The Nation's Report Card
State **Science** 2005
Idaho
Grades 4 and 8
Public Schools
State Report

This report provides selected results from the National Assessment of Educational Progress (NAEP) for Idaho's public school students at grades 4 and 8. Starting in 1996, science has been assessed in three different years at the state level (at grade 8 in 1996, and at both grades 4 and 8 in 2000 and 2005).

In the 2005 assessment, 45 jurisdictions participated: 44 states and the Department of Defense Education Activity Schools (domestic and overseas). Idaho participated and met the criteria for reporting public school results.

NAEP is a project of the National Center for Education Statistics (NCES). For more information about the assessment, see *The Nation's Report Card, Science 2005,* which is available on the NAEP website along with the full set of national and state results in an interactive database (http://nces.ed.gov/nationsreportcard/). Released test questions, scoring guides, and question-level performance data are also available on the website.

See also Idaho NAEP at http://www.sde.state.id.us/naep/

KEY FINDINGS FOR 2005

For grade 4:

- The average science score for students in Idaho was 155. This was not significantly different from that in 2000 (153).
- Idaho's average score (155) was higher than that of the nation's public schools (149).
- In Idaho, 29 percent of students performed at or above *Proficient*. This was not significantly different from that in 2000 (30 percent).
- In Idaho, the percentage of students who performed at or above *Proficient* was not significantly different from that for the nation's public schools (27 percent).
- The percentage of students in Idaho who performed at or above *Basic* was 75 percent. This was not significantly different from that in 2000 (72 percent).
- In Idaho, the percentage of students who performed at or above *Basic* was greater than that for the nation's public schools (66 percent).

For grade 8:

- The average science score for students in Idaho was 158. This was not significantly different from that in 2000 (159).
- Idaho's average score (158) was higher than that of the nation's public schools (147).
- In Idaho, 36 percent of students performed at or above *Proficient*. This was not significantly different from that in 2000 (38 percent).
- In Idaho, the percentage of students who performed at or above *Proficient* was greater than that for the nation's public schools (27 percent).
- The percentage of students in Idaho who performed at or above *Basic* was 71 percent. This was not significantly different from that in 2000 (73 percent).
- In Idaho, the percentage of students who performed at or above *Basic* was greater than that for the nation's public schools (57 percent).

Introduction

What Was Assessed?

The content for each NAEP assessment is determined by the National Assessment Governing Board (NAGB). The objectives for each NAEP assessment are described in a "framework," a document that delineates the important content and process areas to be measured, as well as the types of questions to be included in the assessment.

The *Science Framework for the 2005 National Assessment of Educational Progress* guided the 2005 assessment. The same framework was used by NAGB for the 1996 and 2000 science assessments. The 2005 framework document can be accessed at the NAGB website at http://www.nagb.org/pubs/s_framework_05/761907-ScienceFramework.pdf.

The science framework is organized along two major dimensions: Fields of Science, including Earth, physical and life sciences; and Knowing and Doing Science, including conceptual understanding, scientific investigation, and practical reasoning. Each assessment question is categorized as primarily measuring one of the elements of knowing and doing within one of the fields of science.

To ensure that the NAEP assessment integrates the three fields of Science rather than simply assessing three separate content areas, the framework specifies two overarching domains that describe science: the *nature of science* and *themes.* The nature of science incorporates the historical development of science and technology, the habits of mind that characterize these fields, and methods of inquiry and problem-solving. It also encompasses the nature of technology. Themes are the "big ideas" that transcend the various scientific disciplines, and include systems, models and patterns of change. The overarching domains pertain to a subset of questions within the assessment.

A combination of multiple-choice and constructed-response questions was used to assess students' knowledge of important facts and concepts and to probe their analytical and problem solving skills. Constructed-response questions ask students to explain, apply, design, and communicate scientific information. In addition, about half of the students assessed were administered a hands-on task that probes students' abilities to use materials to perform investigations, evaluate experimental results, and apply problem-solving skills. The same series of test booklets was used in both the national and the state assessments. Each student receives only a portion of the assessment, consisting of a booklet containing two 25-minute sections of science questions. Released test questions, along with student performance data by state, are available on the NAEP website (http://nces.ed.gov/nationsreportcard/itmrls/).

How Is Student Science Performance Reported?

The results of student performance on the NAEP assessments are reported for various groups of students (e.g., fourth-grade female students, eighth-grade Hispanic students, or students who took the assessment in a particular year). NAEP does not produce scores for individual students, nor does it report scores for schools or for school districts. Some large urban districts, however, have voluntarily participated in the assessment on a trial basis and were sampled as states were sampled. Science performance for groups of students is reported in two ways: as average scale scores and as achievement levels.

Scale Scores: Student performance is reported as an average score based on the NAEP science scale, which ranges from 0 to 300 and is linked to the corresponding scales in 1996 and 2000. Subscales were created to reflect performance on each of the three content areas defined in the NAEP science framework.

An overall composite scale was developed by weighting each of the science subscales (Earth, physical, and life) for the grade based on its relative importance in the framework. This composite scale is the metric used to present the average scale scores and selected percentiles used in NAEP reports. While the numeric scale score ranges are identical for each grade, the scales were derived independently for each grade. Therefore, scale scores across grades cannot be compared.

Achievement Levels: Student performance is also reported in terms of three achievement levels—*Basic, Proficient*, and *Advanced*. Results based on achievement levels are expressed in terms of the percentage of students who attained each level. The three achievement levels are defined as follows:

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

The achievement levels are performance standards adopted by the National Assessment Governing Board (NAGB) as part of its statutory responsibilities mandated by Congress. The levels represent collective judgments of what students should know and be able to do for each grade tested. They are based on recommendations made by broadly representative panels of classroom teachers, education specialists, and members of the general public from throughout the United States. As provided by law, the National Center for Education Statistics (NCES), upon review of congressionally mandated evaluations of NAEP, has determined that the achievement levels are to be used on a trial basis until it is determined that they are “reasonable, valid, and informative to the public” (No Child Left Behind Act of 2001, P.L., 107-110, 115 Stat.1425 [2002]). However, both NCES and NAGB believe these performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials as a common yardstick for academic performance. The science achievement-level descriptions are summarized in figure 1.

