



**South Carolina
Alternate Assessment
(SC-Alt)**

**South Carolina's Alternate Assessment, SC-Alt
Spring 2013 Operational and Field Test Administration**

**Technical Report
November 13, 2013**

**American Institutes for Research
South Carolina Department of Education**

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Introduction

This report details the design, development, and spring 2013 operational and field test results for the South Carolina Alternate Assessment (SC-Alt). The SC-Alt consists of five content areas: English language arts (ELA), mathematics, science, social studies, and (high school) biology. The assessments are administered across grade-bands 3–5, 6–8, and 10.

Chapter 1: *Development of Alternate Assessment in South Carolina* describes the background of the alternate assessments in South Carolina, the format of the previous assessments, and the need for a new alternate assessment.

Chapter 2: *Test Development* describes the design of the alternate assessment and the development of tasks and items to measure academic growth among students who have significant cognitive disabilities. The Student Placement Questionnaire (SPQ), a unique feature designed to maximize the efficiency of teacher and student testing time, is described and thoroughly reviewed. The development of a vertical scale linking grade-appropriate tasks across grade levels and complexity levels within grades is described.

Chapter 3: *Spring 2013 Operational Test Administration* details the spring 2013 operational test administration in ELA, mathematics, science, social studies, and (high school) biology; test administrator training; use of the SPQ; measures taken to ensure the accuracy of scoring; and the maintenance of test security.

Chapter 4: *Performance Standards* describes the performance setting standards procedures employed for SC-Alt.

Chapter 5: *Technical Characteristics and Interpretation of Student Scores* reviews technical topics including analysis and scaling, reliability of test scores, the procedures used to calculate internal consistency reliability estimates, and classification accuracy estimates.

Chapter 6: *Score Reports* describes the score reporting system for SC-Alt with emphasis on the Individual Student (Family) Report (see Appendix F) from which the summary reports are derived, the information contained in the various reports, and their intended uses.

Chapter 7: *Student Performance Data from the Spring 2013 Administration* provides an overview of statewide achievement on the SC-Alt, based on the spring 2013 operational test administration.

Chapter 8: *Validity* reports on content validity and convergent and discriminant validity topics as well as the validity of the SPQ and the operational performance of the tailored assessment under the SPQ's start and stop rules.

Chapter 1: Development of Alternate Assessment in South Carolina

Overview of the State Assessment System

The South Carolina Assessment System includes the South Carolina Palmetto Assessment of State Standards (PASS), the High School Assessment Program (HSAP), and the End-of-Course Examination Program (EOCEP). These state-level assessments are required by the Education Accountability Act of 1998 (EAA) as amended in May 2008 and are aligned with the state's academic standards for each subject and grade level.

- PASS measures the performance of all public school students in grades 3–8 in the content areas of ELA, mathematics, science, and social studies.
- HSAP measures the performance of high school students in ELA and mathematics and is used both as one criterion for eligibility to receive a high school diploma and as the primary source for reporting the federally mandated data required by the No Child Left Behind Act (NCLB).
- EOCEP is administered in gateway courses at the high school level. The Biology EOCEP examination is counted for participation purposes for NCLB reporting.

The EAA establishes a performance-based accountability system that includes all students. This act supports South Carolina's commitment to public education and a conviction that high expectations for all students are a vital component of improving academic education.

The goals of the state assessment system are as follows:

- Increasing academic performance of all children and, ultimately, raising high school graduation rates
- Implementing rigorous academic achievement standards that are aligned with the South Carolina curriculum standards
- Improving instruction based in part on the implementation of these higher standards
- Using the results of challenging assessments that measure student performance relative to these standards

Another goal is to inform various audiences—teachers, school administrators, district administrators, South Carolina State Department of Education (SCDE) staff, parents, and the public—of the status of academic performance and of the progress of public school students toward meeting South Carolina's academic achievement standards.

The South Carolina academic standards form the basis for alignment across the state education system for district and school curricula, classroom instruction, units of study, and learning experiences. **The academic standards are the basis for all assessments in the state assessment system, including the alternate assessment.**

Purpose of the South Carolina Alternate Assessment

The purpose of the alternate assessment based on alternate achievement standards is to capture and evaluate the performance of students who have traditionally been excluded from statewide testing programs and to improve instruction for these students by promoting appropriately high expectations and the inclusion of these students in state accountability for district report cards and for adequate yearly progress (AYP) reporting at the school, district, and state levels.

Description of the South Carolina Alternate Assessment

The SC-Alt is administered to students who have been determined by the Individualized Education Program (IEP) team to be unable to participate in the general state assessments even with appropriate accommodations. It is an alternate assessment on alternate achievement standards to the PASS for students in grades 3–8 and the HSAP and Biology EOCEP for high school students.

The test is administered to students who meet the participation criteria for alternate assessment and who are of the ages of typical students in grades 3–8 and 10. Students who are ages 8–13 (the typical ages for grades 3–8) are assessed in ELA, mathematics, science, and social studies. Students who are 15 (the typical age of students in grade 10) are assessed in ELA, mathematics, and biology.

The SC-Alt consists of a series of performance tasks that are scored by the test administrator (teacher) as they are administered. The performance tasks are scripted activities, and each task contains four to eight related items. The items have a scaffolded scoring script to reduce the complexity of the item when students do not respond successfully on the first attempt. All items are linked to the South Carolina academic content standards through the SC-Alt Extended Standards. The Extended Standards are linked explicitly to the South Carolina academic standards for grades 3–8 and 10, although at less complex or prerequisite levels. The SC-Alt has three forms: elementary, middle, and high school. Students' assignment to forms is based on their age on September 1 of the tested year; 8- to 10-year-olds take the elementary form, 11- to 13-year-olds take the middle school form, and 15-year-olds take the high school form.

The assessment is designed to minimize the teacher and student testing burden by administering only those items that are well-suited to a student's achievement level. The test administrator completes an SPQ to determine the most appropriate starting task for the student. Tasks are arranged in ascending order of difficulty. Once the appropriate starting task is identified, test administrators continue to administer tasks until the student can no longer respond successfully.

The first operational administration of the SC-Alt was conducted during a seven-week testing window during spring 2007 in ELA, mathematics, and science. A census field test was conducted during the same assessment window for social studies. In 2009, 2011, and 2012, embedded field tests in ELA, mathematics, science, and social studies were administered together with the operational assessment. Also in 2011, high school biology was introduced as an operational assessment. In 2012, there were two relatively minor changes in form building: the high school biology assessment included 12 operational tasks and 3 field-test tasks, and its start points were adjusted to be consistent with the other subjects; linking tasks were still administered in two adjacent grade-bands during 2012, but they were scored operationally only in the lower

grade-band. In 2013, each form has 12 operational and operational field-test tasks and 3 field-test tasks. Linking tasks exist between ELA grades 3–5 and 6–8 forms, and math grades 6–8 and 10 forms, respectively. There is only one vertical linking task in the adjacent grade-bands. Documentation related to the 2013 operational administration is the focus of this technical report.

Background on Alternate Assessment Development in South Carolina

The 1997 amendments to the Individuals with Disabilities Education Act (IDEA '97) created the mandate to include all children, including children with significant disabilities, in state testing and accountability systems. The vision for the South Carolina alternate assessment system was initiated in early 1998 in response to the IDEA '97 regulations. This vision has driven the development and revision of alternate assessment in South Carolina.

A core team of staff from the SCDE Offices of Exceptional Children, Assessment, Research, and Curriculum and Standards met in March 1998 to develop a plan for designing an alternate assessment to meet the IDEA '97 mandate and to be included in the state assessment system. The team's first steps were to convene a steering committee and seek technical assistance from the Mid-South Regional Resource Center (MSRRC) to explore strategies for designing an alternate assessment.

The Alternate Assessment Steering Committee convened on May 12, 1998, to assist SCDE in determining how to include students with significant cognitive disabilities in statewide assessments. The committee comprised parents, special education and general education teachers, administrators, and representatives from other agencies. Dr. Ken Olsen of MSRRC provided the committee with technical assistance, including information on IDEA '97 requirements, examples of options that some states were using or considering, and research available on alternate assessment. He facilitated a process that allowed the Steering Committee to reach shared foundational beliefs, address eligibility criteria and content and performance standards, and develop plans.

To ensure that all students, including students with significant disabilities, are included in the testing and accountability systems and have appropriate access to instruction in the South Carolina academic standards, the Steering Committee determined that the alternate assessment would be based on the following principles:

- All children can learn, be expected to meet, and be challenged to meet high standards.
- Special education is an extension and adaptation of the general education program and curriculum, rather than an alternate or separate system.
- The South Carolina State Board-approved standards are the foundation for all students, including students with unique needs and abilities.
- Measurement and reporting must be defensible in terms of feasibility, validity, reliability, and comparability.
- Results of the state standards-based program must be used to improve planning, instruction, and learning.
- An alternate assessment is appropriate for the few students for whom the state assessment, even with accommodations, is not appropriate.

- The alternate assessment is designed for a diverse group of students and should be flexible enough to address their individual needs.

The committee articulated these goals for the alternate assessment:

- Provide evidence that the student has acquired the skills and knowledge necessary to become as independent as possible
- Document the student's performance and the performance of the programs serving the student
- Merge instructional best practice, instruction in state standards, and assessment activities
- Provide information in the development of curriculum that is responsive to the student's needs

The Steering Committee created the following participation guidelines to guide IEP team decisions regarding students who should participate in the alternate assessment:

- The student demonstrates significant cognitive disabilities and adaptive skills, which result in performance that is substantially below grade-level achievement expectations even with the use of accommodations and modifications.
- The student accesses the state-approved curriculum standards at less complex levels and with extensively modified instruction.
- The student has current adaptive skills requiring extensive direct instruction and practice in multiple settings to accomplish the application and transfer of skills necessary for application in school, work, home, and community environments.
- The student is unable to apply or use academic skills across natural settings when instructed solely or primarily through classroom instruction.
- The student's inability to achieve the state grade-level achievement expectations is not the result of excessive or extended absences or social, cultural, or economic differences.

NOTE: The term "significant cognitive disabilities" was added by the South Carolina Alternate Assessment Advisory Committee to the criteria after the passage of the NCLB December 2003 regulations on alternate assessment.

The Steering Committee recommended that the state develop a portfolio collection of evidence of student progress toward the South Carolina academic standards similar in design to the Kentucky Portfolio Alternate Assessment. The committee also recommended that SCDE prepare a Request for Proposal (RFP) for a contractor to develop the alternate assessment. Advanced Systems in Measurement and Evaluation Inc. (ASME), which later became Measured Progress, was awarded the contract. This company, along with the Inclusive Large Scale Standards and Assessment (ILSSA) project at the University of Kentucky, began work with SCDE on the design of the Palmetto Achievement Challenges Test-Alternate (PACT-Alt).

A work group was convened to define the domain for instruction and assessment. To ensure that the South Carolina curriculum standards were the foundation for all students, including students

with unique needs and abilities, the work group developed adaptations of the curriculum standards. The work group comprised special education teachers, regular education teachers, parents, administrators, higher education personnel, representatives from community agencies, and SCDE personnel. The work group process, which was facilitated by staff from MSRRC, focused on the prerequisite skills found primarily in the curriculum standards in prekindergarten through grade 2.

The work group affirmed that special education services must operate as an extension of the general education program and curriculum rather than as an alternate or separate system. The standards in this initial document were identified as concepts that every student, including students with moderate to severe disabilities, should know or be able to perform. These selected standards, which focused on skills that were deemed essential and attainable for every student, were directed toward the following goals:

- Enhancing the quality of students' communication skills
- Improving the quality of students' everyday living
- Improving students' ability to function in society and promoting in them an acceptance of and respect for self and others
- Preparing students for transition into adult living
- Moving students toward independence, which may range from a level of self-care with assistance to total self-sufficiency

The extensions were based on the state academic content standards in prekindergarten through grade 2. For each selected standard, examples of essential real-world performance skills were developed. The articulation of these performance skills was designed to provide the rationale for teaching the standards and to serve as guides for teachers and parents regarding how the student demonstrated a skill. The committee specified that these performance skills could be accomplished in home, school, and community environments through a variety of individualized communication systems and might incorporate a variety of supports, such as physical assistance, physical prompts, verbal prompts, and technology. The document *The Extensions and Adaptations of the South Carolina Curriculum Standards for Students Participating in Alternate Assessment* became the focus of the portfolio assessment process, HSAP-Alt performance tasks, and professional development training. In 2002, this document was revised and renamed the *Resource Guide to the South Carolina Curriculum Standards for Students in Alternate Assessment*, but it was still aligned to curriculum standards for prekindergarten through grade 2. This work was based on the IDEA '97 requirements and the thinking at the time about how students with significant cognitive disabilities should be included in the general education curriculum and assessment.

Beginning with the 2000–2001 school year, students in grades 3–8 who met the participation criteria for alternate assessment were assessed with the portfolio assessment PACT-Alt. In 2003, the high school assessment HSAP, which was designed to meet AYP requirements, was added to the state assessment system, and an alternate to HSAP was developed to measure student proficiency in ELA and mathematics. A Stakeholder Committee with expertise in high school instruction of students with significant cognitive disabilities and academic standards was

convened to guide the development of the high school alternate assessment, HSAP-Alt. The committee recommended designing an assessment based on performance on a series of tasks linked to the state curriculum standards. The HSAP-Alt consisted of a series of scripted performance tasks in ELA and mathematics with scaffolded administration and scoring procedures aligned with the *Resource Guide to the South Carolina Curriculum Standards for Students in Alternate Assessment*.

One critical piece of the development and implementation process of PACT-Alt and HSAP-Alt was the provision of intensive professional development related to standards-based instruction, much of it based on the work of Harold Kleinberg and Jacqui Farmer Kearns. A resource for professional development was their book *Alternate Assessment: Measuring Outcomes and Supports for Students with Disabilities*. Professional development was essential to the implementation of the portfolio assessment because the teacher was responsible for teaching the student the content related to the academic standards, assessing the student's progress, and providing evidence of the instruction and progress in the portfolio. Prior to the implementation of the alternate assessment and the IDEA '97 requirement to include students with disabilities in the general education curriculum, many students with disabilities, especially those with significant disabilities, and their teachers had been excluded from standards-based instruction and professional development related to academic standards.

Transition from PACT-Alt and HSAP-Alt to SC-Alt

After seeking input on the vision of a new alternate assessment on alternate achievement standards from the Advisory Committee and teachers who were conducting alternate assessment, SCDE wrote an RFP for the redesign or design of the alternate assessment system. The design was to be consistent with South Carolina's commitment to the instruction and assessment of students with significant cognitive disabilities and NCLB requirements. The focus was to be on grade-level academic standards. The new system was to address concerns related to teacher burden and time involved in assessment while supporting improved instruction based on state academic achievement standards. Extensive training for test administrators was to be integrated into the design of the assessment.

In September 2004, a contract was awarded to American Institutes for Research (AIR) to assist the state in revising the alternate assessment. AIR managed the administration and analyses of the PACT-Alt and HSAP-Alt assessments during the 2004–2005 and 2005–2006 school years while developing the new alternate assessment, the South Carolina Alternate Assessment (SC-Alt), with SCDE.

American Institutes for Research

AIR has more than 50 years of experience as a nonprofit organization dedicated to assessment, behavioral science, and educational research. AIR developed the South Carolina HSAP and the EOCEP programs and has enjoyed a successful collaboration with SCDE for a number of years.

Chapter 2: Test Development

The South Carolina academic content standards are the basis for alignment across the state for district and school curricula, classroom instruction, units of study, and learning experiences. The curriculum standards are the basis for the PASS, the HSAP, the EOCEP, and the alternate assessment. An initial step in the design of the alternate assessment was developing Assessment Standards and Measurement Guidelines (ASMGs).

Development of the Assessment Standards and Measurement Guidelines

In April 2005, a committee comprising South Carolina special education teachers, content specialists, SCDE staff, and AIR staff designed the ASMG document to support the new assessment development. The process involved extending the state academic standards in ELA, mathematics, science, and social studies in grade-bands 3–5, 6–8, and 10 to be accessible to students with significant cognitive disabilities. This document replaced the *Resource Guide to the South Carolina Curriculum Standards for Students in Alternate Assessment*.

The ASMGs were the foundation for the development of the assessment tasks for the SC-Alt. The ASMGs in each content area are distillations of the essence of South Carolina curriculum standards at each grade level.

Each content area committee reviewed the large array of standards and prioritized those in grade-bands 3–5, 6–8, and 10 that they deemed most important to students now and in the future. They then reduced the complexity of these standards, while retaining the essence of the grade-level content knowledge and skills, to make the academic standards appropriate and accessible for students with significant cognitive disabilities. The committee was careful to address both the depth and the breadth of the academic standards and used professional judgment based on experience with the population and the content to determine the standards to be assessed. The resulting document provided the link to the grade-level standards and indicators in the state academic standards. The measurement guidelines gave task writers and teachers the specificity necessary to translate the assessment standards into assessment tasks and items and classroom instruction. A list of individuals who were involved in this process is included in each ASMG content document.

NOTE: The ELA 2005 committee recommended that the standards in the Research Goal not be included in the assessment standards. The rationale for this recommendation was that this goal was not tested to any great extent in PACT because this content is primarily taught and assessed at the classroom level. Committee members, however, indicated that the Communication Goal included standards that they deemed very important to this population, and they recommended including assessment standards for this strand.

The South Carolina State Board of Education adopted revised ELA and mathematics academic standards in August 2007 and May 2008. The South Carolina State Board of Education required replacement of the high school physical science end-of-course assessment for all students with a biology end-of-course assessment. The adoption of these revised standards, which occurred outside the cyclical review timetable, and the replacement of the physical science end-of-course assessment with the biology end-of-course assessment had a direct impact on the ongoing schedule for developing additional tasks for the task pool.

During the 2007 and 2008 school years, committees of special educators and general educators met to extend the revised ELA, mathematics, and science academic standards, as well as the biology standards. These documents were designed to provide specificity for instruction as well as assessment, so the committees extended all standards and indicators including those for non-tested grades. These documents, referred to as the Extended Standards, replaced the ASMGs in ELA, mathematics, and science and provided extensions for biology. The Extended Standards provide extensions for all grade levels, including those that are not tested, and guidance to assist educators with instructional access to the state academic standards.

Stakeholder Input into the Development of the SC-Alt

To ensure the validity of the overall assessment process, a great deal of time and effort was spent obtaining input from various sources, including the State Alternate Assessment Advisory Committee, classroom teachers, parents, and other agency personnel.

South Carolina State Alternate Assessment Advisory Committee

The State Alternate Assessment Advisory Committee meets to provide oversight to the SC-Alt. The committee includes members of the original Alternate Assessment Steering Committee and the High School Stakeholder Committee. The committee also includes parents, special educators, and representatives of higher education, content specialists, special education directors, and district test coordinators. Additional members include representatives from the Department of Disabilities and Special Needs, the University of South Carolina School of Medicine, the South Carolina Assistive Technology Project, the South Carolina Interagency Deaf-Blind Project, the Autism Society of South Carolina, and Pro-Parents of South Carolina.

The Advisory Committee provided input on its expectations for the revised alternate assessment during the first meeting with the contractor, AIR, on November 5, 2004. SCDE and AIR staff reported each step of the development process to the Advisory Committee at each meeting and sought its advice and recommendations.

Early Development Activities

At the recommendation of the Advisory Committee, AIR item writers visited classrooms in South Carolina during January and February 2005 to observe teaching strategies and materials that were in use. They also reviewed PACT-Alt portfolios for examples of evidence that teachers used to demonstrate progress toward proficiency on grade-level standards and examined the characteristics of the HSAP-Alt performance event in order to build on the existing system.

Teacher focus groups convened during January 2005 and obtained feedback from teachers on the types of tasks they believed were appropriate, the protocol format they preferred, and the materials they recommended for inclusion in the assessment.

Qualified item writers employed by AIR were trained to write tasks and items specifically aligned with the ASMGs. Item writing teams included AIR staff with expertise in the content areas; alternate assessment specialists; and consultants in the areas of instruction of students who are blind and visually impaired, students who are deaf and hard of hearing, and students with cognitive disabilities.

On February 14, 2006, prior to the development of science and social studies tasks, SCDE staff and the AIR alternate assessment specialist provided additional training to the writing teams. The training was based on *Designing from the Ground Floor*, materials developed by the National Alternate Assessment Center (2005).

Consideration of universal design was a focus throughout the development process. Items, including passages and response options, were developed to use objects, pictures, picture symbols, words, and numbers. Several tasks in all four content areas and at different levels of complexity were piloted with South Carolina teachers and students in March and May 2005. AIR staff then interviewed the pilot teachers to determine the item characteristics and parameters that teachers believed worked well or did not work.

Summary of the Development and Review of the Original SC-Alt Tasks

- The task and item development process began with the creation of task kernels. AIR was primarily responsible for the majority of task kernels, with input from SCDE and teachers in South Carolina. Task kernels are basic ideas for an assessment activity, stimulus materials, and purpose, which, based on their relation to the South Carolina ASMGs, were used to develop a task and its items.
- SCDE reviewed the task kernels and provided feedback to AIR on which kernels were acceptable, which were unacceptable, and which needed revision. These reviews included alignment with the ASMGs.
- AIR item writers developed the items and stimulus materials. These items were reviewed internally by the content experts for clarity, quality, and alignment with the ASMGs.
- Following the comprehensive AIR internal review, the tasks and items underwent technical review by AIR to ensure that the items were properly keyed and scaffolded, the instructions were appropriate, the stimulus materials were interpretable, and the items were generally consistent in design with other tasks and items under development.
- Items that passed internal review by the AIR development staff were reviewed by the senior content lead for each content area and the senior alternate assessment specialist. This review ensured that within the content area, tasks and items followed the design of the assessment and were consistent with respect to format, presentation, and general administration procedures.
- Before items were passed to SCDE, the project director reviewed all items to ensure that they were consistent with the foregoing factors across content areas and grade-bands.
- Following the final internal AIR review, items were passed to SCDE for its review. During this process, SCDE staff, including content specialists, special educators, and assessment specialists, provided feedback to AIR on the design of the tasks and items, the alignment of items to the ASMGs, and the appropriateness of the items for use in South Carolina. Some items were revised by SCDE to improve alignment with the ASMGs.
- Approved items were placed into tasks for a small-scale tryout, conducted by AIR with the assistance of teachers in South Carolina and Northern Virginia and AIR staff. These tryouts provided invaluable information regarding the clarity of instructions, the utility of

the stimulus materials, and the success of the items and tasks in producing expected responses. Items that showed obvious problems were revised or discarded.

- After changes were made to the prototypes as a result of the pilots and tryouts, a committee of South Carolina teachers was convened on July 12, 2005, to review the revised tasks and provide further input and recommendations.

Content, Bias, and Sensitivity Reviews

Once small-scale tryouts were concluded, AIR, SCDE, and educators in South Carolina reviewed the tasks and items for alignment with the ASMGs and for bias and sensitivity concerns. The reviews for content and bias and sensitivity were combined because of the direct impact of the task format, materials, and language on the assessment accessibility for the population. Committees comprising teachers of students with significant cognitive disabilities, representatives of higher education, special education administrators, experts in the instruction of students with limited English proficiency (LEP), and content experts from across the state participated in these reviews to consider the following:

- Alignment to the ASMGs and Extended Standards
- Bias for specific groups and types of disabilities
- Accessibility of the tasks to the entire population for whom the test was designed
- Characteristics that might lead to bias or are inappropriate for or insensitive to the nature of the student subgroups (e.g., exclusionary language, stereotypes)
- Format and content of the tasks
- Accessibility of materials
- Clarity of instructions and ease of administration

The review committee meetings were conducted in November 2005, May 2006, and, for the spring 2009 embedded field test, in November 2008. For the 2010 biology field test, the content and bias and sensitivity review meetings were held in June 2009. For the 2011, 2012, and 2013 assessments, the committee reconvened in July of the year prior to the test administration in order to review newly developed field-test tasks. During the reviews, committee members recommended that some items be revised or eliminated.

Development of Field-Test Tasks and Forms

- On the basis of the feedback from all the steps above, AIR conducted a final review and sign-off for all items and tasks. Following this review, the items and tasks were affirmed ready for field testing.
- Prior to assembling tasks into test forms, the senior content lead for each content area and the project director reviewed the items and tasks a final time to determine whether the revisions were appropriate and maintained the alignment of the item to the targeted standard.

- For stand-alone field tests, tasks and their items were then placed into field-test forms consistent with the specifications described earlier. For embedded field tests, the tasks and their items were placed into designated locations on the operational test forms.

Item Data Review

- After field testing, AIR and SCDE staff, including alternate assessment specialists, psychometricians, content specialists, and special educators, met to review the field-test statistics.
- They reviewed the statistics associated with each item and task to determine whether the items were functioning within expectations and whether the tasks were appropriately placed within the instrument. The statistical criteria applied to the field-test item data and to the operational item data are described in Chapter 5.
- The committee also considered teacher comments on specific items from the field test, data from field-test observations, and the results of the alignment studies to make decisions about the inclusion of items in the operational assessment.
- The committee decided if an item was to be dropped or revised for recalibration.
- The item data review meetings for the original independent field tests were conducted in August 2006 and June 2007. The item data review of the 2010 independent biology field test was held in July 2010. The other administrations after 2007 used an embedded field-testing approach. For the embedded field tests, item data reviews were conducted in 2008 for social studies and in 2009, 2011, 2012, and 2013 for ELA, mathematics, science and biology, and social studies.

Development of Operational Task/Item Pool

- AIR once again reviewed all data associated with the tasks and items to determine whether the items were functioning as expected and were useful for measuring the achievement of students in South Carolina.
- Items that survived all reviews were placed into the operational task/item pool.

Design and Development of the 2006–2013 SC-Alt Field Tests

Following the task development process, the field-test forms were designed and produced. The primary purposes of the independent field-test administrations for ELA and mathematics (spring 2006), science (fall 2006), and social studies (spring 2007) were to produce data to evaluate SC-Alt tasks and items and to guide the assembly of operational test forms to be used in 2007 and beyond. Student scores based on field-test data were not reported.

An embedded field test (spring 2008) tested the symbolate version of the social studies task “George Washington” so that its performance could be compared with the text version used in the spring 2007 field test.

The design, data collection, and analysis of the independent 2006 and 2007 field tests in ELA, mathematics, science, and social studies, of the 2008 embedded social studies field-test tasks, and of the 2009, 2011, 2012, and 2013 embedded field-test tasks in ELA, mathematics, science,

and social studies were discussed in the spring 2007, 2008, 2009, 2011, 2012 operational technical reports and in this technical report.

Development of the High School Biology Assessment

During spring 2010, concurrently with the operational SC-Alt administration, 21 new high school biology tasks were field-tested on 15- and 16-year-old students eligible for alternate assessment. The biology field test was administered to 472 students on two forms of 12 tasks each. The forms were linked by three shared tasks, which allowed all biology items to be calibrated on the same scale.

The item response theory (IRT) parameters, classical item statistics, and fit and differential item functioning (DIF) statistics were subjected to an item data review conducted with AIR and SCDE staffs on July 20, 2010. A standard setting workshop based on the biology field-test data was conducted on September 14 and 15, 2010. Biology has been administered operationally beginning with the spring 2011 assessment.

Use of the Student Placement Questionnaires

The SPQs are brief structured rating instruments that represent the range of communication levels and cognitive-academic functioning found in the population of alternate assessment examinees. AIR developed the SPQ for the SC-Alt program.

The student placement process is intended to achieve several important goals:

- It matches student achievement levels with the difficulty of the tasks and items that are administered.
- It allows a maximum number of student item responses at an appropriate level of difficulty.
- It minimizes fatigue by targeting the assessment to the student.
- It supports the psychometric rigor of student scores. A student is administered a better targeted test than one that contains many items the student might find too easy or too difficult. Better test targeting contributes to better score reliability. Because fatigue effects from the student's limited attention span are reduced, the validity of the overall assessment is enhanced.

Teachers completed the SPQs in each content area to identify the most appropriate starting task for each student. For each subject, the SPQs prompted the teacher with 12–15 “can do” questions (e.g., can this student recognize the sun/moon/Earth?). The questions were grouped by major content standards and sampled across low-, moderate-, and high-complexity levels. Each question rated the student's functioning on a 4-point scale, valued 0 to 3. Answering the 12–15 questions of each SPQ, summing the total score, and identifying the most appropriate starting task in a lookup table took test administrators approximately six or seven minutes.

The lookup table identified ranges of SPQ scores that corresponded to one of three starting tasks. Teachers used the SPQs to assign students to starting points on the assessment. Cut points for the science SPQ were based on the rules derived for the mathematics SPQ but were altered for the

number of items on the science SPQ. Details regarding the student participation, analysis, and conclusions drawn from use of the SPQ placement procedure appear below.

Administration: Placement and Stopping Rules

After teachers identified the most appropriate starting task for a student, they followed several rules as they administered the starting task and subsequent tasks. If starting at task 1, the teacher would administer at least seven tasks, including at least five tasks that were operational or operational field tasks in 2013; otherwise, at least nine tasks would be administered, including six to seven operational or operational field tasks. Exhibit 2.1 lists the number of tasks that were used in 2013 final scoring. For detailed placement and stopping rules for the spring 2013 administrations, see Appendix A.

Exhibit 2.1. Number of Tasks Used in Scoring

Grade-Band	Range	Tasks Used in Scoring			
		ELA	Math	Science	Social Studies
G3–5	Task 1–7	6	6	6	6
	Task 3–11	7	7	7	7
	Task 7–15	7	7	7	7
G6–8	Task 1–7	5	6	6	6
	Task 3–11	6	7	7	7
	Task 7–15	7	7	7	7
GHS	Task 1–7	6	6	6	
	Task 3–11	7	6	7	
	Task 7–15	7	6	7	

SPQ Summary

The previous discussion describes some of the implementation procedures for the SPQ. Here we review two of the technical characteristics of the SPQ: the method used to select the SPQ-recommended starting task and the usefulness of the SPQ as an indicator of student starting task.

The technical development of the SPQ and determination of the cut points to determine starting tasks are fully described in AIR’s *South Carolina Alternate Assessment (SC-Alt): Technical Report for English Language Arts and Mathematics Field Test Administration, Spring 2006* (2008).

Usefulness of the SPQ for Determining the Starting Task. AIR has gathered information regarding the agreement between the SPQ-recommended start points and the final observed start points by reviewing item data following each operational administration. The results of the 2013 data are reported in detail in Chapter 8.

Use of the SPQ pre-assessment score is only the first step in the procedure used by the test administrator in determining where the student should start the assessment. The instructions for

using the SPQ include procedures requiring teachers to adjust the starting point below the SPQ-recommended start point when the student is not successful on the first administered task. Alternately, after reviewing the assessment, some teachers may determine that a student needed to start at a higher level than recommended by the SPQ.

The results of the 2013 study indicate that the agreement between the SPQ-recommended start point and the observed start point by content area was about 96% for ELA, 94% for mathematics, 94% for science, 91% for biology, and 94% for social studies. The consistency of the biology form is a little bit low because of a 6.1% incomplete SPQ rate. Since the test administrator is required to make adjustments based on the student's success on the first task and these adjustments are reflected in the agreement rates, the SPQ appears to be working effectively for targeting the first task to begin the assessment process.

The results of the Start-Stop Analysis reported in Chapter 8 also support the effectiveness and validity of the SPQ and the SC-Alt tailored assessment design.

Teacher Scoring Accuracy

The design of the SC-Alt includes test administrator (teacher) scoring of student responses. The degree of accuracy with which the test administrator evaluates student performance determines whether the student receives the correct scores and the correct performance level.

A second rater study was conducted during the 2013 administration to confirm that test administrators were following all scoring procedures accurately. For this study, scoring accuracy refers to the degree to which teachers follow scaffolding and scoring directions correctly and assign correct scores to student responses. In the second rater study, scoring accuracy by the test administrators was evaluated by having another trained rater present during the test administration who scored the student responses simultaneously with the test administrator. After the raters concluded their scoring of the student responses, the consistency between the test administrators and the second rater observers was determined.

Detailed results of the scoring consistency analysis are presented in Appendix B. The results indicated that there was a high degree of consistency between the scoring of the test administrators and the second rater observers, suggesting that test administrators in South Carolina understood the scoring procedures and implemented them accurately when scoring student responses.

2013 Operational Test Booklets and Administration and Scoring Procedures

For each grade-band test form in each content area, tasks and items were selected that met the statistical criteria and that covered the breadth of the targeted Extended Standards. The 2013 operational test forms in ELA, mathematics, science/biology, and social studies include embedded field-test tasks in each grade-band form. In addition, operational field-test tasks are included in the elementary and middle school forms of ELA, the middle school form of math, and elementary school form of social studies. All operational forms had their tasks ordered by increasing difficulty of the items in each task, which was determined by IRT analysis. The goal was to use technically sound assessment instruments to support valid inferences about what students know and can do relative to the Extended Standards in each content area.

The SC-Alt operational administration in spring 2013 included three sets of test materials in ELA, mathematics, and science/biology: one for the grade-band 3–5 assessment, one for the grade-band 6–8 assessment, and one for the grade 10 assessment. The social studies assessment used two sets of materials, one each for grade-bands 3–5 and 6–8 (grade 10 is not part of the social studies assessment). Similarly, science was administered only in grade-bands 3–5 and 6–8, while the grade 10 science assessment of previous administrations was replaced by biology. Test administrators (teachers) received a *Test Administration Manual (TAM)* and comprehensive training based on the manual and the test materials.

Exhibit 2.2 lists the number of tasks of each task role in each 2013 spring operational form. It shows that the 2013 test booklets contained 9–12 operational tasks, or 0–3 operational field-test tasks and 3 field-test tasks. Operational tasks are arranged in the order of the task empirical difficulties. The ELA (elementary and middle school) and mathematics (middle and high school) include linking tasks. Each task consisted of 4–8 items. Teachers were instructed to administer a minimum of 5–7 operational tasks to each student, depending on the SPQ-designated starting point, and to continue administration of subsequent tasks until the student was no longer successful or reach the end of the form.

Exhibit 2.2 Numbers of Operational, Field-Test, and Vertical Linking Tasks in Each Grade-Band Assessment, 2013

Subject	Grade-Band	Total # of Tasks	Operational	Operational Field Test	Field Test	Vertical Linking
ELA	3–5	15	10	2	3	
	6–8	15	10	1	3	1
	10	15	12		3	
Mathematics	3–5	15	12		3	
	6–8	15	9	3	3	
	10	15	11		3	1
Science	3–5	15	12		3	
	6–8	15	12		3	
Biology	10	15	12		3	
Social Studies	3–5	15	11	1	3	
	6–8	15	12		3	

Teachers also received other materials with each test booklet:

- Physical manipulatives
- Printed manipulatives
- An answer folder for each participating student
- A SPQ and directions for determining the starting task for each student (included in the answer folder)

The approximate operational form length for each grade-band assessment for the 2013 administration is 60 items (12 tasks times an average of 5 items per task) and 120 score points (60 items times an average of 2 points per item).

Linking Tasks in Each Grade-Band Assessment

All tasks in each SC-Alt grade-band assessment are aligned to the extended standards in that grade-band. Because adjacent grade-band score scales are linked psychometrically for ELA and mathematics, some tasks are used as linking tasks in each grade-band assessment that align with the extended standards in both adjacent grade-bands. All items in linking tasks are designed to be appropriate for students in both adjacent grade-bands.

One task from the ELA elementary school form are on the middle school form, and one task from mathematics middle school form are on the high school form in spring 2013 forms. Linking tasks contributes to the students' operational scores only in the respective lower grade-band.

Chapter 3: Spring 2013 Operational Test Administration

This section describes the spring 2013 operational test administration in the following areas:

- Student participation for the spring 2013 administration
- Demographics of participating students
- Test administration window, materials, and timelines
- Test administrator requirements
- Test administrator training
- Pre-assessment using the SPQ
- Fidelity of administration and accuracy of scoring
- Test security provisions

Student Participation for the Spring 2013 Administration

Students participating in the spring 2013 operational administration were those students whose IEP team had determined that they met the following SC-Alt participation criteria for alternate assessment and who were ages 8–13 or 15 on September 1, 2012. In a few cases, students who were 16 on September 1, 2012 participated in the SC-Alt assessment. These are the ages of typical students who are in grades 3–8 and 10.

- The student demonstrates a significant cognitive disability and adaptive skills that result in performance substantially below grade-level achievement expectations even with the use of accommodations and modifications.
- The student accesses the state-approved curriculum standards at less complex levels and with extensively modified instruction.
- The student has current adaptive skills requiring extensive direct instruction and practice in multiple settings to accomplish the application and transfer of skills necessary for application in school, work, home, and community environments.
- The student is unable to apply or use academic skills across natural settings when instructed solely or primarily through classroom instruction.
- The student's inability to achieve the state grade-level achievement expectations is not the result of excessive or extended absences or social, cultural, or economic differences.

Exhibit 3.1 indicates the age ranges of students who participated in the SC-Alt in spring 2013.

Exhibit 3.2 indicates the alternate assessment eligibility categories that were placed in each eligible student's state precoding file (precoding files enabled SCDE and AIR to ensure that the appropriate SC-Alt materials were delivered to teachers in time for the spring 2013 administration).

Exhibit 3.1: Age Reference Sheet for Spring 2013 Operational Administration

Age as of 9/1/12	Corresponding Birth Date Range		Test Required 2012–2013	Precode AA Eligibility Code
	Beginning DOB	Ending DOB		
5	9/02/06	9/01/07	none	5
6	9/02/05	9/01/06	none	5
7	9/02/04	9/01/05	none	5
8	9/02/03	9/01/04	SC-Alt Elem	2
9	9/02/02	9/01/03	SC-Alt Elem	2
10	9/02/01	9/01/02	SC-Alt Elem	2
11	9/02/00	9/01/01	SC-Alt Middle	3
12	9/02/99	9/01/00	SC-Alt Middle	3
13	9/02/98	9/01/99	SC-Alt Middle	3
14	9/02/97	9/01/98	none	5
15	9/02/96	9/01/97	SC-Alt HS	4
16	9/02/95	9/01/96	None*	5
17	9/02/94	9/01/95	none	5
18	9/02/93	9/01/94	none	5
19	9/02/92	9/01/93	none	5
20	9/02/91	9/01/92	none	5
21	9/02/90	9/01/91	none	5

*Note: A few students at age 16 took the SC-Alt HS forms in the 2012–2013 school year.

Exhibit 3.2: Precode Project Coding (Alternate Assessment Eligibility Field)

Code	SASI Drop-down List Description	Full Description
0	Criteria not met	The student does not meet criteria for alternate assessment.
2	SC-Alt Elem School	The student requires alternate assessment and meets the age eligibility requirement for assessment with the SC-Alt Elem School form this current school year (8–10 years old on September 1, 2012).
3	SC-Alt Middle School	The student requires alternate assessment and meets the age eligibility requirement for assessment with the SC-Alt Middle School form this current school year (11–13 years old on September 1, 2012).
4	SC-Alt High School	The student requires alternate assessment and meets the age eligibility requirement for assessment with the SC-Alt High School form this current school year (15 years old on September 1, 2012).
5	AltAssess NotAgeElig	The student requires alternate assessment but does not meet the age eligibility requirements to be assessed with SC-Alt this current school year (i.e., the student was younger than eight years, age 14, or older than 15 years on September 1, 2012).

Demographics of Participating Students

This section describes the demographics of participating students by test form (elementary, middle, or high school). Exhibit 3.4 presents the student demographics for participating students in each grade-band.

For the purpose of this report, the inclusion of students was based on the same criteria applied in the reporting of student scores. A student was included if the following criteria were met: (1) a signed security affidavit was received for the student, (2) the student was not noted to be excluded from reporting for some other reason (e.g., inappropriate administration procedures), and (3) the number of coded responses met the attemptedness requirement for student scoring (i.e., 23 valid responses) in at least one content area. The population of students reported, therefore, includes 1,539 elementary school test forms, 1,489 middle school test forms, and 400 high school test forms.

According to the attemptedness requirements, a student's responses to a test form could be assigned to one of four completion status categories: completion ("student satisfied attemptedness rule"), invalid due to too few scored responses ("student did not satisfy attemptedness rule"), invalid due to test administration errors ("test administrator did not follow instructions for starting tasks"), or not tested ("student did not answer any content area items"). For all content areas, the majority of students reported completed the administered test form; 99% or more of the eligible students completed ELA and mathematics, 67%–68% completed science and social studies in the elementary and middle school grade-bands,¹ and 98% completed

¹ Not all students were required to complete the science and social studies subject areas.

the high school biology assessment. Of the remaining student records in ELA and math, fewer than 1% of reported test forms were categorized as not tested or not meeting the attemptedness criteria.

Given that the number of students to be assessed on the high school test form was approximately one-third the number of students assessed on either the elementary or the middle school forms, the proportion of demographic characteristics of the student population was relatively consistent across grade-bands. In terms of ethnicity, African American students made up 49%–52% of the assessed students across grade-bands; white students accounted for 41% of the students across grade-bands; and Hispanic students accounted for 5%–7% of students across forms. Other ethnicities each accounted for less than 4% of the assessed population. Gender was also consistent across grade-bands with approximately a two-to-one ratio of male students (67%) to females (33%).

The classification of students in terms of English language proficiency (ELP) was also consistent across grade-bands. The majority of students (94%–96%) were classified as “English Speaker II,” meaning that they had never been coded as an ESL student. The remaining language proficiency classifications each accounted for less than 1% of students by grade-band with the exception of “pre-functional” (3%–5%), indicating that the student scored pre-functional on the ELP assessment and was receiving English as a second language (ESL) services. The percentage of pre-functional ESL students decreased across grade-bands.

The grade reported for a student in the school’s database is the grade reported for funding purposes—the Education Finance Act (EFA) grade—and is often determined by the location of the student’s educational program instead of by the student’s age or years in school. Therefore, approximately 8% of students administered the elementary form (for students ages 8–10, the typical ages of students in grades 3–5) had reported EFA grades lower than grade 3 or higher than grade 5, with most of these students classified in the adjacent grades of 2 and 6. Of students administered the middle school form (for students ages 11–13, the typical ages for grades 6–8), 19% of the students were reported at grades below grade 6 or above grade 8. The vast majority of these students were classified as grade 5 students (16% of all middle school form students), which indicates that these students were being served in educational programs housed in elementary schools. Of the students administered the high school form (for students age 15), 76% were reported as grade 9 or grade 10 (34% and 42%, respectively). Sixteen percent (16%) of the high school form students were reported as grade 8 students, indicating that these students were being served in educational programs housed in middle schools. The purpose of assigning SC-Alt grade-band forms by age is to ensure that students are instructed and assessed on the appropriate grade-band curricula regardless of where their educational programs are housed.

The percentage of students receiving free lunch at schools decreases slightly across forms (69% to 63%), and the percentage of students receiving reduced-price meals stays approximately the same across forms (7% to 9%). One student was indicated as being a migrant student; one student was indicated as being homeschooled. Twenty one elementary school students (1%) were indicated as being medically homebound, as were 19 middle school students (1%) and 10 high school students (3%).

Multiple codes are reported for students in the student database for purposes of funding. Therefore, many SC-Alt students have multiple disability codes, indicating primary and

secondary disabilities, and supplemental services. For example, many students with cognitive disability codes also receive speech services and carry a speech/language disability code. For reporting purposes, a coding system is used to designate a student’s primary disability by giving precedence to cognitive disability classifications and other primary disability codes.

Fifteen different disability codes were reported for students assessed with the SC-Alt, as shown in Exhibit 3.3. In the exhibit, the “Precedence” column indicates the precedence of the disability in the coding system: the smaller the indicator, the higher the precedence of the code when two or more codes are reported. For example, if the code for Profoundly Mentally Handicapped (PMD) is indicated in the data, the student’s primary disability will be reported as PMD no matter what other disability types are indicated. Further, higher precedence codes override lower precedence codes. For instance, if both autism and orthopedically handicapped are indicated, a student’s primary disability will be reported as autism.

Students with the primary disabilities of severe mental disability, moderate mental disability, mild mental disability, and autism made up 80% to 88% of the students assessed with the SC-Alt. The rates of severe (or profound) mental disability, moderate (trainable) mental disability, mild (or educable) mental disability, and autism stayed about the same (8%–9%, 20%–39%, 20%–29%, and 20%–28%, respectively). Although a few students were given a primary disability code of speech or language impairment, the vast majority of students received this code because they were receiving speech/language therapy as a supplementary service.

