DC Office of the State Superintendent of Education (OSSE) Comprehensive Assessment System-Alternate

Technical Manual

For
Mathematics and Reading/English Language Arts
Grades 3-8 and 10
And
Science Grades 5, 8 and 10 (Biology)

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October 2011

Contents

PART 1: INTRODUCTION

1.1 Purpose of the Assessment

This volume is intended primarily for a technical audience, such as the DC OSSE, its technical advisory committee, district assessment directors, district special education directors, and various researchers. However, recognizing that teachers and parents are crucial parts of the alternate assessment system, we intend for this manual to be read more broadly than is the case for general education technical documents, although certain sections will require highly specialized knowledge and a solid understanding of measurement concepts. This manual is organized using a construct validity framework. That is, all of the information presented herein is intended to support or refute the inferences about students and/or schools from the assessments scores.

Uses of the DC OSSE Statewide Assessment Information

In the District of Columbia, the intended uses of the data from the statewide assessment system include monitoring the performance of students over the years, identifying schools in need of additional support, and complying with the requirements of the No Child Left Behind Act of 2001 (NCLB) and the Individuals with Disabilities Education Improvement Act of 2004 (IDEA-04).

Use of Data for Federal Accountability

NCLB requires that all states receiving Title I funds must set incrementally increasing academic performance targets in each content area and requires that the results of annual statewide assessment be reported publicly in disaggregated form so that the relative performance of specific student groups on these performance targets can be seen and compared to determine if the school, district and state are meeting these adequate yearly progress targets for each of these student groups. For schools and districts that repeatedly fail to meet these performance targets, as indicated by the test data, a progressively severe set of consequences is imposed upon that school and/or district. Federal law requires that all students achieve grade-level proficiency in all tested content areas by the year 2014. In addition, IDEA-04 requires all students with disabilities to participate in statewide assessments in a manner determined by their IEP team. Assessment results for these students must be reported with the same frequency and in the same manner as other students' results.

General Assessment

District of Columbia Comprehensive Assessment System (DC CAS) is administered to students in the spring to assess students' skills in Grades 3–8 and 10 in Reading and Mathematics; in Grades 5 and 8 in Science; in high school Biology; and in Grades 4, 7, and 10 in Composition. The DC CAS in Reading, Mathematics, and Science/Biology contains multiple-choice and constructed-response items that are administered under standardized conditions. The suggested time allotment for each section is approximately

30 to 40 minutes. The tests have suggested time limits instead of fixed time limits because the DC CAS tests are designed to measure proficiency in Reading, and Mathematics, with the goal of measuring Adequate Yearly Progress (AYP) as the program continues from year to year. The Composition assessment is a single essay prompt that is scored twice using two different rubrics. Composition and Science/Biology are not included in AYP calculations.

General Assessment with Accommodations

The DC OSSE general large-scale assessments may be taken by students using state approved standard accommodations that do not alter the intended test constructs. Student performance under such test conditions receives full credit as earned by the student. In the CAS, the use of accommodations is available to all students with an IEP or 504 plan or in ELL program (levels 1-4). Accommodations have to be listed on the student's IEP or 504 plan or be based on the student's level of fluency (English proficiency) if they are identified as ELL. Any decision to allow student use of accommodations during general assessment must meet four procedural criteria:

1. The decision to use accommodations must be made by the educational team working with an individual student and must include his/her parent or guardian.

2. Accommodation decisions are made only to meet the identified needs of an individual student and are never permitted to be made for a group of students.

3. Accommodations selected must be consistent with the daily instructional experience of the student, to include test taking situations.

4. Use of accommodations during general assessment must be appropriately documented at the local level to help inform future educational planning.

Alternate Assessment based upon Alternate Achievement Standards

Up to 1% of District of Columbia students in grades tested may show academic proficiency through administration of an alternate assessment based on alternate achievement standards. The CAS-Alt is designed for those students with such significant cognitive impairments that they are unable, even with the best instruction and appropriate accommodations, to participate in the large-scale, statewide assessment. Alternate assessments based on alternate achievement standards are built upon measurable targeted skills that are linked to the DC OSSE content standards in reading/ELA, mathematics, and science. However, they represent student performance at a lower level of breadth, depth and complexity than found in the general statewide assessment.

1.2 Overview of the Assessment

The DC OSSE Alternate Assessment System

Given the legislative context within which the entire statewide assessment system sits, CAS-Alt is, as a part of that overall system, governed by the same laws and rules that govern general assessment. Federal legislation, including IDEA-04 and NCLB, require that students with disabilities have access to the general curriculum, with appropriate accommodations where necessary, and that they be assessed on the same general curriculum standards as all other students. For the small number of students with the most severe cognitive disabilities, who cannot participate in general large-scale assessment based on grade-level achievement standards, the law also allows and the District of Columbia OSSE provides a statewide alternate assessment, based on *alternate academic achievement standards.* Alternate achievement standards are reduced in breadth, depth, and complexity while still maintaining linkage to the same general curriculum standards taught to all children.

As with all forms of assessment, the central question regarding an alternate assessment is its purpose. A central tenet of IDEA-04 is that special education must be directly related to school reform efforts for all students. The question of an alternate assessment's purpose, then, must be framed in the context of comprehensive educational reform efforts in which schools are increasingly held accountable for clearly delineated outcomes. The purpose of an alternate assessment should mirror the purpose of the general assessment. Thus, if the purpose of the general assessment is to give schools a "report card" on what students are learning and suggest ways that learning can be improved, then the alternate assessment should provide similar information for students with significant cognitive disabilities. Consequently, the CAS-Alt has been designed to comply with the requirements of IDEA-04 and NCLB and to ensure that students with significant cognitive disabilities are assessed on the state's academic content standards.

Specific Purposes of the DC Alternate Assessment System:

1. The CAS-Alt is designed to provide a meaningful academic assessment experience based on alternate achievement standards for the District of Columbia's students with the most significant cognitive disabilities.

2. The portfolio approach was chosen to capture student progress in academic content over the course of a year and to enable teachers and others to see evidence of this progress within the context of the instructional program they are providing.

3. The CAS-Alt was designed to provide feedback to teachers on student performance so they can use this information to improve instruction.

4. As part of this purpose, the CAS-Alt was designed to signal to DC special education teachers that they need to maintain high academic expectations for their students and high standards for the delivery of their instructional programs.

5. While the major purpose of the CAS-Alt is for instructional improvements, it is also designed to ensure that all DC students are appropriately included in state and federal accountability systems. This system has been designed to meet the highest technical standards possible while best serving the students participating in the assessment system.

Background

The DC OSSE Alternate Assessment process was developed by the Alternate Assessment Core Team in response to the requirements of the Individuals with Disabilities Education Act of 1997 (IDEA-97). Revisions in the DC OSSE Alternate Assessment were made in response to NCLB and IDEA-04 and renamed the Comprehensive Assessment System Alternate Assessment. The CAS-Alt for Reading/English Language Arts, Mathematics and Science was redesigned in 2007 to comply with the high technical quality standards specified in the requirements of NCLB.
Therefore, the CAS-Alt:

➢ Merges curriculum, instruction, and assessment;

➢ Ensures all students have access to the general curriculum;

➢ Encourages that exemplary/high standards be set for all students;

➢ Ensures that all students have the opportunity to demonstrate what they have learned; and,

➢ Meets the district-wide assessment policy.

Development of the CAS-Alt: A Brief History of the Evolution of the DC OSSE Alternate Assessment

For a detailed history of the CAS-Alt, see 2009 Technical Manual.

General Format

The CAS-Alt portfolio format demonstrates that students taking the CAS-Alt have high-quality daily instruction that reflects grade-level content standards. The portfolio format and scoring dimensions also fit with the Master Education Plan by focusing on a supports dimension in scoring. This dimension is particularly essential for students with the most significant cognitive disabilities, because without appropriate supports these students are unable to function and learn. The portfolio format also fits with the underlying philosophy and goals of DC OSSE due to the system-wide focus on accountability.

The original CAS-Alt was first administered in 2001. The currently administered CAS-Alt has been revised based on curriculum-linked alternate achievement standards, and represents a multidisciplinary approach to student learning and progress. Portfolios showcase multiple student work samples and the charting of student progress, where specific curriculum-linked skills can be assessed across a variety of activities and environments. The philosophy of portfolio-based assessments supports a method of student evaluation that:

- allows students to use their own strengths to demonstrate content knowledge and skills,
- provides multiple opportunities for measuring significant progress in these skills over time,
- appropriately supports growing independence and self-determination,
- encourages the student to engage in learning that is meaningful and appropriate, and
- merges the processes of instruction and assessment.

The evidence for the portfolio is collected throughout the school year (September through March) as part of instruction during a minimum of five data collection periods that occur on five separate days at any time during the testing window to show progress over time. Students partner with their teachers to choose representative samples of their academic school work (entries) that demonstrate the student's academic skills on targeted standards and illustrate how these skills change over the course of the school year.

An entry consists of one data chart with a minimum of five data points. There are also two pieces of corroborating evidence that correspond to the data chart. These pieces of evidence may consist of work samples, video or audio tape, or photographs demonstrating the student working on the targeted skill. Two additional pieces of optional evidence are also allowed in each entry. This optional evidence does not need to correspond to the data sheet.

A completed portfolio contains the following items:

- Learner Characteristics Inventory Summary-a nine-item validated inventory (developed by the National Alternate Assessment Center) that assists teachers in selecting entry or anchor points into the DC Learning Standards.
- Parent Validation-completed and submitted with the portfolios to verify agreement with the contents.
- Administrator Validation-completed and submitted with the portfolio to verify agreement with the contents.
- Grade Level Standards Based Entries and evidence prescribed at each grade level to reflect emphasis in the test blueprint. See administration guide for each grade. Evidence will include a data sheet and two student work samples, as well as optional evidence that may include a scripted videotape, audiotape, or captioned photographs.
    - Three entries for the content area of Reading
        - Entry Cover Sheet for Reading Entries
        - Activity Description Label for each activity within an entry (optional)
        - 3-5 Pieces of Standards Evidence for each entry
    - Three entries for the content area of Mathematics
        - Entry Cover Sheet for Mathematics Entries

- Activity Description Label for each activity within an entry (optional)
- 3-5 Pieces of Standards Evidence for entry

- Three entries for the content area of Science (Grade 5, 8, and Biology only)
  - Entry Cover Sheet for Science Entries
  - Activity Description Label for each activity within an entry (optional)
  - 3-5 Pieces of Standards Evidence for entry

PART 2: TEST DESIGN AND TEST DEVELOPMENT

2.1 Design History

The CAS-Alt was designed[1] as a collection of student work based on grade level instructional activities occurring throughout the school year and compiled into a student portfolio, in order to:

➢ inform and assist teacher instruction;

➢ document the amount and type of student support to participate in instruction; and

➢ monitor and document student progress.

A completed portfolio contains the following items:

➢ Learner Characteristics Inventory Summary-a nine-item validated inventory (developed by the National Alternate Assessment Center) that assists teachers in selecting entry or anchor points into the DC Learning Standards.

➢ Parent Validation-completed and submitted with the portfolios to verify agreement with the contents.

➢ Administrator Validation-completed and submitted with the portfolio to verify agreement with the contents.

➢ Grade Level Standards Based Entries and evidence prescribed at each grade level to reflect emphasis in the test blueprint. See administration guide for each grade. Evidence will include a data sheet and two student work samples, as well as optional evidence that may include a scripted videotape, audiotape, or captioned photographs.

- Three entries for the content area of Reading
    - Entry Cover Sheet for Reading Entries
    - Activity Description Label for each activity within an entry (optional)
    - 3-5 Pieces of Standards Evidence for each entry
- Three entries for the content area of Mathematics
    - Entry Cover Sheet for Mathematics Entries
    - Activity Description Label for each activity within an entry (optional)
    - 3-5 Pieces of Standards Evidence for entry

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[1] Refer to the design process in 2009 Technical Report.

- Three entries for the content area of Science (Grade 5, 8, and Biology only)
  - Entry Cover Sheet for Science Entries
  - Activity Description Label for each activity within an entry (optional)
  - 3-5 Pieces of Standards Evidence for entry

A set of Entry Points for each content area that list the essence of each standard and several pathways for teaching grade-level content to students with significant cognitive disabilities act as a guide for teachers in designing instruction. These "Entry Points" to the standards are designed on a continuum from less to more complex. This continuum varies in complexity based on the level of Revised Bloom's Taxonomy that the general education standard accesses as well as the breadth of content. For instance, if the general education standard asks the students to "analyze how setting affects mood and tone of a text" then the least complex entry point illustrates a way for students to work with parts of the content – identifying the setting, tone or mood separately before moving to more complex tasks, such as comparing the setting or mood of two texts read. Teachers can use these Entry Points to develop targeted skills and activities linked to the general education curriculum. They also provide some common strategies for students with severe cognitive disabilities to access curriculum (e.g., objects, templates, matching, task analysis, etc.).

Table 2.1 Shows the number of portfolios with valid scores for each content area by grade level for the CAS-Alt administration for 2010-2011.

Table 2.1 Number of Valid Scores 2010-2011 Administration

Grade	2010-2011		
	ELA	Math	Science
3	63	63	--
4	50	50	--
5	68	68	66
6	57	56	--
7	75	72	--
8	55	56	56
10	44	44	47
All Grades	412	409	169

2.2 Test Design

Federal legislation over the past decade has resulted in expectations for students with significant cognitive disabilities to have access to the general curriculum. IDEA-97 required that all students have access to the general curriculum; and in 2001, NCLB required that all states receiving Title I funds establish challenging standards, implement assessments that measure students' performance against those standards, and hold

schools accountable for achievement in reading, mathematics, and science. Final NCLB regulations regarding inclusion of students with the most significant cognitive disabilities permitted states to develop alternate achievement standards for reporting adequate yearly progress for students with significant cognitive disabilities (up to 1% of the general population may be counted as proficient using alternate achievement standards). These alternate achievement standards were required to be aligned with a state's academic content standards, promote access to the general curriculum, and reflect the highest achievement standards possible (U.S. Department of Education, 2003).

Subsequent non-regulatory guidance denoted that alternate assessments "should be clearly related to grade-level content, although it may be restricted in scope or complexity or take the form of introductory or prerequisite skills" (U.S. Department of Education, 2005). Through these policies, the expectation for students with significant cognitive disabilities has evolved from simply participating in assessments to the expectation that these assessments document achievement with clear links to state grade level content standards, even when applying alternate achievement standards for this population.

Simply stated access to the general curriculum— meaning teaching and assessing the state's academic content standards — is required. Functional life goals are not appropriate achievement measures for AYP purposes (U.S. Department of Education, 2005). Browder et al. (2004) found that alternate assessments often use a blending of functional and academic content, but those judged to be most closely aligned to general reading and math ability have more academic tasks and contexts (Browder et al., 2003). Teaching academic content does not mean abandoning students' needs for functional skills instruction, but it does mean finding a way to teach academic content to all students with significant cognitive disabilities since, by federal mandate, all students must be assessed in language arts/reading, math, and science.

Browder et al. (2006) suggested several criteria for linking instruction and assessment to grade level academic content standards. These criteria were validated with experts in the fields of measurement and special education as well as state stakeholders. As a result, the criteria were refined with clarified language to accurately reflect the alignment information states need for technical adequacy along with additional information regarding the alignment of instruction to the academic content standards. Flowers, Karvonen, Browder, and Wakeman (2007) fully describe eight criteria used to guide alignment studies for alternate assessments.

Criteria for Instruction and Assessment that Links to Grade Level Content

(Flowers, Karvonen, Browder, and Wakeman, 2007)

1. The content is academic and includes the major domains/strands of the content area as reflected in state and national standards (e.g., reading, math, science).

2. The content is referenced to the student's assigned grade level (based on chronological age).

3. The focus of achievement maintains fidelity with the content of the original grade level standards (content centrality) and when possible, the specified performance.

4. The content differs from grade level in range, balance, and Depth of Knowledge/DOK, but matches high expectations set for students with significant cognitive disabilities.

5. There is some differentiation in content across grade levels or grade bands.

6. The expected achievement for students is for the students to show learning of grade-referenced academic content.

7. The potential barriers to demonstrating what students know and can do are minimized in the assessment.

8. The instructional program promotes learning in the general curriculum.

Three criteria listed above (#3, #4, and #5) are addressed in the final sections of this chapter using findings from the May 2007 and August 2008 CAS-Alt alignment studies. Other findings from these studies are included in Chapter 6, Alignment.

