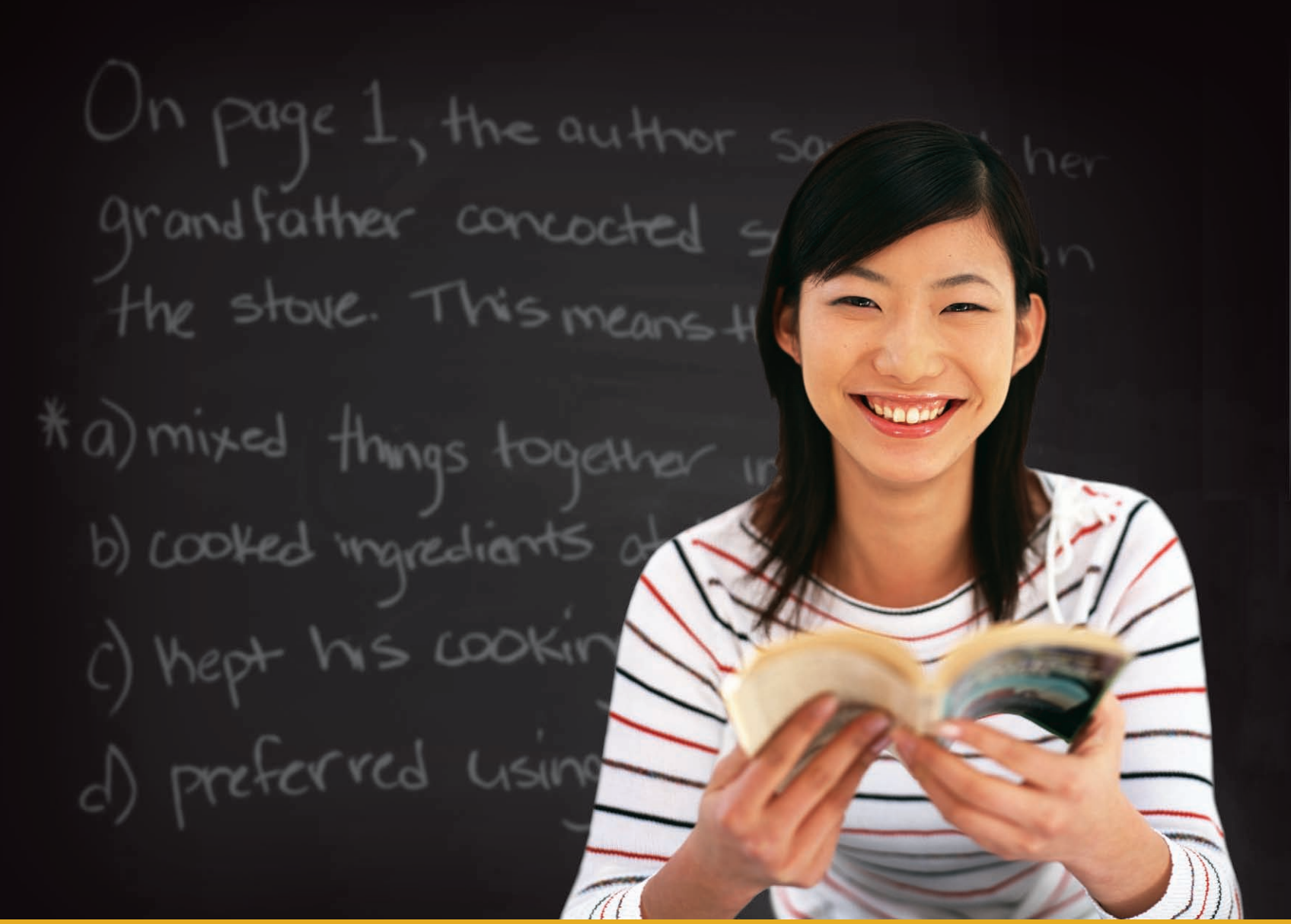


The Nation's Report Card

Vocabulary Results From the 2009 and 2011 NAEP Reading Assessments

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

ies NATIONAL CENTER FOR EDUCATION STATISTICS
Institute of Education Sciences

U.S. Department of Education
NCES 2013–452

Contents

What Is The Nation's Report Card™?

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

Since 1969, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, U.S. history, civics, geography, and other subjects. NAEP collects and reports information on student performance at the national and state levels, making the assessment an integral part of our nation's evaluation of the condition and progress of education. Only academic achievement data and related background information are collected. The privacy of individual students and their families is protected.

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

A New Focus on Word Meaning

Beginning in 2009, the National Assessment of Educational Progress (NAEP) integrated a measure of students' understanding of word meaning with the measurement of passage comprehension in the NAEP reading assessment. The decision to focus on students' understanding of word meaning emphasized the important role vocabulary plays in the process of reading comprehension. To understand the overall topic or theme, students need to integrate their knowledge of individual words—or a sense of these words—with the way the words are used in particular passages. For example, a reader may understand the meaning of "acute" in the context of mathematics to describe the angles of a triangle, but may not have encountered the word used to describe human emotions, as in "acute embarrassment." Having a sense of words that is sufficiently flexible helps readers extend their understanding of the word and understand its use in a new context.

Understanding word meaning has always been essential to reading comprehension. Whether reading the printed page or a computer screen, a strong sense of word meaning provides a basis for greater comprehension in an increasingly fast-paced world.

NAEP assesses vocabulary in a way that aims to capture students' ability to use their understanding or sense of words to acquire meaning from the passages they read. Unlike traditional tests of vocabulary that ask students to write definitions of words in isolation, NAEP always assesses word meaning within the context of particular passages. Students are asked to demonstrate their understanding of words by recognizing what meaning the word contributes to the passage in which it appears.

How did students perform?

Students who scored higher on NAEP vocabulary questions also scored higher in reading comprehension.

Fourth- and eighth-grade vocabulary scores did not change significantly from 2009 to 2011.

There was no significant gender gap in vocabulary at grade 12.

Introduction

This report presents results for student performance on the systematic measure of vocabulary included in the 2009 and 2011 NAEP reading assessments. While previous NAEP assessments had included some vocabulary questions, the new framework for the 2009 assessment provided criteria for developing vocabulary questions as well as prescribing the number of questions to be included in each comprehension section of the assessment. This systematic assessment of vocabulary allows for NAEP to more fully assess the impact of vocabulary knowledge on students' comprehension and makes it possible to report on students' vocabulary performance. Vocabulary questions are designed to assess how well students are able to use words to gain meaning from the passages they read. NAEP vocabulary questions assess whether readers know a word well enough to use it to comprehend the sentence or paragraph in which the word occurs.

Vocabulary results from the 2009 reading assessment are based on nationally representative samples of 116,600 fourth-graders, 103,400 eighth-graders, and 44,500 twelfth-graders. Results from the 2011 assessment are based on samples of 213,100 students at grade 4 and 168,200 students at grade 8. The reading assessment was not administered at grade 12 in 2011.

The NAEP Reading Framework

The National Assessment Governing Board oversees the development of NAEP frameworks that describe the specific knowledge and skills that should be assessed in each subject. The new reading framework, which guided the development of the 2009 and 2011 reading assessments, defines reading as an active, complex process that involves understanding text, developing and interpreting meaning from text, and using meaning as appropriate to type of text, purpose, and situation. The framework, citing the large body of research that supports the link between vocabulary and comprehension, recognizes vocabulary as fundamental to the active process of reading comprehension across all levels of schooling. As a component of the reading assessment, all vocabulary questions measure students' ability to apply word knowledge in order to develop and interpret meaning.

EXPLORE ONLINE

The complete reading framework that guided the 2011 reading assessment is available at http://www.nagb.org/publications/frameworks/reading-2011-framework.pdf.

The Assessment Design

Vocabulary questions appeared in two different types of sections of the reading assessment: comprehension sections and vocabulary sections. The sections differed in the length of the reading texts they included and in the number of vocabulary questions. The vocabulary questions in the comprehension sections are included within a larger set of questions and are based on longer passages. Examples of vocabulary questions from reading comprehension sections are available on the Web at http://nces.ed.gov/nationsreportcard.gov/reading_2011/voc_summary.asp.

There were a total of 40 vocabulary questions in the 2011 fourth-grade assessment, 56 in the eighth-grade assessment, and 47 in the 2009 twelfth-grade assessment. No one student responded to all of the vocabulary questions for a particular grade. For more information, see the Technical Notes section.

VOCABULARY QUESTIONS WERE INCLUDED IN TWO TYPES OF SECTIONS

Comprehension

Full-length passages containing up to:

- 800 words at grade 4
- 1,000 words at grade 8
- 1,200 words at grade 12

Approximately 10 multiple-choice and constructed-response questions, 2 of which were multiple-choice vocabulary questions

Vocabulary

Shorter passages containing up to:

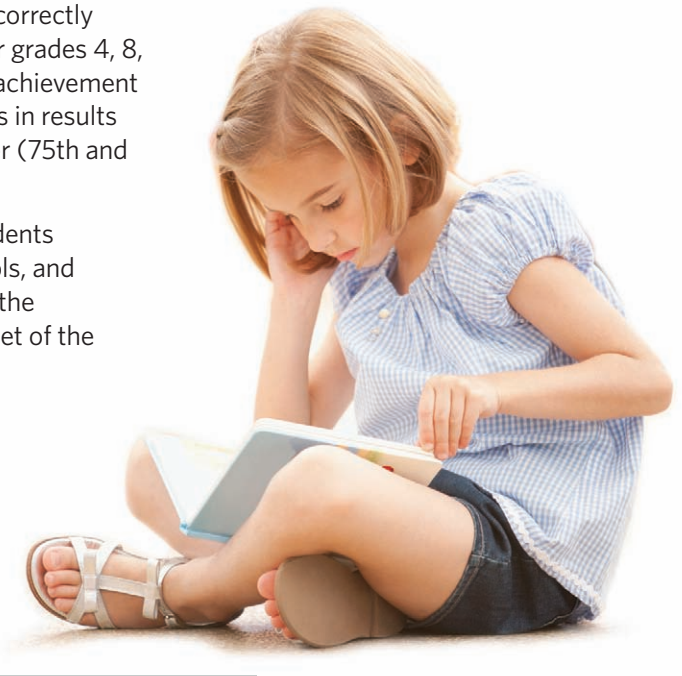
- 400 words at grade 4
- 500 words at grade 8
- 600 words at grade 12

Approximately 5 multiple-choice questions, all of which were vocabulary questions

Reporting NAEP Vocabulary Results

NAEP vocabulary results are reported as the percentages of students who correctly answered vocabulary questions and as average scores on a 0–500 scale for grades 4, 8, and 12. While vocabulary results cannot be reported in terms of the NAEP achievement levels (*Basic*, *Proficient*, and *Advanced*), scores are reported to show patterns in results for students performing at lower (10th and 25th), middle (50th), and higher (75th and 90th) percentiles.