Exhibit 3.3: Primary Disability Code

Precedence	Indicated Student Disability	Primary Disability Code
1	Profoundly Mentally Handicapped	PMD
2	Trainable Mental Disability	TM
3	Educable Mentally Disability	EM
4	Autism	AU
5	Developmental Delay	DD
6	Learning Disability	LD
7	Emotional Handicapped	EH
8	Traumatic Brain Injury	TBI
9	Other Health Impaired	OHI
10		
11	Orthopedically Handicapped	OH
12	Visually Handicapped	VH
13	Hearing Handicapped	HH
14	Speech	SP
15	Deaf/Blindness Hearing Handicapped Visually Handicapped	DB

Precedence	Indicated Student Disability	Primary Disability Code
16	Multiple Disable	MD
99	<<None>>	<<Blank>>

Exhibit 3.4: Summary of Demographic Information

	Elementary School		Middle School		High School	
	N	%	N	%	N	%
<i>STUDENT'S ETHNICITY</i>						
African American	748	48.6	724	48.62	207	51.75
American Indian/Alaska Native	4	0.26	5	0.34	3	0.75
Asian	22	1.43	20	1.34	1	0.25
Double-Bubbled	.	0	.	0	.	0
Hispanic	101	6.56	73	4.9	21	5.25
Multi-Race	32	2.08	51	3.43	6	1.5
Native Hawaiian/Other Pacific Islander	1	0.06	3	0.2	.	0
Other	.	0	.	0	.	0
Unknown	.	0	.	0	.	0
White	631	41	613	41.17	162	40.5
<i>STUDENT'S GENDER</i>						
Female	512	33.27	486	32.64	131	32.75
Male	1027	66.73	1003	67.36	269	67.25
Unknown	.	0	.	0	.	0
<i>ESL (LANGUAGE)</i>						
Advanced	1	0.06	.	0	.	0
Advanced Waiver	.	0	.	0	.	0
Beginner	6	0.39	2	0.13	1	0.25
Beginner Waiver	.	0	.	0	.	0
English Speaker I	2	0.13	1	0.07	.	0
English Speaker II	1441	93.63	1428	95.9	383	95.75
Full English Proficient	.	0	1	0.07	.	0
Intermediate	1	0.06	.	0	.	0
Intermediate Waiver	.	0	.	0	.	0
Pre-Functional	75	4.87	54	3.63	12	3
Pre-Functional Waiver	.	0	.	0	.	0
Title III First Year Exited	.	0	1	0.07	.	0
Title III Second+ Year Exited	.	0	.	0	.	0
Unknown	13	0.84	2	0.13	4	1
<i>ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH</i>						
Free Meals	1062	69.01	983	66.02	250	62.5
Full-Pay Meals	375	24.37	394	26.46	114	28.5
Reduced	102	6.63	112	7.52	36	9

<i>EFA GRADE (REPORTED GRADE FOR FUNDING)</i>						
0	1	0.06	.	0	.	0
1	5	0.32	.	0	.	0
2	90	5.85	1	0.07	1	0.25
3	536	34.83	2	0.13	.	0
4	549	35.67	21	1.41	.	0
5	336	21.83	244	16.39	9	2.25
6	16	1.04	502	33.71	2	0.5
7	3	0.19	441	29.62	4	1
8	2	0.13	263	17.66	65	16.25
9	.	0	12	0.81	136	34
10	.	0	3	0.2	169	42.25
11	.	0	.	0	14	3.5
99	1	0.06	.	0	.	0
<i>COMPLETION STATUS: ELA</i>						
Attempted	1530	99.42	1484	99.66	396	99
Not Tested	5	0.32	1	0.07	.	0
Test Not Valid: Student received fewer than 23 scored responses	3	0.19	4	0.27	2	0.5
Test Not Valid: Test administrator did not follow instructions for starting tasks	1	0.06	.	0	2	0.5
<i>COMPLETION STATUS: Math</i>						
Attempted	1524	99.03	1476	99.13	397	99.25
Not Tested	9	0.58	3	0.2	1	0.25
Test Not Valid: Student received fewer than 23 scored responses	4	0.26	6	0.4	2	0.5
Test Not Valid: Test administrator did not follow instructions for starting tasks	2	0.13	4	0.27	.	0
<i>COMPLETION STATUS: Science</i>						
Attempted*	1052	68.36	1016	68.23	393	98.25
Not Tested	483	31.38	466	31.3	1	0.25
Test Not Valid: Student received fewer than 23 scored responses	1	0.06	3	0.2	4	1
Test Not Valid: Test administrator did not follow instructions for starting tasks	3	0.19	4	0.27	2	0.5

<i>COMPLETION STATUS: Social Studies</i>						
Attempted*	1038	67.45	995	66.82	.	0
Not Tested	494	32.1	492	33.04	400	100
Test Not Valid: Student received fewer than 23 scored responses	4	0.26	2	0.13	.	0
Test Not Valid: Test administrator did not follow instructions for starting tasks	3	0.19	.	0	.	0
<i>Special Status</i>						
Migrant Status	.	0	1	0.07	.	0
Home Schooled	1	0.06	.	0	.	0
Medical Homebound	21	1.36	19	1.28	10	2.5
<i>STUDENT PRIMARY DISABILITY</i>						
Unknown	.	0	.	0	.	0
Autism	436	28.33	343	23.04	81	20.25
Deaf/Blindness	.	0	.	0	.	0
Developmental Delay	132	8.58	.	0	1	0.25
Educable Mentally Disabled	372	24.17	425	28.54	80	20
Emotionally Handicapped	10	0.65	13	0.87	3	0.75
Hearing Handicapped	7	0.45	15	1.01	1	0.25
Learning Disability	33	2.14	19	1.28	5	1.25
Multiple Disabled	10	0.65	5	0.34	1	0.25
Orthopedically Handicapped	21	1.36	41	2.75	10	2.5
Other Health Impaired	66	4.29	69	4.63	17	4.25
Profoundly Mentally Handicapped	117	7.6	126	8.46	36	9
Speech	10	0.65	10	0.67	2	0.5
Trainable Mental Disability	304	19.75	406	27.27	156	39
Traumatic Brain Injury	7	0.45	8	0.54	4	1
Visually Handicapped	14	0.91	9	0.6	3	0.75
TOTAL	1539	100	1489	100	400	100

*Not all students were required to complete the science and social studies subject areas.

Test Administration Window, Materials, and Timelines

The spring 2013 administration of the SC-Alt included the following important dates:

- SC-Alt test administration training for teachers new to the SC-Alt operational administration (did not administer in 2011 or 2012), five regional SCDE workshops: January 14–18, 2013
- District-level SC-Alt test administration training for all test administrators: February 4–28, 2013
- Test materials arrived in district: February 21, 2013
- Assessment window: March 4–April 26, 2013

- Teachers returned materials to the district test coordinator for alternate assessment (DTC-Alt): May 1, 2013
- Materials received by contractor: May 3, 2013

Teachers had approximately eight weeks to review the materials and complete the test administration. Teachers received both printed and physical manipulatives to use during test administration. They were also responsible for collecting a few common classroom items that were familiar to the student to use with several tasks.

Test Administrator Requirements

Test administrators were required to receive training on all phases of the administration of the SC-Alt and had to be one of the following:

- A certified employee of the district
- An employee of the district who is a critical needs teacher and has a letter of eligibility, an interim certificate, or a critical needs certificate
- A substitute teacher who is certified and employed by the district on an as-needed basis
- Someone who was a certified teacher but has allowed the teaching certificate to expire owing to retirement, change of career, or some other reason and has been approved by the DTC-Alt as a qualified test administrator
- Someone who is not certified but has been employed by the school district in an instructional capacity and has been approved by the DTC-Alt as a qualified test administrator

If a test was administered in a location other than the school, the test administrator still had to meet the criteria specified above.

Test Administrator Training

Test administration training was required for all test administrators. The SC-Alt is individually administered with a standard script and scored by the test administrator as the assessment is being conducted. Fidelity of administration and scoring is essential to the validity of the assessment results.

Teachers who administered the SC-Alt during spring 2013 but who did not administer the SC-Alt in spring 2011 or 2012 were required to attend a SCDE training session. In addition, all teachers who administered the SC-Alt in spring 2013, including those who attended the SCDE workshops, were required to attend a district-level SC-Alt administration training session conducted by the DTC-Alt. At the completion of the training sessions, each test administrator was required to sign and submit to SCDE an acknowledgment of receiving training and readiness to conduct the assessment.

The training included the following elements:

- Review of the eligibility criteria for students participating in the alternate assessment

- Overview of the Extended Standards, emphasizing the link to the general education standards
- Explanation of how the assessment was developed, including the role of the review committees
- Review of test administrator requirements, test security, and test materials
- Training and practice in pre-assessment using the SPQ
- Description of the assessment format and procedures:
 - Setup
 - Script
 - Scoring
 - Adaptive instructions
- Instruction for making SC-Alt tasks accessible
- Overview of assistive technology and the alternate assessment
- Administration and scoring instruction and practice using released test items provided on video clips of South Carolina teachers administering a task to students representing a variety of disabilities and ethnicities
- Scoring qualifying round
- Review of procedures for receiving and shipping materials back to the DTC-Alt

Pre-Assessment Using the Student Placement Questionnaire

As noted earlier in this Technical Report, the SC-Alt uses the SPQ as a pre-assessment instrument to determine the most appropriate starting point in the assessment. Recall that the SPQ requires the teacher to evaluate the student on 12–15 “can do” statements addressing the student’s skills and knowledge in each content area on the basis of the teacher’s prior instructional knowledge of the student. A total score computed from the teacher’s SPQ responses indicates the initial starting task for the assessment. Once the assessment has begun, the test administrator is required to adjust the starting point for the student if the student is not successful on the first task. Rules have been established for adjusting the starting tasks and for determining when the assessment should be concluded. The starting and stopping rules used with the SPQs for the 2013 administration are presented in Appendix A.

Fidelity of Administration and Accuracy of Scoring

During the assessment administration for science/biology, a monitor had to be present to observe all assessment sessions and verify the use of proper assessment procedures and the authenticity of student responses. Monitors had to be trained, and they had to sign a Test Administrator Security Affidavit to verify that the appropriate procedures were used. The Test Administrator Security Affidavit is located in the answer folder and includes the principal’s verification of the use of appropriate assessment and scoring procedures. Whenever the requested signatures were missing, the administration was considered an invalid administration.

Some of the assessments (7% to 12%) were audited by having trained raters score the student's performance independently, while witnessing the assessment directly. The results of these studies are reported in detail in Appendix B.

Test Security Provisions

This section describes the test security procedures associated with the SC-Alt. SCDE has the following test security measures in place:

- Each local school board must develop and adopt a district test security policy. The policy must provide for the security of the materials during testing and the storage of all secure tests and test materials before, during, and after testing. Before and after testing, all materials must be stored at a location(s) in the district under lock and key.
- Each district superintendent must designate annually one individual in each district for each mandated assessment who will be the sole individual in the district authorized to procure test instruments that are used in testing programs administered by or through the State Board of Education. The designated individual for alternate assessment is the DTC-Alt. The DTC-Alt is responsible for receiving and distributing all SC-Alt materials and ensuring that all SC-Alt administration procedures and requirements are met.
- All school and district personnel who may have access to SC-Alt test materials or to the location in which the materials are securely stored must sign the Agreement to Maintain Test Security and Confidentiality before they are given access to the materials.
- Test administrators must be trained annually to administer the SC-Alt and must meet all test administrator requirements.
- An assessment monitor must observe all assessment sessions and verify the use of proper assessment procedures and the authenticity of student responses for each completed assessment.

Test administrators must complete an SC-Alt Test Administrator Security Affidavit for each student they assess.

Chapter 4: Performance Standards

As a reference, performance-level cut points for the spring 2013 SC-Alt administration are reproduced in Exhibit 4.1.

Exhibit 4.1: SC-Alt Performance Level Cut Scores on Scale Score Metric

	Elementary School (ES)	Middle School (MS)	High School (HS)
<i>ELA</i>			
Level 1	—	—	—
Level 2	403	417	429
Level 3	466	477	487
Level 4	491	501	514
<i>Mathematics</i>			
Level 1	—	—	—
Level 2	413	425	434
Level 3	476	489	498
Level 4	526	534	541
<i>Science/Biology</i>			
Level 1	—	—	—
Level 2	430	447	408
Level 3	469	489	484
Level 4	496	514	519
<i>Social Studies</i>			
Level 1	—	—	—
Level 2	423	439	—
Level 3	492	503	—
Level 4	549	560	—

The procedures for setting these performance standards and an analysis of the 2011 operational impact data of the high school biology standards were summarized in Chapter 4 of the SC-Alt spring 2011 operational and field test administration (*American Institutes for Research and South Carolina Department of Education, 2011*) and are not reproduced in this volume. Detailed reports of the SC-Alt standard settings can be found in the *SC-Alt spring 2007 standard setting technical report* (*American Institutes for Research, 2007*) and *South Carolina Alternate Assessment 2010 standard setting: Setting standards in high school biology technical report* (*American Institutes for Research and South Carolina Department of Education, 2010b*). Readers interested in the SC-Alt standard setting procedures are referred to these sources.

Chapter 5: Technical Characteristics and Interpretation of Student Scores

This section describes the psychometric analyses for 2013 operational administrations for ELA, mathematics, science, social studies, and biology. In 2013, operational field-test tasks and embedded field-test tasks in all subjects were newly calibrated and evaluated.

In order to provide a complete description of the technical characteristic of the 2013 assessment in all content areas, this chapter also reports the item analysis results from previous years (see AIR and SCDE's SC-Alt operational and field-test administration reports for 2008, 2009, 2010a, 2011, and 2012). The reported analyses are intended to ensure the quality of the items, the assessment materials and instruments, and the score reporting scales as measures of state academic standards.

As a reminder to the reader, there are three grade-band forms in each content area: elementary school (grades 3–5), middle school (grades 6–8), and high school (grade 10). ELA and mathematics are assessed on each grade-band, science and social studies only at elementary and middle school grades, and biology is assessed only at high school level. At each grade-band, the assessments have three potential starting tasks that correspond to three levels of task complexity (low, moderate, and high). Students are assigned to a starting task on the basis of teacher judgments recorded in the SPQ for each content area. Linking tasks connect the grade-band forms so that the vertical test scale can be created.

Analysis and Scaling of Items, Tasks, and Test Forms

The ELA, mathematics, science/biology, and social studies assessments underwent comprehensive psychometric analyses, including initial item calibrations, after their earlier field testing. Final calibrations were estimated for the ELA, mathematics, and science content areas on the basis of operational data gathered during the spring 2007 operational administration; final calibrations for social studies were computed from operational data from the spring 2008 administration. Calibrations based on operational data were considered superior to those based on field-test data. The vertical scales were also defined using the linking tasks as the vehicle that connected the elementary, middle, and high school forms. High school biology was field tested in 2010 and first administered operationally in spring 2011.

AIR calibrated the items, estimated examinee proficiencies, and calculated scale scores and achievement levels for operational forms. This process entailed examining item statistics to ensure quality measurement across the range of the assessment, calibrating the items within each content area to a common scale, and then applying a maximum-likelihood scoring algorithm to each student's responses to estimate his or her proficiency scores and assign the correct achievement level.

Assignment of Examinees to Starting Tasks and Item Calibration and Test Forms Linking

All eligible students participated in the spring 2013 test administrations. The sample sizes of approximately 1,539 students in elementary, 1,489 in middle school, and 400 in high school, per content area, enabled effective calibration across task starting points and grade-bands. Students

were assigned to one of three starting points on the basis of the sum of the teacher responses on the SPQ. The SPQ cut scores were shown to correlate with student achievement scores on the 2006 field-test administrations (for details, see AIR's SC-Alt spring 2007 operational administration report (American Institutes for Research, 2008). The assignment of student starting tasks based on the SPQ cut scores was intended to expose students to items that were ideally suited to their current level of achievement while ensuring that (a) each student responded to an adequate number of items so that reliable and content-valid proficiency scores could be estimated and (b) an adequate number of students responded to each item for the joint calibration to be reliable.

Teachers were instructed to administer all tasks associated with the assigned starting point, with provisions for dropping to a lower starting point (task) if the student was unable to respond to the items in the task at the assigned starting point. Students who were assigned to high and moderate levels of the assessment but were unable to respond to items in the tasks at those levels may have been moved back to a less difficult starting point.

The linking design allowed a joint (concurrent) calibration of all items within a content area and the placement of the items on a common difficulty scale. The tasks actually used to link the grade-band forms (linking tasks) were selected, in part, on the basis of their moderate difficulty levels. Moderately difficult tasks contribute to more stable linking across levels than tasks that may be either too easy or too difficult for the examinees.

Linking across grade-band forms was accomplished by using common tasks across grade-bands. Some of the tasks from the elementary form are on the middle school form; some of the tasks from the middle school form are on the high school form. For the 2013 assessment, linking tasks were only used for the ELA elementary and middle school forms, and mathematics middle and high school forms. The performance on these linking tasks contributed to the students' operational scores only in the respective lower grade-band. Use of the linking tasks in the respective higher grade-bands was only for psychometric diagnostics of the vertical scaling properties. In general, tasks are assigned to forms in such a manner that the forms increase slightly in difficulty as examinees progress through the grade-bands. This means that a linking task assigned to the moderate level of complexity in the elementary form may be assigned to the low-moderate level in the middle school form.

Analysis Plan

AIR's analyses presented in the remainder of this chapter were conducted in five steps:

1. Data preparation and quality control
2. Classical item analysis
3. Review of items not meeting psychometric criteria for inclusion on operational forms
4. Joint calibration of items according to the Rasch model
5. Final achievement estimation and scale score calculation for operational forms

Data Preparation and Quality Control

Before analyzing the operational test data, AIR psychometricians performed a number of quality control procedures to ensure that scanning operations resulted in accurate data capture of the teacher-recorded student responses. Prior to the test administration, AIR verified all of the point values for each form's answer folder. For each form, two AIR staff members independently verified the possible responses and point values for each item.

After receiving the scanned test data, AIR analysts carefully examined the data file to verify its accuracy. Descriptive statistics were computed to ensure that student case counts on the pre-identification file generally corresponded to the actual counts based on test data at the state, school, and classroom levels. In addition, AIR verified that the total number of items in the data file matched the number of items on the answer folder and in the test booklet and then examined the frequency distributions of item responses to identify potential scoring problems, such as out-of-range values or unused response categories.

For purposes of item analysis and student scoring, respectively, non-response (NR) data were treated in two different ways:

For *item analysis and calibration purposes*, a student had to have at least three scored responses for the testing attempt to be considered valid. For a response to be considered a scored response, the test administrator had to have assigned a numeric score (0–4) to the student's response. If the administrator scored NR for all items in a task, the task was treated as not administered, and NR values were recoded as missing.

For *operational scoring* of student responses and estimation of student proficiency, however, the NR codes were treated as indications that the item was administered and that the student did not possess the content area knowledge and skill to respond. In this case, all NR values were recoded as zeroes and included in the student proficiency estimates. Following this recoding, tests were reexamined to determine the number of scored responses (0–4) in each content area. For operational scoring, a student had to have at least 23 scored responses of any kind for the assessment to be considered a valid attempt within a content area.

After the accuracy of the data file was verified, classical item analyses and IRT analyses were performed. Several quality control procedures were taken to ensure the accuracy of these analyses.

As an initial step, the program control file was checked by two data analysts to ensure that form layout was correctly specified and that item response values were correct. As a second step, two analysts independently performed all analyses. Results of the parallel analyses were compared for mistakes by using commercially available file comparison software. Last, the analysis results were spot-checked by using other commercially available statistical software to ensure that the results were consistent across statistical software packages. *These comprehensive quality control steps are highly effective in detecting any issues that might influence the interpretation of the item analysis results.*

Classical Item Analysis

Classical item analysis for the SC-Alt operational and field-test forms was conducted using the *AM* statistical software (<http://am.air.org>). The item analysis yielded the proportion of students in each response category, the percentage of omitted responses for that item,² and the proportion of students who were unable to respond to the item because of access limitations (where relevant). Correlations between the item score and the test score were computed using adjusted polyserial correlations. For purposes of calculating item statistics, omitted items were treated as incorrect when there was at least one scored response within the same task (see above). Minimum- and maximum-point values, average item scores, and adjusted item-total polyserial correlations were calculated for all items.

Test form statistics, such as internal consistency reliability estimates and standard error of measurement statistics, were suppressed at this point because all students were not expected to take all items. Such statistics would be misleading before Rasch scoring was applied. Special marginal reliability analyses used to determine the reliability of the student score estimates are described in a later section of this chapter.

The proportion of students in each score-point category was calculated as defined by the item's scoring guidelines, as well as the proportion of students with blank responses within attempted tasks (i.e., those with at least one scored response). Item difficulty was computed as the mean score on the item across all students taking the form and with a scored response on that item. The average proportion of total points, calculated as the mean score divided by the total number of points possible on the item, serves as an additional measure of item difficulty.

Review of Items Not Meeting the Specified Psychometric Criteria

Classical item analysis provided information about the technical quality of the items; items failing to meet specified psychometric criteria were flagged for subsequent review. During field testing of ELA and mathematics (spring 2006), science (fall 2006), and social studies (spring 2007), AIR reviewed all flagged items in concert with SCDE to determine whether they were of sufficient psychometric quality. For the 2007 operational forms in ELA, mathematics, and science and for the 2008 operational form in social studies, AIR conducted a statistical review of the items to determine whether any operational items were performing in an unacceptable fashion. For the spring 2009 operational SC-Alt administration, AIR subjected all embedded field-test items in ELA, mathematics, science, and social studies to an item data review. The spring 2010 operational SC-Alt administration contained only operational items in ELA, mathematics, science, and social studies. Items from the 2010 spring independent field test in high school biology were subjected to similar analyses as with previous field tests. The 2011 and 2012 administration utilized a field-test design with embedded field-test tasks in ELA, mathematics, science, and social studies, plus operational field-test tasks in science. The 2013 administration used embedded field-test tasks in all subjects, plus operational field-test tasks in ELA, math, and social studies.

² An item was considered omitted if no response was recorded for the item (or the test administrator marked NR on the student score sheet), but the student responded to subsequent items on the task.

Item Response Theory Calibration and Linking Test Forms

This section describes AIR's procedures for item calibration using IRT techniques. Item parameters were estimated using the Partial Credit Model (Masters, 1982) approach available using Winsteps software. A common item design anchored on operational items was used to enable simultaneous calibration and linking across grade-band test forms in each content area. Items were jointly calibrated across grade-bands in a single Winsteps run for each content area. This calibration approach put the item parameters of all grade-band test forms within a content area on the same scale.

For 2013, the results reported on the vertical scale appear in Exhibit 5.1 and Exhibit 5.2. It is interesting to note that the mean scores show a general upward trend from elementary to middle school levels. This indicates that a vertical scale is a useful way to describe the results of this population of students. The growth is not observed from middle school to high school. In addition, in almost every grade-band, a few students were at the floor of the test (minimum scale score equal to 260), but very few reached the ceiling (maximum scale score equal to 740).

Exhibit 5.1: Scale Score Statistics, by Grade-Band, Overall

Subject	Statistic	Elementary School	Middle School	High School
ELA	N	1530	1484	396
	Mean	493.51	515.62	515.00
	SD	52.24	64.64	61.25
	Min	260	260	260
	Max	719	740	697
Mathematics	N	1524	1476	397
	Mean	501.59	509.92	502.18
	SD	61.27	51.68	49.93
	Min	260	260	260
	Max	734	737	604
Science/Biology	N	1052	1016	393
	Mean	503.97	513.89	500.35
	SD	63.28	71.64	94.21
	Min	260	260	260
	Max	735	740	740
Social Studies	N	1038	995	
	Mean	505.22	523.64	
	SD	67.61	69.18	
	Min	260	260	
	Max	740	740	

Exhibit 5.2: Scale Score Statistics, by Grade-Band, by Primary Disability

Subject	Statistic	Elementary School				Middle School				High School			
		Severe	Moderate	Mild	Autism	Severe	Moderate	Mild	Autism	Severe	Moderate	Mild	Autism
ELA	N	116	301	371	434	125	404	424	342	36	153	80	81
	Mean	412.8	484.29	522.03	491.37	415	500.35	555.75	513.36	422.64	509.35	558.23	505.44
	SD	68.83	39.55	36.33	39.97	78.65	42.81	49.49	50.27	77.25	40.72	46.46	42.14
	Min	260	260	288	260	260	268	331	260	260	260	369	358
	Max	526	630	719	662	589	740	740	740	534	602	687	635
Mathematics	N	116	300	369	433	126	405	419	340	36	154	80	80
	Mean	400.39	490.99	535.99	501.91	419.32	502.74	535.87	515.8	418.94	502.47	528.31	502.9
	SD	70.48	40.18	44.49	48.32	82.1	32.02	32.33	37.65	81.54	35.67	29.47	38.09
	Min	260	260	338	260	260	334	410	302	260	260	377	377
	Max	526	596	734	679	558	737	737	617	557	567	604	594
Science/Biology	N	80	200	258	301	95	267	275	244	36	154	80	78
	Mean	410.86	493.23	538.71	498.07	399.21	500.56	560.2	513.23	372	489.49	572.1	479.09
	SD	69.94	42.46	49.11	50.08	81.66	43.51	55.4	55.83	84	63.11	78.64	83.19
	Min	260	265	265	260	260	260	324	291	260	260	260	260
	Max	529	635	735	735	579	740	740	690	576	632	740	715
Social Studies	N	78	197	257	285	80	288	278	223				
	Mean	393.44	494.97	544.84	496.74	418.39	507.76	565.5	520.35				
	SD	76.81	44.14	49.19	50.78	88.13	44.76	55.03	51.47				
	Min	260	332	294	260	260	260	302	364				
	Max	605	626	740	700	671	740	740	708				

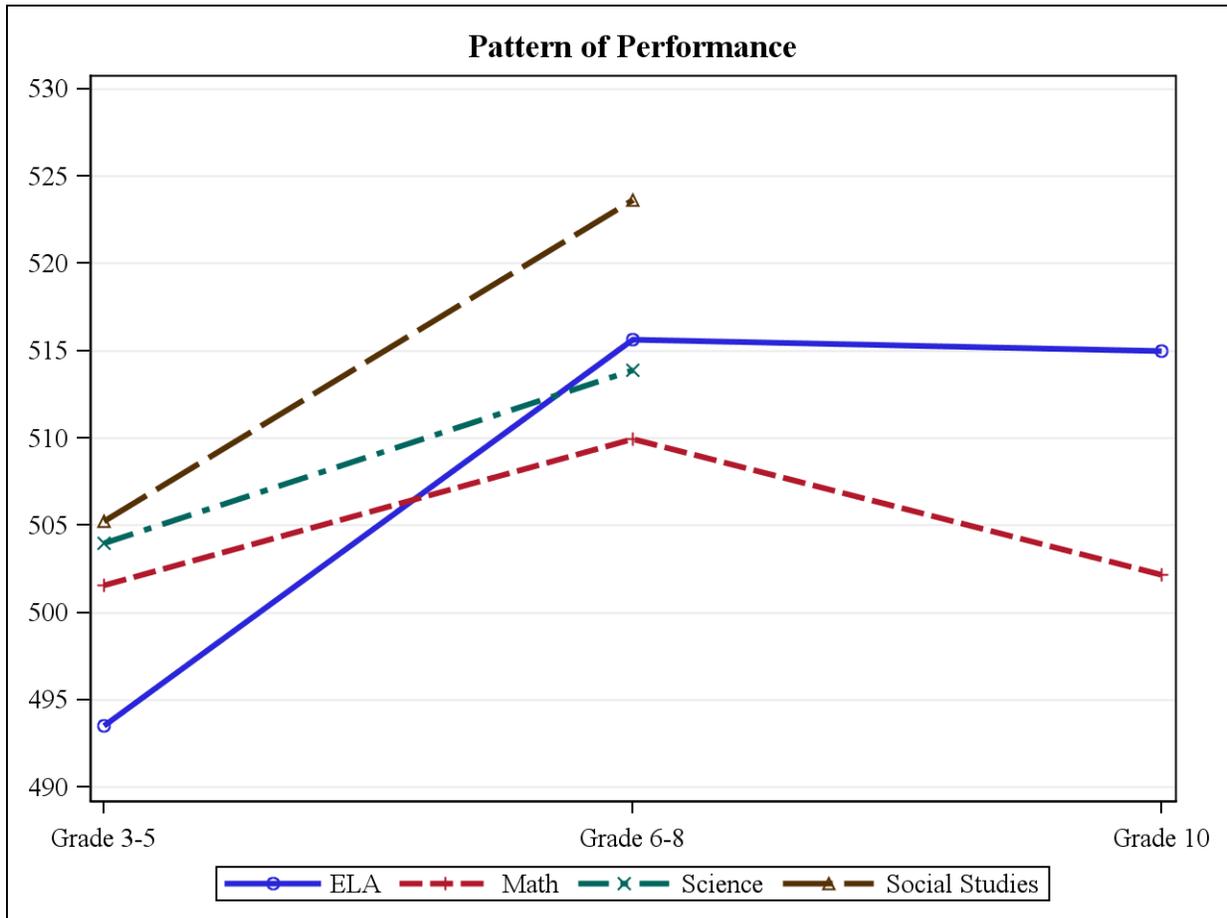
The SC-Alt implements vertical scaling of the assessments, permitting the measurement of student progress on the state content standards over time. Such a scale can provide educators and parents with useful information for monitoring student performance as students move through grades over time.

The development of this scale required the use of a common item linking design. In a common item design, *linking item tasks* appear on two adjacent grade-band forms of the assessment. These linking items allow for the grade-band scales to be connected, thus establishing the vertical scale.

There are at least two features of this linking design and the use of grade-level forms that warrant clarification. First, the linking items are the same (i.e., they are the same items) between two grade-band forms. They are connected to grade-specific standards in the higher grade as well as in the lower grade. As a result, students are not exposed to off-grade-level content since the common items serve a dual purpose in measuring content in both grade-bands. Second, even though some items on each grade-band form are administered for two or three years before replacement, it is not likely that exposure of the items to the students would trigger responses based on the recollection of any item's administration the previous year. As students grow academically, their starting task will likely change each year. New starting tasks mean that a portion of the items any student receives will be unique each year. New task development allowed for field-test tasks to be placed on the 2013 form. These field-test tasks will then be placed on the 2014 form as operational tasks, provided that enough of their items passed the 2013 item data review.

The linking design was changed for the 2011 forms and further changes in the use of linking tasks were made in the 2012 and future forms. For the 2011 forms, in the area of science, biology was added as an operational assessment at the high school level without linking to the earlier grades. Vertical linking tasks were also discontinued for the elementary and middle school science forms. A linking task design was maintained in ELA, mathematics, and social studies. For the 2012 forms and beyond, vertical linking tasks are used only for ELA and mathematics, and the scores of these linking tasks will contribute operationally to student performance scores only at the lower grade-band.

A graph of the overall pattern of performance for 2013 on the vertical scale is shown in Exhibit 5.3. Again, there is a general upward trend from elementary to middle school grade-bands in each of the four subject areas. This graph shows that the vertical scale in the SC-Alt was successful at capturing growth across grade-bands.

Exhibit 5.3: Overall Pattern of Performance on the Vertical Scale

Using Item Responses to Estimate Student Proficiency

This section describes the estimation of student proficiency for the SC-Alt operational administration of ELA, mathematics, and science/biology assessments for elementary, middle, and high school; social studies assessments for elementary and middle school are also reported. The section describes the estimation procedures used to determine student proficiency based on the items administered, the transformation of proficiency estimates on the Rasch theta scale into scale scores, and the relation of achievement estimation to reliability estimation.

Student proficiency scores were estimated using a maximum-likelihood approach based on the scored items for each student. This method calculates the theta score that maximizes the likelihood function of the given item responses for each student. Comparable scale-score estimates from these different item responses were achieved through the measurement-invariance property of IRT ability estimates, even when students were exposed to different ranges of items.

Under the Rasch-based IRT model, there is a one-to-one correspondence between the estimated theta score and the total raw score for a specific set of items. However, in the SC-Alt, each student can take different sets of items. Using the pattern scoring method for calculating theta scores, we ensured that (a) two students who took the same items and achieved the same item scores were assigned the same theta score, and (b) students who took more difficult items were

assigned higher theta scores than students with the same raw scores who took less difficult items. Thus, the scoring method took into account both the number of raw score points the student achieved and the difficulties of the items the student responded to. This scoring process was performed separately for each content area.

Once theta values had been estimated for each student, AIR converted the theta estimates to scale scores using a scale metric determined by SCDE in consultation with AIR. The SC-Alt in ELA, mathematics, science, and social studies were scaled to have a mean of 500 and a standard deviation of 80 on the vertical scale for the grade-band 6–8 assessment. The grade-band 3–5 and grade 10 assessment means and standard deviations were calculated in relation to the grade-band 6–8 mean and standard deviation. This was done by performing a linear transformation of the Rasch theta scale for each content area, fixing the mean of the middle school test form scale at 500, and multiplying the student’s theta deviation score by 80 as shown in the formula below:

$$y_{ijk}^* = 500 + \left(\frac{\hat{\theta}_{ijk} - \hat{\mu}_k}{\hat{\sigma}_k} \right) * 80,$$

where

i indexes student;

j indexes grade-band;

k indexes content area;

y_{ijk}^* is the scale score for student i in grade-band j and content area k , given estimated ability, $\hat{\theta}_{ijk}$;

$\hat{\mu}_k$ is the content-area-specific mean for the middle school test form; and

$\hat{\sigma}_k$ is the content-area-specific standard deviation for the middle school test form.

A similar linear transformation of Rasch theta scale was done for SC-Alt biology assessment, fixing the mean of form scale at 503.488764 and the standard deviation at 84.5495264. The $\hat{\mu}_k$ is the mean theta estimates and $\hat{\sigma}_k$ is the standard deviation of theta estimates for the high school biology test form.

SCDE also decided to truncate the scale score ranges so that the lowest possible scale score was 260 and the highest possible scale score was 740. Student scale-score estimates were truncated to the smallest whole integer (e.g., an estimated scale score of 440.60 would become 440). Additionally, scale scores were calculated and checked using a method similar to the process for total raw data.

Once scoring was completed, it was possible to estimate the internal consistency score reliability of the grade-band assessments by estimating the marginal measurement error across students. These estimates produced different standard errors for each student, depending on the items they

were given and their level of performance on those items. This value was used to determine the score reliability as the proportion of true score variance to observed score variance. We estimated this value within each content area (a) across the entire theta scale, (b) across grade-band forms, and (c) for each starting point within a grade-band.

Test Score Reliability

This section provides the marginal reliability for each grade-band, content area, and group of students beginning at each starting task determined by the SPQ for the spring 2013 administration.

Classical test theory-based reliability indices, such as Cronbach's alpha, were not appropriate for the SC-Alt because the length of the test and the subset of items differed for each student. The reliability coefficient for the SC-Alt was, therefore, calculated as the *marginal reliability* (Sireci, Thissen, & Wainer, 1991), which is equivalent in interpretation to classical internal consistency estimates of reliability.

First we determined the marginal measurement error variance, $\bar{\sigma}_e^2$, across all examinees with a score strictly between the score limits of 260 and 740:

$$\bar{\sigma}_e^2 = \int \sigma_e^2 p(\theta) d\theta = \frac{\sum \sigma_e^2}{N},$$

where σ_e^2 is the square of the standard error of student ability estimate, $\hat{\theta}$. Thus, the marginal measurement error variance could be estimated as the average of squared standard error of $\hat{\theta}$.

Then we estimated the marginal reliability as

$$\bar{\rho} = \frac{\hat{\sigma}_\theta^2 - \bar{\sigma}_e^2}{\hat{\sigma}_\theta^2},$$

where $\hat{\sigma}_\theta^2$ is the variance of observed θ estimates.

The marginal reliability estimate, $\bar{\rho}$, can be interpreted similarly to classical reliability indices such as Cronbach's alpha. Extreme scores, 260 and 740, are excluded in the computation. Estimates of the marginal reliability for the test forms corresponding to the three SC-Alt grade-band assessments can be seen in Exhibit 5.4.

**Exhibit 5.4: Marginal Reliability and Standard Error of Measurement
by Grade-Band and Subject**

Subject	Grade-Band	Elementary School	Middle School	High School
English Language Arts	N	1513	1459	391
	Reliability	0.929	0.933	0.933

Subject	Grade-Band	Elementary School	Middle School	High School
	$\bar{\sigma}_e$	12.3	14.8	14.1
Mathematics	N	1504	1458	391
	Reliability	0.940	0.910	0.912
	$\bar{\sigma}_e$	13.5	13.1	11.9
Science/Biology	N	1043	990	377
	Reliability	0.911	0.924	0.892
	$\bar{\sigma}_e$	17.7	16.7	27.1
Social Studies	N	1021	975	
	Reliability	0.938	0.924	
	$\bar{\sigma}_e$	14.9	16.5	

The marginal reliability estimates for ELA, mathematics, science and social studies met or exceeded 0.91 in each grade-band form; and the marginal reliability estimates for biology exceeded 0.89. The reliability estimates of all four content areas fall into the range of reliability coefficients found with large-scale assessments (Rudner & Schafer, 2001) and meet the reliability requirements for assessments used for the purposes for which the SC-Alt was designed.

In addition to the marginal reliability estimates, Exhibit 5.4 also displays the marginal standard errors of measurement for each subject and grade-band, labeled $\bar{\sigma}_e^2$. These marginal standard errors of measurement range between 12 and 27 scale score units, placing the standard error of measurement (SEM) at approximately from a quarter to less than a third of a standard deviation of the content area and grade-band.

Appendix E shows the marginal reliability estimates broken down by groups of students beginning at each starting task. The reliability coefficients in Exhibits E-1–E-4 are generally somewhat attenuated compared to those in Exhibit 5.4, due to the reduction in variance of scale scores grouped by starting task.

Appendix E also displays the marginal reliability coefficients for each subject and grade-band, broken down by gender (see Exhibit E-5) and by the major ethnicity subgroups (e.g., African American vs. white; see Exhibit E-6). The coefficients in Exhibits E-5 and E-6 range in the high 80s and low- to mid-90s, indicating acceptable reliabilities for these demographic subpopulations.

Classification Accuracy

This section describes the extent to which student achievement-level classifications were accurate across students. Classification accuracy was estimated for each cut score as the average

probability of correct achievement-level assignments across all examinees (assignments above or below the cut score), given each examinee's estimated proficiency score, θ_i :

$$CA_K = \frac{\sum_{i=1}^{N_{k \geq K}} P(\theta_i > \theta_K^* | \theta_i, k_i \geq K) + \sum_{i=1}^{N_{k < K}} [1 - P(\theta_i > \theta_K^* | \theta_i, k_i < K)]}{N}$$

where

θ_i is the proficiency (i.e., theta) of student i ;

k_i is the assigned performance level of student i ;

θ_K^* is the cut score for the performance level K on the theta scale; and

N is the sum of the number of students at or above the cut score, $N_{k \geq K}$, and the number of students below the cut score, $N_{k < K}$, or simply the total number of students.

Thus, $P(\theta_i > \theta_K^* | \theta_i, k_i \geq K)$ is the probability that a student with θ_i assigned to achievement level k_i is above the cut score, θ_K^* . The classification accuracy is the expected rate of correct classification probability, ranging from 0 to 1, where higher values indicate superior classification consistency. Exhibit 5.5 shows the classification accuracy by content areas, achievement levels, and grade-bands.

Exhibit 5.5: Classification Accuracy

Subject	Achievement Level	Elementary School	Middle School	High School	Overall
English Language Arts	Level 2	0.994	0.990	0.990	0.992
	Level 3	0.944	0.952	0.937	0.947
	Level 4	0.928	0.927	0.939	0.929
Mathematics	Level 2	0.987	0.993	0.989	0.990
	Level 3	0.955	0.937	0.916	0.942
	Level 4	0.933	0.908	0.924	0.921
Science	Level 2	0.987	0.978		0.982
	Level 3	0.930	0.925		0.928
	Level 4	0.920	0.937		0.928
Biology	Level 2			0.944	
	Level 3			0.913	
	Level 4			0.924	
Social Studies	Level 2	0.980	0.984		0.982
	Level 3	0.931	0.914		0.923
	Level 4	0.942	0.939		0.941

For example, according to the estimates in Exhibit 5.5, for the grade-band 3–5 ELA assessment, 99% of students were correctly classified at Level 2 or higher (versus at Level 1) and 94% of students at Level 3 or above (vs. at Levels 1 or 2 combined). Students in all grade-bands and subjects had a probability greater than 0.91 of being classified accurately as proficient (i.e., as Level 3 or higher) vs. not proficient. The highest classification accuracy for Level 3 or higher was found for ELA and mathematics; the lowest for biology.

These results indicate that the measurement errors at the performance-level cut points for ELA, mathematics, science/biology, and social studies (Exhibits 5.1 and 5.4) are small compared to the overall variance of student performance.

The calculation of the probability of the correct performance level for students is described in the following section.

Calculation of the Probability of Being Classified Above a Cut Score Given the Student’s Theta Score

For each student we can compute the likelihood of theta $L(\theta | \mathbf{z}, \mathbf{b})$. Suppose that the prior of the theta distribution is $f(\theta)$. Then, using Bayes’ rule, we have

$$f(\theta | \mathbf{z}, \mathbf{b}) \propto f(\theta)L(\theta | \mathbf{z}, \mathbf{b}),$$

where $L(\theta | \mathbf{z}, \mathbf{b})$ is the likelihood of theta given the response \mathbf{z} and item parameters \mathbf{b} ; hence, the probability at and above cut is

$$P = \frac{\int_{\theta \geq \theta_{\text{cut}}} f(\theta)L(\theta | \mathbf{z}, \mathbf{b})d\theta}{\int f(\theta)L(\theta | \mathbf{z}, \mathbf{b})d\theta},$$

where $f(\theta)$ can take different distribution such as normal, or uniform, depending on our prior belief.

Calculation of the Likelihood of Theta Given Item Scores \mathbf{z} and Step Parameters \mathbf{b}

For the Rasch model, we have

$$L(\theta | \mathbf{z}, \mathbf{b}) = \prod_{i \in MC} \left(\frac{\text{Exp}(z_i \theta - b_i z_i)}{1 + \text{Exp}(\theta - b_i)} \right) \prod_{i \in CR} \left(\frac{\text{Exp}(z_i \theta - \sum_{k=1}^{z_i} b_k)}{1 + \sum_{i=1}^{K_i} \text{Exp}(\sum_{k=1}^i (\theta - b_k))} \right)$$

$$\propto \text{Exp}(r \theta) \prod_{i \in MC} \left(\frac{1}{1 + \text{Exp}(\theta - b_i)} \right) \prod_{i \in CR} \left(\frac{1}{1 + \sum_{i=1}^{K_i} \text{Exp}(\sum_{k=1}^i (\theta - b_k))} \right)$$

where K_i is the maximum score for item i when this item is a CR item. It can be noted that the calculation above depends on total raw score r only when using the attempted items.

Chapter 6: Score Reports

This chapter describes the method used for reporting scores on the SC-Alt for the spring 2013 administration. An Individual Score Report (ISR) is included in Appendix F as an example of the highly detailed and diagnostic nature of the reports. This chapter gives a brief overview of how scores on the SC-Alt are reported; a more detailed description is available in a separate *Score Reports User's Guide*.

The SC-Alt has three types of score reports: the ISR, or family report; school reports; and district reports. Each report conveys specific information to its target audience. The reports are designed to be easily used by parents and educators. Of particular note, the reports include in-depth information about what students know and can do relative to the South Carolina academic content standards and to the performance levels.

The ISR provides specific performance feedback for each student across these content areas: ELA, mathematics, science, and social studies in grade-bands 3–5 and 6–8; and ELA, mathematics, and biology in grade 10. Within each content area, a graphic bar highlights the student's performance level along the proficiency scale. Each performance level is described in broad, easy-to-understand content terms. Further descriptions of what a student knows and can do are tailored and printed for each obtained performance level. For example, if a student is classified as Level 3 in mathematics, the following message is printed: "Students who score at Level 3 should be able to add and subtract simple numbers, count and compare objects in a group, compare objects by color, size, or shape, identify three-dimensional shapes, and read information in a graph." **Note:** Scale scores were added to the ISR starting with the spring 2008 reporting cycle.

Specific activities, based on each student's performance level for each content area, are presented for the family to do at home to help ensure positive academic growth in the content area.

The school report provides a summary of the performance of each student in the school. The alphabetical list of students contains basic demographic information and test form administered, in addition to achievement data. A scale score and achievement level are listed for each student for each content area. A school summary shows the number of students scoring at each performance level.

Three district-level reports are issued. The district roster summary report displays the roster of the district's tested students along with their demographic information, their scale scores and performance levels for each content area, and type of test form. The district summary by test form report presents a roster of schools in which students were tested, identifying the test form and giving the number of students tested in each content area and the percentages achieved in each performance level by content area. The total number of students tested with each form and their performance-level distributions by content area are listed at the bottom of the report. The district demographic summary report shows the number of students tested and the distributions of performance levels in all content areas, disaggregated by gender, ethnicity, lunch program, migrant status, and ESL status.

The separate *Score Reports User's Guide* has more specific information on how to interpret student scores and score reports and how to relate academic growth as measured by the SC-Alt to

classroom curricula and activities. The guide has been widely distributed throughout South Carolina.

Chapter 7: Student Performance Data from the Spring 2013 Administration

Performance data from the spring 2013 administration are presented in this chapter. This was the seventh operational administration of the SC-Alt ELA, mathematics, and science assessments; the sixth operational administration of the SC-Alt social studies assessment; and the third operational administration of the SC-Alt high school biology assessment.

A total of 3,431 students from 79 school districts and 574 schools were tested with the SC-Alt in spring 2013. The total number of tested students with one or more valid content area scores was 1,539 for the elementary form, 1,489 for the middle school form, and 400 for the high school form.

About one-third of the participating school districts (27; 34%) tested 15 or fewer students; 32 districts (41%) tested 16 to 50 students; and 20 districts (25%) tested more than 50 students each. Ten districts tested more than 100 students; the greatest number of students tested in one district was 276.

Of the 574 schools testing SC-Alt students, 353 (61%) tested five or fewer students; 136 (24%) tested six to 10 students; 76 (13%) tested 11 to 20 students; and 9 schools (2%) tested 21 or more. Only two schools tested more than 50 students each (69 and 82 students).

The elementary school form was developed to be administered to students who are 8, 9, or 10 years old at the beginning of the school year, which are the ages typical of students enrolled in grades 3, 4, and 5. The middle school form was developed for students who are 11, 12, and 13 (typical of students enrolled in grades 6, 7, and 8), and the high school form was developed for students age 15 (typical age of students in grade 10).

Students tested with the elementary and middle school forms with reported ages outside the specified age ranges were either erroneously assigned to the forms by the test administrator or, in some cases, took the test as a result of birth date coding errors on the data files. No students were reported outside the expected ages for the elementary and middle school forms for each content area. No students reported as having been tested on the high school form with ages below 15 were tested. Students older than 15 (e.g., 16) may be assessed with the high school form if they have not been assessed at the high school level previously.

The performance of students by grade-band form, age, and demographic group for the ELA, mathematics, science, and social studies content areas is presented in Appendix G. As required, the scale score descriptive statistics are suppressed for groups that have fewer than 10 students.

