Wyoming

Grades 4 and 8 Public Schools

The Nation's Report Card

State Mathematics 2011

This report provides selected results for Wyoming's public school students at grades 4 and 8 from the National Assessment of Educational Progress (NAEP) assessment in mathematics. Results are reported by average scale scores and by achievement levels (*Basic, Proficient,* and *Advanced*).

State-level results in mathematics are available for nine assessment years (at grade 8 in 1990; and at both grades 4 and 8 in 1992, 1996, 2000, 2003, 2005, 2007, 2009, and 2011), although not all states may have participated or met the criteria for reporting in every year. All 50 states, the District of Columbia, and the Department of Defense schools participated in the 2011 mathematics assessment at grades 4 and 8.

For more information about the assessment, see the NAEP website http://nces.ed.gov/nationsreportcard/ which contains

- *The Nation's Report Card, Mathematics 2011*
- The full set of national and state results in an interactive database
- Released test questions, scoring guides, and question-level performance data

NAEP is a project of the National Center for Education Statistics (NCES), reporting on the academic achievement of elementary and secondary students in the United States.

ies NATIONAL CENTER FOR EDUCATION STATISTICS
Institute of Education Sciences

NAEP 2011 Mathematics Report for Wyoming (Embargoed)

KEY FINDINGS FOR 2011

Grade 4:

- In 2011, the average mathematics score for fourth-grade students in Wyoming was 244. This was higher than that of the nation's public schools (240).
- The average score for students in Wyoming in 2011 (244) was higher than that in 1992 (225) and was higher than that in 2009 (242).
- In 2011, the percentage of students in Wyoming who performed at or above *Proficient* was 44 percent. This was greater than that for the nation's public schools (40 percent).
- The percentage of students in Wyoming who performed at or above *Proficient* in 2011 (44 percent) was greater than that in 1992 (19 percent) and was not significantly different from that in 2009 (40 percent).
- In 2011, the percentage of students in Wyoming who performed at or above *Basic* was 88 percent. This was greater than that for the nation's public schools (82 percent).
- The percentage of students in Wyoming who performed at or above *Basic* in 2011 (88 percent) was greater than that in 1992 (69 percent) and was not significantly different from that in 2009 (87 percent).

Grade 8:

- In 2011, the average mathematics score for eighth-grade students in Wyoming was 288. This was higher than that of the nation's public schools (283).
- The average score for students in Wyoming in 2011 (288) was higher than that in 1990 (272) and was not significantly different from that in 2009 (286).
- In 2011, the percentage of students in Wyoming who performed at or above *Proficient* was 37 percent. This was greater than that for the nation's public schools (34 percent).
- The percentage of students in Wyoming who performed at or above *Proficient* in 2011 (37 percent) was greater than that in 1990 (19 percent) and was not significantly different from that in 2009 (35 percent).
- In 2011, the percentage of students in Wyoming who performed at or above *Basic* was 80 percent. This was greater than that for the nation's public schools (72 percent).
- The percentage of students in Wyoming who performed at or above *Basic* in 2011 (80 percent) was greater than that in 1990 (64 percent) and was not significantly different from that in 2009 (78 percent).

Introduction

What Was Assessed?

The content for each NAEP assessment is determined by the National Assessment Governing Board. The framework for each assessment documents the content and process areas to be measured and sets guidelines for the types of questions to be used. The mathematics frameworks were developed with the guidance of the Council of Chief State School Officers (CCSSO) and under the direction of the Governing Board. The current framework is available at the Governing Board's website http://www.nagb.org/publications/frameworks/math-2011-framework.pdf.

For grades 4 and 8, the mathematics framework for the 2011 assessment is similar to earlier versions that guided the 1990, 1992, 1996, 2000, 2003, 2005, 2007, and 2009 mathematics assessments. Although the frameworks are updated periodically, the mathematics content objectives for grades 4 and 8 have not changed, allowing students' performance in 2011 to be compared with previous years.

Content Areas and Mathematical Complexity

The 2011 mathematics framework classifies assessment questions in two dimensions, *content area* and *mathematical complexity*, that are used to guide the assessment. Each question is designed to measure one of the five content areas. However, certain aspects of mathematics, such as computation, occur in all content areas. Although the names of the content areas (as well as some topics in those areas) have changed from one framework to the next, a consistent focus has remained on measuring student performance in all five content areas. The distribution of questions among each content area differs by grade to reflect the knowledge and skills appropriate for each grade level.

- **Number properties and operations** measures students' understanding of ways to represent, calculate, and estimate with numbers.
- **Measurement** measures students' knowledge of measurement attributes, such as capacity and temperature, and geometric attributes, such as length, area, and volume.
- **Geometry** measures students' knowledge and understanding of shapes in a plane and in space.
- **Data analysis, statistics, and probability** measures students' understanding of data representation, characteristics of data sets, experiments and samples, and probability.
- **Algebra** measures students' understanding of patterns, using variables, algebraic representation, and functions.

The mathematical complexity of a question refers to the level of cognitive demand it places on students. Each level of complexity includes aspects of knowing and doing mathematics, such as performing procedures, understanding concepts, or solving problems.

- **Low complexity** questions typically specify what a student is to do, which is often to carry out a routine mathematical procedure.
- **Moderate complexity** questions involve more flexibility of thinking and often require a response with multiple steps.
- **High complexity** questions make heavier demands and often require abstract reasoning or analysis in a novel situation.

