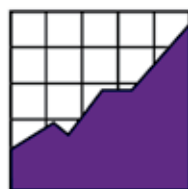


Science Assessments for Students with Disabilities in School Year 2006-2007: What We Know about Participation, Performance, and Accommodations



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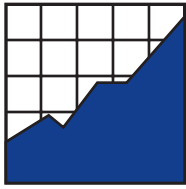
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Martha Thurlow • Christopher Rogers • Laurene Christensen

August 2010

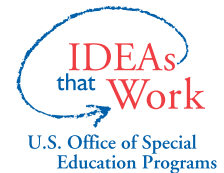
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Executive Summary

The success of all students, including students with disabilities, on statewide assessments in mathematics and reading/English language arts has been examined closely. This is due, in part, to the role of these content areas in school accountability for the Elementary and Secondary Education Act (ESEA) known as “No Child Left Behind” (NCLB). States also were expected to establish science content standards by 2005-2006, and to develop assessments in science by 2007-2008. The purpose of this report is to document the inclusion of students with disabilities in science assessments in 2006-2007, during the period just before the required implementation of statewide science assessments.

We examined the status of science assessments for students with disabilities in the 50 regular states during 2006-2007 by reviewing publicly-available documents describing three aspects of existing science assessments: (a) the general nature of science assessments, including the content assessed, test and item specifications, and response formats; (b) accommodations policies, including which states had policies; and (c) the participation and performance of students with disabilities on science assessments, based on public reports of these data.

Three primary fields of scientific study were covered by most states at all three school levels (elementary, middle, and high school): Earth science, life science, and physical science. States varied in the degree of detail provided about the content of their science assessments, from simply general scientific field categories, to subcategories of material within a field, to actual knowledge and skills statements. The formats for students to give responses to the test items included selected responses, constructed responses, and performance-based responses. Across the three school levels, the most common response format configuration on tests required both selected and constructed responses. However, many states’ assessments required only selected responses, commonly multiple choice. Relatively few states’ science tests required a combination of selected, constructed, and performance responses.

Accommodations policies for science tests were similar. Nearly all states allowed for their science assessments accommodations such as large print, braille, reading aloud of questions, magnification equipment, amplification equipment, proctor/scribe, taking breaks during the assessment, and taking the assessment individually or in small groups. Accommodations that very few states allowed for their science assessments included: presenting instructions and test questions via overhead projector; paraphrasing stimulus material, test items, or answer choices; audiotape/CD recording of items; and use of a thesaurus.

Data on the participation and performance of students with disabilities on science assessments varied considerably in detail. Fewer than 10 states reported participation rates at the elementary, middle school, and high school level. They showed participation rates that were, on average, above 95% of students with disabilities, but less often so at the high school level. Performance also varied considerably, partly as a function of grade. A majority of the scores of students with disabilities did not reach the proficient level. The number of states in which most students with disabilities reached proficiency was largest at the elementary level and smallest at the high school level.

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Overview

States, districts, and schools have focused their attention on reading/English language arts and mathematics for several years now, in part because of the emphasis placed on those content areas by the Elementary and Secondary Education Act (ESEA). Both reading and mathematics are integral to determining whether schools meet ESEA's adequate yearly progress (AYP), which in turn has significant consequences for schools. ESEA required that states develop content standards and assessments for science as well as reading/English language arts and mathematics. States were to establish their science content standards by 2005-2006, and were to have assessments at the elementary, middle, and high school levels by 2007-2008.

There are many reasons to attend to science as a content area, and to the assessments designed to measure science achievement—reasons unrelated to federal requirements. For years, science has been identified as a content area critical to the success of the United States in the global economy. Various organizations have promoted science education by identifying goals and standards for this content area (American Association for the Advance of Science, 1993; National Research Council, 1999) and have considered the qualities of assessments designed to assess students' science knowledge and skills (Wilson & Berenthal, 2005).

According to Wilson and Berenthal (2005), it is important for states to think broadly as they develop science assessments. It is critically important to be deliberate in thinking about assessments as part of a system that demonstrates horizontal, vertical, and developmental coherence; the first involves the curriculum, instruction, and assessment, the second involves the levels of the education system (classroom, school, district, and state), and the third involves identifying how science understanding develops over time.

Wilson and Berenthal (2005) specifically noted the importance of the standards on which assessments are based and the specific constructs to be measured, the role of professional development in ensuring that the assessment functions well, and the part that reporting plays in a coherent system. Wilson and Berenthal mentioned accommodations and the perception that the effects of accommodations are not well understood (and thus need to be considered during the development of assessments). Clearly, the provision of accommodations is an integral part of the inclusion of students with disabilities in assessments, and often affects the ways in which their assessment results are presented. Examining the performance of students with disabilities on science assessments, and understanding how accommodations and content interact with their performance, is a necessary step in thinking about how to ensure that we have good information to guide access to science content, and the most appropriate representations of what these students know and can do.

One national indicator of how students are doing in science is the National Assessment of Educational Progress (NAEP), considered to be the nation's report card, which has administered science assessment across the years. After its 2005 assessment, it reported that performance in science had declined since 1996 (National Center for Education Statistics, 2006). This was true for science overall and for specific areas of science (e.g., earth, physical, life sciences). Large urban districts participating in the Trial Urban District Assessment (TUDA) showed patterns of performance similar to the nation, but generally at a lower level of performance (NCES, 2007). Considerations for students with disabilities and English language learners were clear during the process of constructing the framework for the 2009 NAEP science assessment (National Assessment Governing Board, 2008). Specifically, it was noted that:

NAEP should strive to develop science assessments that allow for the participation of the widest possible range of students, so that interpretation of scores of all who participate leads to valid inferences about the levels of their performance, as well as valid comparisons across states and with state assessments. (p. 109)

This framework reflects the current recognition of the importance of including students with disabilities in the assessments in which other students participate. In the past, exclusion from assessments had been shown to have unintended negative consequences, including increased referrals to special education, reduced access to the general education curriculum, and lack of attention to accommodations (Allington & McGill-Franzen, 1992; Carter & Hughes, 2006; Dymond, Renzaglia, Gilson, & Slagor, 2007; Mayrowetz, 2009; Zlatos, 1994).

The purpose of this report is to document the inclusion of students with disabilities in science assessments just before the ESEA requirement that science assessments be implemented. Specifically, we examined the status of science assessments for students with disabilities in the 50 regular states during 2006-2007. We did this by examining three topics:

- Nature of science assessments (including the content assessed, item specifications, and response formats).
- Accommodation policies (including which states had policies, and the nature of those policies).
- Reporting of science assessment results for students with disabilities (including which states with assessments reported results and how they reported them).

Therefore, data were gathered from different sources, including available information on test and item specifications, accommodations policies, participation data reports, and performance data reports. Some states did not have publicly available information for one or more of these

types of data. Therefore, the numbers of states included in each analysis represents the actual number of states reporting that kind of data for science assessments.

Nature of Science Assessments

The nature of science assessments throughout the United States in the school year 2006-2007 is described in terms of the stage of implementation, the content covered by the test, the degree to which the states specified these content areas, and the response formats expected from students.

Implementation

In school year 2006-2007, statewide science assessments were at different stages of implementation (see Table 1). Some were at the pilot or field test stage, while others were fully implemented. At the elementary and middle school levels, 39 states had publicly available information on their science tests (3 of these states did not specify the year of full implementation). At the high school level, 38 states had publicly available information on their science tests (10 of these states did not specify the year of full implementation).

Table 1. Number of States with Science Assessments in 2006-2007

School Level	Fully Implemented	Pilot/Field Testing	Status Unclear ^a
Elementary	30	6	3
Middle	30	6	3
High	23	5	10

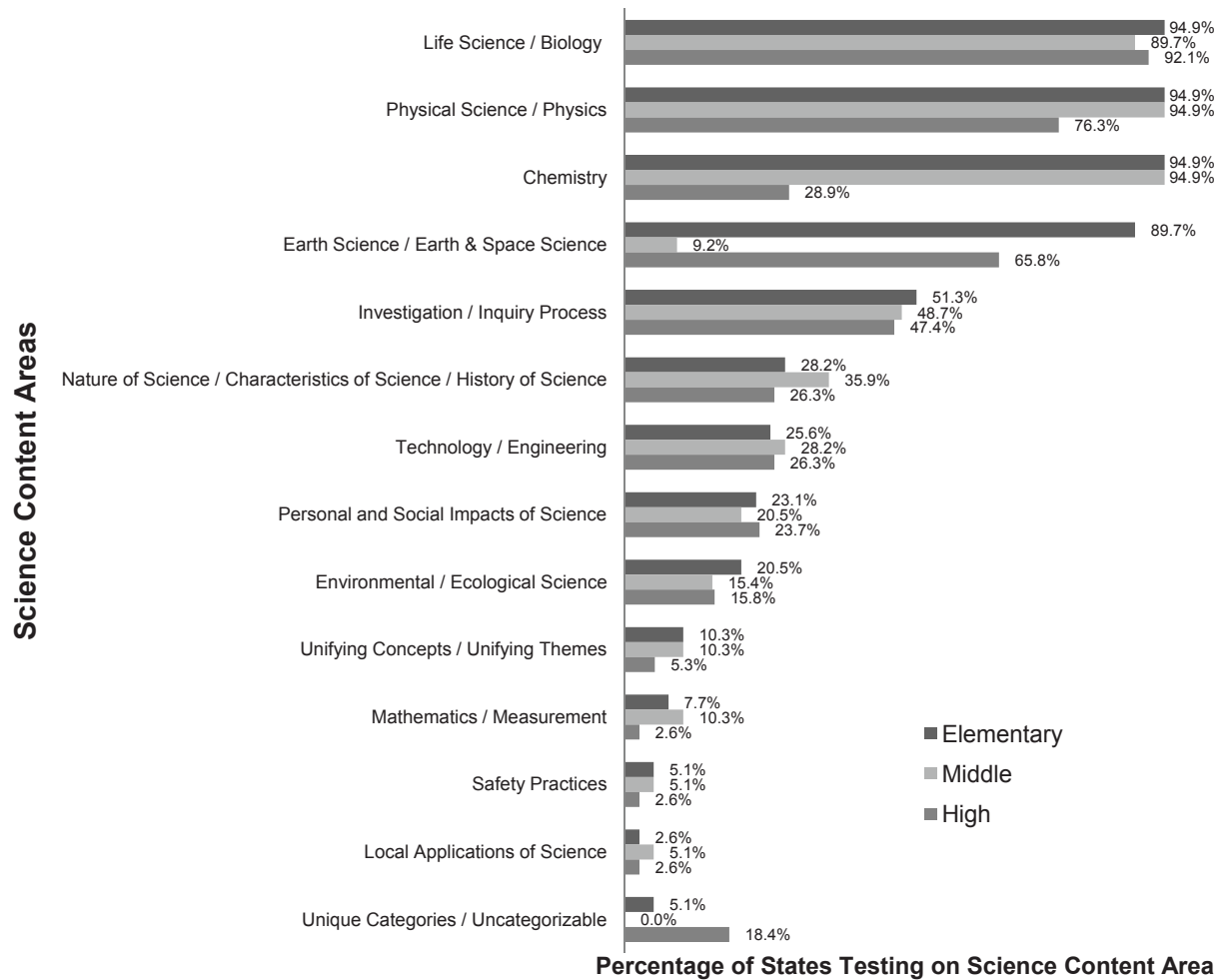
^a Whether a test was fully implemented or in the pilot/field test stage was unclear for states that did not indicate an implementation date. These states were: Elementary—Maryland, Oregon, Rhode Island; Middle School—Iowa, Oregon, Rhode Island; High School—Alabama, Colorado, Connecticut, Illinois, Iowa, Mississippi, North Carolina, North Dakota, Oregon, Rhode Island.

