *Basic* level should complete problems correctly with the help of structural prompts such as diagrams, charts, and graphs. They should be able to solve problems in all NAEP content areas through the appropriate selection and use of strategies and technological tools—including calculators, computers, and geometric shapes. Students at this level also should be able to use fundamental algebraic and informal geometric concepts in problem solving.

**Proficient:** Eighth-grade students performing at the *Proficient* level should be able to conjecture, defend their ideas, and give supporting examples. They should understand the connections between fractions, percents, decimals, and other mathematical topics such as algebra and functions. Students at this level are expected to have a thorough understanding of *Basic*-level arithmetic operations—an understanding sufficient for problem solving in practical situations.

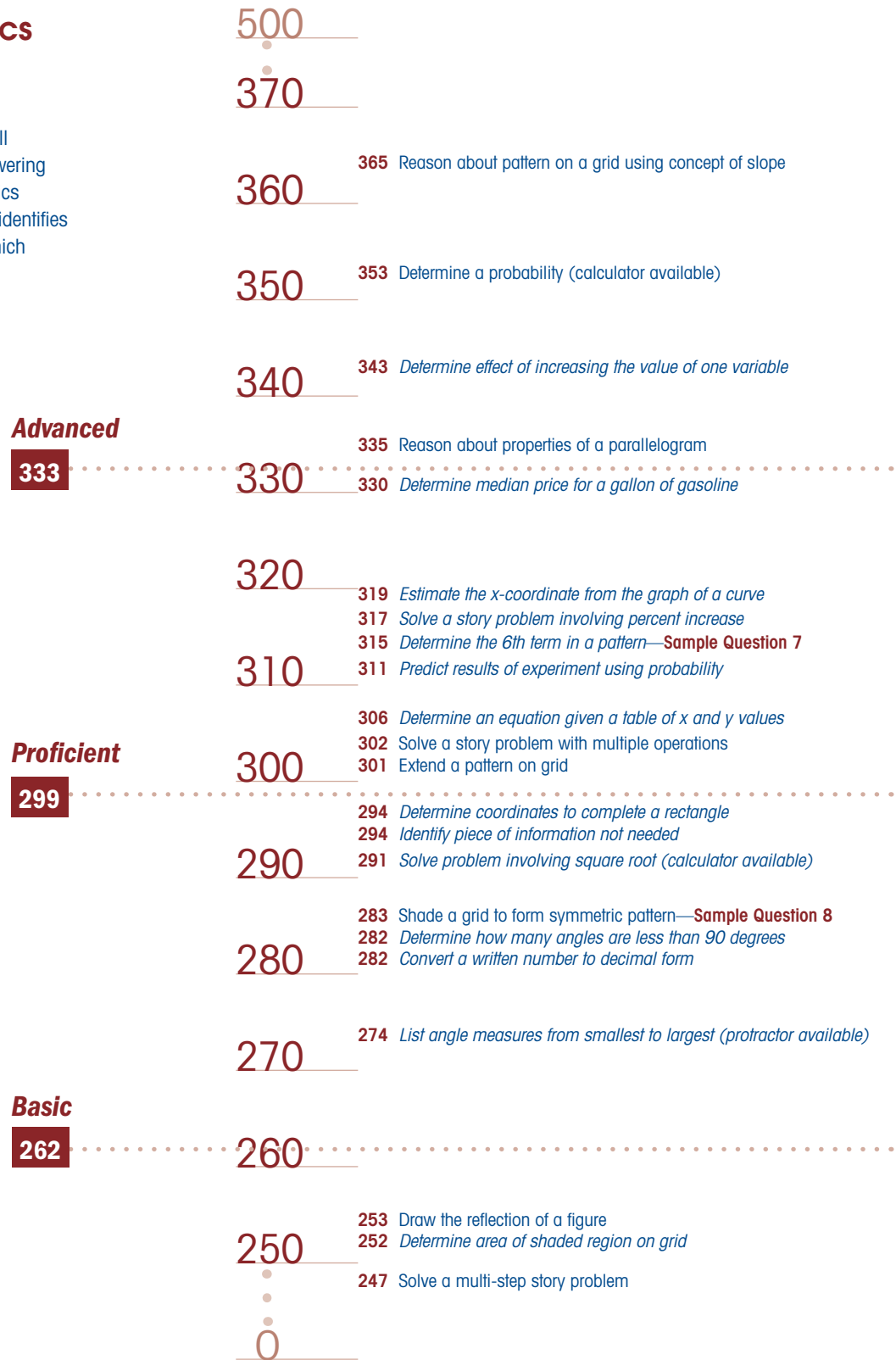
**Advanced:** Eighth-grade students performing at the *Advanced* level should be able to probe examples and counterexamples in order to shape generalizations from which they can develop models. Eighth-graders performing at the *Advanced* level should use number sense and geometric awareness to consider the reasonableness of an answer. They are expected to use abstract thinking to create unique problem-solving techniques and explain the reasoning processes underlying their conclusions.



# Grade 8 Mathematics Item Map

This map describes the knowledge or skill associated with answering individual mathematics questions. The map identifies the score point at which students had a high probability of successfully answering the question.<sup>1</sup>

## NAEP Mathematics Scale



<sup>1</sup> Each grade 8 mathematics question in the 2005 mathematics assessment was mapped onto the NAEP 0–500 mathematics scale. The position of a question on the scale represents the average scale score attained by students who had a 65 percent probability of successfully answering a constructed-response question, a 74 percent probability of correctly answering a four-option multiple-choice question, or a 72 percent probability of correctly answering a five-option multiple-choice question. Only selected questions are presented. Scale score ranges for mathematics achievement levels are referenced on the map. For constructed-response questions, the question description represents students’ performance rated as completely correct.

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

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessment.

## Grade 8 Mathematics Sample Questions

### Sample Grade 8 Multiple-Choice Question

**Sample question 7** is a multiple-choice question in the algebra content area. This question asked students to infer a rule and find the next term in a sequence. The terms in this sequence are the squares of consecutive odd numbers.

1, 9, 25, 49, 81,...

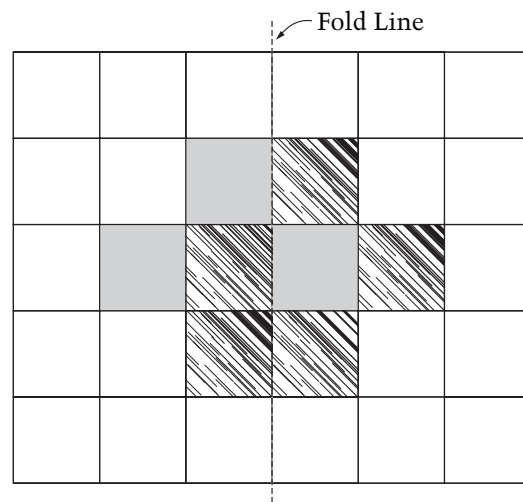
7. The same rule is applied to each number in the pattern above. What is the 6th number in the pattern?
- (A) 40
  - (B) 100
  - (C) 121
  - (D) 144
  - (E) 169

*60 percent of eighth-graders answered this question correctly.*

### Sample Grade 8 Short Constructed-Response Question

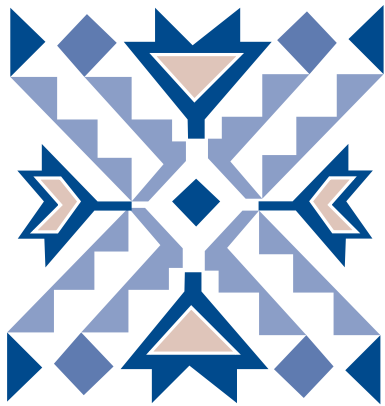
**Sample question 8** is a short constructed-response question in the geometry content area. This question asked students to shade 5 additional squares in a grid that has 3 shaded squares to create a symmetric pattern. Students were given paper squares for this question. The response shown here would have been rated correct.

8. Shade five more squares on the grid below so that if your completed figure were folded along the fold line both sides would match.



*58 percent of eighth-graders gave correct responses.*

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# TECHNICAL NOTES

## Introduction to the Technical Notes

This section describes the procedures used for the 2005 National Indian Education Study (NIES), which involved an augmentation of the NAEP 2005 reading and mathematics assessment samples of American Indian and Alaska Native students in the fourth and eighth grades. The primary technical components relevant to the NIES are detailed.

### NAEP Sampling Procedures for American Indian/Alaska Native Students

The samples of American Indian/Alaska Native students participating in the 2005 NAEP reading and mathematics assessments represent augmentations of the sample of American Indian/Alaska Native students who would usually be selected by NAEP. This allows more detailed reporting of performance for this group. In past NAEP samples, Bureau of Indian Affairs (BIA) schools<sup>1</sup> were identified as part of the national sample, and the resulting number of participating schools was usually small, fewer than five per grade. In 2005, BIA schools were sampled as a part of each state sample, at the same rate as public schools in a given state. That means, roughly speaking, that a BIA student had the same probability of selection as a public school student in the same state. As a result, about 30 BIA schools were included per grade, thereby increasing the number of American Indian/Alaska Native students in the sample. The national participation of sampled American Indian/Alaska Native students may be found in data appendix table A-1. The total number of participating schools and American Indian/Alaska Native students by region and by selected states may be found in data appendix tables A-2 and A-3.

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<sup>1</sup> American Indian/Alaska Native students represent about 1 percent of the student population in the United States. Approximately 7 percent of American Indian/Alaska Native students attend BIA schools which are administered by or affiliated with the U.S. Department of Interior, Bureau of Indian Affairs (BIA). Schools funded by the BIA are either operated by the BIA or by tribes under contracts or grants. BIA-operated schools are under the direct auspices of the BIA, and tribally operated schools are run by individual federally-recognized tribes with grants or contracts from the BIA. The Office of Indian Education Programs (OIEP) in the Bureau of Indian Affairs oversees the BIA school programs (Freeman and Fox 2005, p. 30 and p. 32).

## Understanding NAEP Reporting Groups

NAEP results are provided for groups of students defined by shared characteristics—race/ethnicity, eligibility for free/reduced-price school lunch, gender, school’s type of location, and parental education. Based on participation rate criteria, results are reported for groups only when sufficient numbers of students and adequate school representation are present. The minimum requirement is at least 62 students in a particular group from at least five primary sampling units (PSUs). However, the data for all students, regardless of whether their group was reported separately, were included in computing overall national results. Definitions of the student groups follow.