Figure 1-A	The Nation's Report Card 2005 State Assessment
	Descriptions of NAEP science achievement levels, grade 4

Basic Level (138)	Students performing at the *Basic* level demonstrate some of the knowledge and reasoning required for understanding the Earth, physical, and life sciences at a level appropriate to grade 4. For example, they can carry out simple investigations and read uncomplicated graphs and diagrams. Students at this level also show a beginning understanding of classification, simple relationships, and energy.

Fourth-grade students performing at the *Basic* level are able to follow simple procedures, manipulate simple materials, make observations, and record data. They are able to read simple graphs and diagrams and draw reasonable but limited conclusions based on data provided to them. These students can recognize appropriate experimental designs, although they are unable to justify their decisions.

When presented with diagrams, students at this level can identify seasons; distinguish between day and night; and place the position of the Earth, Sun, and planets. They are able to recognize major energy sources and simple energy changes. In addition, they show an understanding of the relationship between sound and vibrations. These students are able to identify organisms by physical characteristics and group organisms with similar physical features. They can also describe simple relationships among structure, function, habitat, life cycles, and different organisms.

Proficient Level (170)	Students performing at the *Proficient* level demonstrate the knowledge and reasoning required for understanding the Earth, physical, and life sciences at a level appropriate to grade 4. For example, they understand concepts relating to the Earth's features, physical properties, structure, and function. In addition, students can formulate solutions to familiar problems as well as show a beginning awareness of issues associated with technology.

Fourth-grade students performing at the *Proficient* level are able to provide an explanation of day and night when given a diagram. They can recognize major features of the Earth's surface and the impact of natural forces. They are also able to recognize water in its various forms in the water cycle and can suggest ways to conserve it. These students recognize that various materials possess different properties that make them useful. Students at this level are able to explain how structure and function help living things survive. They have a beginning awareness of the benefits and challenges associated with technology and recognize some human effects on the environment. They can also make straightforward predictions and justify their position.

Advanced Level (205)	Students performing at the *Advanced* level demonstrate a solid understanding of the Earth, physical, and life sciences as well as the ability to apply their understanding to practical situations at a level appropriate to grade 4. For example, they can perform and critique simple investigations, make connections from one or more of the sciences to predict or conclude, and apply fundamental concepts to practical applications.

Fourth-grade students performing at the Advanced level are able to combine information, data, and knowledge from one or more of the sciences to reach a conclusion or to make a valid prediction. They can also recognize, design, and explain simple experimental procedures.

Students at this level recognize nonrenewable sources of energy. They also recognize that light and sound travel at different speeds. These students understand some principles of ecology and are able to compare and contrast life cycles of various common organisms. In addition, they have a developmental awareness of the benefits and challenges associated with technology.

Figure 1-B	The Nation's Report Card 2005 State Assessment
	Descriptions of NAEP science achievement levels, grade 8

Basic Level (143)	Students performing at the *Basic* level demonstrate some of the knowledge and reasoning required for understanding the Earth, physical, and life sciences at a level appropriate to grade 8. For example, they can carry out investigations and obtain information from graphs, diagrams, and tables. In addition, they demonstrate some understanding of concepts relating to the solar system and relative motion. Students at this level also have a beginning understanding of cause-and-effect relationships.

Eighth-grade students performing at the *Basic* level are able to observe, measure, collect, record, and compute data from investigations. They can read simple graphs and tables and are able to make simple data comparisons. These students are able to follow directions and use basic science equipment to perform simple experiments. In addition, they have an emerging ability to design experiments. Students at this level have some awareness of causal relationships. They recognize the position of planets and their movement around the Sun and know basic weather-related phenomena. These students can explain changes in position and motion such as the movement of a truck in relation to that of a car. They also have an emerging understanding of the interrelationships among plants, animals, and the environment.

Proficient Level (170)	Students performing at the *Proficient* level demonstrate much of the knowledge and many of the reasoning abilities essential for understanding the Earth, physical, and life sciences at a level appropriate to grade 8. For example, students can interpret graphic information, design simple investigations, and explain such scientific concepts as energy transfer. Students at this level also show an awareness of environmental issues, especially those addressing energy and pollution.

Eighth-grade students performing at the *Proficient* level are able to create, interpret, and make predictions from charts, diagrams, and graphs based on information provided to them or from their own investigations. They have the ability to design an experiment and have an emerging understanding of variables and controls. These students are able to read and interpret geographic and topographic maps. In addition, they have an emerging ability to use and understand models, can partially formulate explanations of their understanding of scientific phenomena, and can design plans to solve problems.

Students at this level can begin to identify forms of energy and describe the role of energy transformations in living and nonliving systems. They have knowledge of organization, gravity, and motion within the solar system and can identify some factors that shape the surface of the Earth. These students have some understanding of properties of materials and have an emerging understanding of the particulate nature of matter, especially the effect of temperature on states of matter. They also know that light and sound travel at different speeds and can apply their knowledge of force, speed, and motion. These students demonstrate a developmental understanding of the flow of energy from the Sun through living systems, especially plants. They know that organisms reproduce and that characteristics are inherited from previous generations. These students also understand that organisms are made up of cells and that cells have subcomponents with different functions. In addition, they are able to develop their own classification system based on physical characteristics. These students can list some effects of air and water pollution as well as demonstrate knowledge of the advantages and disadvantages of different energy sources in terms of how they affect the environment and the economy.

Advanced Level (208)	Students performing at the *Advanced* level demonstrate a solid understanding of the Earth, physical, and life sciences as well as the abilities required to apply their understanding in practical situations at a level appropriate to grade 8. For example, students can perform and critique the design of investigations, relate scientific concepts to each other, explain their reasoning, and discuss the impact of human activities on the environment.

Eighth-grade students performing at the *Advanced* level are able to provide an explanation for scientific results. They have a modest understanding of scale and are able to design a controlled experiment.

These students have an understanding of models as representations of natural systems and can describe energy transfer in living and nonliving systems. Students at this level are able to understand that present physical clues, including fossils and geological formations, are indications that the Earth has not always been the same and that the present is a key to understanding the past. They have a solid knowledge of forces and motions within the solar system and an emerging understanding of atmospheric pressure. These students can recognize a wide range of physical and chemical properties of matter and some of their interactions and understand some of the properties of light and sound. Also, they can infer relationships between structure and function. These students know the differences between plant and animal cells and can apply their knowledge of food as a source of energy to a practical situation. In addition, they are able to explain the impact of human activities on the environment and the economy.