Assessment Content

Science assessments varied somewhat across the United States in the specific content covered, according to a review of the test and item specifications information that was publicly available from the states. In this section, 39 states had publicly available information on content coverage for science. This number differs from the number of states with data for other sections of this report. Variation of content across school levels was minimal (see Figure 1). In fact, it is notable that the lists of content areas were independently developed for each level (elementary, middle, high school) based on a review of all states' science assessments. The same list of content areas emerged at the elementary and middle school levels. The high school level uniquely separated the physical and chemical sciences into separate areas, whereas elementary and middle schools combined them into a single scientific field of study; accordingly, Figure 1 depicts the areas

“Physical Science/Physics” and “Chemistry” with an identical proportion of states covering them. Additionally, only the high school level had a content area termed “Integrated Content Areas,” with 5.3% of the states using that content area on their tests, which was determined to be qualitatively different in nature from “Unifying Concepts/Common Themes”; it was excluded from Figure 1 for space considerations.

Figure 1. Science Assessment Content Coverage Across States



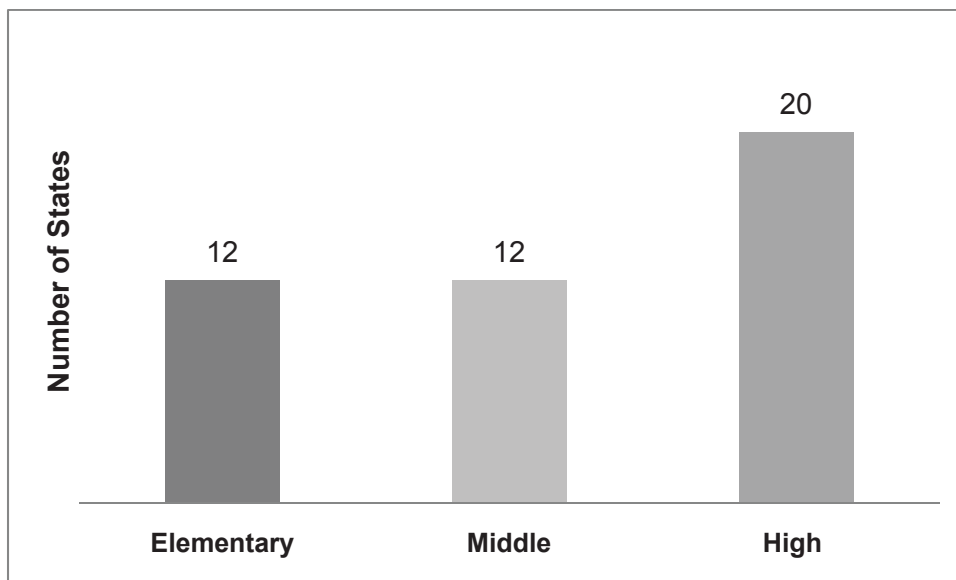
Another pattern of note is that the three primary fields of scientific study—Earth science, life science, and physical science—were covered by nearly all states’ tests at all three levels, yet in varying orders of frequency. The number of states covering life science varied across level—from 37 of 39 states in elementary to 35 of 39 states in middle school to 35 of 38 states in high school. Physical science content was more commonly included on elementary and middle school tests—both 37 of 39 states—and less commonly on high school tests—29 of 38 states. A similar pattern applied to Earth science: content in this area was specifically included in 35 of 39 states at the elementary level and 36 of 39 states at the middle school level, but only 25 of 38 states

at the high school level. A similarity among tests at the three levels is that approximately half of the states explicitly contained segments addressing aspects of the investigative or inquiry process of the scientific method, while approximately half of the states did not do so. The least-frequently included content areas were fairly similar across the elementary, middle, and high school levels, with only small variations in the orders of frequency among them. The grouping of content areas called “Unique Categories/Uncategorizable” was identified most often for science tests at the high school level (N=7). This grouping included state-specific content areas or other unique content areas that did not seem consistent across states.

Content Specificity

Information on the content of test items varied in the degree of specificity that was publicly available from states. Documentation of the content areas in the test and item specification information from the states varied from simply lists of the categories of the items—for example, “Earth and Space Science”—to also listing topics within each category, to setting out statements of the knowledge expected for the student to be able to answer the items. Figure 2 shows the percentage of states with science assessments at each school level that simply reported categories—or the general scientific field—for items.

Figure 2. Number of States with Content Category Only



While the same proportion of states—12 of 39 states—provided only the general content that test items covered in elementary and middle school, over half of the states—20 of 38 states—provided only this basic information for the high school tests. Put another way, of the three school levels, the high school level information for many states contained the least specificity about the content of the science tests.

On their elementary science assessments, 12 of the 39 states (or about 31%) listed only the categories—or general scientific fields—of the content areas covered on the assessments (see Table 2). Twenty-seven (29) states provided more specific detail about the topics covered. Six states identified “subcategories” that specified the general concepts within a field, but did not also provide knowledge and skills statements. For example, Kentucky identified a subcategory of “Motion and Forces” within “Physical Science.” Twelve (12) states provided knowledge and skill statements, often phrased in terms of indicators that the student has grasped the concept or completed the activity but did not also indicate subcategories. For example, Texas detailed “scientific processes” and “science concepts” expected of students in each field of science, with multiple sentences describing what is expected. Some states that provided knowledge and skill statements did not situate them explicitly within their scientific fields; that is, there were no overarching category labels for the statements. Eight (8) states provided both subcategories and knowledge and skill statements to detail the expected understanding students were to demonstrate through their assessments.

Table 2. Elementary Science Test Content Degree of Specificity

State	Degree of Specificity		
	Categories (only)	Subcategories	Knowledge and Skills Statements
California		•	•
Colorado			•
Delaware			•
Florida			•
Georgia			•
Idaho			•
Illinois	•		
Indiana	•		
Kentucky		•	
Louisiana	•		
Maine		•	
Maryland		•	•
Massachusetts		•	
Michigan		•	

Table 2. Elementary Science Test Content Degree of Specificity (continued)

State	Degree of Specificity		
	Categories (only)	Subcategories	Knowledge and Skills Statements
Mississippi	•		
Missouri	•		
Montana	•		
Nebraska	•		
Nevada			•
New Hampshire		•	•
New Jersey		•	•
New Mexico			•
New York			•
North Carolina			•
North Dakota			•
Ohio	•		
Oklahoma		•	
Rhode Island		•	
South Carolina		•	•
South Dakota	•		
Tennessee			•
Texas			•
Utah		•	•
Vermont		•	•
Virginia	•		
West Virginia	•		
Wyoming	•		
Total	12	15	21

On their middle school science assessments, 12 of the 39 states—again, about 31%—listed only the categories of the content areas covered on the assessment; these 12 states were not necessarily the same 12 states that did so at the elementary level (see Table 3). Of the remaining 27 states that had middle school science assessments, 14 provided further detail about the subcategories addressed by the assessment items (nine of these also stated the knowledge and skills expected of students within subcategories). A total of 13 states provided only knowledge and skill statements, without explicitly categorizing the statements according to content categories or subcategories. Overall, at the middle school level, 22 states provided knowledge and skills statements.

Table 3. Middle School Science Test Content Degree of Specificity

State	Degree of Specificity		
	Categories (only)	Subcategories	Knowledge and Skills Statements
California	•		
Colorado			•
Delaware			•
Florida			•
Georgia		•	
Idaho			•
Illinois	•		
Indiana	•		
Iowa	•		
Kentucky		•	
Louisiana	•		
Maine		•	•
Maryland		•	•
Massachusetts		•	
Michigan	•		
Minnesota		•	•
Mississippi	•		
Missouri	•		
Montana			•
Nebraska	•		
Nevada			•
New Hampshire		•	•
New Jersey		•	•
New Mexico			•
New York			•
North Carolina			•
North Dakota			•
Ohio	•		
Oklahoma		•	
Oregon		•	•
Rhode Island		•	
South Carolina		•	•
South Dakota			•
Tennessee			•
Texas			•
Utah		•	•
Vermont		•	•
West Virginia	•		
Wyoming	•		
Total	12	14	22

Table 4. High School Science Test Content Degree of Specificity

State	Degree of Specificity		
	Categories (only)	Subcategories	Statements
Alabama			•
California			•
Colorado			•
Connecticut	•		
Delaware			•
Florida			•
Idaho			•
Illinois	•		
Iowa	•		
Kentucky	•		
Louisiana	•		
Maryland			•
Massachusetts	•		
Michigan	•		
Minnesota		•	•
Mississippi	•		
Missouri	•		
Montana			•
Nebraska	•		
Nevada			•
New Hampshire	•		
New Jersey		•	•
New Mexico		•	•
North Carolina	•		
North Dakota		•	
Ohio	•		
Oklahoma	•		
Oregon		•	•
Rhode Island		•	
South Carolina			•
South Dakota			•
Tennessee	•		
Texas	•		
Utah			•
Vermont	•		
Virginia	•		
West Virginia	•		
Wyoming	•		
Total	20	6	16

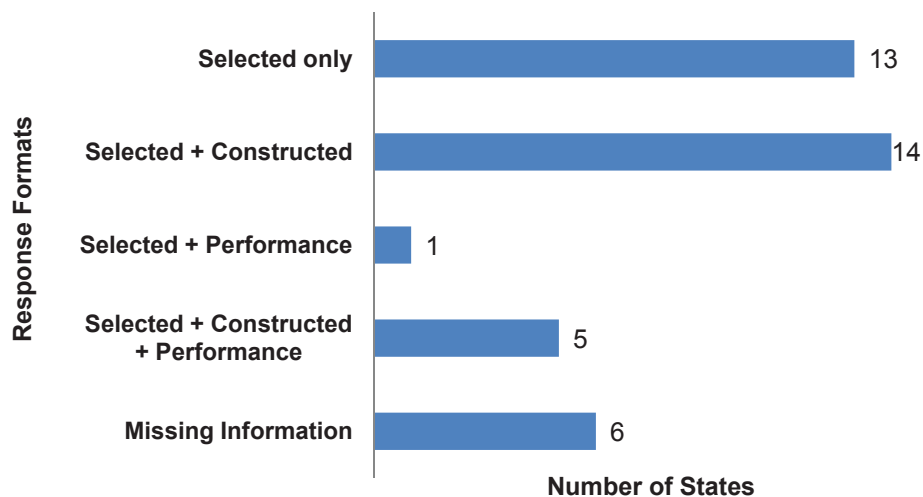
At the high school level, a majority of states with science assessments—20 of the 38—listed only the categories of the content areas covered on the assessment (see Table 4). Six states provided subcategory information for the assessment items. Four of those six states also stated the knowledge and skills expected of students within those subcategories. A total of 16 states provided knowledge and skill statements, and 12 of these did so without providing any category or subcategory information.

