

Report for Virgin Islands

Findings from the
National Assessment of Educational Progress

National Center for Education Statistics

The Nation's Report Card

State **Science 2000**



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Rod Paige

Secretary

Office of Educational Research and Improvement

Grover J. Whitehurst

Assistant Secretary

National Center for Education Statistics

Gary W. Phillips

Acting Commissioner

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Content contact:

Holly Spurlock

202-502-7458

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The Virgin Islands

KEY FINDINGS

For grade 4:

- The average scale score for students in the Virgin Islands was 116. This was lower than the average score across the nation (148).
- Students' scale scores in the Virgin Islands were higher than that in 1 jurisdiction, not significantly different from that in 1 jurisdiction, and lower than those in 41 jurisdictions.
- The percentage of students who performed at or above the *Proficient* level was 4 percent. This was smaller than the national percentage (28 percent).

This report provides selected results from the National Assessment of Educational Progress (NAEP) for the Virgin Islands' public school students at grade 4. The science assessment was administered at the state level at grade 8 in 1996 and at grades 4 and 8 in 2000. The Virgin Islands participated at both grades in 2000 but did not participate in 1996. The Virgin Islands met the criteria for reporting public school results for grade 4 in 2000, but did not meet the criteria for grade 8. Therefore, only the grade 4 2000 results are presented here. *The Nation's Report Card:*

Science Highlights 2000 provides additional results from the assessment and is available on the NAEP web site listed in the box below. NAEP is a project of the National Center for Education Statistics (NCES).

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The full set of results is available in an interactive database on the NAEP web site, <http://nces.ed.gov/nationsreportcard>. Released test questions and question-level performance data are also available on the web site.

Introduction

The content for each NAEP assessment is developed through a national consensus process directed by the National Assessment Governing Board (NAGB). The consensus process implemented for science required the active participation of teachers, curriculum specialists, subject matter specialists, local school administrators, parents, and members of the general public. 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 on the assessment. The science framework is available on the NAGB web site at <http://www.nagb.org/pubs/96-2000science/toc.html>.

What Was Assessed?

The *Science Framework for the 1996 and 2000 National Assessment of Educational Progress* guided the 2000 science assessment. A description of the assessment and released test questions are available on the NAEP web site, <http://nces.ed.gov/nationsreportcard>. In addition, more information about NAEP is available at “Frequently Asked Questions” on the web site at <http://nces.ed.gov/naep3/faq.asp>.

The science framework is organized along two major dimensions, (1) the three fields of science: earth, physical, and life sciences, and (2) the three elements of knowing and doing science: conceptual understanding, scientific investigation, and practical reasoning. Each question is categorized as measuring one of the elements of knowing and doing within one of the fields of science.

The assessment includes multiple-choice items that assess students’ knowledge of important facts and concepts and that probe their analytical reasoning skills. The assessment also includes constructed-response items that ask students to explain, apply, design, and communicate scientific information. In addition, about half of the students assessed were asked to perform 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 is used in both the national and state assessments.

Who Was Assessed?

For the NAEP state assessments, a target for each

jurisdiction is a sample of 100 schools and 2500 students, except in small or sparsely populated jurisdictions. The sample of schools and students is chosen in a two-stage sampling process. First, the sample of schools is selected by probability sampling methods. Then, within the participating schools, random samples of students are chosen. These methods are described in the Technical Information section of the web site at <http://nces.ed.gov/nationsreportcard>. Sample sizes for all participating jurisdictions are shown in table 6A. The state results and the regional and national results are based on *different* and *separate* samples. That is, the regional and national results are not based on aggregated state assessment data and do not include any students from the U.S. territories.

The overall participation rate for schools and students in each state or jurisdiction must meet guidelines established by NCES and NAGB in order for assessment results to be reported publicly. A state or jurisdiction that participates but does not meet minimum participation rate guidelines does not have its data reported to the public. Jurisdictions that meet minimum participation guidelines, but whose sample participation rates were low enough to raise concern about their representativeness, receive notations in state data tables in this report. For more information about participation guidelines, see the Technical Information section of the web site at <http://nces.ed.gov/nationsreportcard>.

The NAEP state assessment in science was first administered to public school students at grade 8 in 1996 and was expanded to include students at grade 4 as well as grade 8 in 2000.

How Is Student Performance Reported?

The results of student performance on the NAEP assessments are reported for various groups of students (for example, fourth-grade female students or students who took the assessment in different years). No individual student scores are reported by NAEP. The differences in performance between groups of students that are discussed in this report are based on statistical tests that consider both the magnitude of the differences between averages or percentages and the standard error of those statistics. The reader is cautioned to rely on the reported differences, which are statistically significant, in the text rather than on the apparent magnitude of any difference.

Differences among groups within a year are discussed in the text, but not marked within the tables. Student science performance is described in two ways:

1) average scale scores; and 2) 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 its corresponding scale in 1996. The average scale score reflects the overall science performance of a particular group of students. While the numeric scale-score ranges are identical, the scales were derived independently for each grade. Therefore, scale scores across grades cannot be compared. More information on the NAEP science scale scores is available in the Technical Information section of the web site at <http://nces.ed.gov/nationsreportcard>.

Achievement Levels: Student science 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 performance standards adopted by NAGB as part of its statutory responsibilities. The levels represent collective judgments of what students should know and be able to do for each grade tested. They are based on recommendations by broadly representative panels of

classroom teachers, education specialists, and members of the general public. As provided by law, the Acting Commissioner of Education Statistics, upon review of congressionally mandated evaluations of NAEP, has determined that the achievement levels are to be considered developmental and should be interpreted and used with caution. However, both the Acting Commissioner and NAGB believe these performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials, including those comprising the National Education Goals Panel, as a common yardstick of academic performance. The science achievement level descriptions are summarized for grades 4 and 8 in figure 1 on page 4.

The results displayed in the *The Nation's Report Card: Science Highlights 2000* are based on representative national and state samples that include students with disabilities and limited English proficient students. In past assessments, however, no testing accommodations or adaptations were made available to the special-needs students in these samples. To preserve comparability with the sample from 1996, the assessment results for 2000 are based on a sample of students for whom testing accommodations were not permitted. This sample allowed the maintenance of NAEP trend data. In the future, accommodations will be permitted in all NAEP assessments.

In this report, overall scale score and achievement level results are presented first for the sample of students in which testing accommodations were not permitted. This sample permits comparisons with past testing years. The "Key Findings" on page 1 of this report are based on this sample. These results are followed by results for a sample of students in which testing accommodations were permitted. The same is true of the comparisons between states: first are the comparisons based on the sample in which accommodations were not permitted, then results based on the sample in which accommodations were permitted are presented. Science performance disaggregated by demographic characteristics is presented only for the sample in which accommodations were not permitted. Results for the sample in which accommodations were permitted are available on the NAEP web site. For more information, see **Toward a More Inclusive NAEP** beginning on page 18 of this report.