Overview of Required Content for the CAS-Alt Portfolio

The CAS-Alt revised is currently comprised of three sections: Reading/ELA, Mathematics and Science (Grades 5, 8 & Biology). Each section consists of three strands (see Figure 2.1). For Reading/ELA, all students in grades 3-8 and 10 focus on language development, informational text, and literary text. In mathematics and science, the three standards vary based on grade level. Teachers choose from a set of substrands, using their knowledge of student strengths and needs to develop a targeted skill for the student to focus on in each substrand. The targeted skill must be directly connected to the grade-level content standard. For each substrand, the teacher gathers student work samples and collects data. Evidence includes a data chart for each substrand. The data chart has at least five different data points demonstrating the student's performance on the targeted skill and is comprised of at least five data points across time; however, more than five data points may be gathered. The data do not need to be collected consecutively.

Figure 2.1
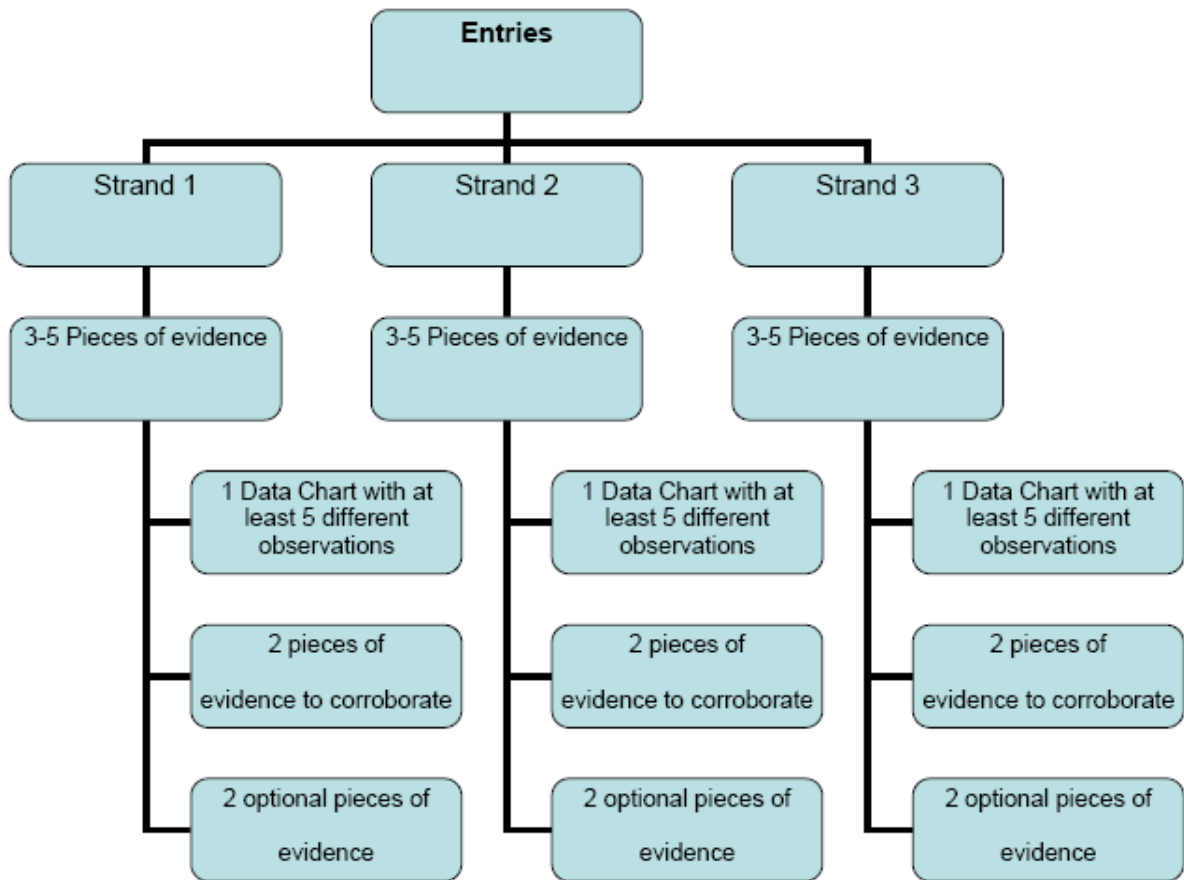
Portfolio Documentation
Along with the data chart are two pieces of corroborating evidence. Corroborating evidence can take the form of student work samples, labeled photographs, or a scripted videotape. All evidence must have the student's name, full date, and a score indicating how the student performed on the targeted skill. Evidence chosen must demonstrate the student performing the targeted skill. The two pieces of corroborating evidence need to be directly linked to the data chart, including the same date and performance score.

There may also be two optional pieces of supporting evidence included in the portfolio. The supporting evidence may take the form of student work, labeled photographs, or a scripted videotape. The supporting evidence must focus on the student performing the targeted skill, and include the student's name, full date, and a performance score.

Addition of Science as a Third Content Area
In the 2007-2008 school year, the CAS-Alt portfolio required three entries for the content area of Science for grades 5, 8 and 10.

Using the same process that was utilized in the development of the Entry Points for Reading and Mathematics, Entry Points for science were developed in August 2007 with a committee of general and special education content specialists. The committee members taught in DC Public schools, DC public special education schools, and/or charter schools. Committee members were chosen based on their background knowledge and skills, and to ensure that the demographics of the group mirrored the demographics of DC School system. They were from both general and special education backgrounds. Current positions included classroom teachers, district administrators, special education teachers, numeracy coaches, school improvement specialists, the Director of Science, IEP and Assessment coordinators, and general education teachers. On a demographics survey, seventy percent of the members self-identified as black or African American, four percent self-identified as white, four percent as Asian, and twenty percent chose not to reply to that question. The mean number of years of experience was 21.4 years; the range of education experience was 8 to 41 years.

The members of the science development committee had experience working with students from pre-kindergarten to 12th grade. Members were also chosen based on other expertise, such as working with District curriculum, assessment, and instruction committees. Several of the committee members had experience developing math and ELA Entry Points, scoring the CAS-Alt. and working with students who are learning English as a second language. In this way, a cross-section of educators was compiled who represented the diverse population of the DC student population and had the knowledge and skills to develop meaningful, linked Entry Points in science.

Standards used for linking were chosen based on the general education (CAS) test specifications and reviewed by the Director of Science to ensure alignment with the general education areas of focus. Teams of educators then worked together to develop essence statements and Entry Points. These teams were trained in the CAS-Alt and the DC OSSE process for developing Entry Points. Teams were divided by grade (5, 8 and 10) and facilitators and DC OSSE administration and ILSSA verified that a combination of general and special educators were involved on each team and that there were at least two content specialist in each group of 4-6 people. The people involved with each team taught or worked with that particular grade level. The Director of Science was also available to answer questions and review possible essence statements and Entry Points. Once the Entry Points were drafted, a facilitator reviewed them. ILSSA staff then reviewed the Entry Points to guarantee that they 1) matched the levels of complexity within the CAS-Alt scoring guide, 2) were formatted correctly, and 3) that they were clearly written. The Entry Points were disseminated district-wide in the fall of November 2007 for use in the development of the 2007-08 CAS-Alt. Feedback from the teachers was collected and along with input from the Science Alignment study were reviewed in order to make revisions for the 2008-2009 school year.

For more information on the alignment studies conducted, refer to the 2009 Technical Manual.

The following tables show the learning standards assessed through the CAS-Alt.

Learning Standard Requirements for the CAS-Alt at each Grade Level

3rd Grade

Strand	
ELA	**Learning Standard**
Language Development	**3.LD-V.8**. Identify the meaning of common prefixes and suffixes (e.g., un-, re-, in-, dis-, -ful, -ly, -less), and know how they change the meaning of roots. *Or* **3.LD-V.12**. Use context of the sentence to determine the intended meaning of an unknown word or a word with multiple meanings.
Literary Text	**3.LT-U.4**. Use story details and prior knowledge to understand ideas that are not directly stated in the text. *Or* **3.LT-F.8**. Identify the elements of stories (problem, solution, character, and setting) and analyze how major events lead from problem to solution.
Informational Text	**3.IT-E.1**. Identify the purpose or main point and supporting details in text. *Or* **3.IT-E.3.** Distinguish cause from effect. *Or* **3.IT-E.4.** Identify and use knowledge of common textual features (e.g., title, headings, table of contents, glossary, captions) to make predictions about content. *Or* **3.IT-E.5**. Form questions about text and locate facts in response to those questions. *Or* **3.IT-DP.6**. Locate specific information in graphic representations (e.g., charts, maps, diagrams, illustrations, tables, timelines) of text. *Or* **3.IT-DP.7.** Use information from text and text features to determine the sequence of activities needed to carry out a procedure.

3rd Grade (continued)

Mathematics	Learning Standard
Number Sense and Operations	**3.NSO-N.1**. Exhibit an understanding of the base 10 number system by reading, modeling, and writing whole numbers to at least 10,000; demonstrate an understanding of the values of the digits. *Or* **3.NSO-E.24.** Understand and use the strategies of rounding and regrouping to estimate quantities, measures, and the results of whole-number computations (addition, subtraction, and multiplication) up to two-digit whole numbers and amounts of money to $100 and to judge the reasonableness of answers. *Or* **3.NSO-C.10.** Demonstrate an understanding of and the ability to use conventional algorithms for the addition and subtraction of up to five-digit whole numbers. *Or* **3.NSO-C.18.** Solve division problems in which a multidigit whole number is evenly divided by a one-digit number. *Or* **3.NSO-F.5.** Identify and represent fractions (between 0 and 1 with denominators through 10) as parts of unit wholes and parts of a collection.
Patterns, Relations, and Algebra	**3.PRA.3**. Determine values of variables in simple equations involving addition, subtraction, or multiplication. *Or* **3.PRA.5.** Extend and recognize a linear pattern by its rules.
Geometry	**3.G.1**. Compare and analyze attributes and other features (e.g., number and shape of sides, faces, corners, right angles) of two-dimensional geometric shapes, especially the attributes of triangles (isosceles, equilateral, right) and quadrilaterals (rectangle, square). *Or* **3.G.4.** Identify and draw lines that are parallel, perpendicular, and intersecting. *Or* **3.G.6.** Apply techniques such as reflections (flips), rotations (turns), and translations (slides) for determining if two shapes are congruent. time using a clock (e.g., hours and minutes since …) and using a calendar (e.g., days since …).

4th Grade

ELA	Learning Standard
Language Development	**4.LD-V.10**. Use knowledge of morphology or the analysis of word roots and affixes to determine the meaning of unfamiliar words. *Or* **4.LD-V.13**. Recognize and use words with multiple meanings (e.g., sentence, school, hard) and determine which meaning is intended from the context of the sentence.
Literary Text	**4.LT-C.1.** Identify similarities and differences between the characters or events in a story and the experiences in an author's life. *Or* **4.LT-F.5.** Explain how the plot, setting, or characters influence the events in a story, using evidence from the text. *Or* **4.LT-F.6.** Describe a character's traits, relationships, and feelings, using evidence from the text (e.g., thoughts, dialogue, actions). *Or* **4.LT-G.2**. Distinguish among common forms of literature (poetry, prose, fiction, nonfiction, and drama) using knowledge of their structural elements. *Or* **4.LT-T.4.** Compare the moral lessons of several fables. *Or* **4.LT-P.8.** Recognize the similarities of sounds in words (e.g., onomatopoeia, alliteration, assonance) and rhythmic patterns in a poetry selection. *Or* **4.LT-P.9.** Identify characteristics and structural elements (e.g., imagery, rhyme, verse, rhythm, meter) of poetry (narrative poem, free verse, lyrical poem, humorous poem). Informational
Informational text	**4.IT-E.1.** Identify the purpose and main points of a text and summarize its supporting details. *Or* **4.IT-E.2.** Distinguish fact from opinion. *Or* **4.IT-E.3.** Identify cause-and-effect relationships stated and implied. *Or* **4.IT-DP.6.** Interpret information in graphic representations (e.g., charts, maps, diagrams, illustrations, tables, timelines) of text. *Or* **4.IT-DP.7.** Locate specific information from text (e.g., letters, memos, directories, menus, schedules, pamphlets, search engines, signs, manuals, instructions, recipes, labels, forms).

Mathematics	Learning Standard
Number Sense and Operations	**4.NSO-N.1**. Exhibit an understanding of the base 10 number system by reading, modeling, and writing whole numbers to at least 100,000; demonstrating an understanding of the values of the digits; and comparing and ordering the numbers. *Or* **4.NSO-C.19.** Demonstrate understanding of and ability to use the conventional algorithms for multiplication of up to a three-digit whole number by a two-digit whole number. Multiply three-digit whole numbers by two-digit whole numbers accurately and efficiently. *Or* **4.NSO-C.20.** Demonstrate understanding of and the ability to use the conventional algorithm for division of up to a three-digit whole number with a single-digit divisor (with or without remainders). Divide up to a three-digit whole number with a single-digit divisor accurately and efficiently. Interpret any remainders. *Or* **4.NSO-C.25.** Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems, including those involving money. *Or* **4.NSO-F.12.** Select, use, and explain models to relate common fractions and mixed numbers (e.g., 1/2, 1/3, 1/4, 1/5, 1/8, 1/10, 1/12, and 1-1/2); find equivalent fractions, mixed numbers, and decimals.
Patterns, Relations, and Algebra	**4.PRA.3.** Use pictures, models, tables, charts, graphs, words, number sentences, and mathematical notations to interpret mathematical relationships. *Or* **4.PRA.4**. Solve problems involving proportional relationships, including unit pricing.
Measurement	**4.M.1.** Identify and use appropriate metric and U.S. customary units and tools (e.g., ruler, protractor, graduated cylinder, thermometer) to estimate, measure, and solve problems involving length, area, volume, weight, time, angle size, and temperature.

5th Grade

ELA	Learning Standard
Language Development	**5.LD-V.8**. Identify the meaning of common Greek and Latin roots and affixes to determine the meaning of unfamiliar words. *Or* **5.LD-V.9.** Identify and apply the meanings of the terms antonym, synonym, and homophone.
Literary Text	**5.LT-T.3**. Identify the theme (moral, lesson, meaning, message, view or comment on life) of a literary selection. *Or* **5.LT-F.5**. Identify the plot and its components (e.g., main events, conflict, resolution). *Or* **5.LT-P.7.** Respond to and analyze the effects of the sounds in words (alliteration, onomatopoeia, rhyme scheme), form (free verse, couplets), and figurative language (metaphor, simile) to uncover the meaning of a poem. *Or* **5.LT-S.9.** Identify and draw conclusions about the author's use of sensory details, imagery, and figurative language.
Informational Text	**5.IT-E.1**. Identify the author's purpose and summarize the critical details of expository text, maintaining chronological or logical order. *Or* **5.IT-E.2**. Distinguish fact from opinion in expository text, providing supporting evidence from text. *Or* **5.IT-A.7.** Determine an author's position (i.e., what the author is arguing), providing supporting evidence from the text.
Mathematics	**Learning Standard**
Number Sense and Operations	**5.NSO-N.1.** Estimate, round, and manipulate very large (e.g., billions) and very small (e.g., thousandths) numbers; demonstrate an understanding of place value to billions and thousandths. *Or* **5.NSO-N.3.** Find and position integers, fractions, mixed numbers, and decimals (both positive and negative) on the number line. *Or* **5.NSO-F.8.** Explain different interpretations of fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, as division of whole numbers by whole numbers, and as locations on the number line. *Or* **5.NSO-C.13**. Add and subtract fractions (including mixed numbers) with like and unlike denominators (of 2, 3, 4, 5, 6 and 10), and express answers in the simplest form. *Or* **5.NSO-E.23**. Estimate sums and differences of whole numbers, positive fractions, and positive decimals. Estimate products of whole numbers and products of positive decimals with whole numbers. Use a variety of strategies and judge reasonableness of answers

Patterns, Relations, and Algebra	**5.PRA.1.** Analyze and determine the rules for extending symbolic, arithmetic, and geometric patterns and progressions (e.g., ABBCCC …; 1, 5, 9, 13, …; 3, 9, 27, …). *Or* **5.PRA.3.** Use the properties of equality to solve problems with whole numbers. *Or* **5.PRA.5**. Interpret and evaluate mathematical expressions that use parentheses; use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations. *Or* **5.PRA.6**. Solve problems involving proportional relationships using concrete models, tables, graphs, and paper-pencil methods.
Geometry	**5.G.1.** Identify polygons based on their properties, including types of interior angles, perpendicular or parallel sides, and congruence of sides (e.g., squares, rectangles, rhombuses, parallelograms, and trapezoids; isosceles, equilateral, and right triangles). *Or* **5.G.2**. Identify, describe, and compare special types of three-dimensional shapes (e.g., cubes, prisms, spheres, cones, and pyramids) based on their properties, such as edges and faces. *Or* **5.G.3.** Identify relationships among points, lines, and planes (e.g., intersecting, parallel, perpendicular). *Or* **5.G.6**. Predict, describe, and perform transformations on two-dimensional shapes (e.g., translations, rotations, and reflections).
Science	**Learning Standard**
Scientific Thinking and Inquiry	**5.1.1** Recognize and describe how results of similar scientific investigations may turn out differently because of inconsistencies in methods, materials, and observations, or because of limitations of the precision of the instruments used. *Or* **5.1.2** Evaluate the validity of claims based on the amount and quality of the evidence cited. *Or* **5.1.6** Identify the controlled variable and at least one independent variable in a scientific investigation, when appropriate. *Or* **5.1.8** Realize and explain why predictions may be more accurate if they are based on large collections of similar events for statistical accuracy.
Earth Science	**5.3.1** Describe the Earth as part of a system called the solar system, which includes the sun (a star), planets, comets, asteroids, and many moons. *Or* **5.3.3** Demonstrate how the Earth orbits the sun in a year's time, and Earth rotates on its axis about once every 24 hours.