Assessment Design

Because of the breadth of the content covered in the NAEP mathematics assessment, each student took just a portion of the test, consisting of two 25-minute sections. Most student's testing time was divided evenly between multiple-choice and constructed-response questions. Short constructed-response questions asked students to provide the answer for a numerical problem or to briefly describe the solution to a problem. Longer constructed-response questions required students to write both a solution and its justification, explanation, or interpretation. Released test questions, along with student performance data by state, are available on the NAEP website at http://nces.ed.gov/nationsreportcard/itmrls/.

Some questions in the 2011 assessment incorporated the use of calculators (four-function calculators at grade 4 and scientific or graphing calculators at grade 8), rulers, protractors (at grade 8), or manipulatives such as spinners and geometric shapes. Calculator use at all grades was permitted on approximately one-third of the assessment.

Who Was Assessed?

All 50 states, the District of Columbia, and the Department of Defense Schools participated in the 2011 mathematics assessment at grades 4 and 8. The overall participation rates for schools and students must meet guidelines established by the National Center for Education Statistics (NCES) and the National Assessment Governing Board for assessment results to be reported publicly. A participation rate of at least 85 percent for schools in each subject and grade was required. Participation rates for the 2011 mathematics assessment are available on the NAEP website at http://nationsreportcard.gov/math_2011/participation.asp.

The schools and students participating in NAEP assessments are selected to be representative both nationally and for public schools at the state level. The comparisons between national and state results in this report present the performance of public school students only. In NAEP reports, the category "nation (public)" does not include Department of Defense or Bureau of Indian Education schools.

How Is Student Mathematics Performance Reported?

The 2011 state results are compared to results from seven earlier assessments at grade 4 and from eight earlier assessments at grade 8.

Scale Scores: Student performance is reported as an average score based on the NAEP mathematics scale, which ranges from 0 to 500 for grades 4 and 8. Because NAEP scales are developed independently for each subject and for each content area within a subject, the scores cannot be compared across subjects or across content areas within the same subject. Results are also reported at five percentiles (10th, 25th, 50th, 75th, and 90th) to show trends in performance for lower-, middle-, and higher-performing students.

Achievement Levels: Based on recommendations from policymakers, educators, and members of the general public, the Governing Board has set specific achievement levels for each subject area and grade. Achievement levels are performance standards indicating what students should know and be able to do. They provide another perspective with which to interpret student performance. NAEP results are reported in terms of three achievement levels—*Basic*, *Proficient*, and *Advanced*—and are expressed in terms of the percentage of students who attained each level. The three achievement levels are defined as follows:

- *Basic* denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
- *Proficient* represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and appropriate analytical skills.
- *Advanced* represents superior performance.

The achievement levels are cumulative; therefore, students performing at the *Proficient* level also display the competencies associated with the *Basic* level, and students at the *Advanced* level also demonstrate the competencies associated with both the *Basic* and the *Proficient* levels.

As provided by law, NCES, upon review of congressionally mandated evaluations of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted with caution. The NAEP achievement levels have been widely used by national and state officials. The mathematics achievement-level descriptions are summarized in figures 1-A and 1-B.

Figure 1-A	The Nation's Report Card 2011 State Assessment
	Descriptions of fourth-grade achievement levels for 2011 NAEP mathematics assessment

Basic Level (214)	Fourth-grade students performing at the *Basic* level should show some evidence of understanding the mathematical concepts and procedures in the five NAEP content areas.

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

Proficient Level (249)	Fourth-grade students performing at the *Proficient* level should consistently apply integrated procedural knowledge and conceptual understanding to problem solving in the five NAEP content areas.

Fourth-graders performing at the *Proficient* level should be able to use whole numbers to estimate, compute, and determine whether results are reasonable. They should have a conceptual understanding of fractions and decimals; be able to solve real-world problems in all NAEP content 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 Level (282)	Fourth-grade students performing at the *Advanced* level should apply integrated procedural knowledge and conceptual understanding to complex and nonroutine real-world problem solving in the five NAEP content areas.

Fourth-graders 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. These students are expected to draw logical conclusions and justify answers and solution processes by explaining why, as well as how, they were achieved. They should go beyond the obvious in their interpretations and be able to communicate their thoughts clearly and concisely.

NOTE: The scores in parentheses in the shaded boxes indicate the lowest point on the 0-500 scale at which the achievement-level range begins.
SOURCE: National Assessment Governing Board. (2010). *Mathematics Framework for the 2011 National Assessment of Educational Progress*. Washington, DC: Author.

Figure 1-B	The Nation's Report Card 2011 State Assessment
	Descriptions of eighth-grade achievement levels for 2011 NAEP mathematics assessment

Basic Level (262)	Eighth-grade students performing at the *Basic* level should exhibit evidence of conceptual and procedural understanding in the five NAEP content areas. This level of performance signifies an understanding of arithmetic operations—including estimation—on whole numbers, decimals, fractions, and percents.

Eighth-graders performing at the *Basic* level should complete problems correctly with the help of structural prompts such as diagrams, charts, and graphs. They should be able to solve problems in all NAEP content 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.

As they approach the *Proficient* level, students at the *Basic* level should be able to determine which of the available data are necessary and sufficient for correct solutions and use them in problem solving. However, these eighth-graders show limited skill in communicating mathematically.

Proficient Level (299)	Eighth-grade students performing at the *Proficient* level should apply mathematical concepts and procedures consistently to complex problems in the five NAEP content areas.

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

Quantity and spatial relationships in problem solving and reasoning should be familiar to them, and they should be able to convey underlying reasoning skills beyond the level of arithmetic. They should be able to compare and contrast mathematical ideas and generate their own examples. These students should make inferences from data and graphs, apply properties of informal geometry, and accurately use the tools of technology. Students at this level should understand the process of gathering and organizing data and be able to calculate, evaluate, and communicate results within the domain of statistics and probability.