Response Formats

The formats for giving responses to the test items included selected responses, constructed responses, and performance-based responses. Selected responses are those in which students identify the correct response from among a list of options—usually in the form of multiple-choice items. Constructed responses are those that students develop themselves in response to a question that prompts them to write their own answer; these responses may call for sentence fragments containing key terms, full explanatory sentences, or long essay-type answers. Performance responses required students to demonstrate a skill or knowledge of a process needed to arrive at an answer.

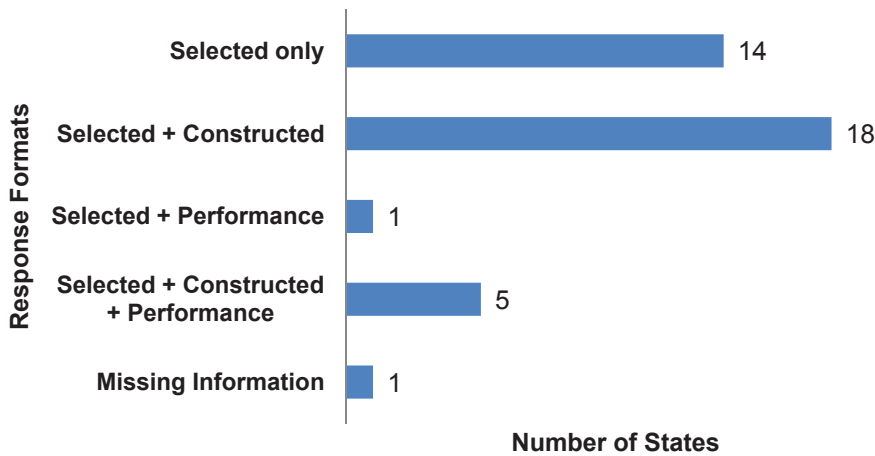
At the elementary level (see Figure 3), 13 states required selected responses only in their response formats, 14 states required both selected and constructed response formats, 1 state required both selected and performance-based response formats, and 5 states required selected and constructed and performance-based response formats. The remaining six states did not specify the response format expected of students.

Figure 3. Elementary Response Formats of State Science Assessments (N=39 states)



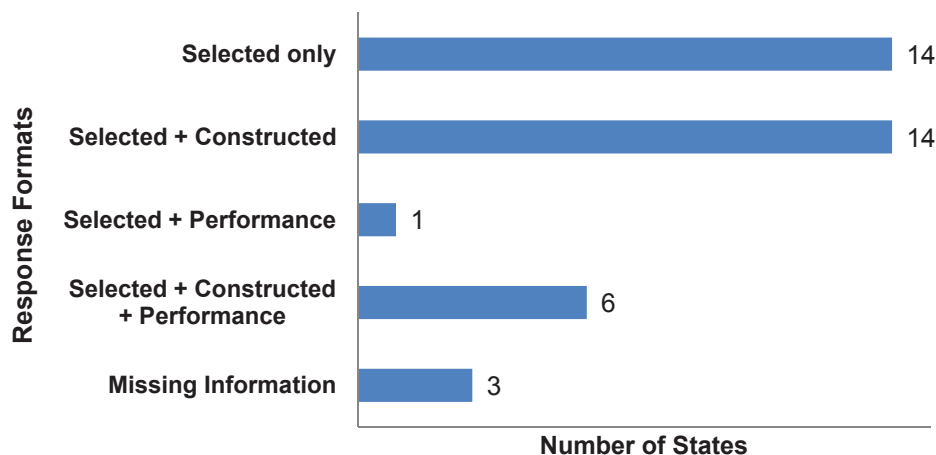
At the middle school level (see Figure 4), 14 states required selected responses only in their response formats, 18 states required both selected and constructed response formats, 1 state required both selected and performance-based response formats, and 5 states required selected and constructed and performance-based response formats. The remaining one state did not specify the response format expected of students.

Figure 4. Middle School Response Formats of State Science Assessments (N=39 states)



At the high school level (see Figure 5), 14 states required selected responses only in their response formats, 14 states required both selected and constructed response formats, 1 state required both selected and performance-based response formats, and 6 states required selected and constructed and performance-based response formats. The remaining three states did not specify the response format expected of students.

Figure 5. High School Response Formats of State Science Assessments (N=38 states)



In general, across school levels and for those states that provided information on response format, it was most common for states to require a combination of selected and constructed-response formats. In other words, students were expected to answer tests both through multiple-choice items as well as by developing their own answers. In addition, some states had developed performance measures as part of their statewide tests, expecting students to answer standardized items through showing what they can do in the practices of science. No state required only constructed or only performance responses. Still, several states did not specify their tests' response format configuration.

Accommodations on Science Assessments

All states have established policies for the provision of accommodations on statewide assessments. In this section, the number of states that had publicly available information on accommodations for science tests was 42. This number differs from the number of states with data for other sections of this report. In examining accommodations policies for science assessments, we considered an accommodation to be allowed if one of the following two conditions was met:

1. State accommodations policy mentioned that the accommodation was allowed for science, or
2. State accommodations policy did not, in general, specify accommodations by content area, but indicated that the accommodation was allowed; these states had a known science assessment.

Of the accommodations described in state written policies, all accommodations mentioned for science are allowable accommodations. No accommodations are listed as prohibited for the science assessment.

State accommodations policies generally are organized according to type of accommodation: presentation, equipment and materials, response, timing and scheduling, and setting accommodations. Often, allowed accommodations are further delineated as to whether they are allowed without any restrictions, only under certain conditions (such as only on certain portions of an assessment or only to students with a certain type of disability), or allowed with implications for scoring or aggregation. The details on these restrictions are provided in Appendix A.

Presentation accommodations alter the way in which a test is presented to a student. Table 5 shows the presentation accommodations that were allowed (with or without restrictions) for science assessments for 2006-2007. The most commonly allowed presentation accommodations for science assessments were Large Print (allowed in 38 states) and Braille (allowed in 37 states).

Reading aloud questions on a science assessment was allowed in 35 states; sign interpretation of questions was allowed in 31 states.

Table 5. Presentation Accommodations for Science Assessments

Presentation Accommodation	Number of States
Large Print	38
Braille	37
Read Aloud Questions	35
Sign Interpret Directions	33
Sign Interpret Questions	31
Read Aloud Directions	29
Repeat/re-Read/Clarify Directions	22
Teacher Highlighting	21
Familiar Examiner	15
Visual Cues	15
Student Highlighting	13
Tactile Graphics	8
Student Reads Test Aloud	8
Prompt/Encourage Student	7
Administration by Others	7
Native Language Translation of Directions and/or Items	6
Simplify/Paraphrase Directions	4
Additional Examples	4
Increased Space Between Items	4
Page Turner	3
Presenting Instructions and Test Questions via Overhead Projector	1
Paraphrasing Stimulus Material, Test Items, and/or Answer Choices	1
Audiotape/CD Recording of Items	1

Equipment and Materials accommodations are changes in the conditions of the assessment setting that involve the introduction of certain types of tools and assistive devices. Table 6 provides a summary of the equipment accommodations that were listed as allowed (with or without accommodations) for science assessments for 2006-2007. The most commonly allowed equipment accommodations for science assessments were Magnification Equipment (allowed in 38 states) and Amplification Equipment (allowed in 38 states). Use of a Calculator as an accommodation for the science assessment was allowed in 27 states.

Table 6. Equipment Accommodations Allowed for Science Assessments

Equipment Accommodation	Number of States
Magnification Equipment	38
Amplification Equipment	38
Templates	31
Light/Acoustics	30
Calculator	27
Noise Buffer	27
Adaptive/Special Furniture	24
Abacus	22
Minimize Distractions	19
Color Overlay	18
Audio/Video Equipment	16
Assistive Technology	16
Adapted Writing Tools	15
Visual Organizers	15
Manipulatives	13
Special Paper	13
Dictionary/Glossary	11
Secure Paper to Work Area	9
Keyboard	8
Graphic Organizers	8
Math Tables/Numberline	7
Slant Board/Wedge	6
Thesaurus	2

Response accommodations are changes in how a student responds during the assessment process. Table 7 provides a summary of the response accommodations that were listed as allowed (with or without restrictions) for science assessments for 2006-2007. The most commonly allowed response accommodations for science assessments were Proctor/Scribe (allowed in 35 states), Braille (allowed in 32 states), and Write in Test Booklets (allowed in 30 states). Spellchecker/Assistance was allowed in 13 states, and Sign Responses to Sign Language Interpreter was allowed in 16 states.

Table 7. Response Accommodations Allowed for Science Assessments

Response Accommodation	Number of States
Proctor/Scribe	35
Braille	32
Write in Test Booklets	30
Computer or Machine	27
Pointing	21
Communication Device	20
Speech/Text Device	19
Sign Responses to Sign Language Interpreter	16
Spellchecker/Assistance	13
Tape Recorder	8
Monitor Placement of Student Responses	4

Scheduling/timing accommodations are changes in the timing or scheduling of an assessment. Table 8 provides a summary of the scheduling and timing accommodations that were listed as allowed (with or without restrictions) for science assessments for 2006-2007. The most commonly allowed scheduling and timing accommodations for science assessments were With Breaks (allowed in 38 states) and Extended Time (allowed in 31 states).

Table 8. Scheduling/Timing Accommodations Allowed for Science Assessments

Scheduling/Timing Accommodation	Number of States
With Breaks	38
Extended Time	31
Time Beneficial to Student	30
Multiple Sessions	19
Over Multiple Days	14
Flexible Scheduling	14

Setting accommodations are changes in the test location or environment. Table 9 provides a summary of the setting accommodations that were listed as allowed (with or without) for science assessments for 2006-2007. The most commonly allowed setting accommodations for science assessments were Individual Administration (allowed in 40 states) and Small Group (allowed in 40 states). Carrels were allowed in 30 states, as was Separate Room (30 states).