Cautions in Interpreting Results

The averages and percentages in this report are estimates based on samples of students rather than on entire populations. Moreover, the collection of questions used at each grade level is only a sample of the many questions that could have been asked to assess the skills and abilities described in the NAEP framework. Therefore, the results are subject to a measure of uncertainty, reflected in the standard error of the estimates—a range of up to a few points above or below the score or percentage—which takes into account potential score fluctuation due to sampling error and measurement error. 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.

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 in previous assessments. In addition, estimates based on smaller groups are likely to have relatively large standard errors. As a consequence, some seemingly large differences may not be statistically significant. That is, it cannot be determined whether these differences are due to the particular makeup of the samples of students who were selected, or to true differences in the performance of the population of interest. The standard errors for the data in the tables of this report can be accessed online in the NAEP Data Explorer at (http://nces.ed.gov/nationsreportcard/nde/).

Differences between scores or between percentages are discussed in this report only when they are significant from a statistical perspective. Statistically significant differences are referred to as “significant differences” or “significantly different.” Significant differences between 2005 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.

It is important to note that simple cross-tabulations of a variable with measures of educational achievement, like the ones presented in this report, cannot constitute proof that a difference in the variable causes differences in educational achievement. There might be several reasons why the performance of one group of students might differ from another. Only through controlled experiments with random assignment of students to groups can hypotheses about the causes of performance differences be tested.

NAEP 2005 Science Overall Scale Score and Achievement-Level Results for Public School Students

Overall Scale Score Results

In this section student performance is reported as an average score based on the NAEP science scale, which ranges from 0 to 300. Scores on this scale are comparable from 1996 through 2005. Scales are created separately for each grade. Therefore, the scores across grades cannot be compared.

Prior to 2000, testing accommodations were not provided for students with special needs in NAEP state science 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.

Tables 1-A and 1-B show the overall performance results of grades 4 and 8 public school students in Idaho, , the nation (public), and the region. The list of states making up a given region for NAEP prior to 2003 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 2005. A list of states comprising each region can be found online at http://nces.ed.gov/nationsreportcard/science/interpret-results.asp.

The first column of results presents the average score on the NAEP science scale. The remaining columns show the scores at selected percentiles. A percentile indicates the percentage 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. The scale score given is the score for students at the given percentile, not the average score for students within a percentile range.

Grade 4 Scale Score Results

- ✓ In 2005, the average scale score for students in Idaho was 155. This was higher than that for students across the nation (149).
- ✓ In Idaho, the average scale score for students in 2005 was not significantly different from that in 2000 (152). However, the average scale score for students in public schools across the nation in 2005 was higher than that in 2000 (145).

Table 1-A **The Nation's Report Card 2005 State Assessment**

Average science scale scores and selected percentiles, grade 4 public schools: 2000 and 2005

Year and jurisdiction	Average scale score	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
2000[1]						
Nation (public)	148	103*	127*	151	173	190*
Idaho	153	113	136	156	174	190
2000						
Nation (public)	145*	97*	122*	148*	171	189
Idaho	152	114	137	155	173	188
2005						
Nation (public)	149	107	129	152	172	188
West[2]	143	98	121	145	167	184
Idaho	155	119	137	156	173	188

* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
[2] The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.
NOTE: The NAEP grade 4 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Grade 8 Scale Score Results

- ✓ In 2005, the average scale score for students in Idaho was 158. This was higher than that for students across the nation (147).
- ✓ In Idaho, the average scale score for students in 2005 was not significantly different from that in 2000 (158). Similarly, the average scale score for students in public schools across the nation in 2005 was not significantly different from that in 2000 (148).

Table 1-B **The Nation's Report Card 2005 State Assessment**

Average science scale scores and selected percentiles, grade 8 public schools: 2000 and 2005

Year and jurisdiction	Average scale score	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
2000[1]						
Nation (public)	149*	101	125	152	175*	194*
Idaho	159	118	141	162	180	196
2000						
Nation (public)	148	99	124	150	174	193*
Idaho	158	115	139	161	180	196
2005						
Nation (public)	147	100	124	150	172	191
West[2]	142	94	118	144	168	187
Idaho	158	116	138	160	179	195

* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
[2] The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Overall Achievement-Level Results

In this section student performance is reported as the percentage of students performing relative to performance standards set by the National Assessment Governing Board (NAGB). 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.

In 2000 only, results were obtained for two student samples: one for which accommodations were permitted and one for which accommodations were not permitted. However, in the text of this report, comparisons to 2000 results refer only to the sample in which accommodations were permitted.

Tables 2-A and 2-B present the percentage of students at grades 4 and 8 who performed below *Basic*, at or above *Basic*, at or above *Proficient*, and at the *Advanced* level. Because the percentages are cumulative from *Basic* to *Proficient* to *Advanced*, they 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 (except for rounding).

Grade 4 Achievement-Level Results

- ✓ In 2005, 29 percent of Idaho's students performed at or above *Proficient*. This was not significantly different from the percentage of the nation's public school students who performed at or above *Proficient* (27 percent).
- ✓ In Idaho, the percentage of students who performed at or above *Proficient* in 2005 was not significantly different from that in 2000 (29 percent).

Table 2-A **The Nation's Report Card 2005 State Assessment**

Percentage of students at or above science achievement levels, grade 4 public schools: 2000 and 2005

Year and jurisdiction	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
2000[1]				
Nation (public)	36	64	28	3*
Idaho	28	72	30	3
2000				
Nation (public)	39*	61*	26	3
Idaho	26	74	29	2
2005				
Nation (public)	34	66	27	2
West[2]	42	58	22	2
Idaho	25	75	29	2

* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
[2] The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.
NOTE: The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Grade 8 Achievement-Level Results

- ✓ In 2005, 36 percent of Idaho's students performed at or above *Proficient*. This was greater than the percentage of the nation's public school students who performed at or above *Proficient* (27 percent).

- ✓ In Idaho, the percentage of students who performed at or above *Proficient* in 2005 was not significantly different from that in 2000 (37 percent).