Advanced Level (333)	Eighth-grade students performing at the *Advanced* level should be able to reach beyond the recognition, identification, and application of mathematical rules in order to generalize and synthesize concepts and principles in the five NAEP content areas.

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

NOTE: The scores in parentheses in the shaded boxes indicate the lowest point on the 0-500 scale at which the achievement-level range begins.
SOURCE: National Assessment Governing Board. (2010). *Mathematics Framework for the 2011 National Assessment of Educational Progress*. Washington, DC: Author.

Interpreting Results

The scores and percentages in this report are estimates based on samples of students rather than on entire populations. In addition, the collection of questions used at each grade level is only a sample of the many questions that could have been asked to assess the skills and abilities described in the NAEP framework. Comparisons over time or between groups are based on statistical tests that consider both the size of the differences and the standard errors of the two statistics being compared. Standard errors are margins of error, and estimates based on smaller groups are likely to have larger margins of error. The size of the standard errors may also be influenced by other factors such as how representative the assessed students are of the entire population. Statistical tests that factor in these standard errors are used to determine whether the differences between average scores or percentages are significant. All differences were tested for statistical significance at the .05 level using unrounded numbers.

NAEP sample sizes have increased since 2002 compared to previous years, resulting in smaller standard errors. As a consequence, smaller differences are detected as statistically significant than were detected in previous assessments. In addition, estimates based on smaller groups are likely to have relatively large standard errors. Thus, some seemingly large differences may not be statistically significant. That is, it cannot be determined whether these differences are due to sampling error, or to true differences in the population of interest.

Differences between scores or between percentages are discussed in this report only when they are significant from a statistical perspective. Significant differences between 2011 and prior assessments are marked with a notation (*) in the tables. Any differences in scores within a year or across years that are mentioned in the text as "higher," "lower," "greater," or "smaller" are statistically significant.

Score or percentage differences or gaps cited in this report are calculated based on differences between unrounded numbers. Therefore, the reader may find that the score or percentage difference cited in the text or tables may not be identical to the difference obtained from subtracting the rounded values shown in the accompanying tables or figures.

The reader is cautioned against making simple causal inferences between student performance and the other variables (e.g., race/ethnicity, gender, and type of school location) discussed in this report. A statistically significant relationship between a variable and measures of student performance does not imply that the variable causes differences in how well students perform. The relationship may be influenced by a number of other variables not accounted for in this report, such as family income, parental involvement, or student attitudes.

NAEP 2011 Mathematics Overall Average Score and Achievement-Level Results for Public School Students

Overall mathematics results for public school students from Wyoming are reported in this section, as well as regional and national results. The regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West (http://nces.ed.gov/nationsreportcard/hsts/tabulations/regions.asp).Therefore, trend data by region are not provided for assessment years prior to 2003.

Prior to 2000, testing accommodations were not provided for students with special needs in NAEP state mathematics assessments. For 2000, results are displayed for both the sample in which accommodations were permitted and the sample in which they were not permitted. Subsequent assessment results were based on the more inclusive samples. In the text of this report, comparisons to 2000 results refer only to the sample in which accommodations were permitted.

Overall Scale Score Results

Student performance is reported as an average score based on the NAEP mathematics scale, which ranges from 0 to 500 for grades 4 and 8.

Tables 1-A and 1-B show the overall performance results of grades 4 and 8 public school students in Wyoming, the nation (public), and the region. Prior to 2003, the list of states that comprise a given region for NAEP differed from the list used by the U.S. Census Bureau, which has been used in NAEP from 2003 onward. Therefore, the data for the state's region are given only for 2003, 2005, 2007, 2009, and 2011. The first column of results presents the average score on the NAEP mathematics scale. The remaining columns show the scores at selected percentiles. Percentiles indicate the percentages of students whose scores fell at or below a particular score. For example, the 25th percentile demarks the cut point for the lowest 25 percent of students within the distribution of scale scores.

Grade 4 Scale Score Results

- In 2011, the average scale score for students in Wyoming was 244. This was higher than that of students across the nation (240).
- In Wyoming, the average scale score for students in 2011 was higher than that in 2009 (242). Similarly, the average scale score for student in public schools across the nation in 2011 was higher than that in 2009 (239).
- In Wyoming, the average scale score for students in 2011 was higher than the scores in 1992, 1996, 2000, 2003, and 2009. However, it was not significantly different from the scores in 2005 and 2007.

Grade 8 Scale Score Results

- In 2011, the average scale score for students in Wyoming was 288. This was higher than that of students across the nation (283).
- In Wyoming, the average scale score for students in 2011 was not significantly different from that in 2009 (286). However, the average scale score for student in public schools across the nation in 2011 was higher than that in 2009 (282).
- In Wyoming, the average scale score for students in 2011 was higher than the scores in 1990, 1992, 1996, 2000, 2003, and 2005. However, it was not significantly different from the scores in 2007 and 2009.