### Race/Ethnicity

In all NAEP assessments, data about student race/ethnicity are collected from two sources: school records and student self-reports. Prior to 2002, NAEP used students’ self-reported race as the primary race/ethnicity reporting variable. Beginning in 2002, the race/ethnicity variable presented in NAEP reports has been based on the race reported by the school. When school-recorded information is missing, student-reported data are used to determine race/ethnicity.

Schools sampled for NAEP are asked to provide lists of all students in the target grade(s) along with basic demographic information, including race/ethnicity. Students are categorized into one of five mutually exclusive categories plus “other.” Administration Schedules—also referred to as student rosters—are created that include the list of sampled students along with their basic demographic information. These data are checked and updated during data collection. This race/ethnicity information is available for all sampled students: those who participated and those who were absent or excluded.

All students who take a NAEP assessment complete a section of general student background questions, including questions about their race/ethnicity. Separate questions are asked about students’ Hispanic ethnic background and about students’ race. This race/ethnicity information is available just for students who participated in the assessment and not for those who were absent or excluded. See <http://nces.ed.gov/nationsreportcard/bgquest.asp> for more information.

The mutually exclusive racial/ethnic categories are White (non-Hispanic), Black (non-Hispanic), Hispanic, Asian/Pacific Islander, American Indian (including Alaska Native), and Unclassified. Unclassified students are those whose school-reported race was “other,” or “unavailable,” or was missing, or who self-reported more than one race category (i.e., “multi-racial”) or none. Hispanic students may be of any race. Information based on student self-reported race/ethnicity is available on the NAEP Data Explorer (<http://nces.ed.gov/nationsreportcard/nde>).



## Eligibility for Free/Reduced-Price School Lunch

As part of the Department of Agriculture's National School Lunch Program, schools can receive cash subsidies and donated commodities in return for offering free or reduced-price lunches to eligible children. Based on available school records, students were classified as either currently eligible for free/reduced-price school lunch or not eligible. Eligibility for the program is determined by a student's family income in relation to the federally established poverty level. Free lunch qualification is set at 130 percent of the poverty level or below, and reduced-price lunch qualification is set at between 130 and 185 percent of the poverty level. (For the period July 1, 2004, through June 30, 2005, for a family of four, 130 percent of the poverty level was \$24,505, and 185 percent was \$34,873. See <http://www.fns.usda.gov/cnd/lunch> for more information.) The classification applies only to the school year when the assessment was administered (i.e., the 2004–2005 school year) and is not based on eligibility in previous years. If school records were not available, the student was classified as “Information not available.” If the school did not participate in the program, all students in that school were classified as “Information not available.”

## Gender

Results are reported separately for male students and female students. Gender was reported by the student.

## Type of Location

Results from the 2005 assessment are reported for students attending schools in three mutually exclusive location types: central city, urban fringe/large town, and rural/small town. A school's type of location is based on its physical location (as provided by addresses in the NCES Common Core of Data) and on characteristics of the population in that loca-

tion. Classifications are based on three factors: (1) a school's location within or outside a metropolitan area (as defined by standards of the U.S. Office of Management and Budget), (2) a school's location in a city or town designated as either urban or rural (based on U.S. Census Bureau classifications), and (3) the population size of that city or town (also based on U.S. Census data). A metropolitan area typically includes at least one principal city with a population of at least 50,000 and adjacent areas that have economic and social ties with the urban center. Metropolitan areas are coterminous with county boundaries.

### *Central city*

The central city category includes schools located in a large city (a principal city of a metropolitan area having a population of at least 250,000) and those located in a mid-size city (a principal city of a metropolitan area having a population less than 250,000). Central city is a geographical term and is not synonymous with “inner city.”

### *Urban fringe/large town*

The urban fringe category includes schools located within a metropolitan area of a large or mid-sized city, in a city or town which is classified as urban by the U.S. Census Bureau, but which does not qualify as a principal city. The large town category includes schools located outside a metropolitan area in a town with a population of at least 25,000.

### *Rural/small town*

The rural category includes all locations within or outside a statistical area that are classified as rural by the U.S. Census Bureau. The small town category includes schools outside a metropolitan area in a town with a population of at least 2,500, but less than or equal to 25,000.

## Parental Education

Eighth-graders were asked the following two questions, the responses to which were combined to derive the parental education variable:

How far in school did your mother go?

- She did not finish high school.
- She graduated from high school.
- She had some education after high school.
- She graduated from college.
- I don't know.

How far in school did your father go?

- He did not finish high school.
- He graduated from high school.
- He had some education after high school.
- He graduated from college.
- I don't know.

The information was combined into one parental-education reporting variable in the following way: If a student indicated the extent of education for only one parent, that level was included in the data. If a student indicated the extent of education for both parents, the higher of the two levels was included in the data. If a student responded “I don't know” for both parents, or responded “I don't know” for one parent and did not respond for the other, the parental education level was classified as “I don't know.” If the student did not respond for either parent, the student was recorded as having provided no response. Fourth-graders' replies to this question are not reported because their responses to previous NAEP assessments were highly variable, and a large percentage of them chose the “I don't know” option.

## Accommodations

It is important to assess all selected students from the target population, including students with disabilities (SD) and students classified by their schools as English language learners (ELL). To accomplish this goal, students who receive accommodations in their state's assessments, such as extra testing time or individual rather than group administration, are offered most of the same accommodations in NAEP, except where an accommodation would change the nature of what is being tested. For example, passages and questions in the reading test are not permitted to be read aloud to the student, because that accommodation would make it a test of listening instead of a test of reading. Similarly, reading passages and questions cannot be presented in a language other than English.

It should be noted that students assessed with accommodations typically received some combination of accommodations. For example, students assessed in small groups (as compared with standard NAEP sessions of about 30 students) usually received extended time. In one-on-one administrations, students often received assistance in recording answers (e.g., use of a scribe or computer) and were afforded extra time.

The most common accommodations are small-group administration, extended time, one-on-one administration, the use of a scribe or computer, and the use of a bilingual book (mathematics only). See <http://nces.ed.gov/nationsreportcard/reading/2005readingacctype.asp> and <http://nces.ed.gov/nationsreportcard/mathematics/2005mathacctype.asp> for more details and a complete list of accommodations.

## Exclusion Rates

Some students identified as SD or ELL who are sampled for NAEP participation may be excluded from the assessment according to carefully defined criteria. School personnel, guided by the student's Individualized Education Program (IEP) and by section 504 eligibility, decide whether a student with a disability should be excluded from participating in the assessment. School personnel also decide whether to exclude students identified as ELL, based on NAEP's guidelines. The process includes evaluating whether the ELL has the capability to participate in the assessment in English, as well as taking into consideration the number of years the student has been receiving instruction in English. The percentages of students excluded from NAEP may vary from one state to another, as well as across years. Percentages of SD and/or ELL students identified, excluded, and assessed with accommodations may be found in data appendix tables A-4 through A-8.

When making comparisons across states, it is important to consider the variation in the exclusion rates. Although every effort is made to include as many students as possible, different states have different policies. States that are more inclusive—that is, they assess greater percentages of their students with disabilities and English language learners—may have lower average scores than states that exclude greater percentages of these students.

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

Testing all sampled students is the best way for NAEP to ensure that the statistics generated by the assessment are as representative as possible of the performance of the entire national population and the populations of participating jurisdictions. However, all groups of students include certain proportions that cannot be tested in large-scale assessments. For some students, no accommodation would be sufficient to enable them to participate meaningfully because of the specific nature of their disabilities or their deficit in English language skills.

## Drawing Inferences From the Results

The reported statistics are estimates and are therefore subject to a measure of uncertainty. There are two sources of such uncertainty. First, NAEP uses a sample of students rather than testing all students. Second, all assessments have some amount of uncertainty related to the fact that they cannot ask all questions that might be asked in a content area. The magnitude of this uncertainty is reflected in the standard error of each of the estimates. When the percentages or average scale scores of certain groups are compared, the estimated standard error should be taken into account. Therefore, the comparisons are based on statistical tests that consider the estimated standard errors of the statistics being compared and the magnitude of the difference between the averages or percentages.

The differences between statistics—such as comparisons of two groups of students' average scale scores and percentages of students at various achievement levels—that are discussed in this report are determined by using standard errors. Comparisons are based on statistical tests that consider both the size of the differences and the standard errors of the two statistics being compared. Estimates based on smaller groups are likely to have relatively large standard errors. As a consequence, a numerical difference that seems large may not be statistically significant. Furthermore, differences of the same magnitude may or may not be statistically significant, depending upon the size of the standard errors of the statistics. For example, a 5-point difference between male and female students may be

statistically significant, while a 5-point difference between students from North Dakota and students from Oklahoma may not be. The differences described in this report have been determined to be statistically significant at the .05 level with appropriate adjustments for part-to-whole and multiple comparisons (Benjamini and Hochberg 1995).

Any difference between scores or percentages that is identified as higher, lower, larger, or smaller in this report, including within-group differences not marked in tables and charts, meets the requirements for statistical significance.

For the data in this report, all the estimates have corresponding standard errors of the estimates. These standard errors can be found in the Data Appendix. The following table shows the standard deviations of the scores of American Indian/Alaska Native students and of all other students for each subject and grade. Standard deviations reflect the variability of scores within a group, in the original scale of measurement. Thus, standard deviations for these two groups can be used to understand both the variability of NAEP reading and mathematics scores among American Indian/Alaska Native students, and among all other students at each grade level.

	Standard deviation	
	American Indian/ Alaska Native students	All other students
<b>Grade 4</b>		
Reading	37.7	36.1
Mathematics	27.9	28.4
<b>Grade 8</b>		
Reading	34.7	35.2
Mathematics	32.6	36.3

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

## Weighting and Variance Estimation

A complex sample design was used to select the students who were assessed. The properties of a sample selected through such a design could be very different from those of a simple random sample, in which every student in the target population has an equal chance of selection and in which the observations from different sampled students can be considered to be statistically independent of one another. Therefore, the properties of the sample for the data collection design were taken into account during the analysis of the assessment data.

One way that the properties of the sample design were addressed was by using sampling weights to account for the fact that the probabilities of selection were not identical for all students. All population and subpopulation characteristics based on the assessment data were estimated using sampling weights. These weights included adjustments for school and student nonresponse.