5th Grade (continued)

Life Science	**5.7.1** Observe and describe that some organisms consist of a single cell that needs an environment that can supply food, water, sometimes oxygen, and a way to dispose of waste. (Some single-celled organisms are anaerobes.) *Or* **5.9.2** Identify organisms that are not native to the Washington, DC, area and how they undergo changes to increase their chance of survival in the area. *Or* **5.9.4** Explain that organisms fit enough to survive in a particular environment will typically produce offspring fit enough to survive and reproduce in that particular environment. Over time, these inherited characteristics are carried as the predominant forms (e.g., adaptations such as shape of beak, length of neck, shape of teeth). *Or* **5.9.5** Explain how changes in an organism's habitat are sometimes beneficial and sometimes harmful, and how changes in the environment (drought, cold) have caused some plants and animals to die, migrate, or become extinct. *Or* **5.9.9** Examine the information that fossils provide us about living things that inhabited the Earth in the distant past, and describe how they can be compared both to one another and to living organisms according to their similarities and differences.

6th Grade

ELA	Learning Standard
Language Development	**6.LD-V.7.** Determine the meaning of unfamiliar words, using knowledge of English language structure, Greek and Latin roots (e.g., *annus, aqua*), suffixes (*e.g., -itis, -osis*), and prefixes (*e.g., multi-, dis-, anti-, hyper-, syn-*). *Or* **6.LD-V.9.** Determine the meaning of figurative language, including similes, metaphors, personification, and grade appropriate idioms.
Literary Text	**6.LT-C.1**. Analyze the relevance of the setting (e.g., time, place, and situation) to the mood and tone of the text. *Or* **6.LT-G.2.** Identify the characteristics of different forms of prose (short story, novel, novella, essay). *Or* **6.LT-T.3**. Apply knowledge that theme, whether stated or implied, refers to the basic meaning of a literary text. *Or* **6.LT-P.7.** Respond to and analyze the effects of figurative language (personification, metaphor, simile, hyperbole) and graphics (capital letters) to uncover the meaning of a poem.
Informational Text	**6.IT-E.1.** Identify and analyze the author's stated purpose, main ideas, supporting ideas, and supporting evidence. *Or* **6.IT-E.3**. Identify and use organizational structures in text, including chronological order, comparison and contrast, cause and effect, logical order, and classification schemes.

Mathematics	Learning Standard
Number Sense and Operations	**6.NSO-N.5.** Identify and determine common equivalent fractions, mixed numbers, decimals, and percentages. *Or* **6.NSO-N.6**. Apply number theory concepts — including prime and composite numbers; prime factorization; greatest common factor; least common multiple; and divisibility rules for 2, 3, 4, 5, 6, 9, and 10 — to the solution of problems. *Or* **6.NSO-C.8.** Select and use appropriate operations to solve problems involving addition, subtraction, multiplication, division, and positive integer exponents with whole numbers and with positive fractions, mixed numbers, decimals, and percentages. *Or* **6.NSO-C.13.** Calculate given percentages of quantities, and solve problems involving discounts at sales, interest earned, and tips. *Or* **6.NSO-E.18**. Estimate results of computations with whole numbers and with positive fractions, mixed numbers, decimals, and percentages. Determine reasonableness of estimates.
Patterns, Relations, and Algebra	**6.PRA.1.** Use the properties of equality to solve problems using letter name variables. *Or* **6.PRA.4.** Simplify expressions of the first degree by combining like terms, and evaluate using specific values. *Or* **6.PRA.9.** Produce and interpret graphs that represent the relationship between two variables (x and y) in everyday situations.
Measurement	**6.M.3.** Develop strategies to find the area and perimeter of complex shapes (e.g., subdividing them into basic shapes such as quadrilaterals, triangles, circles). *Or* **6.M.6**. Identify, measure, describe, classify, and construct various angles, triangles, and quadrilaterals; measure the interior angles of various polygons. *Or* **6.M.8.** Know and use the formulas for the volumes and surface areas of cubes and rectangular prisms, given the lengths of their sides.

7th Grade

ELA	Learning Standard
Language Development	**7.LD-V.7**. Use Greek and Latin roots and affixes to determine the meaning of content area vocabulary. *Or* **7.LD-V.8**. Use such clues as cause and effect and comparison and contrast to identify the meaning of unfamiliar words and words with multiple meanings in context.
Literary Text	**7.LT-G.3**. Identify various genres of fiction (e.g., mysteries, science fiction, historical fiction, adventures, fantasies, fables, myths) based on their characteristics. *Or* **7.LT-F.5.** Analyze plot development (e.g., conflict, rising action, falling action, resolution, subplots, flashbacks, parallel episodes) to determine whether and how conflicts are resolved. *Or* **7.LT-F.7.** Analyze the ways characters change or interact with others over time and give supporting evidence from the text.
Informational Text	**7.IT-E.1.** Identify the author's purpose(s) in a text when it is not stated. *Or* **7.IT-E.2**. Identify and use knowledge of common textual features. *Or* **7.IT-E.3.** Apply knowledge of organizational structures of text to aid comprehension, including chronological order, comparison and contrast, cause and effect, logical order, and classification schemes.

Mathematics	Learning Standard
Number Sense and Operations	**7.NSO-N.1.** Compare, order, estimate, and translate among integers, fractions, mixed numbers (i.e., rational numbers), decimals, and percents. *Or* **7.NSO-N.7**. Apply number theory concepts, including prime factorization and relatively prime numbers, to the solution of problems.
Patterns, Relations, and Algebra	**7.PRA.1**. Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic expressions. Include arithmetic and geometric progressions (e.g., compounding). *Or* **7.PRA.3.** Use the correct order of operations to evaluate expressions (e.g., $3(2x) = 5$). *Or* **7.PRA.4.** Create and use symbolic expressions for linear relationships, and relate them to verbal and graphical representations. *Or* **7.PRA.6.** Write and solve two-step linear equations and check the answers. *Or* **7.PRA.7.** Identify, describe, and analyze linear relationships between two variables. Compare positive rate of change (e.g., $y = 3x + 1$) to negative rate of change (e.g., $y = -3x + 1$).
Data Analysis, Statistics, and Probability	**7.DASP.1.** Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) that represent a set of data. *Or* **7.DASP.2**. Select, create, interpret, and use various tabular and graphical representations of data (e.g., circle graphs, Venn diagrams, stem-and-leaf plots, histograms, tables, and charts). *Or* **7.DASP.4**. Use tree diagrams, tables, organized lists, and area models to compute probabilities for simple compound events (e.g., multiple coin tosses or rolls of dice).

8th Grade

ELA	Learning Standard
Language Development	**8.LD-V.9.** Monitor text for unknown words or words with novel meanings, using word, sentence, and paragraph clues to determine meaning. *Or* **8.LD-V.10**. Understand and explain "shades of meaning" for related words.
Literary Text	**8.LT-G.2**. Identify and analyze how the different genres (e.g., poetry, short story, biography, drama) used by one particular author accomplish different aesthetic purposes. *Or* **8.LT-F.5.** Interpret a character's traits, emotions, or motivations, and provide supporting evidence from a text. *Or* **8.LT-F.6.** Analyze the influence of setting (e.g., time of day, place, historical period, situation) on the problem and resolution. *Or* **8.LT-F.8.** Analyze the effects of sound (alliteration, internal rhyme, rhyme scheme), figurative language (personification, metaphor, simile, hyperbole), and graphics (capital letters, line length, word position) on the meaning of a poem. *Or* **8.LT-S.10**. Draw conclusions about style, mood, tone, and meaning of prose, poetry, and drama based on the author's word choice and use of figurative language.
Informational Text	**8.IT-E.1.** Compare (and contrast) the central ideas, problems, or situations from readings on a specific topic selected to reflect a range of viewpoints. *Or* **8.IT-E.2.** Explain how an author uses word choice and organization of text to achieve his purposes. *Or* **8.IT-E.3.** Distinguish between the concept of theme in a literary work and the author's explicit or implicit purpose in an expository text.
Mathematics	**Learning Standard**
Number Sense and Operations	**8.NSO-N.7.** Demonstrate an understanding of the properties of arithmetic operations on rational numbers. *Or* **8.NSO-C.9**. Solve problems involving ratio units such as miles per hour, dollars per pound, or persons per square mile. *Or* **8.NSO-C.11**. Solve problems that involve markups, commissions, profits, and simple and compound interest. *Or* **8.NSO-E.17.** Determine estimates to a certain stated accuracy.

Patterns, Relations, and Algebra	**8.PRA.2.** Set up and solve linear equations and inequalities with one or two variables using algebraic methods and graphs. *Or* **8.PRA.3**. Use linear equations to model and analyze problems involving proportional relationships. *Or* **8.PRA.7.** Interpret the formula $(-x)(-y) = xy$ in calculations involving such things as distance, speed, and time, or in the graphing of linear functions. Use this identity to simplify algebraic expressions [e.g., $(-2)(-x + 2) = 2x - 4$]. *Or* **8.PRA.8.** Explain and analyze — both quantitatively and qualitatively, using pictures, graphs, charts, and equations — how a change in one variable results in a change in another variable in functional relationships e.g., $C = d$, $A = r2$ (*A* as a function of *r*), *A* rectangle = *lw* (*A* rectangle as a function of *l* and *w*).
Data Analysis, Statistics, and Probability	**8.DASP.2.** Select, create, interpret, and use various tabular and graphical representations of data (e.g., scatterplots, box-and-whisker plots). *Or* **8.DASP.3**. Recognize practices of collecting and displaying data that may bias the presentation or analysis.
Science	**Learning Standard**
Structure of Matter	**8.2.2.** Construct a model of an atom and know the atom is composed of protons, neutrons, and electrons. *Or* **8.2.3.** Using a periodic chart, explain that the atoms of any element are similar to each other, but they are different from atoms of other elements. Know the atoms of a given isotope are identical to each other. *Or* **8.2.7.** Understand how an ion is an atom or group of atoms (molecule) that has acquired an electric charge by losing or gaining one or more electrons. *Or* **8.2.10.** Describe the contributions of the scientists involved with the development of current atomic theory, including John Dalton, Marie and Pierre Curie, Joseph John Thomson, Albert Einstein, Max Planck, Ernest Rutherford, Niels Bohr, and Erwin Schroedinger.
Reactions	**8.3.3.** Explain how the idea of atoms, as proposed by John Dalton, explains the conservation of matter: In chemical reactions, the number of atoms stays the same no matter how they are arranged, and the mass of atoms does not change significantly in chemical reactions, so their total mass stays the same. *Or* **8.3.5.** Investigate and explain that reactions occur at different rates, slow to fast, and that reaction rates can be changed by changing the concentration of reactants, the temperature, the surface areas of solids and by using a catalyst. *Or* **8.3.6.** Recognize that solutions can be acidic, basic, or neutral depending on the concentration of hydrogen ions in the solution. Understand that because this concentration can vary over a very large range, the logarithmic (each increase of one in the pH scale is an increase of 10 times in concentration) pH scale is used to describe how acidic or basic a solution is.

Conservation of Energy	**8.5.2.** Describe kinetic energy as the energy of motion (e.g., a rolling ball), and potential energy as the energy of position or configuration (e.g., a raised object or a compressed spring). *Or* **8.5.7.** Know the sun's radiation consists of a wide range of wavelengths, mainly visible light and infrared and ultraviolet radiation. *Or* **8.5.8.** Investigate and explain that heat energy is a common product of an energy transformation, such as in biological growth, the operation of machines, the operation of a light bulb, and the motion of people. *Or* **8.5.10.** Investigate and explain that in processes at the scale of atomic size or greater, energy cannot be created or destroyed but only changed from one form into another. *Or* **8.5.11.** Compare and contrast how heat energy can be transferred through radiation, convection, or conduction.

10th Grade

ELA	Learning Standard
Language Development	**10.LD-V.9**. Distinguish between the denotative and connotative meanings of words and interpret the connotative power of words.
Literary Text	**10.LT-F4**. Analyze such elements in fiction as foreshadowing, flashbacks, suspense, and irony. *Or* **10.LT-F5.** Explain how narrator's point of view affects tone, characterization, and plot. *Or* **10.LT-S10.** Analyze the author's use of figurative language, including personification, symbolism, simile, metaphor, hyperbole, allusion, and imagery in a poetry selection. *Or* **10.LT-T3.** Analyze the way in which the theme or meaning of a selection represents a view or comment on life, providing textual evidence for the identified theme.
Informational Text	**10.IT-A.9.** Analyze the logic and use of evidence in an author's argument. *Or* **10.IT-E2.** Explain the author's stated (or implied) purpose(s) for writing expository text. *Or* **10.IT-E5.** Make relevant inferences by synthesizing concepts and ideas from a single reading selection.

Mathematics	Learning Standard
Algebra I: Patterns, Relations, and Algebra	**AI.P.5**. Demonstrate an understanding of the relationship between various representations of a line. Determine a line's slope and *x*-and *y*-intercepts from its graph or from a linear equation that represents the line. *Or* **AI.P.8.** Add, subtract, and multiply polynomials with emphasis on 1st-and 2nd-degree polynomials. *Or* **AI.P.9.** Demonstrate facility in symbolic manipulation of polynomial and rational expressions by rearranging and collecting terms, factoring [e.g., $a2 - b2 = (a + b)(a - b)$, $x2 + 10x + 21 = (x + 3) (x + 7)$, $5x4 + 10x3 - 5x2 = 5x2 (x2 + 2x - 1)$], identifying and canceling common factors in rational expressions, and applying the properties of positive integer exponents. *Or* **AI.P.13**. Solve equations and inequalities, including those involving absolute value of linear expressions (e.g., $|x - 2| > 5$), and apply to the solution of problems. *Or* **AI.P.14.** Solve everyday problems (e.g., compound interest and direct and inverse variation problems) that can be modeled using linear or quadratic functions. Apply appropriate graphical or symbolic methods to the solution. *Or* **AI.P.15.** Solve everyday problems (e.g., mixture, rate, and work problems) that can be modeled using systems of linear equations or inequalities. Apply algebraic and graphical methods to the solution.
Algebra I: Data Analysis, Statistics and Probability	**AI.D.1.** Select, create, and interpret an appropriate graphical representation (e.g., scatter plot, table, stem-and-leaf plots, circle graph, line graph, and line plot) for a set of data, and use appropriate statistics (e.g., mean, median, range, and mode) to communicate information about the data. Use these notions to compare different sets of data.