The Nation's Report Card Science 2000 State Assessment

1996 and 2000 Science Achievement Level Descriptions

Grade 4

| | |
|--|---|
| <p>BASIC LEVEL (138)</p> | <p>Students performing at the <i>Basic</i> level demonstrate some of the knowledge and reasoning required for understanding of 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.</p> |
| <p>PROFICIENT LEVEL (170)</p> | <p>Students performing at the <i>Proficient</i> level demonstrate the knowledge and reasoning required for understanding of 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, and structure and function. In addition, students can formulate solutions to familiar problems as well as show a beginning awareness of issues associated with technology.</p> |
| <p>ADVANCED LEVEL (205)</p> | <p>Students performing at the <i>Advanced</i> 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.</p> |

Grade 8

| | |
|--|--|
| <p>BASIC LEVEL (143)</p> | <p>Students performing at the <i>Basic</i> level demonstrate some of the knowledge and reasoning required for understanding of 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.</p> |
| <p>PROFICIENT LEVEL (170)</p> | <p>Students performing at the <i>Proficient</i> level demonstrate much of the knowledge and many of the reasoning abilities essential for understanding of 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.</p> |
| <p>ADVANCED LEVEL (208)</p> | <p>Students performing at the <i>Advanced</i> 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 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.</p> |

NOTE: Source: Bourque, M.L., Champagne, A.B. & Crissman, S. (1997) *National Assessment of Educational Progress 1996 Science Performance Standards: Achievement Results for the Nation and the States*, Washington, DC: National Assessment Governing Board, U.S. Department of Education.

NAEP 2000 Science Overall Scale Score and Achievement Level Results for Public School Students

Grade 4 Scale Score Results: Sample in Which Accommodations Were Not Permitted

Overall Scale Score Results

Tables 1A and 1B show the overall performance of public school students in the Virgin Islands and the nation. Table 1A displays overall performance for 2000 for the sample of students in which accommodations were not permitted, whereas table 1B shows overall performance for 2000 for the sample in which accommodations were permitted. To determine whether the Virgin Islands has a significant difference between the two samples, see table 6A.

In each table, the first column of results presents the average score on the NAEP science scale. The subsequent columns show the average score at selected percentiles. For example, at the 10th percentile for grade 4 students in the nation, 10 percent of public school students had a score that was lower than 103 while 90 percent had a score that was higher.

- In 2000, the average scale score for students in the Virgin Islands was 116. This was lower than that of students across the nation (148).



The Nation's Report Card Science 2000 State Assessment

Average science scale scores and selected percentiles for public school students at grade 4 for the sample in which accommodations were not permitted: 2000

| | Average scale score | Scale score distribution | | | | |
|---------------------|---------------------|--------------------------|-----------------|-----------------|-----------------|-----------------|
| | | 10th percentile | 25th percentile | 50th percentile | 75th percentile | 90th percentile |
| Grade 4 | | | | | | |
| 2000 Virgin Islands | 116 (1.1) | 74 (3.5) | 94 (2.4) | 117 (1.5) | 139 (1.7) | 156 (2.1) |
| Nation | 148 (0.8) | 103 (1.4) | 127 (1.0) | 151 (1.0) | 173 (1.0) | 190 (0.9) |

NOTE: The NAEP science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses.

*** Sample size is insufficient to permit a reliable estimate.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Grade 4 Scale Score Results:

Sample in Which Accommodations Were Permitted

- In 2000, the average scale score for students in the Virgin Islands was 116. This was lower than that of students across the nation (147).

| | | | | | |
|---|--|--|--|--|--|
|  TABLE 1B | The Nation's Report Card Science 2000 State Assessment | | | | |
| | Average science scale scores and selected percentiles for public school students at grade 4 for the sample in which accommodations were permitted: 2000 | | | | |

| | Average scale score | Scale score distribution | | | | |
|---------------------|---------------------|--------------------------|-----------------|-----------------|-----------------|-----------------|
| | | 10th percentile | 25th percentile | 50th percentile | 75th percentile | 90th percentile |
| Grade 4 | | | | | | |
| 2000 Virgin Islands | 116 (1.7) | 73 (4.0) | 95 (5.5) | 117 (2.7) | 139 (1.5) | 157 (2.0) |
| Nation | 147 (0.7) | 99 (1.5) | 124 (1.0) | 149 (0.7) | 172 (0.8) | 189 (1.2) |

NOTE: The NAEP science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses.

*** Sample size is insufficient to permit a reliable estimate.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Overall Achievement Levels Results

Tables 1C and 1D present the percentages of students who performed below *Basic*, at or above *Basic*, at or above *Proficient*, and at the *Advanced* level. Table 1C is based on the sample in which accommodations were not permitted whereas table 1D presents results for the sample in which accommodations were permitted. In each table, because the percentages are cumulative from *Basic* to *Proficient* to *Advanced*, they may sum to more than 100 percent. Only the percentage of students at or above *Basic* (which includes the students at *Proficient* and *Advanced*) plus the students below *Basic* will always sum to 100 percent.

**Grade 4 Achievement Level Results:
Sample in Which Accommodations Were
Not Permitted**

- In 2000, the percentage of the Virgin Islands' students who performed at or above the *Proficient* level was 4 percent. This was smaller than the percentage of the nation's public school students who performed at the same level (28 percent).

| | | The Nation's Report Card Science 2000 State Assessment | | | |
|----------------|----------------|---|--------------------------|-------------------------------|-----------------|
| | | Percentages of public school students attaining achievement levels at grade 4 for the sample in which accommodations were not permitted: 2000 | | | |
| | | Below <i>Basic</i> | At or Above <i>Basic</i> | At or Above <i>Proficient</i> | <i>Advanced</i> |
| Grade 4 | | | | | |
| 2000 | Virgin Islands | 74 (1.9) | 26 (1.9) | 4 (0.8) | 0 (****) |
| | Nation | 36 (0.9) | 64 (0.9) | 28 (0.9) | 3 (0.3) |

NOTE: The NAEP science scale ranges from 0 to 300. The achievement levels correspond to the following points on the NAEP science scale at grade 4: *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. The standard errors of the statistics in the table appear in parentheses.

*** Sample size is insufficient to permit a reliable estimate.

**** Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Grade 4 Achievement Level Results:

Sample in Which Accommodations Were Permitted

- In 2000, the percentage of the Virgin Islands' students who performed at or above the *Proficient* level was 4 percent. This was smaller than the percentage of the nation's public school students who performed at the same level (27 percent).

| | | The Nation's Report Card Science 2000 State Assessment | | | |
|----------------|----------------|--|--------------------------|-------------------------------|-----------------|
| | | Below <i>Basic</i> | At or Above <i>Basic</i> | At or Above <i>Proficient</i> | <i>Advanced</i> |
| Grade 4 | | | | | |
| 2000 | Virgin Islands | 74 (1.8) | 26 (1.8) | 4 (0.7) | 0 (****) |
| | Nation | 38 (0.9) | 62 (0.9) | 27 (0.9) | 3 (0.4) |

NOTE: The NAEP science scale ranges from 0 to 300. The achievement levels correspond to the following points on the NAEP science scale at grade 4: *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. The standard errors of the statistics in the table appear in parentheses.