Not only must appropriate estimates of population characteristics be derived, but appropriate measures of the degree of uncertainty must be obtained for those statistics. Two components of uncertainty are accounted for in the variability of statistics based on student ability: (1) the uncertainty due to sampling only a relatively small number of students, and (2) the uncertainty due to sampling only a relatively small number of cognitive questions. The first component accounts for the variability associated with the estimated percentages of students who had certain background characteristics or who had a certain rating for their responses to a task.

Because NAEP uses complex sampling procedures, conventional formulas for estimating sampling variability that assume simple random sampling are inappropriate. NAEP uses a jackknife replication procedure to estimate standard errors. The jackknife standard error provides a reasonable measure of uncertainty for any student information that can be observed without error. However, because each student typically responds to only a few questions within a content area, the scale score for any single student would be imprecise. In this case, NAEP's marginal estimation methodology can be used to describe the performance of groups and subgroups of students. The estimate of the variance of the students' posterior scale score distributions (which reflect the imprecision due to lack of measurement accuracy) is computed. This component of variability is then included in the standard errors of NAEP scale scores. Further details on this topic can be found in Johnson and Rust (1992).

## Analyzing Group Differences in Averages and Percentages

Statistical tests determine whether, based on the data from the groups in the sample, there is strong enough evidence to conclude that the averages or percentages are actually different for those groups in the population. If the evidence is strong (i.e., the difference is statistically significant), the report describes the group averages or percentages as being different (e.g., one group performed higher or lower than another group), regardless of whether the sample averages or percentages appear to be approximately the same. The reader is cautioned to rely on the results of the statistical tests rather than on the apparent magnitude of the difference between sample averages or percentages when determining whether the sample differences are likely to represent actual differences among the groups in the population.

To determine whether a real difference exists between the average scale scores (or percentages of a certain attribute) for two groups in the population, one needs to obtain an estimate of the degree of uncertainty associated with the difference between the averages (or percentages) of these groups for the sample. This estimate of the degree of uncertainty, called the "standard error of the difference" between the groups, is obtained by taking the square of each group's standard error, summing the squared standard errors, and taking the square root of that sum.

$$SE_{A-B} = \sqrt{(SE_A^2 + SE_B^2)}$$

The standard error of the difference can be used, just like the standard error for an individual group average or percentage, to help determine whether differences among groups in the population are real. The difference between the averages or percentages of the two groups plus or minus 1.96 standard errors of the difference represents an approximately 95 percent confidence interval. If the resulting interval includes zero, there is insufficient evidence to claim a real difference between the groups in the population. If the interval does not contain zero, the difference between the groups is statistically significant at the .05 level.

The following example of comparing groups addresses the problem of determining whether the average mathematics scale score of group A is higher than that of group B. The sample estimates of the average scale scores and estimated standard errors are as follows:

Group	Average scale score	Standard error
A	218	0.9
B	216	1.1

The difference between the estimates of the average scale scores of groups A and B is two points (218–216). The standard error of this difference is

$$\sqrt{(0.9^2 + 1.1^2)} = 1.4$$

Thus, an approximately 95 percent confidence interval for this difference is plus or minus 1.96 standard errors of the difference:

$$2 \pm 1.96 \times 1.4$$

$$2 \pm 2.7$$

$$(-0.7, 4.7)$$

The value zero is within the confidence interval; therefore, there is insufficient evidence to conclude that group A's performance is statistically different from group B.

The procedure above is appropriate to use when it is reasonable to assume that the groups being compared have been independently sampled for the assessment. Such an assumption is clearly warranted when comparing results for one state with another. This is the approach used for NAEP reports when comparisons involving independent groups are made. The assumption of independence is violated to some degree when comparing group results for the nation or a particular state (e.g., comparing national 2005 results for males and females), since these samples of students have been drawn from the same schools.

When the groups being compared do not share students (as is the case, for example, of comparing males and females), the impact of this violation of the independence assumption on the outcome of the statistical tests is assumed to be small, and NAEP, by convention, has, for computational convenience, routinely applied the procedures described above to those cases as well.

When making comparisons of results for groups that share a considerable proportion of students in common, it is not appropriate to ignore such dependencies. In such cases, NAEP has used procedures appropriate to comparing dependent groups. When the dependence in group results is due to the overlap in samples (e.g., when a subgroup is being compared to a total group), a simple modification of the usual standard error of the difference formula can be used. The formula for such cases is

$$SE_{\text{Total-Subgroup}} = \sqrt{(SE_{\text{Total}}^2 + SE_{\text{Subgroup}}^2 - 2pSE_{\text{Subgroup}}^2)}$$

where p is the proportion of the total group contained in the subgroup. This formula was used for this report when a state was compared to the aggregate nation.

## Conducting Multiple Tests

The procedures used to determine whether group differences in the samples represent actual differences among the groups in the population and the certainty ascribed to intervals (e.g., a 95 percent confidence interval) are based on statistical theory that assumes that only one confidence interval or test of statistical significance is being performed. However, there are times when many different groups are being compared (i.e., multiple sets of confidence intervals are being analyzed). For multiple comparisons, statistical theory indicates that the certainty associated with the entire set of comparisons is less than that attributable to each individual comparison from the set. To hold the significance level for the set of comparisons at a particular level (e.g., .05), the standard methods must be adjusted by multiple comparison procedures (Miller 1981). The procedure used by NAEP is the Benjamini-Hochberg False Discovery Rate (FDR) procedure (Benjamini and Hochberg 1995).

Unlike other multiple comparison procedures that control the familywise error rate (i.e., the probability of making even one false rejection in the set of comparisons), the FDR procedure controls the expected proportion of falsely rejected hypotheses. (A “family” in this context is the number of categories to be compared for a given variable. This might be six within the race/ethnicity variable or 50 when considering states.) Furthermore, the FDR procedure used in NAEP is considered appropriately less conservative than familywise procedures for large families of comparisons (Williams, Jones, and Tukey 1999). Therefore, the FDR procedure is more suitable for multiple comparisons in NAEP than are other procedures.

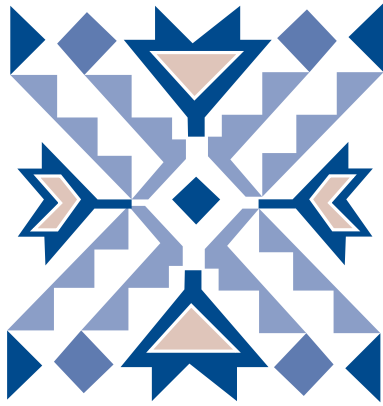
## Cautions in Interpretation

It is possible to examine NAEP performance results for groups of students defined by various background factors measured by NAEP, such as whether their teachers use certain instructional techniques or how much reading material is available in their homes. However, a relationship that exists between achievement and another variable does not reveal its underlying cause, which may be influenced by a number of other variables. Similarly, the assessments do not reflect the influence of unmeasured variables. The results are most useful when they are considered in combination with other knowledge about the student population and the educational system, such as trends in instruction, changes in the school-age population, and societal demands and expectations.

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# DATA APPENDIX

**Table A-1.** National school participation rates and national American Indian/Alaska Native student participation rates for reading and mathematics, grades 4 and 8: 2005

Assessment	School participation <sup>1</sup>					American Indian/Alaska Native student participation <sup>2</sup>	
	Student-weighted		School-weighted		Number of schools participating after substitution	Student-weighted percent	Number of students assessed
	Percent before substitution	Percent after substitution	Percent before substitution	Percent after substitution			
<b>Grade 4</b>							
Reading	96	98	90	94	9,550	93	3,800
Mathematics	96	98	90	94	9,550	93	3,900
<b>Grade 8</b>							
Reading	97	98	86	90	7,220	91	3,400
Mathematics	97	98	86	90	7,220	88	3,500

<sup>1</sup> National school participation includes all schools, regardless of whether or not any American Indian/Alaska Native students were sampled.

<sup>2</sup> National American Indian/Alaska Native student participation includes American Indian/Alaska Native students in the participating schools.

NOTE: The columns of percentages have different denominators. For columns 1 and 2, the denominator is the estimated number of students represented by the initially selected schools that had eligible students enrolled. For columns 3 and 4, the denominator is the estimated number of schools represented by the initially selected schools that had eligible students enrolled. For column 6, the denominator is the estimated number of American Indian/Alaska Native students represented by the eligible sampled students in participating schools. The numbers of schools are rounded to the nearest ten. The numbers of students are rounded to the nearest hundred. "Substitution" refers to the procedures for preselecting substitute schools for schools that had been originally selected for participation in the assessment. If an original school was unable to participate, a preselected substitute school was used. To minimize bias, a substitute school resembled the original selection as much as possible in affiliation, type of location, estimated number of grade-eligible students, and demographic composition.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table A-2.** Number of participating schools with American Indian/Alaska Native students and number of participating American Indian/Alaska Native students, by region, grades 4 and 8: 2005

Region	Grade 4				Grade 8			
	Reading		Mathematics		Reading		Mathematics	
	Number of participating schools	Number of participating students	Number of participating schools	Number of participating students	Number of participating schools	Number of participating students	Number of participating schools	Number of participating students
Atlantic	140	200	140	200	130	200	130	200
North Central	320	900	320	900	260	800	280	800
South Central	200	700	220	700	180	500	200	600
Mountain	340	1,200	330	1,200	290	1,100	280	1,100
Pacific	300	800	290	800	240	800	240	800

NOTE: The numbers of schools are rounded to the nearest ten. The numbers of students are rounded to the nearest hundred.  
 SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table A-3.** Number of participating schools with American Indian/Alaska Native students and number of participating American Indian/Alaska Native students, by selected states, grades 4 and 8: 2005

State	Grade 4				Grade 8			
	Reading		Mathematics		Reading		Mathematics	
	Number of participating schools	Number of participating students	Number of participating schools	Number of participating students	Number of participating schools	Number of participating students	Number of participating schools	Number of participating students
Alaska	140	600	130	600	100	500	100	600
Arizona	50	300	50	200	50	200	40	200
Montana	90	300	90	300	60	300	50	300
New Mexico	70	400	70	400	60	400	60	400
North Dakota	70	200	60	200	50	200	50	200
Oklahoma	130	500	140	500	120	500	110	500
South Dakota	100	400	100	400	80	400	80	400