The national results presented in this report reflect the performance of students attending public schools, private schools, Bureau of Indian Education schools, and Department of Defense schools. Results for states and jurisdictions reflect the performance of students in public schools only and are compared to a subset of the nation that also includes only public school students.



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

National Results

How have fourth- and eighth-grade vocabulary scores changed since 2009?

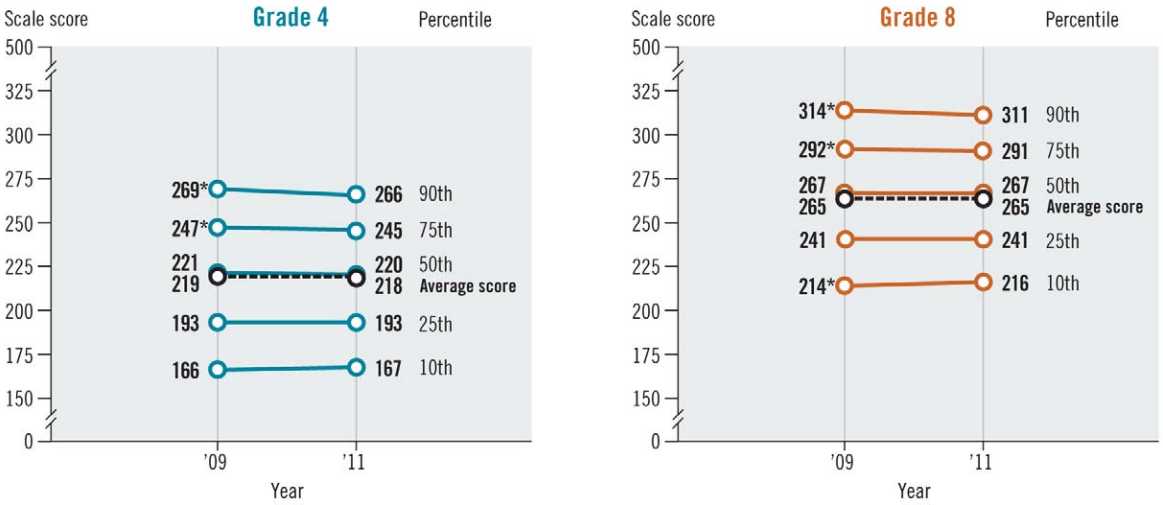
NAEP vocabulary results are available for 2009 and 2011 at grades 4 and 8. As grade 12 was not assessed in 2011, results for twelfth-grade students are available for 2009 only.

The overall average vocabulary scores for fourth- and eighth-grade students in 2011 were not significantly different from 2009, but there were some changes in the scores for students performing at selected percentiles on the vocabulary scale (**figure 1**).

At grade 4, scores were lower in 2011 than in 2009 for higher-performing students at the 75th and 90th percentiles.

At grade 8, lower-performing students at the 10th percentile scored higher in 2011 than in 2009. Eighth-graders at the 75th and 90th percentiles scored lower in 2011 than in 2009.

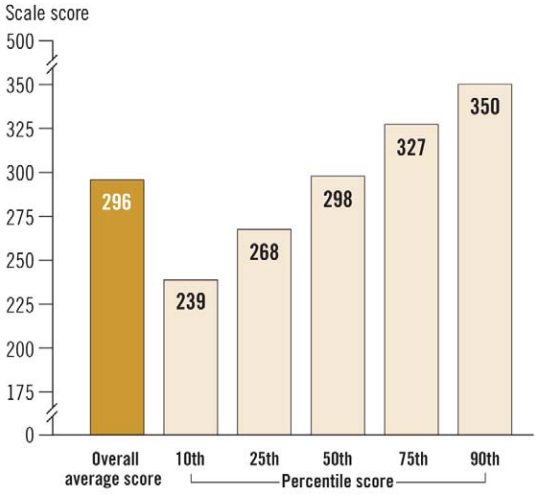
Figure 1. Average scores and percentile scores in NAEP vocabulary at grades 4 and 8: 2009 and 2011



* Significantly different ($p < .05$) from 2011.

At grade 12, the overall average vocabulary score in 2009 was 296 and the percentile scores ranged from 239 for students at the 10th percentile to 350 for those performing at the 90th percentile (**figure 2**).

Figure 2. Average scores and percentile scores in NAEP vocabulary at grade 12: 2009



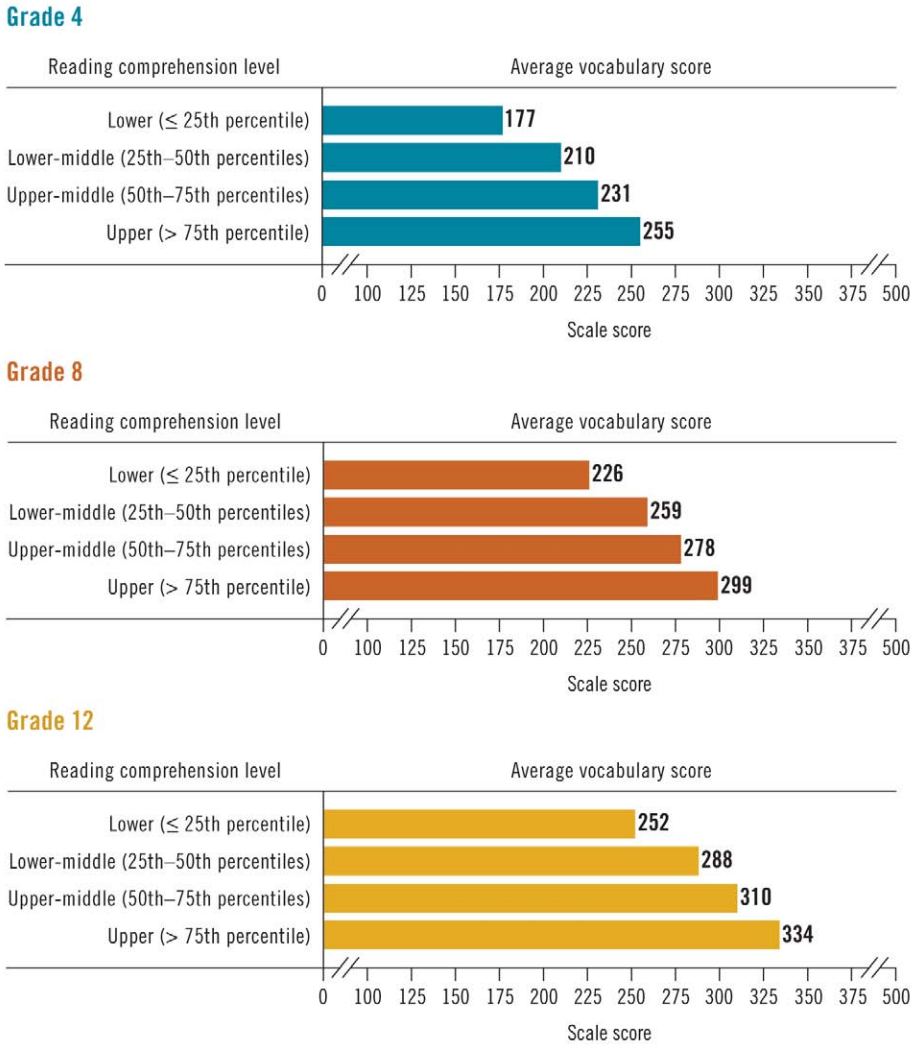
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

How does vocabulary performance relate to reading comprehension?

Both the NAEP reading comprehension and vocabulary scores are reported on 0–500 scales, but because the two scales were developed independently, the results cannot be directly compared. It is possible, however, to look at the vocabulary scores in relation to the performance of students at the lower, middle, and upper quartiles in reading comprehension.

Students who performed well on the vocabulary questions also performed well in reading comprehension (**figure 3**). For example, fourth-grade students performing above the 75th percentile in reading comprehension in 2011 also had the highest average vocabulary score. Lower-performing fourth-graders at or below the 25th percentile in reading comprehension had the lowest average vocabulary score. Similar differences were found in the results for grade 8 in 2011 and for grade 12 in 2009.

Figure 3. Average scores in NAEP vocabulary at grades 4, 8, and 12, by reading comprehension level: 2009 and 2011



NOTE: The results for grades 4 and 8 are from the 2011 reading assessment, and the results for grade 12 are from the 2009 assessment.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

How do lower- and higher-performing students differ demographically?