*** Sample size is insufficient to permit a reliable estimate.

**** Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Comparisons Between the Virgin Islands and Other Participating States and Jurisdictions

In 2000, 45 states and other jurisdictions participated in the science assessment. The maps in figures 2A and 2B show the participating states and jurisdictions and indicate their membership in four U.S. geographic regions. Note that the U.S. territories and the domestic and overseas Department of Defense Education Activity schools (DoDEA/DDESS and DoDEA/DoDDS) were not placed into any of these regions.

Comparisons by Average Scale Scores

Figures 2A and 2B compare the Virgin Islands' overall 2000 grade 4 science scale scores with those of all other states and participating jurisdictions. Figure 2A is based on the sample in which accommodations were not permitted. Figure 2B is based on the sample in which accommodations were permitted. The different shadings are determined by whether or not the Virgin Islands' average scale score is significantly different from that of each of the other participants in the 2000 NAEP science assessment. Note that states that did not participate in 2000, or that did not meet reporting guidelines, are also represented in the maps.

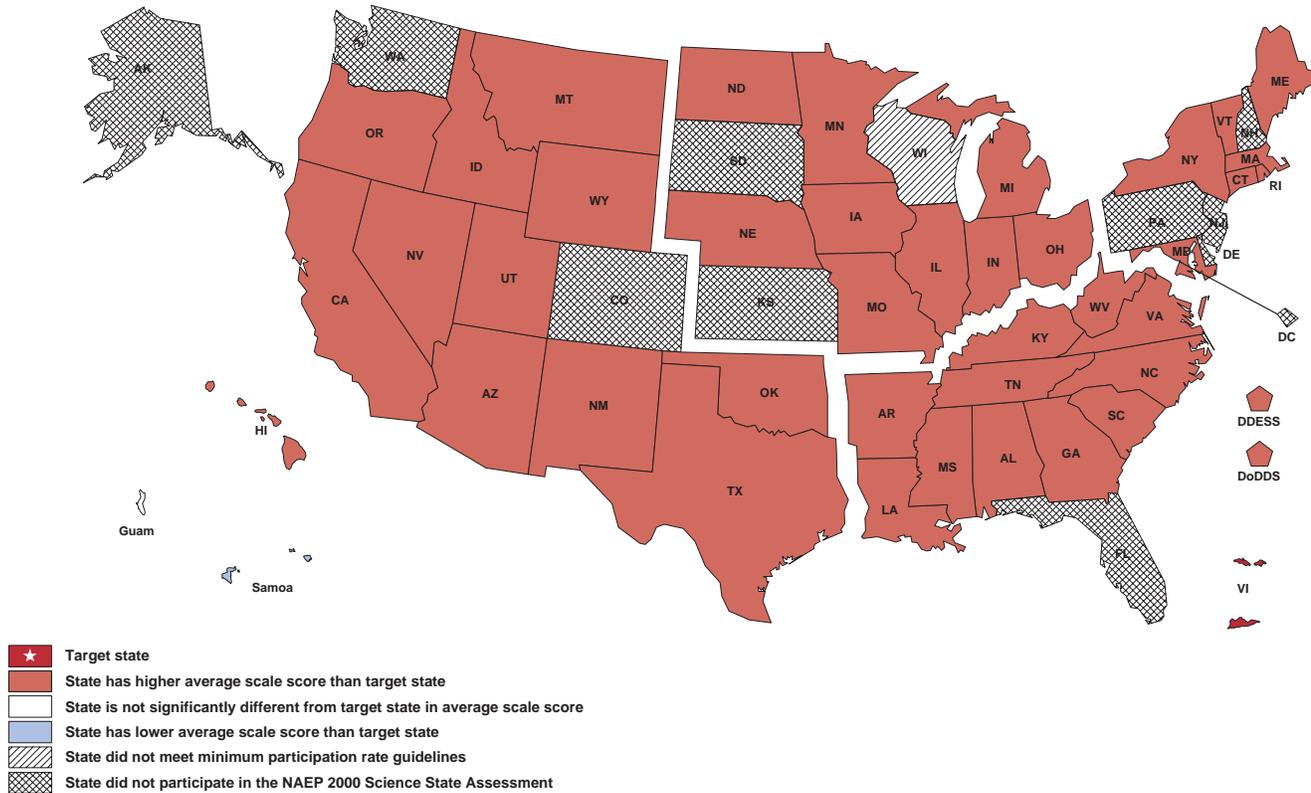
Comparisons by Achievement Levels

Figures 3A and 3B permit comparisons of all participants in the NAEP 2000 science assessment in terms of percentages of students performing at or above the *Proficient* level (including *Advanced*). The participating states and jurisdictions are grouped into categories reflecting student performance compared to that in the Virgin Islands. The jurisdictions are grouped by whether the percentage of their students with scores at or above the *Proficient* level was higher than, not significantly different from, or lower than the percentage in the Virgin Islands. Each population of students is aligned at the point where the *Proficient* category begins, so that they can be easily compared at *Proficient* and above. Note that the arrangement of the states and the other jurisdictions within each category is alphabetical; statistical comparisons among jurisdictions in each of the three categories are not included in this report. Figure 3A is based on the sample in which accommodations were not permitted. Figure 3B is based on the sample in which accommodations were permitted.

FIGURE 2A

The Nation's Report Card Science 2000 State Assessment

The Virgin Islands' 2000 average science scale score compared to those for other participating jurisdictions for public school students at grade 4 in the sample in which accommodations were not permitted