Geometry	**G.G.3.** Apply properties of sides, diagonals, and angles in special polygons; identify their parts and special segments (e.g., altitudes, midsegments); determine interior angles for regular polygons. *Or* **G.G.15.** Use the properties of special triangles (e.g., isosceles, equilateral, 30º-60º-90º, 45º-45º-90º) to solve problems. *Or* **G.G.20.** Draw the results and interpret transformations on figures in the coordinate plane such as translations, reflections, rotations, scale factors, and the results of successive transformations. Apply transformations to the solution of problems. *Or* **G.G.21.** Demonstrate the ability to visualize solid objects and recognize their projections, cross sections, and graph points in 3-D. *Or* **G.G.22.** Find and use measures of perimeter, circumference, and area of common geometric figures such as parallelograms, trapezoids, circles, and triangles.
Science	**Learning Standard**
Biology: Scientific Investigation and Inquiry	**B.1.10** Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.) *Or* **B.1.12** Analyze situations and solve problems that require combining concepts from more than one topic area of science and applying these concepts.
Biology: Cell Biology	**B.3.4** Describe the organelles that plant and animal cells have in common (e.g., ribosomes, Golgi bodies, endoplasmic reticulum) and some that differ (e.g., only plant cells have chloroplasts and cell walls). *Or* **B.3.5** Demonstrate and explain that cell membranes act as highly selective permeable barriers to penetration of substances by diffusion or active transport. *Or* **B.3.7** Describe that the work of the cell is carried out by structures made up of many different types of large (macro) molecules that it assembles, such as proteins, carbohydrates, lipids, and nucleic acids. *Or* **B.3.8** Demonstrate that most cells function best within a narrow range of temperature and pH; extreme changes usually harm cells by modifying the structure of their macromolecules and, therefore, some of their functions. *Or* **B.3.14** Recognize and describe that cellular respiration is important for the production of ATP, which is the basic energy source for cell metabolism. *Or* **B.3.15** Differentiate between the functions of mitosis and meiosis: Mitosis is a process by which a cell divides into each of two daughter cells, each of which has the same number of chromosomes as the original cell. Meiosis is a process of cell division in organisms that reproduce sexually, during which the nucleus divides eventually into four nuclei, each of which contains half the usual number of chromosomes.

Biology: Genetics	**B.4.3** Explain how hereditary information is passed from parents to offspring in the form of "genes," which are long stretches of DNA consisting of sequences of nucleotides. Explain that in eukaryotes, the genes are contained in chromosomes, which are bodies made up of DNA and various proteins. *Or* **B.4.6** Explain how the genetic information in DNA molecules provides the basic form of instructions for assembling protein molecules and that this mechanism is the same for all life forms. *Or* **B.4.8** Explain the mechanisms of genetic mutations and chromosomal recombinations, and when and how they are passed on to offspring. *Or* **B.4.9** Understand and explain that specialization of cells is almost always due to different patterns of gene expression rather than differences in the genes themselves. *Or* **B.4.10** Explain how the sorting and recombination of genes in sexual reproduction result in a vast variety of potential allele combinations in the offspring of any two parents.

PART 3: TEST ADMINISTRATION AND TRAINING

Administration Procedures and Guidelines

Instructional alignment is especially important given the conceptual shift many educators must make to teach and assess this population content that links to grade level standards. For this reason, professional development materials must make links to general education expectations and promote overall program quality. The professional development provided to teachers of students with significant cognitive disabilities includes not only procedural information (such as data collection), but information regarding academic content and best instructional practices for this population.

The specific targeted skills assessed in the CAS-Alt portfolios and supports for responding are determined by the teacher. To do so, the teacher must review the required strands and Learning Standards, choose one standard per required strand, and identify the cognitive demands of that standard, using the suggested Entry Points. Next, the teacher is instructed to review the student's Entry Point using Bloom's Taxonomy and develop targeted skills and standards-based learning activities that will lead to achievement of those skills. Each strand requires one data chart measuring the student's performance on at least five different dates of a single targeted skill. Each strand requires two additional pieces of evidence corroborating performance of the targeted skill identified on the data chart.

If the targeted skill requires the student to choose the correct response from an array of items, at least 2 item distracters (incorrect choices) must be provided. During the probe condition, no models, prompts or cues, including physical prompts may be provided that would suggest the correct answer. Similarly, assistive technology should support the student response, but not provide or suggest the correct response. Task directions and attention to task cues may be repeated as often as necessary. The data can be collected beginning at the start of the school year and must be completed by mid to late March. Testing sessions interrupted by medical or behavioral concerns may be rescheduled.

Administration Responsibility

Principals are responsible for ensuring that teachers have the materials and supports necessary to conduct the assessment and that the final content of each student's portfolio is valid. Certified teachers are responsible for administering the assessment directly to students at the building level. Unlike the general education large-scale assessment, where students complete the assessment with minimal involvement of the teacher, alternate achievement standards assessments require extensive involvement of the teacher in direct student observations.

Current Professional Development and Instructional Support Training for Those Gathering Evidence

Pearson has developed and provided on-going training opportunities to support special education teachers in developing both curriculum and instruction for students with severe cognitive disabilities. Technical assistance has taken many forms – from large-group/whole school support to individual targeted assistance in reviewing student work and documenting data collection. Scoring academy trainings, led by Pearson staff, have been credited for expanding the expertise of special educators across the district in implementing effective curriculum and instruction for this population of students. The *CAS-Alt Revised Teachers' Guide* provides many examples and links to general education expectations as a guide to teaching and assessing grade-referenced content.

Specific to the development of portfolio tasks and data collection and submission requirements, city-wide CAS-Alt Portfolio training is conducted annually in the fall.

Participants

Approximately 200 teachers attended training workshops in February of 2011 conducted by Pearson staff. The trainings were conducted over a two-day period and were organized to target sessions for CAS-ALT first-time teachers, CAS-ALT experienced teachers, and lastly CAS-ALT administrators to balance dissemination of information and guided practice. The following were covered throughout the training.

➢ Information about the background of the CAS-Alt;

➢ Information about the purpose and rationale for revisions made to the CAS-Alt;

➢ Information about CAS-Alt participation guidelines;

➢ Information about student registration;

➢ Practice completing online or paper student registration;

➢ Information about and examples of required portfolio components, strands, and learning standards to be assessed;

➢ Guided practice developing targeted skills and determining appropriate evidence of student performance; and

➢ Review of the scoring rubric, and practice applying the rubric to a sample content area entry.

➢ Procedures for submitting portfolios to include packaging and shipping instructions

➢ Pearson contact information for follow-up questions

In addition, all of the training materials were posted to the Pearson CAS-Alt website. Updates and relevant resources were added throughout the assessment period. In addition to the workshops, Pearson staff provided follow-up working sessions for teachers in March of 2011 as well as individual technical assistance throughout the testing window.

Evaluation of Training Quality
Participants were invited to evaluate the quality of the training on an evaluation form that is distributed at the conclusion of all trainings. Those results were used to inform future trainings. The February 2011 training was evaluated on organization and clarity; presenters' preparedness and knowledge; responsiveness of presenters' to participant questions; usefulness of the content; and clarity of materials utilized. Each item was rated on a scale of 1 to 5 with a 1 being 'strongly disagree" and a 5 being "strongly agree." Across the 2 days of training, the average score on any item was 4.6. Participants were also asked to identify areas where they could use more information or training. Participants identified the need for follow-up working sessions, resources for adapting curriculum and materials, and training on ways to collect data and data collection systems.

Monitoring and Quality Control of Administration Procedures
While error cannot be avoided due to the variability among the population, a number of steps were taken to control error in the revised CAS-Alt portfolio. First, while the teacher has latitude in the design of supports and in determining levels of complexity for individual students related to the targeted skills, Entry Points have been provided for each grade level Learning Standard identified under each required strand. Secondly, teachers were provided with specific training on the development of targeted skills using these Entry Points. Third, all portfolios were scored by trained and certified scorers. All portfolios were scored by two different scorers with discrepancies reconciled by either a table leader or Pearson staff person.

PART 4: SCORING

The CAS-Alt portfolio is scored using an analytic scoring process. Analytic scoring assigns numerical values to the scoring criteria. Each assessment target receives score points assigned in the scoring dimensions creating a sub-score. The sub-scores are then combined to provide the overall score for each content area. Once all the scores have been calculated, the proficiency levels (Below Basic, Basic, Proficient and Advanced) are determined based on the scoring distribution that best describes student performance in each content area. It is important to note that proficiency levels of Advanced, Proficient, Basic, and Below Basic cannot be determined by using the revised scoring rubric. Proficiency levels for reading/ELA and mathematics were determined by cut scores set in June 2007 and for Science in August 2008.

4.1 Description of the Rubric and Dimensions Used in Scoring

The rubric has three dimensions, performance, level of complexity and supports. he first two dimensions indicate the level of student performance, as well as the relationship of that performance to the grade level standards. The third dimension indicates the use of supports provided to the student that allow him/her to demonstrate progress. Each dimension is described below.

Student Performance
Each portfolio entry is scored based on the progress a student makes on the targeted skill developed in the context of the grade level learning standard. Performance accuracy/points above baseline are calculated using an average of the final 3 data points on the data chart. Students who participate in the alternate assessment represent a continuum of communication skills. Some students communicate symbolically while others communicate in highly specialized ways. Students who communicate primarily through cries, facial expressions, etc., with no clear use of symbols (objects, textures, pictures, words) are considered to be communicating at the pre-symbolic level. Symbolic communication forms the foundation for the content areas of ELA and Mathematics. To ensure that students who communicate pre-symbolically are adequately assessed, the scoring rubric dimension of performance has been broken into progress (percentage points above baseline) vs. attainment (accuracy). Students who communicate pre-symbolically will be assessed using the progress level of performance and students who communicate symbolically will be assessed using the attainment level of performance. For students who communicate symbolically, the student's "attainment" score is determined by averaging the last three entry scores. These attainment scores reflect the degree of accuracy the student exhibits on the targeted skill. The attainment model places emphasis on mastery of the academic skills. For example #1, if the last three scores are 60%, 70%, and 70%, the average score is 66.7%. This average percentage corresponds to a score of 3 on the *Performance Dimension Scoring Rubric.*

For students who communicate at the pre-symbolic level, the emphasis is on growth or "progress" rather than on mastery. Progress is measured in relation to the baseline. Again, the baseline must not exceed 50% to permit the student to show growth. Student "progress" is measured by comparing the average of the last three entries to the baseline. For example, if the last three entries are 40%, 50%, and 60%, the average of these entries is 50%. This is a 40-percentage point increase when compared to a baseline of 10%. A 40-percentage point increase corresponds to a score of 4 on the *Performance Dimension Scoring Rubric.*

Complexity
Data collected for the *Level of Complexity* dimension provides evidence that the students are working toward the grade level content standards. The student's targeted skills and associated work are judged against the grade level content standard. Evidence might include student work samples or photographs of the student working on the targeted skill. The type of communication the student uses (e.g., verbal and/or augmentative communication) and types of supports provided by the teacher (e.g., accommodations) do not adversely affect the *Level of Complexity* scores.

Complexity measures the depth and breadth of knowledge at which a student achieves the specified standard compared to the expectations for the general education standard. The scoring continuum moves from no evidence of the grade-level learning standard → performance of an access skill within the context of a grade-level learning standard-based activity → performance of a targeted skill at a lower cognitive demand than that represented by the grade-level learning standard → performance of a targeted skill that addresses part or some of the cognitive demand (complexity) represented by the grade-level learning standard → performance of a targeted skill that addresses all of the cognitive demand represented by the grade-level learning standard.

Supports
This dimension measures the degree to which the supports provided the students are appropriate, meaningful, and allow access to the grade level learning standard. Supports can be "high tech" in nature (e.g., computers or an electric switch) or "low tech" (e.g., a summary of a book rather than an entire book). Supports are defined as adaptations, modifications, and assistive devices that help students become more independent and their performance more accurate. A sophisticated device (such as a computer) is not scored any higher than a simple strategy (such as reducing the amount of text). In relation to scoring, consideration is given to the following:

➢ Appropriateness for the individual student's communication (which is determined by information provided on the Learner Characteristic Inventory Summary);

➢ Degree to which the support connects to the targeted skill;

➢ Appropriateness for the requirements of the assessment target.

4.2 Scoring Rules and Criteria for Each Dimension

Each entry of the CAS-Alt portfolio is scored on three dimensions. These three dimensions were selected based on effective practice and current research in the instruction of students with significant disabilities.

➢ **Performance:** This dimension is used to evaluate student progress toward achieving the targeted skills related to DC Content Standards.

➢ **Complexity:** This dimension is used to determine the depth of knowledge of the targeted skill according to Revised Bloom's Taxonomy.

➢ **Supports**: This dimension evaluates the degree to which the supports provided the student are appropriate, meaningful and allow access to the grade level learning standard.

Performance, Complexity and Support
If the scores given by the two readers are not the same or adjacent, then a third reader scores the portfolio entry. The third score is then combined with the equivalent score. If the third score is adjacent to both the first and second score, then use the third score and the greater score. If the third score is adjacent to either the first or second score, but not both then use the third score and the adjacent one. If the third score is adjacent to neither the first or second score, then use the third score and the greater score. Since some degree of variation in scorer judgments is expected, adjacent scores are acceptable.

Weighted Scores
Scores are reported by content area. Reading/ELA, Mathematics and Science scores are reported based on three entries each. For Reading/ELA, Mathematics and Science any "subject area" containing less than three entries will report dimension scores only; subtotal scores or proficiency levels will not be calculated. Entries that are incomplete or missing will be scored "0;" therefore, the proficiency level, student progress, level of complexity and supports will be reported as "Void."

Each entry of a portfolio is reviewed and given a rating for each dimension of the rubric, and is scored independently by at least two readers for each dimension of the rubric. An entry score is derived from two scores, one from each reader. In the Performance dimension, if the scores given by the two readers are not exact, a third reader will score the "discrepant" entry(s). The third reader's score is then combined with the equivalent score. In the Complexity and Supports dimensions, if the scores given by the two readers are not exact or adjacent, a third reader will score the "discrepant" entry(s). The third reader's score is then combined with the equivalent or highest adjacent score.

The first two rubric dimensions, Performance and Complexity, are weighted. That is, the two reader scores are added together for each dimension per entry and doubled. The remaining dimension's scores are the sum of the two reader scores. Table 4.1 below summarizes the dimension scoring.

Table 4.1 Dimension Scoring

Subject	Number of entries required*	Dimension	Scores of Two Readers
Reading/ELA	3	Performance	Add and double
		Level of Complexity	Add and double
		Supports	Add
Mathematics	3	Performance	Add and double
		Level of Complexity	Add and double
		Supports	Add
Science	3	Performance	Add and double
		Level of Complexity	Add and double
		Supports	Add

Table 4.2 represents the weighting for each dimension score. As shown, for each subject there are three required standards and performance for each standard is scored on three dimensions. In each case, the scores range from 1 to 5, and the scores from two scorers are applied (i.e., added). In the cases of the Performance and Level of Complexity dimensions, the scores are weighted (i.e., multiplied by two). The maximum score for each subject, for both scorers, is 150 points.

Table 4.2 Dimension Scoring Weighting

Subject	Number of Standards	Dimension	Number of Points per Standard	Maximum Scores –2 Readers (add)	Weight	Maximum Weighted Score
Reading	3	Performance	1-5	30	2	60
		Level of Complexity	1-5	30	2	60
		Supports	1-5	30	1	30
		Total Reading	-----	-----	-----	150

Mathematics	3	Performance	1-5	30	2	60
		Level of Complexity	1-5	30	2	60
		Supports	1-5	30	1	30
		Total Math	-----	-----	-----	150
Science	3	Performance	1-5	30	2	60
		Level of Complexity	1-5	30	2	60
		Supports	1-5	30	1	30
		Total Science	-----	-----	-----	150

Table 4.3 below shows the scoring rubrics for each dimension.