Table 9. Setting Accommodations Allowed for Science Assessments

Setting Accommodation	Number of States
Individual	40
Small group	40
Carrel	30
Separate Room	30
Seat Location/Proximity	27
Minimize Distractions	19
Student's Home	19
Hospital	13
Special Education Classroom	6
Increase/Decrease Opportunity for Movement	5
Non-school setting	5

Overall, in the 42 states that had accommodation policies for science assessments for 2006-2007, a wide range of accommodations were allowed. Some states directly mentioned having science accommodations and others did not. Presentation and equipment accommodations were the most numerous in type of accommodation, with 23 examples of each type being mentioned in state policies.

Reporting Results on Science Assessments

Participation

Several states reported data that permitted the calculation of the participation of students with IEPs in their science testing for 2006-2007. Raw data needed to calculate participation rates included the number of students with disabilities assessed and the enrollment counts for both students with disabilities and all students. In some cases, data existed for either the number assessed or the number enrolled. In many cases, no participation data for the science assessment were provided. Further, it was uncommon for states to report data that permitted the calculation of participation rates of students with IEPs on a consistent basis for all school levels (elementary, middle school, high school). In this section, the number of states that had publicly available information on participation varied by grade level, and differed from the number of states that had publicly available information on performance. These numbers also differ from the number of states with data for other sections of this report.

Table 10 shows the participation rate data available at each school level for 2006-2007. The table also shows the number of states with participation rates for students with IEPs above 95%. These data show that most states that reported participation were ones that met the 95% criterion, except at the high school level.

Table 10. Students with IEPs Participation Rates on Science Assessments

Participation Rates	Elementary	Middle	High
Number of states with reported rates	8	9	11
Number of states with rates reported over 95%	6	8	4

At the **elementary school** level in 2006-2007, 8 states with statewide science assessments reported participation rates for students with disabilities (see Table 11). The rates ranged from 89.0%, on Virginia’s grade 5 Standards of Learning Science Test, to 99.6%, on California’s grade 5 Standards Test on Science. Of these eight states, only two—New Jersey and Virginia—did not surpass the 95% participation rate, although New Jersey was just one-half of a percent below 95%. As Table 11 shows, the grade levels tested varied, yet most commonly included fifth grade. In some cases, multiple elementary grade levels were tested, including two grades in Virginia and three grades in New Mexico.

Table 11. Elementary School Participation Rates

State	Name of Assessment	Grade	Tested	Enrolled	Rate
California	California Standards Test (CST): Science	5	48316	48511	99.6%
Colorado	Colorado Student Assessment Program (CSAP): Science	5	5830	5880	99.2%
Nevada	Criterion-Referenced Test (CRT): Science	5	3557	3586	99.2%
New Jersey	New Jersey Assessment of Skills and Knowledge (NJ ASK)	4	16130	15311	94.9%
New Mexico	Standards Based Assessment (SBA): Science	3	3277	3310	99.0%
		4	3292	3325	99.0%
		5	3315	3359	98.7%
Virginia	Standards of Learning (SOL) Tests: Science	3	11025	12250	90.0%
		5	11170	12551	89.0%
Washington	Washington Assessment of Student Learning (WASL): Science	5	8942	9181	97.4%
Wisconsin	Wisconsin Knowledge & Concepts Examinations Criterion-Referenced Test (WKCE CRT): Science	4	8327	8411	99.0%

At the **middle school** level in 2006-2007, 9 states with statewide science assessments reported participation rates for students with disabilities (see Table 12). Rates ranged from 90.0%, on Virginia’s grade 8 Standards of Learning Science Test, to 100%, on Kentucky’s grade 7 Core Content Test on Science. Of these eight states, only two—New Jersey and Virginia—did not surpass the 95% participation rate.

Table 12. Middle School Participation Rates

State	Name of Assessment	Grade	Tested	Enrolled	Rate
California	California Standards Test (CST): Science	8	42269	42533	99.4%
Colorado	Colorado Student Assessment Program (CSAP): Science	8	5048	5177	97.5%
Kentucky	Kentucky Core Content Test (KCCT): Science	7	7047	7047	100.0%
Nevada	Criterion-Referenced Test (CRT): Science	8	3162	3277	96.5%
New Jersey	Grade Eight Proficiency Assessment (GEPA): Science	8	3177	3404	93.3%
New Mexico	Standards Based Assessment (SBA): Science	6	3431	3469	98.9%
		7	3463	3516	98.5%
		8	3604	3681	97.9%
Virginia	Standards of Learning (SOL) Tests: Science	8	11338	12598	90.0%
Washington	Washington Assessment of Student Learning (WASL): Science	8	7968	8144	97.8%
Wisconsin	Wisconsin Knowledge & Concepts Examinations Criterion-Referenced Test (WKCE CRT): Science	8	9555	9750	98.0%

At the **high school** level in 2006-2007, 11 states with statewide science assessments reported participation rates for students with disabilities (see Table 13). Rates ranged from 58.9%, on Alabama’s grade 12 High School Graduation Exam in Science, to 100%, on Kentucky’s grade 11 Core Content Test in Science. Only five states—California, Colorado, Kentucky, Virginia, and Wisconsin—reached or surpassed a 95% participation rate.

Table 13. High School Participation Rates

State	Name of Assessment	Grade	Tested	Enrolled	Rate
Alabama ¹	Alabama High School Graduation Exam (AHSGE): Science	11			87.2%
		12			58.9%
California ²	California Standards Test (CST): Life Science	10	37287	37819	98.6%
Colorado	Colorado Student Assessment Program (CSAP): Science	10	4319	4542	95.1%
Connecticut	Connecticut Academic Performance Test (CAPT): Science	10	4333	5265	82.3%
Kentucky	Kentucky Core Content Test (KCCT): Science	11	4658	4658	100.0%
Nevada	Iowa Tests of Educational Development (ITED): Science	10	2402	2897	82.9%
New Jersey	High School Proficiency Exam (HSPE): Science	11	14204	15294	92.9%
New Mexico	Standards Based Assessment (SBA): Science	9	4070	4307	94.5%
		11	158	173	91.1%
Virginia	End-of-Course (EOC) Tests: Biology		9758	10060	97.0%
	End-of-Course (EOC) Tests: Chemistry		2399	2448	98.0%
	End-of-Course (EOC) Tests: Earth Science		10175	10490	97.0%
Washington	Washington Assessment of Student Learning (WASL): Science	10	6723	7686	87.5%
Wisconsin	Wisconsin Knowledge & Concepts Examinations Criterion-Referenced Test (WKCE CRT): Science	10	9761	10275	95.0%

¹Alabama reported no data for the number tested or enrolled, yet reported rates.

²California had many end-of-term tests that were content-area-specific. The data presented here were from the most widely-used test—life science; other California test data are in Table C-1 in Appendix C.

Several states have multiple tests of science at the high school level. In some cases, science is tested at multiple grade levels through tests encompassing multiple subject areas (e.g., New Mexico’s Standards-Based Assessment). In other cases, and more commonly, end-of-course tests are administered for distinct subject areas within the scientific discipline (e.g., Virginia’s Biology, Chemistry, and Earth Science tests). For end-of-course tests, there are often no assigned grade levels at which the tests are given. One state—California—has combined aspects of both types of approaches. It administers five end-of-course tests for the subjects of Life Science, Biology/Life Sciences, Chemistry, Earth Science, and Physics, and also administers an “Integrated/Coordinated Science” test at each grade level of high school.

Performance

Several states publicly reported science test performance data for students with IEPs for 2006-2007. These data were reported in proportions of student groups performing at several performance levels. Typically, states reported scores at three levels, as required by ESEA—basic, proficient, and advanced, as well as the percentage of students in the proficient and advanced performance levels combined. In some states, different terms were used for the three performance levels, or additional levels were included. We report data for proficient and above performance for the three school levels (elementary, middle school, high school).

At the **elementary school** level in 2006-2007, 22 states with statewide science assessments reported proficient and above performance levels for students with disabilities (see Table 14). These ranged from 7%, on Louisiana’s grade 4 Educational Assessment Program science test, to 94%, on Texas’s grade 5 Assessment of Knowledge and Skills science test. An analysis of the distributions of the proportions of students with IEPs who scored in proficient and above performance levels yields a national average for the states reporting these data for 2006-2007 of 45.6%. The national median for those states reporting data was 47.5%.

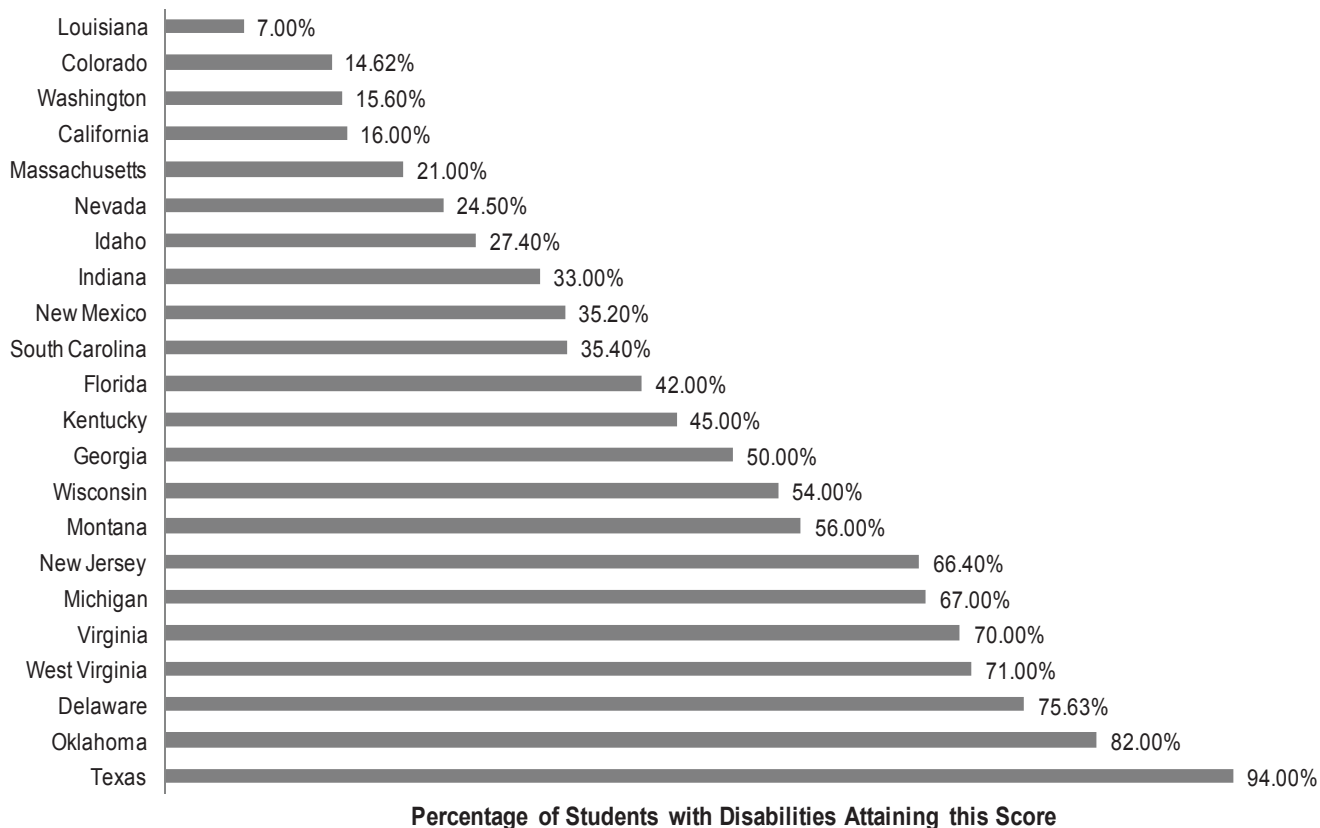
Table 14. Distribution Statistics for Performance Data

Statistic	Elementary	Middle	High
Number of states with percentages	22	24	25 ¹
Range	7.0% - 94.0%	4.0% - 83.0%	5.0% - 50.0%
Mean	45.6%	30.1%	23.7%
Median	47.5%	25.6%	17.8%

¹Of the total states with high school performance data, 22 states had single points of data; the 3 states with multiple tests were not included in the calculation of the other statistics in this school level.