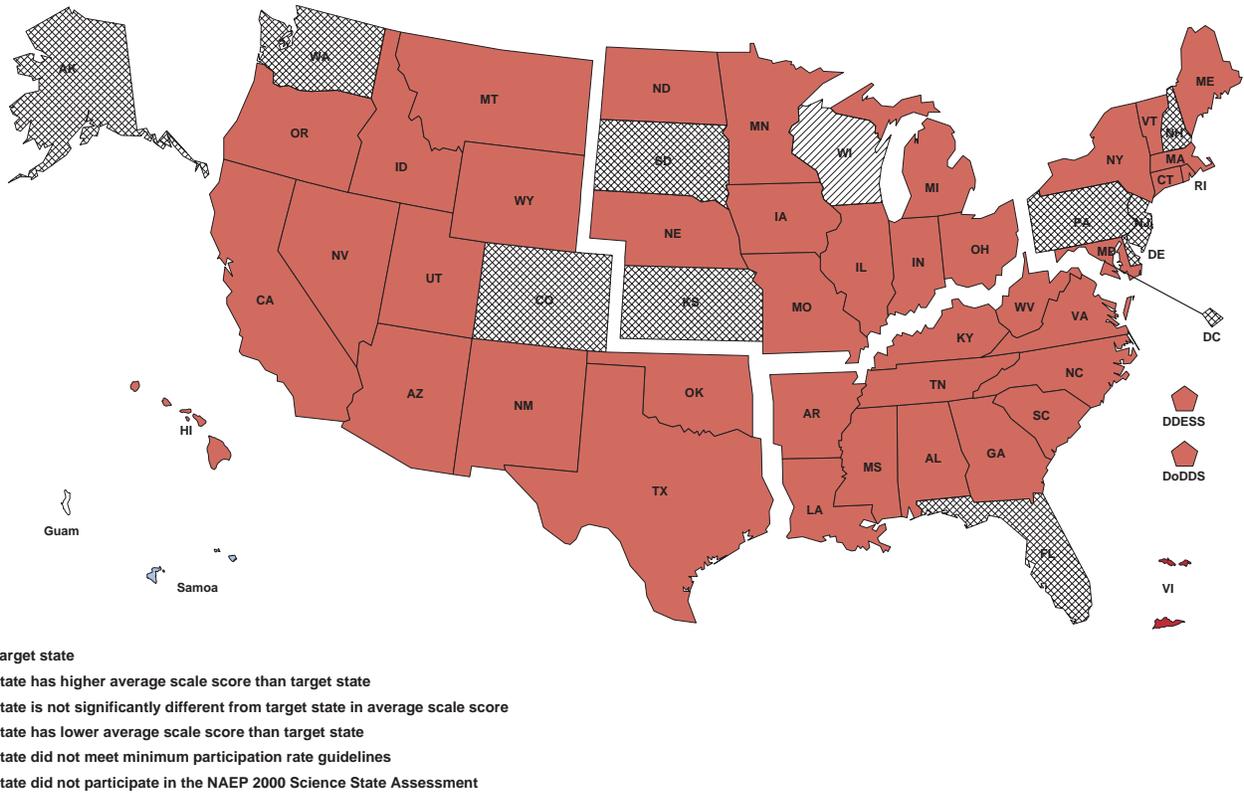


SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.



The Nation's Report Card Science 2000 State Assessment

The Virgin Islands' 2000 average science scale score compared to those for other participating jurisdictions for public school students at grade 4 in the sample in which accommodations were permitted

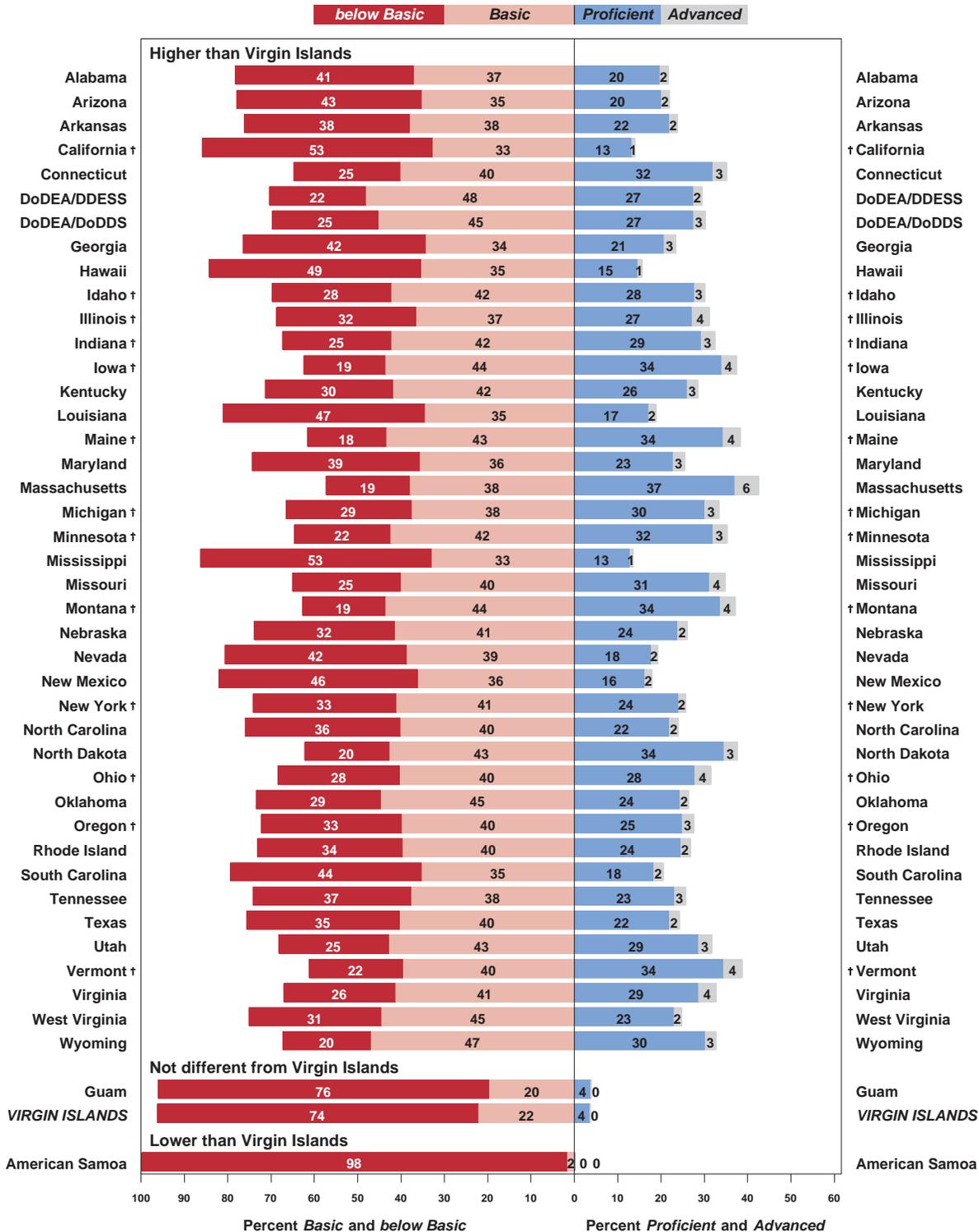


SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.



The Nation's Report Card Science 2000 State Assessment

The percentage of public school students at or above the Proficient level in the Virgin Islands compared with those in other participating jurisdictions at grade 4 in 2000, based on the sample in which accommodations were not permitted



† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

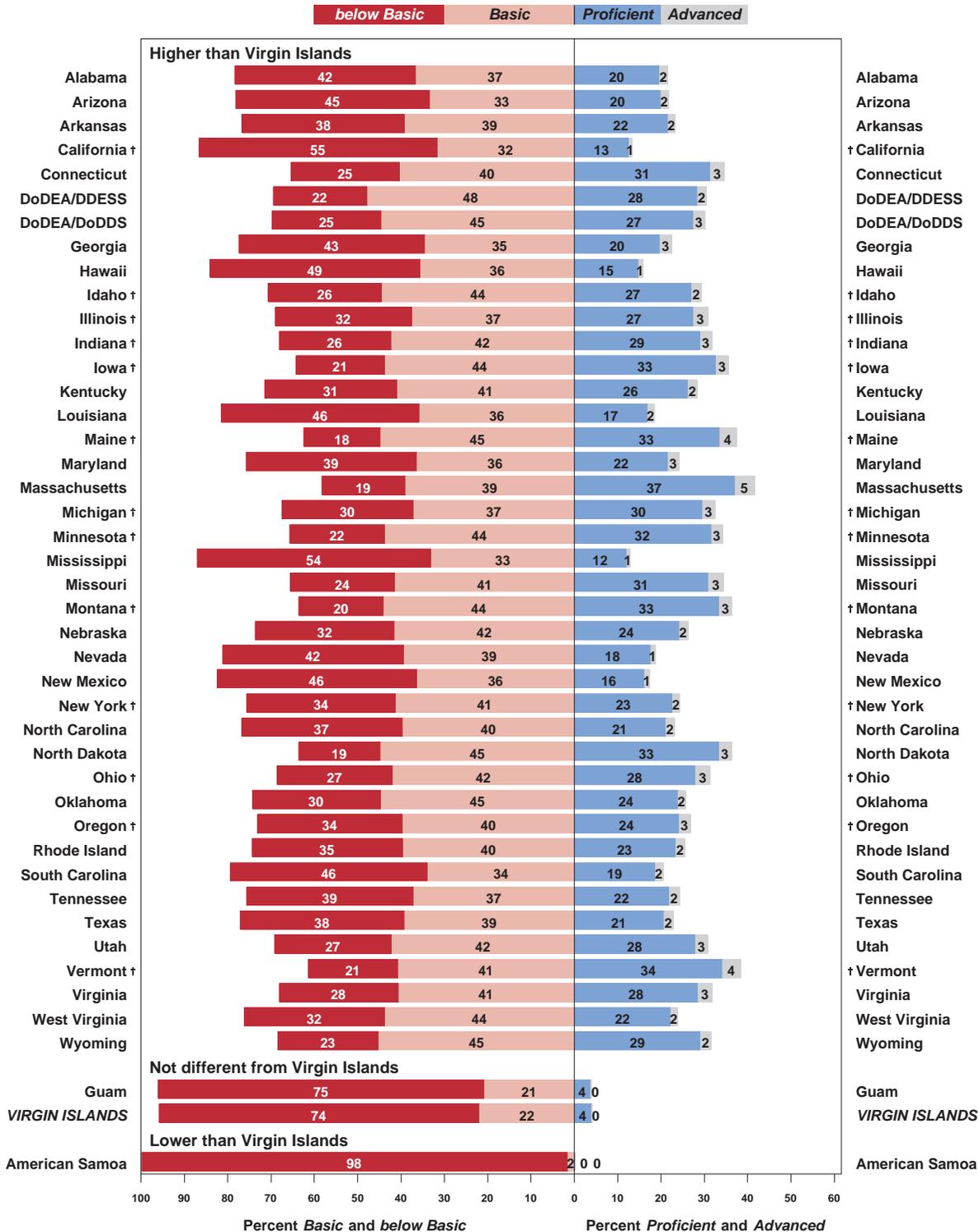
NOTE: The bars above contain estimated percentages of students in each NAEP science achievement category. Each population of students is aligned at the point where the Proficient category begins, so that they may be compared at Proficient and above. Numbers may not add to 100, or to the exact percentage at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.



The Nation's Report Card Science 2000 State Assessment

The percentage of public school students at or above the Proficient level in the Virgin Islands compared with those in other participating jurisdictions at grade 4 in 2000, based on the sample in which accommodations were permitted



† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation.

NOTE: The bars above contain estimated percentages of students in each NAEP science achievement category. Each population of students is aligned at the point where the Proficient category begins, so that they may be compared at Proficient and above. Numbers may not add to 100, or to the exact percentage at or above achievement levels, due to rounding.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Science Performance by Demographic Characteristics

This section of the report presents results by major demographic variables for fourth-grade students in the Virgin Islands and the nation for the sample in which accommodations were not permitted. In these tables, scale score results and achievement level performance are presented in the same table.

Student performance data for the following demographic variables are reported:

- Gender
- Race/ethnicity
- Eligibility for the free/reduced-price school lunch program

Each of the variables is reported in tables that present the percentage of students who belong to each subgroup in the first column and the average scale score in the second column. The columns to the right show the percentage of students at or above each achievement level.

The reader is cautioned against making causal inferences about the performance of these groups relative to these variables. Many factors other than those discussed here may affect student performance.

NAEP collects information on many additional variables including school and home factors related to achievement. All of this information is available in an interactive database on the NAEP web site and can be used to create additional reports of interest to a particular state.

Gender

Table 2A shows scale score and achievement level data for public school students at grade 4 in the Virgin Islands and across the nation by gender in the sample in which accommodations were not permitted. Differences in performance between males and females are indicated in the comparisons highlighted below, but are not indicated by notations of significance in the tables.

**Grade 4 Scale Score Results by Gender:
Sample in Which Accommodations Were
Not Permitted**

- In the Virgin Islands, male students' average scale score was 118 in 2000. This was higher than that of female students (113).
- In 2000, male students in the Virgin Islands had an average scale score in science (118) that was lower than that of male students across the nation

(151). Female students in the Virgin Islands had an average score (113) that was lower than that of female students nationwide (146).

**Grade 4 Achievement Level Results by Gender:
Sample in Which Accommodations Were
Not Permitted**

- In 2000, 4 percent of males and 3 percent of females performed at or above the *Proficient* level in the Virgin Islands. The difference between these percentages was not statistically significant.
- The percentage of males in the Virgin Islands' public schools who were at or above the *Proficient* level in 2000 (4 percent) was smaller than that of males in the nation (31 percent).
- The percentage of females in the Virgin Islands at or above the *Proficient* level in 2000 (3 percent) was smaller than that of the nation's females (24 percent).



The Nation's Report Card Science 2000 State Assessment
Average science scale scores and achievement level results for public school students by gender at grade 4 for the sample in which accommodations were not permitted: 2000

| | Percentage of Students | Average Scale Score | Below <i>Basic</i> | At or Above <i>Basic</i> | At or Above <i>Proficient</i> | <i>Advanced</i> |
|---------------------|------------------------|---------------------|--------------------|--------------------------|-------------------------------|-----------------|
| Male | | | | | | |
| 2000 Virgin Islands | 52 (2.0) | 118 (1.6) | 71 (2.5) | 29 (2.5) | 4 (1.3) | 0 (****) |
| Nation | 50 (0.5) | 151 (1.0) | 33 (1.1) | 67 (1.1) | 31 (1.2) | 5 (0.5) |
| Female | | | | | | |
| 2000 Virgin Islands | 48 (2.0) | 113 (1.9) | 77 (2.6) | 23 (2.6) | 3 (1.0) | 0 (****) |
| Nation | 50 (0.5) | 146 (0.9) | 38 (1.2) | 62 (1.2) | 24 (1.0) | 2 (0.4) |

NOTE: The NAEP science scale ranges from 0 to 300. The achievement levels correspond to the following points on the NAEP science scale at grade 4: *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. The standard errors of the statistics in the table appear in parentheses. **** Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Race/Ethnicity

As part of the background questionnaire administered to students with the assessment, students were asked to identify the racial/ethnic subgroup that best described them. The five mutually exclusive categories were White, Black, Hispanic, Asian/Pacific Islander, and American Indian or Alaskan Native. This information was the primary contributor to the classifications appearing below. For details of the derivation of this variable, see the Technical Information section of the web site at <http://nces.ed.gov/nationsreportcard>. Table 3A shows scale scores and achievement data by racial and ethnic group membership for public school students at grade 4 in the sample in which accommodations were not permitted. Only the race/ethnicity categories with sufficient membership to meet reporting requirements in the Virgin Islands are reported below.