Table 4.3 Dimensional Scoring Rubric

Performance		Targeted skill is not clearly linked to the grade-level learning standard. OR Baseline score begins above 50%.	Student performance of the targeted skill is primarily inaccurate.	Student performance of the targeted skill is limited or inconsistent.	Student performance of the targeted skill is mostly accurate.	Student performance of the targeted skill is accurate and consistent.
	Attainment		(0 – 40% accurate)	(41 – 74% accurate)	(75 – 89% accurate)	(90 – 100%) accurate)
	Progress (% points		0 -9%	10 – 24%	25 –49%	50% & over
		1	2	3	4	5
Level of Complexity		Entry reflects no basis in the DCPS grade-level learning standards in this strand.	Student is working on "access skills" only within grade-level standard based instruction in this strand.	Student work reflects that grade level expectations have been **modified to a lower cognitive demand** for the student in this strand.	Student work reflects part of the cognitive demand of the grade level expectation in this strand.	Student work reflects the same cognitive demand as the grade level expectation in this strand (may reflect a different level of complexity/ difficulty).
		1	2	3	4	5

Supports	No evidence of materials or adaptations that link to the student's learning profile.	Materials and adaptations reflect the student's learning profile, but activities and/or materials are not age-appropriate.	Age appropriate materials and adaptations reflect the student's learning profile, **but are** not clearly linked to the demonstration of the targeted skill.	Age appropriate materials and adaptations are clearly linked to the student's learning profile **and** the demonstration of the targeted skill, but not to grade level learning standards.	Age appropriate materials and adaptations are clearly linked to the student's learning profile, the demonstration of the targeted skill **and the** grade-level learning standards.
	1	2	3	4	5

Pre-Range Finding

In 2011, Pearson prepared to create training sets. Prior to range finding, the Scoring Directors and the Content Specialist reviewed scanned portfolios from the 2010 assessment and chose portfolios to be scored by the range finding committee. These portfolios were chosen based on a variety of factors. In order to have a comprehensive training set, all score points and condition codes should be represented. Twenty-eight portfolios across all grade levels were chosen for 2011 range finding in Washington, DC.

Range Finding

Range finding is the process by which a wide range of portfolios are reviewed by a committee of experts for the purpose of selecting exemplars to use in the training, monitoring, and qualification of scorers, as well as to establish the scoring guidelines.

These portfolios represent the range of abilities and characteristics in the population tested as well as different kinds of evidence. The goal is to provide the range finding committee with a sample of portfolios that is diverse enough to exemplify as many of the issues as possible that may be encountered during scoring.

At the start of the range finding meeting, the committee members and Pearson Scoring Directors began work by reviewing the rubric and scoring rules through a power point presentation. This helped the committee acquire a common understanding of standards. Next, the range finding committee was introduced to their tasks: 1) reviewing and scoring range finding portfolios to be used to create training materials, and 2) determining the scoring guidelines.

Throughout the meeting, Pearson recorded consensus scores, teacher comments, discussions of portfolios along with discussion of new issues seen during review of range finding portfolios.

Post Range Finding

During post range finding, Pearson Scoring Directors reviewed the range finding record, which included consensus scores and teacher comments, to certify that scores have been recorded accurately. Pearson Scoring Directors create the training sets, have them

approved by the Pearson Content Specialist and send them to OSSE for approval. When approval was given the training sets were prepared for scorer training.

4.3 Scorers

Selection of Scorers

Scorers are hired by Pearson to score the CAS-Alt. Recruitment began approximately six weeks before the onset of scorer training. In 2010-11, scoring activities occurred at the Virginia Beach, Virginia scoring site. In selecting scorers for the CAS-Alt, priority is given to (1) individuals with degrees in special education, (2) individuals with previous experience in scoring alternate assessments, and (3) individuals with previous experience in performance scoring. At a minimum, all scorers must have a four-year college degree and complete the formal application process including an interview.

Regardless of previous experience or education, all selected scorers are required to meet the project's qualification standards (acceptable scores on qualifying sets) and were subject to continual monitoring (i.e., back reading and validity) for quality and accuracy.

Training and Qualifications

In 2011, scorers were trained to score all grade levels in Reading/ELA, Mathematics and Science content areas. The CAS-Alt scoring procedures and rubric were presented in context with student portfolios. First, an anchor set of portfolios is introduced to scorers. Then, a set of practice portfolios is used to give the scorers the opportunity to practice scoring. Finally, a set of qualifying portfolios is administered to the scorers to determine if they have fully grasped the scoring criteria and rules.

Introduction

During the introduction to scoring, a power point presentation was presented and hard copies of all training materials were provided to the scorers for review and discussion. Scorers were encouraged to take notes throughout the training process. Scorers are also provided with:

- An explanation of the portfolio contents, the required components and organization

- The criteria for acceptable evidence, required data chart, and examples of evidence

- An explanation of the entry points and complexity (Appendix G of the DC Teachers' Manual)

- An in-depth review and discussion of the scoring procedures and rubric for each dimension (performance, complexity, and supports).

- A condition code packet that explained the kind of evidence to be scored a condition code, along with the amount of credit or score points given for each condition code

The Training Set and Scoring Guide

After the general introduction, Anchor Sets which consist of exemplary portfolios and contain common scoring issues were presented. The anchor portfolios demonstrate a

clear, straightforward presentation of a variety of score points. Discussion focuses on the uniqueness of the portfolio, highlighting critical information that demonstrates exactly what evidence can be considered. The anchor portfolios train scorers to understand the criteria for scoring and provide a reference for use during live scoring. All training portfolios are either one student's complete portfolio or a combination of various students' portfolios in order to cover many training issues. A condition code anchor packet was then trained to demonstrate the scoring of condition codes.

After reviewing the anchor portfolios and condition code packet, the scorers were ready to practice by scoring the practice sets of portfolios. Through three practice portfolios, scorers hone their skills to understand the scoring guidelines, the learning standards, and entry points. They score the practice portfolios independently using the anchor set, the condition code anchor packet, the learning standards, the scoring rules and entry points as guidelines. Practice portfolios contain evidence that is not as straightforward as the anchor portfolios. After completing each practice portfolio, interaction and questions are encouraged so scorers may further internalize the scoring guidelines. The Scoring Directors review the practice portfolios with the scorers and provide the correct scores.

Qualifying Portfolio Sets

After practice and review, scorers took two of three qualifying portfolios. For a scorer to begin live scoring, 65% agreement is required on two of the three portfolios. After each qualifying portfolio, a review of the scores takes place in order for scorers to understand their errors. Scorers not meeting the established guidelines by the end of the training session may be dismissed or hired on a provisional basis. One hundred percent of scorers qualified to score the current administration with an average score for both qualification sets of 96.5% exact plus adjacent agreement and 89.2% exact agreement.

Once scorers qualified, they were trained on the portfolio flow.

4.4 Scoring, Quality Control, and Monitoring

Scoring Procedure

In 2011, Pearson scoring procedure took place as follows. Each scorer received an entire portfolio to score. The evidence within each portfolio was scored at least two times. Portfolios, for which the first and second scores were non adjacent, were sent to resolution for review by one of the Scoring Directors. Some student evidence received condition codes because they did not meet the scoring criteria. If a scorer believed that evidence should receive a condition code, for whatever reason (i.e., alignment issues, evidence not dated or name missing, or any one of several different conditions), the scorer took the portfolio to one of the Scoring Director for review.

After the appropriate score or condition code was determined by the Scoring Director, the score or code was recorded on a different colored form and kept in the portfolio so that the second scorer would know that the evidence was to be scored a condition code. This helped to ensure that the second scorer did not bring the same issue to the attention of Scoring Director after it had been previously reviewed.

Quality Control

Back Reading

Back reading is a source of information on scoring accuracy. Back reading is one of several methods used to monitor reader accuracy whereby a Scoring Director reviews a random sampling of scores assigned by readers to assess accuracy. Back reading is initiated at the beginning of scoring, and continues throughout scoring. This process is used to monitor scorers, to help eliminate drift by alerting scorers to their mistakes, and anchor them back to the training materials and scoring rules.

Each day the Scoring Directors review the training sets and scoring rules. Review of the training materials is used to keep all scorers grounded in the guidelines established during training. If a scorer is absent for two days or more, he/she will review all training materials and scoring rules with a Scoring Director to ensure all scoring decisions were communicated.

Validity Sets

Validity portfolios are portfolios whose "true scores" have already been determined by OSSE and Pearson. These validity portfolios were administered on Tuesdays and Thursdays. Every scorer is given the validity portfolio at the same time. Scorers who receive less than 65% agreement receive remediation and review of the validity portfolios. The average percent agreement between readers' scores and the "true scores" for these validity sets was 76% exact agreement.

In 2011, Pearson used Interrater Reliability Reports (IRR) to monitor scoring. The overall Interrater Reliability for Reading/ELA, Mathematics, and Science was 80.5% exact Agreement and 90.9% exact plus adjacent.

Total IRR	80.5	90.9

Interrater Reliability for Reading/ELA

	Exact Agreement	Agreement+ adjacent
Reading/ELA		
Grade 3	79.9	90.8
Grade 4	80.9	91.8
Grade 5	83.8	93.1
Grade 6	86.4	95.2
Grade 7	75.8	89.8
Grade 8	75.8	86.5
Grade 10	78.3	90.1
	80.1	91.0

Interrater Reliability for Mathematics

	Exact Agreement	Agreement+ adjacent
Mathematics		
Grade 3	79	88.9
Grade 4	88.3	93.2
Grade 5	90.9	95.8
Grade 6	77.5	91.5
Grade 7	70.9	89.4
Grade 8	86.2	92.4
Grade 10	88.2	98.4
	83	92.8

Interrater Reliability for Science

	Exact Agreement	Agreement+ adjacent
Science		
Grade 3		
Grade 4		
Grade 5	72.1	87.2
Grade 6		
Grade 7		
Grade 8	72.2	82.7
Grade 10	82.7	89.6
	75.7	86.5

Scorer Reliability Analyses

In spring 2011, CAS-Alt portfolios were scored by Pearson in our Virginia Beach, Virginia Site. Qualification for scorers on two qualification sets was 89.2% exact agreement and 96.5% exact plus adjacent agreement. Inter-rater reliability for the entire scoring pool was 91% and exact agreement was 81%. All portfolios were 100% second scored and resolution of any nonadjacent and all condition codes was done by the Scoring Directors to ensure accuracy.

Decision Consistency and Accuracy

Consistency in scoring is currently done through 100% second scoring of portfolio entries and any discrepancies are resolved by a Scoring Director to ensure that scores are accurate. Scorers who appear to be drifting are immediately calibrated by reviewing the rubric and the anchor set. If multiple scorers appear to be drifting, calibration sets are administered to the entire group.

4.5 Task Examination

During scoring, the following codes could be assigned:

Table 4.6 Code Definitions

Code	Code Description	Resulting Score Point
V1	Missing entry	Void Score of **0** (zero)
V2	Insufficient Evidence - No name and/or date on the data chart or student work - Missing entry cover sheet - No standard based activity specified (in the entire entry)	Void Score of **0** (zero)
V3	Security breach	Performance, level of complexity and supports score of **0** (zero) for each entry in the content area
A	Missing/incomplete Learner Characteristics Inventory or Wrong performance dimension chosen	Performance and support scored **1** in all entries. Score for complexity.
B	Insufficient Data: - No Data Chart - Not enough data points on the data chart - Not enough corroborating evidence (less than 3 choices in a multiple choice format) - Does not support data chart - Not graded - Grades do not match - Dates do not match	Performance, level of complexity, and support score **1** for that entry.
C	Baseline over 50%	Performance scores a **1** for that entry, score for complexity and supports.

D	Standard not one of the possible standards	Performance, level of complexity, and support score **1** for that entry.
E	Standard Not on the Student's Identified Grade Level	Performance, level of complexity, and support score **1** for that entry.
F	Strand used more than once	Performance, level of complexity, and support score **1** for that entry.
G	Student work is less complex than targeted skill indicated	No automatic score point/Performance and complexity score a **1**, score for supports.
H	Student work is more complex than targeted skill indicated	No automatic score point/Performance and complexity score a **1**, score for supports.
I	Student work does not match targeted skill and/or does not match the strand and standard	Performance, level of complexity, and support score **1** for that entry.
J	Targeted skill/evidence is inappropriate (not measurable or observable) - Poorly worded - Too broad - Too many components	Performance and complexity score **1**, supports cannot be higher than **4**
K	Targeted skill links to the content area but does not lead to the understanding of the grade level learning standard	Complexity cannot score higher than **2**, supports cannot score higher that **4**, performance score **1**
L	Percent of Independent work is unclear	No automatic score point/Performance score **1**, score for complexity and supports.

X	Student did not test in this area	Performance, level of complexity, and support score 0 for that entry.

The distribution of scores is shown by grade in Table 4.7. The largest percentage of V codes was assigned to portfolios in Grade 4. About 11% of the portfolios in that grade were assigned a V code. Additionally, 27% of 4th grade students received a 1, which is primarily due to a higher than normal incidence of B codes, as shown in Table 4.8.

Table 4.7 Distribution of Codes and Scores

Scores	Void CODES		1		2		3		4		5	
Reads	#	%	#	%	#	%	#	%	#	%	#	%
Grade 3												
Performance	780	30	3.85%	180	23.08%	0	0.00%	27	3.46%	90	11.54%	453	58.08%
Complexity	780	30	3.85%	100	12.82%	6	0.77%	66	8.46%	119	15.26%	459	58.85%
Supports	780	30	3.85%	178	22.82%	0	0.00%	14	1.79%	153	19.62%	405	51.92%
Total	**2340**	**90**	**3.85%**	**458**	**19.57%**	**6**	**0.26%**	**107**	**4.57%**	**362**	**15.47%**	**1317**	**56.28%**
Grade 4												
Performance	672	76	11.31%	216	32.14%	1	0.15%	38	5.65%	67	9.97%	274	40.77%
Complexity	672	76	11.31%	130	19.35%	7	1.04%	38	5.65%	31	4.61%	390	58.04%
Supports	672	76	11.31%	206	30.65%	2	0.30%	4	0.60%	70	10.42%	314	46.73%
Total	**2016**	**228**	**11.31%**	**552**	**27.38%**	**10**	**0.50%**	**80**	**3.97%**	**168**	**8.33%**	**978**	**48.51%**
Grade 5												
Performance	1290	94	7.29%	330	25.58%	30	2.33%	104	8.06%	109	8.45%	623	48.29%
Complexity	1290	94	7.29%	230	17.83%	10	0.78%	79	6.12%	240	18.60%	637	49.38%
Supports	1290	94	7.29%	326	25.27%	5	0.39%	33	2.56%	275	21.32%	557	43.18%
Total	**3870**	**282**	**7.29%**	**886**	**22.89%**	**45**	**1.16%**	**216**	**5.58%**	**624**	**16.12%**	**1817**	**46.95%**
Grade 6												
Performance	708	40	5.65%	176	24.86%	14	1.98%	44	6.21%	82	11.58%	352	49.72%
Complexity	708	40	5.65%	84	11.86%	0	0.00%	25	3.53%	137	19.35%	422	59.60%
Supports	708	40	5.65%	176	24.86%	0	0.00%	2	0.28%	147	20.76%	343	48.45%
Total	**2124**	**120**	**5.65%**	**436**	**20.53%**	**14**	**0.66%**	**71**	**3.34%**	**366**	**17.23%**	**1117**	**52.59%**
Grade 7												
Performance	936	56	5.98%	134	14.32%	6	0.64%	70	7.48%	144	15.38%	526	56.20%
Complexity	936	56	5.98%	84	8.97%	14	1.50%	59	6.30%	98	10.47%	625	66.77%
Supports	936	56	5.98%	134	14.32%	8	0.85%	11	1.18%	145	15.49%	582	62.18%
Total	**2808**	**168**	**5.98%**	**352**	**12.54%**	**28**	**1.00%**	**140**	**4.99%**	**387**	**13.78%**	**1733**	**61.72%**
Grade 8												
Performance	1080	86	7.96%	266	24.63%	26	2.41%	73	6.76%	114	10.56%	515	47.69%
Complexity	1080	86	7.96%	118	10.93%	16	1.48%	116	10.74%	217	20.09%	527	48.80%
Supports	1080	86	7.96%	264	24.44%	0	0.00%	40	3.70%	276	25.56%	414	38.33%
Total	**3240**	**258**	**7.96%**	**648**	**20.00%**	**42**	**1.30%**	**229**	**7.07%**	**607**	**18.73%**	**1456**	**44.94%**
Grade 10												
Performance	882	86	9.75%	156	17.69%	6	0.68%	71	8.05%	174	19.73%	389	44.10%
Complexity	882	86	9.75%	124	14.06%	10	1.13%	154	17.46%	147	16.67%	361	40.93%
Supports	882	86	9.75%	156	17.69%	0	0.00%	16	1.81%	274	31.07%	350	39.68%
Total	**2646**	**258**	**9.75%**	**436**	**16.48%**	**16**	**0.60%**	**241**	**9.11%**	**595**	**22.49%**	**1100**	**41.57%**
Total	**19044**	**1404**	**7.37%**	**3768**	**19.79%**	**161**	**0.85%**	**1084**	**5.69%**	**3109**	**16.33%**	**9518**	**49.98%**