Figure 6 shows the percentages of students with IEPs in states at the proficient and above performance levels at the elementary school level on statewide science assessments. Of the 22 states reporting performance data, 12 of them had fewer than 50% of their students with disabilities reach proficiency on their science assessments. Six states had 25% or fewer students with disabilities scoring at the proficient or above level. Only 3 states had 75% or more of their students with disabilities scoring at the proficient or above level.

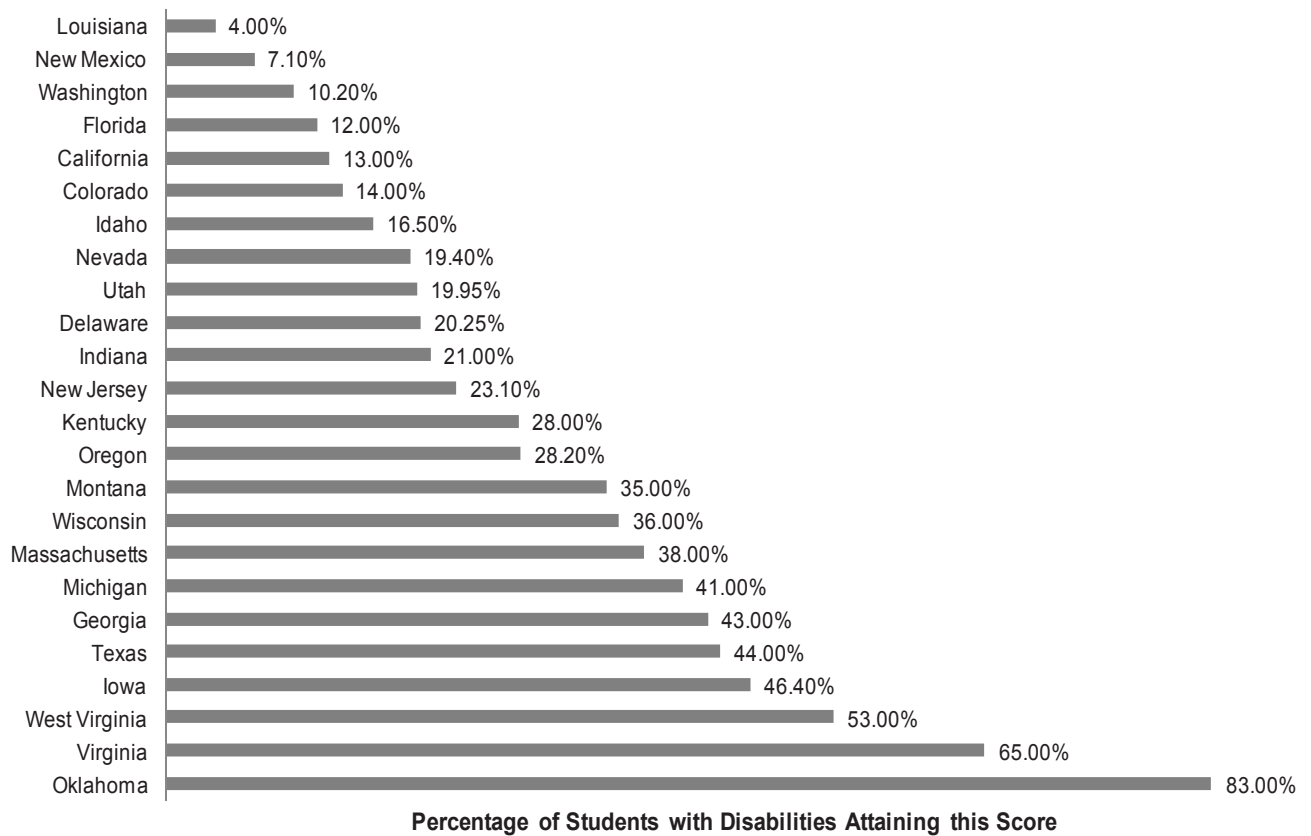
Figure 6. State Elementary Performance Data: Meets/Exceeds, SY 2006-2007



At the **middle school** level in 2006-2007, 24 states with a statewide science assessment reported proficient and above performance levels for students with disabilities (see Table 14). Rates ranged from 4%, on Louisiana’s grade 8 Educational Assessment Program science test, to 83%, on Oklahoma’s grade 8 Core Curriculum Test on science. An analysis of the distributions of the proportions of students with IEPs who scored in the proficient and above performance levels yields a national average of 30.1%. The national median for these states was 25.6%.

Figure 7 shows the percentages of middle school students with IEPs in the proficient and above levels on science tests. Of the 24 states reporting performance data, 21 of them had fewer than 50% of their students with disabilities reach proficiency on the assessments. Twelve states had 25% or fewer students with disabilities scoring at the proficient or above level. Just one state had 75% or more of its students with disabilities scoring at the proficient or above level.

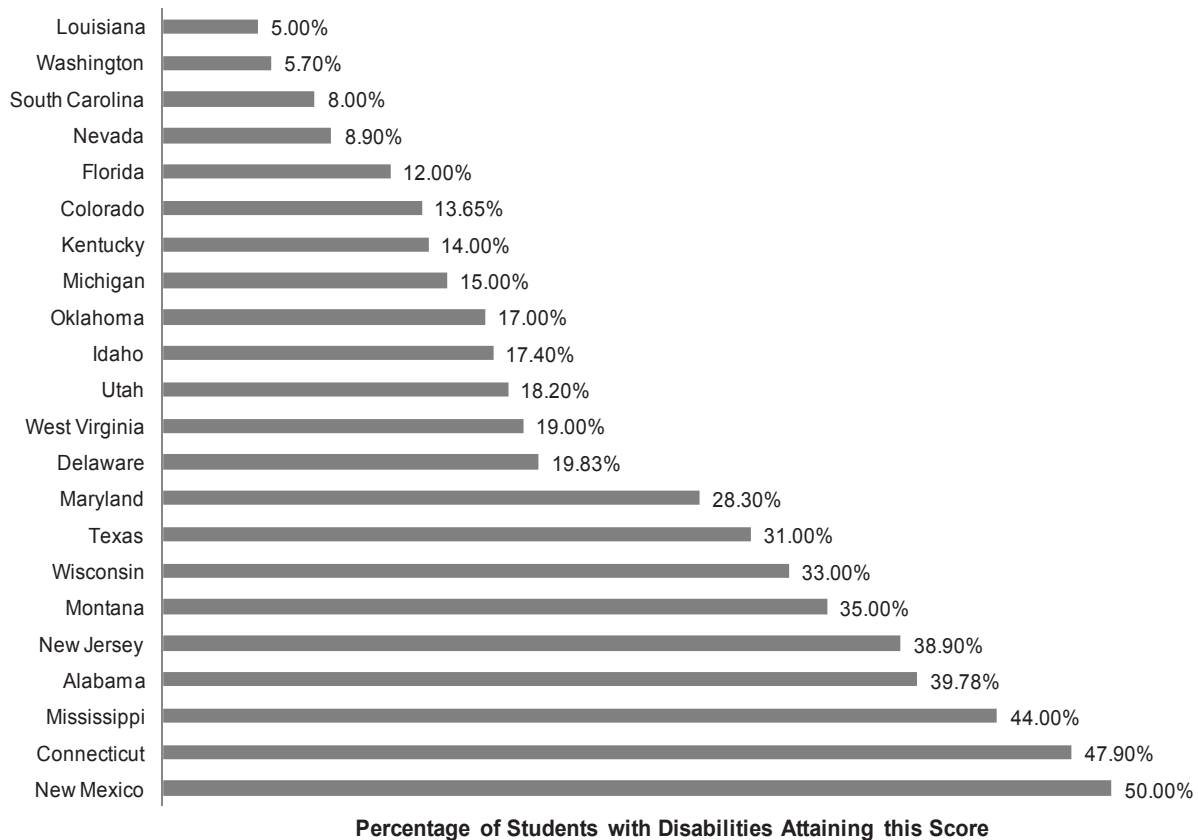
Figure 7. State Middle School Performance Data: Meets/Exceeds, SY 2006-2007



At the **high school** level in 2006-2007, 25 states with a statewide science assessment reported proficient and above performance levels for students with disabilities (see Table 14). Rates ranged from 5%, on Louisiana’s Graduation Exit Examination in science, to 50%, on New Mexico’s Standards Based Assessment in science. An analysis of the distribution of the proportions of students with IEPs who scored in the proficient or above performance level yields that the national average for the states reporting these data for 2006-2007 was 23.7%. The national median for these states was 17.8%.

Figure 8 shows the percentages of high school students with IEPs in the proficient and above levels on science tests. Of the 22 states reporting single points of performance data, 21 of them had fewer than 50% of their students with disabilities reach proficiency on the assessments. Only one state differed from this trend; it had 50% of its students with disabilities in the proficient or above performance level. Thirteen states had fewer than 25% of their students with disabilities at the proficient or above level.

Figure 8. State High School Performance Data: Meets/Exceeds, SY 2006-2007



Summary and Conclusions

The information that states presented on their Web sites about their science assessments indicated that although states are fairly consistent in the nature of the content they cover on science assessments, they diverge in the ways they measure content knowledge and skills. Most states' assessments covered the content areas of Earth science, life science, and physical science. Yet, some states' assessments covered content in areas such as environmental or ecological science, the scientific inquiry process, measurement practices, and laboratory practices, among others. Further, the degree to which the test content was specified across the states' assessments varied from categories to explicit knowledge and skills statements. Across the three school levels—elementary, middle, and high school—the most common response format configuration among the relatively limited number of states that specified them was both selected and constructed responses. Still, many states' assessments required only selected responses, and very few required a combination of selected, constructed, and performance responses.