NOTE: The numbers of schools are rounded to the nearest ten. The numbers of students are rounded to the nearest hundred.  
 SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table A-4.** Students identified, excluded, and assessed with accommodations, by students with disabilities and/or English language learners, as percentages of all sampled students, grades 4 and 8 public and nonpublic schools: 2005

Student characteristics	Grade 4		Grade 8	
	American Indian/ Alaska Native students	All other students	American Indian/ Alaska Native students	All other students
<b>Reading</b>				
Total number of students assessed	3,800	161,900	3,400	156,000
<b>SD and/or ELL</b>				
Identified	28	21	28	17
Excluded	5	6	5	5
Assessed with accommodations	9	6	10	6
<b>SD only</b>				
Identified	15	13	17	12
Excluded	5	5	5	4
Assessed with accommodations	6	5	8	5
<b>ELL only</b>				
Identified	16	10	14	6
Excluded	1	2	2	1
Assessed with accommodations	4	1	4	1
<b>Mathematics</b>				
Total number of students assessed	3,900	168,100	3,500	158,100
<b>SD and/or ELL</b>				
Identified	29	21	28	17
Excluded	3	3	4	3
Assessed with accommodations	14	9	11	7
<b>SD only</b>				
Identified	16	13	16	12
Excluded	3	2	4	3
Assessed with accommodations	10	7	9	7
<b>ELL only</b>				
Identified	16	9	15	6
Excluded	1	1	1	1
Assessed with accommodations	6	2	4	1

NOTE: SD = students with disabilities. ELL = English language learners. 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. The numbers of students are rounded to the nearest hundred. The percentages presented in the table are based on the number of students selected to be assessed, which is different from the number of students actually assessed shown in the table.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table A-5.** Percentage of students identified as students with disabilities and/or English language learners, excluded, and assessed in reading with accommodations, by student group and jurisdiction, grade 4: 2005

Student group and jurisdiction	SD and/or ELL			SD only			ELL only		
	Identified	Excluded	Assessed with accommodations	Identified	Excluded	Assessed with accommodations	Identified	Excluded	Assessed with accommodations
<b>American Indian/Alaska Native students</b>									
Nation	28	5	9	15	5	6	16	1	4
Regions									
Atlantic	16	7	6	14	7	6	3	1	1
North Central	24	8	7	18	8	6	8	1	2
South Central	19	4	7	17	4	6	4	1	1
Mountain	46	6	15	14	5	7	38	3	12
Pacific	24	3	7	13	3	6	13	1	2
Selected states									
Alaska	50	5	14	18	5	9	37	2	7
Arizona	46	5	11	12	5	4	38	2	9
Montana	35	8	13	19	8	9	23	2	9
New Mexico	64	8	24	16	6	8	60	7	22
North Dakota	22	13	3	23	13	3	#	#	#
Oklahoma	18	3	9	16	3	7	3	1	1
South Dakota	45	10	12	21	9	7	30	3	8
<b>All other students</b>									
Nation	21	6	6	13	5	5	10	2	1
Regions									
Atlantic	19	6	9	15	5	7	5	2	2
North Central	17	6	6	13	5	5	4	1	1
South Central	20	8	3	13	6	3	8	3	#
Mountain	23	5	7	12	4	5	13	3	3
Pacific	33	5	4	9	3	3	26	3	2

# The estimate rounds to zero.

NOTE: SD = students with disabilities. ELL = English language learners. 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. The national and regional results include both public and nonpublic schools. The state results include only public and Bureau of Indian Affairs schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table A-6.** Percentage of students identified as students with disabilities and/or English language learners, excluded, and assessed in reading with accommodations, by student group and jurisdiction, grade 8: 2005

Student group and jurisdiction	SD and/or ELL			SD only			ELL only		
	Identified	Excluded	Assessed with accommodations	Identified	Excluded	Assessed with accommodations	Identified	Excluded	Assessed with accommodations
<b>American Indian/Alaska Native students</b>									
Nation	28	5	10	17	5	8	14	2	4
Regions									
Atlantic	25	10	11	19	6	11	7	5	#
North Central	23	5	11	20	5	10	5	1	1
South Central	21	5	7	16	5	6	6	1	2
Mountain	38	5	12	14	4	7	30	3	9
Pacific	26	4	10	19	4	9	9	#	3
Selected states									
Alaska	38	1	11	13	1	8	28	#	4
Arizona	38	4	12	12	4	7	30	2	8
Montana	48	7	17	20	7	10	36	4	10
New Mexico	56	9	17	21	7	8	50	6	16
North Dakota	27	12	9	27	12	9	#	#	#
Oklahoma	21	5	8	18	5	7	4	1	1
South Dakota	34	6	11	21	5	9	19	2	5
<b>All other students</b>									
Nation	17	5	6	12	4	5	6	1	1
Regions									
Atlantic	16	5	8	14	4	7	3	1	1
North Central	15	5	6	13	5	6	2	1	#
South Central	16	6	3	12	5	3	4	1	#
Mountain	18	4	6	11	3	5	9	2	2
Pacific	24	3	4	9	2	3	17	2	2

# The estimate rounds to zero.

NOTE: SD = students with disabilities. ELL = English language learners. 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. The national and regional results include both public and nonpublic schools. The state results include only public and Bureau of Indian Affairs schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table A-7.** Percentage of students identified as students with disabilities and/or English language learners, excluded, and assessed in mathematics with accommodations, by student group and jurisdiction, grade 4: 2005

Student group and jurisdiction	SD and/or ELL			SD only			ELL only		
	Identified	Excluded	Assessed with accommodations	Identified	Excluded	Assessed with accommodations	Identified	Excluded	Assessed with accommodations
<b>American Indian/Alaska Native students</b>									
Nation	29	3	14	16	3	10	16	1	6
Regions									
Atlantic	17	2	11	15	2	11	3	1	1
North Central	28	4	15	22	4	13	8	#	3
South Central	20	3	10	17	3	9	5	#	1
Mountain	46	4	19	15	3	9	39	2	15
Pacific	24	2	10	13	2	8	12	#	3
Selected states									
Alaska	46	2	22	16	2	12	34	1	13
Arizona	48	6	15	17	6	8	40	3	12
Montana	34	2	16	16	2	11	23	#	9
New Mexico	65	3	33	14	2	11	60	2	29
North Dakota	27	3	21	27	3	21	#	#	#
Oklahoma	20	4	11	18	4	10	4	1	2
South Dakota	43	3	19	18	3	11	31	1	11
<b>All other students</b>									
Nation	21	3	9	13	2	7	9	1	2
Regions									
Atlantic	18	3	11	15	2	9	5	1	3
North Central	17	3	9	13	2	7	4	1	2
South Central	20	4	8	13	4	6	8	1	2
Mountain	23	3	10	11	2	6	14	1	5
Pacific	33	4	5	10	2	4	26	2	3

# The estimate rounds to zero.

NOTE: SD = students with disabilities. ELL = English language learners. 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. The national and regional results include both public and nonpublic schools. The state results include only public and Bureau of Indian Affairs schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table A-8.** Percentage of students identified as students with disabilities and/or English language learners, excluded, and assessed in mathematics with accommodations, by student group and jurisdiction, grade 8: 2005

Student group and jurisdiction	SD and/or ELL			SD only			ELL only		
	Identified	Excluded	Assessed with accommodations	Identified	Excluded	Assessed with accommodations	Identified	Excluded	Assessed with accommodations
<b>American Indian/Alaska Native students</b>									
Nation	28	4	11	16	4	9	15	1	4
Regions									
Atlantic	19	6	9	16	4	9	5	2	#
North Central	26	5	13	21	5	13	7	#	2
South Central	19	3	8	15	3	7	5	#	1
Mountain	41	4	15	16	4	9	31	2	10
Pacific	25	3	8	15	3	7	12	#	2
Selected states									
Alaska	43	2	16	17	2	12	32	1	8
Arizona	41	8	9	15	8	5	31	4	5
Montana	46	4	21	20	3	14	35	3	14
New Mexico	57	3	26	21	3	14	46	1	20
North Dakota	30	12	12	30	12	12	#	#	#
Oklahoma	20	4	9	17	4	8	4	#	1
South Dakota	38	2	19	22	2	16	25	1	11
<b>All other students</b>									
Nation	17	3	7	12	3	7	6	1	1
Regions									
Atlantic	16	3	10	14	3	8	3	1	1
North Central	15	3	8	13	3	8	2	#	1
South Central	16	4	5	12	4	4	4	1	1
Mountain	18	3	7	11	2	6	9	1	2
Pacific	23	2	5	9	2	4	16	1	2

# The estimate rounds to zero.

NOTE: SD = students with disabilities. ELL = English language learners. 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. The national and regional results include both public and nonpublic schools. The state results include only public and Bureau of Indian Affairs schools.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.

**Table A-9.** Average scale scores and achievement-level results in reading, by student group, grades 4 and 8: 2005

Student group	Average scale score	Percent					
		Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>							
American Indian/Alaska Native students	204 (1.3)	52 (1.5)	30 (1.2)	15 (1.0)	3 (0.5)	48 (1.5)	18 (1.0)
All other students	219*(0.2)	36*(0.3)	33*(0.2)	24*(0.2)	8*(0.1)	64*(0.3)	32*(0.2)
<b>Grade 8</b>							
American Indian/Alaska Native students	249 (1.4)	41 (2.1)	41 (1.4)	16 (1.5)	1 (0.3)	59 (2.1)	17 (1.7)
All other students	262*(0.2)	27*(0.2)	42 (0.2)	28*(0.2)	3*(0.1)	73*(0.2)	31*(0.2)

\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

NOTE: Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-10.** Reading scale scores at selected percentiles, by student group, grades 4 and 8: 2005

Student group	Percentile				
	10th	25th	50th	75th	90th
<b>Grade 4</b>					
American Indian/Alaska Native students	154 (1.9)	179 (2.6)	206 (1.1)	230 (1.8)	251 (1.3)
All other students	171*(0.3)	196*(0.2)	222*(0.2)	244*(0.2)	263*(0.3)
<b>Grade 8</b>					
American Indian/Alaska Native students	204 (2.0)	227 (2.0)	251 (2.1)	273 (1.7)	292 (2.0)
All other students	216*(0.3)	240*(0.3)	265*(0.2)	287*(0.2)	305*(0.3)

\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

NOTE: Standard errors of the estimates appear in parentheses.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.