Chapter 8: Validity

Content Validity

One source of evidence for the content validity of the SC-Alt was obtained through independent alignment studies. The University of North Carolina at Charlotte (UNCC) conducted studies of the alignment of (a) ASMGs to grade-level curriculum standards and (b) SC-Alt items to the ASMGs that they targeted. This was a pilot study conducted by Flowers, Browder, Wakeman, and Karvonen with UNCC through the National Alternate Assessment Center (NAAC). (South Carolina is a member state of the NAAC.) A second independent study of ELA and mathematics was completed by the South Carolina Education Oversight Committee (EOC; 2008a) as required by the state Education Accountability Act of 1998 (EAA). The EOC approved the ELA and mathematics content areas on February 28, 2008. The UNCC-alignment study results for the ELA and mathematics assessments are reported in detail in Flowers, Browder, Wakeman, and Karvonen (2006a). The results of the alignment studies for the ELA and mathematics assessments indicate that

the state has evidence supporting alignment for its measurement guidelines and alternate assessment based on all seven criteria. We conclude that overall this is an alternate assessment system that links to the grade level content. Some areas for consideration in further development of the system are noted related to balance of content. (p. 7)

The alignment study results for the science assessment are reported in detail in Flowers, Browder, Wakeman, and Karvonen (2006b) and in an addendum dated December 21, 2007. The results of the alignment study for the science assessment indicate that

the strength of the South Carolina science Alternate Assessment was that nearly all of the content was academic science content (98%). This is especially notable given that the alternate assessment tasks included items accessible to students at all symbolic levels. In contrast, the degree of alignment of AA tasks/items to grade-level standards was lower than those found in the alignment of ELA and mathematics. This difference could be due to the fact that the state's science grade-level standards changed during the development of the science AA. Another challenge was that the state had linked its alternate assessment tasks to the state standards and not directly to the measurement guidelines, creating a tough challenge to demonstrating alignment....Our work with other states suggests that science may typically be the area rated as having the weakest alignment. (p. 4)

SCDE reviewed the initial science alignment study and determined that one source of some misalignment had resulted from the linking of some items to multiple standards and indicators in the alignment document provided by SCDE. During the Science Content Review Committee meeting, some members recommended adding additional indicators to align to some items. The intent of these recommendations focused more on instruction and demonstrating that instruction could include multiple standards and indicators. However, the alignment study team considered only the first two standards aligned to each item. In some cases, the first two standards were not necessarily the most appropriate. SCDE prioritized the standards and indicators and resubmitted the documentation for an additional study. From this review, completed December 21, 2007 (Flowers, Browder, Wakeman, & Karvonen, 2007), 163 of 173 items were rated as academic. Of

the 10 items listed as nonacademic, 6 were rated as foundational (p. 1). SCDE is currently addressing the items that were rated as having no content centrality by developing replacement items for new forms.

At the time of the alignment study for ELA and mathematics by Dr. Flowers and colleagues, the design of the SC-Alt was envisioned as a single assessment across grade levels. This design changed to a grade-band assessment following the study; however, the information provided from the alignment study was used to identify items with alignment difficulty, and these items were omitted from the operational grade-band test forms. Information from the review along with teacher comments was also used during item data review as part of the decision-making process regarding inclusion of items in the assessment.

A second independent review of the alignment of the science assessment was conducted by the Education Oversight Committee (EOC; 2008b). The EOC approved the elementary and middle school science alternate assessment on August 12, 2008. The EOC alignment findings were based on the review of two sets of studies of the SC-Alt:

- Studies of the alignment between the SC-Alt science assessment and the state academic standards conducted by University of North Carolina-Charlotte and Western Carolina University professors of curriculum and special education, in cooperation with the South Carolina State Department of Education (SCDE) and the National Alternate Assessment Center (Flowers, Browder, Wakeman, & Karvonen, 2006a, 2006b, 2007)
- A technical review of the task and item data from the 2007 test administration conducted by a professor of educational research and assessment at the University of South Carolina

Copies of the reports of the EOC reviews and findings are available in their entirety from the SCDE. Based on this review, the EOC identified a number of strengths of the SC-Alt science assessment that were noted in the final report:

- The assessment provides accountability and information for instructional improvement for students with significant cognitive disabilities who would not otherwise be assessed in the state testing programs, even with test accommodations and modifications.
- The assessment is intended to be aligned with the same grade-level academic standards as for all students, although at levels of complexity appropriate for the diversity of cognitive functioning observed among students with significant cognitive disabilities.
- The assessment format allows each student to respond to the items using the communication modes the student uses during instruction, such as oral response, pointing, eye gaze, a response card, sign language, or an augmentative communication device.
- The procedures for placing the student at the appropriate level for beginning each assessment reduces student fatigue and maximizes the student's opportunities to show his or her highest performance;
- The items in the assessment have a wide range of difficulty, and the test is moderately able to discriminate between high and low levels of performance.

The EOC report noted that while 96% of the items were found to be aligned to science inquiry standard indicators, the alignment of the items to content standards was 78%, falling short of an expectation for successful alignment of 90% set by the original evaluators. The EOC recommended that the SCDE review the alignment of the SC-Alt science items to the grade-level standards and identify items needing revision or replacement.

The SCDE and its contractor, AIR, reviewed the alignment and the ASMGs and established priorities for development of tasks to fill identified gaps. During 2008, SCDE and AIR developed five new tasks consisting of 32 items to be used to replace poorly aligned items and improve content coverage in science. Three tasks were developed for the elementary science form, and two tasks were developed for the middle school form based on the findings of the alignment study. The high school physical science test was replaced by a high school biology assessment in spring 2010.

An independent review of the alignment of the new items by the Center for Research on Education (2009a) found that 98% of the new items were aligned to grade-level content standard indicators. Copies of the report of the alignment reviews and findings are available in their entirety from the SCDE.

A follow-up alignment study of the high school ELA and mathematics assessments and biology field-test items was conducted by the Center for Research on Education in October 2009, using the same procedures that were used for the elementary and middle school alignment studies in December 2006 and January 2007. Almost all (94% to 96%) of the items were rated as academic. This percentage exceeds the value typically found in alternate assessments (90%) according to the reviewers. The alignment study results are reported in detail in *High School Alternate Assessment Alignment Report to the South Carolina State Department of Education* (Center for Research on Education, 2009b).

Convergent and Discriminant Validity

According to Critical Element 4.1(e) of the federal peer review and Standard 1.14 of the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), it is desirable, if not necessary, to provide evidence of convergent and discriminant validity. One common method for examining this aspect of validity is with a multitrait-multimethod matrix (MTMM) (Campbell & Fiske, 1959).

Campbell and Fiske (1959) proposed the MTMM design as a tool for the study of convergent and discriminant validity in psychological measurement. The MTMM employs a crossed factorial measurement design of traits and methods to reveal these types of validity in comparison:

- Large correlations on validity diagonals (i.e., same trait and different methods) indicate convergent validity.
- Low correlations in the heterotrait-monomethod blocks indicate discriminant validity and the absence of method effects.
- Low correlations in the heterotrait-heteromethod blocks also indicate discriminant validity.

Selection of Traits and Methods

The student's abilities in each of the subjects—ELA, mathematics, science/biology and social studies—make up the four traits for the MTMM study. Two methods are considered for assessing these traits: the SPQ, as a structured teacher rating of student's attainment, and the SC-Alt scale score, as an IRT-based indicator of the student's performance in each subject or trait. In other words, the two methods contrast test scores of student performance with expert (or teacher) ratings. With four traits and two methods, the MTMM correlation matrix is of order 8. Note that the high school assessment does not include a social studies component; therefore, the MTMM for high school has only six rows and columns.

Results

MTMMs were computed separately for each grade-band. The results are given in Exhibits 8.1–8.3. Pearson correlations are used, with pairwise deletion of missing data. For each matrix, the minimum pairwise sample size is indicated. *P*-values of individual correlation coefficients are not reported since *all* correlations are significant ($p < 0.05$).

Exhibit 8.1: MTMM, Scale Scores with SPQ Scores, Elementary School

	Subject	IRT Scale Scores				SPQ Scores			
		ELA	Math	Science	Social Studies	ELA	Math	Science	Social Studies
IRT Scale Scores	ELA	1.00							
	Math	0.90	1.00						
	Science	0.89	0.88	1.00					
	Social Studies	0.91	0.90	0.91	1.00				
SPQ Scores	ELA	0.71	0.74	0.72	0.74	1.00			
	Math	0.72	0.77	0.74	0.75	0.91	1.00		
	Science	0.70	0.73	0.72	0.75	0.87	0.91	1.00	
	Social Studies	0.71	0.73	0.74	0.75	0.89	0.90	0.93	1.00

Minimum pairwise N:562

Exhibit 8.2: MTMM, Scale Scores and SPQ Scores, Middle School

	Subject	IRT Scale Scores				SPQ Scores			
		ELA	Math	Science	Social Studies	ELA	Math	Science	Social Studies
IRT Scale Scores	ELA	1.00							
	Math	<i>0.87</i>	1.00						
	Science	<i>0.91</i>	<i>0.88</i>	1.00					
	Social Studies	<i>0.91</i>	<i>0.86</i>	<i>0.93</i>	1.00				
SPQ Scores	ELA	0.72	0.69	0.73	0.72	1.00			
	Math	0.74	0.72	0.74	0.73	<i>0.92</i>	1.00		
	Science	0.70	0.68	0.72	0.71	<i>0.89</i>	<i>0.90</i>	1.00	
	Social Studies	0.71	0.69	0.72	0.71	<i>0.90</i>	<i>0.89</i>	<i>0.93</i>	1.00

Minimum pairwise N:531

Exhibit 8.3: MTMM, Scales Scores and SPQ Scores, High School

	Subject	IRT Scale Scores			SPQ Scores		
		ELA	Math	Biology	ELA	Math	Biology
IRT Scale Scores	ELA	1.00					
	Math	<i>0.86</i>	1.00				
	Biology	<i>0.89</i>	<i>0.80</i>	1.00			
SPQ Scores	ELA	0.69	0.67	0.68	1.00		
	Math	0.70	0.70	0.72	<i>0.93</i>	1.00	
	Biology	0.58	0.51	0.63	<i>0.70</i>	<i>0.73</i>	1.00

Minimum pairwise N: 360

In each MTMM table, the *convergent validity coefficients* (correlations between measurements of the same trait using different methods) are marked in bold. Most of the convergent validity coefficients range from 0.69 to 0.77 and certainly fall into an acceptable range. These high correlations demonstrate evidence for the validity of the SPQ; the three exhibits indicate that the SPQ and the actual test are essentially measuring the same trait and that the SPQ is a good indicator of performance on the test. The one exception is the high school biology assessment for which the SPQ and the IRT scale scores correlate at 0.63; the reason appears to lie with the biology SPQ score, as it shows noticeably low correlations with *all* the other variables, whether SPQ scores or IRT scale scores. The biology SPQ operates somewhat differently from the other assessments; this may be an interesting target for further investigation.

The *heterotrait-monomethod coefficients* in the monomethod triangles (correlations between measurements of different traits using the same method) are set in italics. These correlation coefficients range between 0.80 and 0.93 for IRT scale scores and between 0.70 and 0.93 for SPQ scores. The high overall range of these correlations (with the exception of lower

correlations involving SPQ scores in biology) indicates the presence of method variance. However, this is to be expected because the SPQ was not developed to measure the trait; instead, it only indicates the starting task on the test for measuring the trait. Such a result of high correlations in the monomethod triangles is not uncommon in MTMM studies (Fiske, 1995), and specific conditions offer themselves as causes for the present scenario. First, the different scale types—summed rating scales versus IRT scales of behavioral tests—are in themselves a source of method variation; second, the SPQ’s “can do” questions draw on the teacher’s memory of a student’s possible performance over the long term and are apt to differ in quality and veracity; and third, the IRT scale scores for the three subjects reflect the student’s performance in the testing situation and are subject to the student’s condition on the testing day.

The *heterotrait-heteromethod coefficients* appear in the tables in regular type. These correlation coefficients fall in the same range as the convergent validity coefficients, with values from 0.51 to 0.75 (again, with the lowest values involving the SPQ scores for high school biology). To confirm discriminant validity, the heterotrait-heteromethod correlations should be smaller than the convergent validity coefficients. However, these MTMMs support the notion that all of the SC-Alt’s subject area assessments except biology vary essentially along just a single dimension. Because the population of alternate assessment students is so *very* heterogeneous, the students’ general levels of cognitive functioning dominate the relationship among their scale scores.

Validity of the Student Placement Questionnaire (SPQ)

AIR reviewed item data from the 2013 administration regarding the agreement between SPQ-recommended start points and the final observed start points. The purpose of the study was to determine the effectiveness of the SPQ in identifying the most appropriate starting task.

Administration of the SC-Alt uses the SPQ as a pre-assessment instrument to determine the most appropriate starting point in the assessment. The SPQ requires the teacher to evaluate the student on 12–15 “can do” statements addressing the student’s skills and knowledge in each content area on the basis of the teacher’s prior instructional knowledge of the student. A total score computed from the teacher’s SPQ responses indicates the initial starting task for the assessment.

The instructions for using the SPQ require teachers to adjust the starting point below the SPQ-recommended start point when the student is not successful on the first administered task. Alternatively, after reviewing the assessment, some teachers may have judged that a student needed to start at a higher level than recommended by the SPQ.

A summary of the results of the agreement between the SPQ-recommended start points and the observed start points for each content area and grade-band form is presented in Exhibits 8.4–8.7.³ These results indicate that the agreement between the SPQ-recommended start point and the observed start point was 96% for ELA, 94% for mathematics, science and biology, and social studies administrations. Use of the SPQ pre-assessment score is only the first step in the procedure used by the test administrator in determining where the student should start the assessment. Since the test administrator is required to make adjustments based on the student’s success on the first task and these adjustments are reflected in the agreement rates, the SPQ appears to be working very effectively for targeting the first task to begin the assessment process.

³ Data of students with missing SPQ scores were excluded from these exhibits.

Exhibit 8.4: Agreement Between SPQ and Observed Start Points by SPQ-Recommended Starting Tasks—ELA

Observed Start Task	Elementary School				Middle School				High School				Overall
	Recommended Starting Task			Total	Recommended Starting Task			Total	Recommended Starting Task			Total	
	1	3	7		1	3	7		1	3	7		
Starting task consistent with SPQ	99.5%	97.2%	99.1%	96.0%	99.3%	95.3%	99.0%	95.9%	99.0%	96.7%	99.6%	96.0%	95.9%
Lower start task than recommended	0.0%	1.9%	0.9%	0.9%	0.0%	3.9%	1.0%	1.3%	0.0%	3.3%	0.4%	0.8%	1.0%
Higher start task than recommended	0.5%	0.6%	0.0%	0.3%	0.7%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%
Nonstandard start task	0.0%	0.3%	0.0%	0.1%	0.0%	0.4%	0.0%	0.1%	1.0%	0.0%	0.0%	0.3%	0.1%
No valid test items; no starting task	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Incomplete SPQ	N/A	N/A	N/A	2.9%	N/A	N/A	N/A	2.6%	N/A	N/A	N/A	3.0%	2.8%
Inconsistent with SPQ	0.5%	2.8%	0.9%	4.1%	0.7%	4.7%	1.0%	4.1%	1.0%	3.3%	0.4%	4.0%	4.1%
ELA Total (N)	369	324	793	1530	296	255	895	1484	96	60	228	396	3410

Exhibit 8.5: Agreement Between SPQ and Observed Start Points by SPQ-Recommended Starting Tasks—Mathematics

Observed Start Task	Elementary School				Middle School				High School				Overall
	Recommended Starting Task												
	1	3	7	Total	1	3	7	Total	1	3	7	Total	
Starting task consistent with SPQ	99.7%	97.5%	98.5%	94.8%	99.6%	96.9%	97.2%	94.2%	100.0%	94.3%	98.6%	92.4%	94.3%
Lower start task than recommended	0.0%	1.7%	1.5%	1.2%	0.0%	2.1%	2.8%	2.0%	0.0%	5.7%	1.4%	1.8%	1.6%
Higher start task than recommended	0.3%	0.8%	0.0%	0.3%	0.4%	1.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2%
Nonstandard start task	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
No valid test items; no starting task	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Incomplete SPQ	N/A	N/A	N/A	3.7%	N/A	N/A	N/A	3.5%	N/A	N/A	N/A	5.8%	3.9%
Inconsistent with SPQ	0.3%	2.5%	1.5%	5.2%	0.4%	3.1%	2.8%	5.8%	0.0%	5.7%	1.4%	7.6%	5.7%
Math Total (N)	330	358	779	1524	268	290	866	1476	89	70	215	397	3397

Exhibit 8.6: Agreement Between SPQ and Observed Start Points by SPQ-Recommended Starting Tasks—Science/Biology

Observed Start Task	Elementary School				Middle School				High School				Overall
	Recommended Starting Task												
	1	3	7	Total	1	3	7	Total	1	3	7	Total	
Starting task consistent with SPQ	99.3%	96.2%	98.5%	94.3%	99.6%	96.0%	98.8%	94.1%	99.1%	87.5%	98.8%	91.1%	93.7%
Lower start task than recommended	0.0%	2.2%	1.5%	1.1%	0.0%	1.7%	1.2%	1.0%	0.0%	9.4%	1.2%	1.8%	1.2%
Higher start task than recommended	0.7%	1.6%	0.0%	0.5%	0.4%	1.7%	0.0%	0.4%	0.9%	1.6%	0%	0.8%	0.5%
Nonstandard start task	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.1%	0.0%	1.6%	0%	0.3%	0.1%
No valid test items; no starting task	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Incomplete SPQ	N/A	N/A	N/A	4.1%	N/A	N/A	N/A	4.4%	N/A	N/A	N/A	6.1%	4.6%
Inconsistent with SPQ	0.7%	3.8%	1.5%	5.7%	0.4%	4.0%	1.2%	5.9%	0.9%	12.5%	1.2%	8.9%	6.3%
Science/Biology Total (N)	297	186	526	1052	231	175	565	1016	221	64	84	393	2461

Exhibit 8.7: Agreement Between SPQ and Observed Start Points by SPQ-Recommended Starting Tasks—Social Studies

Observed Start Task	Elementary School				Middle School				Overall
	1	3	7	Total	1	3	7	Total	
Starting task consistent with SPQ	100.0%	89.1%	98.4%	93.3%	100.0%	93.7%	99.1%	94.7%	94.0%
Lower start task than recommended	0.0%	10.3%	1.6%	2.7%	0.0%	5.6%	0.9%	1.4%	2.1%
Higher start task than recommended	0.0%	0.6%	0.0%	0.1%	0.0%	0.7%	0.0%	0.1%	0.1%
Nonstandard start task	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
No valid test items; no starting task	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Incomplete SPQ	N/A	N/A	N/A	4.0%	N/A	N/A	N/A	3.8%	3.9%
Inconsistent with SPQ	0.0%	10.9%	1.6%	6.7%	0.0%	6.3%	0.9%	5.3%	6.1%
Social Studies Total (N)	210	175	612	1038	158	143	656	995	2033

Start-Stop Analysis

Data from the 2013 SC-Alt were analyzed to address two questions concerning SC-Alt administration procedures and student performance:

1. How many tasks and items were administered to students who were started in the assessment at each of the three start points?
2. What was the achievement level performance of students who were started in the assessment at each of the three start points?

To address these questions, the task start point was identified for each student assessed by the 2013 administration of the SC-Alt for all content areas and grade-band forms. According to each task start point, the number of tasks and items administered and the achievement-level distribution were calculated and summarized.

SC-Alt test administrators were instructed to follow specific procedures concerning the use of the SPQ to determine task start points, the minimum number of tasks to be administered, and whether to continue the administration through additional tasks until the student is no longer able to respond successfully. These procedures are detailed in Appendix A and in the 2013 SC-Alt *Test Administration Manual*.

Number of Tasks Administered

For ELA, mathematics, science/biology, and social studies, the minimum number of overall tasks to be administered is seven tasks when the test administration is started at Task 1, or nine tasks when the administration begins at either Task 3 or Task 7. For assessments in these subjects, the tasks in positions 5, 8, and 12 are field-test tasks. In other words, the sets of seven or nine overall tasks to be administered translate into five or seven operational tasks, respectively.

The actual number of tasks administered to students in the ELA, mathematics, science/biology, and social studies content areas for each form level and task start point are presented in Exhibits 8.8–8.11. Note that these exhibits show only the cases for which the assessment started at one of the three standard starting points. For a few students, however, the assessment was begun at some nonstandard starting task. These cases are not included in Exhibits 8.8–8.11.

In general, most students were administered at least the minimum number of tasks; the distribution of actual tasks administered often exceeded the minimum required when students were started at Task 1 or Task 3. In ELA, 99% or more students were administered seven or more tasks when started at Task 1; 95% or more students were administered nine or more tasks when started at Task 3. Similar patterns are seen in mathematics, science/biology, and social studies, with students starting at Task 3 showing large percentages going beyond the minimum number of tasks administered.

Generally, fewer than 5% of students across forms and subjects were not administered the minimum number of tasks required. The largest percentage of these violations occurred with the ELA administration to the high school students: Here 3 of the 63 students whose assessment started at Task 3 were administered fewer than the required nine tasks.

Students whose assessment started at Task 1 were administered between 8.2 and 10.0 tasks on average, and their median number of administered tasks ranged between 7 and 9; students who started at Task 3 were administered between 10.6 and 12 tasks on average, with a median number of administered tasks between 10 and 13. These data indicate that, for both these groups of students, the tendency was to administer more than the minimum number of tasks needed. Students who started at Task 7 were administered nine tasks on average, also with a median of nine tasks. In other words, students who started at Task 7 were generally administered all nine tasks available at the high-complexity level.

These results show that a large majority of the students assessed during the 2013 spring SC-Alt administration were administered at least the minimum number of tasks, and in many instances the test administrators exposed the students to additional, more complex, and more difficult tasks beyond the minimal administration requirements.

Exhibit 8.8: Number of Tasks Administered by Starting Task—ELA

		Number of Tasks Administered											
Starting Task		<6	6	7	8	9	10	11	12	>12	Total Students	Mean Number of Tasks	Median Number of Tasks
<i>Elementary School</i>													
1	N		2	180	37	47	10	11	15	87	389		
	%		0.51	46.27	9.51	12.08	2.57	2.83	3.86	22.37	100	9.48	8
3	N		.	.	2	42	32	9	9	236	330		
	%		0	0	0.61	12.73	9.7	2.73	2.73	71.52	100	12.09	13
7	N		2	2	2	804	.	.	.	.	810		
	%		0.25	0.25	0.25	99.26	0	0	0	0	100	8.99	9
<i>Middle School</i>													
1	N		.	142	52	17	14	7	12	69	313		
	%		0	45.37	16.61	5.43	4.47	2.24	3.83	22.04	100	9.42	8
3	N		.	.	1	52	29	8	30	139	259		
	%		0	0	0.39	20.08	11.2	3.09	11.58	53.67	100	11.66	13
7	N		.	.	3	908	.	.	.	.	911		
	%		0	0	0.33	99.67	0	0	0	0	100	9	9
<i>High School</i>													
1	N		.	49	5	10	3	5	3	24	99		
	%		0	49.49	5.05	10.1	3.03	5.05	3.03	24.24	100	9.6	8
3	N		.	1	2	20	1	1	2	36	63		
	%		0	1.59	3.17	31.75	1.59	1.59	3.17	57.14	100	11.37	13
7	N		.	1	.	232	.	.	.	.	233		
	%		0	0.43	0	99.57	0	0	0	0	100	8.99	9
<i>Total</i>													
	N		4	375	104	2132	89	41	71	591	3407		
	%		0.12	11.01	3.05	62.58	2.61	1.2	2.08	17.35	100	9.65	9

Exhibit 8.9: Number of Tasks Administered by Starting Task—Mathematics

		Number of Tasks Administered											
Starting Task		<6	6	7	8	9	10	11	12	>12	Total Students	Mean Number of Tasks	Median Number of Tasks
<i>Elementary School</i>													
1	N	.	1	202	38	10	6	17	9	71	354		
	%	0	0.28	57.06	10.73	2.82	1.69	4.8	2.54	20.06	100	9.05	7
3	N	.	.	2	.	75	32	28	14	222	373		
	%	0	0	0.54	0	20.11	8.58	7.51	3.75	59.52	100	11.72	13
7	N	.	.	1	3	793	.	.	.	.	797		
	%	0	0	0.13	0.38	99.5	0	0	0	0	100	8.99	9
<i>Middle School</i>													
1	N	.	.	188	31	24	8	8	7	24	290		
	%	0	0	64.83	10.69	8.28	2.76	2.76	2.41	8.28	100	8.17	7
3	N	2	.	3	2	107	48	59	8	78	307		
	%	0.65	0	0.98	0.65	34.85	15.64	19.22	2.61	25.41	100	10.58	10
7	N	.	1	5	5	868	.	.	.	.	879		
	%	0	0.11	0.57	0.57	98.75	0	0	0	0	100	8.98	9
<i>High School</i>													
1	N	1	.	51	14	6	5	1	1	18	97		
	%	1.03	0	52.58	14.43	6.19	5.15	1.03	1.03	18.56	100	8.89	7
3	N	.	.	1	1	19	5	10	6	30	72		
	%	0	0	1.39	1.39	26.39	6.94	13.89	8.33	41.67	100	11.22	11.5
7	N	.	.	.	2	226	.	.	.	.	228		
	%	0	0	0	0.88	99.12	0	0	0	0	100	8.99	9
<i>Total</i>													
	N	3	2	453	96	2128	104	123	45	443	3397		
	%	0.09	0.06	13.34	2.83	62.64	3.06	3.62	1.32	13.04	100	9.41	9

Exhibit 8.10: Number of Tasks Administered by Starting Task—Science/Biology

		Number of Tasks Administered											
Starting Task		<6	6	7	8	9	10	11	12	>12	Total Students	Mean Number of Tasks	Median Number of Tasks
<i>Elementary School Science</i>													
1	N	.	2	129	65	12	37	14	9	50	318		
	%	0	0.63	40.57	20.44	3.77	11.64	4.4	2.83	15.72	100	9.11	8
3	N	1	1	.	.	61	18	1	57	56	195		
	%	0.51	0.51	0	0	31.28	9.23	0.51	29.23	28.72	100	11.09	12
7	N	.	.	.	5	534	.	.	.	.	539		
	%	0	0	0	0.93	99.07	0	0	0	0	100	8.99	9
<i>Middle School Science</i>													
1	N	.	1	134	36	11	7	4	1	53	247		
	%	0	0.4	54.25	14.57	4.45	2.83	1.62	0.4	21.46	100	9.04	7
3	N	.	.	.	.	35	18	14	4	114	185		
	%	0	0	0	0	18.92	9.73	7.57	2.16	61.62	100	11.78	13
7	N	.	.	.	.	583	.	.	.	.	583		
	%	0	0	0	0	100	0	0	0	0	100	9	9
<i>Total</i>													
	N	1	4	263	106	1236	80	33	71	273	2067		
	%	0.05	0.19	12.72	5.13	59.8	3.87	1.6	3.43	13.21	100	9.47	9
<i>High School Biology</i>													
1	N	2		89	13	40	15	2	13	68	242		
	%	0.83		36.78	5.37	16.53	6.2	0.83	5.37	28.1	100	10.04	9
3	N	.		.	.	8	9	1	6	36	60		
	%	0		0	0	13.33	15	1.67	10	60	100	11.88	13
7	N	.		.	1	89	.	.	.	.	90		
	%	0		0	1.11	98.89	0	0	0	0	100	8.99	9
<i>Total</i>													
	N	3	4	352	120	1373	104	36	90	377	2459		
	%	0.12	0.16	14.31	4.88	55.84	4.23	1.46	3.66	15.33	100	9.56	9

Exhibit 8.11: Number of Tasks Administered by Starting Task—Social Studies

		Number of Tasks Administered											
Starting Task		<6	6	7	8	9	10	11	12	>12	Total Students	Mean Number of Tasks	Median Number of Tasks
<i>Elementary School</i>													
1	N		2	117	56	13	5	12	.	38	243		
	%		0.82	48.15	23.05	5.35	2.06	4.94	0	15.64	100	8.78	8
3	N		.	.	.	31	20	7	27	82	167		
	%		0	0	0	18.56	11.98	4.19	16.17	49.1	100	11.65	12
7	N		1	.	2	625	.	.	.	.	628		
	%		0.16	0	0.32	99.52	0	0	0	0	100	8.99	9
<i>Middle School</i>													
1	N		.	95	19	14	9	7	4	26	174		
	%		0	54.6	10.92	8.05	5.17	4.02	2.3	14.94	100	8.82	7
3	N		.	.	1	41	16	8	18	60	144		
	%		0	0	0.69	28.47	11.11	5.56	12.5	41.67	100	11.26	12
7	N		.	.	2	675	.	.	.	.	677		
	%		0	0	0.3	99.7	0	0	0	0	100	9	9
<i>Total</i>													
	N		3	212	80	1399	50	34	49	206	2033		
	%		0.15	10.43	3.94	68.81	2.46	1.67	2.41	10.13	100	9.33	9

Number of Items Administered

Since test administrators were instructed to administer all of the items in a task and each task contained approximately five items, the number of items administered was roughly proportional to the number of tasks administered. Exhibits 8.12–8.15 show the mean, median, and 25th and 75th percentile for the number of administered items, disaggregated by content area, form level, and task start point. Note that cases with nonstandard starting tasks are not included in Exhibits 8.12–8.15.

The median number of items administered to students starting at Task 1 ranged between 34 and 52 across content areas and form levels; the median for Task 3 start points ranged between 61 and 80, and the median for Task 7 start points ranged between 46 and 57. Students beginning at Task 7 were administered fewer and a smaller range of items than students starting at Task 3 since these students demonstrated more predictable performance (according to the SPQ results) and the end of the minimally required task range coincided with the end of the test. Students whose test administration began at Task 3 tended to have more items administered to them. In these cases, the administration of a content-area test was ended only when (1) the end of the test was reached or (2) the student could no longer respond successfully on a task (i.e., failed to obtain three or more points on the task).

Exhibit 8.12: Number of Items Administered by Starting Task—ELA

Grade-Band	Start Task	N	Mean	P25	Median	P75
Elementary School	1	389	56.1	41	47	72
	3	330	74.4	68	80	80
	7	810	54.8	55	55	55
	TOTAL	1529	59.4	55	55	62
Middle School	1	313	54.3	41	47	69
	3	259	65.6	57	72	73
	7	911	50.9	51	51	51
	TOTAL	1483	54.2	51	51	51
High School	1	99	52.0	37	40	66
	3	63	61.7	47	72	72
	7	233	51.9	52	52	52
	TOTAL	395	53.5	52	52	52

Exhibit 8.13: Number of Items Administered by Starting Task—Mathematics

Grade-Band	Start Task	N	Mean	P25	Median	P75
Elementary School	1	354	49.8	36	36	66
	3	373	70.4	61	78	78
	7	797	56.9	57	57	57
	TOTAL	1524	58.6	57	57	61
Middle School	1	290	52.1	46	46	51
	3	307	63.1	55	61	75
	7	879	48.9	49	49	49
	TOTAL	1476	52.5	49	49	51.5
High School	1	97	49.8	39	39	56
	3	72	63.4	51	63	74
	7	228	50.9	51	51	51
	TOTAL	397	52.9	51	51	51

Exhibit 8.14: Number of Items Administered by Starting Task—Science/Biology

Grade-Band	Start Task	N	Mean	P25	Median	P75
Elementary School Science	1	318	52.2	41	47	57
	3	195	62.2	52	67	71
	7	539	45.9	46	46	46
	TOTAL	1052	50.8	46	46	52
Middle School Science	1	247	55.1	44	44	60
	3	185	66.6	59	73	73
	7	583	48.0	48	48	48
	TOTAL	1015	53.1	48	48	52
High School Biology	1	242	59.1	41	52	84
	3	60	68.7	59	75	75
	7	90	52.9	53	53	53
	TOTAL	392	59.1	46	53	75

Exhibit 8.15: Number of Items Administered by Starting Task—Social Studies

Grade-Band	Start Task	N	Mean	P25	Median	P75
Elementary School	1	243	48.6	38	43	51
	3	167	66.4	58	69	73
	7	628	51.9	52	52	52
	TOTAL	1038	53.5	52	52	52
Middle School	1	174	44.1	34	34	52
	3	144	58.3	46	62	68
	7	677	50.0	50	50	50
	TOTAL	995	50.2	50	50	50

Achievement Level of Students by Start Point

Within an SC-Alt form, two or more tasks (consisting of an average of five items each) are to be used to assess the same standards at different levels of student communication and content complexity, and they are to be placed on the test form in locations that ensure that there is adequate content coverage of the standards regardless of the student's starting point in the assessment. Although tasks are ordered on the form based on student communication levels and average content complexity, items of both lower and higher complexity may appear in each task. This configuration presents items and tasks across the entire assessment providing students with opportunities to demonstrate proficiency. Each student's proficiency and resulting achievement level are determined by the student's performance on the specific group of items the student was administered. The calculation of student proficiency scores is described in Chapter 5. The distribution of achievement levels for students according to start task, form level, and content area is presented in Exhibit 8.16.

The table entries demonstrate interesting operational aspects of the leveled structure of the SC-Alt. Across content areas, students beginning the assessment at Task 1 are categorized as proficient (achievement Levels 3 and 4) at rates between 4% and 46%, with the lowest and highest percentage in elementary school (4%–46%), and the less varied in middle school (10%–29%) and high school (9%–35%). For students starting at Task 3, 41% to 91% of students across content areas are categorized as proficient; unlike students beginning with Task 1, large variation in proficiency rates is found among students starting at Task 3: 48%–91% proficient in elementary school, 41%–88% in middle school and 49%–78% in high school. Finally, 85% to 100% of students starting at Task 7 tested as proficient.

Summary

The purpose of the start-and-stop point analyses was to document the number of tasks and items students complete during the assessment and the performance levels that groups of students attain who enter the assessment at different start points. The results of these analyses demonstrate the effectiveness of the use of the SPQ and the test administration start and stop rules that are based on the student's performance during the assessment. Except in a few instances, all students were administered adequate numbers of tasks and items to assess the intended content.

The findings indicate that the SPQ start and stop rules were being followed for almost all tested students. A considerable proportion of tested students continued testing beyond the minimum required number of tasks to be administered. As a consequence, in each starting task group, there were students who tested in the proficient range (i.e., at achievement levels 3 or 4). Finally, students assigned to higher starting tasks showed a greater likelihood of testing in the proficient range. These results demonstrate that the tailored assessment design of the SC-Alt operates as expected.

Exhibit 8.16: Achievement Level by Task Start Point, Form Level, and Content Area

Subject	Ach. Level	Elementary School (ES)								Middle School (MS)								High School (HS)							
		Starting Task								Starting Task								Starting Task							
		1		3		7		TOTAL		1		3		7		TOTAL		1		3		7		TOTAL	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
ELA	Level 1	72	18.5	.	0.0	.	0.0	72	4.7	71	22.7	.	0.0	.	0.0	71	4.8	16	16.2	.	0.0	.	0.0	16	4.1
	Level 2	182	46.8	29	8.8	5	0.6	216	14.1	152	48.6	32	12.4	4	0.4	188	12.7	54	54.6	21	33.3	3	1.3	78	19.8
	Level 3	113	29.1	189	57.3	136	16.8	438	28.7	70	22.4	139	53.7	101	11.1	310	20.9	25	25.3	25	39.7	58	24.9	108	27.3
	Level 4	22	5.7	112	33.9	669	82.6	803	52.5	20	6.4	88	34.0	806	88.5	914	61.6	4	4.0	17	27.0	172	73.8	193	48.9
	Proficient	135	34.7	301	91.2	805	99.4	1241	81.2	90	28.8	227	87.6	907	99.6	1224	82.5	29	29.3	42	66.7	230	98.7	301	76.2
Math	Level 1	95	26.8	1	0.3	.	0.0	96	6.3	66	22.8	.	0.0	.	0.0	66	4.5	23	23.7	.	0.0	.	0.0	23	5.8
	Level 2	183	51.7	79	21.2	5	0.6	267	17.5	165	56.9	76	24.8	7	0.8	248	16.8	65	67.0	37	51.4	19	8.3	121	30.5
	Level 3	73	20.6	252	67.6	331	41.5	656	43.0	58	20.0	218	71.0	459	52.2	735	49.8	8	8.3	28	38.9	154	67.5	190	47.9
	Level 4	3	0.9	41	11.0	461	57.8	505	33.1	1	0.3	13	4.2	413	47.0	427	28.9	1	1.0	7	9.7	55	24.1	63	15.9
	Proficient	76	21.5	293	78.6	792	99.4	1161	76.2	59	20.3	231	75.2	872	99.2	1162	78.7	9	9.3	35	48.6	209	91.7	253	63.7
Science/ Biology	Level 1	82	25.8	.	0.0	.	0.0	82	7.8	99	40.1	2	1.1	.	0.0	101	10.0	52	21.5	.	0.0	.	0.0	52	13.3
	Level 2	90	28.3	22	11.3	6	1.1	118	11.2	112	45.3	74	40.0	38	6.5	224	22.1	106	43.8	13	21.7	7	7.8	126	32.1
	Level 3	108	34.0	89	45.6	84	15.6	281	26.7	26	10.5	61	33.0	96	16.5	183	18.0	38	15.7	9	15.0	12	13.3	59	15.1
	Level 4	38	12.0	84	43.1	449	83.3	571	54.3	10	4.1	48	26.0	449	77.0	507	50.0	46	19.0	38	63.3	71	78.9	155	39.5
	Proficient	146	45.9	173	88.7	533	98.9	852	81.0	36	14.6	109	58.9	545	93.5	690	68.0	84	34.7	47	78.3	83	92.2	214	54.6
Social Studies	Level 1	78	32.1	1	0.6	1	0.2	80	7.7	73	42.0	2	1.4	.	0.0	75	7.5								
	Level 2	155	63.8	86	51.5	92	14.7	333	32.1	84	48.3	83	57.6	86	12.7	253	25.4								
	Level 3	9	3.7	64	38.3	297	47.3	370	35.7	17	9.8	56	38.9	330	48.7	403	40.5								
	Level 4	1	0.4	16	9.6	238	37.9	255	24.6	.	0.0	3	2.1	261	38.6	264	26.5								
	Proficient	10	4.1	80	47.9	535	85.2	625	60.2	17	9.8	59	41.0	591	87.3	667	67.0								

References

- Agresti, A. (1990). *Categorical data analysis*. Hoboken, NJ: Wiley.
- American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association.
- American Institutes for Research. (2007). *South Carolina Alternate Assessment spring 2007 standard setting technical report*. Washington, DC: American Institutes for Research.
- American Institutes for Research. (2008). *South Carolina Alternate Assessment (SC-Alt): Technical report for English language arts and mathematics field test administration, spring 2006*. Washington, DC: American Institutes for Research.
- American Institutes for Research and South Carolina Department of Education. (2008). *South Carolina's Alternate Assessment, SC-Alt spring 2007 operational administration*. Washington, DC: American Institutes for Research.
- American Institutes for Research and South Carolina Department of Education. (2009). *South Carolina's Alternate Assessment, SC-Alt spring 2008 operational administration*. Washington, DC: American Institutes for Research.
- American Institutes for Research and South Carolina Department of Education. (2010a). *South Carolina's Alternate Assessment, SC-Alt spring 2010 operational administration*. Washington, DC: American Institutes for Research.
- American Institutes for Research and South Carolina Department of Education. (2010b). *South Carolina Alternate Assessment 2010 standard setting: Setting standards in high school biology technical report*. Washington, DC: American Institutes for Research.
- American Institutes for Research and South Carolina Department of Education. (2011). *South Carolina's Alternate Assessment, SC-Alt spring 2011 operational and field test administration*. Washington, DC: American Institutes for Research.
- American Institutes for Research and South Carolina Department of Education. (2012). *South Carolina's Alternate Assessment, SC-Alt spring 2012 operational and field test administration*. Washington, DC: American Institutes for Research.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56(2), 81–105.
- Center for Research on Education. (2009a). *Alternate assessment alignment study of replacement items report to the South Carolina State Department of Education*. Columbia, SC: South Carolina State Department of Education.
- Center for Research on Education. (2009b). *High school alternate assessment alignment report to the South Carolina State Department of Education*. Columbia, SC: South Carolina State Department of Education.

- Cizek, G. J., & Bunch, M. B. (2007). *Standard setting: A guide to establishing and evaluating performance standards on tests*. Thousand Oaks, CA: Sage Publications.
- Education Oversight Committee. (2008a). *Review of the SC-Alternate English language arts and mathematics assessments report to the South Carolina State Department of Education*. Columbia, SC: South Carolina State Department of Education.
- Education Oversight Committee. (2008b). *Review of the SC-Alternate science assessment report to the South Carolina State Department of Education*. Columbia, SC: South Carolina State Department of Education.
- Ferrara, S., Perie, M., & Johnson, E. (2008). Matching the judgmental task with standard setting panelist expertise: The Item-Descriptor (ID) Matching procedure. *Journal of Applied Testing Technology*, 9, 1–22.
- Fiske, D. W. (1995). Reprise, new themes, and steps forward. In P. E. ShROUT & S. T. Fiske (Eds.), *Personality research, methods, and theory: A festschrift honoring Donald W. Fiske*. Hillsdale, NJ: Lawrence Erlbaum.
- Flowers, C., Browder, D., Wakeman, S., & Karvonen, M. (2006a). *Alternate assessment alignment pilot study report to the South Carolina State Department of Education*. Columbia, SC: South Carolina State Department of Education.
- Flowers, C., Browder, D., Wakeman, S., & Karvonen, M. (2006b). *Science alternate assessment alignment pilot study report to the South Carolina State Department of Education*. Columbia, SC: South Carolina State Department of Education.
- Flowers, C., Browder, D., Wakeman, S., & Karvonen, M. (2007). *Science alternate assessment alignment pilot study report to the South Carolina State Department of Education*, Addendum, December 21, 2007. Columbia, SC: South Carolina State Department of Education.
- Huynh, H. (2003, August). *Technical memorandum for computing standard error in Bookmark standard setting* [The South Carolina PACT 2003 Standard Setting Support Project]. Columbia, SC: University of South Carolina.
- Kleinert, H. L., & Kearns, J. F. (2001). *Alternate assessment: Measuring outcomes and supports for students with disabilities*. Baltimore, MD: Brookes.
- Masters, G. N. (1982). A Rasch model for partial credit scoring. *Psychometrika*, 47, 149–174.
- National Alternate Assessment Center. (2005). *Designing from the ground floor*. Conference Pre-Session, Council of Chief State School Officers' Large-Scale Assessment Conference. San Antonio, TX: June 17–18, 2005.
- Rudner, L.M., & Schafer, W.D. (2001). Reliability (ERIC Digest). College Park, MD: ERIC Clearinghouse on Assessment and Evaluation (ERIC Document Reproduction Service No. ED458213). Retrieved May 17, 2009, from www.ericdigests.org/2002-2/reliability.htm.

Sireci, S. G., Thissen, D., & Wainer, H. (1991). On the reliability of testlet-based tests. *Journal of Educational Measurement*, 28(3), 234–247.

Spitzer, R.L., Cohen, J., Fleiss, J.L., & Endicott, J. (1967). Quantification of agreement in psychiatry diagnosis: A new approach. *Archives of General Psychiatry*, 17, 83–87.

Appendices

Appendix A: Starting and Stopping Rules for Using the Student Placement Questionnaire

Directions for Determining the Starting and Concluding Tasks and Use of the Student Placement Questionnaire (SPQ), Spring 2013

These directions guide you through the following steps:

- Completing the SPQ
- Identifying the starting task in each content area
- Adjusting the starting task, if that becomes necessary
- Determining when to conclude the administration

Completing the Student Placement Questionnaire

The SPQ is designed to identify the most appropriate starting task for each of your students in each content area of SC-Alt. You will use the SPQ to identify the most appropriate starting task for each student in the SC-Alt in English language arts (ELA), mathematics, science, and social studies. Answer each SPQ item as accurately as you can based on your experience in the classroom with this student.

The SPQs are located in the Student Answer Folder along with the areas for recording the student's scores on each SC-Alt task. An example of a completed ELA SPQ is included at the end of these instructions.

Identifying the Starting Task for a Student in Each Content Area

1. Bubble in your responses to the SPQ questions. After you respond to all items in the SPQ, identify the most appropriate starting task for this student following the steps on the SPQ. These are the steps:
2. Count the number of bubbles you marked in each of the first three columns, and write the totals in the blocks under each column.
3. In section 3 at the bottom of the page:
 - a. Write the column totals in the appropriate blocks.
 - b. Multiply each total by the specified multiplier, and write the resulting totals in the blocks to the right.
 - c. Sum the three totals to obtain the total SPQ score. Write the SPQ score into the blocks and bubble in the SPQ score.
 - d. Please check your work and complete the bubble grids for the total SPQ score.
4. Find the total SPQ score in section 4 to determine the starting task for this student.

Administering the Starting Task and Completing the Administration

After you identify the starting task for this student using the SPQ, follow these directions to administer the starting task and complete the administration.

The SPQ provides the initial starting point for a student’s administration. Each student must be administered a minimum of seven operational tasks (including the starting task) if the student is started at Task 1 or a minimum of nine tasks if the student is started at Task 3 or Task 7. The minimum number of tasks and specific tasks that must be administered to each student for each starting level are specified in Exhibit B-1.

Exhibit B-1: Minimum Task Ranges to Be Administered

ELA, Mathematics, Science, and Social Studies	
Starting task	Administer all items in at least these tasks
Task 1	1–7
Task 3	3–11
Task 7	7–15

It may be necessary to adjust the starting task based on the student’s level of success on the first task. Also, the administration should be continued beyond the minimum number of tasks when the student is responding successfully.

When the Student Does Not Respond Successfully on the First Task

“Responding successfully” means getting at least three total points on a task. Each task has at least four items. Responding successfully would mean that a student received at least three total points for all the items combined. For example, a student may respond successfully by receiving three points on one item, or two points on one item and one point on another item, or one point each on three different items. When a student does not receive three or more total points on a task, the student has not responded successfully on the task.

When a student is started at Task 3 or at Task 7 and does not respond successfully on the first task, the starting task was too difficult, and the teacher must restart the student at the next lower starting point. For example:

- If the student starts at Task 3 but cannot respond successfully on Task 3, restart the student at Task 1.
- If the student starts at Task 7 but cannot respond successfully on Task 7, restart the student at Task 3.

When a student is started at Task 1, no downward adjustment is possible, and the administration must progress through at least seven tasks.

When to Conclude the Administration

If the student responds successfully on the last required task as specified in the table above, continue with the administration by administering the next task and subsequent tasks until the

student no longer responds successfully on a task. By continuing the administration of subsequent tasks when the student is “responding successfully,” you will provide the maximum opportunity for the student to demonstrate his or her knowledge and skills.

If the student does not respond successfully on the last required task or if at any point the student does not respond successfully on additional tasks (i.e., obtain three or more points on the task), you may conclude the administration.