	Among students who scored **below the 25th percentile** on the vocabulary scale	Among students who scored **above the 75th percentile** on the vocabulary scale
Grade 4	Among fourth-graders who scored **below the 25th percentile** on the vocabulary scale (i.e., below a score of 193) in 2011 • **33%** were White **25%** were Black **35%** were Hispanic • **73%** were eligible for free/ reduced-price school lunch • **24%** were English language learners	Among fourth-graders who scored **above the 75th percentile** on the vocabulary scale (i.e., above a score of 245) in 2011 • **72%** were White **7%** were Black **10%** were Hispanic • **24%** were eligible for free/ reduced-price school lunch • **2%** were English language learners
Grade 8	Among eighth-graders who scored **below the 25th percentile** on the vocabulary scale (i.e., below a score of 241) in 2011 • **34%** were White **25%** were Black **33%** were Hispanic • **68%** were eligible for free/ reduced-price school lunch	Among eighth-graders who scored **above the 75th percentile** on the vocabulary scale (i.e., above a score of 291) in 2011 • **74%** were White **6%** were Black **10%** were Hispanic • **21%** were eligible for free/ reduced-price school lunch
Grade 12	Among twelfth-graders who scored **below the 25th percentile** on the vocabulary scale (i.e., below a score of 268) in 2009 • **40%** were White **26%** were Black **27%** were Hispanic • **31%** reported at least one parent graduated from college	Among twelfth-graders who scored **above the 75th percentile** on the vocabulary scale (i.e., above a score of 327) in 2009 • **79%** were White **5%** were Black **7%** were Hispanic • **70%** reported at least one parent graduated from college

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

How do student groups differ in vocabulary performance?

As highlighted in the key findings below, average vocabulary scores for student groups sometimes varied by grade.

Race/ ethnicity	For each of the three grades, average vocabulary scores for White and Asian/Pacific Islander students were higher than the scores for Black, Hispanic, and American Indian/Alaska Native students. Differences in average vocabulary scores between White and Asian/ Pacific Islander students varied by grade: — At grade 4, there was no significant difference in vocabulary scores between White and Asian/Pacific Islander students in 2011. — At grade 8, White students scored higher in vocabulary than Asian/Pacific Islander students in 2011. — At grade 12, there was no significant difference in vocabulary scores between the two groups in 2009. The White – Hispanic score gap in vocabulary narrowed from 2009 to 2011 at grade 8.
Gender	Female students scored higher on average than male students in NAEP vocabulary at grades 4 and 8 in 2011. At grade 12 in 2009, there was no significant difference in vocabulary scores between male and female students.
Family income	At both grades 4 and 8, the average vocabulary scores for students who were eligible for free or reduced-price school lunch (an indicator of low family income) were lower than the scores for students who were not eligible in 2011.
Students with disabilities	At all three grades, students with disabilities scored lower on average in vocabulary than students without disabilities.
English language learners	At all three grades, average vocabulary scores were lower for English language learners than for non-English language learners. Eighth-grade English language learners scored higher in vocabulary in 2011 than in 2009.

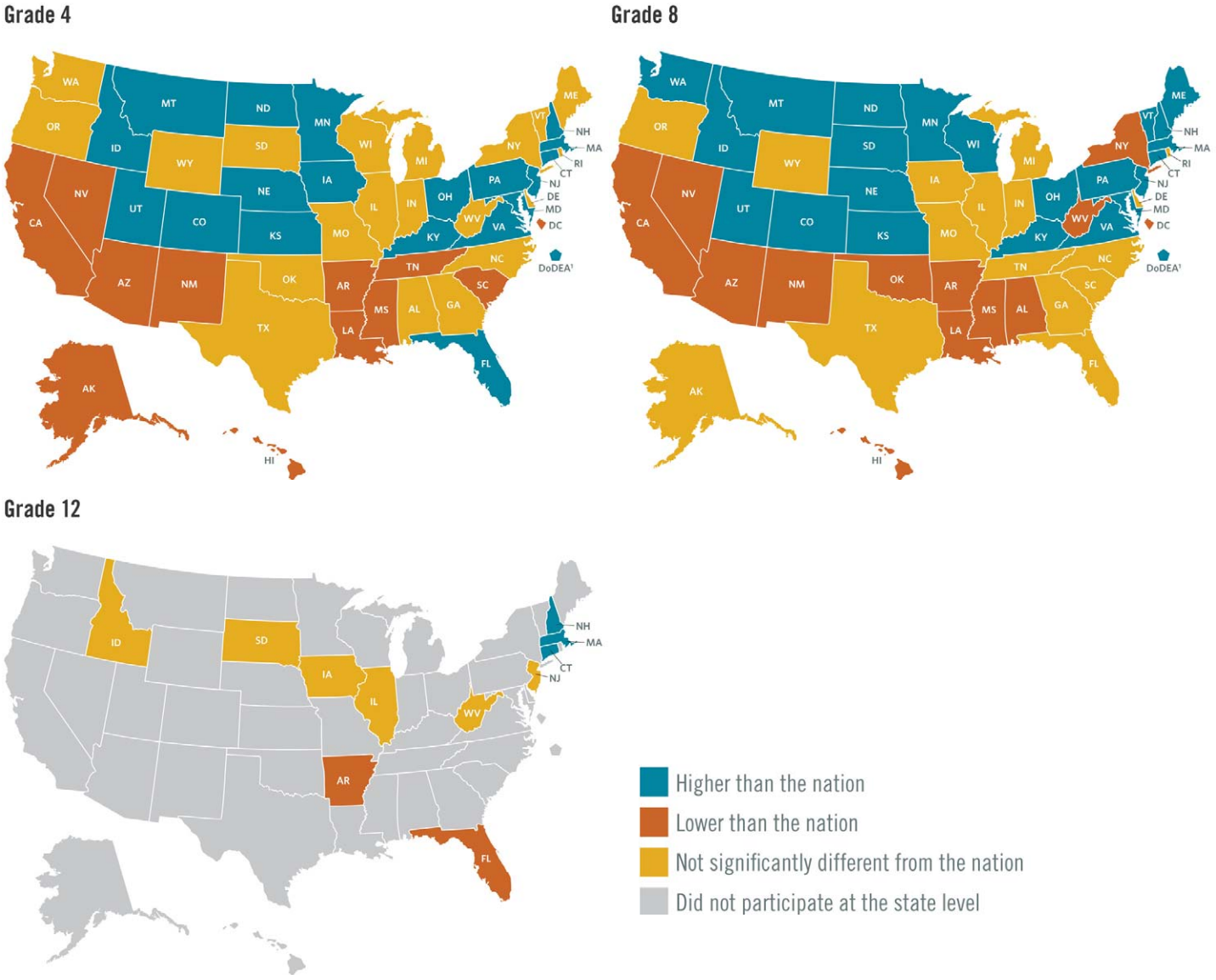
NOTE: Prior to 2011, data for Asian and Native Hawaiian/Other Pacific Islander students were only available for a single combined Asian/Pacific Islander category. Results for the separate categories in 2011 are available in appendix tables A-1 and A-2.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

State Results

Vocabulary results are available for 50 states, the District of Columbia, and Department of Defense schools in 2011 at grades 4 and 8, and for the 11 states that volunteered to participate in the 2009 state pilot program at grade 12. Vocabulary scores for both fourth- and eighth-graders in 18 states/jurisdictions were higher than the national averages in 2011 (**figure 4**). See appendix **tables A-4** through **A-6** for additional state results including results from 2009 for grades 4 and 8.

Figure 4. Comparison of state/jurisdiction and national average scores in NAEP vocabulary at grades 4, 8, and 12: 2009 and 2011



[1] Department of Defense Education Activity (overseas and domestic schools).
NOTE: The results for grades 4 and 8 are from the 2011 reading assessment, and the results for grade 12 are from the 2009 assessment.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

How does the performance of female and male students on vocabulary questions compare at the state level?

Of the 52 states and jurisdictions that participated in the 2011 reading assessment, there were no significant differences in the average vocabulary scores for female and male students at both grades 4 and 8 in 30 states/jurisdictions. In three states (Florida, New Hampshire, and North Carolina), female students scored higher on average than male students in 2011 at both grades 4 and 8.

Although not shown here, there were no significant gender gaps in vocabulary scores for any of the 11 states that participated in the 2009 twelfth-grade assessment.

No significant gender gaps at both grades 4 and 8 in 2011

30 states/jurisdictions

Alabama	New Mexico
Alaska	New York
Arizona	North Dakota
Connecticut	Ohio
Delaware	Oklahoma
Hawaii	Oregon
Iowa	South Carolina
Kentucky	South Dakota
Maine	Tennessee
Maryland	Texas
Massachusetts	Vermont
Minnesota	West Virginia
Montana	Wisconsin
Nebraska	Wyoming
New Jersey	DoDEA[1]

No significant gender gap at grade 4, while female students scored higher than male students at grade 8 in 2011

9 states/jurisdictions

Arkansas	Michigan
California	Nevada
District of Columbia	Utah
Idaho	Washington
Illinois	

No significant gender gap at grade 8 in 2011, while female students scored higher than male students at grade 4

10 states

Colorado	Mississippi
Georgia	Missouri
Indiana	Pennsylvania
Kansas	Rhode Island
Louisiana	Virginia

[1] Department of Defense Education Activity (overseas and domestic schools).

EXPLORE ONLINE

See how states rank based on their average reading comprehension and vocabulary scores at http://nationsreportcard.gov/reading_2011/voc_state.asp.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Reading Assessment.

NAEP Vocabulary Questions

As described in the NAEP reading framework, vocabulary questions are both a measure of passage comprehension and a measure of students' understanding of specific words. All vocabulary questions ask about words as they are used in the context of passages that students read. Students are not asked to provide written definitions of words in isolation because the NAEP assessment measures reading comprehension. NAEP vocabulary takes into account that word meaning is not fixed, but depends on the context in which the word appears. In addition, the framework recognizes that a reader may not be able to provide a written definition of a word, but may be able to understand the word's meaning well enough so that passage comprehension is not impeded. On the other hand, a reader may be able to associate a word with a definition but not be able to apply that definition to building understanding of a particular context that uses the word.