Table 1-A

The Nation's Report Card 2011 State Assessment

Average scale scores and selected percentile scores in NAEP mathematics for fourth-grade public school students, by year and jurisdiction: Various years, 1992–2011

Year and jurisdiction		Average scale score	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
1992[1]	Nation (public)	219*	176*	197*	220*	241*	259*
	Wyoming	225*	191*	209*	226*	244*	258*
1996[1]	Nation (public)	222*	180*	201*	224*	244*	261*
	Wyoming	223*	186*	205*	225*	243*	259*
2000[1]	Nation (public)	226*	185*	206*	228*	249*	265*
	Wyoming	229*	193*	212*	231*	249*	264*
2000	Nation (public)	224*	183*	203*	225*	247*	264*
	Wyoming	229*	192*	211*	231*	249*	264*
2003	Nation (public)	234*	196*	215*	235*	254*	270*
	West[2]	230*	191*	210*	231*	251*	267*
	Wyoming	241*	210	226	242*	257*	271*
2005	Nation (public)	237*	199*	219*	239*	257*	272*
	West[2]	233*	193*	213*	235*	254*	270*
	Wyoming	243	210	227	244	260	274
2007	Nation (public)	239*	201*	221	241	259*	274*
	West[2]	233*	191*	213*	236*	256*	272*
	Wyoming	244	211	228	246	261	274
2009	Nation (public)	239*	201*	221*	241*	259*	275*
	West[2]	235*	193	214	236*	256*	273
	Wyoming	242*	210	226	243	259*	272
2011	Nation (public)	240	202	222	242	260	276
	West[2]	237	196	216	239	259	276
	Wyoming	244	211	228	245	261	275

* Value is significantly different ($p < .05$) from the value for the same jurisdiction in 2011.

[1] Accommodations were not permitted for this assessment.

[2] Region in which jurisdiction is located. Regional data are not provided for years prior to 2003 to be consistent with the U.S. Census Bureau defined regions.

NOTE: The NAEP grade 4 mathematics scale ranges from 0 to 500. All differences were calculated and tested using unrounded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1992–2011 Mathematics Assessments.

Table 1-B

The Nation's Report Card 2011 State Assessment

Average scale scores and selected percentile scores in NAEP mathematics for eighth-grade public school students, by year and jurisdiction: Various years, 1990–2011

Year and jurisdiction		Average scale score	10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
1990[1]	Nation (public)	262*	214*	237*	263*	288*	307*
	Wyoming	272*	235*	253*	272*	293*	309*
1992[1]	Nation (public)	267*	219*	242*	268*	293*	314*
	Wyoming	275*	238*	255*	276*	295*	312*
1996[1]	Nation (public)	271*	222*	247*	272*	296*	316*
	Wyoming	275*	234*	256*	276*	296*	313*
2000[1]	Nation (public)	274*	225*	250*	276*	300*	321*
	Wyoming	277*	235*	257*	279*	299*	317*
2000	Nation (public)	272*	221*	247*	274*	299*	320*
	Wyoming	276*	232*	255*	278*	297*	316*
2003	Nation (public)	276*	228*	253*	278*	301*	321*
	West[2]	272*	222*	247*	273*	299*	320*
	Wyoming	284*	243*	264*	285*	305*	322*
2005	Nation (public)	278*	230*	254*	279*	303*	323*
	West[2]	273*	224*	248*	274*	299*	321*
	Wyoming	282*	243	263*	283*	303*	319*
2007	Nation (public)	280*	234*	257*	281*	305*	325*
	West[2]	275*	226*	250*	276*	302*	323*
	Wyoming	287	246	267	288	309	326
2009	Nation (public)	282*	235*	258*	283*	307*	328
	West[2]	276	226	251	277	303	325
	Wyoming	286	245	266	287	308	326
2011	Nation (public)	283	236	259	284	308	329
	West[2]	278	228	253	279	304	327
	Wyoming	288	246	268	289	309	328

* Value is significantly different ($p < .05$) from the value for the same jurisdiction in 2011.

[1] Accommodations were not permitted for this assessment.

[2] Region in which jurisdiction is located. Regional data are not provided for years prior to 2003 to be consistent with the U.S. Census Bureau defined regions.

NOTE: The NAEP grade 8 mathematics scale ranges from 0 to 500. All differences were calculated and tested using unrounded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1990–2011 Mathematics Assessments.

Overall Achievement-Level Results

Student results are reported as the percentages of students performing relative to performance standards set by the National Assessment Governing Board. These performance standards for what students should know and be able to do were based on the recommendations of broadly representative panels of educators and members of the public.

Tables 2-A and 2-B show the percentage of students at grades 4 and 8 who performed below *Basic*, at or above *Basic*, at or above *Proficient*, and at *Advanced*. Because the percentages are cumulative from *Basic* to *Proficient* to *Advanced*, they may sum to more than 100 percent. Only the percentage of students performing at or above *Basic* (which includes the students at *Proficient* and *Advanced)* plus the students below *Basic* will sum to 100 percent.

Grade 4 Achievement-Level Results

- In 2011, the percentage of Wyoming's students who performed at or above *Proficient* was 44 percent. This was greater than the percentage of the nation's public school students who performed at or above *Proficient* (40 percent).
- In Wyoming, the percentage of students who performed at or above *Proficient* in 2011 was greater than the percentages in 1992, 1996, 2000, and 2003, but was not significantly different from the percentages in 2005, 2007, and 2009.
- In 2011, the percentage of Wyoming's students who performed at or above *Basic* was 88 percent. This was greater than the percentage of the nation's public school students who performed at or above *Basic* (82 percent).
- In Wyoming, the percentage of students who performed at or above *Basic* in 2011 was greater than the percentages in 1992, 1996, and 2000, but was not significantly different from the percentages in 2003, 2005, 2007, and 2009.

Grade 8 Achievement-Level Results

- In 2011, the percentage of Wyoming's students who performed at or above *Proficient* was 37 percent. This was greater than the percentage of the nation's public school students who performed at or above *Proficient* (34 percent).
- In Wyoming, the percentage of students who performed at or above *Proficient* in 2011 was greater than the percentages in 1990, 1992, 1996, 2000, 2003, and 2005, but was not significantly different from the percentages in 2007 and 2009.
- In 2011, the percentage of Wyoming's students who performed at or above *Basic* was 80 percent. This was greater than the percentage of the nation's public school students who performed at or above *Basic* (72 percent).
- In Wyoming, the percentage of students who performed at or above *Basic* in 2011 was greater than the percentages in 1990, 1992, 1996, 2000, 2003, and 2005, but was not significantly different from the percentages in 2007 and 2009.