Table 2-B

The Nation's Report Card 2005 State Assessment

Percentage of students at or above science achievement levels, grade 8 public schools: 2000 and 2005

Year and jurisdiction	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
2000[1]				
Nation (public)	41	59	30*	4
Idaho	27	73	38	4
2000				
Nation (public)	43	57	29	4*
Idaho	29	71	37	4
2005				
Nation (public)	43	57	27	3
West[2]	48	52	23	2
Idaho	29	71	36	4

* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
[2] The four regions defined by the U.S. Census Bureau are Northeast, South, Midwest, and West.
NOTE: The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Comparisons Between Idaho, the Nation, and Other Participating States and Jurisdictions

Forty-five jurisdictions participated in the science assessment in 2005. These include 44 states and the Department of Defense Education Activity (DoDEA) schools (domestic and overseas). Previous NAEP reports presented results for the Department of Defense Dependents Schools (DoDDS) overseas and the Department of Defense Domestic Dependent Elementary and Secondary Schools (DDESS) in the United States separately. Data for the two jurisdictions in prior years have been retroactively combined to provide comparable data for the single DoDEA jurisdiction.

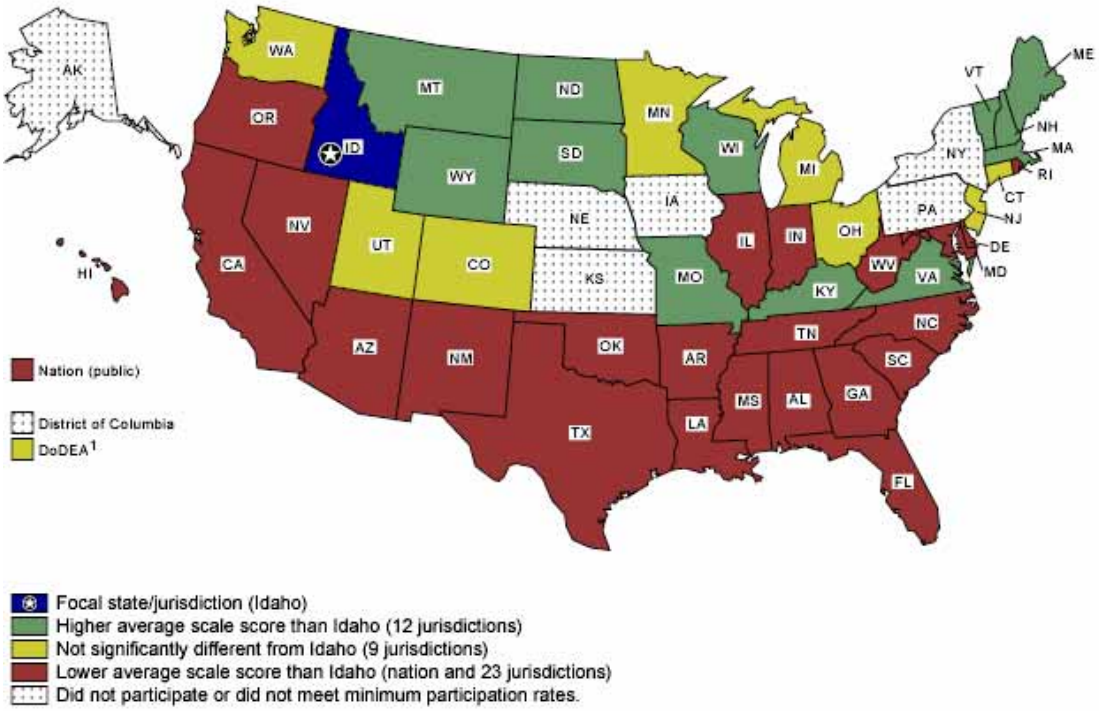
Comparisons by Average Scale Scores

Figures 1-A and 1-B compare Idaho's 2005 overall science 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 Idaho in the NAEP 2005 science assessment.

Figure 1-A

The Nation's Report Card 2005 State Assessment

Idaho's average science scale score compared with scores for the Nation and other participating jurisdictions, grade 4 public schools: 2005



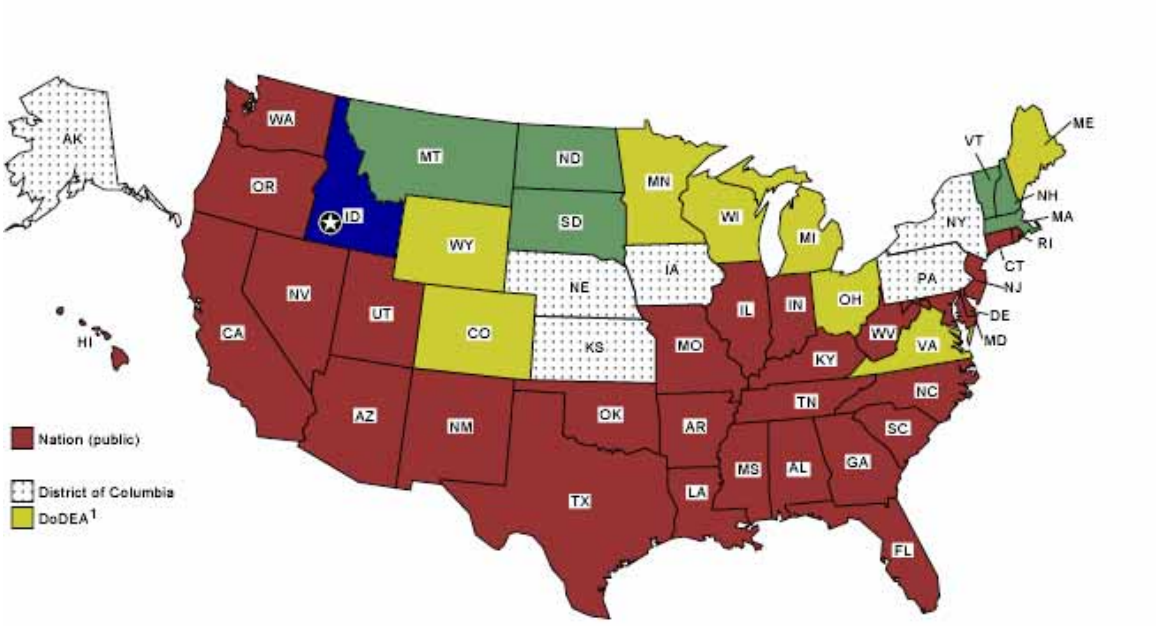
Focal state/jurisdiction (Idaho)
Higher average scale score than Idaho (12 jurisdictions)
Not significantly different from Idaho (9 jurisdictions)
Lower average scale score than Idaho (nation and 23 jurisdictions)
Did not participate or did not meet minimum participation rates.