Grade 4 Scale Score Results by Race/Ethnicity: Sample in Which Accommodations Were Not Permitted

- In 2000, Black students in the Virgin Islands had an average scale score that was higher than that of Hispanic students.

| | | The Nation's Report Card Science 2000 State Assessment | | | | | |
|-----------------|---------------------|--|---------------------|--------------------|--------------------------|-------------------------------|-----------------|
| | | Average science scale scores and achievement level results for public school students by race/ethnicity at grade 4 for the sample in which accommodations were not permitted: 2000 | | | | | |
| | | Percentage of Students | Average Scale Score | Below <i>Basic</i> | At or Above <i>Basic</i> | At or Above <i>Proficient</i> | <i>Advanced</i> |
| Black | 2000 Virgin Islands | 71 (1.6) | 119 (1.4) | 71 (2.2) | 29 (2.2) | 4 (1.0) | 0 (****) |
| | Nation | 15 (0.2) | 124 (1.7) | 67 (2.1) | 33 (2.1) | 6 (0.9) | 0 (****) |
| Hispanic | 2000 Virgin Islands | 25 (1.7) | 106 (3.0) | 83 (4.6) | 17 (4.6) | 1 (****) | 0 (****) |
| | Nation | 16 (0.3) | 127 (1.4) | 60 (1.6) | 40 (1.6) | 10 (0.9) | 1 (0.4) |

NOTE: The NAEP science scale ranges from 0 to 300. The achievement levels correspond to the following points on the NAEP science scale at grade 4: *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. The standard errors of the statistics in the table appear in parentheses.

**** Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Free/Reduced-Price Lunch Program Eligibility

NAEP collects data on eligibility for the federal program providing free or reduced-price school lunches. Eligibility is determined through the USDA’s Income Eligibility Guidelines and is included in this report as an indicator of poverty. 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. This program is available to public schools, nonprofit private schools, and residential child care institutions. Table 4A presents results for grade 4 for the sample in which accommodations were not permitted.

**Grade 4 Scale Score Results by Free/Reduced-Price Lunch Program Eligibility:
Sample in Which Accommodations Were Not Permitted**

- Students in the Virgin Islands eligible for the free/reduced-price lunch program had an average science scale score of 115.

- Students in the Virgin Islands eligible for the free/reduced-price lunch program had an average scale score (115) that was lower than that of similar students in the nation (129).

**Grade 4 Achievement Level Results by Free/Reduced-Price Lunch Program Eligibility:
Sample in Which Accommodations Were Not Permitted**

- In the Virgin Islands, 3 percent of students who were eligible for the free/reduced-price lunch program performed at or above the *Proficient* level.
- For students in the Virgin Islands who were eligible for the free/reduced-price lunch program, the percentage at or above the *Proficient* level (3 percent) was lower than the corresponding percentage for their counterparts around the nation (11 percent).



The Nation’s Report Card Science 2000 State Assessment
Average science scale scores and achievement level results for public school students by eligibility for the free/reduced-price lunch program at grade 4 for the sample in which accommodations were not permitted: 2000

| | Percentage of Students | Average Scale Score | Below <i>Basic</i> | At or Above <i>Basic</i> | At or Above <i>Proficient</i> | <i>Advanced</i> |
|---------------------|------------------------|---------------------|--------------------|--------------------------|-------------------------------|-----------------|
| Eligible | | | | | | |
| 2000 Virgin Islands | 99 (0.4) | 115 (1.1) | 75 (1.9) | 25 (1.9) | 3 (0.7) | 0 (****) |
| Nation | 37 (1.1) | 129 (1.2) | 58 (1.3) | 42 (1.3) | 11 (0.7) | 1 (0.2) |

NOTE: The NAEP science scale ranges from 0 to 300. The achievement levels correspond to the following points on the NAEP science scale at grade 4: *Basic*, 138–169; *Proficient*, 170–204; and *Advanced*, 205 and above. The standard errors of the statistics in the table appear in parentheses. **** Standard error estimates cannot be accurately determined.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Toward a More Inclusive NAEP

NAEP endeavors to assess all students selected in the randomized sampling process including students with disabilities (SD) as well as students who are classified by their schools as limited English proficient (LEP). The percentages of students classified as SD or LEP in all participating states and jurisdictions are available in an interactive database at the NAEP web site. It is important to note that school personnel, guided by the student's Individualized Education Program (IEP), make the ultimate decision as to whether or not a particular student should participate in NAEP. Percentages of students excluded from NAEP may vary considerably across states and within a state across years. Comparisons of achievement results across states and within a state across years should be interpreted with caution if the exclusion rates vary widely.

The results displayed in the *The Nation's Report Card: Science Highlights 2000* are based on representative national and state samples that include students with disabilities and limited English proficient students. In past assessments, however, no testing accommodations or adaptations were made available to the special-needs students in these samples. To preserve comparability with the samples from 1996, these assessment results for 2000 are based on a sample of students for whom testing accommodations were not permitted. This sample allowed the maintenance of NAEP trend data.

In the 1996 and 2000 science assessments, however, the NAEP program drew a second, representative national sample of schools. For students in this sample, accommodations were made available. The program has used this split-sample design to study the effects on NAEP results of including special-needs students in the assessments. A series of technical research papers has been published with the results of these comparisons.¹ The *NAEP 2000 Report Card* series is the first to present the results from both the reporting sample of schools in which accommodations were not permitted and the sample in which accommodations were permitted for special-needs

students who normally receive them in their state assessments.

Also in 2000, the split-sample design was used for the first time in the state assessment of mathematics and science. Both samples included students who were not classified as having special needs and students who were classified as having special needs. In both samples there were special-needs students who took the NAEP science assessment without accommodations. In the sample where accommodations were permitted, those special-needs students who normally receive accommodations in their state assessment were allowed to receive them for the NAEP assessment, unless the accommodations were judged to change the construct being measured. It should be noted that accommodated students generally make up a small proportion of the total weighted number of students assessed. For example, in the 2000 national science assessment, accommodated students made up 3 percent of the total weighted number of students assessed.