By concluding the administration when the student is no longer successful after you have administered the required tasks, the student’s test administration is not prolonged unnecessarily, and possible negative effects on the student are avoided.

Examples:

- Student A was started at ELA Task 1 and administered Tasks 1–7. The student responded successfully on Task 7 and therefore was administered Task 8. The student responded successfully on Task 8 and was administered Task 9. The student did not respond successfully on Task 9, and the administration was concluded after Task 9.
- Student B was started at Task 3 and was administered Tasks 3–11. The student did not respond successfully on Task 11, and the administration was concluded after Task 11.

SC - ALT STUDENT PLACEMENT QUESTIONNAIRE - ELA (ENGLISH LANGUAGE ARTS)

Follow steps 1-4 to complete the SPQ and identify the starting task.	No, she/he cannot do this		
(1) Please darken the bubble (●) that corresponds to the most appropriate response for this student. Mark <u>only one response</u> for each item. Please mark a response for <u>all</u> items below. Use a No. 2 pencil only.	With physical prompting/hand-over-hand	With verbal/gestural prompting	Independently
In reading, can this student:			
1. Attend to text read aloud?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
2. Recall details of text read aloud?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
3. Recognize some high-frequency written words?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
4. Draw conclusions or make inferences about texts?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
In writing, can this student:			
5. Write his or her name using a pencil, name stamp, letter tiles, or other means?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
6. Use objects, pictures, and/or picture symbols to write in any format?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
7. Copy, trace, or print letters?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
8. Use oral language and/or letters and words to write?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
In communicating, can this student:			
9. Listen (i.e., demonstrate receptive behavior) and respond?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Participate in conversations by responding appropriately?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
11. Use language to express a preference, opinion, or viewpoint?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
12. Recognize and understand the meaning of environmental signs (e.g., street signs, store signs, school signs)?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
(2) Write in the total number of bubbles you marked in each column	1	7	2

Col.1 Col.2 Col.3

(3) Calculate the SPQ total score

- (a) write the column totals from (2) in (a) below
- (b) multiply and write the results in (b) below
- (c) sum the results from (b) and write the sum in (c)

	(a)		(b)		
Column 1 Total	1	x 3 =	3	+	1
Column 2 Total	7	x 2 =	14	+	2
Column 3 Total	2	x 1 =	2	+	9
(c) Total SPQ Score =			19		

(4) Identify the starting task for this student using the SPQ total score from step (3).

If the total score is in this range	Start at this task	Administer all items in <u>at least</u> these tasks
0-11	Task 1	1-7
12-22	Task 3	3-11
23-36	Task 7	7-15

Appendix B: Scoring Audits and Analysis of Second Rater Data from the Spring 2013 Operational Administration

A second rater study was conducted to audit scoring accuracy and classification consistency for the spring 2013 administrations of the SC-Alt in science and biology. **Scoring accuracy** refers to the degree to which teachers follow scaffolding and scoring directions correctly and assign correct scores to student responses. **Classification consistency** refers to the degree to which students are assigned to the same performance levels based on item scores by test administrators and second raters. This appendix describes the sampling procedures, the identified sample of students, and the results for the attained sample of completed second rater administrations.

Sampling Procedures

The sampling procedure was designed to include administrations from every school district and to be broadly representative of the range of student and test administrations. A sample of students was identified for second rater assessment so that (a) all districts implementing the SC-Alt would be required to assign a second rater to at least one student administration and (b) the total number of audited test administrations per district would be based on the number of teachers involved in the assessment for each district. The sampling was by teacher and his or her students, within districts. One-third of the teachers in each district were randomly sampled to conduct second rater administrations with one student in the science/biology content area. These students had their science/biology item responses scored simultaneously by a second rater who was present during the test administration. The number of test administrations audited from the districts is shown in Exhibit B-1.

Exhibit B-1: Distribution of Second Rater Sample Records across Districts—by Test Form

Grade-Band	# of Students	# of Districts
Elementary School	1	24
	2	9
	3	7
	4	3
	5	2
	6	2
	7	1
	10	1
Middle School	1	16
	2	10
	3	3
	4	4
	5	3
	10	1
	13	1

Grade-Band	# of Students	# of Districts
High School	1	17
	2	5
	3	4
	4	1
	6	1

Based on the sampling plan and the numbers of pre-identified students coded for each district for the 2013 administration, the frequency distribution of test administrations sampled per district was as follows:

Elementary School: Second Rater

- 1 test administration—24 districts
- 2–5 test administrations—21 districts
- 6–10 test administrations—4 districts

Middle School: Second Rater

- 1 test administration—16 districts
- 2–5 test administrations—20 districts
- 6–10 test administrations—1 districts
- 11-15 test administrations—2 districts

High School: Second Rater

- 1 test administration—17 districts
- 2–5 test administrations—10 districts
- 6-10 test administrations—1 districts

The sampling of students and teachers was conducted from the January 2013 precode file, which was the pre-identification file for the spring 2013 SC-Alt administration. The sampling was conducted by SCDE, and the students identified for the second rater study were flagged on the precode file sent to AIR for the production of materials and district notification.

Analysis of Second Rater (SR) Data

During the spring 2013 administration of the SC-Alt, a total of 262 administrations had second rater data collected. Of these cases, 114 were collected from elementary school administrations; 99 from middle school; and 49 from high school. The spring 2013 second rater study was applied to science and biology assessments only. These administrations involved a second rater observer independently scoring the administration along with the test administrator (TA). The scoring data from the second rater was recorded on a separate answer folder. The official TA scoring data and the second rater data were compared by the contractor to conduct the scoring consistency and classification consistency analyses reported in this technical report. Exhibit B-2 displays the student demographics of the second rater sample broken down by grade-band.

Exhibit B-2: Demographic Frequencies for the Second Rater Data Samples—by Test Form

	Elementary School		Middle		High	
	N	%	N	%	N	%
STUDENT'S ETHNICITY						
Missing	.	0	.	0	.	0
Asian	.	0	2	2.02	.	0
African American	66	57.89	51	51.52	17	34.69
Hispanic	7	6.14	4	4.04	3	6.12
American Indian/Alaska Native	2	1.75	.	0	.	0
Multi-Race	1	0.88	4	4.04	2	4.08
Native Hawaiian/Other Pacific Islander	.	0	.	0	.	0
White	38	33.33	38	38.38	27	55.1
STUDENT'S GENDER						
Female	25	21.93	34	34.34	20	40.82
Male	89	78.07	65	65.66	29	59.18
ESL (LANGUAGE)						
Pre-Functional	6	5.26	1	1.01	2	4.08
English Speaker II	108	94.74	98	98.99	47	95.92
Unknown	.	0	.	0	.	0
ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH						
Free Meals	70	61.4	66	66.67	32	65.31
Reduced	9	7.89	8	8.08	4	8.16
Full-Pay Meals	35	30.7	25	25.25	13	26.53
EFA GRADE (REPORTED GRADE FOR FUNDING)						
1	1	0.88	.	0	.	0
2	4	3.51	.	0	.	0
3	36	31.58	.	0	.	0
4	51	44.74	3	3.03	.	0
5	20	17.54	12	12.12	2	4.08
6	2	1.75	32	32.32	1	2.04
7	.	0	39	39.39	.	0
8	.	0	11	11.11	8	16.33
9	.	0	1	1.01	15	30.61
10	.	0	1	1.01	20	40.82
11	.	0	.	0	3	6.12
COMPLETION STATUS: Math						
Attempted	114	100	99	100	47	95.92
Test Not Valid: Student received fewer than 23 scored responses	.	0	.	0	2	4.08

	Elementary School		Middle		High	
	N	%	N	%	N	%
Special Status						
Migrant Status	.	0	.	0	.	0
Home Schooled	.	0	.	0	.	0
Medical Homebound	1	0.88	.	0	2	4.08
Student Disability						
Missing	.	0	.	0	.	0
Autism	29	25.44	20	20.2	12	24.49
Deaf/Blindness	.	0	.	0	.	0
Developmental Delay	13	11.4	.	0	.	0
Educable Mentally Disability	20	17.54	28	28.28	8	16.33
Emotional Handicapped	2	1.75	.	0	2	4.08
Hearing Handicapped	.	0	1	1.01	.	0
Learning Disability	.	0	1	1.01	.	0
Multiple Disable	.	0	.	0	.	0
Orthopedically Handicapped	2	1.75	2	2.02	2	4.08
Other Health Impaired	6	5.26	6	6.06	4	8.16
Profoundly Mentally Handicapped	13	11.4	14	14.14	5	10.2
Speech	1	0.88	.	0	.	0
Trainable Mental Disability	26	22.81	27	27.27	16	32.65
Traumatic Brain Injury	1	0.88	.	0	.	0
Visually Handicapped	1	0.88	.	0	.	0
TOTAL	114	100	99	100	49	100

When the attained second rater samples are compared to the “assessed population” (see Exhibit 3.4), the following statements can be made:

By form:

- The attained sample approximates the expected number of students for each form: Elementary students make up 44% of the sample, middle school students 38%, and high school students make up 19% of the sample.

By the Individualized Education Program (IEP) disability code:

The important primary disabilities are profound (severe), trainable (moderate), and educable (mild) mental disability, and autism. If any of the mental disabilities were coded together with autism, then only the mental disability was reported. The other rows in the table show additional disabilities coded by the test administrators.

Profound (severe) Mental Disability was sampled similarly to the expectation across forms (sampled%–overall%) (elementary school: 11%–8%, middle school: 14%–8%, and high school: 10%–9%).

- Trainable (moderate) Mental Disability was sampled at a similar rate (23%, 27%, and 33%) to the expectation (20%, 27%, and 39%).
- Educable (mild) Mental Disability was sampled at a similar rate (18%, 28%, and 16%) to the expectation (24%, 29%, and 20%).
- Autism was sampled at a similar rate (25%, 20%, and 24%) to the expectation (28%, 23%, and 20%).

By other demographic variables:

For other demographic variables, the proportions in the second rater sample generally correspond to those seen in the total assessed population when data were available.

- In the sample, African American (35%–58%),⁴ American Indian (0%–2%), Asian (0%–2%), Hispanic (4%–6%), White (33%–55%), and Other (0%–4%) ethnicities were reported, representing the majority of ethnicities in the total assessed population. These percentages evidence some variability around the corresponding population values as a result of the small sample sizes. One of the largest discrepancies is that the second rater sample does not effectively represent the 52% African American high school students.
- Gender is distributed as approximately one to three males for each female.
- “English Speaker II” (95% to 99%) in the sample reflects the percentage of students in the assessed population.
- Between 61% and 67% of students in the sample were eligible for Free Lunch, approximately the same as in the total population. A small group of students in the sample was eligible for Reduced Lunch (8%), which is similar to the assessed population (7% to 9%).
- None of the students in the attained second rater sample were home-schooled or migrant, but three students were medically homebound.

The attained second rater sample (Exhibit B-2) appears to reasonably represent the full population (Exhibit 3.4). The demographic variables of interest are present in the attained sample data within acceptable ranges of the assessed population.

Item Agreement Analysis

Within each grade-band, the absolute difference between test administrator (TA) scores and second rater (SR) item scores for each item was computed. Scores that did not differ between TA and SR are noted as “equal”; scores differing by ± 1 score point were noted as “adjacent.” Scores differing by more than ± 1 point were flagged as “discrepant.” The agreement data are summarized by grade-band in Exhibit B-3, where values indicate the average percentage of items falling within each agreement category for which there were valid matched responses across TAs and SRs.

For the elementary school form, the second rater audit showed 99% of items scored as “equal” between the TA and SR, “adjacent” ratings were the next most prevalent outcome (at 1%), and “discrepant” ratings were the least prevalent result (0%).

On the middle school form, the second rater study showed a pattern similar to the elementary form: 98% of the item scores matched as “equal,” 2% as “adjacent,” and 0% as “discrepant.”

⁴ The percentage range is reported across all three subsamples—for the elementary school, middle school, and high school science/biology assessments.

On the high school form, the second rater study yielded the same pattern for mathematics: “Equal” ratings again account for the largest proportion of cases (98%), “adjacent” is the next most prevalent (2%), and finally “discrepant” (0%).

Exhibit B-3: Average Item Agreement Statistics by Method, Grade-Band, and Subject

Subject	Agreement	Response					
		Elementary School		Middle School		High School	
		Count	%	Count	%	Count	%
Science/Biology	Equal	5447	99.1	4956	98.4	2530	98.3
	Adjacent	47	0.9	76	1.5	39	1.5
	Discrepant	5	0.1	7	0.1	5	0.2

Classification Consistency Analysis (as distinct from scoring consistency as discussed in the previous section)

The reported performance levels for each student are derived from a scale score to performance level conversion process. Scale scores are produced based on conversions from the raw scores assigned by the TA. From these scale scores, students were assigned to one of four performance levels (i.e., Levels 1, 2, 3, or 4) within each grade-band and content area assessment. The correspondence between reported (TA) performance levels and SR performance levels was assessed according to the kappa and weighted kappa coefficients. In particular, consistency was assessed through the *weighted kappa statistic* (Agresti, 1990; Spitzer, Cohen, Fleiss, & Endicott, 1967), which is appropriate for ordered categories:

$$\kappa_w = \frac{\sum \sum w_{ij} \pi_{ij} - \sum \sum w_{ij} \pi_{i+} \pi_{+j}}{1 - \sum \sum w_{ij} \pi_{i+} \pi_{+j}},$$

where i is the category assigned by the TA, j is the category assigned by the SR, $w_{ij} = 1 - (i - j)^2 / (I - 1)^2$ are the weights, π_{ij} is the probability of being classified as ij , and “+” indicates agreement between categories. Kappa equals 0 when the agreement is that expected by chance, and kappa equals 1 when there is perfect agreement among raters.

Under the current condition, it must be noted that not all cases included in this analysis contained complete data. The “N” rows of Exhibit B-4 indicate the *effective sample size* (where “n” is the count of valid TA administrations with complete SR item scores). For these realized samples, there is a high level of agreement: The weighted kappa coefficients range between 0.97 and 0.99, and their 95% confidence intervals fall within ± 0.03 of the point estimates.

Exhibit B-4: Agreement Statistics by Method, Subject, and Grade-Band

Subject	Statistic	Second Rater		
		Elementary	Middle	High
Science/Biology	N	114	98	47
	kw	0.99	0.98	0.97
	95% CI	0.97-1	0.97-1	0.94-1

Summary

TA and second rater assignments of students to performance levels show high levels of agreement, as weighted kappa typically ranges from 0.97 to 0.99. Further, the 95% confidence intervals show that, while sample sizes for the current calculations may be small, the agreement indices are significantly greater than chance agreement and often approach 1.00. Based on the current evidence, the second rater results affirm that the SC-Alt was accurately scored by the test administrators.

Appendix C: Descriptions of Achievement Levels (DALs)

Exhibit C-1: English Language Arts Descriptions of Achievement Levels

Performance Level	ELA Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
1	Students performing at Level 1 demonstrate emerging academic skills and competencies in reading, writing, and communication.	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> listen (as evidenced by facial expressions, gestures, or sounds) to a variety of text read aloud; point or eye gaze to objects, pictures, or letters to complete a writing activity; engage (using facial expressions, gestures, or sounds) in conversations focused on objects in the immediate surroundings; and listen (as evidenced by facial expressions, gestures, or sounds) to a speaker. 	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> point or eye gaze to objects or pictures related to a variety of grade-appropriate or adapted text focused on concrete concepts, read aloud; point or eye gaze to objects, pictures, or letters to create a simple composition; engage in conversations focused on events in the immediate surroundings as evidenced by facial expressions, gestures, or sounds; and listen to a speaker as evidenced by facial expressions or gestures without interrupting. 	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> listen to a variety of grade-appropriate/adapted texts read aloud as evidenced by facial expressions, gestures, or sounds; point or eye gaze to objects, pictures, or letters to complete more complex written products; engage in conversations focused on objects or events outside the immediate surroundings as evidenced by facial expressions, gestures, or sounds; and listen and respond to a speaker.
2	Students performing at Level 2 demonstrate	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> tell or show what a grade-appropriate or 	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> tell or show what a text that requires only literal 	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> tell or show what a grade-appropriate or adapted text

Performance Level	ELA Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
	foundational academic skills and competencies in reading, writing, and communication.	adapted text, which contains high-frequency words, is about; <ul style="list-style-type: none"> • identify individual words/picture symbols; • identify story elements (e.g., main idea, events, setting, and characters); • use oral and written language to describe; • select from a list of topics to generate ideas for written communication; • listen to a speaker without interrupting; and • respond appropriately in conversations. 	interpretation is about (using objects, pictures, or words); <ul style="list-style-type: none"> • read a variety of grade-appropriate/adapted texts (e.g., recipes or advertisements); • identify story elements (e.g., main idea, events, setting, characters, and conflict); • make connections within and between texts; • use oral and written language to explain; • select from a list of topics to generate multiple ideas for written communication; • focus attention on a speaker and listen without interrupting; • engage in conversations by answering direct questions about familiar situations; and • follow oral and/or written one-step directions. 	that requires simple inferences is about; <ul style="list-style-type: none"> • read a variety of texts (e.g., recipes, advertisements, schedules, and newspapers); • identify story elements (e.g., main idea, events, setting, characters, conflict, and plot); • gather meaning from graphic representations; • use oral and written language to explain, inform, and describe; • generate ideas for written communication; • edit own writing; and • engage in conversations by answering direct questions about the immediate environment or other familiar surroundings.
3	Students performing at Level 3 demonstrate increasing	Students performing at Level 3 should be able to <ul style="list-style-type: none"> • identify story elements in text (e.g., characters, settings, events, cause 	Students performing at Level 3 should be able to <ul style="list-style-type: none"> • identify and recall details in text including main idea and characters; 	Students performing at Level 3 should be able to <ul style="list-style-type: none"> • make connections with text (plot, characters, setting); • make inferences about events

Performance Level	ELA Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
	<p>academic skills and competencies in reading, writing, and communication.</p>	<p>and effect, and problem and solution);</p> <ul style="list-style-type: none"> • read words and simple sentences; • generate an idea and use words, pictures, or oral language to write; • follow one-step oral or signed directions; and • communicate agreement or disagreement appropriately. 	<ul style="list-style-type: none"> • draw conclusions and make simple predictions and inferences about the text; • determine meaning of unfamiliar words; • generate multiple ideas by selecting from a list and use words, pictures, or oral language to write; and • initiate conversation about immediate surroundings. 	<p>in text;</p> <ul style="list-style-type: none"> • understand multiple meanings of words; • compare and contrast story elements from different stories; • discriminate fact from fiction; • generate an idea and use words, pictures, or oral language to write; • follow directions to complete a task; and • initiate conversations about immediate surroundings or other familiar topics.
4	<p>Students performing at Level 4 demonstrate and apply academic skills and competencies in reading, writing, and communication.</p>	<p>Students performing at Level 4 should be able to</p> <ul style="list-style-type: none"> • identify story elements such as the main idea and cause and effect; • draw conclusions and make predictions about text; • read and understand the main idea of a simple paragraph; • create and edit personal written products; • follow two-step oral or 	<p>Students performing at Level 4 should be able to</p> <ul style="list-style-type: none"> • recognize and recall details in text, including the main idea, plot, characters, and setting; • draw conclusions and make predictions and inferences about the text; • read and understand the main idea of a simple paragraph; • explain word meanings; • create and edit personal written products; • follow oral/signed or written 	<p>Students performing at Level 4 should be able to</p> <ul style="list-style-type: none"> • recognize and recall details in text, including the main idea, plot, characters, and setting; • draw conclusions and make predictions and inferences about the text; • read and understand the main idea of a short story; • use context clues to understand the meaning of unknown words; • make connections within and between texts and to prior

Performance Level	ELA Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
		<p>signed directions; and</p> <ul style="list-style-type: none"> • take turns appropriately during conversation or discussion. 	<p>directions; and</p> <ul style="list-style-type: none"> • initiate and retell conversations. 	<p>knowledge, other texts, and the world;</p> <ul style="list-style-type: none"> • create and edit personal written products; and • use graphic representations as sources of information.

Exhibit C-2: Mathematics Descriptions of Achievement Levels

Performance Level	Mathematics Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
1	Students performing at Level 1 demonstrate emerging academic skills and competencies in mathematics.	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> manipulate one concrete object; observe that two geometric figures have the same attributes; and recognize attributes of objects, such as length and weight. 	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> recognize the concept of one in counting objects; recognize that two geometric figures have the same attributes; and recognize attributes of objects, such as length, weight, and size/volume. 	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> recognize the concept of one more in counting objects; match geometric figures that have the same attributes; respond to positional concepts such as on top of/under, on/off, above/below; and match objects by one attribute such as length, weight, and size/volume.
2	Students performing at Level 2 demonstrate foundational academic skills and competencies in mathematics.	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> count objects in a set; identify objects by one attribute (color, size, shape); classify two- and three-dimensional concrete objects according to one attribute; recognize positional concepts (on/off); and identify measurement tools, including graphs. 	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> add and subtract using concrete objects; sort objects by one attribute (color, size, shape); recognize and demonstrate understanding of positional concepts (on/off, below/above); use nonstandard units to measure; match the correct tool to a 	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> solve addition and subtraction problems; Identify operations (+ or -); tell which has more in a set; identify a repeating relationship (pattern); sort and classify objects by one attribute (length, height, weight, volume); and use a graph or chart to gain

Performance Level	Mathematics Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
			specific task (e.g., measure length, weight, time); and <ul style="list-style-type: none"> identify parts of a chart, graph, or table. 	information.
3	Students performing at Level 3 demonstrate increasing academic skills and competencies in mathematics.	Students performing at Level 3 should be able to <ul style="list-style-type: none"> demonstrate addition and subtraction concretely or symbolically; count and compare objects in a set; sort and classify objects by attribute (shape, size); identify three-dimensional shapes (cube, sphere, cylinder); use nonstandard units to measure; and find answers to questions in a graph. 	Students performing at Level 3 should be able to <ul style="list-style-type: none"> identify the answer to one-digit addition and subtraction problems; identify a set as having more, fewer, or the same number as another set; extend a repeating pattern; compare objects by attribute; and interpret information displayed in a table. 	Students performing at Level 3 should be able to <ul style="list-style-type: none"> identify the process for solving an addition or a subtraction problem; identify and use operational symbols correctly; estimate the number of objects in a set; add to find value of a set of coins; describe, create, and complete a repeating pattern; and use and organize data to create charts, graphs, and tables.
4	Students performing at Level 4 demonstrate and apply academic skills	Students performing at Level 4 should be able to <ul style="list-style-type: none"> demonstrate understanding of addition and subtraction; generate a pattern using three-dimensional shapes 	Students performing at Level 4 should be able to <ul style="list-style-type: none"> solve addition and subtraction facts without regrouping; describe and extend a 	Students performing at Level 4 should be able to <ul style="list-style-type: none"> identify, compare, and construct numbers; use operation symbols (more than, less than, and equal to)

Performance Level	Mathematics Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
	and competencies in mathematics.	(cube, sphere, cylinder); <ul style="list-style-type: none"> • compare objects by attribute (length, size); and • interpret information displayed in a graph. 	repeating pattern; <ul style="list-style-type: none"> • interpret information displayed in a graph; and • use data to create tables. 	to solve problems; <ul style="list-style-type: none"> • add to find the value of a set of two or more coins; • identify, describe, create, extend, and complete a repeating pattern; • describe events as more likely or less likely to occur; and • use and organize data to create and interpret graphs.

Exhibit C-3: Science Descriptions of Achievement Levels

Performance Level	Science Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
1	Students performing at Level 1 demonstrate emerging academic skills and competencies in science.	<p>Students performing at Level 1 should be able to use their senses to</p> <ul style="list-style-type: none"> observe the outcome of a simple science investigation; sequence growth patterns; observe and record daily weather conditions; recognize the sun and moon and relate them to day and night; and recognize that objects move when force is applied. 	<p>Students performing at Level 1 should be able to use their senses to</p> <ul style="list-style-type: none"> choose a question (how) (what if) to conduct a scientific investigation; identify major body parts of animals; identify the sun and moon; recognize that objects move when force is applied and recognize speed (fast and slow); and sort by one attribute. 	<p>Students performing at Level 1 should be able to use their senses to</p> <ul style="list-style-type: none"> choose questions to conduct a simple scientific investigation; recognize that objects move when force is applied; recognize that an object at rest does not move; and identify physical properties of matter (e.g., freezing/melting).
2	Students performing at Level 2 demonstrate foundational academic skills and competencies in science.	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> generate a question to conduct a simple scientific investigation; sort organisms by physical characteristics; identify daily weather conditions; recognize the pattern of day and night; 	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> carry out a simple scientific investigation to answer a question; sort and describe materials by observable properties; sort and identify organisms by physical characteristics; identify patterns of day and night; and 	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> carry out a simple scientific investigation related to electricity or force and motion to answer a question; compare magnetic and non-magnetic objects; identify the force that makes an object move; recognize physical changes

Performance Level	Science Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
		<ul style="list-style-type: none"> • identify the position of objects such as above/below, inside, or on top; and • sort materials by observable properties. 	<ul style="list-style-type: none"> • recognize that an object at rest moves when force is applied. 	<p>in matter; and</p> <ul style="list-style-type: none"> • recognize physical properties of matter.
3	Students performing at Level 3 demonstrate increasing academic skills and competencies in science.	<p>Students performing at Level 3 should be able to</p> <ul style="list-style-type: none"> • select appropriate tool for gathering data; • carry out a simple scientific investigation; • classify events in sequential order; • distinguish between living and nonliving things; • identify major organs of animals; and • use a graph to compare daily changes in weather conditions. 	<p>Students performing at Level 3 should be able to</p> <ul style="list-style-type: none"> • conduct and analyze the results of a simple scientific investigation; • use graphs, tables, and charts to record data and report on the results of an investigation; • compare the characteristics of living and nonliving things; • identify what plants need to grow; • use a graph or chart to compare weather conditions each season; and • classify organisms into major groups. 	<p>Students performing at Level 3 should be able to</p> <ul style="list-style-type: none"> • predict the outcome of a simple investigation and compare the results with the prediction; • compare factors that affect an electromagnet; • identify electricity as a source of energy; • relate the change in force to the change in speed; and • recognize the physical properties of two or more objects.
4	Students performing at Level 4 demonstrate	<p>Students performing at Level 4 should</p> <ul style="list-style-type: none"> • plan and conduct a simple scientific investigation; 	<p>Students performing at Level 4 should be able to</p> <ul style="list-style-type: none"> • plan, conduct, and carry out a simple scientific investigation; 	<p>Students performing at Level 4 should be able to</p> <ul style="list-style-type: none"> • plan, conduct, and analyze the results of a scientific

Performance Level	Science Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8	Grade 10
	<p>and apply academic skills and competencies in science.</p>	<ul style="list-style-type: none"> • identify major organs of animals and their functions; • identify living and nonliving things in terms of a food web; • identify natural resources as renewable or nonrenewable; • compare heat and light changes from season to season using a graph; and • draw simple conclusions from tables, graphs, and charts . 	<ul style="list-style-type: none"> • communicate simple conclusions using tables and graphs; • identify simple machines (inclined plane, lever, pulley); • compare data on temperature changes over time using a graph; • use a graph to show how heat and light change from season to season; and • identify sources of light. 	<p>investigation;</p> <ul style="list-style-type: none"> • draw simple conclusions from distance/time graphs or tables; • demonstrate how simple machines are used to help people (inclined plane, lever, pulley, etc.); • predict the effect of the change in force on an object; and • identify water as solid, steam, or liquid.

Exhibit C-4: Social Studies Descriptions of Achievement Levels

Performance Level	Social Studies Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8
1	Students performing at Level 1 demonstrate emerging academic skills and competencies in social studies.	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> • identify self from others; • respond to a person in authority in the home or school; • follow class rules; • engage in turn-taking; and • listen to information about South Carolina history. 	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> • identify self from others; • respond to familiar authority figures; • follow class rules; • engage in turn-taking and sharing; and • listen to information presented about significant and historical events in South Carolina.
2	Students performing at Level 2 demonstrate foundational skills and competencies in social studies.	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> • identify characteristics such as gender that help identify self in relation to others; • match workers to different jobs in the community; • recognize people in authority and follow class rules; • match the people we honor on some national holidays (e.g., George Washington, Martin Luther King, Jr.) with the holidays; • distinguish between past and present (match jobs of the past with jobs of the present); and • match significant historical figures such as Thomas Edison to their accomplishments. 	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> • identify surroundings (e.g., classroom, school); • match different people to their jobs in the community; • identify people in authority and follow class rules; • demonstrate understanding of rules; • identify the people we honor on some national holidays (e.g., George Washington, Martin Luther King, Jr.); • identify the purpose of money; and • match changes over time to the past and present such as communication.

Performance Level	Social Studies Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8
3	Students performing at Level 3 demonstrate increasing skills and competencies in social studies.	<p>Students performing at Level 3 should be able to</p> <ul style="list-style-type: none"> • understand the concept of past and present; • demonstrate respect for people in authority; • identify major symbols of the United States; • identify why we celebrate the national holidays; • recognize that when we work we earn money to buy things; • identify features on a map of South Carolina (river, mountain, ocean); • answer questions about significant events related to the Civil War; and • identify historical figures such as Thomas Edison, Alexander Graham Bell, etc., to their accomplishments. 	<p>Students performing at Level 3 should be able to</p> <ul style="list-style-type: none"> • identify members of the larger community (e.g., police officers, firefighters, doctors); • demonstrate understanding of the consequences of not following the rules; • identify examples of good citizenship such as honesty, courage, etc.; • identify symbols of the United States (e.g., the flag, bald eagle); • demonstrate an understanding that we work to earn money and use money to buy things; • identify changes over time such as in travel, farming, etc.; • gain information from maps, charts, and graphs; and • answer questions about key historical figures and significant historical events including the civil rights movement.
4	Students performing at Level 4 demonstrate and apply academic skills and competencies in social studies.	<p>Students performing at Level 4 should be able to</p> <ul style="list-style-type: none"> • place personal history on a time line; • identify the roles of leaders and officials in local government (e.g., principal, mayor, governor); • identify individuals who embody qualities of good citizenship; • identify examples of respect and fair 	<p>Students performing at Level 4 should be able to</p> <ul style="list-style-type: none"> • place personal and family history on a time line; • identify roles of leaders and officials in local government (e.g., principal, mayor, governor); • identify examples of the qualities of courage and patriotism; • identify examples of respect and fair treatment and their opposites; • recognize how the amount of money available

Performance Level	Social Studies Achievement-Level Definitions	Grade-Band 3–5	Grade-Band 6–8
		<p>treatment;</p> <ul style="list-style-type: none"> • recognize that we exchange money for goods and services; • use a key to locate geographic features on a map of South Carolina; • answer questions about key concepts related to the Civil War; and • answer questions about the accomplishments of key historical figures such as Thomas Edison, Alexander Graham Bell, etc. 	<p>determines what we can buy;</p> <ul style="list-style-type: none"> • gain information from maps and charts; and • identify the accomplishments of Civil Rights leaders including Rosa Parks.

Exhibit C-5: High School Biology Descriptions of Achievement Levels

Performance Level	Biology Achievement Level Definitions	Grade 10
1	Students performing at Level 1 demonstrate some emerging academic skills and competencies in biology.	<p>Students performing at Level 1 should be able to</p> <ul style="list-style-type: none"> • Identify a possible outcome of a simple scientific investigation; • Recognize tools that could be used in a simple scientific investigation; • Identify a result of a simple investigation based on observations; • Identify appropriate safety instruments when conducting scientific investigations; • Identify things as cellular (living); • Recognize cellular vs. non cellular (living or nonliving) things; • Recognize that cells are the smallest unit of life; • Identify food as a source of protein, carbohydrates, or fat; • Identify food as a source of energy; • Identify what the human body needs for survival; • Identify the offspring produced by parents; • Identify a physical trait; • Identify adaptations that allow animals to survive in their habitat; • Identify a fossil from a non-fossil; • Identify parent/offspring pairs; • Identify natural things in the environment and things made by humans; • Identify natural resources; • Identify the organism being consumed in a food chain.
2	Students performing at Level 2 demonstrate foundational academic skills biology.	<p>Students performing at Level 2 should be able to</p> <ul style="list-style-type: none"> • Identify a prediction; • Identify the outcome of a simple controlled scientific investigation; • Identify scientific instruments used to make observations; • Interpret simple scientific data; • Identify parts of a graph; • Identify appropriate safety procedures when conducting scientific investigations;

Performance Level	Biology Achievement Level Definitions	Grade 10
		<ul style="list-style-type: none"> • Recall that cells are the basic unit of life; • Classify things as cellular or non cellular; • Recognize that cells can be further broken down into smaller units; • Recognize that cells form tissues; • Recognize food as protein, carbohydrate, or fat; • Identify the flow of energy in a simple food web; • Identify what plants need for survival; • Identify the source of energy in a food chain; • Identify parents as a source of physical traits; • Identify DNA/genes as a source of traits; • Identify a trait passed from parent to offspring; • Identify favorable and unfavorable traits that determine species survival; • Classify an animal as living or extinct; • Identify a phylogenetic tree as a diagram that shows ancestry of organisms; • Identify living and nonliving resources in an ecosystem; • Recognize the relationships among organisms; • Identify environmental changes that can effect a population; • Identify human activities that affect Earth.
3	Students performing at Level 3 demonstrate increasing academic skills and competencies in biology.	<p>Students performing at Level 3 should be able to</p> <ul style="list-style-type: none"> • Identify the hypothesis of a simple investigation; • Recognize which scientific instruments are used to collect and/or record data; • Organize data in a given graph/table/model; • Interpret the results of scientific data that are displayed in a graph; • Identify the outcome of a simple investigation as the same as or different from the original hypothesis; • Identify appropriate safety procedures required when conducting a specific scientific investigation; • Illustrate that all living things are composed of cells;

Performance Level	Biology Achievement Level Definitions	Grade 10
		<ul style="list-style-type: none"> • Identify different types of cells, tissues, and organs; • Illustrate the end product of cell division; • Classify different foods as protein, fat, or carbohydrate; • Summarize the role of protein, carbohydrates, or fat in the body; • Illustrate the flow of energy in a simple food web; • Identify that chromosomes contain DNA; • Identify types of traits passed on from parent to offspring; • Identify offspring based on dominant parent traits; • Identify the structure of DNA; • Identify an organism that is better adapted to a changing habitat; • Identify which organisms are most closely related by using a phylogenetic tree; • Identify predator/prey relationships; • Explain how environmental changes can affect a population; • Identify the sequence of ecological succession; • Classify human activities based on their effect on Earth (beneficial or harmful).
4	Students performing at Level 4 demonstrate and apply academic skills and competencies in biology.	<p>Students performing at Level 4 should be able to</p> <ul style="list-style-type: none"> • Analyze the outcome of a simple investigation and compare it to the hypothesis; • Select the appropriate graph for displaying simple scientific data; • Use laboratory instruments and procedures in a safe manner; • Recall that all cells come from other cells; • Identify a nucleus, cell membrane/wall, vacuole, and chloroplast; • Recall different types of cells; • Illustrate that plants and animals have different cell structures; • Identify different types of cells, tissues, organs, and organ systems; • Classify protein, carbohydrate, or fats based on function or description of structure; • Create a food web showing the flow of energy; • Summarize that plants use photosynthesis to make their own food;

Performance Level	Biology Achievement Level Definitions	Grade 10
		<ul style="list-style-type: none"> • Identify that DNA and genes pass on specific traits to offspring; • Predict physical traits of offspring based on dominant or recessive physical traits of parents; • Identify a dominant trait of a given species; • Identify the principle of natural selection; • Explain the effect of a changing habitat on a population; • Explain the relationship of two organisms based on a phylogenetic tree; • Identify living counterparts of extinct organisms; • Classify interrelationships among organisms within ecosystems; • Predict the effect of environmental changes on a population; • Illustrate the changes that occur during succession; • Illustrate how human activities affect the naturally occurring processes on Earth.

Appendix D: Statistics Summaries for the 2013 Spring Items

Exhibit D-1: Grade-Band 3-5 ELA Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1406	3-5	1	Operational	0.48	0.64	0.00	0.01	-A	-A
1408	3-5	2	Operational	0.38	0.56	0.00	0.03	+A	-A
1409	3-5	3	Operational	0.38	0.65	0.00	0.02	+A	+A
1410	3-5	4	Operational	0.31	0.65	0.00	0.02	-A	-A
469	3-5; 6-8;	5	Operational	0.34	0.47	0.01	0.03	+A	+A
425	3-5; 6-8;	6	Operational	0.39	0.56	0.01	0.03	+A	-A
471	3-5; 6-8;	7	Operational	0.40	0.54	0.01	0.03	-A	+A
424	3-5; 6-8;	8	Operational	0.46	0.58	0.01	0.03	+A	-C
686	3-5; 6-8;	9	Operational	0.24	0.38	0.01	0.03	-A	-A
472	3-5; 6-8;	10	Operational	0.40	0.57	0.01	0.03	+A	+A
2099	3-5	11	Operational	0.41	0.52	0.00	0.04	-A	+A
2100	3-5	12	Operational	0.44	0.65	0.00	0.04	-A	-A
2102	3-5	13	Operational	0.26	0.39	0.00	0.04	-A	+B
2103	3-5	14	Operational	0.33	0.62	0.00	0.04	+A	+A
2104	3-5	15	Operational	0.35	0.44	0.00	0.04	-A	-A
2105	3-5	16	Operational	0.54	0.70	0.00	0.03	+A	-A
2098	3-5	17	Operational	0.45	0.59	0.00	0.04	-A	+A
1355	3-5	18	Operational	0.26	0.64	0.00	0.04	+A	-A
1357	3-5	19	Operational	0.46	0.65	0.00	0.04	-A	-A
1358	3-5	20	Operational	0.50	0.46	0.00	0.03	+B	+A
1359	3-5	21	Operational	0.45	0.52	0.00	0.03	+A	+A
1360	3-5	22	Operational	0.48	0.68	0.00	0.03	-A	+A
1361	3-5	23	Operational	0.47	0.47	0.00	0.04	+A	-A
2459	3-5	24	Field Test	0.56	0.79	0.00	0.00	-A	-A
2460	3-5	25	Field Test	0.37	0.65	0.00	0.03	+A	+A
2461	3-5	26	Field Test	0.36	0.57	0.00	0.04	-A	+A
2462	3-5	27	Field Test	0.39	0.54	0.00	0.04	+A	+B
2463	3-5	28	Field Test	0.39	0.71	0.00	0.04	+A	-A
2464	3-5	29	Field Test	0.30	0.69	0.00	0.04	-A	-A
2652	3-5	30	Operational-Field Test	0.45	0.46	0.00	0.04	+A	+A
2653	3-5	31	Operational-Field Test	0.34	0.63	0.00	0.04	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2654	3-5	32	Operational-Field Test	0.41	0.46	0.00	0.04	+A	+A
2655	3-5	33	Operational-Field Test	0.37	0.57	0.00	0.04	+A	+A
2656	3-5	34	Operational-Field Test	0.36	0.63	0.00	0.04	+A	+A
2657	3-5	35	Operational-Field Test	0.47	0.59	0.00	0.04	+A	-A
2080	3-5	36	Operational	0.67	0.64	0.00	0.04	-A	+A
2081	3-5	37	Operational	0.68	0.74	0.00	0.04	-A	-A
2082	3-5	38	Operational	0.67	0.80	0.00	0.04	+A	+A
2083	3-5	39	Operational	0.58	0.79	0.00	0.04	-A	+A
2085	3-5	40	Operational	0.52	0.75	0.00	0.05	-A	+A
2253	3-5	41	Operational	0.70	0.66	0.00	0.04	-A	-A
2475	3-5	42	Field Test	0.57	0.76	0.00	0.00	-A	+A
2476	3-5	43	Field Test	0.48	0.81	0.00	0.00	-A	-A
2477	3-5	44	Field Test	0.65	0.50	0.00	0.01	-A	-A
2478	3-5	45	Field Test	0.51	0.56	0.00	0.01	-A	-A
2479	3-5	46	Field Test	0.07	0.63	0.00	0.01	+A	-A
2480	3-5	47	Field Test	0.28	0.55	0.00	0.01	-A	+A
1770	3-5	48	Operational	0.27	0.57	0.00	0.00	+A	+A
1771	3-5	49	Operational	0.52	0.84	0.00	0.00	+A	+A
1767	3-5	50	Operational	0.48	0.50	0.00	0.00	-A	-A
1772	3-5	51	Operational	0.43	0.43	0.00	0.01	-A	-A
1768	3-5	52	Operational	0.60	0.52	0.00	0.01	-A	+A
1769	3-5	53	Operational	0.20	0.63	0.00	0.01	-A	+A
2071	3-5	54	Operational	0.52	0.72	0.00	0.00	+A	+A
2072	3-5	55	Operational	0.70	0.78	0.00	0.00	+A	-A
2073	3-5	56	Operational	0.44	0.80	0.00	0.00	+A	+A
2074	3-5	57	Operational	0.69	0.73	0.00	0.00	-A	-A
2075	3-5	58	Operational	0.69	0.55	0.00	0.01	+A	-A
2076	3-5	59	Operational	0.52	0.86	0.00	0.00	-A	-A
2077	3-5	60	Operational	0.74	0.67	0.00	0.01	-A	-A
2639	6-8	61	Operational-Field Test	0.69	0.60	0.00	0.00	+A	-A
2659	6-8	62	Operational-Field Test	0.54	0.86	0.00	0.00	+A	+A
2660	6-8	63	Operational-Field Test	0.44	0.67	0.00	0.00	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2661	6-8	64	Operational-Field Test	0.49	0.75	0.00	0.00	+A	-A
2662	6-8	65	Operational-Field Test	0.65	0.53	0.00	0.00	+A	+A
2663	6-8	66	Operational-Field Test	0.33	0.77	0.00	0.00	-A	+A
2414	3-5	67	Field Test	0.75	0.68	0.00	0.00	+A	+A
2415	3-5	68	Field Test	0.46	0.71	0.00	0.00	+A	+A
2416	3-5	69	Field Test	0.28	0.47	0.00	0.00	-A	+A
2417	3-5	70	Field Test	0.46	0.67	0.00	0.00	-A	+A
2418	3-5	71	Field Test	0.67	0.68	0.00	0.00	-A	-A
2419	3-5	72	Field Test	0.27	0.62	0.00	0.00	-A	-A
2062	3-5	73	Operational	0.27	0.78	0.00	0.00	-A	-A
2065	3-5	74	Operational	0.58	0.52	0.00	0.00	-A	-A
2066	3-5	75	Operational	0.23	0.61	0.00	0.00	-A	-A
2067	3-5	76	Operational	0.41	0.71	0.00	0.00	-A	+A
2068	3-5	77	Operational	0.66	0.57	0.00	0.00	+A	+A
2069	3-5	78	Operational	0.43	0.80	0.00	0.00	+A	+A
1778	3-5; 6-8;	79	Operational	0.50	0.69	0.00	0.00	+A	+A
1774	3-5; 6-8;	80	Operational	0.22	0.51	0.00	0.00	+A	-A
1775	3-5; 6-8;	81	Operational	0.35	0.71	0.00	0.00	-A	-A
1776	3-5; 6-8;	82	Operational	0.36	0.55	0.00	0.00	-A	+A
1777	3-5; 6-8;	83	Operational	0.37	0.79	0.00	0.00	+A	+A
1773	3-5; 6-8;	84	Operational	0.30	0.41	0.00	0.00	-A	-A
1706	3-5	85	Operational	0.55	0.59	0.00	0.00	+A	+A
1707	3-5	86	Operational	0.51	0.74	0.00	0.00	+A	+A
1708	3-5	87	Operational	0.20	0.67	0.00	0.00	-A	+A
1709	3-5	88	Operational	0.46	0.50	0.00	0.00	+A	-A
1710	3-5	89	Operational	0.55	0.53	0.00	0.00	+A	-A
1711	3-5	90	Operational	0.22	0.80	0.00	0.00	-A	+A