Table 2-A

The Nation's Report Card 2011 State Assessment

Percentage of fourth-grade public school students at or above NAEP mathematics achievement levels, by year and jurisdiction: Various years, 1992–2011

Year and jurisdiction		Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
1992[1]	Nation (public)	43*	57*	17*	2*
	Wyoming	31*	69*	19*	1*
1996[1]	Nation (public)	38*	62*	20*	2*
	Wyoming	36*	64*	19*	1*
2000[1]	Nation (public)	33*	67*	25*	2*
	Wyoming	27*	73*	25*	2*
2000	Nation (public)	36*	64*	22*	2*
	Wyoming	29*	71*	25*	2*
2003	Nation (public)	24*	76*	31*	4*
	West[2]	29*	71*	27*	3*
	Wyoming	13	87	39*	4*
2005	Nation (public)	21*	79*	35*	5*
	West[2]	26*	74*	31*	4*
	Wyoming	13	87	43	5
2007	Nation (public)	19	81	39*	5*
	West[2]	26*	74*	33*	5*
	Wyoming	12	88	44	5
2009	Nation (public)	19*	81*	38*	6*
	West[2]	25	75	34*	5
	Wyoming	13	87	40	4*
2011	Nation (public)	18	82	40	6
	West[2]	23	77	37	6
	Wyoming	12	88	44	5

* Value is significantly different ($p < .05$) from the value for the same jurisdiction in 2011.

[1] Accommodations were not permitted for this assessment.

[2] Region in which jurisdiction is located. Regional data are not provided for years prior to 2003 to be consistent with the U.S. Census Bureau defined regions.

NOTE: The NAEP grade 4 mathematics scale ranges from 0 to 500. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 213 or lower; *Basic*, 214—248; *Proficient*, 249—281; and *Advanced*, 282 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. Detail may not sum to totals because of rounding. All differences were calculated and tested using unrounded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1992–2011 Mathematics Assessments.

Table 2-B

The Nation's Report Card 2011 State Assessment

Percentage of eighth-grade public school students at or above NAEP mathematics achievement levels, by year and jurisdiction: Various years, 1990–2011

Year and jurisdiction		Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
1990[1]	Nation (public)	49*	51*	15*	2*
	Wyoming	36*	64*	19*	2*
1992[1]	Nation (public)	44*	56*	20*	3*
	Wyoming	33*	67*	21*	2*
1996[1]	Nation (public)	39*	61*	23*	4*
	Wyoming	32*	68*	22*	2*
2000[1]	Nation (public)	35*	65*	26*	5*
	Wyoming	30*	70*	25*	4*
2000	Nation (public)	38*	62*	25*	5*
	Wyoming	31*	69*	23*	3*
2003	Nation (public)	33*	67*	27*	5*
	West[2]	39*	61*	25*	5*
	Wyoming	23*	77*	32*	4*
2005	Nation (public)	32*	68*	28*	6*
	West[2]	38*	62*	25*	5*
	Wyoming	24*	76*	29*	3*
2007	Nation (public)	30*	70*	31*	7*
	West[2]	36*	64*	27*	6*
	Wyoming	20	80	36	7
2009	Nation (public)	29*	71*	33*	7
	West[2]	35	65	28	6
	Wyoming	22	78	35	7
2011	Nation (public)	28	72	34	8
	West[2]	33	67	30	7
	Wyoming	20	80	37	7

* Value is significantly different ($p < .05$) from the value for the same jurisdiction in 2011.

[1] Accommodations were not permitted for this assessment.

[2] Region in which jurisdiction is located. Regional data are not provided for years prior to 2003 to be consistent with the U.S. Census Bureau defined regions.

NOTE: The NAEP grade 8 mathematics scale ranges from 0 to 500. Achievement levels correspond to the following points on the NAEP mathematics scales: below *Basic*, 261 or lower; *Basic*, 262—298; *Proficient*, 299—332; and *Advanced*, 333 and above. At or above *Basic* includes *Basic*, *Proficient*, and *Advanced*. At or above *Proficient* includes *Proficient* and *Advanced*. Detail may not sum to totals because of rounding. All differences were calculated and tested using unrounded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1990–2011 Mathematics Assessments.

Comparisons Between Wyoming, the Nation, and Participating States and Jurisdictions

All 50 states, the District of Columbia, and the Department of Defense Schools participated in the 2011 mathematics assessment at grades 4 and 8. References to "jurisdictions" in the results statements may include states, the District of Columbia, and Department of Defense Schools.

Comparisons by Scale Scores

Figures 2-A and 2-B compare Wyoming's 2011 overall mathematics scale scores at grades 4 and 8 with those of public schools in the nation and all other participating states and jurisdictions. The different shadings indicate whether the average score of the nation (public), a state, or a jurisdiction was found to be higher than, lower than, or not significantly different from that of Wyoming in the NAEP 2011 mathematics assessment.

Grade 4 Scale Score Comparison Results

- The average score for students in Wyoming was higher than the scores in 30 jurisdictions, not significantly different from those in 14 jurisdictions, and lower than those in 7 jurisdictions.