In the NAEP science assessment, more students were excluded from the sample in which accommodations were not offered in 2000 than in prior years. This may be accounted for in a variety of ways. Among the most far-reaching is the implementation of the Individuals with Disabilities Education Act (IDEA). States that have been diligent in implementing IDEA in their state assessment programs may have higher exclusion rates in the NAEP sample that does not permit accommodations. Local district staff who are accustomed to providing accommodations in state testing situations may have opted for exempting students from the NAEP assessment rather than including them without their customary accommodations. In addition, state population shifts may also account for higher exclusion rates.

As a result, exclusion rates vary considerably within states between the current assessment year and past years. In addition, there is considerable variation in exclusion rates across states. Comparisons of achievement results across states and within states across years should be made with caution, since a comparison within a state across years or between two states may be based on samples with exclusion rates that differ considerably.

¹ Olson, J.F. and Goldstein, A.A. (1997). *The inclusion of students with disabilities and limited English proficient students in large-scale assessments: A summary of recent progress*. (NCES Publication No. 97-482). Washington, DC: National Center for Education Statistics.
Mazzeo, J., Carlson, J.E., Voelkl, K.E., & Lutkus, A.D. (1999). *Increasing the participation of special-needs students in NAEP: A report on 1996 research activities*. (NCES Publication No. 2000-473). Washington, DC: National Center for Education Statistics.

Table 5A shows the percentage of students in the Virgin Islands and the nation who were classified as SD or LEP and also the percentages of students who were excluded in the sample in which accommodations

were not permitted. Table 5B shows the same information for the sample in which accommodations were permitted.

| The Nation's Report Card Science 2000 State Assessment | | |
|---|----------------|--------|
| Percentage of students in the Virgin Islands and the nation classified as limited English proficient or as having disabilities in the sample in which accommodations were not permitted: 2000 | | |
| Percentage of students who are | Grade 4 | |
| | Virgin Islands | Nation |
| Classified as LEP | 4% | 6% |
| Excluded from the assessment due to LEP | 2% | 2% |
| Classified as having a disability | 3% | 11% |
| Excluded from the assessment due to disability | 3% | 6% |

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

| The Nation's Report Card Science 2000 State Assessment | | |
|---|----------------|--------|
| Percentage of students in the Virgin Islands and the nation classified as limited English proficient or as having disabilities in the sample in which accommodations were permitted: 2000 | | |
| Percentage of students who are | Grade 4 | |
| | Virgin Islands | Nation |
| Classified as LEP | 3% | 6% |
| Excluded from the assessment due to LEP | 2% | 1% |
| Tested with accommodations | 0% | 1% |
| Classified as having a disability | 3% | 12% |
| Excluded from the assessment due to disability | 2% | 4% |
| Tested with accommodations | 0% | 3% |

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Table 6A presents a comparison between performance within a state on the two samples: the sample in which accommodations were not permitted, and the sample in which accommodations

were permitted. This table displays the number of students assessed in each jurisdiction and indicates whether the scale score difference between the two samples is significant.



The Nation's Report Card Science 2000 State Assessment

Sample sizes and average scale scores in the sample in which accommodations were not permitted and the sample in which accommodations were permitted for each jurisdiction participating in the 2000 science assessment

| | Grade 4 | | | | Grade 8 | | | |
|----------------|---|------------|---|------------|---|------------|---|-------------|
| | Sample in which accommodations were not permitted | | Sample in which accommodations were permitted | | Sample in which accommodations were not permitted | | Sample in which accommodations were permitted | |
| | N | Average | N | Average | N | Average | N | Average |
| Alabama | 2526 | 143 (1.7) | 2552 | 143 (1.7) | 2400 | 141 (1.9) | 2382 | 143 (1.7) |
| Arizona † | 2080 | 141 (1.4) | 2068 | 140 (1.8) | 1783 | 146 (1.6) | 1822 | 145 (1.3) |
| Arkansas | 2175 | 144 (1.7) | 2214 | 145 (1.3) | 2115 | 143 (1.3) | 2140 | 142 (1.2) |
| California † | 1682 | 131 (2.0) | 1714 | 129 (3.0) | 1650 | 132 (1.5) | 1723 | 129 (1.8) |
| Connecticut | 2493 | 156 (1.3) | 2550 | 156 (1.3) | 2506 | 154 (1.4) | 2551 | 153 (1.6) |
| Georgia | 2640 | 143 (1.4) | 2687 | 142 (1.4) | 2550 | 144 (1.5) | 2578 | 142 (1.6) |
| Hawaii | 2425 | 136 (1.4) | 2439 | 136 (1.4) | 2268 | 132 (1.2) | 2285 | 130 (1.4) |
| Idaho † | 1717 | 153 (1.5) | 1750 | 152 (1.4) | 1973 | 159 (1.1) | 2003 | 158 (1.0) |
| Illinois † | 1596 | 151 (1.6) | 1671 | 150 (2.4) | 1753 | 150 (1.9) | 1808 | 148 (1.7) |
| Indiana † | 1812 | 155 (1.6) | 1870 | 154 (1.5) | 1878 | 156 (1.7) | 1904 | 154 (1.4) |
| Iowa † | 1887 | 160 (1.4) | 1951 | 159 (1.3) | ---- | --- (--) | ---- | --- (--) |
| Kentucky | 2248 | 152 (1.1) | 2311 | 152 (1.2) | 2303 | 152 (1.3) | 2383 | 150 (1.2) |
| Louisiana | 2452 | 139 (1.9) | 2538 | 139 (1.8) | 2373 | 136 (1.7) | 2393 | 134 (1.5) |
| Maine † | 2094 | 161 (1.0) | 2184 | 161 (1.1) | 2156 | 160 (1.0) | 2254 | 158 (0.9) |
| Maryland | 2648 | 146 (1.3) | 2737 | 145 (1.3) | 2336 | 149 (1.3) | 2434 | 146 (1.4) |
| Massachusetts | 2274 | 162 (1.2) | 2351 | 161 (1.4) | 2277 | 161 (1.6) | 2389 | 158 (1.1) |
| Michigan † | 1875 | 154 (1.8) | 1922 | 152 (1.8) | 2024 | 156 (1.7) | 2047 | 155 (1.8) |
| Minnesota † | 1853 | 157 (1.5) | 1894 | 157 (1.6) | 1435 | 160 (2.1) | 1458 | 159 (1.2) |
| Mississippi | 2776 | 133 (1.4) | 2799 | 133 (1.4) | 2495 | 134 (1.2) | 2514 | 134 (1.2) |
| Missouri | 2367 | 156 (1.6) | 2473 | 157 (1.2) | 2320 | 156 (1.1) | 2415 | 154 (1.2) |
| Montana † | 1176 | 160 (2.1) | 1201 | 160 (1.5) | 1692 | 165 (1.2) | 1745 | 164 (1.4) |
| Nebraska | 1289 | 150 (1.8) | 1315 | 150 (1.8) | 1898 | 157 (1.0) | 1863 | 158 (1.4) |
| Nevada | 2526 | 142 (1.3) | 2619 | 142 (1.2) | 2694 | 143 (1.1) | 2733 | 141 (1.0) |
| New Mexico | 1895 | 138 (2.0) | 1999 | 140 (1.8) | 1903 | 140 (1.6) | 1981 | 139 (1.5) |
| New York † | 1764 | 149 (1.4) | 1848 | 148 (1.3) | 1616 | 149 (2.4) | 1697 | 145 (2.1) |
| North Carolina | 2374 | 148 (1.4) | 2482 | 147 (1.3) | 2342 | 147 (1.5) | 2452 | 145 (1.4) |
| North Dakota | 2338 | 160 (0.8) | 2400 | 160 (0.9) | 2194 | 161 (0.9) | 2221 | 159 (1.1) |
| Ohio † | 1887 | 154 (1.6) | 1922 | 155 (1.4) | 2122 | 161 (1.5) | 2169 | 159 (1.5) |
| Oklahoma | 2377 | 152 (1.4) | 2475 | 151 (1.3) | 2452 | 149 (1.2) | 2515 | 149 (1.1) |
| Oregon † | 1625 | 150 (1.9) | 1686 | 148 (2.0) | 1751 | 154 (1.6) | 1780 | 154 (1.4) |
| Rhode Island | 2395 | 148 (1.5) | 2500 | 148 (1.3) | 2360 | 150 (1.3) | 2440 | 148 (0.9) |
| South Carolina | 2448 | 141 (1.2) | 2495 | 140 (1.3) | 2298 | 142 (1.3) | 2336 | 140 (1.4) |
| Tennessee | 2496 | 147 (1.5) | 2522 | 145 (1.4) | 2227 | 146 (1.5) | 2257 | 145 (1.5) |
| Texas | 2125 | 147 (1.6) | 2229 | 145 (1.8) | 2302 | 144 (1.5) | 2331 | 143 (1.7) |
| Utah | 2652 | 155 (1.1) | 2694 | 154 (1.3) | 2446 | 155 (0.9) | 2475 | 154 (1.0) |
| Vermont † | 1237 | 159 (1.7) | 1312 | 160 (1.3) | 1966 | 161 (0.9) | 2021 | 159 (1.0) |
| Virginia | 2502 | 156 (1.6) | 2615 | 155 (1.4) | 2435 | 152 (1.2) | 2508 | 151 (1.0) |
| West Virginia | 2522 | 150 (1.1) | 2639 | 149 (1.3) | 2436 | 150 (1.1) | 2567 | 146 (1.1)* |
| Wyoming | 1745 | 158 (1.1) | 1821 | 156 (1.3) | 2560 | 158 (1.0) | 2575 | 156 (1.0) |
| American Samoa | 453 | 51 (1.7) | 475 | 54 (1.6) | 445 | 72 (2.3) | 471 | 74 (4.2) |
| DDESS | 1295 | 157 (0.7) | 1300 | 157 (0.9) | 650 | 159 (1.2) | 701 | 155 (1.6) |
| DoDDS | 2790 | 156 (0.5) | 2825 | 155 (0.8) | 1962 | 159 (0.8) | 1999 | 159 (0.8) |
| Guam | 996 | 110 (2.3) | 1064 | 114 (1.2) | 945 | 114 (4.5) | 921 | 114 (1.8) |
| Virgin Islands | 690 | 116 (1.1) | 698 | 116 (1.7) | ---- | --- (--) | ---- | --- (--) |