Exhibit D-2: Grade-Band 6-8 ELA Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1411	6-8	1	Operational	0.54	0.65	0.00	0.01	-A	-A
1412	6-8	2	Operational	0.62	0.93	0.00	0.02	+A	+A
1413	6-8	3	Operational	0.75	0.93	0.00	0.02	+A	+A
1414	6-8	4	Operational	0.39	0.56	0.00	0.02	-A	-A
1415	6-8	5	Operational	0.29	0.64	0.00	0.03	+A	+A
1416	6-8	6	Operational	0.26	0.60	0.00	0.03	+A	+A
2037	6-8	7	Operational	0.35	0.53	0.00	0.02	-A	-A
2038	6-8	8	Operational	0.12	0.45	0.00	0.02	-A	-C
2039	6-8	9	Operational	0.32	0.60	0.00	0.02	+A	-A
2040	6-8	10	Operational	0.32	0.46	0.00	0.03	-A	+A
2042	6-8	11	Operational	0.40	0.57	0.00	0.02	+A	-A
2043	6-8	12	Operational	0.43	0.63	0.00	0.03	+A	+A
1784	6-8	13	Operational	0.47	0.69	0.00	0.03	+A	+A
1779	6-8	14	Operational	0.30	0.45	0.00	0.03	-A	+A
1780	6-8	15	Operational	0.30	0.50	0.00	0.03	-A	-A
1782	6-8	16	Operational	0.30	0.46	0.00	0.03	-A	+A
1783	6-8	17	Operational	0.54	0.65	0.00	0.03	-A	+A
469	3-5; 6-8;	18	Vertical Linking	0.50	0.49	0.01	0.03	-A	+A
425	3-5; 6-8;	19	Vertical Linking	0.51	0.61	0.01	0.03	-A	+A
471	3-5; 6-8;	20	Vertical Linking	0.41	0.62	0.01	0.03	+A	+A
424	3-5; 6-8;	21	Vertical Linking	0.55	0.64	0.01	0.03	+A	-A
686	3-5; 6-8;	22	Vertical Linking	0.28	0.40	0.01	0.03	-A	-A
472	3-5; 6-8;	23	Vertical Linking	0.35	0.59	0.01	0.03	+A	-A
2481	6-8	24	Field Test	0.55	0.73	0.00	0.00	-A	-A
2482	6-8	25	Field Test	0.28	0.65	0.00	0.03	-A	+A
2483	6-8	26	Field Test	0.34	0.54	0.00	0.02	-A	-A
2484	6-8	27	Field Test	0.39	0.65	0.00	0.03	+A	+A
2485	6-8	28	Field Test	0.32	0.56	0.00	0.03	+A	-A
2046	6-8	29	Operational	0.34	0.52	0.00	0.03	-A	+A
2047	6-8	30	Operational	0.53	0.70	0.00	0.04	+A	+A
2048	6-8	31	Operational	0.32	0.58	0.00	0.03	+A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2049	6-8	32	Operational	0.45	0.45	0.00	0.03	-A	-A
2050	6-8	33	Operational	0.49	0.54	0.00	0.04	-A	+A
2051	6-8	34	Operational	0.52	0.63	0.00	0.03	+A	+A
2120	6-8	35	Operational	0.71	0.77	0.00	0.03	+A	-A
2121	6-8	36	Operational	0.71	0.68	0.00	0.03	-A	-A
2122	6-8	37	Operational	0.69	0.73	0.00	0.03	-A	+A
2123	6-8	38	Operational	0.63	0.82	0.00	0.03	+A	+A
2124	6-8	39	Operational	0.65	0.67	0.00	0.03	+A	-A
2125	6-8	40	Operational	0.63	0.76	0.00	0.04	-A	+A
2126	6-8	41	Operational	0.61	0.80	0.00	0.04	+A	+A
2486	6-8	42	Field Test	0.21	0.62	0.01	0.01	-A	-A
2487	6-8	43	Field Test	0.52	0.54	0.01	0.01	+A	+A
2488	6-8	44	Field Test	0.19	0.61	0.01	0.01	+A	-A
2489	6-8	45	Field Test	0.31	0.60	0.01	0.01	+A	-A
2490	6-8	46	Field Test	0.38	0.65	0.01	0.01	+A	+A
2491	6-8	47	Field Test	0.41	0.63	0.01	0.01	-A	+A
2492	6-8	48	Operational- Field Test	0.45	0.71	0.00	0.00	-A	-A
2494	6-8	49	Operational- Field Test	0.23	0.61	0.00	0.00	+A	+A
2493	6-8	50	Operational- Field Test	0.53	0.65	0.00	0.00	+A	+A
2495	6-8	51	Operational- Field Test	0.32	0.56	0.00	0.00	+A	+A
2496	6-8	52	Operational- Field Test	0.34	0.71	0.00	0.00	-A	-A
2497	6-8	53	Operational- Field Test	0.51	0.60	0.00	0.00	+A	+A
498	6-8; HS;	54	Operational	0.49	0.87	0.00	0.00	+A	-A
500	6-8; HS;	55	Operational	0.55	0.71	0.01	0.00	-A	-A
501	6-8; HS;	56	Operational	0.43	0.77	0.01	0.00	-A	+A
502	6-8; HS;	57	Operational	0.66	0.64	0.01	0.00	-A	+A
503	6-8; HS;	58	Operational	0.63	0.70	0.01	0.00	+A	-A
82	3-5; 6-8;	59	Operational	0.59	0.88	0.01	0.00	-A	+A
83	3-5; 6-8;	60	Operational	0.49	0.76	0.01	0.00	-A	-A
85	3-5; 6-8;	61	Operational	0.55	0.67	0.01	0.00	-A	+A
89	3-5; 6-8;	62	Operational	0.52	0.54	0.01	0.00	-A	+A
95	3-5; 6-8;	63	Operational	0.53	0.68	0.01	0.00	+A	+A
2498	6-8	64	Field Test	0.51	0.63	0.00	0.00	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2499	6-8	65	Field Test	0.56	0.62	0.00	0.00	-A	-A
2500	6-8	66	Field Test	0.38	0.78	0.00	0.00	-A	-A
2501	6-8	67	Field Test	0.53	0.66	0.00	0.00	-A	-A
2502	6-8	68	Field Test	0.40	0.48	0.00	0.00	-A	+A
2503	6-8	69	Field Test	0.28	0.76	0.00	0.00	+A	-A
2254	6-8	70	Operational	0.45	0.85	0.00	0.00	+A	+A
2255	6-8	71	Operational	0.38	0.88	0.00	0.00	-A	+A
2256	6-8	72	Operational	0.51	0.61	0.00	0.00	-A	-A
2257	6-8	73	Operational	0.51	0.62	0.00	0.00	+A	-A
2258	6-8	74	Operational	0.37	0.66	0.01	0.00	-B	-A
2259	6-8	75	Operational	0.50	0.61	0.01	0.00	-B	+A
1712	6-8	76	Operational	0.59	0.51	0.00	0.00	-A	+A
1713	6-8	77	Operational	0.55	0.73	0.00	0.00	-A	+A
1714	6-8	78	Operational	0.63	0.52	0.00	0.00	-A	+A
1715	6-8	79	Operational	0.62	0.78	0.00	0.00	-A	+A
1717	6-8	80	Operational	0.45	0.76	0.00	0.00	-A	-A
1830	6-8	81	Operational	0.29	0.60	0.00	0.00	+A	+A
1831	6-8	82	Operational	0.58	0.61	0.00	0.00	+A	+A
1832	6-8	83	Operational	0.63	0.58	0.00	0.00	-A	-A
1834	6-8	84	Operational	0.36	0.65	0.00	0.00	+A	-A
1835	6-8	85	Operational	0.39	0.68	0.00	0.00	+A	+A

Exhibit D-3: Grade 10 ELA Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1284	HS	1	Operational	0.63	0.67	0.00	0.01	+A	+A
1292	HS	2	Operational	0.64	0.65	0.00	0.01	+A	-A
1297	HS	3	Operational	0.34	0.92	0.00	0.03	+A	+A
1299	HS	4	Operational	0.18	0.46	0.00	0.03	-A	-A
1300	HS	5	Operational	0.35	0.65	0.00	0.03	+A	+A
1301	HS	6	Operational	0.47	0.66	0.00	0.04	+A	-A
2146	HS	7	Operational	0.62	0.59	0.00	0.02	-A	+A
2147	HS	8	Operational	0.63	0.61	0.00	0.01	+A	-A
2148	HS	9	Operational	0.40	0.44	0.00	0.03	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2149	HS	10	Operational	0.50	0.53	0.00	0.04	+A	+A
2151	HS	11	Operational	0.32	0.49	0.00	0.04	+A	-A
2152	HS	12	Operational	0.30	0.67	0.00	0.04	+A	-C
161	6-8; HS;	13	Operational	0.41	0.57	0.00	0.03	+A	+A
162	6-8; HS;	14	Operational	0.41	0.62	0.00	0.03	-A	+A
166	6-8; HS;	15	Operational	0.29	0.60	0.00	0.03	-C	-A
182	6-8; HS;	16	Operational	0.54	0.57	0.00	0.04	-A	+A
1804	HS	17	Operational	0.47	0.57	0.00	0.04	+A	+A
1806	HS	18	Operational	0.53	0.47	0.00	0.03	-A	+A
1813	HS	19	Operational	0.39	0.56	0.00	0.03	+A	-A
1808	HS	20	Operational	0.33	0.53	0.00	0.04	+A	-A
1810	HS	21	Operational	0.40	0.52	0.00	0.03	-A	+A
2425	HS	22	Field Test	0.57	0.74	0.00	0.01	-A	-A
2426	HS	23	Field Test	0.27	0.50	0.00	0.02	+A	+A
2427	HS	24	Field Test	0.27	0.71	0.00	0.03	-A	+A
2428	HS	25	Field Test	0.48	0.49	0.00	0.02	+A	-A
2430	HS	26	Field Test	0.26	0.68	0.00	0.03	-A	-A
2429	HS	27	Field Test	0.47	0.48	0.00	0.04	+A	-A
523	HS	28	Operational	0.56	0.48	0.00	0.03	+A	-A
524	HS	29	Operational	0.36	0.64	0.00	0.04	+A	-A
525	HS	30	Operational	0.51	0.61	0.00	0.03	+A	+A
526	HS	31	Operational	0.46	0.55	0.00	0.03	+A	+A
527	HS	32	Operational	0.52	0.37	0.00	0.04	+A	+A
1766	HS	33	Operational	0.67	0.77	0.00	0.05	-A	-A
1823	HS	34	Operational	0.69	0.80	0.00	0.04	+A	-A
1825	HS	35	Operational	0.70	0.51	0.00	0.04	-A	-A
1826	HS	36	Operational	0.62	0.69	0.00	0.04	+A	-A
1827	HS	37	Operational	0.48	0.70	0.00	0.05	+A	+A
2466	HS	38	Field Test	0.61	0.75	0.00	0.02	+A	+A
2467	HS	39	Field Test	0.38	0.65	0.00	0.01	+A	+A
2469	HS	40	Field Test	0.52	0.80	0.00	0.02	-A	-A
2468	HS	41	Field Test	0.61	0.71	0.00	0.01	-A	+A
2470	HS	42	Field Test	0.43	0.77	0.00	0.01	-C	-A
2471	HS	43	Field Test	0.68	0.67	0.00	0.01	+A	-A
2106	HS	44	Operational	0.55	0.68	0.00	0.01	+A	-A
2107	HS	45	Operational	0.73	0.65	0.00	0.01	+A	-A
2108	HS	46	Operational	0.67	0.63	0.00	0.01	-A	+A
2109	HS	47	Operational	0.65	0.65	0.00	0.01	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2111	HS	48	Operational	0.58	0.71	0.00	0.01	+A	-A
2112	HS	49	Operational	0.60	0.82	0.00	0.01	-A	-A
446	HS	50	Operational	0.65	0.76	0.01	0.01	+A	-A
448	HS	51	Operational	0.51	0.72	0.01	0.01	-A	-A
449	HS	52	Operational	0.56	0.60	0.01	0.01	+A	-C
450	HS	53	Operational	0.31	0.58	0.01	0.01	+A	+A
452	HS	54	Operational	0.67	0.76	0.01	0.01	+A	-A
2113	HS	55	Operational	0.41	0.71	0.00	0.01	-A	-A
2114	HS	56	Operational	0.41	0.62	0.00	0.00	+A	+A
2115	HS	57	Operational	0.54	0.60	0.00	0.00	-A	-A
2116	HS	58	Operational	0.70	0.56	0.00	0.00	-A	+A
2119	HS	59	Operational	0.34	0.61	0.00	0.00	+A	+A
2431	HS	60	Field Test	0.65	0.68	0.00	0.00	+A	+A
2432	HS	61	Field Test	0.58	0.58	0.00	0.00	-A	+A
2433	HS	62	Field Test	0.40	0.77	0.00	0.00	-A	-A
2434	HS	63	Field Test	0.58	0.80	0.00	0.00	+A	+A
2435	HS	64	Field Test	0.37	0.70	0.00	0.01	-A	+A
2436	HS	65	Field Test	0.53	0.74	0.00	0.01	+A	-A
2437	HS	66	Field Test	0.16	0.59	0.00	0.00	-A	-A
2153	HS	67	Operational	0.51	0.84	0.00	0.00	+A	+A
2154	HS	68	Operational	0.70	0.73	0.00	0.00	+A	+A
2155	HS	69	Operational	0.39	0.70	0.00	0.00	-A	+A
2156	HS	70	Operational	0.43	0.61	0.00	0.00	+A	+A
2157	HS	71	Operational	0.59	0.61	0.00	0.00	+A	+A
2159	HS	72	Operational	0.46	0.76	0.00	0.00	-A	-A
2158	HS	73	Operational	0.69	0.63	0.00	0.00	-A	+A
1803	HS	74	Operational	0.65	0.66	0.00	0.00	+A	-A
1800	HS	75	Operational	0.34	0.64	0.00	0.00	+A	+A
1802	HS	76	Operational	0.24	0.66	0.00	0.00	-A	-A
1799	HS	77	Operational	0.56	0.63	0.00	0.00	+A	+A
1798	HS	78	Operational	0.14	0.54	0.00	0.00	-A	-C
1316	HS	79	Operational	0.27	0.62	0.00	0.00	-A	+A
1317	HS	80	Operational	0.33	0.71	0.00	0.01	-A	-B
1318	HS	81	Operational	0.47	0.73	0.00	0.00	+A	+A
1320	HS	82	Operational	0.45	0.85	0.00	0.00	-A	-A
1321	HS	83	Operational	0.52	0.42	0.00	0.01	+A	-A
1322	HS	84	Operational	0.63	0.50	0.00	0.01	+A	+A

Exhibit D-4: Grade-Band 3-5 Math Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1283	3-5	1	Operational	0.69	0.63	0.00	0.02	-A	-A
1285	3-5	2	Operational	0.49	0.79	0.00	0.03	+A	-A
1288	3-5	3	Operational	0.38	0.75	0.00	0.03	+A	+A
1289	3-5	4	Operational	0.39	0.47	0.00	0.04	+A	+A
1290	3-5	5	Operational	0.52	0.41	0.00	0.04	+A	-A
1293	3-5	6	Operational	0.25	0.43	0.00	0.04	-A	+A
674	3-5; 6-8; HS;	7	Operational	0.67	0.58	0.00	0.01	+A	+A
641	3-5; 6-8; HS;	8	Operational	0.46	0.63	0.00	0.02	-A	+C
645	3-5; 6-8; HS;	9	Operational	0.39	0.43	0.00	0.03	+A	-A
644	3-5; 6-8; HS;	10	Operational	0.11	0.45	0.00	0.03	+A	+A
647	3-5; 6-8; HS;	11	Operational	0.13	0.52	0.00	0.03	+A	-A
1634	3-5	12	Operational	0.70	0.72	0.00	0.01	+A	+A
1635	3-5	13	Operational	0.35	0.60	0.00	0.04	+A	+A
1636	3-5	14	Operational	0.35	0.68	0.00	0.04	-A	+A
1637	3-5	15	Operational	0.33	0.44	0.00	0.04	-A	+B
1638	3-5	16	Operational	0.37	0.59	0.00	0.04	+A	-A
1639	3-5	17	Operational	0.44	0.60	0.00	0.04	-A	-A
1972	3-5	18	Operational	0.42	0.58	0.00	0.03	+B	+A
1973	3-5	19	Operational	0.46	0.71	0.00	0.03	+A	-A
1974	3-5	20	Operational	0.26	0.56	0.00	0.03	+B	+A
1975	3-5	21	Operational	0.56	0.72	0.00	0.04	+A	-A
1976	3-5	22	Operational	0.39	0.66	0.00	0.04	+A	-A
1977	3-5	23	Operational	0.50	0.76	0.00	0.04	-A	+A
2385	3-5	24	Field Test	0.65	0.68	0.00	0.02	-A	+A
2386	3-5	25	Field Test	0.00	0.45	0.00	0.04	-A	-A
2387	3-5	26	Field Test	0.23	0.55	0.00	0.04	-A	-B
2388	3-5	27	Field Test	0.42	0.71	0.00	0.04	-A	+A
2389	3-5	28	Field Test	0.30	0.51	0.00	0.05	+A	+A
254	3-5; 6-8;	29	Operational	0.52	0.60	0.00	0.04	-A	+A
255	3-5; 6-8;	30	Operational	0.58	0.65	0.00	0.04	-B	-A
257	3-5; 6-8;	31	Operational	0.60	0.60	0.00	0.04	+B	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
256	3-5; 6-8;	32	Operational	0.47	0.56	0.00	0.05	-A	-A
200	3-5	33	Operational	0.64	0.62	0.00	0.04	+A	-A
211	3-5	34	Operational	0.56	0.60	0.00	0.04	-A	-A
215	3-5	35	Operational	0.62	0.81	0.00	0.04	+A	-A
218	3-5	36	Operational	0.68	0.75	0.00	0.04	+A	+A
2378	3-5	37	Field Test	0.47	0.83	0.00	0.00	-A	+A
2379	3-5	38	Field Test	0.59	0.75	0.00	0.01	+A	-A
2380	3-5	39	Field Test	0.54	0.85	0.00	0.01	+A	-A
2381	3-5	40	Field Test	0.50	0.73	0.00	0.00	-A	-A
2382	3-5	41	Field Test	0.30	0.61	0.00	0.01	-B	+A
2383	3-5	42	Field Test	0.57	0.75	0.00	0.01	+A	-A
2384	3-5	43	Field Test	0.47	0.72	0.00	0.01	-A	-A
1270	3-5	44	Operational	0.38	0.76	0.00	0.01	-A	-A
1274	3-5	45	Operational	0.60	0.65	0.00	0.01	-A	-A
1276	3-5	46	Operational	0.52	0.81	0.00	0.01	+A	+A
1277	3-5	47	Operational	0.19	0.56	0.00	0.01	-A	+A
1279	3-5	48	Operational	0.29	0.57	0.00	0.01	+A	-A
1280	3-5	49	Operational	0.36	0.67	0.00	0.00	-A	-A
1281	3-5	50	Operational	0.32	0.61	0.00	0.01	+A	-A
1956	3-5	51	Operational	0.67	0.82	0.00	0.00	+A	-A
1957	3-5	52	Operational	0.61	0.88	0.00	0.00	-A	+A
1958	3-5	53	Operational	0.67	0.71	0.00	0.00	-A	+A
1959	3-5	54	Operational	0.63	0.83	0.00	0.00	+A	-A
1960	3-5	55	Operational	0.59	0.87	0.00	0.00	-A	-A
1961	3-5	56	Operational	0.66	0.81	0.00	0.00	-A	-A
1962	3-5	57	Operational	0.61	0.89	0.00	0.01	-A	-A
1963	3-5	58	Operational	0.62	0.79	0.00	0.01	+A	+A
1964	3-5	59	Operational	0.39	0.53	0.00	0.01	+A	+A
1965	3-5	60	Operational	0.42	0.66	0.00	0.01	+A	-A
1966	3-5	61	Operational	0.64	0.69	0.00	0.01	-A	+A
1967	3-5	62	Operational	0.63	0.54	0.00	0.01	+A	-A
1968	3-5	63	Operational	0.32	0.53	0.00	0.01	-A	+A
1969	3-5	64	Operational	0.51	0.40	0.00	0.01	-A	+A
1970	3-5	65	Operational	0.33	0.68	0.00	0.01	-A	-A
1971	3-5	66	Operational	0.43	0.43	0.00	0.01	-B	-A
2390	3-5	67	Field Test	0.27	0.53	0.00	0.00	+A	+A
2391	3-5	68	Field Test	0.50	0.56	0.00	0.00	+A	+A
2392	3-5	69	Field Test	0.12	0.64	0.00	0.00	-A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2393	3-5	70	Field Test	0.43	0.55	0.00	0.00	-A	-A
2394	3-5	71	Field Test	0.39	0.61	0.00	0.00	-A	-A
2395	3-5	72	Field Test	0.26	0.71	0.00	0.00	-B	-A
1641	3-5; 6-8;	73	Operational	0.49	0.75	0.00	0.00	+A	-A
1642	3-5; 6-8;	74	Operational	0.40	0.77	0.00	0.00	-A	-A
1643	3-5; 6-8;	75	Operational	0.36	0.60	0.00	0.00	+A	+A
1644	3-5; 6-8;	76	Operational	0.19	0.69	0.00	0.00	-A	-A
1645	3-5; 6-8;	77	Operational	0.61	0.70	0.00	0.00	+A	-A
1646	3-5	78	Operational	0.43	0.59	0.00	0.00	-A	+A
1647	3-5	79	Operational	0.33	0.70	0.00	0.00	-A	-A
1648	3-5	80	Operational	0.46	0.61	0.00	0.00	+A	+A
1649	3-5	81	Operational	0.55	0.57	0.00	0.00	+A	+A
1650	3-5	82	Operational	0.38	0.71	0.00	0.00	-A	+A
1651	3-5	83	Operational	0.45	0.63	0.00	0.00	-A	-A
245	3-5; 6-8;	84	Operational	0.43	0.69	0.00	0.00	+A	-A
246	3-5; 6-8;	85	Operational	0.44	0.70	0.00	0.00	-A	-A
247	3-5; 6-8;	86	Operational	0.64	0.57	0.00	0.00	+A	-A
248	3-5; 6-8;	87	Operational	0.59	0.55	0.00	0.00	+A	+A
249	3-5; 6-8;	88	Operational	0.43	0.65	0.00	0.00	-A	+A
250	3-5; 6-8;	89	Operational	0.59	0.47	0.00	0.00	-A	-A

Exhibit D-5: Grade-Band 6-8 Math Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2640	6-8	1	Operational-Field Test	0.47	0.56	0.00	0.01	-A	-A
2641	6-8	2	Operational-Field Test	0.29	0.61	0.00	0.02	-A	+A
2643	6-8	3	Operational-Field Test	0.31	0.55	0.00	0.02	+A	-A
2644	6-8	4	Operational-Field Test	0.24	0.45	0.00	0.03	+A	-A
2642	6-8	5	Operational-Field Test	0.35	0.52	0.00	0.03	-A	+C
2645	6-8	6	Operational-Field Test	0.35	0.56	0.00	0.03	-C	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2276	6-8	7	Operational	0.30	0.60	0.00	0.03	-A	+A
2277	6-8	8	Operational	0.40	0.39	0.00	0.02	+A	+A
2127	6-8	9	Operational	0.25	0.41	0.00	0.03	-A	+A
2128	6-8	10	Operational	0.24	0.58	0.00	0.02	+A	+A
2130	6-8	11	Operational	0.33	0.46	0.00	0.03	+A	+A
2132	6-8	12	Operational	0.39	0.53	0.00	0.03	+A	-A
2129	6-8	13	Operational	0.40	0.32	0.00	0.03	-A	+A
2131	6-8	14	Operational	0.46	0.46	0.00	0.03	+A	+A
2647	6-8	15	Operational-Field Test	0.45	0.66	0.00	0.02	+A	+A
2646	6-8	16	Operational-Field Test	0.36	0.44	0.00	0.02	+A	+A
2649	6-8	17	Operational-Field Test	0.45	0.63	0.00	0.03	+A	+A
2648	6-8	18	Operational-Field Test	0.49	0.56	0.00	0.03	-A	-A
2650	6-8	19	Operational-Field Test	0.48	0.64	0.00	0.03	-A	+A
2651	6-8	20	Operational-Field Test	0.39	0.63	0.00	0.03	-A	+A
1309	6-8	21	Operational	0.35	0.80	0.01	0.03	-A	-A
1332	6-8	22	Operational	0.46	0.62	0.01	0.02	-A	+A
1338	6-8	23	Operational	0.53	0.64	0.01	0.02	-A	-A
1339	6-8	24	Operational	0.44	0.45	0.01	0.03	+A	-A
1340	6-8	25	Operational	0.34	0.55	0.01	0.02	-A	-A
1342	6-8	26	Operational	0.40	0.60	0.01	0.03	-A	-A
1343	6-8	27	Operational	0.47	0.46	0.01	0.03	-A	-B
2450	6-8	28	Field Test	0.47	0.65	0.00	0.02	-A	-A
2444	6-8	29	Field Test	0.31	0.64	0.00	0.03	-A	-A
2445	6-8	30	Field Test	0.22	0.55	0.00	0.03	-A	-A
2447	6-8	31	Field Test	0.25	0.70	0.00	0.03	-A	-A
*2446	6-8	32	Field Test		0.00	0.00	0.02		
2448	6-8	33	Field Test	0.14	0.54	0.00	0.03	+A	-A
2036	6-8	34	Operational	0.29	0.40	0.00	0.03	+A	-A
2041	6-8	35	Operational	0.28	0.46	0.00	0.03	-A	+A
2044	6-8	36	Operational	0.43	0.55	0.00	0.04	+A	-A
2045	6-8	37	Operational	0.31	0.55	0.00	0.03	-A	+A
2053	6-8	38	Operational	0.29	0.33	0.00	0.04	+A	+A
2057	6-8	39	Operational	0.34	0.56	0.00	0.04	+A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2061	6-8	40	Operational	0.45	0.38	0.00	0.04	-A	-A
2064	6-8	41	Operational	0.36	0.47	0.00	0.04	+A	-B
317	6-8; HS;	42	Operational	0.45	0.67	0.00	0.03	-A	-A
318	6-8; HS;	43	Operational	0.65	0.68	0.00	0.03	-A	-A
321	6-8; HS;	44	Operational	0.62	0.75	0.00	0.03	-A	-A
322	6-8; HS;	45	Operational	0.67	0.61	0.00	0.03	-A	+A
320	6-8; HS;	46	Operational	0.66	0.70	0.00	0.03	-A	+A
2454	6-8	47	Field Test	0.48	0.76	0.00	0.00	-A	+A
2452	6-8	48	Field Test	0.55	0.74	0.00	0.00	-A	+A
2451	6-8	49	Field Test	0.44	0.84	0.00	0.00	-B	+A
2453	6-8	50	Field Test	0.46	0.84	0.00	0.00	-A	+A
2455	6-8	51	Field Test	0.59	0.74	0.00	0.00	-A	-A
2086	6-8	52	Operational	0.36	0.76	0.00	0.00	-A	+A
2087	6-8	53	Operational	0.52	0.62	0.00	0.00	+A	-A
2088	6-8	54	Operational	0.32	0.66	0.00	0.00	-A	-A
2089	6-8	55	Operational	0.47	0.58	0.00	0.00	-A	-A
2091	6-8	56	Operational	0.49	0.76	0.00	0.01	-A	-A
2090	6-8	57	Operational	0.47	0.67	0.00	0.01	-A	+A
2094	6-8	58	Operational	0.33	0.56	0.00	0.00	+A	-A
2095	6-8	59	Operational	0.43	0.77	0.00	0.00	+A	-A
2096	6-8	60	Operational	0.45	0.67	0.00	0.00	-A	+A
2097	6-8	61	Operational	0.36	0.63	0.00	0.00	-A	+A
2092	6-8	62	Operational	0.27	0.51	0.00	0.00	+A	+A
2233	6-8	63	Operational	0.35	0.67	0.00	0.00	-A	-A
1730	6-8	64	Operational	0.31	0.54	0.00	0.00	-A	+A
1731	6-8	65	Operational	0.29	0.80	0.00	0.00	-B	+A
1732	6-8	66	Operational	0.25	0.43	0.00	0.00	+A	-A
1733	6-8	67	Operational	0.27	0.69	0.00	0.00	-A	+A
1734	6-8	68	Operational	0.37	0.43	0.00	0.01	+A	+A
1735	6-8	69	Operational	0.43	0.59	0.00	0.00	-A	-A
2372	6-8	70	Field Test	0.17	0.71	0.00	0.00	-A	-A
2371	6-8	71	Field Test	0.42	0.64	0.00	0.00	-A	+A
2373	6-8	72	Field Test	0.24	0.62	0.00	0.00	-A	-A
2374	6-8	73	Field Test	0.28	0.49	0.00	0.00	-A	-A
2375	6-8	74	Field Test	0.28	0.44	0.00	0.00	-A	+A
2377	6-8	75	Field Test	0.07	0.48	0.00	0.00	+A	+A
2438	6-8	76	Operational- Field Test	0.27	0.67	0.00	0.00	-A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2439	6-8	77	Operational-Field Test	0.39	0.57	0.00	0.00	-A	-A
2440	6-8	78	Operational-Field Test	0.23	0.50	0.00	0.00	+A	-A
2441	6-8	79	Operational-Field Test	0.33	0.60	0.00	0.00	+A	+A
2442	6-8	80	Operational-Field Test	0.28	0.52	0.00	0.00	+A	-A
1724	6-8	81	Operational	0.30	0.64	0.00	0.00	+A	-A
1726	6-8	82	Operational	0.34	0.63	0.00	0.00	-A	+A
1725	6-8	83	Operational	0.41	0.64	0.00	0.00	-A	+A
1727	6-8	84	Operational	0.43	0.54	0.00	0.00	+A	+A
1728	6-8	85	Operational	0.43	0.65	0.00	0.00	+A	-A
1729	6-8	86	Operational	0.33	0.57	0.00	0.00	-A	+A
1718	6-8	87	Operational	0.40	0.55	0.00	0.00	-A	+A
1719	6-8	88	Operational	0.36	0.58	0.00	0.00	-A	+B
1722	6-8	89	Operational	0.31	0.52	0.00	0.00	+B	+A
1723	6-8	90	Operational	0.43	0.56	0.00	0.00	+A	+A

*Item 2446 In Math 6-8 was excluded from calibration, AM, and scoring data set

Exhibit D-6: Grade 10 Math Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2167	HS	1	Operational	0.65	0.62	0.00	0.01	+A	-A
2168	HS	2	Operational	0.20	0.43	0.00	0.04	+A	-A
2169	HS	3	Operational	0.49	0.58	0.00	0.04	+A	+A
2170	HS	4	Operational	0.03	0.66	0.00	0.03	-A	+A
2171	HS	5	Operational	0.47	0.36	0.00	0.04	+A	+A
2172	HS	6	Operational	0.42	0.47	0.00	0.04	-A	-A
678	3-5; 6-8; HS;	7	Operational	0.68	0.60	0.00	0.00	-A	-A
10	3-5; 6-8; HS;	8	Operational	0.17	0.42	0.00	0.03	+A	+A
11	3-5; 6-8; HS;	9	Operational	0.35	0.54	0.00	0.03	+A	+A
13	3-5; 6-8; HS;	10	Operational	0.52	0.59	0.00	0.01	+A	-A
16	3-5; 6-8; HS;	11	Operational	0.18	0.43	0.00	0.02	-A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2210	HS	12	Operational	0.46	0.61	0.00	0.03	+A	+A
2211	HS	13	Operational	0.45	0.43	0.00	0.03	+A	+A
2212	HS	14	Operational	0.50	0.63	0.00	0.03	+A	+C
2213	HS	15	Operational	0.55	0.44	0.00	0.03	-A	-A
2214	HS	16	Operational	0.40	0.63	0.00	0.03	+A	+A
2215	HS	17	Operational	0.49	0.60	0.00	0.03	+A	+C
2216	HS	18	Operational	0.37	0.57	0.00	0.03	+A	+A
2217	HS	19	Operational	0.42	0.62	0.00	0.04	-A	+A
1742	HS	20	Operational	0.29	0.59	0.00	0.03	-A	+A
1743	HS	21	Operational	0.36	0.57	0.00	0.02	+A	-A
1745	HS	22	Operational	0.39	0.59	0.00	0.03	-A	-A
1746	HS	23	Operational	0.43	0.65	0.00	0.03	-C	-A
1744	HS	24	Operational	0.40	0.32	0.00	0.04	+A	+A
2457	HS	25	Field Test	0.66	0.69	0.00	0.02	+A	+A
2458	HS	26	Field Test	0.37	0.61	0.00	0.02	+A	+A
2465	HS	27	Field Test	0.46	0.52	0.00	0.03	+A	-A
2472	HS	28	Field Test	0.36	0.45	0.00	0.03	-A	-A
2473	HS	29	Field Test	0.22	0.59	0.00	0.04	-A	-A
458	6-8; HS;	30	Operational	0.39	0.66	0.01	0.03	+A	+A
459	6-8; HS;	31	Operational	0.46	0.46	0.01	0.03	+A	+A
461	6-8; HS;	32	Operational	0.36	0.52	0.01	0.03	-A	-A
473	6-8; HS;	33	Operational	0.44	0.36	0.01	0.04	-A	-A
462	6-8; HS;	34	Operational	0.47	0.60	0.01	0.04	-A	-A
1759	HS	35	Operational	0.83	0.82	0.00	0.04	-A	+A
1761	HS	36	Operational	0.35	0.46	0.00	0.05	+A	+A
1762	HS	37	Operational	0.62	0.61	0.00	0.04	+A	+A
1763	HS	38	Operational	0.55	0.62	0.00	0.04	+A	-A
1764	HS	39	Operational	0.63	0.79	0.00	0.05	-A	+A
2504	HS	40	Field Test	0.55	0.70	0.00	0.01	+A	+A
2509	HS	41	Field Test	0.49	0.62	0.00	0.00	+A	+A
2505	HS	42	Field Test	0.02	0.57	0.00	0.00	-A	+A
2507	HS	43	Field Test	0.52	0.60	0.00	0.01	-A	+C
2506	HS	44	Field Test	0.23	0.59	0.00	0.00	+A	-A
2508	HS	45	Field Test	0.21	0.63	0.00	0.01	+A	-A
1302	HS	46	Operational	0.64	0.81	0.00	0.01	+C	+A
1303	HS	47	Operational	0.73	0.79	0.00	0.00	-A	+A
1305	HS	48	Operational	0.51	0.79	0.00	0.01	-A	-A
1306	HS	49	Operational	0.57	0.79	0.00	0.00	+A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1307	HS	50	Operational	0.21	0.61	0.00	0.01	-A	-A
1310	HS	51	Operational	0.42	0.47	0.00	0.01	-A	+A
317	6-8; HS;	52	Vertical Linking	0.40	0.72	0.00	0.03	-A	+A
318	6-8; HS;	53	Vertical Linking	0.65	0.72	0.00	0.03	+A	+A
321	6-8; HS;	54	Vertical Linking	0.55	0.76	0.00	0.03	-A	-A
322	6-8; HS;	55	Vertical Linking	0.62	0.66	0.00	0.03	+A	+A
320	6-8; HS;	56	Vertical Linking	0.62	0.78	0.00	0.03	+A	+A
2191	HS	57	Operational	0.33	0.65	0.00	0.01	-A	-A
2192	HS	58	Operational	0.28	0.58	0.00	0.00	-A	-A
2193	HS	59	Operational	0.48	0.68	0.00	0.00	-A	+A
2194	HS	60	Operational	0.67	0.65	0.00	0.00	-A	+A
2195	HS	61	Operational	0.59	0.67	0.00	0.01	+A	+A
2196	HS	62	Operational	0.50	0.54	0.00	0.00	-A	-A
2510	HS	63	Field Test	0.19	0.55	0.00	0.00	+A	+A
2511	HS	64	Field Test	0.32	0.51	0.00	0.00	+A	+A
2512	HS	65	Field Test	0.33	0.72	0.00	0.00	-A	-A
2513	HS	66	Field Test	0.43	0.57	0.00	0.01	+A	-A
2514	HS	67	Field Test	0.30	0.69	0.00	0.00	+A	+A
2515	HS	68	Field Test	0.27	0.63	0.00	0.00	-A	+A
2198	HS	69	Operational	0.58	0.66	0.00	0.00	+A	-A
2199	HS	70	Operational	0.29	0.61	0.00	0.00	-A	-A
2200	HS	71	Operational	0.05	0.47	0.00	0.00	+A	+A
2202	HS	72	Operational	0.48	0.53	0.00	0.00	+A	+A
217	HS	73	Operational	0.25	0.63	0.00	0.00	+A	+A
222	HS	74	Operational	0.30	0.58	0.00	0.00	+C	-A
223	HS	75	Operational	0.24	0.65	0.00	0.00	-A	-C
226	HS	76	Operational	0.42	0.62	0.00	0.00	-A	+A
343	HS	77	Operational	0.28	0.53	0.00	0.00	-C	-A
298	HS	78	Operational	0.47	0.76	0.00	0.00	+A	-A
1752	HS	79	Operational	0.26	0.56	0.00	0.00	-A	-A
1753	HS	80	Operational	0.26	0.55	0.00	0.00	-A	-A
1754	HS	81	Operational	0.35	0.73	0.00	0.00	-A	-A
1755	HS	82	Operational	0.49	0.60	0.00	0.00	+A	+A
1756	HS	83	Operational	0.46	0.55	0.00	0.00	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1757	HS	84	Operational	0.26	0.58	0.00	0.00	-A	+A
1758	HS	85	Operational	-0.01	0.41	0.00	0.00	-A	-A

Exhibit D-7: Grade-Band 3-5 Science Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
894	3-5	1	Operational	0.60	0.71	0.00	0.01	+A	+A
1023	3-5	2	Operational	0.61	0.63	0.00	0.03	-A	-A
895	3-5	3	Operational	0.49	0.65	0.00	0.04	-A	-A
896	3-5	4	Operational	0.25	0.49	0.00	0.03	+A	+A
898	3-5	5	Operational	0.43	0.50	0.00	0.03	-A	+A
2226	3-5	6	Operational	0.35	0.45	0.00	0.03	+A	-C
2227	3-5	7	Operational	0.38	0.55	0.00	0.03	-A	+A
2228	3-5	8	Operational	0.50	0.59	0.00	0.03	+A	+A
2229	3-5	9	Operational	0.33	0.52	0.00	0.03	-A	-A
2230	3-5	10	Operational	0.26	0.37	0.00	0.03	+A	+A
2231	3-5	11	Operational	0.47	0.56	0.00	0.03	+A	-A
2268	3-5	12	Operational	0.38	0.69	0.00	0.03	+A	+A
2269	3-5	13	Operational	0.41	0.54	0.00	0.03	+A	-A
2272	3-5	14	Operational	0.46	0.64	0.00	0.03	+A	-A
2273	3-5	15	Operational	0.42	0.64	0.00	0.04	-A	-A
2274	3-5	16	Operational	0.43	0.48	0.00	0.03	+A	+A
2275	3-5	17	Operational	0.42	0.64	0.00	0.03	-A	-A
1399	3-5	18	Operational	0.00	0.64	0.01	0.05	-B	+A
1400	3-5	19	Operational	0.34	0.44	0.00	0.04	-A	+A
1401	3-5	20	Operational	0.38	0.52	0.00	0.04	+A	-A
1402	3-5	21	Operational	0.24	0.60	0.00	0.05	-A	-A
1403	3-5	22	Operational	0.40	0.66	0.01	0.04	+A	+A
1404	3-5	23	Operational	0.40	0.52	0.01	0.04	+A	+A
1405	3-5	24	Operational	0.32	0.65	0.01	0.04	-A	+A
2280	3-5	25	Field Test	0.41	0.62	0.00	0.04	+A	+B
2281	3-5	26	Field Test	0.30	0.69	0.00	0.04	-A	+A
2282	3-5	27	Field Test	0.34	0.48	0.00	0.04	+A	+A
2283	3-5	28	Field Test	0.44	0.79	0.00	0.04	+A	+A
2284	3-5	29	Field Test	0.25	0.71	0.00	0.04	-A	+A
2285	3-5	30	Field Test	0.37	0.71	0.00	0.04	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1663	3-5	31	Operational	0.56	0.66	0.00	0.04	+A	+A
1658	3-5	32	Operational	0.52	0.56	0.00	0.05	-A	-A
1659	3-5	33	Operational	0.47	0.63	0.00	0.05	-A	-A
1660	3-5	34	Operational	0.56	0.64	0.00	0.04	+A	-A
1661	3-5	35	Operational	0.45	0.43	0.00	0.04	+A	+A
1662	3-5	36	Operational	0.40	0.63	0.00	0.05	-A	+A
2234	3-5	37	Operational	0.61	0.71	0.00	0.04	+A	+A
2235	3-5	38	Operational	0.59	0.78	0.00	0.04	+A	-A
2236	3-5	39	Operational	0.69	0.62	0.00	0.05	-A	+A
2237	3-5	40	Operational	0.73	0.62	0.00	0.05	+A	+A
2239	3-5	41	Operational	0.50	0.63	0.00	0.05	+A	+A
2298	3-5	42	Field Test	0.19	0.68	0.00	0.01	-A	+A
2299	3-5	43	Field Test	0.24	0.76	0.00	0.01	-A	-A
2300	3-5	44	Field Test	0.46	0.53	0.00	0.00	-A	+A
2301	3-5	45	Field Test	0.21	0.67	0.00	0.01	-A	+A
2302	3-5	46	Field Test	0.61	0.60	0.00	0.01	+A	-A
2303	3-5	47	Field Test	0.33	0.76	0.00	0.01	+A	-A
1669	3-5	48	Operational	0.26	0.74	0.00	0.00	+A	-A
1665	3-5	49	Operational	0.60	0.84	0.00	0.00	+A	-A
1828	3-5	50	Operational	0.71	0.72	0.00	0.00	-A	-A
1666	3-5	51	Operational	0.68	0.80	0.00	0.00	+A	-A
1829	3-5	52	Operational	0.66	0.52	0.00	0.00	-A	-A
1668	3-5	53	Operational	0.30	0.68	0.00	0.00	-A	-A
745	3-5; 6-8;	54	Operational	0.45	0.83	0.00	0.00	+A	+A
748	3-5; 6-8;	55	Operational	0.57	0.64	0.00	0.00	-A	-A
751	3-5; 6-8;	56	Operational	0.36	0.71	0.00	0.00	-B	+A
749	3-5; 6-8;	57	Operational	0.69	0.66	0.00	0.00	-A	+A
1266	3-5	58	Operational	-0.01	0.48	0.00	0.00	-A	+A
1262	3-5	59	Operational	0.66	0.62	0.00	0.00	+A	+A
1263	3-5	60	Operational	0.65	0.72	0.00	0.00	+A	+A
1264	3-5	61	Operational	0.33	0.75	0.00	0.00	-A	-A
1267	3-5	62	Operational	0.54	0.79	0.00	0.00	+A	+A
1265	3-5	63	Operational	0.16	0.44	0.00	0.00	+A	+A
2292	3-5	64	Field Test	-0.07	0.60	0.00	0.00	-A	-A
2293	3-5	65	Field Test	0.41	0.68	0.00	0.00	-A	+A
2294	3-5	66	Field Test	-0.23	0.60	0.00	0.00	+A	+A
2295	3-5	67	Field Test	0.23	0.46	0.00	0.00	-A	+A
2296	3-5	68	Field Test	0.48	0.49	0.00	0.00	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2297	3-5	69	Field Test	0.09	0.46	0.00	0.00	-A	+A
940	3-5	70	Operational	0.67	0.71	0.00	0.00	+A	-A
941	3-5	71	Operational	0.55	0.72	0.00	0.00	-A	-A
942	3-5	72	Operational	0.70	0.72	0.00	0.00	+A	+A
977	3-5	73	Operational	0.35	0.80	0.00	0.00	-A	-A
943	3-5	74	Operational	0.58	0.70	0.00	0.00	-A	+A
803	3-5	75	Operational	0.33	0.46	0.00	0.00	+A	-A
804	3-5	76	Operational	0.26	0.83	0.00	0.00	-A	+A
806	3-5	77	Operational	0.26	0.69	0.00	0.00	+A	-A
807	3-5	78	Operational	-0.01	0.48	0.00	0.00	-A	+A
1670	3-5	79	Operational	0.44	0.78	0.00	0.00	-A	-A
1673	3-5	80	Operational	0.61	0.72	0.00	0.00	+A	+A
1675	3-5	81	Operational	0.30	0.81	0.00	0.00	+A	-A
1672	3-5	82	Operational	0.52	0.54	0.00	0.00	+B	+A

Exhibit D-8: Grade-Band 6-8 Science Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
787	6-8; HS;	1	Operational	0.74	0.73	0.00	0.01	-C	-A
789	6-8; HS;	2	Operational	0.22	0.57	0.00	0.03	-A	+A
790	6-8; HS;	3	Operational	0.37	0.61	0.00	0.03	-A	-A
791	6-8; HS;	4	Operational	0.33	0.45	0.00	0.03	+A	+A
793	6-8; HS;	5	Operational	0.43	0.63	0.00	0.04	-A	+A
794	6-8; HS;	6	Operational	0.32	0.54	0.00	0.03	+A	+A
1985	6-8	7	Operational	0.67	0.64	0.00	0.01	-A	-A
1986	6-8	8	Operational	0.33	0.49	0.00	0.03	+A	-A
1987	6-8	9	Operational	0.36	0.61	0.00	0.03	+A	+C
1988	6-8	10	Operational	0.40	0.52	0.00	0.02	+A	-A
1989	6-8	11	Operational	0.43	0.60	0.00	0.03	-A	-A
1990	6-8	12	Operational	0.44	0.63	0.00	0.03	-A	+A
1991	6-8	13	Operational	0.36	0.62	0.00	0.03	-A	+A
1992	6-8	14	Operational	0.24	0.37	0.00	0.04	+A	+A
2006	6-8	15	Operational	0.43	0.71	0.01	0.03	-A	-A
2007	6-8	16	Operational	0.34	0.54	0.01	0.03	+A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2008	6-8	17	Operational	0.52	0.69	0.01	0.03	+A	-A
2009	6-8	18	Operational	0.39	0.52	0.01	0.04	+A	-A
2010	6-8	19	Operational	0.32	0.49	0.01	0.03	+A	+A
2012	6-8	20	Operational	0.37	0.57	0.01	0.04	+A	+A
1417	6-8	21	Operational	0.25	0.48	0.00	0.03	+A	-C
1423	6-8	22	Operational	0.42	0.69	0.00	0.03	-A	+A
1418	6-8	23	Operational	0.36	0.74	0.00	0.03	-A	+C
1420	6-8	24	Operational	0.32	0.54	0.00	0.03	-A	-A
1421	6-8	25	Operational	0.28	0.43	0.00	0.03	+A	-A
1422	6-8	26	Operational	0.28	0.68	0.00	0.03	-A	+A
2334	6-8	27	Field Test	0.23	0.52	0.00	0.03	-A	-A
2335	6-8	28	Field Test	0.32	0.55	0.00	0.03	+A	-A
2336	6-8	29	Field Test	0.37	0.73	0.00	0.03	-A	+A
2337	6-8	30	Field Test	0.30	0.58	0.00	0.04	+A	-A
2338	6-8	31	Field Test	0.26	0.68	0.00	0.04	+A	-A
2339	6-8	32	Field Test	0.36	0.64	0.00	0.03	-A	+A
1999	6-8	33	Operational	0.52	0.59	0.01	0.04	+A	-B
2000	6-8	34	Operational	0.44	0.53	0.01	0.03	+A	-A
2001	6-8	35	Operational	0.43	0.50	0.01	0.04	+A	-A
2002	6-8	36	Operational	0.28	0.57	0.01	0.04	+A	+A
2003	6-8	37	Operational	0.38	0.55	0.01	0.04	-A	-A
2004	6-8	38	Operational	0.37	0.48	0.01	0.04	+A	-A
2005	6-8	39	Operational	0.30	0.56	0.01	0.04	-A	+A
957	6-8	40	Operational	0.46	0.82	0.00	0.04	-A	-A
959	6-8	41	Operational	0.73	0.66	0.00	0.04	+A	-A
958	6-8	42	Operational	0.69	0.69	0.01	0.03	-A	-A
960	6-8	43	Operational	0.62	0.78	0.01	0.04	-A	+A
963	6-8	44	Operational	0.63	0.77	0.00	0.04	-A	+A
2329	6-8	45	Field Test	0.23	0.70	0.00	0.01	+A	+A
2523	6-8	46	Field Test	0.62	0.72	0.00	0.00	+A	-A
2330	6-8	47	Field Test	0.41	0.71	0.00	0.00	-A	-B
2331	6-8	48	Field Test	0.65	0.69	0.00	0.00	-A	+A
2332	6-8	49	Field Test	0.32	0.76	0.00	0.00	-A	-A
2333	6-8	50	Field Test	0.63	0.78	0.00	0.01	+A	+A
1676	6-8	51	Operational	0.62	0.87	0.00	0.00	-A	-A
1677	6-8	52	Operational	0.51	0.77	0.00	0.00	+A	+B
1678	6-8	53	Operational	0.67	0.73	0.00	0.00	+A	-A
1679	6-8	54	Operational	0.52	0.66	0.00	0.00	-A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1680	6-8	55	Operational	0.35	0.52	0.00	0.00	-A	-A
1681	6-8	56	Operational	0.66	0.60	0.00	0.00	-A	+A
1009	3-5; 6-8; HS;	57	Operational	0.38	0.81	0.00	0.00	+A	-A
1011	3-5; 6-8; HS;	58	Operational	0.58	0.62	0.00	0.00	+A	+A
1010	3-5; 6-8;	59	Operational	0.53	0.87	0.00	0.00	+A	-A
1013	3-5; 6-8; HS;	60	Operational	0.60	0.84	0.00	0.00	-A	-A
755	3-5; 6-8;	61	Operational	0.54	0.82	0.00	0.00	+A	+A
756	3-5; 6-8;	62	Operational	0.54	0.83	0.00	0.00	-A	-A
758	3-5; 6-8;	63	Operational	0.64	0.65	0.00	0.00	+A	-A
760	3-5; 6-8;	64	Operational	0.53	0.81	0.00	0.00	-A	+A
911	3-5; 6-8;	65	Operational	0.46	0.86	0.00	0.00	+A	+A
766	3-5; 6-8;	66	Operational	0.50	0.60	0.00	0.00	-A	-A
2304	6-8	67	Field Test	0.27	0.43	0.00	0.00	+A	+A
2305	6-8	68	Field Test	0.39	0.58	0.00	0.00	+A	+A
2306	6-8	69	Field Test	0.30	0.75	0.00	0.00	+A	+A
2307	6-8	70	Field Test	0.03	0.61	0.00	0.00	+A	-A
2308	6-8	71	Field Test	0.61	0.60	0.00	0.00	+A	+A
2309	6-8	72	Field Test	0.15	0.71	0.00	0.00	-A	+A
2310	6-8	73	Field Test	0.20	0.44	0.00	0.00	+A	+A
699	3-5; 6-8;	74	Operational	0.64	0.73	0.00	0.00	-A	+A
700	3-5; 6-8;	75	Operational	0.44	0.71	0.00	0.00	+A	-A
702	3-5; 6-8;	76	Operational	0.44	0.84	0.00	0.00	+A	-A
703	3-5; 6-8;	77	Operational	0.29	0.42	0.00	0.00	+A	-A
1696	6-8	78	Operational	0.67	0.78	0.00	0.00	+A	-A
1694	6-8	79	Operational	0.37	0.75	0.00	0.00	+A	+A
1695	6-8	80	Operational	0.57	0.78	0.00	0.00	-A	+A
1697	6-8	81	Operational	0.54	0.64	0.00	0.00	+A	+A
1698	6-8	82	Operational	0.37	0.55	0.00	0.00	-A	+A
1699	6-8	83	Operational	0.50	0.70	0.00	0.00	-A	-A
1682	6-8	84	Operational	0.60	0.75	0.00	0.00	+A	-A
1683	6-8	85	Operational	0.60	0.72	0.00	0.00	-A	+A
1685	6-8	86	Operational	0.29	0.53	0.00	0.00	-A	+A
1686	6-8	87	Operational	0.58	0.56	0.00	0.00	-A	+A