[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment.

Figure 1-B

The Nation's Report Card 2005 State Assessment

Idaho's average science scale score compared with scores for the Nation and other participating jurisdictions, grade 8 public schools: 2005



Focal state/jurisdiction (Idaho)
Higher average scale score than Idaho (6 jurisdictions)
Not significantly different from Idaho (9 jurisdictions)
Lower average scale score than Idaho (nation and 29 jurisdictions)
Did not participate or did not meet minimum participation rates.

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

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

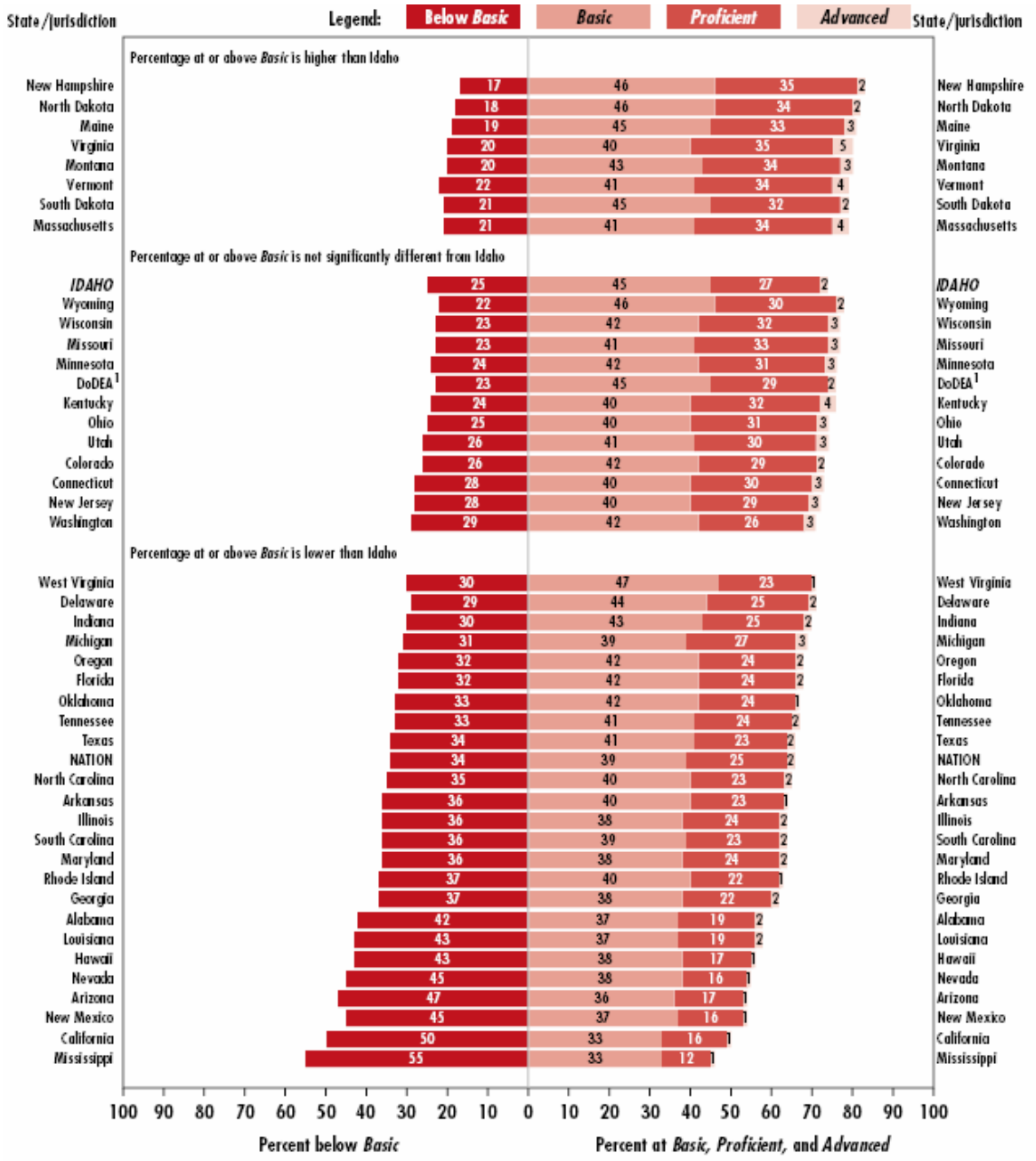
Comparisons by Achievement Levels

Figures 2-A and 2-B permit comparisons of all jurisdictions participating in the NAEP 2005 science assessment in terms of percentages of grade 4 and 8 students performing at or above *Basic*. The participating states and jurisdictions are grouped into categories reflecting whether the percentage of their students performing at or above (including *Proficient* and *Advanced*) was found to be higher than, not significantly different from, or lower than the percentage in Idaho. The states and the nation are ordered by the percentage of students performing at or above *Basic* within each of the three comparison categories.

Figure 2-A

The Nation's Report Card 2005 State Assessment

Percentage of students within each science achievement level, and Idaho's percentage at or above Basic compared with other participating jurisdictions, grade 4 public schools: By state, 2005