All questions on the NAEP reading assessment measure one of three cognitive targets as specified in the framework: locate and recall, integrate and interpret, and critique and evaluate. All of the vocabulary questions are classified as integrate and interpret. In responding to a NAEP vocabulary question, students use their understanding of the word to interpret a part of the passage. Options other than the correct answer may provide another meaning of the word or may be an interpretation that correctly reflects passage content but does not reflect the meaning of the word. To choose the correct answer, students must recognize how the selected word contributes to the meaning in the passage they are reading. It is this intersection of word knowledge and passage comprehension that typifies NAEP vocabulary questions.

Criteria for selecting vocabulary words

The reading framework specifies the characteristics of words appropriate for vocabulary questions and how those words should relate to the content of the passage. In general, words were selected to be characteristic of written language as opposed to words common to everyday speech. Another criterion for word selection was that the word could be used across a variety of content areas as opposed to technical words used only in specialized content. Words appropriate for vocabulary questions denote concepts, feelings, or actions that students may have knowledge about, although the vocabulary word denoting the concept, feeling, or action is likely not part of students' speaking vocabulary. The vocabulary questions measure students' ability to connect an appropriate meaning to the word in order to gain comprehension of the passage.

Language criteria

- Characteristic of written language as opposed to conversational oral language
- Used across content areas, as opposed to technical terms specific to one content area
- Represent familiar concepts, even if the word itself may not be known

Passage criteria

- Plays an important content-bearing role in all or part of the passage
- May be related to central idea, but does not name the central idea of the passage
- Meaning is not defined by the context

Grade 4

The following sample questions are from a vocabulary section that was part of the 2011 fourth-grade reading assessment. This section included a short passage entitled, "Ducklings Come Home to Boston," about how the sculptor Nancy Schön came to create statues of ducklings for the Boston Public Garden. The section included five vocabulary questions about the passage, two of which are presented here.

On page 1, the passage says that the duckling statues "were created by the sculptor Nancy Schön." This means that Ms. Schön

- **A made the duckling statues**
- B wrote a book about duckling statues
- C liked the duckling statues
- D lined the duckling statues in a row

Ducklings Come Home to Boston

by Pamela Waterman

What has eighteen legs, shines in the sun, and loves children? A set of eight bronze duckling statues with their mother, that's what! They are made for hugging, climbing on, and "feeding." They were created by the sculptor Nancy Schön (pronounced "shern"). She based them on the ducklings in the famous children's book *Make Way for Ducklings*.

The ducklings in the book hatched from the drawing pencil of author Robert McCloskey back in 1941. In the story, the ducklings followed their proud mother around the Public Garden in Boston, Massachusetts. They learned to "walk in a line, to come when they were called, and to keep a safe distance from bikes and scooters and other things with wheels." But the duckling statues started in a very different way almost fifty years later.

Ms. Schön, who had been making sculptures of people for years, noticed that children love to play with animal statues. At the same time, the six-year-old twin boys of an English friend of hers visited the Public Garden. They had read *Make Way for Ducklings*, and they were puzzled. "Mummy, where are the ducks?" they asked.

Ms. Schön's friend suggested that she bring the famous little birds to life. Mr. McCloskey himself was delighted with the idea. He encouraged the sculptor to start by copying his own drawings.

"Just to be different, I chose eight of the poses of the ducks that I liked best," explains Ms. Schön. She then lined them up behind Mrs. Mallard. She wanted to remind people how the ducklings in the book waddled from the Charles River, across busy Beacon Street, and right into the Public Garden.

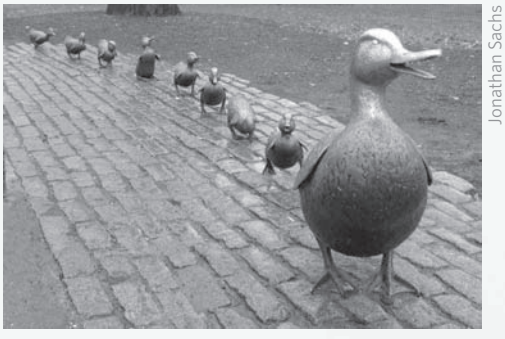
Deciding how big the ducks should be was an important question. Mr. McCloskey himself came to the art studio to help. To get a better look, they dragged the clay models outside on a snowy February day. Just then a group of children at the preschool next door came out and stopped short in surprise.

Page 1

76% of fourth-grade students used their knowledge of the word **"created"** to select the correct interpretation.

Incorrect selections

- **Option B**, chosen by 12 percent of fourth-graders, is a misinterpretation of the context in which the word occurs.
- **Option C**, chosen by 5 percent of fourth-graders, is also a misinterpretation.
- **Option D**, chosen by 7 percent of fourth-graders, presents correct information from the passage, but is not the meaning of the word "created."



Jonathan Sachs

"Come along, children. Follow me," says Mrs. Mallard.

Ms. Schön laughs as she remembers. "The children came running and screaming and started to pat and hug them. It was so exciting!" There was no doubt now—the ducklings were perfect. The bronze statues were ready to be made.

In October 1987, two large and sixteen small webbed feet lined up and came to stay in the Boston Public Garden. Mrs. Mallard stands more than three feet tall, and her children—"Jack, then Kack, and then Lack, followed by Mack and Nack and Ouack and Pack and Quack"—trail proudly behind her, waddling on old rounded Boston cobblestones. Their bright eyes sparkle, inviting children of all ages to touch, hug, and play with them, just as Ms. Schön wanted.

On page 1, the passage says that some boys were **puzzled** when they visited the Public Garden. This means the boys were

- (A) trying to follow the ducks
- (B) hoping to play games with the ducks
- (C) surprised that there were so many ducks
- (D) **confused that there were no ducks**

Page 2

➤ **51%** of fourth-grade students used their knowledge of the word **"puzzled"** to select the correct interpretation.

Incorrect selections

- **Option A**, chosen by 10 percent of fourth-graders, is a misinterpretation of the context in which the word occurs.
- **Option B**, chosen by 6 percent of fourth-graders, presents correct information from the passage, but is not the meaning of the word "puzzled."
- **Option C**, chosen by 32 percent of fourth-graders, presents a misinterpretation of the part of the passage where the word appears.

Grade 8

The following sample questions are from a vocabulary section that was part of the 2011 eighth-grade reading assessment. This section included a short passage entitled, "Mint Snowball," a first-person narrative expressing nostalgia for less modern times. The section included six vocabulary questions about the passage, two of which are presented here.

On page 1, the author says that mint syrup *permeated* the shaved ice. This means that the mint syrup

- (A) caused the shaved ice to melt slightly
- (B) formed the shaved ice into clumps
- **(C) spread all the way through the shaved ice**
- (D) made the shaved ice taste better

51% of eighth-graders used their knowledge of the word **"permeated"** to select the correct interpretation.

Mint Snowball

by Naomi Shihab Nye

Color Pictures, Inc. (Eva Tuchotka)

My great-grandfather on my mother's side ran a drugstore in a small town in central Illinois. He sold pills and rubbing alcohol from behind the big cash register and creamy ice cream from the soda fountain. My mother remembers the counter's long polished sweep, its shining face. She twirled on the stools. Dreamy fans. Wide summer afternoons. Clink of nickels in anybody's hand. He sold milkshakes, cherry cokes, old fashioned sandwiches. What did an old fashioned sandwich look like? Dark wooden shelves. Silver spigots on chocolate dispensers.

My great-grandfather had one specialty: a Mint Snowball which he invented. Some people drove all the way in from Decatur just to taste it. First he stirred fresh mint leaves with sugar and secret ingredients in a small pot on the stove for a very long time. He concocted a flamboyant elixir of mint. Its scent clung to his fingers even after he washed his hands. Then he shaved ice into tiny particles and served it mounted in a glass dish. Permeated with mint syrup. Scoops of rich vanilla ice cream to each side. My mother took a bite of minty ice and ice cream mixed together. The Mint Snowball tasted like winter. She closed her eyes to see the Swiss village my great-grandfather's parents came from. Snow frosting the roofs. Glistening, dangling spokes of ice.

Page 1

Incorrect selections

- **Option A**, chosen by 18 percent of eighth-graders, is a misinterpretation of the context in which the word occurs.
- **Option B**, chosen by 6 percent of eighth-graders, is also a misinterpretation.
- **Option D**, chosen by 24 percent of eighth-graders, presents correct information from the passage, but is not the meaning of the word.

Before my great-grandfather died, he sold the recipe for the mint syrup to someone in town for one hundred dollars. This hurt my grandfather's feelings. My grandfather thought he should have inherited it to carry on the tradition. As far as the family knew, the person who bought the recipe never used it. At least not in public. My mother had watched my great-grandfather make the syrup so often she thought she could replicate it. But what did he have in those little unmarked bottles? She experimented. Once she came close. She wrote down what she did. Now she has lost the paper.

Perhaps the clue to my entire personality connects to the lost Mint Snowball. I have always felt out-of-step with my environment, disjointed in the modern world. The crisp flush of cities makes me weep. Strip centers, poodle grooming, and take-out Thai. I am angry over lost department stores, wistful for something I have never tasted or seen.

Although I know how to do everything one needs to know—change airplanes, find my exit off the interstate, charge gas, send a fax—there is something missing. Perhaps the stoop of my great-grandfather over the pan, the slow patient swish of his spoon. The spin of my mother on the high stool with her whole life in front of her, something fine and fragrant still to happen. When I breathe a handful of mint, even pathetic sprigs from my sunbaked Texas earth, I close my eyes. Little chips of ice on the tongue, their cool slide down. Can we follow the long river of the word "refreshment" back to its spring? Is there another land for me? Can I find any lasting solace in the color green?