Exhibit D-9: High School Biology Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS	Grade	Item	Role	Adjusted	Average	Access	Omit	DIF
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Item ID		Position		Biserial/ Polyserial	Score	Limitation		Female vs. Male	Black vs. White
1588	HS	1	Operational	0.51	0.80	0.00	0.01	-A	-A
1589	HS	2	Operational	0.50	0.65	0.00	0.03	-A	+A
1590	HS	3	Operational	0.39	0.73	0.00	0.02	-A	+A
1591	HS	4	Operational	0.52	0.57	0.00	0.03	+C	+A
1592	HS	5	Operational	0.39	0.67	0.00	0.03	+A	-A
1593	HS	6	Operational	0.60	0.53	0.00	0.04	-A	-A
2027	HS	7	Operational	0.62	0.67	0.00	0.02	+B	+A
2028	HS	8	Operational	0.31	0.78	0.00	0.02	-A	-A
2029	HS	9	Operational	0.56	0.46	0.00	0.03	+A	-A
2030	HS	10	Operational	0.33	0.50	0.00	0.02	+A	+A
2031	HS	11	Operational	0.30	0.72	0.00	0.03	-A	-A
2032	HS	12	Operational	0.59	0.52	0.00	0.02	+A	+A
2033	HS	13	Operational	0.44	0.48	0.00	0.03	+A	+A
2034	HS	14	Operational	0.13	0.64	0.00	0.02	-A	-A
1534	HS	15	Operational	0.44	0.65	0.00	0.02	-A	-A
1535	HS	16	Operational	0.30	0.54	0.00	0.03	-A	+A
1536	HS	17	Operational	0.58	0.69	0.00	0.03	-A	-A
1537	HS	18	Operational	0.37	0.64	0.00	0.02	-C	-A
1538	HS	19	Operational	0.28	0.63	0.00	0.03	+A	+A
1521	HS	20	Operational	0.39	0.80	0.01	0.04	+A	+A
1523	HS	21	Operational	0.58	0.60	0.00	0.02	-A	-A
1526	HS	22	Operational	0.33	0.77	0.00	0.02	-A	-A
1525	HS	23	Operational	0.50	0.56	0.00	0.03	+A	-A
1524	HS	24	Operational	0.45	0.35	0.00	0.02	-A	-A
2524	HS	25	Field Test	0.60	0.81	0.00	0.01	+A	-A
2341	HS	26	Field Test	0.55	0.73	0.00	0.03	+B	-A
2342	HS	27	Field Test	0.39	0.69	0.00	0.03	-A	+A
2343	HS	28	Field Test	0.35	0.59	0.01	0.02	-A	+A
2344	HS	29	Field Test	0.27	0.80	0.00	0.03	+A	-A
2345	HS	30	Field Test	0.45	0.60	0.01	0.03	-A	-A
1458	HS	31	Operational	0.38	0.59	0.01	0.03	+A	+A
1460	HS	32	Operational	0.56	0.73	0.01	0.02	+A	-A
1459	HS	33	Operational	0.22	0.56	0.01	0.04	-A	+A
1461	HS	34	Operational	0.28	0.57	0.01	0.04	+A	-A
1463	HS	35	Operational	0.28	0.64	0.01	0.02	-A	+A
1462	HS	36	Operational	0.27	0.47	0.01	0.04	+A	+A
1504	HS	37	Operational	0.49	0.67	0.00	0.03	-A	+B
1503	HS	38	Operational	0.46	0.63	0.00	0.03	-B	+A
1497	HS	39	Operational	0.69	0.64	0.00	0.03	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1499	HS	40	Operational	0.44	0.69	0.00	0.04	+A	-B
1501	HS	41	Operational	0.18	0.54	0.00	0.04	-A	+A
2346	HS	42	Field Test	0.58	0.88	0.00	0.00	+A	+A
2347	HS	43	Field Test	0.40	0.84	0.00	0.01	-A	-A
2349	HS	44	Field Test	0.51	0.51	0.00	0.01	-A	-A
2350	HS	45	Field Test	0.55	0.60	0.00	0.01	+B	-A
2351	HS	46	Field Test	0.25	0.75	0.00	0.00	-A	-A
1515	HS	47	Operational	0.54	0.58	0.00	0.00	+A	+A
1516	HS	48	Operational	0.35	0.73	0.00	0.01	+A	+A
1517	HS	49	Operational	0.45	0.58	0.00	0.00	-A	-A
1518	HS	50	Operational	0.26	0.70	0.00	0.00	-A	+A
1519	HS	51	Operational	0.42	0.58	0.00	0.00	+A	-A
1520	HS	52	Operational	0.57	0.61	0.00	0.00	+A	+A
1498	HS	53	Operational	0.52	0.77	0.00	0.00	-A	+A
1500	HS	54	Operational	0.62	0.58	0.00	0.00	-A	-A
1502	HS	55	Operational	0.33	0.73	0.00	0.00	-A	-A
1505	HS	56	Operational	0.52	0.73	0.00	0.00	-A	-A
1506	HS	57	Operational	0.49	0.56	0.00	0.00	+A	+A
1507	HS	58	Operational	0.59	0.75	0.00	0.00	-A	+A
1508	HS	59	Operational	0.56	0.72	0.00	0.00	-A	+A
2139	HS	60	Operational	0.39	0.59	0.00	0.00	+A	+A
2141	HS	61	Operational	0.47	0.71	0.00	0.00	-A	-A
2142	HS	62	Operational	0.45	0.69	0.00	0.00	-A	+A
2218	HS	63	Operational	0.43	0.60	0.00	0.00	+A	-A
2143	HS	64	Operational	0.39	0.62	0.00	0.00	+A	-A
2144	HS	65	Operational	0.54	0.67	0.00	0.00	-A	+A
2145	HS	66	Operational	0.43	0.58	0.00	0.00	+A	+A
2358	HS	67	Field Test	0.05	0.49	0.00	0.00	-A	-A
2359	HS	68	Field Test	0.33	0.71	0.00	0.00	-A	+A
2360	HS	69	Field Test	0.56	0.69	0.00	0.00	-A	-A
2361	HS	70	Field Test	0.53	0.64	0.00	0.00	+A	-A
2362	HS	71	Field Test	0.38	0.72	0.00	0.00	-A	+A
2363	HS	72	Field Test	0.35	0.75	0.00	0.00	-A	+A
2364	HS	73	Field Test	0.29	0.48	0.00	0.00	+A	+A
2013	HS	74	Operational	0.57	0.75	0.00	0.00	+A	-A
2014	HS	75	Operational	0.57	0.69	0.00	0.00	-A	-C
2015	HS	76	Operational	0.34	0.70	0.00	0.00	-C	+A
2017	HS	77	Operational	0.59	0.76	0.00	0.00	+A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2016	HS	78	Operational	0.46	0.85	0.00	0.00	-A	-A
2025	HS	79	Operational	0.46	0.71	0.00	0.00	+A	-A
2026	HS	80	Operational	0.64	0.64	0.00	0.00	-A	+A
1470	HS	81	Operational	0.50	0.81	0.00	0.00	+A	-A
1472	HS	82	Operational	0.61	0.72	0.00	0.00	+A	+A
1473	HS	83	Operational	0.56	0.69	0.00	0.00	+A	-A
1474	HS	84	Operational	0.24	0.60	0.00	0.00	+A	-A
1434	HS	85	Operational	0.53	0.68	0.00	0.00	-C	-A
1447	HS	86	Operational	0.45	0.42	0.00	0.00	+C	+A
1448	HS	87	Operational	0.42	0.66	0.00	0.00	+C	-C
1449	HS	88	Operational	0.26	0.61	0.00	0.00	+A	+A
1450	HS	89	Operational	0.42	0.57	0.00	0.00	+A	-A

Exhibit D-10: Grade-Band 3-5 Social Studies Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1131	3-5	1	Operational	0.62	0.60	0.00	0.01	+A	-A
1133	3-5	2	Operational	0.24	0.60	0.00	0.02	+A	+A
1134	3-5	3	Operational	0.24	0.63	0.00	0.03	-A	+A
1135	3-5	4	Operational	0.30	0.60	0.00	0.03	+A	+A
2516	3-5	5	Operational-Field Test	0.63	0.63	0.00	0.01	+A	-A
2517	3-5	6	Operational-Field Test	0.21	0.64	0.00	0.01	-A	+A
2518	3-5	7	Operational-Field Test	0.16	0.44	0.00	0.02	-A	+A
2519	3-5	8	Operational-Field Test	0.34	0.62	0.00	0.03	+A	-A
2520	3-5	9	Operational-Field Test	0.30	0.46	0.00	0.03	-A	+A
2521	3-5	10	Operational-Field Test	0.39	0.66	0.00	0.03	+C	-A
2522	3-5	11	Operational-Field Test	0.10	0.43	0.00	0.03	-A	+C
1166	3-5; 6-8;	12	Operational	0.48	0.66	0.00	0.03	+A	-A
1167	3-5; 6-8;	13	Operational	0.49	0.64	0.00	0.03	-A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1168	3-5; 6-8;	14	Operational	0.49	0.57	0.00	0.03	-A	+A
1169	3-5; 6-8;	15	Operational	0.44	0.60	0.00	0.03	+A	+A
1232	3-5	16	Operational	0.43	0.60	0.01	0.03	+A	+A
1233	3-5	17	Operational	0.50	0.65	0.01	0.03	+A	-A
1234	3-5	18	Operational	0.38	0.60	0.01	0.02	-A	+A
1236	3-5	19	Operational	0.30	0.65	0.01	0.03	+A	+A
1238	3-5	20	Operational	0.33	0.43	0.01	0.03	-A	+A
1241	3-5	21	Operational	0.46	0.62	0.01	0.03	+A	+A
1245	3-5	22	Operational	0.41	0.55	0.01	0.04	-A	-A
2311	3-5	23	Field Test	0.23	0.49	0.01	0.03	+A	+A
2312	3-5	24	Field Test	-0.06	0.53	0.00	0.03	-A	-B
2313	3-5	25	Field Test	0.11	0.52	0.00	0.03	-A	+A
2314	3-5	26	Field Test	0.12	0.43	0.00	0.04	-A	+A
2315	3-5	27	Field Test	0.15	0.41	0.00	0.03	-A	-A
1125	3-5	28	Operational	0.37	0.39	0.00	0.03	-A	-A
1126	3-5	29	Operational	0.45	0.66	0.00	0.03	-A	+A
1127	3-5	30	Operational	0.58	0.52	0.00	0.03	+A	-A
1128	3-5	31	Operational	0.56	0.58	0.00	0.03	+A	-A
1129	3-5	32	Operational	0.58	0.62	0.00	0.03	-A	+A
1246	3-5	33	Operational	0.76	0.65	0.00	0.04	-A	+A
1247	3-5	34	Operational	0.72	0.85	0.00	0.04	+A	+A
1248	3-5	35	Operational	0.70	0.82	0.00	0.04	-A	-A
1249	3-5	36	Operational	0.52	0.49	0.00	0.05	+A	+A
1250	3-5	37	Operational	0.57	0.79	0.00	0.04	+A	-A
1251	3-5	38	Operational	0.47	0.64	0.00	0.04	-A	-A
2318	3-5	39	Field Test	0.47	0.48	0.00	0.02	-A	+B
2319	3-5	40	Field Test	0.11	0.62	0.00	0.01	-A	+A
2320	3-5	41	Field Test	0.41	0.52	0.00	0.01	-A	+A
2322	3-5	42	Field Test	0.43	0.55	0.00	0.01	-A	+A
2316	3-5	43	Field Test	0.17	0.34	0.00	0.01	-A	+A
2321	3-5	44	Field Test	0.16	0.50	0.00	0.01	+A	-A
1848	3-5	45	Operational	0.67	0.66	0.00	0.01	+A	+A
1849	3-5	46	Operational	0.54	0.72	0.00	0.01	+A	+A
1850	3-5	47	Operational	0.41	0.75	0.00	0.00	-A	-A
1851	3-5	48	Operational	0.52	0.62	0.00	0.01	-A	-A
1852	3-5	49	Operational	0.51	0.75	0.00	0.01	+A	-A
1853	3-5	50	Operational	0.46	0.75	0.00	0.01	+A	-A
1854	3-5	51	Operational	0.59	0.73	0.00	0.00	-A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1855	3-5	52	Operational	0.52	0.80	0.00	0.00	-A	-A
1856	3-5	53	Operational	0.62	0.60	0.00	0.00	+A	-A
1857	3-5	54	Operational	0.46	0.80	0.00	0.01	+A	+A
1858	3-5	55	Operational	0.50	0.45	0.00	0.01	-A	+A
1859	3-5	56	Operational	0.59	0.75	0.00	0.01	-A	-A
1860	3-5	57	Operational	0.41	0.86	0.00	0.01	-A	-A
1861	3-5	58	Operational	0.51	0.80	0.00	0.00	-A	-A
1862	3-5	59	Operational	0.71	0.65	0.00	0.01	-A	+A
2203	3-5	60	Operational	0.70	0.58	0.00	0.01	-A	+A
2204	3-5	61	Operational	0.54	0.85	0.00	0.00	+A	-A
2205	3-5	62	Operational	0.76	0.67	0.00	0.00	-A	+A
2206	3-5	63	Operational	0.61	0.62	0.00	0.00	-A	+A
2209	3-5	64	Operational	0.56	0.81	0.00	0.00	+A	+A
2402	3-5	65	Field Test	0.38	0.82	0.00	0.00	+A	+A
2328	3-5	66	Field Test	0.19	0.55	0.00	0.00	-A	-A
2401	3-5	67	Field Test	0.22	0.52	0.00	0.01	-A	+A
2403	3-5	68	Field Test	0.19	0.58	0.00	0.00	-A	-A
2404	3-5	69	Field Test	0.22	0.49	0.00	0.00	-A	+A
1875	3-5	70	Operational	0.24	0.65	0.00	0.00	+A	-A
1876	3-5	71	Operational	0.62	0.57	0.00	0.00	-A	+A
1877	3-5	72	Operational	0.76	0.60	0.00	0.00	-A	-A
1878	3-5	73	Operational	0.44	0.62	0.00	0.00	+A	-A
1879	3-5	74	Operational	0.55	0.75	0.00	0.00	+A	-A
1880	3-5	75	Operational	0.50	0.61	0.00	0.00	-A	-A
1881	3-5	76	Operational	0.37	0.64	0.00	0.00	-A	+A
1093	3-5; 6-8;	77	Operational	0.44	0.53	0.00	0.00	+A	+A
1092	3-5; 6-8;	78	Operational	0.37	0.65	0.00	0.00	-C	+A
1094	3-5; 6-8;	79	Operational	0.19	0.56	0.00	0.00	-A	+A
1091	3-5; 6-8;	80	Operational	0.76	0.58	0.00	0.00	-A	+A
2245	3-5	81	Operational	0.48	0.51	0.00	0.00	+A	-A
2242	3-5	82	Operational	0.32	0.72	0.00	0.00	+A	-A
2243	3-5	83	Operational	0.48	0.45	0.00	0.00	-A	+A
2246	3-5	84	Operational	0.51	0.56	0.00	0.00	-A	+A

Exhibit D-11: Grade-Band 6-8 Social Studies Operational, Operational-Field Test and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1106	6-8	1	Operational	0.64	0.61	0.00	0.01	-A	-A
1107	6-8	2	Operational	0.43	0.62	0.00	0.02	-A	+A
1115	6-8	3	Operational	0.39	0.56	0.00	0.02	-A	+A
1114	6-8	4	Operational	0.32	0.56	0.00	0.02	+A	-A
2185	6-8	5	Operational	0.59	0.56	0.00	0.01	+A	-A
2186	6-8	6	Operational	0.40	0.58	0.00	0.02	-A	+A
2187	6-8	7	Operational	0.30	0.49	0.00	0.03	+A	-A
2188	6-8	8	Operational	0.36	0.63	0.00	0.02	-A	+A
2189	6-8	9	Operational	0.48	0.51	0.00	0.03	-B	+A
2190	6-8	10	Operational	0.30	0.51	0.00	0.03	+A	-A
1059	6-8	11	Operational	0.58	0.69	0.00	0.03	-A	+A
1067	6-8	12	Operational	0.40	0.48	0.00	0.03	+C	+A
1068	6-8	13	Operational	0.51	0.55	0.00	0.02	+A	+A
1070	6-8	14	Operational	0.58	0.67	0.00	0.03	-A	-A
1863	6-8	15	Operational	0.46	0.66	0.00	0.02	-A	-A
1864	6-8	16	Operational	0.45	0.53	0.00	0.03	+A	+A
1866	6-8	17	Operational	0.39	0.42	0.00	0.03	-A	-A
1867	6-8	18	Operational	0.49	0.54	0.00	0.03	-A	-A
1868	6-8	19	Operational	0.41	0.61	0.00	0.03	+A	+A
2352	6-8	20	Field Test	0.57	0.65	0.00	0.01	-A	-A
2355	6-8	21	Field Test	0.26	0.51	0.00	0.02	-A	+A
2354	6-8	22	Field Test	0.44	0.68	0.00	0.02	+A	+A
2356	6-8	23	Field Test	0.19	0.68	0.00	0.03	+A	+C
2357	6-8	24	Field Test	0.29	0.48	0.00	0.03	-A	+A
1077	3-5; 6-8;	25	Operational	0.49	0.59	0.01	0.02	-A	-A
1079	3-5; 6-8;	26	Operational	0.44	0.58	0.00	0.03	-A	-A
1080	3-5; 6-8;	27	Operational	0.44	0.64	0.01	0.03	+A	+A
1081	3-5; 6-8;	28	Operational	0.50	0.51	0.00	0.02	-A	+A
1235	6-8	29	Operational	0.52	0.72	0.00	0.03	+A	+A
1242	6-8	30	Operational	0.61	0.75	0.00	0.03	-A	-A
1237	6-8	31	Operational	0.43	0.71	0.00	0.03	+A	+A
1239	6-8	32	Operational	0.41	0.65	0.00	0.03	-A	+A
1243	6-8	33	Operational	0.61	0.78	0.00	0.03	+A	-A
1244	6-8	34	Operational	0.45	0.39	0.00	0.03	+A	+A
2365	6-8	35	Field Test	0.43	0.60	0.00	0.01	-A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2366	6-8	36	Field Test	0.54	0.64	0.00	0.01	+A	+A
2367	6-8	37	Field Test	0.38	0.77	0.00	0.01	-A	+A
2368	6-8	38	Field Test	0.59	0.71	0.00	0.00	+A	+A
2369	6-8	39	Field Test	0.46	0.85	0.00	0.00	+B	-A
2370	6-8	40	Field Test	0.52	0.53	0.00	0.01	-A	-A
1254	6-8	41	Operational	0.46	0.62	0.00	0.00	+A	-A
1255	6-8	42	Operational	0.29	0.81	0.00	0.00	+A	+A
1256	6-8	43	Operational	0.42	0.77	0.00	0.00	-A	+A
1257	6-8	44	Operational	0.58	0.72	0.00	0.00	+A	-A
1258	6-8	45	Operational	0.59	0.76	0.00	0.00	+A	-A
1260	6-8	46	Operational	0.37	0.83	0.00	0.00	-A	-A
1882	6-8	47	Operational	0.46	0.64	0.00	0.01	+A	-A
1883	6-8	48	Operational	0.48	0.84	0.00	0.00	+A	-A
1884	6-8	49	Operational	0.54	0.59	0.00	0.00	+A	+A
1885	6-8	50	Operational	0.62	0.64	0.00	0.00	-A	-A
1886	6-8	51	Operational	0.47	0.73	0.00	0.00	-A	-A
1887	6-8	52	Operational	0.57	0.71	0.00	0.00	-A	+A
2247	6-8	53	Operational	0.59	0.77	0.00	0.00	-B	+A
2249	6-8	54	Operational	0.32	0.74	0.00	0.00	-A	+A
2250	6-8	55	Operational	0.61	0.62	0.00	0.00	+A	+A
2251	6-8	56	Operational	0.53	0.57	0.00	0.00	-A	+A
2405	6-8	57	Field Test	0.41	0.50	0.00	0.00	-A	+A
2408	6-8	58	Field Test	0.35	0.78	0.00	0.00	+A	-A
2413	6-8	59	Field Test	0.32	0.54	0.00	0.00	+A	-A
2406	6-8	60	Field Test	0.36	0.68	0.00	0.00	-A	+A
2411	6-8	61	Field Test	0.47	0.55	0.00	0.00	-C	+A
2412	6-8	62	Field Test	0.39	0.50	0.00	0.00	-A	+A
2173	6-8	63	Operational	0.51	0.60	0.00	0.00	-A	+A
2174	6-8	64	Operational	0.60	0.65	0.00	0.00	+A	+A
2175	6-8	65	Operational	0.53	0.80	0.00	0.00	+A	-A
2176	6-8	66	Operational	0.47	0.82	0.00	0.00	+A	-A
2177	6-8	67	Operational	0.62	0.78	0.00	0.00	-A	-A
2178	6-8	68	Operational	0.60	0.58	0.00	0.00	-A	-A
1055	6-8	69	Operational	0.06	0.99	0.00	0.00	+A	-A
1056	6-8	70	Operational	0.59	0.67	0.00	0.00	-A	+A
1057	6-8	71	Operational	0.28	0.56	0.00	0.00	+A	-A
1058	6-8	72	Operational	0.44	0.60	0.00	0.00	-A	-A
1869	6-8	73	Operational	0.40	0.69	0.00	0.00	-A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1870	6-8	74	Operational	0.41	0.54	0.00	0.00	-A	-A
1871	6-8	75	Operational	0.40	0.73	0.00	0.00	+A	-A
1872	6-8	76	Operational	0.42	0.61	0.00	0.00	-A	+A
1873	6-8	77	Operational	0.56	0.61	0.00	0.00	-A	-A
1874	6-8	78	Operational	0.44	0.60	0.00	0.00	+A	-A

Exhibit D-12: ELA Field-Test WINSTEPS Item Statistics

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
82	-0.3354	1247	2190	0.057781	0.8358	-2.8692	0.619	-4.8594
83	0.4122	1247	1893	0.043977	1.0669	1.7411	0.9373	-0.9991
85	0.8734	1245	1671	0.043959	0.9337	-2.0591	0.9227	-2.0591
89	1.534	1243	1329	0.039204	1.1808	5.5412	1.1914	4.7112
95	0.9534	1241	1688	0.044411	0.9757	-0.729	0.9437	-1.5491
161	0.0933	151	175	0.105461	1.1515	1.7612	1.1182	0.8211
162	0.1249	151	186	0.116176	0.904	-1.1191	0.8775	-1.1391
166	0.9477	154	185	0.109276	1.5913	6.0516	1.6865	5.1017
182	0.3041	150	173	0.114947	0.8221	-2.2492	0.7927	-2.1392
424	-0.1224	825	1020	0.049275	0.8189	-5.1392	0.8014	-4.8492
425	0.0391	824	976	0.048953	0.8796	-3.4691	0.8758	-3.1591
446	0.1738	328	500	0.09026	1.1073	1.2211	1.005	0.091
448	0.744	328	706	0.063035	1.1375	1.8611	1.1431	1.2811
449	1.0896	327	395	0.076901	1.0796	1.3211	1.1134	1.1811
450	1.2451	327	376	0.085124	1.2551	3.7513	1.2644	3.4613
452	0.4806	325	489	0.081876	0.8739	-1.8391	0.7028	-2.0093
469	0.3141	827	802	0.043974	1.0545	1.7311	1.0387	0.911
471	-0.1093	821	970	0.048199	1.1509	3.8912	1.1604	3.3912
472	0.6317	809	936	0.04697	1.1132	3.2211	1.1435	3.3011
498	-0.4106	1267	2204	0.060115	1.2156	2.9112	0.9954	0.001
500	0.4815	1259	1776	0.044288	0.9854	-0.399	0.9502	-0.989
501	0.1196	1259	1947	0.047585	1.3041	6.0313	1.3633	4.1314
502	0.7973	1259	1621	0.0396	0.9436	-1.8191	0.8401	-3.1592
503	0.704	1257	1766	0.040582	0.8334	-5.4092	0.7432	-5.1793
523	0.3058	152	148	0.104582	1.0013	0.041	0.9221	-0.6091
524	0.4538	149	192	0.10528	1.0972	1.2911	1.055	0.5111
525	0.0403	152	186	0.115089	0.9758	-0.249	0.9116	-0.7591
526	0.7887	151	166	0.115831	0.9909	-0.079	0.9786	-0.189

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
527	0.8372	149	111	0.112005	1.0185	0.251	0.9829	-0.129
686	1.1319	807	630	0.050448	1.4407	9.0214	1.625	9.3616
1284	-0.60163	93	188	0.121191	1.0073	0.101	0.9526	-0.099
1292	-0.42544	93	183	0.11181	0.9543	-0.249	0.8328	-0.5792
1297	-2.82252	85	78	0.488893	1.5262	1.2515	1.2233	0.5712
1299	0.439445	84	39	0.227387	1.0839	1.5511	1.1112	1.1211
1300	0.040977	87	56	0.224491	0.9877	-0.189	0.9747	-0.199
1301	0.81841	80	53	0.23888	1.2485	3.2212	1.2004	1.6812
1316	1.051047	287	360	0.098164	1.3845	4.7614	1.4018	4.6814
1317	0.867649	286	404	0.086939	1.1477	2.1111	1.1933	1.7312
1318	0.75138	287	416	0.094322	1.0579	0.8211	1.022	0.271
1320	0.276816	288	491	0.096567	0.8996	-1.0491	0.7566	-1.1992
1321	1.986354	287	241	0.087014	1.2799	3.6413	1.348	3.7813
1322	1.639297	287	287	0.083275	1.0603	0.9111	1.0343	0.431
1355	0.875676	644	824	0.056221	1.9187	9.9019	1.931	9.9019
1357	0.026388	646	844	0.049211	0.8605	-4.1191	0.855	-2.9191
1358	0.315306	652	609	0.048768	0.9781	-0.659	0.9537	-1.049
1359	0.148495	651	678	0.054438	0.873	-3.4191	0.8627	-3.3491
1360	-0.14378	652	894	0.051172	0.911	-2.2691	0.8555	-2.6691
1361	0.445153	640	608	0.047937	0.8954	-3.3491	0.8693	-2.9291
1406	-0.4658	360	696	0.054472	0.979	-0.279	1.7378	6.8917
1408	-0.37496	332	188	0.115908	0.9988	-0.029	0.9818	-0.429
1409	-1.15065	338	219	0.131797	1.2974	3.9513	1.2835	3.2113
1410	-0.91994	341	222	0.124645	1.1553	2.6112	1.159	2.2712
1411	-0.34329	292	571	0.061716	0.9429	-0.7791	0.9537	-0.449
1412	-3.08628	267	247	0.295628	1.4981	1.8215	1.2973	0.9213
1413	-2.54374	272	253	0.240132	0.8056	-1.0092	0.7375	-1.0793
1414	-0.60066	264	147	0.137159	1.1911	3.2812	1.1805	2.4412
1415	-0.71403	259	165	0.14157	1.1756	2.6912	1.2388	2.8512
1416	-0.38347	253	152	0.135932	1.0869	1.8211	1.1246	1.9911
1706	0.905318	1123	1325	0.038647	0.949	-1.7391	0.9228	-1.9891
1707	0.261596	1122	1667	0.045526	0.7746	-6.8192	0.7868	-5.1092
1708	0.65612	1118	1491	0.04233	1.2664	7.7513	1.3024	7.1813
1709	1.238001	1119	1105	0.040701	1.1161	3.6011	1.1239	3.4211
1710	0.962585	1115	1171	0.039575	1.045	1.491	1.0405	1.091
1711	0.122924	1118	1785	0.044533	1.0595	1.4611	1.1909	2.7212
1712	1.194464	1147	1163	0.040412	1.085	2.6711	1.21	4.4212
1713	0.385963	1147	1676	0.049391	0.9185	-2.1391	0.8995	-2.0591
1714	1.328646	1147	1184	0.039378	0.9563	-1.429	0.9236	-1.7191
1715	0.167883	1146	1778	0.051616	0.8637	-3.2891	0.7519	-4.5592

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1717	0.524067	1140	1735	0.045437	0.9781	-0.549	0.8886	-1.7991
1766	-0.02513	378	581	0.087448	0.8616	-1.8291	0.7405	-2.0193
1767	0.535491	1310	1310	0.036925	1.1576	5.2912	1.324	6.9513
1768	0.704536	1300	1340	0.036949	0.9993	-0.009	0.9773	-0.589
1769	0.215963	1299	1628	0.039542	1.4323	9.9014	1.991	9.902
1770	0.334479	1310	1478	0.042383	1.2768	8.0113	1.3759	9.3514
1771	-0.32315	1312	2207	0.046684	0.9061	-2.0891	0.7659	-3.6292
1772	0.712548	1306	1129	0.037039	1.2235	7.4612	1.3099	7.6713
1773	1.277972	1131	929	0.040031	1.2348	7.0112	1.2716	6.9913
1774	0.883872	1135	1160	0.043329	1.3103	8.8813	1.3391	8.9613
1775	0.344123	1134	1620	0.043101	1.1803	4.9812	1.1266	2.6011
1776	1.021227	1136	1245	0.04247	1.1073	3.3211	1.1072	3.0911
1777	0.030227	1136	1794	0.045396	1.1083	2.4611	1.1288	1.7711
1778	0.308485	1135	1557	0.046214	0.9118	-2.5791	0.923	-1.9491
1779	0.637347	508	452	0.058537	1.2111	4.7912	1.2259	4.0912
1780	0.419539	509	515	0.056734	1.1594	3.7612	1.3395	5.7413
1782	0.80656	510	467	0.065835	1.0668	1.3711	1.0714	1.3711
1783	-0.0968	512	673	0.060486	0.9502	-0.949	0.9515	-0.659
1784	-0.17927	519	713	0.062158	1.0395	0.741	1.0411	0.591
1798	1.650185	293	317	0.08286	1.8974	9.9019	2.0312	9.672
1799	1.200782	295	369	0.085702	0.9244	-1.1791	0.87	-1.6291
1800	1.022859	295	379	0.086512	1.0817	1.2411	1.5794	5.6316
1802	1.100008	295	389	0.081626	1.4108	5.7914	1.4576	4.0415
1803	0.66418	294	391	0.087515	1.0575	0.8211	0.9319	-0.5291
1804	0.227856	150	169	0.123846	1.1358	1.4611	1.0984	0.9811
1806	0.571163	153	145	0.102206	0.8467	-2.2092	0.8163	-1.6292
1808	0.411649	148	157	0.121476	1.2962	3.0913	1.2746	2.5913
1810	0.341361	149	157	0.107043	1.1195	1.5411	1.0751	0.6811
1813	-0.25274	151	170	0.118234	1.6061	5.0516	1.749	4.0717
1823	-0.1746	383	615	0.091254	0.8332	-2.2192	0.7453	-2.1593
1825	1.18986	382	390	0.072127	0.948	-0.8891	0.9012	-1.1391
1826	0.422899	381	521	0.07811	0.9924	-0.099	0.964	-0.289
1827	0.476398	378	522	0.075496	1.1738	2.6412	1.1751	1.3312
1830	1.087178	1107	1332	0.046549	1.2063	5.6112	1.2916	6.9613
1831	1.157547	1108	1342	0.040119	0.9766	-0.739	0.9788	-0.389
1832	1.353906	1108	1287	0.040858	0.9038	-3.1491	0.8539	-3.5691
1834	0.827829	1107	1435	0.048492	1.2029	5.2912	1.2222	5.1412
1835	0.793646	1106	1505	0.046613	1.095	2.6011	1.1038	2.2711
2037	0.049573	267	141	0.128086	1.0127	0.391	1.0014	0.041
2038	0.698324	269	122	0.130145	1.1933	4.5812	1.3508	5.3114

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2039	-0.31841	264	158	0.132566	1.0566	1.2811	1.0381	0.671
2040	0.539834	260	121	0.130793	1.0489	1.381	1.0565	1.0211
2042	-0.45874	265	151	0.133998	1.0855	1.7211	1.0602	0.9711
2043	-0.48662	248	157	0.139681	0.9892	-0.189	0.9627	-0.529
2046	0.689583	511	537	0.063453	1.0847	1.8111	1.0838	1.6611
2047	-0.33174	506	713	0.065099	1.106	1.6511	1.071	0.8211
2048	0.534954	516	594	0.06018	1.0627	1.4511	1.0979	1.9111
2049	0.700296	516	460	0.054523	0.9758	-0.619	0.9637	-0.599
2050	0.382986	506	546	0.063117	0.917	-1.8591	0.9099	-1.8491
2051	0.031316	506	635	0.059359	0.9912	-0.169	1.0005	0.031
2062	0.150175	1146	1787	0.042905	1.1522	3.7212	1.2507	3.3513
2065	1.078045	1148	1202	0.039256	0.9303	-2.3691	0.9054	-2.7291
2066	0.661434	1147	1395	0.039468	1.2832	8.6313	1.3661	7.7114
2067	0.174474	1149	1623	0.046271	1.0232	0.651	1.0186	0.441
2068	0.814725	1144	1313	0.037678	0.827	-6.2892	0.7649	-5.8592
2069	0.121222	1143	1825	0.043593	0.9225	-1.9791	0.8584	-2.1291
2071	0.234777	1264	1815	0.042368	0.8971	-3.2191	0.8503	-3.7591
2072	0.03142	1263	1967	0.04103	0.8059	-5.2192	0.5872	-6.0394
2073	-0.08945	1260	2017	0.043745	0.9986	-0.019	1.0212	0.321
2074	0.199567	1263	1854	0.039124	0.8237	-5.4892	0.7031	-5.0793
2075	0.856116	1255	1390	0.037677	0.8404	-5.9092	0.8077	-5.7792
2076	-0.21021	1255	2154	0.045771	0.8599	-2.9791	0.732	-3.2893
2077	0.461146	1250	1680	0.03745	0.7503	-9.2393	0.6536	-7.7993
2080	0.505799	1450	1859	0.033831	0.7983	-8.0092	0.7561	-5.3992
2081	-0.10241	1453	2146	0.041188	0.8162	-5.7492	0.744	-6.0293
2082	-0.21304	1452	2313	0.04078	0.785	-5.8392	0.6413	-5.8294
2083	-0.05346	1447	2285	0.038536	0.8482	-4.4792	0.7586	-3.9292
2085	0.068852	1444	2151	0.037314	0.9577	-1.309	0.9913	-0.129
2098	0.097326	645	768	0.057834	0.9138	-2.0991	0.9066	-2.1591
2099	0.422566	646	679	0.049184	1.055	1.6411	1.0296	0.691
2100	-0.07389	646	846	0.050864	0.9109	-2.3691	0.8944	-1.9891
2102	0.674435	647	501	0.051779	1.1691	4.2512	1.31	6.0113
2103	-0.01707	643	796	0.050641	1.0167	0.461	1.0508	0.9811
2104	0.698942	641	567	0.050316	1.0387	1.031	1.0592	1.1811
2105	-0.22156	654	921	0.05215	0.8738	-3.0491	0.8278	-3.0092
2106	0.719597	342	462	0.082022	0.9481	-0.8191	0.9067	-1.0491
2107	0.860453	342	440	0.072533	0.7688	-4.2992	0.6268	-3.1494
2108	0.728094	341	427	0.081359	0.9019	-1.6091	0.8466	-1.7292
2109	0.946635	341	444	0.073913	0.8644	-2.4191	0.7785	-2.1192
2111	0.506883	341	486	0.083296	0.8938	-1.6391	0.857	-1.3791

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2112	-0.03245	338	553	0.09588	0.9139	-0.9691	0.7292	-1.9093
2113	0.706331	324	457	0.08075	1.0897	1.3911	1.1459	1.2611
2114	0.950521	326	406	0.086044	1.2778	4.0013	1.2717	3.2913
2115	1.110193	326	390	0.073191	0.9634	-0.609	1.1745	1.4412
2116	1.225932	326	361	0.075191	0.7819	-3.9192	0.7121	-3.2993
2119	0.743624	325	399	0.085039	1.2159	3.1512	1.5689	5.4716
2120	0.182426	1425	2196	0.04285	0.7384	-7.7593	0.6494	-6.7294
2121	0.688808	1419	1933	0.03767	0.8201	-6.2192	0.7124	-5.9193
2122	0.449788	1425	2085	0.040834	0.7721	-7.4892	0.6798	-7.3293
2123	-0.07556	1421	2336	0.045678	0.9177	-1.7991	1.016	0.211
2124	0.711092	1425	1906	0.038131	0.9082	-3.0791	0.839	-3.4492
2125	0.138553	1411	2152	0.044949	0.8601	-4.0691	0.8003	-4.3892
2126	-0.04945	1408	2265	0.045763	0.9636	-0.829	0.8721	-1.7491
2146	-0.14652	89	158	0.109793	0.8544	-1.1691	0.8474	-0.8092
2147	-0.22085	93	171	0.106859	0.9166	-0.5691	0.8378	-0.6792
2148	0.113197	85	38	0.226849	1.0157	0.291	0.977	-0.179
2149	0.289512	84	45	0.226944	0.9178	-1.6091	0.8854	-1.1591
2151	0.35554	84	42	0.227317	1.0048	0.111	0.9822	-0.149
2152	-0.00321	82	54	0.232277	0.9987	0.001	0.9808	-0.129
2153	0.015315	297	499	0.105399	0.9186	-0.8091	0.8022	-1.2592
2154	0.635935	296	433	0.082744	0.8084	-2.8592	0.6106	-2.3994
2155	0.673639	296	413	0.085352	1.309	4.0713	1.2419	1.7212
2156	0.913934	295	358	0.091205	1.0731	1.0711	1.1404	1.6411
2157	1.007997	295	360	0.086563	0.9677	-0.479	0.9115	-0.9991
2158	1.2026	293	368	0.076816	0.7743	-3.8792	0.7113	-2.5293
2159	0.54003	294	445	0.089046	0.9623	-0.489	0.8836	-0.8291
2253	0.375243	1439	1890	0.034597	0.7711	-8.9192	0.6665	-7.2893
2254	0.120852	1157	1970	0.051071	1.0322	0.601	0.9558	-0.419
2255	-0.00603	1157	2049	0.054084	0.9104	-1.5491	0.8525	-1.4991
2256	1.172181	1155	1399	0.040857	0.9838	-0.509	0.9919	-0.169
2257	1.173737	1158	1422	0.041478	1.0567	1.7811	1.0373	0.901
2258	0.849649	1150	1507	0.045291	1.1831	5.0612	1.2172	4.8312
2259	1.011979	1145	1404	0.045802	1.104	2.9611	1.0875	2.2211
2414	0.482532	1198	1634	0.037141	0.6908	-9.8993	0.5829	-8.0994
2415	0.115325	1196	1700	0.046015	0.9461	-1.5291	0.9292	-1.6991
2416	1.194321	1196	1110	0.039775	1.1816	5.6512	1.2122	5.8812
2417	0.466327	1194	1602	0.03907	1.0158	0.521	0.9164	-1.7391
2418	0.42677	1194	1637	0.038934	0.7647	-8.2192	0.6709	-7.0493
2419	0.548795	1185	1469	0.043402	1.1037	3.1211	1.157	4.1412
2425	-0.29684	160	355	0.088798	0.9121	-0.7691	1.1508	0.8112

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2426	0.545818	155	77	0.168323	1.0685	1.6111	1.0704	0.9711
2427	-0.44345	154	110	0.185193	1.0183	0.251	0.9856	-0.069
2428	0.576307	155	76	0.168391	0.9248	-1.8191	0.8969	-1.4391
2429	0.606278	147	72	0.173002	0.9316	-1.6491	0.9043	-1.3191
2430	-0.27378	150	102	0.183024	1.0347	0.501	1.0148	0.161
2431	0.880326	301	409	0.07907	0.804	-3.3092	0.6765	-2.6193
2432	1.217616	301	349	0.081872	0.8934	-1.7391	0.9146	-0.9691
2433	0.538469	300	461	0.084801	1.0776	1.0411	1.0412	0.291
2434	0.24311	300	477	0.096863	0.8484	-1.8492	0.6653	-2.6293
2435	0.764195	299	417	0.084097	1.1528	2.2112	1.097	0.8211
2436	0.615072	299	442	0.085283	0.8963	-1.4891	0.9123	-0.5791
2437	1.194579	298	352	0.080048	1.5569	7.6216	1.7101	5.9817
2459	-0.63425	693	1638	0.046343	0.8497	-2.4892	0.8723	-1.5691
2460	-0.33738	654	430	0.085271	0.9641	-1.179	0.916	-2.0791
2461	0.054885	648	372	0.081981	0.9484	-2.5591	0.9257	-2.6091
2462	0.203479	648	350	0.081432	0.9423	-3.1791	0.9182	-3.1291
2463	-0.58803	640	456	0.089979	0.9608	-0.999	0.9188	-1.5991
2464	-0.48154	640	443	0.088272	0.987	-0.349	0.9495	-1.0691
2466	0.232484	344	518	0.089395	0.8338	-2.4092	0.7248	-2.7593
2467	0.762761	347	452	0.079404	1.1479	2.3411	1.143	1.5111
2468	0.464412	345	486	0.085904	0.8703	-2.0091	0.7953	-2.2992
2469	0.213316	344	549	0.085206	0.9505	-0.609	0.7502	-1.5392
2470	0.307324	344	530	0.083724	1.0281	0.401	0.9929	0.001
2471	0.78935	340	453	0.074768	0.7983	-3.6192	0.7278	-2.3393
2475	-0.20877	1346	2047	0.045248	0.8553	-4.0891	0.7799	-5.0492
2476	-0.19249	1346	2178	0.0431	0.949	-1.2091	0.8507	-2.1591
2477	0.951781	1340	1349	0.035254	0.8299	-6.4492	0.7944	-5.9792
2478	0.74672	1336	1509	0.035608	0.9638	-1.319	0.9773	-0.579
2479	0.461975	1339	1683	0.039242	1.3691	9.9014	1.4267	9.9014
2480	0.750917	1330	1474	0.039904	1.1611	5.2012	1.1506	4.4512
2481	-0.29911	550	1210	0.049862	0.9423	-0.9091	1.069	0.8511
2482	-0.17962	521	342	0.096261	1.0151	0.431	1.054	1.1411
2483	0.374399	523	281	0.091324	0.9834	-0.709	0.9627	-1.139
2484	-0.17673	521	343	0.096143	0.9678	-0.899	0.9575	-0.899
2485	0.311732	510	283	0.09272	0.9939	-0.239	0.9746	-0.739
2486	0.941477	1321	1632	0.038711	1.3629	9.9014	1.5196	9.9015
2487	1.245024	1310	1419	0.038383	1.0137	0.471	0.9858	-0.349
2488	0.971223	1317	1610	0.038648	1.3829	9.9014	1.6395	9.9016
2489	0.951663	1312	1584	0.041742	1.1593	4.8512	1.2577	6.4413
2490	0.750466	1308	1697	0.042443	1.081	2.4611	1.1212	2.9211