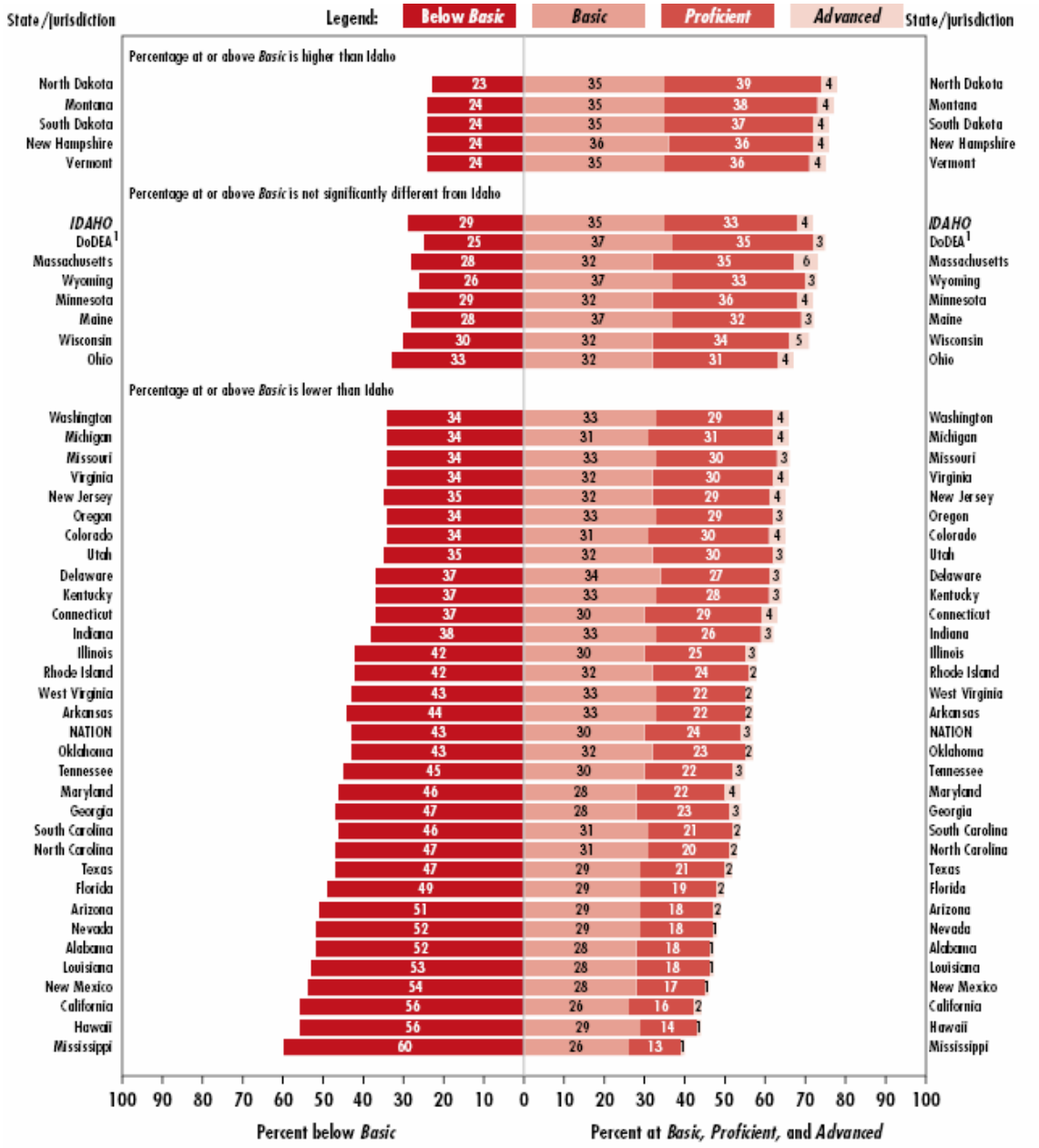


[1] Department of Defense Education Activity schools (domestic and overseas).
NOTE: The bars above contain percentages of students in each NAEP science achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Basic* category begins, so that they may be compared at *Basic* and above. Detail may not sum to totals because of rounding. 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), 2005 Science Assessment.

Figure 2-B

The Nation's Report Card 2005 State Assessment

Percentage of students within each science achievement level, and Idaho's percentage at or above Basic compared with other participating jurisdictions, grade 8 public schools: By state, 2005



[1] Department of Defense Education Activity schools (domestic and overseas).
NOTE: The bars above contain percentages of students in each NAEP science achievement level. Achievement levels corresponding to each population of students are aligned at the point where the *Basic* category begins, so that they may be compared at *Basic* and above. Detail may not sum to totals because of rounding. 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), 2005 Science Assessment.

Science Performance of Selected Student Groups

This section of the report presents trend results for students in Idaho and the nation by demographic characteristics. Student performance data are reported for

- gender
- race/ethnicity
- student eligibility for free/reduced-price school lunch
- type of location (for 2005 only)

Definitions of NAEP reporting groups are available on the NAEP website (http://nces.ed.gov/nationsreportcard/science/results2005/interpret-results.asp#RepGroups).

Each of the variables is reported in tables that present the percentage of students belonging to each group in the first column and the average scale score in the second column. The columns to the right show the percentage of students below *Basic* and at or above each achievement level.

Differences between scores or percentages mentioned in the text are calculated using unrounded values. The result of subtracting the rounded values displayed in the tables may differ (usually by one point) from the results that would be obtained by subtracting the unrounded values.

The reader is cautioned against making causal inferences about the performance of groups of students relative to demographic variables. Many factors other than those discussed here, including home and school factors, may affect student performance.

NAEP collects information on many additional variables, including school and home factors related to achievement. All of this information is in an interactive database available on the NAEP website in the NAEP Data Explorer (http://nces.ed.gov/nationsreportcard/nde/).

Gender

Information on student gender is reported by the student's school when rosters of the students eligible to be assessed are submitted to NAEP.

Tables 3-A and 3-B show average scale scores and achievement-level data for public school students at grade 4 and 8 in Idaho and the nation, by gender. In 2000 only, results were obtained for student samples for which accommodations were permitted and those for which accommodations were not permitted. However, in the text of this report, comparisons to 2000 results refer only to the sample for which accommodations were permitted.