NOTE: The NAEP science scale ranges from 0 to 300. The standard errors of the statistics in the table appear in parentheses.

† Indicates that the jurisdiction did not meet one or more of the guidelines for school participation in one or both grades.

* Indicates that the average scale score for the sample in which accommodations were permitted was significantly different from the average scale score for the sample in which accommodations were not permitted within a single jurisdiction.

** Indicates that the average scale score for the sample in which accommodations were permitted was significantly different from the average scale score for the sample in which accommodations were not permitted using a multiple comparison procedure based on all jurisdictions that participated.

--- Iowa did not participate at grade 8. Virgin Islands failed to meet participation guidelines to report results at grade 8.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Where to Find More Information

The NAEP Science Assessment

The latest news about the NAEP 2000 science assessment and the results of the assessment can be found on the science page of the NAEP web site at <http://nces.ed.gov/nationsreportcard/science>.

Information about the assessment and interpretation of results is also available in the Technical Information section on the same web site. The individual *State Reports* are also available on the NAEP web site, <http://nces.ed.gov/nationsreportcard>. *The Science Framework for the National Assessment of Educational Progress*, on which the assessment is based, is available at <http://www.nagb.org>.

Participation in 2000

Information on each jurisdiction's participation rates for schools and students can be found in the Technical Information section of the NAEP web site.

Additional Results from the Science Assessment

For more findings from the 2000 science assessments, refer to the NAEP 2000 results at <http://nces.ed.gov/nationsreportcard/tables>. The interactive database at this site includes student and school variables for all jurisdictions, the nation, and the four NAEP geographic regions. Data tables are also available for each jurisdiction, with all background questions cross-tabulated with the major demographic variables.

Publications on the inclusion of students with disabilities and limited English proficient students

Olson, J.F. and Goldstein, A.A. (1997). *The inclusion of students with disabilities and limited English proficient students in large-scale assessments: A summary of recent progress*. (NCES Publication No. 97-482). Washington, DC: National Center for Education Statistics.

Mazzeo, J., Carlson, J.E., Voelkl, K.E., & Lutkus, A.D. (1999). *Increasing the participation of special-needs students in NAEP: A report on 1996 research activities*. (NCES Publication No. 2000-473). Washington, DC: National Center for Education Statistics.

To Order Publications

Recent NAEP publications related to science are listed on the science page of the NAEP web site and are available electronically. Publications can be also be ordered from:

Education Publications Center (ED Pubs)
P.O. Box 1398
Jessup, MD 20794-1398

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FAX: 1-301-470-1244

The 2000 Science State Reports in this series were prepared by Charlotte Solomon, Laura Jerry, and Anthony Lutkus of Educational Testing Service.

What is The Nation's Report Card?

THE NATION'S REPORT CARD, the National Assessment of Educational Progress (NAEP), is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields. By making objective information on student performance available to policymakers at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information related to academic achievement is collected under this program. NAEP guarantees the privacy of individual students and their families.

NAEP is a congressionally mandated project of the National Center for Education Statistics, the U.S. Department of Education. The Commissioner of Education Statistics is responsible, by law, for carrying out the NAEP project through competitive awards to qualified organizations. NAEP reports directly to the Commissioner, who is also responsible for providing continuing reviews, including validation studies and solicitation of public comment, on NAEP's conduct and usefulness.

In 1988, Congress established the National Assessment Governing Board (NAGB) to formulate policy guidelines for NAEP. The Board is responsible for selecting the subject areas to be assessed from among those included in the National Education Goals; for setting appropriate student performance levels; for developing assessment objectives and test specifications through a national consensus approach; for designing the assessment methodology; for developing guidelines for reporting and disseminating NAEP results; for developing standards and procedures for interstate, regional, and national comparisons; for determining the appropriateness of test items and ensuring they are free from bias; and for taking actions to improve the form and use of the National Assessment.

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