**Table A-11.** Average scale scores and achievement-level results in reading, by student group and region, grades 4 and 8: 2005

Student group and region	Percentage of students	Average scale scores	Percent					
			Below Basic	At Basic	At Proficient	At Advanced	At or above Basic	At or above Proficient
<b>Grade 4</b>								
<b>American Indian/Alaska Native students</b>								
Atlantic	12 (2.1)	210 (4.0)	45 (4.9)	34 (4.7)	15 (4.9)	5 (2.8)	55 (4.9)	20 (3.7)
North Central	14 (1.3)	207 (2.0)	49 (2.3)	33 (2.7)	15 (2.7)	4 (1.8)	51 (2.3)	18 (2.0)
South Central	25 (1.6)	212 (2.2)	42 (2.8)	34 (2.7)	20 (2.6)	4 (1.5)	58 (2.8)	24 (2.4)
Mountain	28 (2.1)	190 (2.6)	68 (2.5)	22 (2.5)	9 (1.1)	1 (0.4)	32 (2.5)	10 (1.3)
Pacific	21 (1.5)	206 (2.6)	50 (3.1)	29 (3.1)	16 (2.3)	5 (1.3)	50 (3.1)	21 (2.5)
<b>All other students</b>								
Atlantic	36*(0.2)	223*(0.3)	32*(0.4)	33 (0.4)	26 (0.4)	9 (0.3)	68*(0.4)	35*(0.5)
North Central	22*(0.2)	222*(0.4)	32*(0.5)	33 (0.5)	26*(0.4)	8 (0.3)	68*(0.5)	34*(0.5)
South Central	18*(0.2)	217*(0.5)	38 (0.7)	34 (0.5)	22 (0.5)	6 (0.3)	62 (0.7)	28 (0.6)
Mountain	7*(0.1)	217*(0.6)	37*(0.6)	32*(0.6)	24*(0.5)	7*(0.3)	63*(0.6)	30*(0.7)
Pacific	18*(0.2)	212*(0.6)	44 (0.8)	30 (0.6)	20 (0.4)	6 (0.3)	56 (0.8)	26 (0.6)
<b>Grade 8</b>								
<b>American Indian/Alaska Native students</b>								
Atlantic	11 (1.1)	260 (3.6)	28 (5.8)	46 (5.7)	25 (4.8)	1 (†)	72 (5.8)	26 (4.4)
North Central	14 (1.6)	256 (2.7)	32 (3.7)	48 (3.7)	18 (5.2)	2 (1.1)	68 (3.7)	20 (4.8)
South Central	22 (1.6)	256 (1.7)	32 (2.7)	45 (2.9)	22 (2.9)	1 (†)	68 (2.7)	23 (2.7)
Mountain	32 (3.0)	239 (2.8)	54 (3.9)	37 (3.1)	9 (2.3)	# (0.2)	46 (3.9)	10 (2.3)
Pacific	22 (2.1)	246 (2.8)	45 (3.3)	38 (2.8)	16 (2.7)	1 (†)	55 (3.3)	17 (2.9)
<b>All other students</b>								
Atlantic	36*(0.3)	265 (0.4)	25 (0.4)	41 (0.3)	30 (0.4)	4 (0.2)	75 (0.4)	34 (0.4)
North Central	23*(0.2)	267*(0.4)	22*(0.4)	43 (0.5)	31*(0.5)	3 (0.2)	78*(0.4)	35*(0.6)
South Central	18*(0.2)	259 (0.5)	30 (0.6)	43 (0.4)	24 (0.5)	2 (0.2)	70 (0.6)	27 (0.5)
Mountain	7*(0.1)	261*(0.5)	29*(0.6)	43 (0.6)	26*(0.5)	2*(0.2)	71*(0.6)	29*(0.5)
Pacific	17*(0.3)	256*(0.5)	35*(0.5)	40 (0.4)	23*(0.5)	2 (0.2)	65*(0.5)	25*(0.5)

(†) Not applicable. Standard error estimate cannot be accurately determined.

# The estimate rounds to zero.

\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

NOTE: Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-12.** Average scale scores and achievement-level results in reading for American Indian/Alaska Native students only, by nation and selected states, grades 4 and 8: 2005

State	Average scale score	Percent					
		Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>							
Nation	204 (1.3)	52 (1.5)	30 (1.2)	15 (1.0)	3 (0.5)	48 (1.5)	18 (1.0)
Alaska	183*(3.0)	71*(2.3)	20*(2.5)	8*(1.5)	1*(0.4)	29*(2.3)	9*(1.6)
Arizona	184*(5.3)	75*(4.7)	17 (4.9)	7*(1.6)	1*(0.5)	25*(4.7)	8*(1.8)
Montana	201 (2.0)	55 (3.2)	32 (3.6)	12 (2.6)	1*(0.5)	45 (3.2)	13 (2.5)
New Mexico	186*(2.4)	72*(3.4)	22 (3.3)	6*(1.3)	# (†)	28*(3.4)	7*(1.5)
North Dakota	198 (2.7)	61*(3.8)	31 (4.7)	8 (3.6)	1 (†)	39*(3.8)	9*(3.8)
Oklahoma	211*(1.8)	43*(2.5)	35 (3.5)	18 (2.7)	3 (1.4)	57*(2.5)	22 (2.8)
South Dakota	194*(2.6)	63*(3.7)	26 (3.1)	10*(1.7)	1*(0.5)	37*(3.7)	11*(1.8)
<b>Grade 8</b>							
Nation	249 (1.4)	41 (2.1)	41 (1.4)	16 (1.5)	1 (0.3)	59 (2.1)	17 (1.7)
Alaska	240*(2.1)	51*(3.3)	39 (3.3)	10*(1.8)	# (0.2)	49*(3.3)	10*(1.8)
Arizona	238*(4.5)	57 (5.9)	32 (5.5)	10 (3.7)	# (†)	43 (5.9)	11 (3.7)
Montana	247 (2.6)	44 (4.3)	41 (4.2)	15 (2.7)	1 (†)	56 (4.3)	16 (2.6)
New Mexico	236*(2.8)	56*(4.2)	39 (4.1)	5*(1.7)	# (†)	44*(4.2)	6*(1.7)
North Dakota	248 (2.6)	41 (4.8)	45 (4.8)	13 (2.7)	# (†)	59 (4.8)	14 (2.7)
Oklahoma	254*(1.6)	34*(2.7)	47 (3.2)	19 (2.1)	# (†)	66*(2.7)	19 (2.1)
South Dakota	238*(2.2)	54*(2.7)	36 (3.2)	10 (2.2)	# (†)	46*(2.7)	10*(2.2)

(†) Not applicable. Standard error estimate cannot be accurately determined.

# The estimate rounds to zero.

\* Significantly different from American Indian/Alaska Native students in the nation.

NOTE: National and state data presented in this table represent American Indian and Alaska Native students only. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-13.** Average scale scores and achievement-level results in reading, by race/ethnicity, grades 4 and 8: 2005

Race/ethnicity	Percentage of students	Average scale score	Percent					
			Below Basic	At Basic	At Proficient	At Advanced	At or above Basic	At or above Proficient
<b>Grade 4</b>								
American Indian/Alaska Native	1 (0.1)	204 (1.3)	52 (1.5)	30 (1.2)	15 (1.0)	3 (0.5)	48 (1.5)	18 (1.0)
White	59*(0.3)	229*(0.2)	24*(0.3)	35*(0.3)	31*(0.2)	10*(0.2)	76*(0.3)	41*(0.3)
Black	16*(0.3)	200*(0.3)	58*(0.5)	29 (0.5)	11*(0.3)	2*(0.2)	42*(0.5)	13*(0.3)
Hispanic	18*(0.2)	203 (0.5)	54 (0.7)	30 (0.4)	13 (0.4)	3 (0.2)	46 (0.7)	16 (0.5)
Asian/Pacific Islander	5*(0.1)	229*(0.7)	27*(0.9)	32 (1.1)	29*(0.9)	13*(0.8)	73*(0.9)	42*(0.9)
Unclassified	1 (0.0)	223*(1.3)	32*(1.9)	34 (2.3)	25*(2.5)	9*(1.2)	68*(1.9)	34*(2.2)
<b>Grade 8</b>								
American Indian/Alaska Native	1 (0.1)	249 (1.4)	41 (2.1)	41 (1.4)	16 (1.5)	1 (0.3)	59 (2.1)	17 (1.7)
White	61*(0.3)	271*(0.2)	18*(0.2)	43 (0.3)	35*(0.3)	4*(0.1)	82*(0.2)	39*(0.3)
Black	16*(0.3)	243*(0.4)	48*(0.6)	40 (0.5)	12*(0.4)	# (0.1)	52*(0.6)	12*(0.4)
Hispanic	16*(0.2)	246 (0.4)	44 (0.6)	41 (0.6)	14 (0.4)	1 (0.1)	56 (0.6)	15 (0.4)
Asian/Pacific Islander	4*(0.1)	271*(0.8)	20*(0.8)	40 (1.1)	35*(1.1)	6*(0.5)	80*(0.8)	40*(1.2)
Unclassified	1*(0.1)	266*(1.9)	24*(2.0)	40 (2.2)	32*(2.3)	4*(1.0)	76*(2.0)	36*(2.7)

# The estimate rounds to zero.

\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Unclassified students are those whose school-reported race/ethnicity was other or unavailable, or was missing, and whose race/ethnicity category could not be determined from self-reported information. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-14.** Average scale scores and achievement-level results in reading, by student group and eligibility for free or reduced-price school lunch, grades 4 and 8: 2005