States differed considerably in the array of accommodations allowed for students with disabilities taking their science assessments, even though they generally were inclusive of accommodations and did not expressly prohibit any of them. The most commonly-offered *presentation accommodations* included large print, braille, read aloud questions and directions, and sign interpret directions and questions; the least common were presenting instructions and questions via overhead projector, the recording of the reading aloud of items, the paraphrasing of items or answer choices, and a page turner. The most common *materials or equipment accommodations* were magnification equipment, amplification equipment, templates, and lighting or acoustics; the least common were thesaurus, slant board/wedge, math tables/numberline, graphic organizers, and keyboard. The most common *response accommodations* were proctor/scribe, braille, write in test booklets, and computer or machine; the least common were monitoring the placement of student answers, tape recorder, and spell-checker/assistance. The most common *scheduling/timing accommodations* were breaks and extended time; the least common were flexible scheduling and testing over multiple days. The most common *setting accommodations* were individual testing, small-group testing, carrel, and separate room; the least common were non-school setting, increasing or decreasing opportunity for movement, and special education classroom.

Students with disabilities are, for the most part, participating in science assessments, yet many are not performing proficiently. Many states with science assessments did not report the data needed to calculate participation and performance of students with disabilities on science assessments. Those states that did more often reported performance data than participation data. States reporting participation data generally indicated that over 95% of students with disabilities were administered science assessments, except at the high school level where only 4 of 11 states with reported data reached that threshold. In those states reporting science assessment performance, relatively few students with disabilities performed at a proficient or higher level. This was evident across the three school levels, with all but one state having fewer than half of their students with disabilities not scoring at the proficient or above level.

States that had their assessments developed for the 2006-2007 year, before they were required by ESEA to have one, seemed to have attended to some of the recommendations of Wilson and Berenthal (2005) in that they had laid out their content standards and had attempted to be clear about their accommodations policies. It also seems that these states had included nearly all of their students with disabilities, as the NAEP Science Framework (National Assessment Governing Board, 2008) recommended, though participation rates indicated that they have been less successful in doing so at the high school level.

Performance results are similar to those found for reading and mathematics (Albus, Thurlow, & Bremer, 2009), and on NAEP Science 2005 (Grigg, Lanko, & Brockway, 2006). Braun, Coley, Jia, and Trapani (2009) identified instructional strategies associated with higher scores on NAEP, including reading science textbooks, doing hands-on activities, talking about mea-

surements and results from hands-on activities, writing long answers for assignments and tests, and working with others on science activities and projects. The application of these to students with disabilities should be explored in more depth.

This report represents a snapshot in time during the states' implementation of science assessments just before they were required by ESEA. In general, although we found that students with disabilities were participating in state science assessments, how they participate, including what accommodations they use, varied considerably. In addition, the performance of students with disabilities on these assessments varied as well. States will continue to grapple with the many complex concerns and requirements raised by assessing students in science. It will be important to take another snapshot of science assessments after all states have them implemented at all school levels.

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Appendix A

Content Information

Table A-1. Elementary Science Test Content Specifications

Content Area	Number of States
Life Science / Biology	37
Physical Science / Physics / Physical & Chemical Science	37
Earth Science / Earth & Space Science	35
Investigation / Inquiry Process	20
Nature of Science / Characteristics of Science / History of Science	11
Technology / Engineering	10
Personal and Social Impacts of Science	9
Environmental / Ecological Science	8
Unifying Concepts / Unifying Themes	4
Mathematics / Measurement	3
Safety Practices	2
Local Applications of Science	1
Unique Categories / Uncategorizable	2
Total States	39

Barely a majority of the states at the elementary level—20 of 39 states—had content requiring students to know and understand aspects of the investigative or inquiry process of the scientific method; coverage of these at the middle and high school levels occurred in fewer states. The least commonly-covered content areas, regardless of school level, were segments specifically addressing scientific measurement or mathematics, safety practices in the science laboratory, and the application of science in local natural environments in the state. It was relatively uncommon for test items to specifically address unifying themes or concepts across the science content areas.

Table A-2. Middle School Science Test Content Specifications

Content Areas	Number of States
Physical Science / Physics / Physical & Chemical Science	37
Earth Science / Earth & Space Science	36
Life Science / Biology	35
Investigation / Inquiry Process / Scientific Method	19
Nature of Science / Characteristics of Science / History of Science	14
Technology / Engineering	11
Personal and Social Impacts of Science	8
Environmental / Ecological Science	6
Mathematics / Measurement	4
Unifying Concepts / Common Themes	4
Safety Practices	2
Local Applications of Science	2
Total States	39

At the middle school level, the most commonly-covered content areas were physical science, Earth science, and life science (see Table A-2). A substantial minority—19 of 39 states—had content requiring students to know and understand aspects of the investigative or inquiry process of the scientific method. The least commonly-covered content areas were specific segments on safety practices in the science laboratory and on the application of science in local natural environments in the state. Test items rarely specifically addressed scientific measurement or mathematics, unifying themes or concepts across the content areas, or environmental or ecological science. These were included in less than 20 percent of states' tests.

Table A-3. High School Science Test Content Specifications

Content Area	Number of States
Life Science / Biology	35
Physical Science / Physics	29
Earth Science / Earth & Space Science	25
Investigation / Inquiry Process / Scientific Method	18
Chemistry	11
Nature of Science / Characteristics of Science / History of Science	10
Technology / Engineering	10
Personal and Social Impacts of Science	9
Environmental / Ecological Science	6
Unifying Concepts / Common Themes	2
Integrated Content Areas	2
Mathematics / Measurement	1
Local Applications of Science	1
Safety Practices	1
Unique Categories / Uncategorizable	7
Total States	38

At the high school level, the most commonly-covered content areas were life science, physical science, and Earth science (see Table A-3). A substantial minority—18 of 38 states—had content requiring students to know and understand aspects of the investigative or inquiry process of the scientific method. The least commonly-covered content areas were specific segments on safety practices in the science laboratory, scientific measurement or mathematics, and the application of science in local natural environments in the state—each of these areas were addressed by only one state. Test items rarely specifically addressed environmental or ecological science, unifying themes or concepts across the content areas, or otherwise integrated the content areas. These were included in less than 20 percent of states’ tests.

Appendix B

Accommodations Information

Table B-1. Accommodations Allowed on Science Tests in Regular States

State	Accommodations Allowed
Alabama*	Presentation
	Large Print; Braille ³ ; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Familiar Examiner.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Noise Buffer ¹ ; Adaptive/Special Furniture; Abacus ¹ ; Adapted Writing Tools ¹ ; Slant Board/Wedge ¹ ; Secure Paper to Work Area ¹ ; Color Overlay.
	Response
	Proctor/Scribe ³ ; Computer or Machine ¹ ; Write in Test Booklets ³ ; Communication Device ³ ; Sign Responses to Sign Language Interpreter ³ ; Pointing ³ .
	Scheduling/Timing
	With Breaks ¹ ; Multiple Sessions ¹ ; Time Beneficial to Student; Flexible Scheduling ¹ .
	Setting
Individual ¹ ; Small Group ¹ ; Carrel; Seat Location/Proximity ¹ ; Student's Home ¹ ; Special Education Classroom ¹ .	
Alaska	No science assessment.
Arizona	No science assessment.
Arkansas	No science assessment.
California	Presentation
	Braille; Read Aloud Questions; Sign Interpret Questions; Sign Interpret Directions; Teacher Highlighting; Repeat-Re-read/Clarify Directions; Page Turner.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Calculator ² ; Audio/Video Equipment; Light/Acoustics; Noise Buffer; Write in Test Booklets; Communication Device ¹ ; Spell Checker/Assistance ² ; Minimize Distractions ¹ ; Adaptive/Special Furniture; Manipulatives ² ; Color Overlay; Math Tables/Numberline ² .
	Response
	Proctor/Scribe ³ .
	Scheduling/Timing
	Extended Time ¹ ; With Breaks; Time Beneficial to Student; Over Multiple Days.
Setting	
Individual; Small Group; Carrel; Separate Room; Student's Home; Hospital.	

Colorado	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat-Re-read/Clarify Directions; Native Language Translation of Directions/Items; Familiar Examiner.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Noise Buffer; Adapted Writing Tools; Assistive Technology; Keyboard.
	Response
	Proctor/Scribe; Communication Device; Spell Checker/Assistance; Braille; Sign Responses to Sign Language Interpreter; Pointing.
	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student; Flexible Scheduling.
Setting	
Individual; Small Group; Seat Location/Proximity.	
Connecticut*	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions.
	Equipment and Material
	Magnification Equipment; Amplification Equipment, Light/Acoustics; Noise Buffer; Visual Organizers; Calculator; Audio/Video Equipment; Adaptive/Special Furniture; Abacus.
	Response
	Proctor/Scribe; Computer/Machine; Write in Test Booklets; Braille; Sign Responses to Sign Language Interpreter.
	Scheduling/Timing
	With Breaks; Multiple Sessions; Time Beneficial to Student.
Setting	
Individual; Small Group; Carrel; Separate Room; Speech/Text Device; Extended Time; Student's Home; Special Education Classroom.	

Delaware	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/re-Read/Clarify Directions; Teacher Highlighting ¹ ; Native Language Translation of Directions/Items ³ ; Simplify/Paraphrase Directions ³ ; Prompt/Encourage Student; Page Turner; Presenting Instructions and Test Questions via Overhead Projector.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Audio/Video Equipment; Noise Buffer; Adaptive/Special Furniture; Assistive Technology; Dictionary/Glossary; Keyboard.
	Response
	Proctor/Scribe; Computer/Machine; Write in Test Booklets; Tape Recorder; Spell Checker/Assistance; Braille; Sign Responses to Sign Language Interpreter; Speech/Text Device.
	Scheduling/Timing
	Multiple Sessions; Over Multiple Days.
Florida	Setting
	Individual; Small Group; Seat Location/Proximity; Physical Assistance; With Breaks; Separate Room.
	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Familiar Examiner; Additional Examples; Teacher Highlighting; Student Highlighting; Student Reads Test Aloud; Increased Space Between Items.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Templates; Audio/Video Equipment; Noise Buffer; Abacus; Secure Paper to Work Area; Visual Organizers; Color Overlay; Special Paper; Math Tables/Numberline; Dictionary/Glossary; Keyboard.
	Response
	Computer or Machine; Write in Test Booklets; Tape Recorder; Communication Device; Braille; Pointing; Speech/Text Device; Monitor Placement of Student Responses.
Scheduling/Timing	
Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student; Over Multiple Days.	
Setting	
Individual; Small Group; Carrel; Separate Room; Minimize Distractions; Student's Home; Increase/Decrease Opportunity for Movement; Hospital.	