On page 2, the author says that her mother "thought she could **replicate**" the great grandfather's mint syrup. This means the author's mother thought she could

- A buy back the mint syrup recipe
- **B make mint syrup that tasted like his**
- C remember how the mint syrup tasted
- D make a better mint syrup than his

➤ **89%** of eighth-grade students used their knowledge of the word **"replicate"** to select the correct interpretation.

Incorrect selections

- **Option A**, chosen by 2 percent of eighth-graders, is a misinterpretation of the context in which the word occurs.
- **Option C**, chosen by 7 percent of eighth-graders, presents correct information related to the theme of the passage, but is not the meaning of the word.
- **Option D**, chosen by 2 percent of eighth-graders, presents a misinterpretation of the part of the passage where the word appears.

Grade 12

The following sample questions are from a vocabulary section that was part of the 2009 twelfth-grade reading assessment. This section included a short passage entitled, "Capitalizing on the *Cognitive Niche*," in which Bill Gates argues that humans must embrace the digital age. The section included five vocabulary questions about the passage, two of which are presented here.

On page 1, the author says that we can mitigate the challenges of the digital age. He is suggesting that we can

- (A) expand research studies of technological problems
- (B) look forward to many technological advances
- (C) **lessen the problems caused by technology**
- (D) increase public awareness of technology

50% of twelfth-grade students used their knowledge of the word **"mitigate"** to select the correct interpretation.

Capitalizing on the "Cognitive Niche"

by Bill Gates

© MARIO TAMA/AFP/Getty Images

A DNA plate used for sequencing and mapping the human genome, Rockville, Maryland, 2000.

College dropout and computer whiz kid, corporate executive and philanthropist, William H. Gates (1955–) was born and raised in Seattle, Washington. His interest in computers, which began at the age of thirteen, led Gates to realize the potential of a standard operating platform for the computer era, and through the success of his company Microsoft, he became one of the world's richest men. Criticized for its monopolistic practices, Microsoft was sued by the United States government in the 1990's. In 2000, Gates established the Bill and Melinda Gates Foundation, which has become the world's largest philanthropy dedicated to improving health and education worldwide. The following essay was published in 1999.

Human beings are not the biggest animals. We're not the strongest or fastest. We're not the sharpest in sight or smell. It's amazing how we survived against the many fierce creatures of nature. We survived and prospered because of our brains. We evolved to fill the cognitive niche. We learned how to use tools, to build shelter, to invent agriculture, to domesticate livestock, to develop civilization and culture, to cure and prevent disease. Our tools and technologies have helped us to shape the environment around us.

I'm an optimist. I believe in progress. I'd much rather be alive today than at any time in history—and not just because in an earlier age my skill set wouldn't have been as valuable and I'd have been a prime candidate for some beast's dinner. The tools of the Industrial Age extended the capabilities of our muscles. The tools of the digital age extend the capabilities of our minds. I'm even happier for my children, who will come of age in this new world.

By embracing the digital age, we can accelerate the positive effects and mitigate the challenges, such as privacy and have-vs.-have-not. If we sit back and wait for the digital age to come to us

Page 1

Incorrect selections

- **Option A**, chosen by 22 percent of twelfth-graders, presents a misinterpretation of information from the essay.
- **Option B**, chosen by 22 percent of twelfth-graders, presents correct information from the essay that is not the meaning of the word.
- **Option D**, chosen by 6 percent of twelfth-graders, presents correct information from the essay that is not the meaning of the word.

on terms defined by others, we won't be able to do either. The Web lifestyle can increase citizen involvement in government. Many of the decisions to be made are political and social, not technical. These include how we ensure access for everyone and how we protect children. Citizens in every culture must engage on the social and political impact of digital technology to ensure that the new digital age reflects the society they want to create.

If we are reactive and let change overwhelm us or pass us by, we will perceive change negatively. If we are proactive, seek to understand the future now, and embrace change, the idea of the unexpected can be positive and uplifting. Astronomer Carl Sagan in his last book, *Billions and Billions*, said: "The prediction I can make with the highest confidence is that the most amazing discoveries will be the ones we are not today wise enough to foresee."

As tough and uncertain as the digital world makes it for business—it's evolve rapidly or die—we will all benefit. We're going to get improved products and services, more responsiveness to complaints, lower costs, and more choices. We're going to get better government and social services at substantially less expense.

This world is coming. A big part of it comes through businesses using a digital nervous system to radically improve their processes.

A digital nervous system can help business redefine itself and its role in the future, but energy or paralysis, success or failure, depends on business leaders. Only you can prepare your organization and make the investments necessary to capitalize on the rapidly dawning digital age.

Digital tools magnify the abilities that make us unique in the world: the ability to think, the ability to articulate our thoughts, the ability to work together to act on those thoughts. I strongly believe that if companies empower their employees to solve problems and give them potent tools to do this with, they will always be amazed at how much creativity and initiative will blossom forth.

Page 2

79% of twelfth-grade students used their knowledge of the word **"capitalize"** to select the correct interpretation.

On page 2, the author talks about making the investments necessary to **capitalize** on the digital age. He is referring to

- A locating new businesses in big cities
- B spending more money on technology than on people
- **C gaining advantages by using technology**
- D hiring strong leaders to improve the company

Incorrect selections

- **Option A**, chosen by 5 percent of twelfth-graders, refers to the idea of a capital city.
- **Option B**, chosen by 9 percent of twelfth-graders, presents an idea that reflects information in the essay but is not the meaning of the word.
- **Option D**, chosen by 7 percent of twelfth-graders, presents a misinterpretation of the context in which the word appears.

EXPLORE ONLINE

More examples of NAEP vocabulary questions from both the comprehension and vocabulary sections of the 2009 and 2011 reading assessments can be found in the NAEP Questions Tool at http://nces.ed.gov/nationsreportcard/itmrlsx/.

Results show students are able to understand a variety of words in context

The chart below shows only words from released comprehension and vocabulary sections and the proportion of students at each grade who understood how the words were used to convey meaning. As the assessment was administered at grade 12 in 2009 only, there are fewer words than at grades 4 and 8 for which results from two assessment years are available. Italicized words are from a section administered at both grades 8 and 12. Bolded words are those from sample questions presented in this report. The other words are from assessment passages and questions available at http://nationsreportcard.gov/reading_2011/voc_summary.asp.

	2009 and 2011		2009
	Grade 4	**Grade 8**	**Grade 12**
75% or more of students recognized the meaning of these words	**created** spread underestimate	*anecdotes* edible enticing grimace icons motivate **replicate** specialty	*anecdotes* **capitalize** prospective prospered reimburse
Between 50% and 74% of students recognized the meaning of these words	breakthrough cleared clenched gaze models outraged poses **puzzled** sparkle staggering striking suggested	concocted embedded laden **permeated** pressed responsible solace tolerate vast wistful	articulate **mitigate** proactive self-possessed
49% or less of students recognized the meaning of these words	barren detected eerie flourish prestigious	*urbane*	delusion *urbane*

NOTE: Fewer words are listed for grade 12 than for grades 4 and 8 because the grade 12 assessment was conducted in one year only.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

Technical Notes

Assessment Design

Vocabulary questions were administered as part of the 2009 and 2011 reading assessments to nationally representative samples of students. In 2009, a total of twenty-eight comprehension sections and ten vocabulary sections were administered at grades 4, 8, and 12. In 2011, nineteen comprehension sections and eight vocabulary sections were administered at grades 4 and 8. A proportion of the comprehension sections and vocabulary sections are developed to be administered across two grades. For example, the assessment design at grade 8 includes four comprehension sections administered at both grades 4 and 8, five sections administered at grade 8 only, and four sections administered at both grades 8 and 12. The assessment design for vocabulary sections includes two grade-specific sets and two cross-grade sets at each of the three grades. The NAEP reading assessment is administered every two years at grades 4 and 8, and every four years at grade 12. In 2011, when grade 12 was not assessed, the sections common to grades 8 and 12 were administered only at grade 8. The chart below presents the number of comprehension sections and vocabulary sections that were administered in 2009 and 2011.

Number of reading comprehension sections and vocabulary sections administered

	2009					2011			
	Grade 4	Grades 4 and 8	Grade 8	Grades 8 and 12	Grade 12	Grade 4	Grades 4 and 8	Grade 8	Grades 8 and 12
Comprehension sections	6	4	5	4	9	6	4	5	4
Vocabulary sections	2	2	2	2	2	2	2	2	2

When the assessment of meaning vocabulary along with other changes to the reading framework were first implemented as part of the 2009 assessment, special trend analyses were conducted to evaluate the impact of those changes on the comparability of scores from earlier assessment years. A summary of these special analyses and an overview of the differences between the previous framework and the 2009 framework are available on the Web at http://nces.ed.gov/nationsreportcard/reading/trend_study.asp. Students participating in the 2009 reading assessment were randomly assigned to take the old (2007) assessment, the new (2009) assessment, or a specially designed mixed assessment that contained material from both the old and new assessments. Participation rates for the 2009 and 2011 reading assessments are available at http://nationsreportcard.gov/reading_2009/participation.asp and http://nationsreportcard.gov/reading_2011/participation.asp.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

In 2009 at grades 4 and 8, approximately

- 33 percent of students took the reading assessment based on the old framework and did not respond to any vocabulary questions;
- 33 percent responded to two vocabulary questions from a new comprehension section;
- 30 percent responded to four vocabulary questions from two new comprehension sections; and
- 3 percent responded to 10–12 vocabulary questions from one new comprehension section and a section containing two new vocabulary sections.