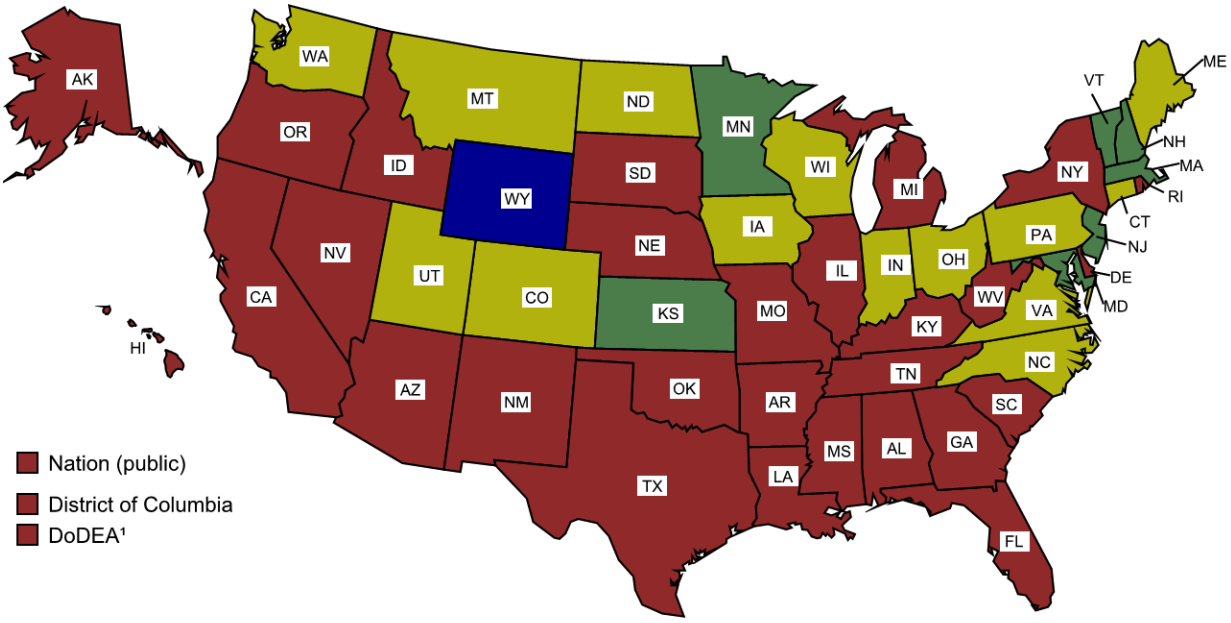
Grade 8 Scale Score Comparison Results

- The average score for students in Wyoming was higher than the scores in 29 jurisdictions, not significantly different from those in 12 jurisdictions, and lower than those in 10 jurisdictions.

Figure 2-A

The Nation's Report Card 2011 State Assessment

Wyoming's average scale score in NAEP mathematics for fourth-grade public school students compared with scores for the nation and other participating jurisdictions: 2011



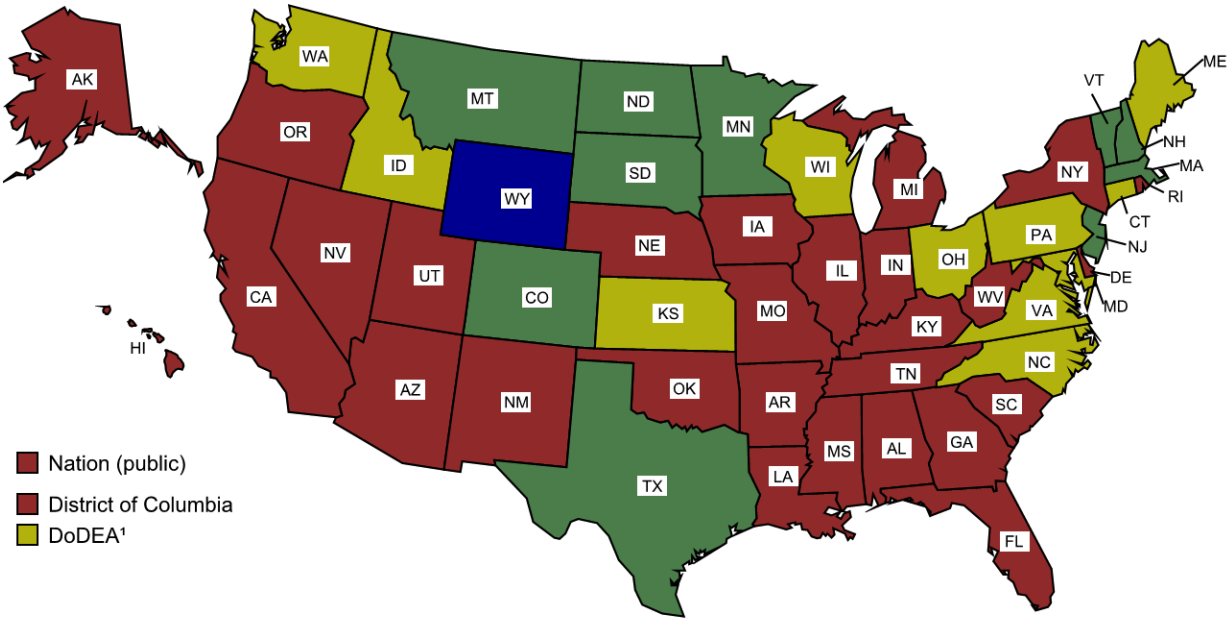
★	Focal state/jurisdiction (Wyoming)
	Higher average scale score than Wyoming (7 jurisdictions)
	Not significantly different from Wyoming (14 jurisdictions)
	Lower average scale score than Wyoming (nation and 30 jurisdictions)

¹ Department of Defense Education Activity (overseas and domestic schools).
NOTE: Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Mathematics Assessment.