Table 4.8 Distribution of Condition Codes by Grade and Content Area

Grade	Content Area	Total Reads	V1 #	V1 % Assigned a code	V2 #	V2 % Assigned a code	V3 #	V3 % Assigned a code	A #	A % Assigned a code	B #	B % Assigned a code	C #	C % Assigned a code
3	ELA	195	7	4%	0	0%	0	0%	23	12%	13	7%	0	0%
3	Math	195	7	4%	1	1%	0	0%	22	11%	23	12%	0	0%
4	ELA	168	2	1%	16	10%	0	0%	21	13%	29	17%	2	1%
4	Math	168	2	1%	18	11%	0	0%	21	13%	23	14%	3	2%
5	ELA	216	4	2%	8	4%	0	0%	24	11%	25	12%	1	0%
5	Math	216	4	2%	10	5%	0	0%	24	11%	21	10%	1	0%
5	Sci	216	15	7%	9	4%	0	0%	24	11%	24	11%	0	0%
6	ELA	177	2	1%	5	3%	0	0%	29	16%	1	1%	0	0%
6	Math	177	2	1%	11	6%	0	0%	30	17%	5	3%	0	0%
7	ELA	234	2	1%	7	3%	0	0%	18	8%	16	7%	0	0%
7	Math	234	2	1%	17	7%	0	0%	18	8%	10	4%	0	0%
8	ELA	180	2	1%	13	7%	0	0%	27	15%	11	6%	0	0%
8	Math	180	2	1%	11	6%	0	0%	27	15%	9	5%	1	1%
8	Sci	180	4	2%	11	6%	0	0%	26	14%	12	7%	0	0%
10	ELA	141	1	1%	10	7%	0	0%	13	9%	11	8%	0	0%
10	Math	141	3	2%	9	6%	0	0%	12	9%	7	5%	0	0%
10	Sci	159	3	2%	17	11%	0	0%	11	7%	12	8%	0	0%

Grade	Content Area	Total Reads	D #	D % Assigned a code	E #	E % Assigned a code	F #	F % Assigned a code	G #	G % Assigned a code	H,J,K #	H,J,K % Assigned a code	I #	I % Assigned a code
3	ELA	195	0	0%	0	0%	0	0%	0	0%	0	0%	3	2%
3	Math	195	0	0%	0	0%	3	2%	1	1%	0	0%	2	1%
4	ELA	168	0	0%	3	2%	0	0%	0	0%	0	0%	1	1%
4	Math	168	0	0%	3	2%	0	0%	0	0%	0	0%	4	2%
5	ELA	216	0	0%	6	3%	1	0%	0	0%	0	0%	2	1%
5	Math	216	1	0%	6	3%	0	0%	0	0%	0	0%	4	2%
5	Sci	216	3	1%	0	0%	1	0%	0	0%	0	0%	6	3%
6	ELA	177	2	1%	6	3%	0	0%	0	0%	0	0%	5	3%
6	Math	177	2	1%	6	3%	0	0%	0	0%	0	0%	2	1%
7	ELA	234	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%
7	Math	234	0	0%	0	0%	0	0%	0	0%	0	0%	3	1%
8	ELA	180	3	2%	0	0%	0	0%	0	0%	0	0%	3	2%
8	Math	180	3	2%	0	0%	0	0%	0	0%	0	0%	2	1%
8	Sci	180	3	2%	0	0%	0	0%	0	0%	0	0%	6	3%
10	ELA	141	0	0%	0	0%	0	0%	0	0%	0	0%	5	4%
10	Math	141	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%
10	Sci	159	0	0%	0	0%	0	0%	0	0%	0	0%	6	4%

Part 5: RESULTS

Important validity evidence can come from the positive and negative, the intended and unintended consequences of an assessment. The consequences of a high stakes test for an at-risk, and often marginalized, population are especially important. The consequences of test use can be investigated by looking at the distributions of scores across sub-groups in the tested population. We have calculated the number and percent of students from various sub groups who achieve each of the four proficiency levels, Advanced, Proficient, Basic, and Below Basic, separately by grade and subject. The subgroup addressed is public compared to private compared to charter school attendance. In Table 5.1 the general results of the 2010-11 CAS-Alt are presented by grade level, based on valid scores.

Table 5.1 Valid Scores Proficiency Level by Grade

Grade	Total Students Enrolled	ELA Number of Valid Scores	Percent Advanced	Percent Proficient	Percent Basic	Percent Below Basic
3	65	63	65.1%	12.7%	19.0%	3.2%
4	56	50	50.0%	16.0%	18.0%	16.0%
5	72	68	61.8%	13.2%	10.3%	14.7%
6	59	57	64.9%	19.3%	3.5%	12.3%
7	78	75	72.0%	17.3%	6.7%	4.0%
8	60	55	52.7%	36.4%	5.5%	5.5%
10	53	44	50.0%	25.0%	11.4%	13.6%
All Grades	443	412	60.7%	19.4%	10.4%	9.5%

Grade	Math Number of Valid Scores	Percent Advanced	Percent Proficient	Percent Basic	Percent Below Basic	Sci Number of Valid Scores	Percent Advanced	Percent Proficient	Percent Basic	Percent Below Basic
3	63	52.4%	19.0%	19.0%	9.5%	--	--	--	--	--
4	50	46.0%	16.0%	22.0%	16.0%	--	--	--	--	--
5	68	57.4%	14.7%	11.8%	16.2%	66	33.3%	24.2%	22.7%	19.7%
6	56	51.8%	17.9%	14.3%	16.1%	--	--	--	--	--
7	72	63.9%	16.7%	13.9%	5.6%	--	--	--	--	--
8	56	48.2%	23.2%	23.2%	5.4%	56	42.9%	16.1%	23.2%	17.9%
10	44	52.3%	29.5%	4.5%	13.6%	47	46.8%	36.2%	8.5%	8.5%
All Grades	409	53.8%	19.1%	15.6%	11.5%	169	40.2%	24.9%	18.9%	16.0%

The relationship between proficiency level and attendance at a public, private, or charter school was investigated by subject; sample sizes were too small to interpret when looked at by grade. The combined, across-grade percentages for each school are provided by performance level in Table 5.2. Additionally, the combined, across-grade percentages for each performance level are provided by school type in Table 5.3. There is a relationship between students' placement in a public or charter school versus a private school and their proficiency level. However, it is difficult to interpret these numbers to conclude bias due to the nature of private school placements of students with significant cognitive disabilities in DC.

Table 5.2 Combined Grade School Type Percentages by Proficiency Level

ELA				
	# of Valid Scores	Percents based on school type		
		Public	Private	Charter
Advanced	250	69.6%	4.0%	26.4%
Proficient	80	50.0%	12.5%	37.5%
Basic	43	60.5%	20.9%	18.6%
Below Basic	39	61.5%	28.2%	10.3%
Total	412	64.1%	9.7%	26.2%

Math				
	# of Valid Scores	Percents based on school type		
		Public	Private	Charter
Advanced	220	72.3%	4.5%	23.2%
Proficient	78	42.3%	11.5%	46.2%
Basic	64	67.2%	14.1%	18.8%
Below Basic	47	53.2%	25.5%	21.3%
Total	409	63.6%	9.8%	26.7%

Science				
	# of Valid Scores	Percents based on school type		
		Public	Private	Charter
Advanced	68	51.5%	4.4%	44.1%
Proficient	42	64.3%	14.3%	21.4%
Basic	32	62.5%	21.9%	15.6%
Below Basic	27	48.1%	29.6%	22.2%
Total	169	56.2%	14.2%	29.6%

Table 5.3 Combined Grade Proficiency Level Percentages by School Type

ELA						
	Total Students Enrolled	**Number of Valid Scores**	**Percents based on Proficiency Level**			
			Advanced	**Proficient**	**Basic**	**Below Basic**
Public School	273	264	65.9%	15.2%	9.8%	9.1%
Private School	48	40	25.0%	25.0%	22.5%	27.5%
Charter	122	108	61.1%	27.8%	7.4%	3.7%
Total	443	412	60.7%	19.4%	10.4%	9.5%

Math						
	Total Students Enrolled	**Number of Valid Scores**	**Percents based on Proficiency Level**			
			Advanced	**Proficient**	**Basic**	**Below Basic**
Public School	273	260	61.2%	12.7%	16.5%	9.6%
Private School	48	40	25.0%	22.5%	22.5%	30.0%
Charter	122	109	46.8%	33.0%	11.0%	9.2%
Total	443	409	53.8%	19.1%	15.6%	11.5%

Science						
	Total Students Enrolled	**Number of Valid Scores**	**Percents based on Proficiency Level**			
			Advanced	**Proficient**	**Basic**	**Below Basic**
Public School	101	95	36.8%	28.4%	21.1%	13.7%
Private School	29	24	12.5%	25.0%	29.2%	33.3%
Charter	55	50	60.0%	18.0%	10.0%	12.0%
Total	185	169	40.2%	24.9%	18.9%	16.0%

Table 5.4 shows the general trend data of the CAS-Alt. However, since individual students are not tracked through the CAS-Alt program and each portfolio consists of teacher-based tasks that could vary from examinee to examinee, claims regarding average test scores should be somewhat discounted.

Table 5.4 Trend Data From 2006-07 to 2010-11 for CAS-Alt

	2006-07 495 Portfolios 33 Schools		2007-08 512 Portfolios 48 Schools		2008-09 582 Portfolios 56 Schools		2009-10 Data Unavailable		2010-11 443 Portfolios 61 Schools	
	Mean	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*
ELA Final Score	75.81	45.03	101.35	45.03	120.34	35.83			109.64	46.05
Math Final Score	75.43	45.88	100.77	46.27	120.48	35.57			107.14	46.30
Science Final Score			88.67	46.00	101.71	44.06			97.31	47.24
ELA Dimensions										
ELA Performance Dimensions	29.06	19.13	38.85	18.54	30.54	12.42			41.77	20.59
ELA Complexity Dimensions	30.18	18.28	40.99	18.43	32.94	11.50			46.40	18.44
ELA Supports Dimensions	16.01	9.93	21.57	9.47	16.18	2.93			21.46	10.32
Math Dimensions										
Math Performance Dimensions	29.69	19.62	38.80	19.37	30.72	12.60			41.38	20.93
Math Complexity Dimensions	29.87	18.36	40.61	18.74	32.50	11.40			44.88	18.53
Math Supports Dimensions	15.87	10.09	21.35	9.68	16.06	2.87			20.88	10.24
Science Dimensions										
Science Performance Dimensions			33.96	19.02	26.70	15.54			38.05	20.93
Science Complexity Dimensions			35.81	18.72	26.82	14.98			40.27	18.56
Science Supports Dimensions			18.90	9.84	13.38	3.76			18.99	10.03

PART 6: STANDARD SETTING

See 2009 Technical Manual for Standard Settings performed in 2007 for ELA and Mathematics and in 2008 for Science. Final Performance Level Descriptions for each content area and grade are attached as an appendix (Appendix A).

PART 7: REPORTING

CAS-Alt score reports provide a performance description on the proficiency level achieved by each student for each content area, as well as the assigned score for each rubric dimension. Reports are provided at the student, school, and LEA levels. Score Interpretation Training sessions are hosted annually by OSSE once the final score reports are received.

Critical Information Included in Reports

<u>Individual Student Report</u>. Schools receive two copies of a score report entitled *Individual Student Report* for each student participating in the CAS-Alt. One of these reports remains with the school for the school records, while the other is distributed to the student/parents. These reports include the rating assigned to each scoring dimension, as well as a composite score for each strand-based entry with a statement of the student's performance level (Below Basic, Basic, Proficient, or Advanced), along with scores for each content area (English Language Arts, Mathematics and Science). There are three required content area strands within English Language Arts and Mathematics for each grade level (3-8 & 10) and for Science at grades 5, 8 & 10 (Biology). A template of the individual student report can be found at the end of this chapter.

<u>School Roster Reports</u>. The School Roster Report lists each student assessed by grade, and provides the total dimension scores for each dimension within a content area strand. The report further indicates each student's proficiency level.

Types of Scores Reported

District-wide testing results by grade (Grades 3, 4, 5, 6, 7, 8, and 10) are posted on the DC OSSE website. Within these reports, data is provided for each school and for the entire district. For each of these aggregation levels, data is broken out by gender, race/ethnicity, eligibility for free or reduced lunch, special education status, and English proficiency status.

Development and Review of Reports

Draft reports were developed by Pearson and provided to the DC OSSE for review. The DC OSSE reviewed the sample reports, made edits, and then disseminated the sample reports to a group of lead teachers for input.

Interpretation Guides

Training for teachers and school administrators on how to interpret score reports is held annually in the Fall. A separate training session for parents is held in fall, as well. The parent training is intended to help parents both interpret the results and understand how their school and the district use them. The goal of these training sessions is to provide the participants with the ability to interpret, analyze and discuss student data from the CAS-Alt.

Adherence of Reports to Joint *Standards*

Standard 5.10 of the *Standards for Educational and Psychological Testing* (AERA, APA & NCME, 1999) states that "When test score information is released to students, parents, legal representatives, teachers, clients, or the media, those responsible for testing programs should provide appropriate interpretations." The DC OSSE complies with this standard both through the interpretive training sessions described in a previous section and by including the performance level descriptors in the report itself. Other standards on individual reports focus on the areas of confidentiality. OSSE maintains confidentiality by sending the reports directly to schools and encouraging schools to distribute the reports to the individual student and parents.

The only area in which these reports do not fully meet the joint *Standards* is in the area of reporting the validity of the scores (Standard 5.12). However, this information is available in the technical report which will be available on the CAS-Alt website.

STUDENT REPORT

FIRSTNAMEXXXXXXXXXXXXXXXX'S Performance on the Alternate Assessment

★ ★ ★
Office of the
State Superintendent of Education

Student Name: FIRSTNAMEX XXXX XXX XXXX XXX X LAS TNAME XXX XXX XXXX XXX XXXX
Student ID: 1231231   Date of Birth: mm/dd/yyyy   Grade: 5
School: SCHOOLNAME XXXX XXX XXXX XXX XXXX XXX XXXX XXXX XXX XXXX XXXX

STUDENT'S PERFORMANCE LEVELS AND RAW SCORES BY PROFICIENCY CONTENT AREA

Performance Level	Raw Score	Reading/English Language Arts	Raw Score	Mathematics	Raw Score	Science
ADVANCED	150 / 130 / 119		150 / 123 / 122		150 / 131 / 130	####
PROFICIENT	82 / 81	####	95 / 94	####	101 / 100	
BASIC	52 / 51		56 / 55		61 / 60	
BELOW BASIC	0		0		0	

Your student's Performance Level is **PROFICIENT** | Your student's Performance Level is **PROFICIENT** | Your student's Performance Level is **ADVANCED**

	Learning Standard	Performance (####)	Complexity (####)	Supports (####)	Code	Total
ELA Entry 1 *Language Development*		###	###	###	##	###
ELA Entry 2 *Informational Text*		###	###	###	##	###
ELA Entry 3 *Literary Text*		###	###	###	##	###
		Perform. Total: ###	LOC Total: ###	Supports Total: ###		###

	Learning Standard	Performance (####)	Complexity (####)	Supports (####)	Code	Total
Mathematics Entry 1 *Number Sense and Operations*		###	###	###	##	###
Mathematics Entry 2 *Patterns, Relations, and Algebra*		###	###	###	##	###
Mathematics Entry 3 *Geometry*		###	###	###	##	###
		Perform. Total: ###	LOC Total: ###	Supports Total: ###		###

	Learning Standard	Performance (####)	Complexity (####)	Supports (####)	Code	Total
Science Entry 1 *Scientific Thinking and Inquiry*		###	###	###	##	###
Science Entry 2 *Earth Science*		###	###	###	##	###
Science Entry 3 *Life Science*		###	###	###	##	###
		Perform. Total: ###	LOC Total: ###	Supports Total: ###		###

* The number in parentheses is the total number of points possible for each dimension.