Table 3-A **The Nation's Report Card 2005 State Assessment**

Average science scale scores and percentage of students at or above each achievement level, by gender, grade 4 public schools: 2000 and 2005

Gender	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Male						
2000[1]						
Nation (public)	50*	151	33	67	31	5*
Idaho	51	155	26	74	35	3
2000						
Nation (public)	50	147*	38*	62*	29	4
Idaho	52	156	23	77	34	3
2005						
Nation (public)	51	151	32	68	30	3
Idaho	51	157	24	76	34	3
Female						
2000[1]						
Nation (public)	50*	146	38	62	24	2
Idaho	49	150	30	70	25	2
2000						
Nation (public)	50	143*	41*	59*	23	2
Idaho	48	149	29	71	24	1
2005						
Nation (public)	49	147	36	64	24	2
Idaho	49	152	27	73	25	2

* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
NOTE: The NAEP grade 4 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Table 3-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by gender, grade 8 public schools: 2000 and 2005

Gender	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Male						
2000[1]						
Nation (public)	51	153*	38*	62*	35*	5
Idaho	51	162	24	76	44	6
2000						
Nation (public)	50	151	40	60	32	5
Idaho	51	161	26	74	44	6
2005						
Nation (public)	50	149	41	59	30	4
Idaho	52	161	26	74	42	5
Female						
2000[1]						
Nation (public)	49	146	45	55	26	3
Idaho	49	155	29	71	32	2
2000						
Nation (public)	50	145	46	54	25	3
Idaho	49	154	31	69	31	2
2005						
Nation (public)	50	145	45	55	25	2
Idaho	48	154	32	68	31	2

* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Race/Ethnicity

Schools reported the racial/ethnic subgroup that best described the students eligible to be assessed. The six mutually exclusive categories are White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, and Unclassified. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin. Tables 4-A and 4-B show average scale scores and achievement-level data for public school students at grade 4 and 8 in Idaho and the nation, by race/ethnicity. In 2000 only, results were obtained for student samples for which accommodations were permitted and those for which accommodations were not permitted. However, in the text of this report, comparisons to 2000 results refer only to the sample for which accommodations were permitted.

Table 4-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by race/ethnicity, grade 4 public schools: 2000 and 2005—Continued

Race/ethnicity	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
White						
2000[1]						
Nation (public)	67*	159*	22*	78*	37	5*
Idaho	84	156	23	77	33	3
2000						
Nation (public)	61*	158*	24*	76*	36	5
Idaho	85	156	22	78	32	2
2005						
Nation (public)	57	161	18	82	38	3
Idaho	83	159	20	80	33	3
Black						
2000[1]						
Nation (public)	17	122*	69*	31*	6	#
Idaho	1	‡	‡	‡	‡	‡
2000						
Nation (public)	17	121*	70*	30*	6	#
Idaho	1	‡	‡	‡	‡	‡
2005						
Nation (public)	17	128	62	38	7	#
Idaho	1	‡	‡	‡	‡	‡
Hispanic						
2000[1]						
Nation (public)	11*	125*	63*	37*	9	#
Idaho	10	122	64	36	6	#
2000						
Nation (public)	16*	121*	67*	33*	7	#
Idaho	11	122	64	36	6	#
2005						
Nation (public)	20	132	56	44	10	#
Idaho	13	131	59	41	6	#
Asian/Pacific Islander						
2000[1]						
Nation (public)	‡	‡	‡	‡	‡	‡
Idaho	2	‡	‡	‡	‡	‡
2000						
Nation (public)	‡	‡	‡	‡	‡	‡
Idaho	2	‡	‡	‡	‡	‡
2005						
Nation (public)	4	156	26	74	34	5
Idaho	1	‡	‡	‡	‡	‡

See notes at end of table.

Table 4-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by race/ethnicity, grade 4 public schools: 2000 and 2005—Continued

Race/ethnicity	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
American Indian/Alaska Native						
2000[1]						
Nation (public)	1*	‡	‡	‡	‡	‡
Idaho	1	‡	‡	‡	‡	‡
2000						
Nation (public)	1	135	47	53	18	1
Idaho	1	‡	‡	‡	‡	‡
2005						
Nation (public)	1	139	47	53	15	1
Idaho	1	‡	‡	‡	‡	‡
Unclassified[2]						
2000[1]						
Nation (public)	#*	149	35	65	24	1
Idaho	1	‡	‡	‡	‡	‡
2000						
Nation (public)	1	148	37	63	24	2
Idaho	1	‡	‡	‡	‡	‡
2005						
Nation (public)	1	151	32	68	25	2
Idaho	#	‡	‡	‡	‡	‡

Estimate rounds to zero.
‡ Reporting standards are not met.
* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
[2] "Unclassified" students are those whose school-reported race was "other" or "unavailable," or was missing, and who self-reported more than one race category or none. The six mutually exclusive categories are White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, and Unclassified. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.
NOTE: The NAEP grade 4 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Table 4-B The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by race/ethnicity, grade 8 public schools: 2000 and 2005—Continued

Race/ethnicity	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
White						
2000[1]						
Nation (public)	69*	159	29	71	39	5
Idaho	89	161	23	77	41	4
2000						
Nation (public)	64*	159	29	71	38	5
Idaho	88	161	25	75	41	4
2005						
Nation (public)	60	159	28	72	38	4
Idaho	86	161	24	76	40	4
Black						
2000[1]						
Nation (public)	15*	120	76	24	6	#
Idaho	1	‡	‡	‡	‡	‡
2000						
Nation (public)	17	120	76	24	6	#
Idaho	1	‡	‡	‡	‡	‡
2005						
Nation (public)	17	123	73	27	7	#
Idaho	1	‡	‡	‡	‡	‡
Hispanic						
2000[1]						
Nation (public)	11*	125	69	31	9	1
Idaho	8	134	60	40	10	#
2000						
Nation (public)	14*	125	69	31	9	1
Idaho	9	131	61	39	13	2
2005						
Nation (public)	17	127	67	33	10	#
Idaho	10	131	64	36	10	#
Asian/Pacific Islander						
2000[1]						
Nation (public)	3*	151	43	57	32	5
Idaho	1	‡	‡	‡	‡	‡
2000						
Nation (public)	4	152	41	59	34	6
Idaho	1	‡	‡	‡	‡	‡
2005						
Nation (public)	4	155	35	65	34	6
Idaho	2	‡	‡	‡	‡	‡

See notes at end of table.