Figure 2-B

The Nation's Report Card 2011 State Assessment

Wyoming's average scale score in NAEP mathematics for eighth-grade public school students compared with scores for the nation and other participating jurisdictions: 2011



★	Focal state/jurisdiction (Wyoming)
	Higher average scale score than Wyoming (10 jurisdictions)
	Not significantly different from Wyoming (12 jurisdictions)
	Lower average scale score than Wyoming (nation and 29 jurisdictions)

¹ Department of Defense Education Activity (overseas and domestic schools).
NOTE: Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Mathematics Assessment.

Comparisons by Achievement Levels

Figures 3-A and 3-B permit comparisons of all jurisdictions (and the nation) participating in the NAEP 2011 mathematics assessment in terms of percentages of grades 4 and 8 students performing at or above *Proficient*. The participating states and jurisdictions are grouped into categories reflecting whether the percentage of their students performing at or above *Proficient* (including *Advanced*) was found to be higher than, not significantly different from, or lower than the percentage in Wyoming.

Note that the selected state is listed first in its category, and the other states and jurisdictions within each category are listed alphabetically; statistical comparisons among jurisdictions in each of the three categories are not included in this report. However, statistical comparisons among states by achievement level can be calculated online by using the NAEP Data Explorer at http://nces.ed.gov/nationsreportcard/naepdata/.

Grade 4 Achievement-Level Comparison Results

- The percentage of students performing at or above the *Proficient* level in Wyoming was greater than the percentage in 27 jurisdictions, not significantly different from those in 19 jurisdictions, and smaller than those in 5 jurisdictions.
- The percentage of students performing at or above the *Basic* level in Wyoming was greater than the percentage in 31 jurisdictions, not significantly different from those in 18 jurisdictions, and smaller than those in 2 jurisdictions (data not shown).

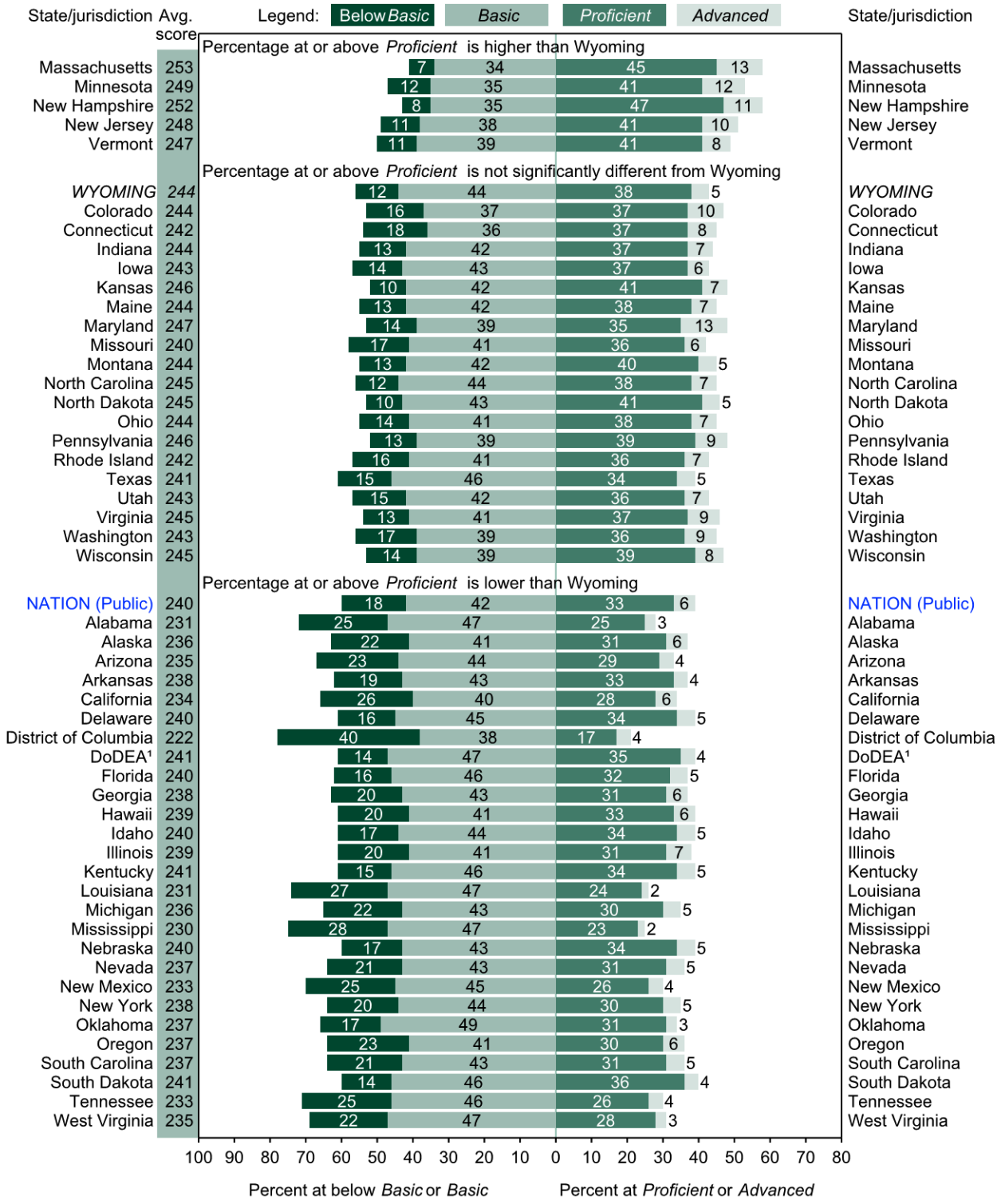
Grade 8 Achievement-Level Comparison Results

- The percentage of students performing at or above the *Proficient* level in Wyoming was greater than the percentage in 26 jurisdictions, not significantly different from those in 16 jurisdictions, and smaller than those in 9 jurisdictions.
- The percentage of students performing at or above the *Basic* level in Wyoming was greater than the percentage in 34 jurisdictions, not significantly different from those in 15 jurisdictions, and smaller than those in 2 jurisdictions (data not shown).