Because state results were reported for the first time in 2009 at grade 12, the comparability of state results from previous years was not an issue so more students were assessed with the assessment developed under the new framework.

In 2009 at grade 12, approximately

- 15 percent of students took the reading assessment based on the old framework and did not respond to any vocabulary questions;
- 13 percent responded to two vocabulary questions from a new comprehension section;
- 62 percent responded to four vocabulary questions from two new comprehension sections; and
- 10 percent responded to 10–12 vocabulary questions from one new comprehension section and a section containing two new vocabulary sections.

In 2011, at grades 4 and 8, approximately 90 percent of students responded to four vocabulary questions (from two comprehension sections); and approximately 10 percent responded to 10–12 questions (from one comprehension section and one section containing two vocabulary sections).

Reporting Results

NAEP reports results using widely accepted statistical standards; findings are reported based on a statistical significance level set at .05 with appropriate adjustments for multiple comparisons. Only those differences that are found to be statistically significant are discussed as higher or lower.

Comparisons over time or between groups are based on statistical tests that consider both the size of the difference and the standard errors of the two statistics being compared. Standard errors are margins of error, and estimates based on smaller groups are likely to have larger margins of error. The size of the standard errors may also be influenced by other factors such as how representative the assessed students are of the entire population. When an estimate has a large standard error, a numerical difference that seems large may not be statistically significant. Standard errors for the estimates presented in this report are available at http://nces.ed.gov/nationsreportcard/naepdata/.

A score that is significantly higher or lower in comparison to an earlier assessment year is reliable evidence that student performance has changed. However, NAEP is not designed to identify the causes of these changes. Although comparisons are made in students' performance based on demographic characteristics, the results cannot be used to establish a cause-and-effect relationship between student characteristics and achievement. Many factors may influence student achievement, including educational policies and practices, available resources, and the demographic characteristics of the student body. Such factors may change over time and vary among student groups.

Race/Ethnicity

Prior to 2011, student race/ethnicity was obtained from school records and reported for the following six mutually exclusive categories. Students identified with more than one racial/ethnic group were classified as "other" and were included as part of the "unclassified" category, along with students who had a background other than the ones listed or whose race/ethnicity could not be determined.

RACIAL/ETHNIC CATEGORIES PRIOR TO 2011

- White
- Black
- Hispanic
- Asian/Pacific Islander
- American Indian/Alaska Native
- Other or unclassified

In compliance with standards from the U.S. Office of Management and Budget for collecting and reporting data on race/ethnicity, additional information was collected in 2011. This allows results to be reported separately for Asian students, Native Hawaiian/Other Pacific Islander students, and students identifying with two or more races. Beginning in 2011, all of the students participating in NAEP were identified as belonging in one of the following seven racial/ethnic categories.

RACIAL/ETHNIC CATEGORIES BEGINNING IN 2011

- White
- Black
- Hispanic
- Asian
- Native Hawaiian/Other Pacific Islander
- American Indian/Alaska Native
- Two or more races

As in earlier years, students identified as Hispanic were classified as Hispanic in 2011 even if they were also identified with another racial/ethnic group. Students identified with two or more of the other racial/ethnic groups (e.g., White and Black) would have been classified as "other" and reported as part of the "unclassified" category prior to 2011, and were classified as "two or more races" in 2011.

When comparing the 2011 results for racial/ethnic groups with results from 2009, the 2011 data for Asian and Native Hawaiian/Other Pacific Islander students were combined into a single Asian/Pacific Islander category.

National School Lunch Program

NAEP collects data on student eligibility for the National School Lunch Program (NSLP) as an indicator of low family income. Under the guidelines of NSLP, children from families with incomes at or below 130 percent of the poverty level are eligible for free meals. Those from families with incomes between 130 and 185 percent of the poverty level are eligible for reduced-price meals. (For the period July 1, 2011 through June 30, 2012, for a family of four, 130 percent of the poverty level was $29,055, and 185 percent was $41,348.) Some schools provide free meals to all students regardless of individual eligibility, using their own funds to cover the costs of non-eligible students. Under special provisions of the National School Lunch Act intended to reduce the administrative burden of determining student eligibility every year, schools can be reimbursed based on eligibility data for a single base year. Because students' eligibility for free or reduced-price school lunch may be underreported at grade 12, the results are not included in this report but are available in the NAEP Data Explorer at http://nces.ed.gov/nationsreportcard/naepdata/. For more information on NSLP, visit http://www.fns.usda.gov/cnd/lunch/.

Appendix Tables

Table A-1. Average scores and percentile scores in NAEP vocabulary at grade 4, by selected characteristics: 2009 and 2011

Characteristic	Overall average score		Percentile scores									
			10th percentile		25th percentile		50th percentile		75th percentile		90th percentile	
	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011
All students	**219**	**218**	**166**	**167**	**193**	**193**	**221**	**220**	**247***	**245**	**269***	**266**
Race/ethnicity												
White	230	229	182	183	206	207	231	231	255	254	275*	273
Black	202	201	153	153	177	177	203	202	229	226	250*	247
Hispanic	199	201	147	151	173	176	200	202	227	227	249	249
Asian/Pacific Islander	230	231	179	181	206	207	231	233	256	257	278	278
Asian	—	232	—	183	—	209	—	234	—	258	—	279
Native Hawaiian/Other Pacific Islander	—	210	—	159	—	187	—	212	—	236	—	258
American Indian/Alaska Native	207	202	154	151	179	176	208	203	235	229	259	251
Two or more races	225	224	174	175	200	200	228	226	252	250	273	270
Gender												
Male	218	217	164	164	192	192	220	220	246*	245	269*	266
Female	219	219	167	169	194	195	221	221	247	246	269	267
Eligibility for free/reduced-price school lunch												
Eligible	202	202	151	153	177	178	204	204	229	228	251*	249
Not eligible	232*	233	185*	188	208*	211	233*	235	256	257	276	276
Type of school												
Public	217	217	164	165	191	192	219	219	245*	244	267*	265
Private	232	233	185	188	209	212	234	235	257	257	277	276
Catholic	234	234	188	189	211	212	235	235	258	257	278	276
Status as students with disabilities (SD)												
SD	187	185	132	131	157	155	186	184	217	214	243	240
Not SD	222	222	172	174	197	198	224	224	249*	248	270*	268
Status as English language learners (ELL)												
ELL	178	182	131	135	153	158	179	182	204	206	226	226
Not ELL	223	222	172	174	198	199	224	224	249*	248	270*	268
Score gaps[1]												
White – Black	27	29	29	31	29	31	28	29	26	28	25	26
White – Hispanic	30	29	35	33	34	32	31	29	27	26	25	24
Female – Male	1	2	3	4	2	3	1	1	1	1	#	1
Not eligible – Eligible	29	31	33	35	32	33	29	30	27	28	26	27

— Not available. Prior to 2011, data for Asian and Native Hawaiian/Other Pacific Islander students were only available for a single combined Asian/Pacific Islander category.
Rounds to zero.
* Significantly different ($p < .05$) from 2011.
[1] The score gaps for each category are calculated based on the differences between the unrounded scores for the first student group minus the unrounded scores for the second student group.
NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Private schools include Catholic, other religious, and nonsectarian private schools. SD includes students identified as having either an Individualized Education Program or protection under Section 504 of the Rehabilitation Act of 1973.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

Table A-2. Average scores and percentile scores in NAEP vocabulary at grade 8, by selected characteristics: 2009 and 2011

Characteristic	Overall average score		Percentile scores									
			10th percentile		25th percentile		50th percentile		75th percentile		90th percentile	
	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011
All students	**265**	**265**	**214***	**216**	**241**	**241**	**267**	**267**	**292***	**291**	**314***	**311**
Race/ethnicity												
White	276	276	231	232	254	255	278	278	300	299	320*	318
Black	247	247	199	203	223	225	248	248	272	270	292	289
Hispanic	246	249	194*	201	221*	226	249	250	273	273	294	293
Asian/Pacific Islander	272	271	221	222	247	249	274	274	298	297	319	318
Asian	—	273	—	224	—	250	—	275	—	299	—	319
Native Hawaiian/Other Pacific Islander	—	250	—	203	—	226	—	253	—	275	—	296
American Indian/Alaska Native	249	252	202	206	225	230	250	253	275	276	294	295
Two or more races	266	273	220	228	243	250	268	274	292	297	312	317
Gender												
Male	263	264	211*	214	238	240	265	265	290	290	311	310
Female	268	267	217	219	243	243	270	268	294*	292	316*	313
Eligibility for free/reduced-price school lunch												
Eligible	248	249	198*	203	224*	227	250	251	274	273	295	293
Not eligible	275*	277	230*	233	253*	256	277	279	300	300	319	319
Type of school												
Public	263	263	212*	215	238	240	265	265	290	289	311*	310
Private	286	285	244	243	264	264	287	286	309	307	328	325
Catholic	282	285	241	243	261	264	283	286	304	306	323	325
Status as students with disabilities (SD)												
SD	230	231	178*	182	202	205	230	231	258	256	281	279
Not SD	269	269	221*	223	245	246	270	270	294	293	315*	313
Status as English language learners (ELL)												
ELL	213*	219	166	175	188*	196	213*	219	239	241	260	260
Not ELL	268	268	219*	221	244	245	269	269	294	292	315*	312
Score gaps[1]												
White – Black	30	29	31	29	31	30	30	29	29	29	28	29
White – Hispanic	30*	28	37*	31	33*	29	29	27	27	26	26	25
Female – Male	5	3	6	5	5	3	5	3	4	2	4	3
Not eligible – Eligible	28	28	32	30	30	29	27	28	26	27	25	26

— Not available. Prior to 2011, data for Asian and Native Hawaiian/Other Pacific Islander students were only available for a single combined Asian/Pacific Islander category.

* Significantly different ($p < .05$) from 2011.