Table 4-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by race/ethnicity, grade 8 public schools: 2000 and 2005—Continued

Race/ethnicity	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
American Indian/Alaska Native						
2000[1]						
Nation (public)	1	140	54	46	21	3
Idaho	1	‡	‡	‡	‡	‡
2000						
Nation (public)	1	146	49	51	26	6
Idaho	1	‡	‡	‡	‡	‡
2005						
Nation (public)	1	134	59	41	15	1
Idaho	1	‡	‡	‡	‡	‡
Unclassified[2]						
2000[1]						
Nation (public)	#*	‡	‡	‡	‡	‡
Idaho	1	‡	‡	‡	‡	‡
2000						
Nation (public)	#*	‡	‡	‡	‡	‡
Idaho	1	‡	‡	‡	‡	‡
2005						
Nation (public)	1	149	41	59	28	4
Idaho	#	‡	‡	‡	‡	‡

Estimate rounds to zero.
‡ Reporting standards are not met.
* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
[2] "Unclassified" students are those whose school-reported race was "other" or "unavailable," or was missing, and who self-reported more than one race category or none. The six mutually exclusive categories are White, Black, Hispanic, Asian/Pacific Islander, American Indian/Alaska Native, and Unclassified. Black includes African American, Hispanic includes Latino, and Pacific Islander includes Native Hawaiian. Race categories exclude Hispanic origin.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Student Eligibility for Free/Reduced-Price School Lunch

NAEP collects data on eligibility for the federal program providing free or reduced-price school lunches. The free/reduced-price lunch component of the National School Lunch Program (NSLP) offered through the U.S. Department of Agriculture (USDA) is designed to ensure that children near or below the poverty line receive nourishing meals. Eligibility is determined through the USDA's Income Eligibility Guidelines, and results for this category of students are included as an indicator of lower family income.

Tables 5-A and 5-B show average scale scores and achievement-level data for public school students at grade 4 and 8 in Idaho and the nation, by eligibility for free/reduced-price lunch. In 2000 only, results were obtained for student samples for which accommodations were permitted and those for which accommodations were not permitted. However, in the text of this report, comparisons to 2000 results refer only to the sample for which accommodations were permitted.

Table 5-A

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by eligibility for free/reduced-price school lunch, grade 4 public schools: 2000 and 2005

Eligibility status	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Eligible						
2000[1]						
Nation (public)	37*	129*	58*	42*	11	1
Idaho	38	142	41	59	19	1
2000						
Nation (public)	41*	126*	61*	39*	10*	#
Idaho	40	141	40	60	17	1
2005						
Nation (public)	45	135	53	47	12	#
Idaho	43	145	39	61	18	1
Not eligible						
2000[1]						
Nation (public)	51	159*	22*	78*	37	5
Idaho	56	159	20	80	36	3
2000						
Nation (public)	48*	158*	24*	76*	37	5
Idaho	54	160	17	83	37	3
2005						
Nation (public)	53	162	18	82	40	4
Idaho	56	162	15	85	38	3
Information not available						
2000[1]						
Nation (public)	12*	160*	22*	78*	39*	6
Idaho	7	163	16	84	41	5
2000						
Nation (public)	11*	158*	24*	76*	38*	6
Idaho	6	163	16	84	38	5
2005						
Nation (public)	2	148	36	64	27	2
Idaho	1	‡	‡	‡	‡	‡

Estimate rounds to zero.
‡ Reporting standards are not met.
* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
NOTE: The NAEP grade 4 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Table 5-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by eligibility for free/reduced-price school lunch, grade 8 public schools: 2000 and 2005

Eligibility status	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Eligible						
2000[1]						
Nation (public)	27*	127*	67*	33*	12	1
Idaho	29*	149	38	62	27	2
2000						
Nation (public)	29*	127*	68*	32*	11	1
Idaho	30*	146	42	58	27	2
2005						
Nation (public)	39	130	63	37	12	1
Idaho	37	147	42	58	24	2
Not eligible						
2000[1]						
Nation (public)	55	160	29	71	39	5
Idaho	61	164	21	79	44	5
2000						
Nation (public)	54*	158	30	70	38	5
Idaho	61	163	23	77	42	5
2005						
Nation (public)	58	158	29	71	38	4
Idaho	62	164	22	78	44	5
Information not available						
2000[1]						
Nation (public)	18*	151	40	60	31	3
Idaho	9*	155	30	70	36	3
2000						
Nation (public)	17*	150	41	59	30	4
Idaho	9*	161	23	77	41	5
2005						
Nation (public)	3	147	44	56	26	3
Idaho	1	‡	‡	‡	‡	‡

‡ Reporting standards are not met.
* Value is significantly different from the value for the same jurisdiction in 2005.
[1] Accommodations were not permitted for this assessment.
NOTE: The NAEP grade 8 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 and 2005 science Assessments.

Type of Location

Schools that participated in the assessment were classified as being located in three mutually exclusive types of community: central city, urban fringe/large town, and rural/small town. These categories indicate the geographic locations of schools. “Central city” is geographical term meaning the largest city of a Metropolitan Statistical Area and is not synonymous with "inner city." The criteria for classifying schools with respect to type of location changed for 2005; therefore, comparisons with prior years are not provided.

Tables 6-A and 6-B show average scale scores and achievement-level data for public school students at grade 4 and 8 in Idaho and the nation, by type of location.

Table 6-A **The Nation's Report Card 2005 State Assessment**

Average science scale scores and percentage of students at or above each achievement level, by type of location, grade 4 public schools: 2005

Type of location	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Central city						
2005						
Nation (public)	31	141*	46*	54*	19*	2
Idaho	31	157	22	78	33	3
Urban fringe						
2005						
Nation (public)	44*	153	29	71	31	3
Idaho	26	156	25	75	30	2
Rural						
2005						
Nation (public)	25*	153	28	72	30*	2
Idaho	43	152	28	72	26	2

* Value is significantly different from the value for Idaho.
NOTE: The NAEP grade 4 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 science Assessment.

Table 6-B

The Nation's Report Card 2005 State Assessment

Average science scale scores and percentage of students at or above each achievement level, by type of location, grade 8 public schools: 2005

Type of location	Percentage of students	Average scale score	Below *Basic*	At or above *Basic*	At or above *Proficient*	At *Advanced*
Central city						
2005						
Nation (public)	29	138*	54*	46*	20*	2*
Idaho	30	158	29	71	37	4
Urban fringe						
2005						
Nation (public)	43*	151*	39*	61*	31*	4
Idaho	25	160	26	74	39	5
Rural						
2005						
Nation (public)	28*	152	37*	63*	30	3
Idaho	45	156	31	69	34	3

* Value is significantly different from the value for Idaho.

NOTE: The NAEP grade 8 science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses. All differences were tested for statistical significance at the .05 level using unrounded numbers. Detail may not sum to totals because of rounding. Performance comparisons may be affected by differences in exclusion rates for students with disabilities and English language learners in the NAEP samples and by changes in sample sizes.

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