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2491	0.89153	1308	1646	0.0395	1.0729	2.3411	1.1521	3.3112
2492	0.6137	1290	1846	0.040289	1.0602	1.7911	1.0399	0.691
2493	0.734885	1287	1686	0.043369	0.9588	-1.259	0.9289	-1.8191
2494	0.980151	1289	1590	0.039169	1.418	9.9014	1.5756	9.9016
2495	1.217167	1285	1422	0.04055	1.3102	9.2913	1.2937	7.4713
2496	0.607725	1282	1825	0.040995	1.1735	4.9412	1.2573	4.3113
2497	1.055378	1276	1535	0.038456	1.062	2.0511	1.0741	1.6411
2498	0.944687	1195	745	0.063303	0.9215	-3.7991	0.8859	-3.3291
2499	0.940802	1192	744	0.063418	0.8745	-6.1491	0.8284	-5.1092
2500	0.434763	1192	1850	0.044379	1.0634	1.5811	1.0121	0.191
2501	0.811749	1196	1578	0.04393	0.9042	-2.9491	0.8988	-2.4391
2502	1.640993	1194	565	0.062209	1.014	0.691	1.0152	0.581
2503	0.403647	1192	1810	0.046165	1.1336	3.3111	1.204	3.2712
2639	0.713092	1250	1490	0.036349	0.8056	-7.4192	0.7501	-6.3893
2652	0.487981	644	595	0.049087	0.9424	-1.7391	0.9638	-0.789
2653	-0.04704	642	806	0.051935	1.0515	1.3311	1.0652	1.2911
2654	0.480157	643	598	0.050268	0.9953	-0.119	0.9939	-0.119
2655	0.078052	639	736	0.056135	1.0055	0.151	0.9944	-0.109
2656	-0.16909	643	806	0.058707	1.0191	0.451	1.016	0.351
2657	-0.03943	639	754	0.060161	0.9306	-1.5891	0.9163	-1.8591
2659	-0.37613	1252	2146	0.049772	0.9135	-1.6091	0.7284	-3.3993
2660	0.273465	1249	1674	0.044032	0.991	-0.259	1.0218	0.581
2661	0.060549	1249	1885	0.042681	0.977	-0.609	0.92	-1.4491
2662	0.923005	1249	1328	0.036463	0.8613	-5.1291	0.8269	-4.8792
2663	0.031676	1246	1924	0.042525	1.1214	3.0511	1.2244	3.3412

Exhibit D-13: Math Field-Test WINSTEPS Item Statistics

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
10	-0.285	79	67	0.143706	1.6106	4.5516	1.6363	3.7116
11	-0.5243	79	85	0.158286	1.0284	0.261	1.095	0.6811
13	-0.7341	86	51	0.238278	1.0368	0.421	1.0224	0.231
16	0.2848	82	35	0.231208	1.0858	1.3911	1.1029	1.2911
200	0.3339	1448	1792	0.0375	1.0285	0.921	0.9685	-0.589
211	0.4813	1446	1727	0.040998	1.0711	2.2711	1.0621	1.6911
215	-0.6452	1448	2354	0.04767	1.1645	3.1512	1.1522	1.5112
217	0.5514	279	176	0.128238	1.0344	0.821	1.0195	0.391
218	-0.4742	1446	2161	0.044839	1.2927	5.8913	1.0075	0.111
222	0.397	279	162	0.131043	1.1354	2.6911	1.1285	2.0711
223	0.449	278	181	0.130299	1.0372	0.811	1.0387	0.681

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
226	0.3444	277	172	0.132694	1.0644	1.2411	1.0448	0.711
245	0.5989	1066	1478	0.041441	1.093	2.7711	1.0851	1.4011
246	0.4384	1069	1502	0.046769	0.9497	-1.4191	0.9284	-1.5591
247	0.7975	1069	1220	0.041669	0.8427	-5.2792	0.7964	-4.5892
248	0.9341	1068	1181	0.041337	0.9011	-3.2791	0.93	-1.5891
249	0.891	1063	2074	0.03344	1.0974	2.6211	1.1572	3.3212
250	1.376533	1065	1487	0.031453	1.1659	4.1412	1.2846	5.0213
254	-0.3062	655	791	0.054957	0.9041	-2.2591	0.8746	-2.5091
255	-0.4324	651	850	0.05339	0.9909	-0.179	0.9878	-0.159
256	-0.1613	641	722	0.055383	0.8498	-3.7392	0.8558	-3.1291
257	-0.5071	647	780	0.056739	0.9016	-2.1291	0.8892	-1.9491
298	0.4092	274	416	0.089056	0.8784	-1.7691	0.8564	-1.8591
317	0.5091	1740	1178	0.051832	0.9105	-5.3091	0.8849	-5.0791
318	0.4864	1740	2395	0.032918	0.8243	-7.0092	0.7527	-7.3492
320	0.6021	1727	2476	0.034575	0.8484	-6.0992	0.8071	-6.8292
321	0.3242	1729	2603	0.035733	0.8105	-7.1392	0.772	-7.2092
322	0.8266	1730	2148	0.031817	0.8517	-6.4691	0.8038	-6.7392
343	0.9337	276	293	0.076851	1.2312	3.9012	1.2926	4.2113
458	-0.8235	150	100	0.193988	1.1889	1.8912	1.1684	1.3312
459	0.4586	149	136	0.103099	1.0585	0.8211	1.0256	0.301
461	0.1626	148	158	0.105912	1.0149	0.221	0.9912	-0.059
462	0.2439	144	173	0.115951	0.9077	-1.1191	0.888	-1.2591
473	0.9407	146	105	0.114273	1.1438	1.5411	1.1546	1.3412
641	-1.1589	306	194	0.128484	1.0581	1.0911	1.0102	0.171
644	-0.0559	295	134	0.12333	1.1812	4.8712	1.2196	3.7712
645	-0.2867	297	127	0.122506	0.9907	-0.259	1.063	1.2611
647	0.0942	283	147	0.126441	1.2203	5.5112	1.2935	4.5613
674	-1.1082	323	558	0.065578	1.2592	3.1813	1.3657	3.5814
678	-1.22683	90	163	0.142029	2.219	5.1522	2.2272	4.0022
1270	-0.11446	1276	1944	0.044357	1.264	5.9013	1.4347	5.1814
1274	0.351291	1277	1656	0.039899	1.0026	0.091	0.9478	-0.9791
1276	-0.49589	1277	2072	0.050996	1.0444	0.981	1.0768	1.1411
1277	0.837374	1275	711	0.059992	1.1735	8.9312	1.1727	5.4312
1279	0.619144	1275	722	0.060605	1.1085	5.3911	1.1535	4.3212
1280	0.296054	1278	852	0.062343	1.0127	0.561	1.0354	0.861
1281	0.630858	1267	1543	0.042604	1.2175	6.4312	1.2426	6.0612
1283	-0.78311	316	596	0.059935	0.8874	-1.6491	0.8798	-1.3691
1285	-1.45589	296	234	0.13864	0.8532	-2.2391	0.8112	-2.2892
1288	-1.25432	295	220	0.133379	0.9296	-1.1991	0.9287	-0.9491
1289	0.044858	270	126	0.129017	1.025	0.681	1.0433	0.741

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1290	0.340597	271	112	0.132335	0.9832	-0.359	0.9491	-0.6791
1293	-0.05471	277	120	0.126844	1.0682	1.9211	1.0707	1.3011
1302	-0.34462	330	533	0.097266	0.9228	-0.8491	0.8343	-1.5792
1303	0.225728	331	520	0.07628	0.771	-3.3992	0.6319	-3.6594
1305	0.023388	330	523	0.083764	0.983	-0.179	0.9128	-0.7291
1306	-0.05022	331	519	0.089901	0.9312	-0.9391	0.9261	-0.8991
1307	0.724018	330	404	0.081531	1.114	1.8611	1.1062	1.6911
1309	-0.53045	517	415	0.09969	0.8168	-4.4592	0.8034	-4.0192
1310	1.19465	326	307	0.077826	1.0459	0.821	1.0555	0.9411
1332	0.048467	533	671	0.056689	1.0035	0.101	0.9948	-0.079
1338	-0.15441	531	676	0.062988	0.8815	-2.5591	0.8819	-2.3391
1339	0.671512	526	474	0.057078	1.041	1.011	1.0451	0.871
1340	0.848326	530	582	0.065978	1.3566	6.6314	1.3791	6.6314
1342	0.139953	522	629	0.056819	1.0167	0.421	1.0357	0.721
1343	0.449668	514	473	0.055316	0.9603	-1.049	0.9395	-1.1891
1634	-0.88358	696	1494	0.04756	0.927	-1.3191	0.9682	-0.439
1635	-0.18509	655	395	0.08319	1.0216	0.831	1.0079	0.251
1636	-0.82372	657	446	0.089958	1.0582	1.4211	1.0924	1.7411
1637	0.311022	656	578	0.050866	1.2288	5.6712	1.2657	4.6613
1638	-0.27795	648	762	0.058714	1.0719	1.6111	1.0849	1.7811
1639	-0.14613	646	780	0.051868	1.0079	0.211	1.0265	0.511
1641	0.069626	1134	852	0.069435	0.8656	-4.6291	0.8397	-3.1092
1642	0.133915	1136	1741	0.044484	1.0669	1.6411	1.2062	2.5712
1643	0.754227	1134	1366	0.047571	1.0791	2.2111	1.1224	3.1411
1644	0.527194	1133	1567	0.041852	1.2904	8.1813	1.5177	8.7115
1645	0.334583	1133	1595	0.04139	0.9285	-2.0391	0.853	-2.0191
1646	0.596406	1091	1282	0.046767	1.1516	4.1712	1.1622	3.7912
1647	0.388947	1093	1531	0.042767	1.2502	6.5313	1.2174	3.1212
1648	0.570246	1093	1327	0.045912	1.0027	0.091	1.0079	0.201
1649	0.797173	1089	1236	0.041583	1.0674	2.1211	1.0501	1.0911
1650	0.379186	1093	1562	0.041863	1.1333	3.5611	1.0724	0.9411
1651	0.402885	1088	1378	0.0481	1.0829	2.2511	1.0704	1.6011
1718	1.29585	964	525	0.066772	0.9545	-2.919	0.9467	-2.8791
1719	1.081307	964	561	0.067138	0.9663	-2.039	0.9636	-1.739
1722	1.20594	964	1011	0.049224	1.0879	2.3711	1.0888	2.3711
1723	1.201673	963	1085	0.042393	0.9931	-0.219	0.9872	-0.369
1724	0.84908	975	1245	0.044283	1.0852	2.5311	1.0669	1.7111
1725	0.903288	973	1243	0.048378	1.0685	1.9011	1.0555	1.5011
1726	0.981085	974	1225	0.04259	1.1205	3.7611	1.1015	2.6811
1727	1.379457	975	1046	0.041559	1.032	1.071	1.0366	1.101

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1728	0.944881	974	1267	0.042586	1.0499	1.5811	1.0193	0.521
1729	1.180614	972	1117	0.042066	1.1191	3.8411	1.1456	4.1111
1730	0.341665	1218	1304	0.04387	1.4008	9.9014	1.5489	9.9015
1731	-0.57297	1215	971	0.079571	1.1843	3.4412	1.2505	3.5213
1732	0.531326	1220	1035	0.041263	1.5594	9.9016	1.8506	9.9019
1733	-0.09199	1214	835	0.069702	1.2537	6.6013	1.3233	6.2013
1734	0.717084	1208	1043	0.037745	1.3841	9.9014	1.5801	9.9016
1735	0.419003	1210	1436	0.045605	1.2261	6.2312	1.2558	6.6513
1742	0.672935	152	178	0.120429	1.2029	2.1912	1.3265	3.2513
1743	0.507968	154	179	0.100344	1.1783	2.3912	1.1772	1.7012
1744	1.331809	149	94	0.122436	1.5561	3.8416	1.5889	2.8216
1745	0.27891	152	179	0.104735	1.173	2.2412	1.1362	1.4511
1746	-0.17799	152	197	0.107803	1.0954	1.0611	1.1231	1.0211
1752	0.950204	268	301	0.095837	1.0195	0.301	1.0263	0.391
1753	0.936985	267	296	0.084375	1.2176	3.3712	1.1999	2.9512
1754	0.30614	267	390	0.090179	1.0586	0.7611	1.0176	0.211
1755	0.846811	267	320	0.082771	1.1226	1.9811	1.1036	1.5311
1756	0.839788	267	292	0.078121	1.0828	1.4211	1.066	0.9511
1757	0.933141	268	308	0.080765	1.2163	3.5012	1.2634	3.8213
1758	1.222495	266	216	0.075807	1.366	6.0914	1.4104	5.9414
1759	-0.51838	378	933	0.078289	1.2297	1.9212	1.0544	0.3911
1761	0.430074	373	349	0.06951	1.5688	8.4116	1.792	8.0418
1762	0.389636	375	457	0.068644	0.9603	-0.659	0.9219	-0.8891
1763	0.474855	375	465	0.069173	1.0008	0.031	0.9894	-0.119
1764	-0.10295	371	583	0.080843	0.9524	-0.599	0.8742	-1.1691
1956	-0.44522	1270	2097	0.050642	0.8315	-4.2192	0.6701	-6.2793
1957	-0.47881	1269	2226	0.051099	0.776	-4.5192	0.549	-5.8095
1958	0.238498	1267	1800	0.040396	0.8513	-4.5791	0.7555	-4.2992
1959	-0.28124	1270	2113	0.048703	0.7467	-7.0793	0.6585	-7.2693
1960	-0.39244	1271	2216	0.049204	0.7712	-4.7492	0.5858	-5.0194
1961	0.047621	1267	2052	0.042007	0.8008	-5.5492	0.6284	-5.6894
1962	-0.4664	1267	2253	0.051033	0.7712	-4.4292	0.5192	-5.6595
1963	-0.11169	1259	1981	0.046298	0.9261	-1.9491	0.8203	-3.4092
1964	0.995342	1259	1340	0.044792	1.105	3.0811	1.0977	2.7511
1965	0.468287	1261	1658	0.038816	1.1332	4.1311	1.1181	2.1311
1966	0.03038	1259	1747	0.044898	0.9073	-2.6191	0.833	-3.4092
1967	0.760081	1258	1366	0.039592	0.918	-2.8091	0.8729	-3.2891
1968	0.987567	1252	1328	0.044575	1.2506	7.0813	1.259	6.9213
1969	1.398263	1253	1005	0.040824	1.1078	3.2711	1.1424	3.6011
1970	0.501117	1252	1691	0.04122	1.1603	4.8612	1.1474	3.2811

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1971	1.377478	1236	1058	0.038827	1.2782	7.9313	1.3317	6.6813
1972	-0.08283	662	384	0.082311	0.9936	-0.259	0.9717	-0.859
1973	-0.8743	665	473	0.090183	0.9806	-0.459	0.957	-0.789
1974	-0.18757	664	373	0.08263	1.0908	3.4311	1.1133	3.2611
1975	-1.08113	659	477	0.094616	0.9911	-0.169	0.9427	-0.9091
1976	-0.8248	652	433	0.09053	1.096	2.2811	1.0928	1.7211
1977	-1.06942	649	492	0.095458	0.9358	-1.3191	0.9034	-1.5491
2036	0.708141	536	436	0.055287	1.0879	2.1611	1.1999	3.4512
2041	0.259453	528	493	0.064658	1.0926	1.9211	1.0956	1.9211
2044	0.199095	527	575	0.065602	0.9622	-0.779	0.9521	-0.969
2045	0.145204	528	587	0.056509	1.132	3.1111	1.1538	2.9612
2053	0.845397	523	348	0.057888	1.0064	0.161	1.1082	1.8511
2057	0.053298	525	586	0.058454	1.102	2.3011	1.1198	2.3111
2061	0.675915	516	385	0.0569	0.9575	-1.059	0.9433	-1.0991
2064	0.415944	510	484	0.06655	0.9985	-0.009	0.9925	-0.129
2086	-0.10268	1258	957	0.068255	0.9961	-0.099	0.9605	-0.849
2087	0.703581	1256	775	0.060025	0.8837	-6.7191	0.8518	-6.5691
2088	0.564002	1254	824	0.060907	0.9983	-0.079	0.9877	-0.449
2089	0.728578	1257	732	0.059879	0.9439	-3.2291	0.9185	-3.5891
2090	0.525538	1248	1672	0.042307	0.926	-2.3691	0.9013	-2.8691
2091	0.398719	1252	1910	0.039301	0.9381	-1.8391	0.8761	-2.5391
2092	1.157795	1228	1266	0.042317	1.2398	7.2112	1.2406	7.0912
2094	1.161219	1229	686	0.059548	1.0184	1.191	1.017	0.911
2095	-0.07422	1229	947	0.068874	0.9177	-2.4291	0.8687	-2.9491
2096	0.38727	1226	815	0.063146	0.9463	-2.2991	0.9076	-2.9691
2097	0.761383	1227	1554	0.037385	1.1079	3.6711	1.0976	2.5111
2127	-0.07981	233	96	0.135986	1.0603	1.8911	1.0779	1.7311
2128	-0.45742	236	138	0.138572	1.076	1.6911	1.1371	2.5011
2129	0.685337	224	144	0.091996	1.0016	0.051	0.9801	-0.159
2130	0.09455	231	216	0.085036	1.1137	1.9211	1.0983	1.3411
2131	0.293319	228	209	0.093623	0.9981	-0.009	0.9712	-0.359
2132	0.719945	231	247	0.096835	1.4659	5.5615	1.5047	4.9915
2167	-0.55333	88	163	0.119081	0.9327	-0.5091	0.9521	-0.299
2168	0.439763	75	32	0.244038	1.0908	1.2911	1.1552	1.6312
2169	0.000177	77	45	0.237933	0.9539	-0.729	0.9674	-0.409
2170	-0.36898	79	52	0.238989	1.1341	1.7411	1.1802	1.9412
2171	0.538221	75	54	0.148093	0.9315	-0.5591	0.9715	-0.109
2172	-0.03523	76	72	0.149218	0.9938	-0.019	0.9753	-0.169
2191	0.565141	316	408	0.074728	1.1071	1.7911	1.0942	1.2411
2192	0.540042	318	369	0.074776	1.2679	4.2013	1.3797	4.4714

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2193	0.37449	318	429	0.084698	0.9814	-0.269	0.9853	-0.189
2194	0.695315	318	412	0.06903	0.7801	-4.4092	0.72	-3.9793
2195	0.153488	317	425	0.090621	1.0754	1.1011	1.0314	0.451
2196	0.95296	318	339	0.07005	1.0053	0.121	0.9938	-0.079
2198	0.651353	292	384	0.07655	0.9086	-1.5791	0.8512	-2.0691
2199	0.683517	292	353	0.076398	1.1671	2.7412	1.1561	2.0712
2200	1.364143	292	276	0.081508	1.2058	3.2712	1.2025	3.1112
2202	1.077459	293	310	0.073978	1.0343	0.661	1.0404	0.691
2210	-0.32088	151	184	0.115526	1.2387	2.2912	1.2011	1.5912
2211	0.365885	153	134	0.100582	1.0602	0.8611	1.0248	0.281
2212	-0.04836	153	191	0.115156	0.7788	-2.7592	0.7759	-2.5292
2213	0.693149	152	137	0.107235	1.0681	0.8711	1.0653	0.6411
2214	0.018128	150	191	0.108879	1.0558	0.7011	1.0307	0.341
2215	0.086658	153	182	0.111211	0.8212	-2.3092	0.832	-1.8992
2216	0.305696	152	175	0.127841	1.2325	2.3112	1.2301	2.2812
2217	-0.04994	148	184	0.108286	1.1302	1.5111	1.1267	1.1511
2233	0.706528	1222	1660	0.037773	1.108	3.5911	1.1162	2.8611
2276	-0.48157	231	140	0.140586	1.0204	0.451	1.003	0.071
2277	0.20443	236	179	0.077805	0.8595	-2.8291	0.8506	-1.6191
2371	0.635585	1104	705	0.064812	0.9261	-3.5791	0.8882	-4.1191
2372	0.292688	1101	781	0.068354	1.0361	1.251	1.0511	1.3311
2373	0.717613	1103	685	0.064263	1.0295	1.491	1.022	0.851
2374	1.292171	1103	1069	0.038891	1.0905	3.1111	1.1112	3.3111
2375	1.443439	1102	979	0.040505	1.0946	3.0711	1.1063	3.1511
2377	1.340479	1097	1051	0.044535	1.2456	7.0212	1.2567	7.1913
2378	-0.75524	1319	1090	0.075649	0.9392	-1.3491	0.7768	-3.0392
2379	-0.27212	1317	993	0.067264	0.8675	-4.2191	0.7193	-5.2793
2380	-0.91625	1309	1110	0.079797	0.8976	-2.0691	0.6979	-3.8393
2381	-0.10833	1316	955	0.065169	0.927	-2.5391	0.8178	-3.6492
2382	0.476899	1312	803	0.060395	1.0721	3.4411	1.0593	1.6211
2383	-0.25504	1308	984	0.06732	0.8776	-3.8991	0.742	-4.8293
2384	0.004814	1306	1872	0.044547	0.978	-0.619	1.0538	1.1111
2385	-0.51623	678	1383	0.043157	0.8481	-3.1192	0.8424	-2.5892
2386	0.346204	657	297	0.082402	1.2017	8.1612	1.238	6.7612
2387	-0.099	651	363	0.082963	1.0676	2.7111	1.0828	2.5511
2388	-0.80694	646	457	0.090549	0.9603	-0.979	0.9331	-1.2991
2389	0.150587	634	322	0.083146	1.0281	1.261	1.02	0.681
2390	0.983085	1173	1240	0.046401	1.1691	4.6912	1.1713	4.5312
2391	0.892173	1172	1313	0.038574	0.9671	-1.109	0.9696	-0.639
2392	0.563648	1173	1508	0.041108	1.3661	9.9014	1.4637	8.5015

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2393	0.9408	1171	1279	0.038678	1.0644	2.1311	1.0692	1.5111
2394	0.633154	1164	1412	0.045049	1.0316	0.951	1.0301	0.781
2395	0.319248	1161	1651	0.042288	1.1641	4.4912	1.2012	3.1612
2438	0.51248	1049	706	0.067867	1.0274	1.101	1.0206	0.631
2439	0.968467	1048	601	0.064729	0.9597	-2.389	0.9418	-2.7091
2440	1.298713	1050	522	0.064133	1.0588	3.6511	1.064	3.3811
2441	0.837945	1049	1264	0.046285	1.0677	1.9611	1.0755	2.0911
2442	1.212076	1048	542	0.064191	1.0276	1.751	1.0276	1.461
2444	-0.24199	537	344	0.093171	0.9854	-0.439	0.9839	-0.399
2445	0.18961	532	291	0.090017	1.0272	1.251	1.045	1.511
*2446	0	1	0	0	1	0	1	0
2447	-0.50436	531	370	0.097767	1.0134	0.331	1.0095	0.211
2448	0.233786	529	283	0.090168	1.0538	2.4711	1.0538	1.8211
2450	-0.1	556	1090	0.044295	0.9727	-0.509	0.9752	-0.369
2451	-0.12527	1284	2162	0.046311	0.9259	-1.4691	0.7602	-3.2092
2452	0.338434	1286	1915	0.038351	0.8079	-5.7892	0.6679	-6.2793
2453	-0.11414	1284	2153	0.046061	0.8935	-2.1691	0.7432	-3.5293
2454	-0.02167	1287	1965	0.045813	0.8772	-3.3091	0.8187	-4.1592
2455	0.347241	1282	1891	0.038603	0.7728	-7.0292	0.6517	-7.0293
2457	-0.31388	157	324	0.086977	0.7874	-2.1792	0.8306	-1.2992
2458	-0.06115	154	188	0.109762	1.0418	0.521	1.0109	0.141
2465	0.285137	151	158	0.10253	0.9548	-0.609	0.967	-0.319
2472	0.496827	152	138	0.102258	1.0331	0.481	1.1471	1.5111
2473	0.113597	147	172	0.103864	1.1735	2.1912	1.2579	2.3713
2504	0.214791	344	479	0.081474	0.8612	-2.2291	0.8383	-2.2792
2505	0.795329	345	389	0.070928	1.3402	5.8513	1.3889	5.7214
2506	0.624623	345	409	0.079124	1.0964	1.6211	1.1349	2.1411
2507	0.695043	344	414	0.068617	0.8938	-2.0591	0.8978	-1.5091
2508	0.592441	341	427	0.072227	1.1428	2.4611	1.1928	2.6512
2509	0.625856	345	428	0.069627	0.9504	-0.909	0.9	-1.4391
2510	0.946147	299	326	0.08086	1.0787	1.3411	1.0901	1.4711
2511	1.070183	299	308	0.074197	1.0269	0.521	1.0219	0.391
2512	0.411473	298	429	0.07879	0.9963	-0.029	0.9319	-0.7091
2513	0.895267	295	334	0.077195	0.927	-1.3291	0.9139	-1.4291
2514	0.29191	299	414	0.089444	1.0041	0.081	1.003	0.071
2515	0.716926	296	370	0.075785	1.0286	0.521	1.1014	1.4411
2640	-0.24065	263	447	0.062135	0.9836	-0.229	0.9807	-0.229
2641	-0.45601	240	146	0.137442	1.0319	0.741	1.036	0.711
2642	-0.0742	233	122	0.135749	1.0114	0.381	0.999	-0.009
2643	-0.24317	236	132	0.135899	0.9989	-0.019	1.019	0.431

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2644	0.220376	235	106	0.135552	1.0221	0.741	1.0018	0.051
2645	-0.27856	232	131	0.137993	0.9932	-0.169	0.9903	-0.179
2646	0.577052	547	477	0.053179	1.0539	1.4411	1.0607	1.1411
2647	-0.24964	545	717	0.062862	0.9573	-0.869	0.9441	-1.0491
2648	0.212992	531	589	0.055756	0.9343	-1.6791	0.92	-1.6191
2649	-0.1403	541	680	0.062884	0.9847	-0.309	0.9805	-0.369
2650	-0.13709	540	704	0.05853	0.9683	-0.669	0.9383	-1.0991
2651	-0.04044	529	675	0.056743	1.0278	0.631	1.0393	0.701

*Item 2446 In Math 6-8 was excluded from calibration, AM, and scoring data set

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Exhibit D-14: Science Field-Test WINSTEPS Item Statistics

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
699	0.5367	770	1131	0.052424	0.8558	-3.5791	0.7472	-4.2893
700	0.6893	770	1095	0.049581	1.0515	1.2711	0.9484	-0.7591
702	0.133333	770	1931	0.04553	1.095	1.5711	1.1057	1.0211
703	1.493833	770	985	0.041635	1.6513	9.9017	1.7128	9.9017
745	-0.4167	844	1403	0.06124	1.0562	0.8811	1.083	0.8211
748	0.5545	841	542	0.074508	0.8697	-5.5191	0.8411	-4.8392
749	0.544	839	1113	0.045241	0.8388	-4.5992	0.7333	-4.6193
751	0.3226	838	597	0.076457	0.9466	-1.9291	0.9127	-2.1591
755	0.0839	833	1373	0.055434	0.8573	-3.0491	0.6907	-4.3993
756	-0.0146	831	1376	0.057099	0.9045	-1.8591	0.741	-3.2893
758	0.6029	832	1081	0.048596	0.913	-2.2791	0.8496	-2.4992
760	0.0662	829	1343	0.054832	0.9292	-1.3691	0.8094	-2.0292
766	0.8483	830	996	0.048752	1.1148	2.9411	1.1432	2.7411
787	-1.5506	230	502	0.098582	1.7269	5.2717	1.5692	3.6716
789	-0.4591	209	120	0.147869	1.0922	1.9611	1.1347	2.2311
790	-0.4363	203	123	0.148532	0.9878	-0.269	0.9803	-0.349
791	0.3693	208	94	0.146357	1.0286	0.731	1.067	1.0911
793	-0.2989	201	128	0.148682	0.9351	-1.6491	0.9183	-1.6591
794	0.0268	201	107	0.147482	1.0365	1.061	1.043	0.881
803	1.0433	704	324	0.079607	1.0652	2.7111	1.0651	2.1911
804	-0.6741	703	582	0.10775	1.1458	2.0211	1.155	1.5412
806	0.1555	704	484	0.087327	1.1403	3.5211	1.1387	2.4111
807	0.7291	699	335	0.081177	1.3359	9.9013	1.4665	9.9015
894	-1.00231	292	624	0.071998	1.2356	2.6612	1.2812	2.5613
895	-0.55867	266	172	0.132719	0.9242	-1.6491	0.8944	-1.8391
896	-0.0854	271	132	0.126271	1.0433	1.411	1.088	2.0511
898	0.087432	272	272	0.088521	0.9707	-0.439	0.9603	-0.579

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
911	-0.3608	832	1437	0.065115	0.9935	-0.069	1.0204	0.211
940	0.1705	703	991	0.056595	1.0951	1.7811	0.9609	-0.419
941	0.5579	704	1519	0.0423	0.9648	-0.729	0.9583	-0.679
942	0.366467	703	1525	0.041678	0.9771	-0.429	0.8546	-1.6491
943	0.2699	701	978	0.055266	1.005	0.121	1.0915	1.1311
957	-0.92789	969	792	0.094198	1.138	2.2311	1.1521	1.4512
958	0.07766	961	669	0.075487	0.8162	-6.0592	0.6981	-6.0693
959	0.330649	965	1281	0.045908	0.8414	-4.2792	0.6847	-4.7693
960	-0.10445	950	1484	0.052935	0.9601	-0.849	0.8144	-2.5392
963	0.001526	964	1496	0.04954	0.9101	-2.0191	0.733	-3.2293
977	0.0315	703	1127	0.060411	1.1106	1.9611	1.1325	1.5911
1009	-0.18937	836	2023	0.050222	1.8896	9.4919	2.9405	9.9029
1010	-0.1184	838	1454	0.05829	0.7276	-5.1493	0.6147	-4.2394
1011	0.9035	838	1557	0.037812	1.0858	1.9811	1.0663	1.2211
1013	-0.059	837	1414	0.058027	0.6912	-6.7093	0.6027	-5.8794
1023	-0.80885	267	168	0.138171	1.0121	0.221	0.9499	-0.6691
1262	0.425914	807	505	0.077221	0.869	-4.9891	0.8138	-5.0092
1263	0.100879	805	578	0.081001	0.828	-5.3392	0.7394	-5.5993
1264	-0.04901	802	602	0.083441	0.9922	-0.189	0.9697	-0.519
1265	1.025826	801	355	0.074828	1.1541	6.4512	1.1901	6.4512
1266	0.146744	807	390	0.080256	1.6587	9.9017	1.9224	9.9019
1267	-0.0421	802	632	0.083328	0.7971	-5.7292	0.6979	-5.9293
1399	0.250164	443	282	0.098577	1.13	5.3911	1.1732	5.2712
1400	0.490774	459	203	0.097431	1.0023	0.101	1.006	0.191
1401	0.022692	452	234	0.098439	1.0164	0.651	1.0096	0.281
1402	0.200318	452	272	0.097747	1.0294	1.251	1.033	1.031
1403	-0.3112	450	299	0.101938	0.9455	-1.5991	0.9059	-2.0491
1404	0.051176	448	235	0.098896	0.9964	-0.129	0.9703	-0.829
1405	-0.22422	440	286	0.102024	0.9809	-0.589	0.9922	-0.159
1417	-0.04822	391	189	0.107102	1.151	4.6912	1.165	3.7412
1418	-0.46177	390	292	0.112812	0.9079	-2.1291	0.8904	-1.9291
1420	-0.10649	391	212	0.107784	1.075	2.2811	1.0596	1.3411
1421	0.323591	390	168	0.105903	1.0491	1.831	1.0378	0.971
1422	-0.08193	389	264	0.108002	0.9978	-0.059	0.9981	-0.029
1423	-0.32378	393	273	0.109895	0.9284	-1.8791	0.9049	-1.8891
1658	-0.11799	454	507	0.069652	0.9472	-1.0291	0.9207	-1.4691
1659	-0.03725	452	566	0.06251	1.0092	0.221	0.9683	-0.529
1660	-0.37021	455	586	0.071198	0.9007	-1.8891	0.8734	-2.2091
1661	0.297603	455	389	0.059058	1.1017	2.4111	1.097	1.7311
1662	0.127829	443	561	0.060497	0.9899	-0.219	1.0011	0.041

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1663	-0.4021	456	603	0.070385	0.8642	-2.5991	0.8262	-2.9692
1665	-0.25686	855	1442	0.056685	0.8189	-3.4292	0.6267	-4.6794
1666	-0.3405	852	1365	0.059637	0.8146	-3.8592	0.6857	-5.2793
1668	0.320743	855	1167	0.052283	1.1985	4.6912	1.184	3.7412
1669	0.016404	853	632	0.079202	1.015	0.451	0.9966	-0.049
1670	0.325322	617	959	0.060257	0.9473	-0.9891	0.8615	-1.8091
1672	1.054259	614	667	0.054246	1.0054	0.141	1.0274	0.561
1673	0.21249	617	885	0.064862	0.9643	-0.669	0.9056	-1.4891
1675	0.077936	616	996	0.066159	0.9731	-0.439	1.0029	0.061
1676	-0.44392	849	1473	0.065137	0.7715	-4.2992	0.6035	-5.7594
1677	-0.18314	848	1306	0.059183	1.4419	6.3814	1.335	2.7413
1678	0.329947	848	1243	0.050738	0.9229	-1.8391	0.7567	-3.6492
1679	0.267311	847	1110	0.055963	1.1665	3.7112	1.1185	2.2311
1680	0.531874	849	874	0.055651	1.5212	9.9015	1.5454	9.9015
1681	0.660469	849	1024	0.047936	0.8954	-2.8291	0.824	-3.1692
1682	0.119475	743	1120	0.060469	0.8822	-2.3391	0.7798	-3.1392
1683	0.263561	744	1077	0.05665	1.0613	1.2211	1.0462	0.571
1685	1.247061	742	775	0.060087	1.3628	7.3914	1.353	7.1214
1686	1.166011	742	838	0.050411	0.9275	-1.8891	0.9168	-1.7291
1694	0.264301	749	1130	0.062928	1.1191	2.5211	1.0594	1.1811
1695	0.004257	748	1164	0.063976	0.9078	-1.9091	0.8247	-3.0392
1696	0.437309	749	1170	0.051374	0.7522	-5.8692	0.5726	-4.7694
1697	0.752479	749	969	0.050689	0.9565	-1.079	0.9972	-0.019
1698	1.037044	745	818	0.050829	1.2546	6.0313	1.3056	5.5813
1699	0.630057	744	1039	0.055088	0.9469	-1.2591	0.919	-1.5191
1828	0.235552	854	1226	0.051636	0.6552	-9.6993	0.6036	-8.9094
1829	1.050845	857	888	0.04577	0.9549	-1.239	0.9481	-1.1891
1985	-0.42145	223	427	0.071595	0.8565	-1.9491	0.8514	-1.7391
1986	0.143025	209	103	0.144893	1.0052	0.161	1.0177	0.331
1987	-0.35776	206	125	0.148003	0.9957	-0.089	1.0159	0.311
1988	0.153781	212	109	0.143855	1.0031	0.101	1.0011	0.041
1989	-0.96429	207	124	0.159793	1.1695	2.2512	1.1715	1.9012
1990	-0.52969	209	131	0.148683	0.9514	-0.989	0.9673	-0.519
1991	-0.72157	206	129	0.153231	1.0581	1.0011	1.0503	0.7311
1992	0.839195	197	73	0.158621	1.1	1.6011	1.1863	1.9712
1999	-0.45202	373	221	0.114945	1.0473	1.061	0.9845	-0.239
2000	0.04565	383	205	0.107973	0.9679	-1.069	0.9501	-1.179
2001	-0.23036	372	186	0.111928	1.0977	2.5511	1.0801	1.5911
2002	0.183762	371	210	0.108679	1.051	1.8211	1.0363	0.931
2003	0.039242	369	200	0.109659	0.9892	-0.349	0.9726	-0.659

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2004	1.067288	372	179	0.114202	1.1995	4.3712	1.2057	3.2812
2005	0.380482	362	204	0.109553	1.0338	1.251	1.0579	1.5411
2006	-0.22433	381	538	0.069939	1.033	0.601	1.0554	0.7511
2007	0.107335	379	406	0.082739	1.131	2.0611	1.121	1.8911
2008	-0.2716	376	518	0.070361	0.959	-0.689	0.9696	-0.359
2009	0.286825	376	395	0.075706	1.0509	0.9311	1.0442	0.771
2010	0.355919	385	373	0.076443	1.1222	2.1211	1.1262	2.0711
2012	0.191311	368	421	0.076342	1.0905	1.6011	1.118	1.9711
2226	0.269649	272	246	0.075228	1.1143	2.1211	1.1661	2.0612
2227	-0.14416	270	298	0.080871	1.0923	1.5711	1.1125	1.6411
2228	-0.26073	269	318	0.087503	0.9156	-1.3391	0.9015	-1.4791
2229	-0.18059	271	284	0.08933	0.9779	-0.319	0.9792	-0.289
2230	0.467361	267	196	0.078848	1.0981	1.6511	1.1361	1.8411
2231	-0.17676	273	306	0.075479	0.959	-0.749	0.9224	-1.0491
2234	0.165242	995	1403	0.047372	0.8173	-5.2192	0.7709	-5.0192
2235	-0.23346	998	1551	0.049089	0.9064	-2.0591	0.786	-2.6492
2236	0.508964	986	1233	0.042732	0.888	-3.3591	0.8007	-3.9692
2237	0.287275	992	1233	0.042637	0.8605	-4.0791	0.7493	-3.9693
2239	0.449894	985	1238	0.049552	1.0401	1.091	1.0253	0.651
2268	0.023049	463	642	0.057802	0.9769	-0.539	0.9792	-0.309
2269	0.319005	464	506	0.058482	1.0908	2.1711	1.087	1.5611
2272	-0.77146	463	298	0.108455	1.1586	2.9812	1.0851	1.2611
2273	0.029084	459	593	0.058924	0.9318	-1.6291	0.9806	-0.299
2274	0.501151	459	440	0.06209	0.9615	-0.859	0.9528	-0.919
2275	0.196417	462	595	0.060391	0.9929	-0.149	0.9724	-0.509
2280	-0.2434	460	288	0.100138	0.962	-1.179	0.9131	-1.9991
2281	-0.57041	458	319	0.105243	0.9853	-0.319	0.9915	-0.129
2282	0.385151	458	222	0.097317	0.993	-0.279	0.994	-0.169
2283	-1.10025	460	362	0.117804	0.9333	-0.9991	0.8535	-1.7591
2284	-0.60245	456	320	0.105982	1.0054	0.131	1.0393	0.671
2285	-0.6324	456	323	0.106667	0.9514	-1.049	0.9212	-1.2991
2292	0.82237	727	865	0.04934	1.5574	9.9016	1.7227	9.9017
2293	0.306706	729	996	0.059181	0.964	-0.799	0.9935	-0.109
2294	0.729245	731	436	0.07927	1.283	9.9013	1.3952	9.9014
2295	1.359155	729	333	0.078513	1.0633	2.5511	1.0692	2.3811
2296	1.211423	729	357	0.078213	0.9239	-3.3191	0.9062	-3.4791
2297	1.376489	725	660	0.05686	1.2761	6.0813	1.2855	6.1713
2298	0.140714	917	620	0.074232	1.0778	2.6511	1.1431	3.1411
2299	-0.32107	917	698	0.080689	1.0328	0.831	1.0468	0.771
2300	0.816553	918	489	0.070301	0.9483	-2.3791	0.938	-2.2491

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2301	0.157719	915	616	0.074159	1.0692	2.3811	1.1028	2.3111
2302	0.50527	911	549	0.07161	0.8643	-6.0091	0.8131	-5.9392
2303	-0.31574	912	694	0.080894	1.0006	0.031	0.9758	-0.379
2304	1.510615	794	696	0.050156	1.3139	7.2313	1.4087	7.8614
2305	0.918986	790	922	0.052389	1.078	1.9511	1.0813	1.7511
2306	0.304355	790	1192	0.052991	1.1661	3.4312	1.1763	2.0312
2307	0.842966	787	962	0.049825	1.5264	9.9015	1.7366	9.9017
2308	0.911329	786	945	0.047625	0.852	-4.0591	0.843	-2.7892
2309	0.508227	787	1120	0.050003	1.3519	7.5814	1.7821	8.1418
2310	1.547715	784	346	0.076986	1.143	5.2611	1.1757	5.0812
2329	0.215499	881	1239	0.054461	1.1983	4.4412	1.3688	6.3014
2330	0.138543	883	629	0.078556	0.9573	-1.269	0.9478	-0.9091
2331	0.465747	882	1223	0.046732	0.7796	-6.0492	0.689	-4.5693
2332	-0.1264	879	668	0.08288	1.0262	0.651	1.0055	0.101
2333	-0.15636	875	1368	0.058324	0.7826	-4.7992	0.6638	-5.5893
2334	0.261464	388	199	0.106155	1.0437	1.631	1.0912	2.2511
2335	0.099715	390	214	0.106364	0.9915	-0.289	0.9967	-0.069
2336	-0.77331	392	285	0.118588	0.974	-0.449	0.9778	-0.279
2337	-0.04142	388	225	0.107694	0.9978	-0.059	1.0029	0.081
2338	-0.47316	383	258	0.113972	1.0206	0.471	1.0877	1.4511
2339	-0.30093	387	246	0.110611	0.9852	-0.369	0.9674	-0.629
2523	0.350456	882	1266	0.048376	0.8058	-5.0492	0.746	-3.6293

Exhibit D-15: Biology Field-Test WINSTEPS Item Statistics

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1434	0.270839	181	122	0.173137	1.0151	0.231	0.912	-0.7091
1447	1.063472	181	77	0.159246	1.0747	1.4811	1.1349	1.8511
1448	0.270839	181	119	0.173137	1.114	1.5011	1.1796	1.4412
1449	0.557433	181	112	0.165819	1.1652	2.5712	1.2541	2.4113
1450	0.761687	181	103	0.162234	1.0628	1.1411	1.0358	0.441
1458	0.274028	285	334	0.085953	1.0819	1.2711	1.0945	1.2811
1459	0.847458	283	158	0.129022	1.2826	5.6913	1.336	5.3013
1460	-1.01616	289	213	0.148855	1.0608	0.7811	0.9319	-0.5091
1461	0.448959	281	162	0.127254	1.1274	3.1311	1.1245	2.2611
1462	0.454774	280	132	0.127295	1.0951	2.3711	1.2009	3.6512
1463	-0.37737	284	181	0.1333	1.1221	2.3311	1.2749	3.0713
1470	-0.11846	201	162	0.174523	0.8245	-2.1092	0.7873	-1.5492
1472	0.430164	201	288	0.102643	0.9998	0.031	0.9867	-0.059
1473	0.645298	201	276	0.105697	1.065	0.8211	0.996	-0.009
1474	0.891901	201	122	0.151785	1.1056	2.1311	1.2454	3.2112

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1497	0.195456	375	482	0.071625	0.801	-3.6592	0.7817	-2.2792
1498	-0.29062	251	192	0.156276	0.9454	-0.6891	0.8408	-1.2392
1499	-0.37523	374	255	0.121985	1.0816	1.5211	1.0628	0.6711
1500	0.633642	250	146	0.13675	0.8604	-3.3391	0.8079	-2.9392
1501	0.59481	374	201	0.112434	1.2259	5.5012	1.2765	4.5713
1502	-0.07209	251	183	0.14929	1.0618	0.9311	1.0612	0.5711
1503	0.047086	376	238	0.115084	1.0162	0.401	0.9378	-0.8391
1504	-0.02587	378	510	0.079699	1.0668	1.0911	1.1381	1.6911
1505	0.221037	250	182	0.142618	0.8679	-2.5391	0.8004	-2.2892
1506	0.694714	250	141	0.136272	0.9643	-0.829	0.9346	-0.9791
1507	0.156786	250	187	0.143953	0.8066	-3.6492	0.7079	-3.3293
1508	0.178661	249	180	0.143808	0.8539	-2.7391	0.7774	-2.4892
1515	0.054134	290	169	0.133586	1.0989	1.8511	1.0697	0.7811
1516	-0.2228	286	208	0.141027	1.0574	0.9011	1.106	0.9611
1517	0.638208	290	168	0.126899	1.0022	0.071	0.9773	-0.349
1518	-0.17647	289	204	0.138903	1.1177	1.8811	1.2926	2.5513
1519	0.070172	288	165	0.133784	1.1904	3.4712	1.1514	1.6312
1520	0.269698	286	174	0.131126	0.9638	-0.769	0.895	-1.3491
1521	-1.07491	283	226	0.15343	0.9904	-0.089	0.8999	-0.7291
1523	0.083208	289	172	0.126367	0.8858	-2.9991	0.8371	-2.8792
1524	1.00915	290	100	0.129845	0.9892	-0.199	0.9825	-0.259
1525	-0.16119	288	161	0.128925	1.0339	0.781	0.9882	-0.139
1526	-0.49689	290	223	0.13408	0.9193	-1.5091	0.8499	-1.7492
1534	-0.40068	290	190	0.132224	1.0135	0.281	1.0256	0.331
1535	0.434906	288	156	0.125515	1.0929	2.3511	1.1184	2.2411
1536	-0.4204	289	200	0.132872	0.8797	-2.3991	0.841	-1.9592
1537	-0.37062	289	183	0.131804	1.09	1.7711	1.0578	0.7311
1538	-0.28442	284	180	0.131347	1.1169	2.4111	1.0869	1.1311
1588	-0.73538	235	564	0.076361	0.845	-1.5892	1.1953	1.1212
1589	-0.70466	225	147	0.15253	1.0325	0.531	1.0174	0.201
1590	-0.5133	229	167	0.146478	0.9018	-1.8791	0.8336	-2.0292
1591	-0.17656	224	128	0.143237	0.9305	-1.6191	0.9868	-0.169
1592	-0.70083	224	149	0.152791	1.0697	1.0911	1.0503	0.5311
1593	0.127655	222	117	0.141835	0.8964	-2.6891	0.8553	-2.5991
2013	0.169672	202	303	0.113679	0.7503	-2.9892	0.7455	-2.2993
2014	0.735281	202	279	0.097163	0.9863	-0.159	0.9103	-0.7791
2015	0.530955	202	281	0.107567	1.0066	0.111	1.1026	1.0311
2016	-0.0609	202	344	0.115792	0.8402	-1.4392	1.1242	0.6411
2017	0.42444	202	309	0.100643	0.8384	-2.0192	0.8519	-1.0191
2025	0.602598	202	287	0.099039	1.0084	0.131	1.0183	0.191