Student group and eligibility category	Percentage of students	Average scale score	Percent						
			Below Basic	At Basic	At Proficient	At Advanced	At or above Basic	At or above Proficient	
<b>Grade 4</b>									
<b>American Indian/Alaska Native students</b>									
Eligible for free lunch	13 (1.0)	205 (2.5)	52 (3.9)	32 (4.1)	13 (2.7)	3 (1.8)	48 (3.9)	16 (2.5)	
Eligible for reduced-price lunch	52 (1.6)	194 (1.8)	62 (2.0)	26 (1.8)	10 (1.3)	2 (0.7)	38 (2.0)	12 (1.3)	
Not eligible	30 (1.4)	217 (1.8)	37 (2.3)	35 (2.3)	22 (1.9)	6 (1.1)	63 (2.3)	28 (2.1)	
Information not available	6 (1.5)	218 (8.7)	40 (12.7)	33 (8.8)	19 (6.2)	9 (3.8)	60 (12.7)	27 (8.2)	
<b>All other students</b>									
Eligible for free lunch	7*(0.1)	212*(0.4)	43* (0.7)	35 (0.7)	18 (0.5)	4 (0.3)	57* (0.7)	22 (0.5)	
Eligible for reduced-price lunch	34*(0.3)	201*(0.3)	56* (0.5)	30 (0.4)	12 (0.3)	2 (0.1)	44* (0.5)	14 (0.3)	
Not eligible	51*(0.3)	230*(0.2)	23* (0.2)	35 (0.3)	31*(0.2)	11*(0.2)	77* (0.2)	42*(0.3)	
Information not available	8 (0.3)	232 (0.9)	23 (1.1)	32 (1.2)	32 (1.1)	13 (0.7)	77 (1.1)	45 (1.4)	
<b>Grade 8</b>									
<b>American Indian/Alaska Native students</b>									
Eligible for free lunch	8 (0.8)	250 (3.4)	40 (5.2)	44 (5.1)	15 (3.0)	1 (‡)	60 (5.2)	16 (3.3)	
Eligible for reduced-price lunch	52 (2.3)	242 (1.6)	49 (2.6)	39 (2.0)	12 (2.0)	1 (‡)	51 (2.6)	12 2.0	
Not eligible	35 (1.8)	259 (2.0)	30 (3.2)	44 (3.1)	23 (2.2)	2 (0.7)	70 (3.2)	25 (2.6)	
Information not available	5 (1.0)	251 (5.2)	37 (10.8)	43(10.5)	19 (7.6)	1 (‡)	63 (10.8)	21 (7.1)	
<b>All other students</b>									
Eligible for free lunch	7 (0.1)	255 (0.7)	33 (0.8)	46 (0.9)	20 (0.6)	1 (0.2)	67 (0.8)	21 (0.7)	
Eligible for reduced-price lunch	29*(0.3)	245 (0.3)	45 (0.4)	41 (0.4)	13 (0.3)	1 (0.1)	55 (0.4)	14 (0.3)	
Not eligible	56*(0.4)	270*(0.2)	19* (0.3)	42 (0.3)	35*(0.3)	4*(0.1)	81* (0.3)	39*(0.2)	
Information not available	8*(0.3)	275*(1.1)	16 (1.0)	39 (1.0)	39*(1.1)	6 (0.5)	84 (1.0)	45*(1.3)	

(‡) Reporting standards not met. Standard error estimates cannot be accurately determined.

\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-15.** Average scale scores and achievement-level results in reading, by student group and gender, grades 4 and 8: 2005

Student group and gender	Percentage of students	Average scale score	Percent					
			Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>								
<b>American Indian/Alaska Native students</b>								
Male	51 (1.0)	199 (1.4)	57 (2.0)	29 (1.9)	12 (1.2)	2 (0.6)	43 (2.0)	15 (1.3)
Female	49 (1.0)	209 (1.6)	47 (1.9)	31 (1.8)	17 (1.6)	4 (1.0)	53 (1.9)	22 (1.6)
<b>All other students</b>								
Male	50 (0.2)	216*(0.2)	39*(0.4)	33 (0.3)	22*(0.3)	6*(0.1)	61*(0.4)	29*(0.3)
Female	50 (0.2)	222*(0.3)	33*(0.3)	33 (0.3)	26*(0.3)	9*(0.2)	67*(0.3)	35*(0.3)
<b>Grade 8</b>								
<b>American Indian/Alaska Native students</b>								
Male	51 (1.1)	244 (1.9)	46 (2.7)	40 (1.9)	13 (1.7)	1 (0.5)	54 (2.7)	15 (1.8)
Female	49 (1.1)	254 (1.7)	36 (2.7)	43 (2.4)	19 (2.2)	1 (0.4)	64 (2.7)	20 (2.4)
<b>All other students</b>								
Male	50 (0.2)	257*(0.2)	32*(0.3)	42 (0.3)	24*(0.2)	2 (0.1)	68*(0.3)	26*(0.3)
Female	50 (0.2)	268*(0.2)	22*(0.3)	42 (0.3)	32*(0.3)	4*(0.2)	78*(0.3)	36*(0.3)

\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-16.** Average scale scores and achievement-level results in reading, by student group and type of school location, grades 4 and 8: 2005

Student group and type of location	Percentage of students	Average scale score	Percent					
			Below Basic	At Basic	At Proficient	At Advanced	At or above Basic	At or above Proficient
<b>Grade 4</b>								
<b>American Indian/Alaska Native students</b>								
Central city	19 (1.3)	207 (2.3)	49 (3.5)	31 (3.7)	16 (2.3)	4 (1.2)	51 (3.5)	20 (2.4)
Urban fringe/large town	26 (2.3)	213 (2.5)	42 (4.2)	33 (4.4)	19 (2.7)	6 (1.5)	58 (4.2)	25 (2.9)
Rural/small town	55 (2.5)	198 (1.6)	58 (1.7)	28 (1.4)	12 (1.0)	2 (0.5)	42 (1.7)	14 (1.0)
<b>All other students</b>								
Central city	32*(0.3)	213*(0.4)	43 (0.6)	31 (0.4)	20 (0.3)	6 (0.2)	57 (0.6)	26*(0.4)
Urban fringe/large town	44*(0.3)	223*(0.3)	31*(0.4)	33 (0.3)	27*(0.3)	9 (0.2)	69*(0.4)	36*(0.4)
Rural/small town	24*(0.3)	220*(0.3)	34*(0.5)	35*(0.4)	25*(0.4)	7*(0.2)	66*(0.5)	31*(0.4)
<b>Grade 8</b>								
<b>American Indian/Alaska Native students</b>								
Central city	19 (1.4)	250 (2.0)	41 (2.8)	41 (2.8)	16 (2.3)	2 (1.1)	59 (2.8)	18 (2.2)
Urban fringe/large town	25 (2.3)	254 (2.3)	34 (3.3)	44 (2.8)	20 (2.2)	1 (†)	66 (3.3)	22 (2.4)
Rural/small town	56 (2.3)	246 (2.0)	44 (3.0)	40 (2.2)	15 (2.1)	1 (0.4)	56 (3.0)	15 (2.1)
<b>All other students</b>								
Central city	31*(0.4)	257*(0.4)	33*(0.5)	41 (0.3)	24*(0.4)	3 (0.1)	67*(0.5)	26*(0.4)
Urban fringe/large town	43*(0.4)	266*(0.3)	24*(0.4)	41 (0.3)	31*(0.3)	4 (0.1)	76*(0.4)	35*(0.3)
Rural/small town	25*(0.3)	263*(0.4)	25*(0.4)	44 (0.4)	28*(0.4)	2*(0.2)	75*(0.4)	31*(0.4)

(†) Not applicable. Standard error estimate cannot be accurately determined.

\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-17.** Average scale scores and achievement-level results in reading, by student group and student-reported highest level of education of either parent, grade 8: 2005

Student group and highest level of parental education	Percentage of students	Average scale score	Percent						
			Below Basic	At Basic	At Proficient	At Advanced	At or above Basic	At or above Proficient	
<b>American Indian/Alaska Native students</b>									
Less than high school	10 (0.9)	240 (2.9)	51 (7.0)	41 (6.8)	8 (3.0)	# (†)	49 (7.0)	8 (3.0)	
Graduated from high school	22 (1.0)	245 (1.9)	47 (3.5)	39(3.5)	13 (2.1)	1 (†)	53 (3.5)	14 (2.2)	
Some education after high school	24 (2.0)	257 (4.7)	32 (5.4)	45(4.3)	22 (5.5)	2 (†)	68 (5.4)	24 (5.6)	
Graduated from college	31 (1.8)	257 (1.8)	32 (2.6)	44(2.3)	22 (2.3)	2 (1.2)	68 (2.6)	24 (2.3)	
Unknown	13 (0.9)	236 (2.7)	55 (3.8)	38(4.3)	8 (1.9)	# (†)	45 (3.8)	8 (2.0)	
<b>All other students</b>									
Less than high school	7*(0.1)	244 (0.5)	46 (0.7)	42(0.7)	12 (0.5)	# (0.1)	54 (0.7)	12 (0.5)	
Graduated from high school	17*(0.2)	253*(0.4)	36*(0.6)	45(0.6)	18 (0.4)	1 (0.1)	64*(0.6)	19*(0.4)	
Some education after high school	17*(0.1)	266 (0.2)	22 (0.4)	46(0.5)	30 (0.4)	2 (0.2)	78 (0.4)	32 (0.4)	
Graduated from college	48*(0.2)	272*(0.2)	18*(0.3)	40(0.4)	37*(0.3)	5*(0.2)	82*(0.3)	42*(0.3)	
Unknown	10*(0.1)	243*(0.4)	48 (0.5)	40(0.6)	12 (0.5)	# (0.1)	52 (0.5)	12*(0.5)	

(†) Not applicable. Standard error estimate cannot be accurately determined.

# The estimate rounds to zero.

\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same parental education category.

NOTE: Results are based on the national NAEP sample. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-18.** Average scale scores and achievement-level results in mathematics, by student group, grades 4 and 8: 2005

Student group	Average scale score	Percent					
		Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>							
American Indian/Alaska Native students	226 (0.9)	32 (1.5)	47 (1.8)	19 (1.1)	2 (0.5)	68 (1.5)	21 (1.2)
All other students	238*(0.1)	20*(0.2)	44 (0.2)	31*(0.2)	5*(0.1)	80*(0.2)	37*(0.2)
<b>Grade 8</b>							
American Indian/Alaska Native students	264 (0.9)	47 (1.3)	40 (1.6)	12 (1.2)	2 (0.4)	53 (1.3)	14 (1.2)
All other students	279*(0.2)	31*(0.2)	39 (0.2)	24*(0.2)	6*(0.1)	69*(0.2)	30*(0.2)

\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

NOTE: Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-19.** Mathematics scale scores at selected percentiles, by student group, grades 4 and 8: 2005

Student group	Percentile				
	10th	25th	50th	75th	90th
<b>Grade 4</b>					
American Indian/Alaska Native students	190 (1.6)	208 (1.8)	227 (0.9)	246 (0.8)	261 (0.8)
All other students	201*(0.3)	220*(0.2)	240*(0.2)	258*(0.2)	273*(0.2)
<b>Grade 8</b>					
American Indian/Alaska Native students	221 (2.0)	243 (2.0)	265 (1.6)	286 (1.9)	304 (2.6)
All other students	232*(0.3)	256*(0.3)	280*(0.2)	304*(0.2)	324*(0.3)

\* Results for American Indian/Alaska Native students were significantly different from those of all other students.