Codes

A =	Missing/Incomplete Learner Characteristic Inventory or Wrong Performance Dimension Chosen
B =	Insufficient Data (No Data Chart, Not Enough Data Points on the Data Chart, Not Enough Corroborating Evidence (less than 3 choices in a multiple choice format), Does Not Support Data Chart, Not Graded, Grades Do Not Match, Data Do Not Match)
C =	Baseline Over 50%
D =	Standard Not One of the Possible Standards
E =	Standard Not on the Student's Identified Grade Level
F =	Strand Used More Than Once
G =	Student Work is Less Complex Than Targeted Skill Indicated
H =	Student Work is More Complex Than Targeted Skill Indicated
I =	Student Work Does Not Match Targeted Skill and Does Not Match its Strand and Standard
J =	Targeted Skill/Evidence is Inappropriate (it is Not Measurable or Observable Because it is Poorly Worded, Too Broad, Has Too Many Components)
K =	Targeted Skill Links to the Content Area but Does Not Lead to the Understanding of the Grade Level Learning Standard
L =	Percent of Independent Work is Unclear
V1 =	Missing Entry
V2 =	Insufficient Evidence (No Name and/or Date on the Data Chart or Student Work, Missing Entry Cover Sheet, No Standard Based Activity Specified (in the Entire entry))
V3 =	Security Breach

The Individual Student Report for Reading/English Language Arts, Mathematics, and Science provides information about a student's performance on the DCCAS-Alt.

For more information contact your student's school or visit http://osse.dc.gov.

mm/dd/yy Z0000011-0000000000-0000001

*Performance Level Descriptor Definitions Abbreviated**

★ ★ ★
Office of the
State superintendent of Education

Reading/English Language Arts

Below Basic
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill reduced in complexity (*cognitive demand*) and difficulty (*breadth of knowledge*), the student demonstrates inaccurate or minimal knowledge of English language arts content in language development, informational text, and literary text.

Basic
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that is reduced in complexity (*cognitive demand*) and difficulty (*breadth of knowledge*), the student demonstrates a limited understanding of English language arts content in language development, informational text, and literary text.

Proficient
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in complexity (*cognitive demand*) and/or difficulty (*breadth of knowledge*), the student demonstrates an observable understanding of English language arts content in language development, informational text, and literary text.

Advanced
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in difficulty (*breadth of knowledge*), the student demonstrates an observable understanding and application of English language arts content in language development, informational text, and literary text.

Mathematics

Below Basic
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill reduced in complexity (*cognitive demand*) and difficulty (*breadth of knowledge*), the student demonstrates inaccurate or minimal knowledge of Mathematics content.

Basic
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that is reduced in complexity (*cognitive demand*) and difficulty (*breadth of knowledge*), the student demonstrates a limited understanding of Mathematics content.

Proficient
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in complexity (*cognitive demand*) and/or difficulty (*breadth of knowledge*), the student demonstrates an observable understanding of Mathematics content.

Advanced
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in difficulty (*breadth of knowledge*), the student demonstrates an observable understanding and application of Mathematics content.

Science

Below Basic
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill reduced in complexity (*cognitive demand*) and difficulty (*breadth of knowledge*), the student demonstrates inaccurate or minimal knowledge of Science content.

Basic
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that is reduced in complexity (*cognitive demand*) and difficulty (*breadth of knowledge*), the student demonstrates a limited understanding of Science content.

Proficient
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in complexity (*cognitive demand*) and/or difficulty (*breadth of knowledge*), the student demonstrates an observable understanding of Science content.

Advanced
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in difficulty (*breadth of knowledge*), the student demonstrates an observable understanding and application of Science content.

The Individual Student Report for Reading/English Language Arts, Mathematics, and Science
provides information about a student's performance on the DC CAS-Alt.

*For a complete list of Performance Level Descriptor Definitions by grade, visit
http://www.osse-dccasalt.pearson.com/index.cfm?a=sec&sid=4042

Appendix A Alternate Achievement Standards

CAS-Alt PERFORMANCE LEVEL DESCRIPTORS
English Language Arts Grade 3

Below Basic (30-51)	Basic (52-82)	Proficient (83-119)	Advanced (120-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of English language arts content in the following: **Language Development** • Identify common prefixes or suffixes • Define unknown words **Informational Text** • Identify the main idea of an informational text • Demonstrate cause/effect but not in text • Locate basic/specific information in maps or diagrams	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of English language arts content in the following: **Language Development** • Identify common prefixes and suffixes. • Define unknown words **Informational Text** • Identify the main idea of an informational text • Locate basic/specific information in graphic representations, such as maps or diagrams • Identify cause and effect relationships in simple text • Locate basic stated facts in a text	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of English language arts content in the following: **Language Development** • Identify the meaning of common prefixes and suffixes. • Define unknown words **Informational Text** • Identify purpose or main point of a text. • Identify cause and effect • Locate specific information in graphic representations, such as charts, maps, diagrams, and timelines • Identify stated or implied facts	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of English language arts content in the following: **Language Development** • Understand prefixes and suffixes and how they change the definition of root words • Define words using context cues **Informational Text** • Identify purpose or main point and supporting details • Distinguish between cause and effect • Apply knowledge of textual features to make predictions • Form questions about text and locate facts in response to those

• Locate basic stated facts in a text • Identify basic text features **Literary Text** • Identify information stated in a text • Identify the problem/solution of a text	• Locate basic information in a graphic representation • Identify the purpose or main point of a text and the details that support this • Locate specific information from text/text features **Literary Text** • Identify/explain information stated in a text • Identify the problem/solution in a text	in a text • Locate specific information in graphic representations • Locate and sequence specific information from text/text features **Literary Text** • Use story details and prior knowledge to understand a text • Identify and explain how events lead to a problem or solution	questions (create and answer questions about text) • Locate specific information in graphic representations (e.g.,charts, maps, diagrams, illustrations, tables, timelines) of text. • Use information from text and text features to determine the sequence of activities needed to carry out a procedure. **Literary Text** • Make simple inferences using story details and prior knowledge • Analyze how events in a text lead to a problem or solution

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
English Language Arts Grade 4

Below Basic (30-51)	Basic (52-82)	Proficient (83-119)	Advanced (120-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of English language arts content in the following: **Language Development** • Identify prefixes and suffixes • Identify unfamiliar words or words with multiple meanings **Informational Text** • Identify purpose of simple text • Identify stated cause or effect • Locate information on a graphic representation • Locate information **Literary Text** • Identify events/ characters/ author of a story • Identify rhymes	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of English language arts content in the following: **Language Development** • Identify words with prefixes and suffixes • Identify words with multiple meanings **Informational Text** • Identify purpose of simple text • Identify fact or opinion • Identify stated cause or effect • Locate information on a graphic representation • Locate specific information from text. **Literary Text** • Identify events/ characters/author of a story • Identify the theme of a story • Match moral to its fable	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of English language arts content in the following: **Language Development** • Use affixes to change the meaning of a root word • Use context cues to complete a cloze sentence **Informational Text** • Identify purpose or main points • Distinguish between fact and opinion • Identify stated cause and effect relationships • Answer questions about graphic representations • Locate specific information from text (e.g., letters, memos, directories, menus, schedules, pamphlets, search engines, signs, manuals, instructions,	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of English language arts content in the following: **Language Development** • Analyze the meaning of unfamiliar words using root words and affixes. • Analyze context cues to determine the correct meaning of a word with multiple meanings. **Informational Text** • Identify purpose or main points and summarize supporting details • Distinguish fact from opinion • Identify cause and effect relationships(stated and implied) • Interpret information in graphic representations • Locate and use specific information from text (e.g., letters, memos, directories, menus, schedules, pamphlets, search engines, signs, manuals,

• Identify a poem	• Identify rhymes • Identify a poem	recipes, labels, forms). **Literary Text** • Identify similarities between the author's life and the text • Identify theme and plot of a story • Identify character's traits, relationships and feelings • Identify morals of fables • Identify patterns of sounds or rhythm patterns in poetry	instructions, recipes, labels, forms). **Literary Text** • Compare characters or events in a story to author's life experiences • Understand how story elements influence the events of the story, using specific examples from the text. • Identify character's traits, relationships, and feelings supported with text • Compare/contrast forms of literature • Compare morals of fables • Recognize similarities of sounds in words and rhythmic patterns in poetry • Identify characteristics of poetry

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
English Language Arts Grade 5

Below Basic (30-51)	Basic (52-81)	Proficient (82-119)	Advanced (120-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of English language arts content in the following: **Language Development** • Identify words with prefixes and suffixes • Identify synonyms **Informational Text** • Identify purpose • Identify between fact and opinion **Literary Text** • Identify theme • Identify sensory details	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of English language arts content in the following: **Language Development** • Identify words with prefixes and suffixes • Identify antonyms, synonyms or homophones **Informational Text** • Identify purpose • Identify between fact and opinion **Literary Text** • Identify theme • Identify plot • Identify sound effects in words • Identify sensory details	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of English language arts content in the following: **Language Development** • Identify Greek and Latin roots and affixes • Demonstrate understanding of antonyms, synonyms and/or homophones **Informational Text** • Identify purpose • Distinguish between fact and opinion • Identify author's position. **Literary Text** • Identify theme • Identify plot and its components • Illustrate how sound effects in words, form and figurative language make people feel • Identify author's use of sensory	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of English language arts content in the following: **Language Development** • Use Greek and Latin roots and affixes to define unknown words. • Identify and apply the meaning of the terms antonym, synonym and/or homophone. **Informational Text** • Identify author's purpose, summarize critical details in sequence • Distinguish fact from opinion and support with text • Determine author's position and support with text **Literary Text** • Identify theme of a literary selection • Identify plot and its components • Analyze sound effects in words, form and figurative language and/or interpret a poem

		details, imagery, and/or figurative language	• Identify and evaluate author's use of sensory details, imagery, and figurative language

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
English Language Arts Grade 6

Below Basic (30-52)	Basic (53-75)	Proficient (76-120)	Advanced (121-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of English language arts content in the following: **Language Development** • Identify roots or affixes • Identify figurative language **Informational Text** • Identify stated purpose • Identify some text features and graphic components **Literary Text** • Describe the mood of characters with simple adjectives • Identify some elements of a simple narrative	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of English language arts content in the following: **Language Development** • Identify roots or affixes • Identify figurative language **Informational Text** • Identify stated purpose • Identify some text features and graphic components **Literary Text** • Describe mood of text • Identify some elements of simple narratives • Identify characteristics of different forms of prose • Identify themes • Identify figurative language	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of English language arts content in the following: **Language Development** • Identify Greek and Latin roots or affixes • Identify figurative language **Informational Text** • Identify stated purpose • Identify most text features and graphic components • Identify main idea and supporting detail **Literary Text** • Describe mood and tone of text • Identify characteristics of different forms of prose	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of English language arts content in the following: **Language Development** • Define unfamiliar words using Greek and Latin roots or affixes • Interpret figurative language **Informational Text** • Identify and analyze stated purpose, main ideas, or supporting details • Identify and use organizational structure of text features **Literary Text** • Analyze how setting effects mood and tone of text • Identify and analyze characteristics of different forms of prose • Analyze and compare text with universal themes supported with

• Identify universal themes • Identify figurative language		• Compare text with universal themes • Demonstrate understanding of figurative language	text • Respond to and analyze figurative language and graphics to interpret the meaning of a poem

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
English Language Arts Grade 7

Below Basic (30-52)	Basic (53-75)	Proficient (76-120)	Advanced (121-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of English language arts content in the following: **Language Development** • Identify Greek and Latin roots • Identify unknown words using Latin roots • Identify words with multiple meanings **Informational Text** • Identify author's stated purpose • Identify a common text feature **Literary Text**	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of English language arts content in the following: **Language Development** • Identify Greek and Latin roots • Identify unknown words using Latin roots • Identify words with multiple meanings **Informational Text** • Identify author's stated purpose • Identify some common text features • Identify organizational structures **Literary Text** • Identify genres of fiction •	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of English language arts content in the following: **Language Development** • Match Greek and Latin roots and affixes to their meanings • Define unknown words with Greek and Latin roots • Define words with multiple meaning **Informational Text** • Identify author's stated purpose • Identify common text features • Demonstrate understanding of organizational structures **Literary Text** • Identify genres of fiction • Identify conflict and main	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of English language arts content in the following: **Language Development** • Apply knowledge of Greek and Latin roots and affixes to define content vocabulary. • Use context cues to define unknown words with Greek and Latin roots • Define and use words with multiple meanings **Informational Text** • Identify the author's implied purpose • Identify and use common text features • Apply knowledge of organizational structures to aid comprehension **Literary Text** • Identify genres of fiction based on characteristics • State the relationship of plot development to conflict, climax and

• Identify conflict • Identify how a character feels/acts	Identify conflict • Identify how a character feels/acts	events • Identify ways a character changes and interacts over time	resolution • Analyze ways a character changes and interacts over time

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
English Language Arts Grade 8

Below Basic (30-52)	Basic (53-75)	Proficient (76-120)	Advanced (121-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of English language arts content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of English language arts content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of English language arts content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of English language arts content in the following:
Language Development • Identify unknown words • Identify shades of meaning	**Language Development** • Identify unknown words • Identify shades of meaning	**Language Development** • Define unknown words • Identify shades of meaning	**Language Development** • Identify unknown words or words with novel meanings in text and use text clues to determine the meaning. • Understand and explain "shades of meaning" for related words
Informational Text • Identify central ideas from readings • Identify author's purpose	**Informational Text** • Identify central ideas and/or problems from readings • Identify author's purpose	**Informational Text** • Identify central ideas, problems, or situations from readings • Identify author's purpose • Identify theme in literary text and author's purpose in expository text	**Informational Text** • Compare and contrast central ideas, problems, or situations from readings on a specific topic • Explain author's word choice/organization of text and how it achieves his/her purpose • Distinguish between theme in literary text and author's purpose in expository text
Literary Text • Identify different genres and purposes • Identify character's traits • Identify setting • Identify sound	**Literary Text** • Identify different genres • Identify character's traits and emotions • Identify setting and problem • Identify sound, figurative language (personification,	**Literary Text** • Identify different genres and purposes • Identify character's traits, emotions or motivations • Identify setting, problem and resolution • Demonstrate understanding of sound, figurative language and graphics (capitol letters, line,	**Literary Text** • Identify and analyze different genres to accomplish different purposes • Interpret a character's traits, emotions, or motivations and support with text • Analyze the influence of setting on the problem and resolution • Analyze the effects of sound, figurative language, and graphics to interpret the meaning of a poem

(alliteration, internal rhyme & rhyme scheme)	metaphor, simile, hyperbole) and graphics	length, word position) • Identify style, mood, tone, and meaning	• Draw conclusions about style, mood, tone, and meaning of prose, poetry, or drama based on author's use of figurative language

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
English Language Arts Grade 10

Below Basic (30-54)	Basic (55-89)	Proficient (90-120)	Advanced (121-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of English language arts content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of English language arts content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of English language arts content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of English language arts content in the following:
Language Development • Identify literal meanings of words	**Language Development** • Identify literal and/or figurative meanings of words	**Language Development** • Identify literal and figurative meanings of words	**Language Development** • Distinguish between the literal and figurative meaning of words and explain the emotion or feeling a word can express
Informational Text • Identify if a statement is true or false	**Informational Text** • Identify if a statement is true or false • Identify author's stated purpose (read to inform) • Locate facts in a text to answer questions	**Informational Text** • Identify evidence that supports an arguement • Identify author's stated and implied purpose • Compare known information in a text with unknown information	**Informational Text** • Analyze logic and evidence an author uses • Explain the author's purpose (stated or implied) in expository text. • Make relevant inferences based on what they have read
Literary Text • Identify fiction • Identify narrator's characterization and plot • Identify theme	**Literary Text** • Identify fiction • Identify narrator's point of view, characterization and plot • Identify figurative language in poetry	**Literary Text** • Answer questions about fiction techniques • Identify narrator's point of view, tone, characterization and plot • Identify figurative language in poetry	**Literary Text** • Analyze literary techniques of fiction • Explain how narrator's point of view affects tone, characterization, and plot • Identify and explain the author's use of figurative language in poetry

	• Identify theme as it relates to the story	• Identify theme as it relates to the universal theme	• Explain how the theme relates real life, supported with text