Figure 3-A

The Nation's Report Card 2011 State Assessment

Average scale scores in NAEP mathematics for fourth-grade public school students, percentage within each achievement level, and Wyoming's percentage at or above *Proficient* compared with the nation and other participating states/jurisdictions: 2011



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

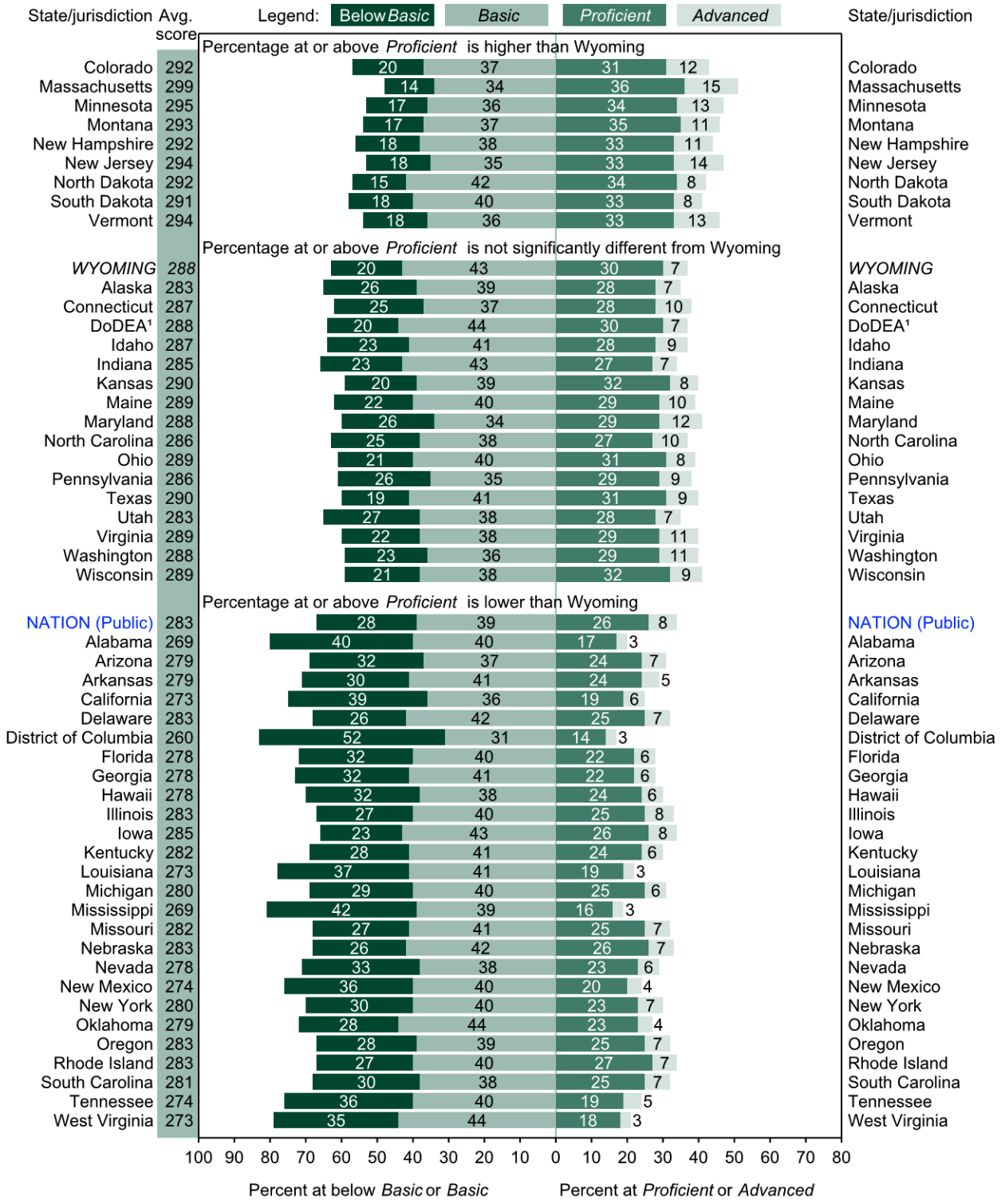
NOTE: The bars above contain percentages of students in each NAEP mathematics achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Proficient* category begins, so that they may be compared at *Proficient* and above. Detail may not sum to totals because of rounding. All differences were calculated and tested using unrounded numbers. The shaded bars are graphed using unrounded numbers. Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.

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

Figure 3-B

The Nation's Report Card 2011 State Assessment

Average scale scores in NAEP mathematics for eighth-grade public school students, percentage within each achievement level, and Wyoming's percentage at or above *Proficient* compared with the nation and other participating states/jurisdictions: 2011



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

NOTE: The bars above contain percentages of students in each NAEP mathematics achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Proficient* category begins, so that they may be compared at *Proficient* and above. Detail may not sum to totals because of rounding. All differences were calculated and tested using unrounded numbers. The shaded bars are graphed using unrounded numbers. Significance tests used a multiple-comparison procedure based on all jurisdictions that participated.

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