NOTE: Standard errors of the estimates appear in parentheses.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 National Indian Education Study.



**Table A-20.** Average scale scores and achievement-level results in mathematics, by student group and region, grades 4 and 8: 2005

Student group and region	Percentage of students	Average scale score	Percent					
			Below Basic	At Basic	At Proficient	At Advanced	At or above Basic	At or above Proficient
<b>Grade 4</b>								
<b>American Indian/Alaska Native students</b>								
Atlantic	12 (2.3)	230 (3.6)	30 (6.7)	42 (5.2)	26 (4.2)	2 (1.2)	70 (6.7)	28 (4.6)
North Central	15 (1.3)	229 (1.6)	29 (2.4)	48 (2.7)	20 (2.2)	3 (1.3)	71 (2.4)	23 (2.5)
South Central	26 (1.8)	231 (1.4)	22 (2.4)	55 (2.3)	21 (1.9)	2 (0.9)	78 (2.4)	23 (2.0)
Mountain	27 (1.8)	218 (1.7)	43 (3.0)	45 (2.7)	12 (1.5)	1 (†)	57 (3.0)	13 (1.5)
Pacific	20 (1.4)	227 (2.0)	33 (3.7)	44 (4.4)	21 (2.5)	2 (1.3)	67 (3.7)	23 (2.8)
<b>All other students</b>								
Atlantic	36*(0.3)	240*(0.2)	17 (0.3)	44 (0.3)	33 (0.3)	6 (0.2)	83 (0.3)	39*(0.3)
North Central	22*(0.2)	240*(0.3)	18*(0.5)	43 (0.5)	34*(0.4)	6 (0.3)	82*(0.5)	39*(0.5)
South Central	18*(0.2)	237*(0.3)	20 (0.4)	47*(0.5)	30*(0.5)	4 (0.2)	80 (0.4)	33*(0.5)
Mountain	7*(0.1)	235*(0.4)	22*(0.6)	44 (0.6)	29*(0.5)	4 (0.3)	78*(0.6)	33*(0.7)
Pacific	17 (0.2)	234*(0.5)	25 (0.6)	43 (0.6)	28*(0.6)	5 (0.3)	75 (0.6)	32*(0.8)
<b>Grade 8</b>								
<b>American Indian/Alaska Native students</b>								
Atlantic	9 (1.0)	269 (3.0)	42 (5.5)	43 (6.7)	12 (3.8)	3 (1.5)	58 (5.5)	15 (3.9)
North Central	15 (1.5)	264 (1.9)	47 (3.6)	39 (3.9)	13 (2.3)	1 (0.8)	53 (3.6)	14 (2.4)
South Central	24 (1.6)	269 (1.6)	37 (3.1)	47 (2.9)	14 (2.1)	2 (0.7)	63 (3.1)	16 (2.2)
Mountain	31 (2.5)	256 (2.0)	57 (2.5)	34 (3.9)	9 (3.1)	1 (0.4)	43 (2.5)	10 (3.1)
Pacific	20 (1.5)	267 (2.2)	44 (3.5)	39 (3.5)	15 (2.8)	3 (1.4)	56 (3.5)	18 (2.8)
<b>All other students</b>								
Atlantic	36*(0.3)	281*(0.4)	29*(0.4)	39 (0.4)	25*(0.4)	7*(0.2)	71*(0.4)	32*(0.4)
North Central	23*(0.2)	283*(0.4)	26*(0.4)	40 (0.5)	27*(0.6)	7*(0.3)	74*(0.4)	34*(0.6)
South Central	18*(0.2)	276*(0.4)	34 (0.5)	41 (0.5)	21*(0.5)	5*(0.2)	66 (0.5)	26*(0.5)
Mountain	7*(0.1)	278*(0.5)	31*(0.7)	40 (0.6)	24*(0.5)	5*(0.2)	69*(0.7)	29*(0.6)
Pacific	17*(0.3)	274*(0.5)	37 (0.7)	36 (0.5)	20 (0.5)	6 (0.3)	63 (0.7)	26*(0.5)

(†) Not applicable. Standard error estimate cannot be accurately determined.

\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same region.

NOTE: Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-21.** Average scale scores and achievement-level results in mathematics for American Indian/Alaska Native students only, by nation and selected states, grades 4 and 8: 2005

State	Average scale score	Percent					
		Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>							
Nation	226 (0.9)	32 (1.5)	47 (1.8)	19 (1.1)	2 (0.5)	68 (1.5)	21 (1.2)
Alaska	220*(1.3)	43*(2.4)	42 (2.3)	14*(1.7)	2 (0.5)	57*(2.4)	15*(1.6)
Arizona	215*(3.2)	49*(4.9)	39 (4.7)	12*(2.4)	# (†)	51*(4.9)	12*(2.3)
Montana	223 (2.3)	38 (4.1)	45 (3.4)	16 (2.8)	1 (†)	62 (4.1)	17 (2.7)
New Mexico	215*(1.4)	46*(3.2)	46 (2.9)	7*(1.6)	# (†)	54*(3.2)	7*(1.6)
North Dakota	221*(1.8)	37 (4.1)	51 (4.1)	11 (3.5)	# (†)	63 (4.1)	12*(3.5)
Oklahoma	229 (1.4)	24*(2.3)	55*(2.1)	20 (2.0)	1 (0.6)	76*(2.3)	21 (2.1)
South Dakota	217*(1.8)	44*(3.1)	46 (3.1)	10*(1.9)	1 (0.4)	56*(3.1)	11*(1.9)
<b>Grade 8</b>							
Nation	264 (0.9)	47 (1.3)	40 (1.6)	12 (1.2)	2 (0.4)	53 (1.3)	14 (1.2)
Alaska	264 (1.8)	47 (3.5)	38 (3.3)	13 (1.6)	2 (0.5)	53 (3.5)	15 (1.5)
Arizona	256 (4.3)	58 (6.5)	33 (6.3)	8 (2.2)	1 (†)	42 (6.5)	9 (2.2)
Montana	259 (2.1)	52 (3.7)	37 (4.1)	10 (1.8)	# (†)	48 (3.7)	11 (2.0)
New Mexico	251*(1.9)	64*(3.5)	32 (3.8)	4*(1.2)	# (†)	36*(3.5)	4*(1.2)
North Dakota	260 (2.3)	53 (3.6)	39 (3.6)	8 (2.2)	# (†)	47 (3.6)	9 (2.2)
Oklahoma	267 (1.9)	40 (3.1)	45 (3.0)	14 (2.2)	1 (0.5)	60 (3.1)	15 (2.2)
South Dakota	250*(2.8)	63*(3.1)	29*(2.8)	8 (1.3)	1 (†)	37*(3.1)	8*(1.4)

(†) Not applicable. Standard error estimate cannot be accurately determined.

# The estimate rounds to zero.

\* Significantly different from American Indian/Alaska Native students in the nation.

NOTE: National and state data presented in this table represent American Indian and Alaska Native students only. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-22.** Average scale scores and achievement-level results in mathematics, by race/ethnicity, grades 4 and 8: 2005

Race/ethnicity	Percentage of students	Average scale score	Percent					At or above Basic	At or above Proficient
			Below Basic	At Basic	At Proficient	At Advanced			
<b>Grade 4</b>									
American Indian/Alaska Native	1 (0.1)	226 (0.9)	32 (1.5)	47 (1.8)	19 (1.1)	2 (0.5)	68 (1.5)	21 (1.2)	
White	58*(0.3)	246*(0.1)	10*(0.2)	42*(0.2)	40*(0.3)	7*(0.2)	90*(0.2)	47*(0.2)	
Black	16*(0.2)	220*(0.3)	40*(0.5)	47 (0.6)	12*(0.3)	1*(0.1)	60*(0.5)	13*(0.3)	
Hispanic	19*(0.2)	226 (0.3)	32 (0.5)	49 (0.5)	18 (0.3)	1 (0.1)	68 (0.5)	19 (0.3)	
Asian/Pacific Islander	4*(0.1)	251*(0.7)	10*(0.5)	35*(0.9)	41*(1.1)	14*(0.8)	90*(0.5)	55*(1.1)	
Unclassified	1 (0.0)	241*(0.9)	16*(1.2)	44 (2.0)	34*(2.1)	6*(1.0)	84*(1.2)	40*(2.1)	
<b>Grade 8</b>									
American Indian/Alaska Native	1 (0.0)	264 (0.9)	47 (1.3)	40 (1.6)	12 (1.2)	2 (0.4)	53 (1.3)	14 (1.2)	
White	61*(0.3)	289*(0.2)	20*(0.2)	42 (0.3)	31*(0.2)	8*(0.2)	80*(0.2)	39*(0.3)	
Black	16*(0.2)	255*(0.4)	58*(0.5)	33*(0.4)	8*(0.2)	1*(0.1)	42*(0.5)	9*(0.3)	
Hispanic	16*(0.2)	262*(0.4)	48 (0.6)	38 (0.6)	12 (0.4)	1 (0.1)	52 (0.6)	13 (0.4)	
Asian/Pacific Islander	5*(0.1)	295*(0.9)	19*(0.8)	34*(1.0)	31*(1.1)	16*(0.9)	81*(0.8)	47*(1.2)	
Unclassified	1*(0.1)	280*(1.9)	30*(2.7)	40 (2.3)	24*(1.6)	6*(1.0)	70*(2.7)	30*(2.1)	

\* Significantly different from American Indian/Alaska Native students.