[1] The score gaps for each category are calculated based on the differences between the unrounded scores for the first student group minus the unrounded scores for the second student group.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Private schools include Catholic, other religious, and nonsectarian private schools. SD includes students identified as having either an Individualized Education Program or protection under Section 504 of the Rehabilitation Act of 1973.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

Table A-3. Average scores and percentile scores in NAEP vocabulary at grade 12, by selected characteristics: 2009

Characteristic	Overall average score	Percentile scores				
		10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
All students	**296**	**239**	**268**	**298**	**327**	**350**
Race/ethnicity						
White	307	254	281	309	335	357
Black	272	220	246	273	300	322
Hispanic	276	223	249	277	304	327
Asian/Pacific Islander	304	246	275	307	334	357
American Indian/Alaska Native	281	230	259	284	307	328
Two or more races	310	260	282	309	340	361
Gender						
Male	296	236	266	298	327	351
Female	297	242	269	298	326	350
Highest level of parental education						
Did not finish high school	274	222	248	274	302	325
Graduated from high school	280	226	252	281	309	333
Some education after high school	294	242	268	295	321	343
Graduated from college	309	255	283	311	338	360
Status as students with disabilities (SD)						
SD	262	201	230	263	295	322
Not SD	299	244	271	300	328	352
Status as English language learners (ELL)						
ELL	240	193	217	243	266	286
Not ELL	298	242	269	299	327	351
Score gaps[1]						
White – Black	35	34	35	36	36	35
White – Hispanic	31	31	32	32	31	30
Female – Male	1	5	2	#	-1	-2

Rounds to zero.

[1] The score gaps for each category are calculated based on the differences between the unrounded scores for the first student group minus the unrounded scores for the second student group.

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Private schools include Catholic, other religious, and nonsectarian private schools. SD includes students identified as having either an Individualized Education Program or protection under Section 504 of the Rehabilitation Act of 1973.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Reading Assessment.

Table A-4. Average scores in NAEP vocabulary for public school students at grade 4, by selected characteristics and state/jurisdiction: 2009 and 2011

State/jurisdiction	All students		Race/ethnicity									
			White		Black		Hispanic		Asian/ Pacific Islander		American Indian/ Alaska Native	
	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011
Nation (public)	**217**	**217**	**229**	**228**	**202**	**200**	**198**	**200**	**229**	**230**	**209**	**203**
Alabama	216	217	225	227	200	200	194	199	‡	‡	‡	‡
Alaska	210	207	223	221	203	203	208	208	200	197	188	180
Arizona	209	211	225	226	207	203	195	198	‡	226	196	188
Arkansas	217*	213	227	222	195	192	193	195	‡	213	‡	‡
California	205	208	227	228	200	207	189	193	227	232	‡	‡
Colorado	225	222	238	236	215	206	198	197	238	231	‡	‡
Connecticut	225	223	235	235	208	198	195	198	234	236	‡	‡
Delaware	226	221	236	231	214	209	211	209	‡	236	‡	‡
Florida	223	221	232	235	207	204	216	213	238	234	‡	‡
Georgia	217	218	229	230	204	203	200	211	‡	233	‡	‡
Hawaii	205	208	217	221	‡	207	205	205	204	206	‡	‡
Idaho	220	221	225	226	‡	‡	196	201	‡	224	‡	‡
Illinois	215	215	231	230	192	190	191	195	246	230	‡	‡
Indiana	222*	217	227	223	210*	195	190	198	‡	‡	‡	‡
Iowa	223*	219	228	224	198	193	196	196	‡	224	‡	‡
Kansas	226	224	232	230	209	203	209	206	‡	227	‡	‡
Kentucky	222	222	224	224	204	207	204	214	‡	242	‡	‡
Louisiana	205	206	220	220	192	190	‡	201	‡	‡	‡	‡
Maine	220	219	221	220	‡	189	‡	‡	‡	209	‡	‡
Maryland	223	226	235	239	208	207	206	217	240	246	‡	‡
Massachusetts	232	233	239	240	214	205	207	209	238	239	‡	‡
Michigan	214	215	222	222	187	186	197	198	226	232	‡	‡
Minnesota	221	221	229	230	192	193	189	196	213	216	197	196
Mississippi	212	208	227	221	199	194	‡	199	‡	‡	‡	‡
Missouri	222	219	227	225	202	197	208	204	‡	228	‡	‡
Montana	225	223	228	227	‡	‡	‡	214	‡	‡	204	197
Nebraska	220	222	226	229	200	197	199	202	‡	230	‡	‡
Nevada	208	210	219	224	198	201	196	197	215	219	‡	‡
New Hampshire	227	227	228	228	‡	‡	214	211	‡	230	‡	‡
New Jersey	224	224	233	234	206	209	202	204	245	240	‡	‡
New Mexico	205	202	224	222	‡	200	197	194	‡	219	188	185
New York	219	216	230	227	204	202	202	199	227	226	‡	‡
North Carolina	220	217	231	230	206	200	198	198	236	231	205	196
North Dakota	228	227	230	230	‡	214	‡	212	‡	‡	211	207
Ohio	222	221	228	227	201	198	207	198	‡	‡	‡	‡
Oklahoma	219	218	224	223	200	201	203	206	‡	228	219	218
Oregon	220	218	226	226	‡	203	196	194	225	232	213	215
Pennsylvania	220*	225	226*	232	194	199	204	199	234	237	‡	‡
Rhode Island	219	217	228	225	206	200	196	198	216	226	‡	‡
South Carolina	212	211	225	224	194	194	193	201	‡	‡	‡	‡
South Dakota	225	218	229	223	‡	199	‡	202	‡	‡	204	193
Tennessee	217	214	226	221	193	196	195	192	‡	232	‡	‡
Texas	220	216	235	233	216	208	209	206	248	246	‡	‡
Utah	218	220	225	226	‡	‡	187	193	212	216	‡	187
Vermont	224	223	225	224	‡	201	‡	‡	‡	‡	‡	‡
Virginia	228	225	237	237	209	205	217*	203	238	228	‡	‡
Washington	218	217	227	227	202	203	196	191	214	218	210	202
West Virginia	215	215	216	217	200	196	‡	‡	‡	‡	‡	‡
Wisconsin	217	219	225	226	185	195	195	194	214	216	‡	‡
Wyoming	220	219	222	222	‡	‡	203	205	‡	‡	‡	191
Other jurisdictions												
District of Columbia	198	194	248	244	194	188	192	192	‡	‡	‡	‡
DoDEA[1]	229	229	236	234	218	219	219	224	229	229	‡	‡

See notes at end of table.

Table A-4. Average scores in NAEP vocabulary for public school students at grade 4, by selected characteristics and state/jurisdiction: 2009 and 2011—Continued

State/jurisdiction	Gender				Eligibility for free/reduced-price school lunch			
	Male		Female		Eligible		Not eligible	
	2009	2011	2009	2011	2009	2011	2009	2011
Nation (public)	**217**	**216**	**218**	**218**	**202**	**202**	**232**	**233**
Alabama	214	216	217	218	203	206	230	232
Alaska	208	206	212	209	194	191	224	222
Arizona	208	209	210	212	195	198	225	228
Arkansas	215	212	219	214	203	202	237	231
California	207	208	204	208	189	193	225	228
Colorado	224	219	226	224	201	202	240	239
Connecticut	224	221	226	225	202	201	235	236
Delaware	224	220	227	222	213	209	235	233
Florida	222	219	225	223	212	210	236	239
Georgia	216	214	217	221	205	205	232	233
Hawaii	203	205	207	211	193	196	215	220
Idaho	220	220	220	222	205	209	232	233
Illinois	213	214	218	216	194	196	234	233
Indiana	221*	215	224	220	209	205	232	230
Iowa	221	218	226	221	207	203	233	231
Kansas	225	222	227	226	213	209	239	239
Kentucky	222	223	222	221	211	211	233	236
Louisiana	202	203	209	209	197	197	226	226
Maine	218	217	223	220	209	207	228	229
Maryland	222	224	224	227	205	208	234	238
Massachusetts	230	232	234	234	211	211	242	244
Michigan	213	214	215	215	199	199	226	227
Minnesota	222	220	221	222	199	202	232	233
Mississippi	210	206	215	211	204	200	231	230
Missouri	220	216	225	222	208	205	233	233
Montana	224	221	226	225	213	212	234	232
Nebraska	219	220	220	223	204	205	230	234
Nevada	207	209	208	210	197	197	215*	226
New Hampshire	227	224	228	230	210	212	232	232
New Jersey	224	224	223	224	202	205	233	235
New Mexico	203	202	206	201	194	193	225	223
New York	218	215	221	217	207	204	232	230
North Carolina	218	215	222	220	204	203	234	234
North Dakota	227	226	229	228	218	216	232	233
Ohio	222	220	222	221	204	207	233	233
Oklahoma	217	216	221	219	207	209	232	231
Oregon	219	217	221	220	203	204	234	235
Pennsylvania	220	222	220*	228	203	207	230*	237
Rhode Island	217	214	222	220	203	202	231	229
South Carolina	215	210	210	213	198	199	230	228
South Dakota	224	216	226	219	211	205	233	227
Tennessee	214	213	219	215	204	202	229	231
Texas	219	217	221	216	209	205	236	235
Utah	219	220	217	220	201	205	227	229
Vermont	222	221	226	224	212	209	230	231
Virginia	227	223	229	228	209	203	237	237
Washington	217	215	220	218	203	199	231	232
West Virginia	214	215	216	216	204	203	229	229
Wisconsin	218	219	217	220	197	202	230	231
Wyoming	218	217	221	220	208	208	226	226
Other jurisdictions								
District of Columbia	198	191	198	198	190	185	219	221
DoDEA[1]	228	227	230	231	‡	‡	‡	‡

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

* Significantly different ($p < .05$) from 2011.