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2026	0.632011	200	255	0.10424	0.8579	-1.8491	0.788	-2.2092
2027	-0.65977	231	156	0.149061	0.899	-1.7291	0.8066	-2.1492
2028	-1.21697	229	180	0.168636	1.0427	0.481	0.9619	-0.229
2029	0.272489	226	104	0.140431	0.9099	-2.3091	0.9326	-1.2491
2030	0.526148	229	113	0.141042	1.1049	2.2811	1.1093	1.8611
2031	-0.58354	225	162	0.149555	0.9888	-0.179	0.9349	-0.6891
2032	-0.1208	229	120	0.141041	0.9332	-1.6191	0.9092	-1.4191
2033	0.04558	222	108	0.141983	1.0099	0.261	1.0379	0.651
2034	-0.51391	226	145	0.147632	1.1678	2.9512	1.2262	2.4512
2139	0.733035	236	280	0.085352	1.0727	1.0811	1.2475	2.0112
2141	0.282557	234	334	0.099073	0.9462	-0.6791	0.9309	-0.6091
2142	0.101794	235	325	0.097038	1.3531	3.6714	1.4931	2.5515
2143	0.423444	235	288	0.098583	1.2957	3.6313	1.2827	2.7613
2144	0.450586	235	316	0.091581	1.0564	0.7911	0.9948	0.001
2145	0.903597	235	274	0.093543	1.1235	1.7211	1.1224	1.4511
2218	0.458603	235	283	0.099799	1.0999	1.3111	1.1484	1.5911
2341	-0.68256	284	207	0.139909	0.8925	-1.7591	0.7771	-2.3292
2342	-0.49529	285	198	0.135311	0.9575	-0.769	1.0371	0.441
2343	0.004328	285	168	0.127868	1.03	0.741	1.0047	0.101
2344	-1.04836	283	224	0.151789	1.0376	0.481	0.9715	-0.179
2345	-0.05672	281	170	0.129412	0.9602	-0.939	0.9074	-1.4191
2346	-0.58068	302	794	0.081412	0.7839	-1.9292	0.6624	-1.4193
2347	-0.92734	301	251	0.160676	0.9728	-0.249	0.8122	-1.1692
2349	0.888369	300	150	0.124562	0.9417	-1.4091	0.9438	-0.9991
2350	0.387901	300	182	0.126461	0.9221	-1.8391	0.8717	-1.8791
2351	-0.32715	302	224	0.138701	1.0859	1.3211	1.028	0.281
2358	1.178973	225	111	0.142485	1.2225	4.5812	1.2338	3.7112
2359	0.179434	226	159	0.152706	1.003	0.071	0.9862	-0.099
2360	0.271371	226	155	0.150556	0.8869	-1.9991	0.8082	-2.0592
2361	0.534391	224	142	0.146509	0.897	-2.1291	0.8676	-1.6691
2362	0.115032	225	161	0.154731	0.9833	-0.239	0.9089	-0.8191
2363	-0.05794	225	168	0.159868	0.9948	-0.049	0.9394	-0.4591
2364	1.241956	222	107	0.143602	1.0841	1.7811	1.0794	1.3311
2524	-0.71497	293	714	0.073246	0.781	-2.3792	0.6935	-1.9693

Exhibit D-16: Social Studies Field-Test WINSTEPS Item Statistics

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1055	-3.2422	776	765	0.323756	1.1368	0.5211	1.873	2.0019
1056	0.5403	776	1041	0.051368	1.0147	0.361	0.9467	-0.6791
1057	1.3761	774	855	0.052688	1.2884	6.7113	1.2896	5.9813

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1058	1.0821	774	927	0.050693	1.1592	4.0012	1.1549	2.9912
1059	-0.5209	282	392	0.085786	1.0137	0.201	1.0219	0.241
1067	0.0269	280	268	0.077281	1.1748	2.8412	1.1889	2.3812
1068	0.0939	287	317	0.087764	0.9791	-0.309	0.9679	-0.459
1070	-0.3782	280	375	0.091929	0.9693	-0.419	0.9255	-1.0091
1077	-0.1341	282	329	0.077876	1.0396	0.641	0.9908	-0.079
1079	0.3668	280	324	0.083762	1.0446	0.751	1.057	0.8311
1080	0.1817	271	347	0.07754	1.0272	0.501	1.0295	0.401
1081	0.0454	283	285	0.073916	0.9486	-0.8891	0.9148	-0.9491
1091	0.7511	767	888	0.047387	0.7578	-7.0992	0.6978	-6.4393
1092	0.482	771	1004	0.054413	1.0811	1.9411	1.0852	1.8111
1093	0.8954	770	808	0.050452	1.1294	3.2911	1.1445	3.2311
1094	0.7822	771	863	0.055797	1.2789	6.2513	1.3176	6.8413
1106	-1.0608	156	285	0.09905	1.5621	4.3616	1.4453	3.0114
1107	-1.0028	145	91	0.18922	1.1024	1.2311	1.0754	0.7511
1114	-0.0569	146	80	0.174171	1.0896	1.8911	1.1068	1.4011
1115	-0.6038	143	82	0.180336	1.0426	0.721	1.027	0.361
1125	0.3414	363	285	0.06769	1.0686	1.3311	1.0954	1.3811
1126	-0.4259	372	490	0.067824	0.8916	-2.0391	0.9047	-1.1691
1127	-0.1416	367	379	0.064948	0.8541	-3.1991	0.7967	-3.1092
1128	-0.4095	363	421	0.068216	1.0075	0.161	0.9477	-0.6091
1129	-0.4742	365	452	0.075902	0.8745	-2.2491	0.8421	-2.4792
1131	-1.2075	217	387	0.082081	1.6573	5.7417	1.6473	4.8416
1133	-0.9	205	122	0.150908	1.1155	2.1311	1.106	1.6111
1134	-0.8666	201	127	0.152008	1.0527	1.0111	1.0466	0.731
1135	-0.6633	200	120	0.148747	1.0187	0.461	1.0202	0.401
1166	-0.3496	374	492	0.069489	0.7529	-5.1092	0.7405	-4.1393
1167	-0.4514	368	475	0.06811	0.906	-1.7291	0.9279	-0.8291
1168	-0.4045	370	423	0.065935	1.0726	1.3311	1.0048	0.081
1169	-0.2292	364	440	0.069239	0.8175	-3.7892	0.8189	-2.8892
1232	0.086903	367	441	0.068582	1.1353	2.6511	1.1389	2.2311
1233	-0.75072	357	465	0.082148	1.0508	0.8011	1.0298	0.431
1234	-0.60115	368	222	0.114102	1.0446	1.091	1.0252	0.461
1235	0.08565	954	688	0.076185	0.9433	-1.7291	0.8535	-2.4891
1236	-0.55745	365	235	0.11384	1.045	1.131	1.0725	1.3311
1237	0.300954	955	1349	0.04845	1.2468	5.7412	1.3343	4.5313
1238	0.18729	361	156	0.110196	1.0008	0.041	1.0327	0.851
1239	0.381073	954	1238	0.053624	1.2255	5.3112	1.2639	5.3713
1241	-0.17118	366	456	0.069101	0.9883	-0.219	0.9641	-0.539
1242	-0.07785	954	714	0.078468	0.8566	-4.0691	0.7294	-4.3693

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1243	0.010098	954	1487	0.050993	0.9479	-1.0891	0.8168	-2.0792
1244	1.545614	947	742	0.047614	1.2303	5.5612	1.3478	6.0713
1245	0.081668	354	390	0.079496	1.0133	0.251	1.0012	0.041
1246	0.420185	987	1281	0.043299	0.7817	-6.5692	0.6882	-6.1793
1247	-0.571	988	1689	0.054389	0.7263	-5.3293	0.5187	-5.3695
1248	-0.47077	983	1608	0.053723	0.7579	-5.5392	0.603	-6.5494
1249	0.820844	973	951	0.045202	1.1175	3.2011	1.1383	3.1311
1250	-0.40481	979	1556	0.052245	0.9969	-0.049	0.987	-0.139
1251	0.287296	978	1248	0.048987	1.1037	2.7111	1.1254	2.8611
1254	0.979977	878	1094	0.046557	1.1146	3.1411	1.1138	2.2011
1255	-0.64169	876	710	0.096443	1.206	3.1812	1.3079	2.7413
1256	0.221947	877	1357	0.051233	1.0204	0.471	1.0903	1.1211
1257	0.366109	879	1261	0.049524	0.9754	-0.589	0.8365	-2.3792
1258	0.164474	873	1328	0.055428	0.8371	-3.9592	0.8029	-3.5792
1260	-0.0212	873	1443	0.05523	1.0015	0.051	1.1622	1.5612
1848	0.306977	858	1127	0.047402	0.8666	-3.5791	0.8165	-3.1192
1849	-0.04368	860	1241	0.0564	1.0237	0.561	0.9832	-0.329
1850	-0.33761	860	1299	0.057064	1.5063	7.8815	1.5723	5.4516
1851	0.309197	859	1073	0.047575	1.1062	2.6611	1.2439	3.7412
1852	-0.19944	856	1283	0.054364	1.1588	2.9412	1.1802	1.9912
1853	-0.13847	858	1289	0.053572	1.2041	3.9612	1.2437	2.9412
1854	-0.05267	859	1260	0.054902	0.9701	-0.679	0.8873	-2.1491
1855	-0.38057	848	1362	0.058643	1.1103	1.7911	1.0828	0.8411
1856	0.600211	847	1014	0.045595	0.9569	-1.189	0.9139	-1.6291
1857	-0.20383	844	1352	0.055171	1.0657	1.2411	0.9716	-0.299
1858	1.333623	844	760	0.048643	1.1636	4.0412	1.2104	4.4612
1859	-0.05671	845	1274	0.053864	0.862	-3.1591	0.7761	-3.7092
1860	-0.42287	843	1448	0.060022	0.94	-0.9391	0.925	-0.6791
1861	-0.18464	845	1349	0.054814	0.9727	-0.519	0.8741	-1.5591
1862	0.467122	837	1098	0.045787	0.7984	-5.7692	0.7111	-5.0293
1863	-0.10741	285	378	0.07917	1.0608	0.9811	1.0596	0.7711
1864	-0.24077	278	294	0.092724	1.1332	1.8811	1.1527	2.0712
1866	0.473749	274	230	0.078071	1.0521	0.9411	1.0939	1.2511
1867	0.058774	276	301	0.091583	1.0085	0.151	1.002	0.051
1868	-0.09048	275	334	0.080918	1.0384	0.621	1.0929	1.1811
1869	0.176741	750	1041	0.061205	1.3169	5.8613	1.4231	5.5614
1870	1.056569	749	810	0.053129	1.2005	4.7912	1.2348	4.5212
1871	0.536436	750	1095	0.052882	1.133	2.9611	1.1456	1.8211
1872	0.868029	749	905	0.054249	1.0867	2.1011	1.156	2.9312
1873	0.949757	750	910	0.048606	0.9544	-1.229	0.9951	-0.049

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
1874	0.815222	749	889	0.054222	1.0981	2.3511	1.1832	3.3012
1875	0.818834	780	1005	0.050188	1.4042	9.5214	1.3911	8.0114
1876	0.813639	779	888	0.046633	0.9281	-1.9891	0.8959	-2.0891
1877	0.675497	781	936	0.046324	0.7309	-7.9793	0.6842	-6.0693
1878	0.741278	778	968	0.050445	1.0258	0.681	1.0136	0.321
1879	0.196252	780	1171	0.051566	0.9701	-0.659	0.8413	-2.2392
1880	0.743806	779	957	0.052632	1.0363	0.931	1.022	0.531
1881	0.566918	775	997	0.055491	1.087	2.0711	1.077	1.7311
1882	0.683102	863	551	0.074514	0.9461	-2.2291	0.9086	-2.0891
1883	-0.20302	866	1458	0.059818	1.0881	1.3311	0.9918	-0.019
1884	0.912294	865	1024	0.048976	0.9678	-0.879	0.9392	-1.2991
1885	0.711752	862	1099	0.045816	0.8362	-4.8492	0.7639	-3.7092
1886	0.373483	864	1271	0.049907	1.0678	1.6311	0.9708	-0.379
1887	0.267645	866	1234	0.056878	0.8881	-2.7391	0.8363	-3.4392
2173	0.985907	787	949	0.048217	0.9659	-0.929	0.9891	-0.169
2174	0.944376	787	1027	0.047957	0.8215	-5.1692	0.8792	-2.0491
2175	0.200108	787	1257	0.05478	0.9913	-0.149	0.8154	-1.6892
2176	0.127192	788	1296	0.05649	1.0304	0.561	0.9146	-0.7391
2177	0.132981	787	1224	0.05897	0.792	-4.5492	0.7003	-4.6593
2178	1.128166	783	906	0.049611	0.8839	-3.2091	0.8696	-2.6991
2185	-0.59239	151	253	0.087247	1.0575	0.6211	1.0046	0.081
2186	-0.77114	142	84	0.184446	1.0648	0.9411	1.0916	1.0511
2187	0.216434	138	67	0.179692	1.0997	1.9811	1.129	1.5811
2188	-0.71298	143	91	0.182366	1.0102	0.181	1.0233	0.311
2189	-0.49224	137	144	0.117046	1.1481	1.5811	1.1234	1.0811
2190	0.041791	136	138	0.140835	1.4916	4.0815	1.4712	3.8915
2203	0.664645	841	979	0.047515	0.8335	-4.8192	0.7842	-5.0492
2204	-0.40361	842	1436	0.059597	0.9227	-1.2391	0.7763	-2.2392
2205	0.390705	842	1124	0.045994	0.7357	-7.6493	0.6241	-6.3894
2206	0.593899	840	1034	0.046897	0.8788	-3.4391	0.8861	-2.3491
2209	-0.39021	838	1356	0.059391	1.2084	3.0512	1.0408	0.391
2242	0.171912	731	1053	0.054918	1.2075	4.0512	1.4923	5.6515
2243	1.379552	730	666	0.050444	1.1535	3.6912	1.1523	3.1612
2245	1.117514	730	752	0.048945	1.0804	2.0711	1.0849	1.8211
2246	1.017097	730	821	0.048743	1.0221	0.591	1.0107	0.241
2247	-0.13818	858	1306	0.059931	1.0575	1.1411	0.9351	-0.8991
2249	0.278165	857	1270	0.05214	1.284	6.0213	1.4047	5.0214
2250	0.733343	857	1068	0.046738	0.897	-2.9491	0.9852	-0.219
2251	1.011106	856	971	0.04978	1.0292	0.791	1.0183	0.421
2311	0.148719	358	175	0.11041	1.0353	1.231	1.03	0.801

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2312	-0.04127	367	195	0.109017	1.167	5.6712	1.2547	6.4713
2313	-0.01503	373	194	0.108398	1.1278	4.3111	1.1509	3.8712
2314	0.440664	361	152	0.111243	1.0964	2.8411	1.1041	2.5111
2315	0.462043	365	151	0.111039	1.0781	2.2711	1.0816	1.8511
2316	1.515861	912	630	0.048333	1.4022	8.9314	1.5216	9.1015
2318	1.000332	908	437	0.070868	0.9336	-2.9691	0.9207	-2.8891
2319	0.356051	912	565	0.072293	1.1705	6.4812	1.1947	5.0112
2320	0.799845	915	479	0.070561	0.9779	-0.989	0.9801	-0.689
2321	0.888826	911	918	0.049356	1.3474	8.5313	1.3805	8.7814
2322	0.710723	915	1007	0.045264	1.0854	2.3611	1.091	2.0011
2328	0.82176	797	874	0.053729	1.2465	5.7812	1.2609	5.8613
2352	-0.27244	296	577	0.062819	0.9088	-1.2591	0.9256	-0.8191
2354	-0.54713	286	193	0.132461	0.9743	-0.459	0.9781	-0.299
2355	0.251495	283	143	0.124112	1.0325	1.041	1.0458	0.951
2356	-0.55299	276	189	0.135418	1.0622	1.0911	1.0859	1.2011
2357	0.370838	278	133	0.125236	1.0118	0.381	0.9965	-0.049
2365	0.748578	896	1069	0.052862	1.053	1.3411	1.0293	0.681
2366	0.636018	892	1148	0.048255	0.8912	-3.0491	0.8182	-3.5192
2367	0.109458	892	1369	0.052861	1.031	0.681	1.1115	1.4211
2368	0.42377	896	1264	0.048025	0.813	-5.0992	0.734	-4.1193
2369	-0.18328	897	1526	0.057255	0.9699	-0.469	0.8064	-1.5692
2370	1.105561	892	939	0.043788	0.9985	-0.029	1.0305	0.541
2401	0.957066	795	829	0.048236	1.2395	6.0212	1.3044	6.3813
2402	-0.22467	799	1310	0.058138	1.0522	0.9111	1.0913	0.9711
2403	0.696985	799	924	0.052628	1.2024	4.8812	1.2523	5.5413
2404	1.08167	799	780	0.049633	1.2432	6.0012	1.2941	6.4913
2405	1.299777	808	808	0.048099	1.1175	3.0311	1.1579	3.0412
2406	0.533437	805	1084	0.054896	1.0694	1.6411	1.0967	1.7711
2408	0.286286	806	1262	0.051896	1.0809	1.6511	1.3026	2.5413
2411	1.130624	805	881	0.046532	1.0428	1.171	1.0475	0.831
2412	1.284363	802	811	0.048205	1.1575	4.0112	1.2241	4.1812
2413	1.163334	804	862	0.051433	1.2093	5.1312	1.2101	4.3912
2516	-0.7	219	413	0.071214	0.852	-1.9291	0.8709	-1.3991
2517	-0.91094	218	139	0.146696	1.0577	1.1211	1.0791	1.2211
2518	-0.0111	203	89	0.146327	1.0633	1.6811	1.1169	2.3611
2519	-0.77647	200	124	0.1502	0.9888	-0.219	0.9872	-0.209
2520	-0.10238	198	92	0.147101	1.0146	0.441	1.011	0.251
2521	-0.92634	199	130	0.153928	0.9669	-0.589	0.9688	-0.439
2522	0.029394	195	85	0.148807	1.0973	2.5611	1.1383	2.8811

Appendix E: Marginal Reliability by Grade-Band, Subject, Starting Task, Gender, and Ethnic Group

Exhibit E-1: Marginal Reliability by Starting Task and Grade-Band for ELA

Initial Task	Statistic	Elementary	Middle	High
1	N	372	299	94
	$\bar{\sigma}_e^*$	13.44	16.74	14.07
	Reliability	0.91	0.91	0.91
3	N	330	259	63
	$\bar{\sigma}_e^*$	8.87	10.41	11.95
	Reliability	0.87	0.82	0.90
7	N	810	900	233
	$\bar{\sigma}_e^*$	12.94	15.13	14.59
	Reliability	0.84	0.86	0.87

Exhibit E-2: Marginal Reliability by Starting Task and Grade-Band for Mathematics

Initial Task	Statistic	Elementary	Middle	High
1	N	334	272	91
	$\bar{\sigma}_e^*$	14.96	14.31	13.00
	Reliability	0.90	0.90	0.91
3	N	373	307	72
	$\bar{\sigma}_e^*$	9.56	9.71	9.90
	Reliability	0.85	0.74	0.83
7	N	797	879	228
	$\bar{\sigma}_e^*$	14.40	13.79	12.00
	Reliability	0.86	0.77	0.74

Exhibit E-3: Marginal Reliability by Starting Task and Grade-Band for Science/Biology

Initial Task	Statistic	Elementary	Middle	High
1	N	309	230	229
	$\bar{\sigma}_e^*$	16.46	16.41	26.52
	Reliability	0.91	0.90	0.85
3	N	195	185	60
	$\bar{\sigma}_e^*$	12.74	11.97	24.96
	Reliability	0.84	0.86	0.84
7	N	539	574	87
	$\bar{\sigma}_e^*$	19.77	18.09	29.77
	Reliability	0.79	0.83	0.81

Exhibit E-4: Marginal Reliability by Starting Task and Grade-Band for Social Studies

Initial Task	Statistic	Elementary	Middle	High
1	N	227	160	X
	$\bar{\sigma}_e^*$	15.76	17.15	X
	Reliability	0.89	0.90	X
3	N	167	144	X
	$\bar{\sigma}_e^*$	11.17	11.91	X
	Reliability	0.90	0.76	X
7	N	627	671	X
	$\bar{\sigma}_e^*$	15.58	17.21	X
	Reliability	0.88	0.86	X

Exhibit E-5: Marginal Reliability by Subject, Gender, and Grade-Band

Subject	Gender	Elementary	Middle	High	Overall
ELA	Female	0.929	0.938	0.932	0.937
	Male	0.929	0.930	0.933	0.933
Math	Female	0.941	0.912	0.904	0.929
	Male	0.939	0.909	0.916	0.927
Science	Female	0.910	0.925		0.917
	Male	0.912	0.924		0.919
Biology	Female			0.881	0.881

Subject	Gender	Elementary	Middle	High	Overall
	Male			0.895	0.895
Social Studies	Female	0.938	0.928		0.934
	Male	0.939	0.921		0.932

Exhibit E-6: Marginal Reliability by Subject, Major Ethnic Group, and Grade-Band

Subject	Ethnicity	Elementary	Middle	High	Overall
ELA	African American	0.924	0.933	0.936	0.933
	White	0.932	0.931	0.933	0.934
Math	African American	0.934	0.910	0.909	0.923
	White	0.944	0.907	0.922	0.932
Science	African American	0.903	0.925		0.915
	White	0.917	0.921		0.920
Biology	African American			0.880	0.880
	White			0.906	0.906
Social Studies	African American	0.932	0.927		0.930
	White	0.942	0.919		0.934

Appendix F: Score Report Sample

INDIVIDUAL STUDENT REPORT
Prepared Especially for the Family of
Kelly Adams

Date of Birth: 09/20/2003
Student ID: 123456123456
School District: Columbia
School: Alfonso Elementary School

Spring 2013



The South Carolina Alternate Assessment (SC-Alt)

Kelly participated in the South Carolina Alternate Assessment (SC-Alt) during the spring of 2013.

She took the elementary school form of the test, which is based on academic standards from grades 3 to 5. This report is designed to provide you with information on your child's performance on this assessment.

The SC-Alt is a test designed for students with significant cognitive disabilities who participate in a school curriculum that includes academic and functional skill instruction. The alternate assessment only tests students' achievement in English language arts (ELA), mathematics, science, and social studies. Individualized Education Program (IEP) reports and other methods provide parents with information on how students are progressing in the other areas.

What is the SC-Alt?

- The SC-Alt includes performance tasks in each subject area. Students may complete the tasks by using their usual method of communication. This may include pointing or gazing at answer choices; selecting objects, pictures, or picture symbols that represent an answer choice; or reading letters, words, or sentences to complete the task.
- The tasks are linked to the state academic content standards in four areas: English language arts (ELA), mathematics, science, and social studies.
- Students are assigned a test form based on their age. Students ages 8–10 are assigned to the elementary school form; students ages 11–13 are assigned to the middle school form; and students age 15 take the high school form.

How are scores reported and used?

- Four achievement levels (Level 1, Level 2, Level 3, and Level 4) have been established for the SC-Alt. Achievement levels describe how students are doing in relation to the state academic standards. Your child's performance is also reported as a scale score that allows parents to monitor growth from year to year.
- SC-Alt is also a state and federal accountability measure and the results provide information on how schools and districts are doing as well.

Where can I get more information about SC-Alt and my child's performance?

- You can contact your child's teacher or school for more information.
- You can view examples of tasks, information about expectations at each achievement level, and scale score tables on the South Carolina Department of Education Web site at <http://ed.sc.gov/agency/programs-services/48/>.



The South Carolina Department of Education

Spring 2013
Kelly Adams

The SC-Alt

4+
3%

Mathematics

Kelly scored at **Level 3** with a scale score of **480** in mathematics.

Students who score at Level 3 should be able to:

- add and subtract simple numbers;
- count and compare objects in a group;
- compare objects by color, size, or shape;
- identify three-dimensional shapes;
- read information in a graph.

Your Child's Level	4	Students performing at Level 4 demonstrate and apply academic skills and competencies in mathematics.
	3	Students performing at Level 3 demonstrate increasing academic skills and competencies in mathematics.
	2	Students performing at Level 2 demonstrate foundational academic skills and competencies in mathematics.
	1	Students performing at Level 1 may demonstrate emerging academic skills and competencies in mathematics.

How you can support Kelly's learning

- Help your child add and subtract during everyday activities. For example, show her five pennies or other objects and give her one more. Then, ask her to tell you how many there are altogether.
- Play games with your child. Use games that require matching numbers (dots), such as dominoes.
- Put three objects in one pile and two objects in another pile. Ask your child which pile has more objects.
- Describe everyday household objects by shapes. For example, a can is a cylinder; a box is a rectangular prism; and a ball is a sphere.



English Language Arts

Kelly scored at **Level 4** with a scale score of **495** in ELA.

Students who score at Level 4 should be able to:

- identify the main idea and make predictions about what will happen next in a story;
- write a simple story;
- follow two-step directions;
- take turns appropriately during conversations.

Your Child's Level	4	Students performing at Level 4 demonstrate and apply academic skills and competencies in reading, writing, and research.
	3	Students performing at Level 3 demonstrate increasing academic skills and competencies in reading, writing, and research.
	2	Students performing at Level 2 demonstrate foundational academic skills and competencies in reading, writing, and research.
	1	Students performing at Level 1 may demonstrate emerging academic skills and competencies in reading, writing, and research.

How you can support Kelly's learning

- Encourage your child to read passages from a variety of materials (books, magazines, newspapers).
- Read a story with your child and talk to her about specific characters and the order of events in the story.
- Assist your child with writing about an event or activity using her typical method of communication.
- Encourage your child to begin conversations with family members or friends by using her typical method of communication.

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Science

Kelly scored at **Level 1** with a scale score of **270** in science.

Students who score at Level 1 should be able to:

- use senses to observe the outcome of a simple scientific investigation;
- sequence growth patterns;
- observe and record daily weather conditions;
- recognize the sun and moon and relate them to day and night;
- recognize that objects move when force is applied.

4	Students performing at Level 4 demonstrate and apply academic skills and competencies in science.
3	Students performing at Level 3 demonstrate increasing academic skills and competencies in science.
2	Students performing at Level 2 demonstrate foundational academic skills and competencies in science.
1	Students performing at Level 1 may demonstrate emerging academic skills and competencies in science.

Your Child's Level

How you can support Kelly's learning

- Help your child plant a seed and watch it grow.
- Explain and help your child observe different weather conditions.
- Point out the moon in the sky at night.
- Show your child two balls. Roll one across a table and leave one still. Point out which ball is in motion and which is not.



Social Studies

Kelly scored at **Level 1** with a scale score of **270** in social studies.

Students who score at Level 1 should be able to:

- identify self from others;
- respond appropriately to a person of authority in the home or at school;
- follow rules;
- engage in turn-taking;
- begin to distinguish between past and present.

4	Students performing at Level 4 demonstrate and apply academic skills and competencies in social studies.
3	Students performing at Level 3 demonstrate increasing academic skills and competencies in social studies.
2	Students performing at Level 2 demonstrate foundational academic skills and competencies in social studies.
1	Students performing at Level 1 may demonstrate emerging academic skills and competencies in social studies.

Your Child's Level

How you can support Kelly's learning

- Help your child find her picture in a family album or photo.
- Help your child find a picture of her mother, father, or caregiver.
- Help your child follow rules by going to bed when an alarm rings or sitting in a chair at mealtime.
- Help your child engage in taking turns in picking out an activity, food, or song.
- Help your child choose a storybook about South Carolina and read it to her.



The following areas are tested in Mathematics:

Number and Operations

- whole numbers
- fractions
- addition and subtraction
- multiplication and division

Algebra

- patterns and their relationships

Geometry

- attributes of objects such as shape, size, color
- identification of two- and three-dimensional shapes

Measurement

- money
- length, liquid, volume, and mass and weight
- time
- equivalences

Data Analysis and Probability

- data collection and representation
- data analysis
- probability



The following areas are tested in English Language Arts:

Reading

- reading
 - comprehending a variety of texts (such as fiction, nonfiction, poetry, and drama)
- Note: Reading materials may include objects, pictures or photographs, picture symbols, letters, and words.*

Writing

- developing written communications (notes, stories) using the student's typical method of communication

Research

- accessing and using information from a variety of sources
 - communicating their own ideas and ideas of others*
- *Students' typical method of communication, verbal or nonverbal, may be facilitated by using objects, pictures or photographs, picture symbols, letters and words, voice output devices, or assistive technology.*



The following areas are tested in Science:

Scientific Inquiry involves studying scientific processes and skills such as:

- observing
- classifying
- predicting what will happen in a simple scientific experiment

Life Science

- basic needs of plants and animals
- their structures and habitats

Earth Science

- weather
- objects in the sky (sun and moon)
- earth materials (rocks and soil)

Physical Science

- characteristics of objects
- the effect of force on the motion of objects
- light, heat, and electricity



The following areas are tested in Social Studies:

Social Studies Literacy Elements are concepts required for understanding this subject such as:

- distinguishing between past, present, and future
- demonstrating responsible citizenship within the school community, the local community, and national communities
- creating and using timelines
- understanding the relationship between people and the land

Academic Standards include concepts related to specific historical time frames:

- history
- geography
- political science/government
- economics

Appendix G: Student Performance by Demographics, Grade-Band, and Subject Area

Exhibit G-1: Performance by Grade-Band and Demographics—ELA⁵

ELA	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
STUDENT'S AGE															
8	489	486	51	95	394	.	.	.	.	.	.	.	.	.	.
9	534	494	52	95	439	.	.	.	.	.	.	.	.	.	.
10	507	500	53	98	409	.	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	521	512	61	90	431	.	.	.	.	.
12	.	.	.	.	.	486	514	68	90	396	.	.	.	.	.
13	.	.	.	.	.	477	521	65	79	398	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	387	514	61	93	294
16	.	.	.	.	.	.	.	.	.	.	7	–	–	–	–
17	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
25	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
STUDENT'S ETHNICITY															
African American	742	498	52	118	624	723	519	70	111	612	204	514	60	47	157
American Indian/Alaska Native	4	–	–	–	–	5	–	–	–	–	3	–	–	–	–
Asian	22	469	35	8	14	20	503	37	4	16	1	–	–	–	–
Double-Bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hispanic	101	482	57	26	75	72	497	70	19	53	21	514	69	2	19
Multi-Race	32	499	61	7	25	51	515	42	6	45	6	–	–	–	–
Native Hawaiian/Other	1	–	–	–	–	3	–	–	–	–	.	.	.	.	.

⁵ Note: Data marked '–' are suppressed because the subgroup contains fewer than 10 students.

ELA	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Pacific Islander															
Other	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
White	628	491	51	128	500	610	514	59	116	494	161	517	60	44	117
STUDENT'S GENDER															
Female	508	492	54	111	397	484	511	69	99	385	131	522	62	27	104
Male	1022	494	51	177	845	1000	518	62	160	840	265	511	61	68	197
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ESL (LANGUAGE)															
Advanced	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
Advanced Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beginner	6	–	–	–	–	2	–	–	–	–	1	–	–	–	–
Beginner Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
English Speaker I	2	–	–	–	–	1	–	–	–	–	.	.	.	.	.
English Speaker II	1432	494	52	266	1166	1423	516	65	245	1178	379	515	60	92	287
Full English Proficient	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Intermediate	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
Intermediate Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pre-Functional	75	483	54	20	55	54	499	58	13	41	12	497	94	2	10
Pre-Functional Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Title III First Year Exited	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.

ELA	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Title III Second+ Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown	13	507	33	1	12	2	–	–	–	–	4	–	–	–	–
<ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH															
Reduced	101	496	45	12	89	112	510	56	14	98	36	496	45	11	25
Free Meals	1056	498	52	179	877	979	522	66	148	831	247	523	61	50	197
Full-Pay Meals	373	480	51	97	276	393	501	62	97	296	113	504	64	34	79
Double-Bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
STUDENT'S DISABILITIES															
Missing	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Autism	434	491	40	82	352	342	513	50	56	286	81	505	42	21	60
Deaf/Blindness	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Developmental Delay	132	507	42	14	118	.	.	.	.	.	1	–	–	–	–
Educable Mentally Disability	371	522	36	6	365	424	556	49	3	421	80	558	46	3	77
Emotional Handicapped	10	526	41	.	10	13	569	41	.	13	2	–	–	–	–
Hearing Handicapped	7	–	–	–	–	15	521	45	2	13	1	–	–	–	–
Learning Disability	32	545	28	.	32	19	560	44	.	19	5	–	–	–	–
Multiple Disabilities	10	494	57	1	9	5	–	–	–	–	1	–	–	–	–
Orthopedically Handicapped	20	491	46	6	14	41	500	61	10	31	10	565	75	3	7
Other Health	66	491	65	14	52	69	545	51	8	61	17	528	47	2	15

ELA	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Impaired															
Profoundly Mentally Handicapped	116	413	69	93	23	125	415	79	102	23	36	423	77	29	7
Speech	10	484	52	2	8	10	488	89	3	7	2	–	–	–	–
Trainable Mental Disability	301	484	40	56	245	404	500	43	71	333	153	509	41	34	119
Traumatic Brain Injury	7	–	–	–	–	8	–	–	–	–	4	–	–	–	–
Visually Handicapped	14	443	66	9	5	9	–	–	–	–	3	–	–	–	–
TOTAL	1530	494	52	288	1242	1484	516	65	259	1225	396	515	61	95	301

Exhibit G-2: Performance by Grade-Band and Demographics—Mathematics⁶

Math	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
STUDENT'S AGE															
8	488	492	55	122	366	.	.	.	.	.	.	.	.	.	.
9	531	502	60	127	404	.	.	.	.	.	.	.	.	.	.
10	505	510	66	114	391	.	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	519	509	47	110	409	.	.	.	.	.
12	.	.	.	.	.	484	508	54	106	378	.	.	.	.	.
13	.	.	.	.	.	473	513	54	98	375	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	387	502	50	142	245
16	.	.	.	.	.	.	.	.	.	.	8	–	–	–	–
17	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
25	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
STUDENT'S ETHNICITY															
African American	741	507	61	163	578	720	512	58	135	585	206	503	49	72	134
American Indian/Alaska Native	4	–	–	–	–	5	–	–	–	–	3	–	–	–	–
Asian	22	478	54	7	15	20	507	38	6	14	1	–	–	–	–
Double-Bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hispanic	100	490	63	37	63	72	499	55	23	49	21	505	62	3	18
Multi-race	32	508	67	6	26	51	509	37	11	40	6	–	–	–	–
Native	1	–	–	–	–	3	–	–	–	–	.	.	.	.	.

⁶ Note: Data marked ‘–’ are suppressed because the subgroup contains fewer than 10 students.

Math	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Hawaiian/Other Pacific Islander															
Other	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
White	624	498	61	150	474	605	509	44	135	470	160	502	46	64	96
STUDENT'S GENDER															
Female	507	497	61	137	370	481	504	54	115	366	131	505	48	43	88
Male	1017	504	61	226	791	995	513	50	199	796	266	501	51	101	165
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ESL (LANGUAGE)															
Advanced	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
Advanced Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beginner	6	–	–	–	–	2	–	–	–	–	1	–	–	–	–
Beginner Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
English Speaker I	2	–	–	–	–	1	–	–	–	–	.	.	.	.	.
English Speaker II	1426	502	61	331	1095	1415	510	52	296	1119	380	503	49	140	240
Full English Proficient	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Intermediate	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
Intermediate Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pre-Functional	75	489	64	28	47	54	501	48	17	37	12	489	85	2	10
Pre-Functional Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Math	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Title III First Year Exited	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Title III Second+ Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown	13	509	33	3	10	2	–	–	–	–	4	–	–	–	–
ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH															
Reduced	100	504	56	20	80	111	507	45	26	85	36	494	52	13	23
Free Meals	1053	507	62	229	824	974	514	53	183	791	249	508	47	81	168
Full-Pay Meals	371	486	59	114	257	391	501	50	105	286	112	492	54	50	62
Double-Bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
STUDENT'S DISABILITIES															
Missing	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Autism	433	502	48	103	330	340	516	38	55	285	80	503	38	32	48
Deaf/Blindness	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Developmental Delay	132	514	48	19	113	.	.	.	.	.	1	–	–	–	–
Educable Mentally Disability	369	536	44	11	358	419	536	32	18	401	80	528	29	6	74
Emotional Handicapped	10	543	45	.	10	13	548	22	.	13	3	–	–	–	–
Hearing Handicapped	7	–	–	–	–	15	526	23	1	14	1	–	–	–	–
Learning Disability	32	565	36	.	32	19	545	34	1	18	5	–	–	–	–
Multiple Disabilities	9	–	–	–	–	4	–	–	–	–	1	–	–	–	–

Math	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Orthopedically Handicapped	21	493	54	5	16	41	498	46	13	28	10	519	46	4	6
Other Health Impaired	65	495	74	18	47	67	526	37	7	60	17	513	29	7	10
Profoundly Mentally Handicapped	116	400	70	105	11	126	419	82	106	20	36	419	82	34	2
Speech	10	481	94	4	6	10	484	82	3	7	2	–	–	–	–
Trainable Mental Disability	300	491	40	82	218	405	503	32	103	302	154	502	36	56	98
Traumatic Brain Injury	7	–	–	–	–	8	–	–	–	–	4	–	–	–	–
Visually Handicapped	13	446	77	8	5	9	–	–	–	–	3	–	–	–	–
TOTAL	1524	502	61	363	1161	1476	510	52	314	1162	397	502	50	144	253

Exhibit G-3: Performance by Grade-Band and Demographics—Science/Biology⁷

Science/Biology	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
STUDENT'S AGE															
8	249	497	62	46	203	.	.	.	.	.	.	.	.	.	.
9	525	505	63	99	426	.	.	.	.	.	.	.	.	.	.
10	278	509	66	55	223	.	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	281	512	64	89	192	.	.	.	.	.
12	.	.	.	.	.	482	513	72	158	324	.	.	.	.	.
13	.	.	.	.	.	253	519	78	78	175	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	383	500	93	174	209
16	.	.	.	.	.	.	.	.	.	.	8	–	–	–	–
17	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
25	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
STUDENT'S ETHNICITY															
African American	537	509	61	91	446	506	518	77	143	363	204	502	91	87	117
American Indian/Alaska Native	2	–	–	–	–	3	–	–	–	–	3	–	–	–	–
Asian	12	478	58	4	8	13	509	33	4	9	1	–	–	–	–
Double-Bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hispanic	71	492	57	17	54	47	499	68	20	27	21	510	82	7	14
Multi-Race	16	522	49	3	13	35	516	55	12	23	6	–	–	–	–
Native	1	–	–	–	–	2	–	–	–	–	.	.	.	.	.

⁷ Note: Data marked ‘–’ are suppressed because the subgroup contains fewer than 10 students.

Science/Biology	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Hawaiian/Other Pacific Islander															
Other	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
White	413	499	67	85	328	410	511	67	143	267	158	497	99	81	77
STUDENT'S GENDER															
Female	352	501	59	76	276	310	503	77	110	200	128	514	96	48	80
Male	700	505	65	124	576	706	519	69	215	491	265	494	93	130	135
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ESL (LANGUAGE)															
Advanced	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
Advanced Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Beginner	5	–	–	–	–	1	–	–	–	–	1	–	–	–	–
Beginner Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
English Speaker I	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
English Speaker II	988	504	64	185	803	976	514	72	308	668	376	501	94	171	205
Full English Proficient	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Intermediate	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
Intermediate Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pre-Functional	49	487	54	13	36	34	504	48	15	19	12	477	115	5	7
Pre-Functional Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Science/Biology	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Title III First Year Exited	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Title III Second+ Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown	8	–	–	–	–	2	–	–	–	–	4	–	–	–	–
ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH															
Reduced	66	505	63	11	55	69	512	58	26	43	35	470	77	22	13
Free Meals	724	511	61	120	604	677	522	72	191	486	247	514	94	96	151
Full-Pay Meals	262	484	66	69	193	270	495	72	108	162	111	480	94	60	51
Double-Bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
STUDENT PRIMARY DISABILITY															
Missing	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Autism	301	498	50	54	247	244	513	56	85	159	78	479	83	43	35
Deaf/Blindness	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Developmental Delay	89	522	57	10	79	.	.	.	.	.	1	–	–	–	–
Educable Mentally Disability	258	539	49	11	247	275	560	55	14	261	80	572	79	8	72
Emotional Handicapped	7	–	–	–	–	10	578	42	.	10	3	–	–	–	–
Hearing Handicapped	4	–	–	–	–	10	526	57	2	8	1	–	–	–	–
Learning Disability	25	575	39	.	25	15	562	54	3	12	5	–	–	–	–
Multiple Disabilities	7	–	–	–	–	4	–	–	–	–	1	–	–	–	–

Science/Biology	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Orthopedically Handicapped	12	517	47	1	11	29	490	43	14	15	9	–	–	–	–
Other Health Impaired	47	501	69	12	35	52	547	49	9	43	16	526	81	7	9
Profoundly Mentally Handicapped	80	411	70	62	18	95	399	82	87	8	36	372	84	34	2
Speech	7	–	–	–	–	5	–	–	–	–	2	–	–	–	–
Trainable Mental Disability	200	493	42	35	165	267	501	44	100	167	154	489	63	77	77
Traumatic Brain Injury	6	–	–	–	–	4	–	–	–	–	4	–	–	–	–
Visually Handicapped	9	–	–	–	–	6	–	–	–	–	3	–	–	–	–
TOTAL	1052	504	63	200	852	1016	514	72	325	691	393	500	94	178	215

Exhibit G-4: Performance by Grade-Band Form and Student Age—Social Studies⁸

SocialStudies	Grade-Band									
	Elementary School					Middle School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3
STUDENT'S AGE										
8	259	493	62	118	141	.	.	.	.	.
9	528	506	68	206	322	.	.	.	.	.
10	251	515	71	89	162	.	.	.	.	.
11	.	.	.	.	.	261	522	65	84	177
12	.	.	.	.	.	481	521	72	166	315
13	.	.	.	.	.	253	530	67	78	175
STUDENT'S ETHNICITY										
African American	492	512	67	176	316	479	527	75	133	346
American Indian/Alaska Native	3	–	–	–	–	4	–	–	–	–
Asian	17	461	56	12	5	17	499	47	9	8
Double-Bubbled	.	.	.	.	.	.	.	.	.	.
Hispanic	64	495	65	33	31	46	515	71	15	31
Multi-Race	23	515	77	7	16	32	519	49	12	20
Native Hawaiian/Other Pacific Islander	.	.	.	.	.	1	–	–	–	–
Other	.	.	.	.	.	.	.	.	.	.
Unknown	.	.	.	.	.	.	.	.	.	.
White	439	501	68	183	256	416	522	63	157	259
STUDENT'S GENDER										
Female	337	503	68	125	212	340	520	70	110	230

⁸ Note: Data marked '–' are suppressed because the subgroup contains fewer than 10 students.

SocialStudies	Grade-Band									
	Elementary School					Middle School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Male	701	506	67	288	413	655	526	69	218	437
Unknown	.	.	.	.	.	.	.	.	.	.
ESL (LANGUAGE)										
Advanced	.	.	.	.	.	.	.	.	.	.
Advanced Waiver	.	.	.	.	.	.	.	.	.	.
Beginner	1	–	–	–	–	1	–	–	–	–
Beginner Waiver	.	.	.	.	.	.	.	.	.	.
English Speaker I	2	–	–	–	–	1	–	–	–	–
English Speaker II	973	506	68	379	594	959	524	69	316	643
Full English Proficient	.	.	.	.	.	1	–	–	–	–
Intermediate	1	–	–	–	–	.	.	.	.	.
Intermediate Waiver	.	.	.	.	.	.	.	.	.	.
Pre-Functional	53	494	59	30	23	33	504	68	11	22
Pre-Functional Waiver	.	.	.	.	.	.	.	.	.	.
Title III First Year Exited	.	.	.	.	.	.	.	.	.	.
Title III Second+ Year Exited	.	.	.	.	.	.	.	.	.	.
Unknown	8	–	–	–	–	.	.	.	.	.
ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH										
Reduced	72	514	56	26	46	77	518	58	31	46
Free Meals	714	512	67	256	458	648	530	70	177	471
Full-Pay Meals	252	483	69	131	121	270	510	68	120	150
Double-Bubbled	.	.	.	.	.	.	.	.	.	.
STUDENT PRIMARY DISABILITY										
Missing	.	.	.	.	.	.	.	.	.	.
Autism	285	497	51	148	137	223	520	51	87	136

SocialStudies	Grade-Band									
	Elementary School					Middle School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Deaf/Blindness	.	.	.	.	.	.	.	.	.	.
Developmental Delay	99	525	59	27	72	.	.	.	.	.
Educable Mentally Disability	257	545	49	29	228	278	566	55	21	257
Emotional Handicapped	8	–	–	–	–	9	–	–	–	–
Hearing Handicapped	5	–	–	–	–	9	–	–	–	–
Learning Disability	20	569	35	.	20	12	561	59	2	10
Multiple Disabilities	6	–	–	–	–	3	–	–	–	–
Orthopedically Handicapped	14	496	52	7	7	27	512	74	11	16
Other Health Impaired	51	511	84	16	35	45	559	63	6	39
Profoundly Mentally Handicapped	78	393	77	74	4	80	418	88	73	7
Speech	6	–	–	–	–	9	–	–	–	–
Trainable Mental Disability	197	495	44	96	101	288	508	45	117	171
Traumatic Brain Injury	4	–	–	–	–	7	–	–	–	–
Visually Handicapped	8	–	–	–	–	5	–	–	–	–
TOTAL	1038	505	68	413	625	995	524	69	328	667