NOTE: Results are based on the national NAEP sample. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Unclassified students are those whose school-reported race/ethnicity was other or unavailable, or was missing, and whose race/ethnicity category could not be determined from self-reported information. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-23.** Average scale scores and achievement-level results in mathematics, by student group and eligibility for free or reduced-price school lunch, grades 4 and 8: 2005

Student group and eligibility category	Percentage of students	Average scale score	Percent								
			Below Basic	At Basic	At Proficient	At Advanced	At or above Basic	At or above Proficient			
<b>Grade 4</b>											
<b>American Indian/Alaska Native students</b>											
Eligible for free lunch	11 (0.8)	229 (2.4)	29 (3.9)	47 (4.4)	21 (3.6)	2 (‡)	71 (3.9)	23 (3.6)			
Eligible for reduced-price lunch	53 (1.7)	219 (1.1)	40 (2.9)	47 (3.0)	12 (1.2)	1 (0.2)	60 (2.9)	12 (1.2)			
Not eligible	30 (1.2)	238 (1.2)	18 (1.7)	47 (2.2)	31 (2.1)	4 (1.3)	82 (1.7)	35 (2.1)			
Information not available	5 (1.3)	225 (7.5)	32 (11.0)	51 (9.1)	16 (5.9)	1 (‡)	68 (11.0)	17 (5.4)			
<b>All other students</b>											
Eligible for free lunch	7*(0.1)	234 (0.4)	21 (0.6)	50 (0.6)	26 (0.7)	2 (0.2)	79 (0.6)	29 (0.7)			
Eligible for reduced-price lunch	35*(0.3)	224*(0.2)	35 (0.3)	48 (0.3)	16*(0.2)	1*(0.1)	65* (0.3)	17*(0.2)			
Not eligible	50*(0.3)	248*(0.2)	10* (0.2)	41* (0.3)	42*(0.3)	8*(0.2)	90* (0.2)	50*(0.3)			
Information not available	8 (0.3)	244 (0.7)	13 (0.7)	42 (1.0)	38*(1.2)	7 (0.6)	87 (0.7)	45*(1.2)			
<b>Grade 8</b>											
<b>American Indian/Alaska Native students</b>											
Eligible for free lunch	10 (1.0)	265 (3.1)	48 (5.2)	37 (5.9)	13 (4.6)	2 (1.5)	52 (5.2)	15 (4.3)			
Eligible for reduced-price lunch	53 (1.9)	257 (1.2)	56 (1.8)	35 (2.7)	8 (2.1)	1 (0.3)	44 (1.8)	9 (2.2)			
Not eligible	33 (1.7)	276 (1.3)	31 (2.5)	47 (2.8)	19 (2.0)	3 (1.1)	69 (2.5)	22 (2.1)			
Information not available	3 (0.7)	264 (3.2)	43 (10.1)	45 (11.6)	11 (5.7)	1 (0.4)	57 (10.1)	11 (5.8)			
<b>All other students</b>											
Eligible for free lunch	7*(0.1)	270 (0.6)	39 (0.9)	42 (0.9)	17 (0.6)	2 (0.2)	61 (0.9)	19 (0.6)			
Eligible for reduced-price lunch	29*(0.3)	260*(0.3)	51* (0.5)	36 (0.4)	11 (0.2)	1 (0.1)	49* (0.5)	12 (0.3)			
Not eligible	56*(0.4)	289*(0.2)	20* (0.2)	41 (0.3)	30*(0.2)	9*(0.2)	80* (0.2)	39*(0.3)			
Information not available	8*(0.3)	289*(1.2)	21* (1.1)	39 (0.8)	30*(1.1)	10*(0.6)	79* (1.1)	40*(1.4)			

(‡) Reporting standards not met. Standard error estimates cannot be accurately determined.

\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same eligibility category.

NOTE: Results are based on the national NAEP sample. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study

**Table A-24.** Average scale scores and achievement-level results in mathematics, by student group and gender, grades 4 and 8: 2005

Student group and gender	Percentage of students	Average scale score	Percent					
			Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>								
<b>American Indian/Alaska Native students</b>								
Male	48 (1.1)	228 (1.2)	29 (1.9)	48 (1.9)	20 (1.6)	3 (0.8)	71 (1.9)	23 (1.7)
Female	52 (1.1)	225 (1.2)	34 (2.4)	46 (2.7)	18 (1.5)	1 (0.6)	66 (2.4)	19 (1.6)
<b>All other students</b>								
Male	51*(0.2)	239*(0.2)	19*(0.2)	43*(0.2)	33*(0.2)	6*(0.1)	81*(0.2)	39*(0.2)
Female	49*(0.2)	237*(0.2)	20*(0.2)	45 (0.2)	30*(0.3)	4*(0.1)	80*(0.2)	34*(0.3)
<b>Grade 8</b>								
<b>American Indian/Alaska Native students</b>								
Male	49 (1.1)	266 (1.5)	45 (2.0)	40 (2.2)	13 (2.3)	2 (0.5)	55 (2.0)	15 (2.4)
Female	51 (1.1)	262 (1.1)	48 (1.8)	39 (2.1)	12 (1.2)	1 (0.6)	52 (1.8)	13 (1.2)
<b>All other students</b>								
Male	50 (0.2)	280*(0.2)	30*(0.3)	39 (0.3)	24*(0.3)	7*(0.2)	70*(0.3)	31*(0.3)
Female	50 (0.2)	278*(0.2)	31*(0.3)	40 (0.3)	23*(0.2)	5*(0.1)	69*(0.3)	29*(0.3)

\* Results for American Indian/Alaska Native students were significantly different from those of all other students of the same gender.

NOTE: Results are based on the national NAEP sample. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-25.** Average scale scores and achievement-level results in mathematics, by student group and type of school location, grades 4 and 8: 2005

Student group and type of location	Percentage of students	Average scale score	Percent					
			Below <i>Basic</i>	At <i>Basic</i>	At <i>Proficient</i>	At <i>Advanced</i>	At or above <i>Basic</i>	At or above <i>Proficient</i>
<b>Grade 4</b>								
<b>American Indian/Alaska Native students</b>								
Central city	21 (1.4)	231 (1.8)	27 (2.7)	46 (3.6)	24 (2.5)	3 (1.3)	73 (2.7)	27 (2.5)
Urban fringe/large town	26 (2.6)	230 (2.4)	28 (3.9)	45 (3.8)	23 (2.5)	3 (1.2)	72 (3.9)	26 (2.8)
Rural/small town	52 (2.9)	222 (1.0)	35 (2.0)	49 (2.1)	15 (1.5)	1 (0.4)	65 (2.0)	16 (1.5)
<b>All other students</b>								
Central city	32*(0.3)	233 (0.3)	26 (0.4)	43 (0.3)	26 (0.3)	5 (0.2)	74 (0.4)	31 (0.4)
Urban fringe/large town	44*(0.3)	241*(0.2)	16*(0.3)	43 (0.3)	35*(0.3)	6*(0.2)	84*(0.3)	41*(0.4)
Rural/small town	24*(0.3)	238*(0.3)	17*(0.3)	47 (0.4)	32*(0.4)	4*(0.2)	83*(0.3)	36*(0.5)
<b>Grade 8</b>								
<b>American Indian/Alaska Native students</b>								
Central city	19 (1.4)	268 (2.0)	39 (3.7)	44 (4.8)	14 (2.2)	2 (1.0)	61 (3.7)	16 (2.4)
Urban fringe/large town	24 (1.8)	271 (1.9)	39 (2.8)	43 (3.5)	14 (2.4)	3 (1.2)	61 (2.8)	18 (2.6)
Rural/small town	57 (2.0)	260 (1.3)	52 (1.7)	37 (2.2)	11 (2.0)	1 (0.3)	48 (1.7)	11 (2.0)
<b>All other students</b>								
Central city	31*(0.3)	273*(0.4)	38 (0.5)	36 (0.3)	20*(0.4)	6*(0.2)	62 (0.5)	25*(0.5)
Urban fringe/large town	43*(0.4)	283*(0.3)	27*(0.3)	39 (0.3)	27*(0.3)	7*(0.2)	73*(0.3)	34*(0.3)
Rural/small town	25*(0.3)	280*(0.4)	28*(0.4)	43*(0.4)	24*(0.4)	5*(0.2)	72*(0.4)	29*(0.5)

\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same type of school location.

NOTE: Results are based on the national NAEP sample. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

**Table A-26.** Average scale scores and achievement-level results in mathematics, by student group and student-reported highest level of education of either parent, grade 8: 2005

Student group and highest level of parental education	Percentage of students	Average scale score	Percent						
			Below Basic	At Basic	At Proficient	At Advanced	At or above Basic	At or above Proficient	
<b>American Indian/Alaska Native students</b>									
Less than high school	8 (0.7)	253 (2.4)	62 (4.5)	34 (5.1)	4 (1.8)	# (†)	38 (4.5)	4 (1.9)	
Graduated from high school	24 (1.6)	260 (2.0)	51 (3.7)	39 (3.8)	9 (1.8)	1 (0.6)	49 (3.7)	10 (1.9)	
Some education after high school	21 (1.3)	268 (2.2)	40 (3.5)	46 (4.3)	13 (2.7)	1 (†)	60 (3.5)	14 (2.8)	
Graduated from college	35 (1.5)	273 (1.6)	36 (2.3)	42 (3.1)	19 (3.0)	3 (0.8)	64 (2.3)	22 (3.0)	
Unknown	13 (0.9)	250 (2.5)	65 (4.3)	31 (4.5)	4 (1.7)	# (†)	35 (4.3)	4 (1.8)	
<b>All other students</b>									
Less than high school	7 (0.1)	259*(0.5)	52*(0.8)	37 (0.6)	10*(0.4)	1 (0.1)	48*(0.8)	11*(0.4)	
Graduated from high school	18*(0.1)	268*(0.3)	42*(0.4)	41 (0.5)	15*(0.4)	2 (0.1)	58*(0.4)	17*(0.4)	
Some education after high school	17*(0.1)	280*(0.3)	26*(0.5)	45 (0.6)	24*(0.4)	4 (0.2)	74*(0.5)	28*(0.4)	
Graduated from college	47*(0.2)	290*(0.2)	20*(0.2)	38 (0.3)	32*(0.3)	10*(0.2)	80*(0.2)	42*(0.3)	
Unknown	11*(0.1)	261*(0.4)	50*(0.6)	37 (0.6)	12*(0.3)	2 (0.1)	50*(0.6)	14*(0.3)	

(†) Not applicable. Standard error estimate cannot be accurately determined.

# The estimate rounds to zero.

\* Results for American Indian/Alaska Native students were significantly different from those of all other students in the same parental education category.

NOTE: Results are based on the national NAEP sample. Standard errors of the estimates appear in parentheses. 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), 2005 National Indian Education Study.

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