Georgia	Presentation
	Large Print; Braille ¹ ; Sign Interpret Directions; Sign Interpret Questions ¹ ; Repeat/Re-Read/Clarify Directions; Visual Cues; Familiar Examiner; Teacher Highlighting ¹ ; Simplify/Paraphrase Directions ¹ ; Tactile Graphics ¹ .
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Noise Buffer; Adaptive/Special Furniture; Manipulatives ¹ ; Adapted Writing Tools; Color Overlay; Dictionary/Glossary.
	Response
	Proctor/Scribe ¹ ; Computer or Machine ¹ ; Write in Test Booklets ¹ ; Communication Device ¹ ; Braille ¹ ; Pointing ¹ .
	Scheduling/Timing
	Extended Time ¹ ; With Breaks ¹ ; Time Beneficial to Student; Over Multiple Days ¹ ; Flexible Scheduling.
	Setting
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Student's Home; Special Education Classroom; Hospital.	
Hawaii	No science assessment.
Idaho	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Additional Examples; Teacher Highlighting; Increased Space Between Items; Simplify/Paraphrase Directions; Prompt/Encourage Student.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Templates; Audio/Video Equipment; Noise Buffer; Adaptive/Special Furniture; Abacus ¹ ; Adapted Writing Tools; Slant Board/Wedge; Secure Paper to Work Area; Visual Organizers; Assistive Technology; Dictionary/Glossary.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Communication Device; Spell Checker/Assistance; Braille; Sign Responses to Sign Language Interpreter; Pointing.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student; Over Multiple Days; Flexible Scheduling.
	Setting
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions.	

Illinois	Presentation
	Large Print; Braille; Read Aloud Directions; Repeat/Re-Read/Clarify Directions; Student Highlighting ¹ .
	Equipment and Material
	Special Paper; Graphic Organizers.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets.
	Scheduling/Timing
	Extended Time; With Breaks.
Indiana	Setting
	Individual; Small Group; Separate Room.
	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Questions; Familiar Examiner; Additional Examples.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Noise Buffer; Adaptive/Special Furniture; Adapted Writing Tools; Slant Board/Wedge.
	Response
	Proctor/Scribe; Computer or Machine; Communication Device; Braille; Sign Responses to Sign Language Interpreter.
Iowa*	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student.
	Setting
	Individual; Small Group; Seat Location/Proximity.
	Presentation
	Large Print; Braille; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Visual Cues; Tactile Graphics.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Calculator; Audio/Video Equipment; Noise Buffer; Visual Organizers; Graphic Organizers.
Kansas	Response
	Proctor/Scribe; Computer or Machine; Tape Recorder; Spell Checker/Assistance; Braille; Speech/Text Device.
	Scheduling/Timing
	Extended Time; With Breaks; Flexible Scheduling.
	Setting
	Carrel; Separate Room.
	Setting
	No science assessment.

Kentucky	Presentation
	Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Prompt/Encourage Student.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Calculator; Templates; Audio/Video Equipment; Noise Buffer; Abacus; Manipulatives; Dictionary/Glossary.
	Response
	Proctor/Scribe; Computer or Machine; Communication Device; Braille; Speech/Text Device.
	Scheduling/Timing
	Extended Time.
Louisiana	Setting
	Separate Room.
	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Teacher Highlighting.
	Equipment and Material
	Magnification Equipment; Calculator; Templates; Abacus; Adapted Writing Tools.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Tape Recorder; Communication Device; Braille; Speech/Text Device.
Maine	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student.
	Setting
	Individual; Small Group.
	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Familiar Examiner.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Noise Buffer; Abacus; Color Overlay; Special Paper; Graphic Organizers.
	Response
	Proctor/Scribe; Communication Device; Braille; Speech/Text Device.
	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student; Over Multiple Days; Flexible Scheduling.
	Setting
	Individual; Small Group; Carrel; Separate Room; Minimize Distractions; Student's Home; Increase/Decrease Opportunity for Movement; Hospital.

Maryland	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Visual Cues; Teacher Highlighting; Student Highlighting; Tactile Graphics.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Calculator; Templates; Audio/Video Equipment ³ ; Noise Buffer; Abacus; Manipulatives; Assistive Technology; Special Paper; Graphic Organizers.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Tape Recorder; Spell Checker/Assistance; Braille; Speech/Text Device; Monitor Placement of Student Responses.
	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student ¹ ; Over Multiple Days ¹ ; Flexible Scheduling.
Setting	
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions; Student's Home; Hospital.	
Massachusetts	Presentation
	Large Print; Braille; Read Aloud Questions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Familiar Examiner; Prompt/Encourage Student.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Templates; Noise Buffer; Abacus; Color Overlay; Keyboard; Graphic Organizers.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Speech/Text Device; Monitor Placement of Student Responses.
	Scheduling/Timing
	With Breaks; Time Beneficial to Student.
Setting	
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity.	

Michigan	Presentation
	Large Print; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Familiar Examiner; Teacher Highlighting; Student Highlighting; Student Reads Test Aloud; Page Turner.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Audio/Video Equipment; Noise Buffer; Adaptive/Special Furniture; Abacus; Manipulatives; Adapted Writing Tools; Secure Paper to Work Area; Visual Organizers; Color Overlays; Special Paper; Math Tables/Numberline ² .
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Tape Recorder; Communication Device; Braille; Sign Responses to Sign Language Interpreter; Pointing; Speech/Text Device.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student; Flexible Scheduling.
	Setting
Individual; Small Group; Separate Room; Seat Location/Proximity; Minimize Distractions; Student's Home; Special Education Classroom; Increase/Decrease Opportunity for Movement; Hospital.	
Minnesota	Presentation
	Large Print; Braille; Repeat/Re-Read/Clarify Directions; Teacher Highlighting; Student Highlighting.
	Equipment and Material
	Magnification Equipment; Light/Acoustics; Calculator; Templates; Abacus; Color Overlay; Assistive Technology ¹ ; Special Paper.
	Response
	Proctor/Scribe ¹ ; Write in Test Booklets; Tape Recorder; Pointing; Speech/Text Device.
	Scheduling/Timing
	Extended Time ¹ ; Time Beneficial to Student.
	Setting
Individual; Small Group.	

Mississippi	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Familiar Examiner; Teacher Highlighting; Student Highlighting; Simplify/Paraphrase Directions; Prompt/Encourage Student.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Adaptive/Special Furniture; Abacus ¹ ; Secure Paper to Work Area; Color Overlay; Keyboard.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Tape Recorder; Communication Device; Braille.
	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student; Over Multiple Days.
	Setting
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Student's Home ¹ .	
Missouri	Presentation
	Large Print; Braille; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Simplify/Paraphrase Directions ³ .
	Equipment and Material
	Magnification Equipment, Amplification Equipment; Light/Acoustics; Calculator; Templates; Abacus.
	Response
	Proctor/Scribe; Computer or Machine; Tape Recorder; Communication Device; Braille; Sign Responses to Sign Language Interpreter; Pointing.
	Scheduling/Timing
	Extended Time ³ ; With Breaks; Multiple Sessions.
	Setting
Individual; Small Group; Minimize Distractions.	

Montana	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Familiar Examiner; Teacher Highlighting.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Templates; Noise Buffer.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Speech/Text Device.
	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student; Flexible Scheduling.
Setting	
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Student's Home.	
Nebraska	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Teacher Highlighting; Student Highlighting; Increased Space Between Items; Simplify/Paraphrase Directions; Tactile Graphics;
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Templates; Audio/Video Equipment; Noise Buffer; Abacus; Manipulatives; Adapted Writing Tools; Assistive Technology; Special Paper; Math Tables/Numberline; Dictionary/Glossary; Graphic Organizers.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Tape Recorder; Spell Checker/Assistance; Braille; Pointing; Speech/Text Device.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student; Over Multiple Days.
Setting	
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions.	

Nevada	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Repeat/Re-Read/Clarify Directions; Administration by Others.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Noise Buffer; Adaptive Writing Tools; Visual Organizers.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Braille.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student.
New Hampshire	Setting
	Individual; Small Group; Carrel; Separate Room.
	Presentation
	Large Print; Braille; Sign Interpret Directions; Administration by Others; Student Reads Test Aloud; Native Language Translation of Directions and/or Items.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Noise Buffer; Adaptive/Special Furniture; Abacus ¹ ; Color Overlay; Assistive Technology.
	Response
	Computer or Machine; Braille.
New Jersey	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student.
	Setting
	Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Non-School Setting.
	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Administration by Others; Familiar Examiner; Tactile Graphics.
	Equipment and Material
	Amplification Equipment; Light/Acoustics; Calculator; Templates; Adaptive/Special Furniture; Manipulatives; Adaptive Writing Tools; Visual Organizers; Special Paper.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Communication Device; Braille; Sign Responses to Sign Language Interpreter; Pointing.
	Scheduling/Timing
	Extended Time; With Breaks; Over Multiple Days.
	Setting
	Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Student's Home; Special Education Classroom; Hospital.

New Mexico	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Administration by Others; Native Language Translation of Directions and/or Items; Paraphrasing Stimulus Material, Test Items, and/or Answer Choices ² .
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Calculator; Templates; Audio/Video Equipment; Assistive Technology; Dictionary/Glossary; Adapted Writing Tools; Keyboard.
	Response
	Proctor/Scribe; Computer/Machine; Write in Test Booklets; Tape Recorder; Communication Device; Spell Checker/Assistance; Braille; Sign Responses to Sign Language Interpreter; Pointing ¹ ; Speech/Text Device.
	Scheduling/Timing
	With Breaks; Time Beneficial to Student; Flexible Scheduling.
	Setting
Individual; Small Group; Carrel; Seat Location/Proximity.	
New York	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Additional Examples; Teacher Highlighting; Increased Space Between Items; Simplify/Paraphrase Directions.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator ³ ; Templates; Audio/Video Equipment; Adaptive/Special Furniture; Abacus; Secure Paper to Work Area; Visual Organizers; Special Paper.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Tape Recorder; Spell Checker/Assistance; Braille; Sign Responses to Sign Language Interpreter; Speech/Text Device.
	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Over Multiple Days.
	Setting
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions.	

North Carolina	Presentation
	Familiar Examiner.
	Equipment and Material
	Amplification Equipment; Light/Acoustics; Calculator; Adaptive/Special Furniture.
	Response
	Spell Checker/Assistance; Sign Responses to Sign Language Interpreter; Pointing.
	Scheduling/Timing
	With Breaks.
North Dakota	Setting
	Individual; Small Group; Carrel; Seat Location/Proximity; Student's Home; Hospital.
	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Repeat/Re-Read/Clarify Directions; Teacher Highlighting; Simplify/ Paraphrase Directions; Tactile Graphics.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Noise Buffer; Adaptive/Special Furniture; Manipulatives; Visual Organizers; Assis- tive Technology; Keyboard; Graphic Organizers.
	Response
	Proctor/Scribe; Computer or Machine; Communication Device; Spell Checker/ Assistance; Braille; Sign Responses to Sign Language Interpreter; Pointing.
North Dakota	Scheduling/Timing
	None.
	Setting
Individual; Small Group; Carrel; Seat Location/Proximity; Minimize Distractions; Student's Home; Increase/Decrease Opportunity for Movement; Hospital.	