[1] Department of Defense Education Activity (overseas and domestic schools).

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Results are not shown separately for students whose race/ethnicity was two or more races and for students whose eligibility status for free/reduced-price school lunch was not available.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

Table A-5. Average scores in NAEP vocabulary for public school students at grade 8, by selected characteristics and state/jurisdiction: 2009 and 2011

State/jurisdiction	All students		Race/ethnicity									
			White		Black		Hispanic		Asian/ Pacific Islander		American Indian/ Alaska Native	
	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011	2009	2011
Nation (public)	**263**	**263**	**275**	**274**	**246**	**246**	**245**	**247**	**270**	**271**	**251**	**252**
Alabama	258	260	268	270	241	244	‡	244	‡	‡	‡	‡
Alaska	263	263	274	276	‡	250	265	259	257	256	239	238
Arizona	257	259	275	274	251	246	241	246	‡	268	241	242
Arkansas	256	257	266	267	231	231	239	245	‡	‡	‡	‡
California	253	254	272	272	243	245	240	242	265	269	‡	‡
Colorado	267	270	279	281	253	256	244	248	270	278	‡	‡
Connecticut	275	275	284	287	245	250	248	244	‡	284	‡	‡
Delaware	261	264	270	273	249	251	250	252	‡	279	‡	‡
Florida	265	264	274	275	250	248	259	257	277	266	‡	‡
Georgia	262	264	272	275	249	252	254	255	‡	277	‡	‡
Hawaii	251	253	263	270	‡	253	242	245	249	250	‡	‡
Idaho	268	270	273	274	‡	‡	238*	251	‡	‡	‡	‡
Illinois	265	264	277	275	241	243	250	251	285	278	‡	‡
Indiana	265	265	269	272	248	244	249	244	‡	‡	‡	‡
Iowa	266	266	270	270	238	243	243	245	‡	264	‡	‡
Kansas	268	269	275	276	245	248	245	250	‡	264	‡	‡
Kentucky	264	267	267	270	241	246	254	253	‡	‡	‡	‡
Louisiana	255	251	269	262	237	237	‡	241	‡	‡	‡	‡
Maine	266	270	267	271	‡	243	‡	‡	‡	‡	‡	‡
Maryland	266	269	278	282	249	252	254	257	282	286	‡	‡
Massachusetts	272	276	279	283	248	257	243	245	280	284	‡	‡
Michigan	262	265	269	271	240	242	236	251	‡	272	‡	‡
Minnesota	269	271	274	276	245	245	242	252	251	260	252	258
Mississippi	253	253	272	269	235	238	‡	‡	‡	‡	‡	‡
Missouri	267	266	272	270	240	243	‡	252	‡	‡	‡	‡
Montana	276	274	279	277	‡	‡	‡	260	‡	‡	247	254
Nebraska	268	270	274	275	244	249	245	249	‡	‡	‡	‡
Nevada	254	257	267	272	241	250	241	242	263	262	‡	‡
New Hampshire	278*	271	279*	272	‡	‡	‡	250	‡	269	‡	‡
New Jersey	274	272	284	283	248	252	256	252	291	283	‡	‡
New Mexico	254	255	279	273	‡	247	244	248	‡	268	235	243
New York	264	261	279	274	244	245	241	242	270	267	‡	‡
North Carolina	262	265	274	277	244	244	249	253	264	275	235	247
North Dakota	275	273	278	276	‡	‡	‡	‡	‡	‡	247	249
Ohio	271	267	276	274	246	242	252	248	‡	‡	‡	‡
Oklahoma	264	261	268	268	249	247	245	249	‡	‡	268 *	254
Oregon	271	267	277	273	‡	246	246	247	281	262	‡	254
Pennsylvania	271*	266	276	274	251	240	248	248	281	275	‡	‡
Rhode Island	260	259	268	267	238	241	241	241	‡	255	‡	‡
South Carolina	260	262	270	273	245	244	250	251	‡	‡	‡	‡
South Dakota	273	272	277	276	‡	253	‡	256	‡	‡	247	247
Tennessee	265	262	275*	269	240	240	‡	252	‡	‡	‡	‡
Texas	262	263	282	281	257	252	246*	252	282	284	‡	‡
Utah	269	272	273	278	‡	‡	247	246	‡	260	‡	249
Vermont	274	272	274	273	‡	‡	‡	‡	‡	‡	‡	‡
Virginia	268	268	277	276	253	254	250	253	263	275	‡	‡
Washington	267	267	275	274	247	251	241	244	270	271	245	255
West Virginia	257	257	258	258	246	247	‡	‡	‡	‡	‡	‡
Wisconsin	266	269	272	276	240	238	246	244	253	264	‡	‡
Wyoming	272	266	275	269	‡	‡	254	251	‡	‡	‡	‡
Other jurisdictions												
District of Columbia	240	240	‡	287	238	237	237	233	‡	‡	‡	‡
DoDEA[1]	275	275	281	281	262	263	272	267	274	271	‡	‡

See notes at end of table.

Table A-5. Average scores in NAEP vocabulary for public school students at grade 8, by selected characteristics and state/jurisdiction: 2009 and 2011—Continued

State/jurisdiction	Gender				Eligibility for free/reduced-price school lunch			
	Male		Female		Eligible		Not eligible	
	2009	2011	2009	2011	2009	2011	2009	2011
Nation (public)	**261**	**262**	**266**	**265**	**248**	**249**	**275**	**277**
Alabama	254	258	262	261	245	249	271	272
Alaska	261	260	265	266	248	246	272	275
Arizona	257	257	258	261	240	246	273	274
Arkansas	255	254	258	260	245	246	270	272
California	250	251	255	258	240	242	267	269
Colorado	265	270	270	271	249	250	277*	283
Connecticut	271	274	279	276	251	251	283	287
Delaware	259	261	264	266	248	253	269	272
Florida	262	261	267	267	253	253	276	277
Georgia	258	262	266	266	250	254	273	278
Hawaii	247	250	255	256	241	241	257	263
Idaho	263	267	272	272	254	259	275	279
Illinois	262	261	269	266	247	248	277	278
Indiana	265	264	266	267	253	252	272	276
Iowa	264	265	269	267	253	251	273	275
Kansas	268	267	268	271	251	254	280	281
Kentucky	263	268	265	266	254	256	273	279
Louisiana	252	250	256	252	244	243	272	264
Maine	262	268	271	273	256	258	272	278
Maryland	265	268	267	269	250	250	273	278
Massachusetts	271	274	274	278	251	255	281	285
Michigan	258	263	267	267	247	252	272	275
Minnesota	266	270	271	272	249	253	276	279
Mississippi	252	251	254	255	239	244	279	273
Missouri	265	264	269	267	251	253	276	275
Montana	273	272	278	277	264	264	281	281
Nebraska	264	268	271	271	251	254	277	280
Nevada	251	254	258	260	244	245	260*	268
New Hampshire	274*	268	282*	273	264*	255	282*	275
New Jersey	272	271	277	274	253	251	281	281
New Mexico	254	253	255	256	241	246	277	270
New York	263	260	266	262	248	248	279	274
North Carolina	257	261	267	269	248	250	273*	280
North Dakota	273	270	277	276	263	260	280	279
Ohio	270	265	272	269	256	252	279	279
Oklahoma	264	260	264	262	255	253	272	271
Oregon	266	265	276	268	254	252	283	281
Pennsylvania	270*	265	272*	267	254	249	280	277
Rhode Island	257	257	263	262	244	244	269	270
South Carolina	257	259	263	264	249	249	271	275
South Dakota	271	270	276	274	260	259	279	278
Tennessee	262	261	268	264	250	250	277	275
Texas	261	264	264	261	247	250	279	280
Utah	267	268	271	275	253	255	274	281
Vermont	269	269	278	276	260	258	279	280
Virginia	264	267	271	269	250	249	275	277
Washington	265	265	269	269	251	252	277	277
West Virginia	254	254	260	260	249	248	266	265
Wisconsin	264	267	269	271	249	249	274	279
Wyoming	270	264	274	269	260	255	277	272
Other jurisdictions								
District of Columbia	239	236	241	243	235	233	252	256
DoDEA[1]	273	274	277	277	‡	‡	‡	‡

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

* Significantly different ($p < .05$) from 2011.

[1] Department of Defense Education Activity (overseas and domestic schools).

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Results are not shown separately for students whose race/ethnicity was two or more races and for students whose eligibility status for free/reduced-price school lunch was not available.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Reading Assessments.

Table A-6. Average scores in NAEP vocabulary for public school students at grade 12, by selected characteristics and state/jurisdiction: 2009

State/jurisdiction	All students	Race/ethnicity					Gender	
		White	Black	Hispanic	Asian/ Pacific Islander	American Indian/ Alaska Native	Male	Female
Nation (public)	**294**	**305**	**271**	**275**	**304**	**280**	**294**	**295**
Arkansas	283	294	251	263	‡	‡	282	284
Connecticut	300	310	271	274	303	‡	298	302
Florida	290	299	273	281	305	‡	289	291
Idaho	300	304	‡	273	‡	‡	298	303
Illinois	297	307	272	275	318	‡	298	297
Iowa	296	298	270	273	‡	‡	296	297
Massachusetts	306	312	282	270	314	‡	306	306
New Hampshire	307	307	‡	‡	‡	‡	301	312
New Jersey	296	309	266	275	315	‡	296	297
South Dakota	303	306	‡	‡	‡	280	301	305
West Virginia	291	291	276	‡	‡	‡	288	294

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

NOTE: Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Results are not shown separately for students whose race/ethnicity was two or more races. Eleven states participated in the assessment at the state level and met the reporting criteria.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Reading Assessment.

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