Ohio	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues; Administration by Others; Familiar Examiner; Teacher Highlighting; Student Highlighting.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Templates; Audio/Video Equipment; Noise Buffer; Adaptive/Special Furniture; Abacus; Manipulatives; Adapted Writing Tools; Slant Board/Wedge; Secure Paper to Work Area; Visual Organizers; Special Paper; Math Tables/Numberline; Dictionary/Glossary; Thesaurus.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Spell Checker/ Assistance; Braille; Pointing.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student.
Setting	
Individual; Small Group; Carrel.	
Oklahoma	Presentation
	Large Print; Braille; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Visual Cues.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Adaptive/Special Furniture; Abacus; Adapted Writing Tools; Slant Board/Wedge; Secure Paper to Work Area; Color Overlay.
	Response
	Proctor/Scribe; Computer or Machine; Braille; Sign Responses to Sign Language Interpreter.
	Scheduling/Timing
	With Breaks; Multiple Sessions; Time Beneficial to Student; Flexible Scheduling.
Setting	
Individual; Small Group; Carrel; Separate Room; Special Education Classroom.	

Oregon	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Familiar Examiner; Teacher Highlighting; Student Highlighting; Native Language Translation of Directions and/or Items; Simplify/Paraphrase Directions; Prompt/Encourage Student.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Templates; Audio/Video Equipment; Noise Buffer; Adaptive/Special Furniture; Abacus; Manipulatives; Adapted Writing Tools; Secure Paper to Work Area; Visual Organizers; Color Overlay; Assistive Technology; Thesaurus ² .
	Response
	Write in Test Booklets; Tape Recorder; Braille; Sign Responses to Sign Language Interpreter; Pointing.
	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions.
Setting	
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity, Minimize Distractions; Student's Home ² ; Increase/Decrease Opportunity for Movement.	
Pennsylvania	No science assessment.
Rhode Island	Presentation
	Large Print; Braille; Sign Interpret Directions; Administration by Others; Familiar Examiner; Student Reads Test Aloud; Native Language Translation of Directions and/or Items.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Noise Buffer; Adaptive/Special Furniture; Manipulatives; Color Overlay.
	Response
	Braille; Pointing.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student.
Setting	
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions; Non-School Setting.	

South Carolina	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Visual Cues; Teacher Highlighting; Student Highlighting; Student Reads Test Aloud.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator ³ ; Templates; Audio/Video Equipment; Adaptive/Special Furniture; Abacus; Manipulatives; Adapted Writing Tools; Color Overlay; Assistive Technology; Special Paper; Math Tables/Numberline ³ ; Keyboard.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Tape Recorder; Communication Device; Braille; Pointing.
	Scheduling/Timing
	With Breaks; Multiple Sessions; Time Beneficial to Student; Over Multiple Days.
South Dakota	Presentation
	Large Print; Braille; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read/Clarify Directions; Simplify/Paraphrase Directions; Tactile Graphics; Audiotape/CD Recording of Items.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Templates; Noise Buffer; Adaptive/Special Furniture; Adapted Writing Tools; Slant Board/Wedge; Visual Organizers; Assistive Technology.
	Response
	Proctor/Scribe; Write in Test Booklets; Tape Recorder; Braille; Sign Responses to Sign Language Interpreter.
	Scheduling/Timing
	With Breaks; Multiple Sessions; Time Beneficial to Student.
South Dakota	Setting
	Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions; Student's Home; Hospital.

Tennessee	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions ¹ ; Repeat/Re-Read/Clarify Directions; Student Reads Test Aloud.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Calculator; Templates; Noise Buffer; Abacus; Visual Organizers; Assistive Technology; Math Tables/Numberline; Dictionary/Glossary.
	Response
	Proctor/Scribe; Write in Test Booklets; Tape Recorder; Communication Device; Speech/Text Device.
	Scheduling/Timing
	Extended Time; With Breaks; Multiple Sessions; Time Beneficial to Student.
Setting	
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Student's Home ¹ ; Non-School Setting ¹ .	
Texas	Presentation
	Large Print ¹ ; Braille ¹ ; Read Aloud Questions ¹ ; Sign Interpret Directions ¹ ; Sign Interpret Questions; Teacher Highlighting ¹ ; Student Highlighting ¹ ; Student Reads Test Aloud; Native Language Translation of Directions or Items; Simplify/Paraphrase Directions ¹ .
	Equipment and Material
	Templates; Calculator; Color Overlay.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Tape Recorder.
	Scheduling/Timing
None.	
Setting	
Individual; Small Group.	

Utah	Presentation
	Large Print; Braille; Read Aloud Directions ¹ ; Read Aloud Questions; Sign Interpret Directions ¹ ; Sign Interpret Questions; Repeat/Re-Read-Clarify Directions ¹ ; Teacher Highlighting; Student Highlighting; Simplify/Paraphrase Directions; Tactile Graphics.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Calculator; Templates; Noise Buffer; Assistive Technology; Special Paper; Graphic Organizers.
	Response
	Proctor/Scribe; Write in Test Booklets; Tape Recorder; Braille; Speech/Text Device ¹ .
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student.
	Setting
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions; Student's Home; Hospital.	
Vermont	Presentation
	Large Print; Braille; Sign Interpret Directions; Administration by Others; Teacher Highlighting; Student Reads Test Aloud; Native Language Translation of Directions and/or Items.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Adaptive/Special Furniture; Manipulatives; Color Overlay.
	Response
	Computer or Machine; Braille; Pointing.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student.
	Setting
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions; Non-School Setting.	

Virginia	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Audio/Video Equipment; Sign Interpret Directions ¹ ; Sign Interpret Questions ¹ ; Repeat/Re-Read-Clarify Directions; Simplify/Paraphrase Directions.
	Equipment and Material
	Light/Acoustics; Templates; Adaptive/Special Furniture; Abacus; Adapted Writing Tools; Dictionary/Glossary.
	Response
	Magnification Equipment; Amplification Equipment; Write in Test Booklets; Spell Checker/Assistance; Pointing.
	Scheduling/Timing
	With Breaks; Multiple Sessions; Over Multiple Days; Flexible Scheduling.
	Setting
Individual; Small Group; Carrel; Seat Location/Proximity; Minimize Distractions; Student's Home; Hospital; Non-School Setting.	
Washington	No science assessment.
West Virginia	Presentation
	Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Simplify/Paraphrase Directions; Prompt/Encourage Student ¹ .
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Calculator; Templates; Adaptive/Special Furniture; Visual Organizers ¹ ; Color Overlay; Assistive Technology ¹ ; Special Paper; Dictionary/Glossary.
	Response
	Proctor/Scribe; Computer or Machine; Write in Test Booklets; Communication Device ¹ ; Braille; Pointing ¹ ; Speech/Text Device.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student ¹ ; Over Multiple Days; Flexible Scheduling.
Setting	
Individual; Small Group; Separate Room; Minimize Distractions ¹ .	
Wisconsin	No science assessment.

Wyoming	Presentation
	Large Print; Braille; Read Aloud Directions; Read Aloud Questions; Sign Interpret Directions; Sign Interpret Questions; Repeat/Re-Read-Clarify Directions; Assistive Technology; Visual Cues; Teacher Highlighting; Student Highlighting.
	Equipment and Material
	Magnification Equipment; Amplification Equipment; Light/Acoustics; Templates; Noise Buffer; Adaptive/Special Furniture; Visual Organizers; Color Overlay.
	Response
	Proctor/Scribe; Write in Test Booklets; Tape Recorder; Communication Device; Braille; Pointing; Speech/Text Device; Monitor Placement of Student Responses.
	Scheduling/Timing
	Extended Time; With Breaks; Time Beneficial to Student; Flexible Scheduling.
	Setting
Individual; Small Group; Carrel; Separate Room; Seat Location/Proximity; Minimize Distractions; Student Home; Hospital.	

¹ With conditions.

² With implications for scoring.

³ With conditions and implications for scoring.

* These states did not have information available on the nature of their science assessments.

Appendix C

Science Assessment Participation and Performance Data

Table C-1. California High School Participation Rates

Name of Assessment	Grade	Tested	Enrolled	Rate
California Standards Test (CST): Life Science	10	37287	37819	98.59%
California Standards Test (CST): Biology/Life Sciences	9	6971	7039	99.03%
	10	18472	18579	99.42%
	11	7517	7590	99.04%
	EOC	32960	33208	99.25%
California Standards Test (CST): Chemistry	9	103	105	98.10%
	10	1654	1654	100.00%
	11	2849	2855	99.79%
	EOC	4606	4614	99.83%
California Standards Test (CST): Earth Science	9	12162	12258	99.22%
	10	4969	5016	99.06%
	11	5205	5251	99.12%
	EOC	22336	22525	99.16%
California Standards Test (CST): Physics	9	721	724	99.59%
	10	311	313	99.36%
	11	872	875	99.66%
	EOC	1904	1912	99.58%
California Standards Test (CST): Integrated/Coordinated Science 1	9	6497	6561	99.02%
	10	1841	1851	99.46%
	11	1499	1508	99.40%
	EOC	9837	9920	99.16%
California Standards Test (CST): Integrated/Coordinated Science 2	9	324	326	99.39%
	10	766	774	98.97%
	11	398	401	99.25%
	EOC	1488	1501	99.13%

Table C-1. California High School Participation Rates (continued)

Name of Assessment	Grade	Tested	Enrolled	Rate
California Standards Test (CST): Integrated/Coordinated Science 3	9	26	26	100.00%
	10	29	30	96.67%
	11	156	160	97.50%
	EOC	211	216	97.69%
California Standards Test (CST): Integrated/Coordinated Science 4	9	27	27	100.00%
	10	47	48	97.92%
	11	30	30	100.00%
	EOC	104	105	99.05%

Table C-2. High School Performance Data for Three States with Multiple Assessments

State	Assessment Name	Grade	Meets/Exceeds
California	CST: Life Science	10	8%
	CST: Biology/Life Sciences	10	8%
	CST: Chemistry	10	13%
	CST: Earth Science	10	7%
	CST: Physics	10	7%
	CST: Integrated/Coordinated Science 1	10	2%
	CST: Integrated/Coordinated Science 2	10	2%
	CST: Integrated/Coordinated Science 3	10	3%
	CST: Integrated/Coordinated Science 4	10	0%
Massachusetts	MCAS: Biology	10	8%
	MCAS: Chemistry	10	6%
	MCAS: Introductory Physics	10	9%
	MCAS: Technology/Engineering	10	5%
Virginia	End-of-Course (EOC) Tests: Biology		63%
	End-of-Course (EOC) Tests: Chemistry		69%
	End-of-Course (EOC) Tests: Earth Science		61%

CST = California Standards Test

MCAS = Massachusetts Comprehensive Assessment System