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Math Grade 3

Below Basic (30-55)	Basic (56-94)	Proficient (95-122)	Advanced (123-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of math content in the following: **Number Sense and Operations** • Identify numbers • Identify addition and subtraction problems • Identify addition and subtraction problems • Identify money • Skip count • Demonstrate concepts of division • Demonstrate concepts of multiplication • Identify fractions as parts of a whole • Identify decimals **Patterns, Relations and Algebra** • Use symbolic and mathematical patterns	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of math content in the following: **Number Sense and Operations** • Identify numbers • Identify addition and subtraction problems • Identify addition and subtraction problems • Identify money • Skip count • Demonstrate concepts of division • Demonstrate concepts of multiplication • Identify fractions as parts of a whole • Identify decimals **Patterns, Relations and Algebra** • Use symbolic and mathematical patterns	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of math content in the following: **Number Sense and Operations** • Compare numbers • Solve addition and subtraction problems • Identify addition and subtraction problems • Identify money • Skip count • Demonstrate the concept of division • Solve multiplication facts • Sort objects into like groups • Identify and use fractions with like denominators **Patterns, Relations and Algebra** • Use symbolic and mathematical patterns	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of math content in the following: **Number Sense and Operations** • Demonstrate understanding of place value • Apply rounding and regrouping to estimate: • Quantities • Measures • Money • Judge reasonableness of answer • Apply conventional procedures and formulas to solve addition and subtraction problems • Add and subtract up to four-digit whole numbers • Solve addition and subtraction problems involving money/decimals • Solve multiplication problems • Use the concept of division • Use multiplication facts to solve problems

• Identify operational and relational symbols • Solve for variables in addition, subtraction, or multiplication problems • Identify kinds of graphs **Geometry** • Identify 2-dimensional shapes • Identify three- and two-dimensional shapes • Identify angles • Identify different types of lines • Identify lines of symmetry • Identify reflections, rotations, or translations • Identify ordered pairs on a grid	• Identify operational and relational symbols • Solve for variables in addition, subtraction, or multiplication problems • Identify kinds of graphs **Geometry** • Identify 2-dimensional shapes • Identify three- and two-dimensional shapes • Identify angles • Identify different types of lines • Identify lines of symmetry • Identify reflections, rotations, or translations • Identify ordered pairs on a grid	• Identify operational and relational symbols • Solve for variables in addition, subtraction, or multiplication problems • Identify bar and picture graph **Geometry** • Identify attributes of 2- 3-dimensional shapes • Identify and classify three- and two- dimensional shapes • Identify angles • Identify different types of lines • Identify lines of symmetry • Identify reflections, rotations, or translations • Identify ordered pairs on a grid	• Solve division problems • Identify and understand fractions • Use and compare fractions with like denominators **Patterns, Relations and Algebra** • Use and extend symbolic and mathematical geometric patterns • Determine operational and relational symbols to make an equation true • Solve for variables in addition, subtraction, or multiplication problems **Geometry** • Analyze attributes of 2- and 3-dimensional shapes (especially triangles and quadrilaterals) • Differentiate, compare and classify three- and two-dimensional shapes • Identify angles as right, acute, or obtuse • Construct different types of lines • Construct lines of symmetry • Apply reflections, rotations, or translations to determine congruency. • Use ordered pairs to locate and identify points on a grid

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Math Grade 4

Below Basic (30-55)	Basic (56-94)	Proficient (95-122)	Advanced (123-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of math content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of math content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of math content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of math content in the following:
Number Sense and Operations • Identify numbers to 10,000 • Estimate addition and subtraction with decimals • Estimate quantities, measures and amounts of money • Solve addition and subtraction problems • Solve multiplication problems • Use conventional procedures to solve division problems • Apply operations to solve problems • Identify fractions as parts of a whole, collection and place it on a number line • Identify forms of decimals and fractions	**Number Sense and Operations** • Identify numbers to 10,000 • Estimate addition and subtraction with decimals • Estimate quantities, measures and amounts of money • Solve addition and subtraction problems • Solve multiplication problems • Use conventional procedures to solve division problems • Apply operations to solve problems • Identify fractions as parts of a whole, collection and place it on a number line • Identify forms of decimals and fractions	**Number Sense and Operations** • Demonstrate understanding of place value • Identify numbers to 10,000 • Estimate addition and subtraction with decimals • Estimate quantities, measures and amounts of money • Solve addition and subtraction problems • Solve multiplication problems • Use conventional procedures to solve division problems • Apply operations to solve problems • Identify and compare fractions as parts of a whole, collection • Demonstrate understanding of equivalent forms of decimals and fractions	**Number Sense and Operations** • Identify and understand numbers to 10,000 including expanded notation and written out in words • Estimate and solve addition and subtraction with decimals • Identify and apply estimating to quantities, measures and amounts of money • Solve addition and subtraction problems • Solve multiplication problems • Use conventional procedures and formulas to solve division problems • Apply operations to solve problems • Identify and compare fractions as parts of a whole, collection • Demonstrate understanding of
Patterns, Relations and Algebra	**Patterns, Relations and Algebra**		

• Identify geometric and numeric patterns • Identify letters and other symbols as variables • Demonstrate mathematical relationships illustrated through various methods • Identify proportional relationships **Measurement** • Identify appropriate units and tools to solve problems involving: ♦ length ♦ volume ♦ weight ♦ angle size • Identify system of measurement • Tell time with hours and days • Identify area and perimeter	• Identify geometric and numeric patterns • Identify letters and other symbols as variables • Demonstrate mathematical relationships illustrated through various methods • Identify proportional relationships **Measurement** • Identify appropriate units and tools to solve problems involving: ♦ length ♦ volume ♦ weight ♦ angle size • Identify system of measurement • Tell time with hours and days • Identify area and perimeter	**Patterns, Relations and Algebra** • Create geometric and numeric patterns • Use letters and other symbols as variables • Demonstrate mathematical relationships illustrated through various methods to include graphing • Identify problems involving proportional relationships • Interpret and analyze graphs **Measurement** • Identify appropriate units and tools to solve problems involving: ♦ length ♦ volume ♦ weight ♦ angle size • Convert within system of measurement • Tell time with hours and days • Compute area and perimeter	equivalent forms of decimals and fractions **Patterns, Relations and Algebra** • Understand and extend geometric and numeric patterns • Use letters and other symbols as variables • Demonstrate mathematical relationships illustrated through various methods to include graphing • Solve problems involving proportional relationships • Construct, interpret and analyze graphs **Measurement** • Identify and use appropriate units and tools to solve problems involving: ♦ length ♦ volume ♦ weight ♦ angle size • Convert within system of measurement • Tell time and compute elapsed time with hours and days • Compute area and perimeter

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Math Grade 5

Below Basic (30-55)	Basic (56-94)	Proficient (95-122)	Proficient (95-122)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of math content in the following: **Number Sense and Operations** • Identify numbers (very large or very small numbers (including decimals or expanded notation)) • Identify integers, decimals, mixed numbers, percents, or fractions • Identify prime numbers to 100 • Identify equivalence between fractions, mixed numbers, decimals, and percents • Identify improper fractions and mixed numbers • Solve addition and subtraction problems involving fractions • Add and subtract decimals	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of math content in the following: **Number Sense and Operations** • Identify numbers (very large or very small numbers (including decimals or expanded notation)) • Identify integers, decimals, mixed numbers, percents, or fractions • Identify prime numbers to 100 • Identify equivalence between fractions, mixed numbers, decimals, and percents • Identify improper fractions and mixed numbers	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of math content in the following: **Number Sense and Operations** • Apply number concepts to very large or very small numbers (including decimals) use number concept to estimate, round and manipulate numbers • Identify integers, decimals, mixed numbers, or fractions on a number line. • Identify numbers, including fractions, mixed numbers, decimals and percents • Identify prime numbers to 100 • Represent percents as a part out of 100 • Identify equivalent fractions, mixed numbers, decimals, and percents • Identify improper fractions and mixed numbers • Solve addition and subtraction	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of math content in the following: **Number Sense and Operations** • Apply knowledge of number concepts to very large or very small numbers (including decimals) to estimate, round and manipulate numbers • Identify and compare very large and small numbers (including expanded notation) • Use a number line to demonstrate understanding of integers, decimals, mixed numbers, or fractions. • Identify and order numbers, including fractions, mixed numbers, decimals and percents • Identify prime numbers to 100 • Understand different interpretations of fractions • Understand and represent percents are a part out of 100 • Identify and compare equivalent fractions, mixed numbers,

• Solve multiplication and division problems
• Multiply decimals and whole numbers
• Identify improper fractions and mixed numbers
• Solve addition and subtraction problems involving fractions
• Add and subtract decimals
• Solve multiplication and division problems
• Multiply decimals and whole numbers
• Use estimation

Patterns, Relations and Algebra
• Identify and extend patterns
• Use values to solve problems
• Solve problems
• Use graphs and models to represent real situations
• Identify order of operations
• Identify proportional problems
• Identify graphs that represent real life situations

Geometry
• Identify polygons
• Identify three-dimensional shapes and their properties
• Identify points, line, and planes

• Solve addition and subtraction problems involving fractions
• Add and subtract decimals
• Solve multiplication and division problems
• Multiply decimals and whole numbers
• Use estimation

Patterns, Relations and Algebra
• Identify and extend patterns
• Use values to solve problems
• Solve problems
• Use graphs and models to represent real situations
• Identify order of operations
• Identify proportional problems
• Identify graphs that represent real life situations

Geometry
• Identify polygons
• Identify three-dimensional shapes and their properties
• Identify points, line, and planes
• Identify types of symmetry
• Identify congruent triangles or quadrilaterals
• Identify transformation on two-dimensional shapes
• Identify the Cartesian coordinate plane's first two quadrants

problems involving fractions
• Add and subtract decimals
• Solve multiplication and division problems
• Multiply decimals and whole numbers

Patterns, Relations and Algebra
• Identify and extend patterns
• Use values to solve problems
• Use properties of equality to solve problems
• Create graphs and models to represent real situations
• Identify order of operations
• Interpret proportional problems

Geometry
• Identify polygons
• Identify three-dimensional shapes and their properties
• Identify points, line, and planes
• Identify lines of symmetry in various polygons
• Identify congruent triangles or quadrilaterals
• Identify transformation on two-dimensional shapes
• Identify the Cartesian coordinate plane's first two quadrants

decimals, and percents
• Identify and understand improper fractions and mixed numbers
• Solve addition and subtraction problems involving fractions and express them in simplest form
• Add and subtract decimals
• Solve multiplication and division problems
• Multiply decimals and whole numbers
• Use estimation to solve problems involving addition, subtraction, or multiplication.

Patterns, Relations and Algebra
• Analyze patterns to determine their rules
• Use values to solve and simplify problems
• Use properties of equality to solve problems
• Apply order of operations to solve a problem
• Use various methods to solve proportional problems
• Create and interpret graphs that represent real life situations
Geometry
• Identify polygons based on their properties
• Compare three-dimensional shapes based on their properties
• Identify relationships among points, line, and planes
• Identify and explain lines of

• Identify types of symmetry • Identify congruent triangles or quadrilaterals • Identify transformation on two-dimensional shapes • Identify the Cartesian coordinate plane's first two quadrants			symmetry of various polygons • Identify congruent triangles or quadrilaterals • Perform transformation on two-dimensional shapes • Identify and use the Cartesian coordinate plane's first two quadrants

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Math Grade 6

Below Basic (30-61)	Basic (62-94)	Proficient (95-127)	Advanced (128-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of math content in the following:	Provided supports such as assistive technology,adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of math content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of math content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of math content in the following:
Number Sense and Operations • Identify the numerals in fractions, decimals and mixed numbers • Identify the numerals in prime or composite numbers • Identify the numerals and/or mathematical symbols for addition, subtraction, multiplication, and division problems with whole numbers, mixed numbers, fractions, decimals, or percentages (+, -, %, =, ., /, etc.). • Estimate to solve problems involving fractions, mixed numbers, decimal or percentages. **Patterns, Relations and**	**Number Sense and Operations** • Identify fractions, decimals, mixed numbers and/or percentages • Identify prime or composite numbers • Solve addition, subtraction, multiplication, and division problems with whole numbers, decimals, or percentages. • Identify exponents **Patterns, Relations and Algebra** • Locate information on graphs • Locate information on graphs that represent the relationship between variables • Interpret graphs that represent	**Number Sense and Operations** • Recognize common equivalent fractions, mixed numbers, decimals, and percentages. • Identify prime or composite numbers, factorization, greatest and least common multiples, or divisibility rules • Solve addition, subtraction, multiplication, and division problems with whole numbers, mixed numbers, fractions, decimals, or percentages. • Identify laws of exponents • Identify prime factorization • Add, subtract, multiply, divide and simplify fractions • Identify percentages	**Number Sense and Operations** • Recognize and understand common equivalent fractions, mixed numbers, decimals and/or percentages. • Use prime or composite numbers, factorization, greatest and least common multiples, or divisibility rules to solve problems. • Select the operation and solve addition, subtraction, multiplication, and division problems with whole numbers, mixed numbers, fractions, decimals, or percentages. • Use laws of exponents to solve problems • Use prime factorization to add and subtract unlike fractions

Algebra • Disaggregate shapes (e.g., Blue squares, Red triangles, Yellow circles) into a simple linear graph • Locate information on graphs • Locate information on graphs that represent the relationship between variables **Measurement** • Distinguish between pi and other arithmetic/mathematical symbols • Identify appropriate measures for two- and three-dimensional objects • Understand the concept of volume	the relationship between variables **Measurement** •identify pi •Identify, measure describe, classify, or construct various two-dimensional polygons and measure angles •Identify proportional problems and measurement conversion •Understand the concept of volume	• Estimate to solve problems involving fractions, mixed numbers, decimal or percentages. **Patterns, Relations and Algebra** • Identify a linear or proportional relationship • Create and interpret graphs that represent the relationship between variables • Solve equations given x as a variable • Apply order of operations to solve problems **Measurement** • Identify pi and match to 3.12… • Understand how to find area and perimeter of complex shapes • Find and understand the areas of triangles and parallelograms • Identify formulas to determine volume or surface area • Understand and apply volume formulas	• Estimate to solve problems involving fractions, mixed numbers, decimal or percentages. **Patterns, Relations and Algebra** • Understand when information suggests a linear or proportional relationship • Simplify and solve equations given x • Understand that adding or subtracting the same number to both sides creates a new equation • Understand that multiplying or dividing both sides by the same nonzero number creates a new equation • Add or subtract the same number to both sides • Multiply or divide both sides by the same nonzero number • Apply order of operations to solve problems **Measurement** • Use pi to solve problems • Use formulas to find volume or surface area • Use appropriate measures for two- and three-dimensional objects • Find the area or perimeter of complex shapes

			• Find the area of triangles and parallelograms • Solve proportional problems • Solve measurement conversion

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Math Grade 7

Below Basic (30-61)	Basic (62-94)	Proficient (95-127)	Advanced (128-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of math content in the following: **Number Sense and Operations** • Identify numerals in integers, fractions, mixed numbers, decimals, percents and rational numbers • Identify numbers or symbols in absolute values • Identify prime or composite numbers • Identify either number or operational sign • Identify numerals and percentage signs **Patterns, Relations and Algebra** • Identify either number or operational sign. • Identify numerals and letters	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of math content in the following: **Number Sense and Operations** • Compare integers, fractions, mixed numerals, decimals or percents • Understand positive and negative integers • Identify prime or composite numbers and factorization • Identify percentages • Solve addition, subtraction, multiplication and division problem with whole numbers, decimals, fractions or percents **Patterns, Relations and Algebra** • Identify x, +, -, division symbol • Understand terms such as	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of math content in the following: **Number Sense and Operations** • Compare and order positive integers, fractions, mixed numbers, decimals, and percents • Identify absolute value • Identify prime or composite numbers, factorization, greatest and least common multiples or divisibility rules • Solve problems involving rational numbers, including converting decimals to fractions • Solve an equation, given addition, subtraction, multiplication and division • Identify percentage problems • Understand order of operations • Use inverse relationships to simplify problems • Write two-step linear equation	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of math content in the following: **Number Sense and Operations** • Compare, order, estimate and translate integers, fractions, mixed numbers, decimals, and percents. • Understand the concept of absolute value • Use prime or composite numbers, factorization, greatest and least common multiples, or divisibility rules to solve problems • Solve problems involving rational numbers, including converting decimals to fractions • Understand and apply operations to solve problems • Solve percentage problems • Use inverse relationships to simplify and solve problems • Understand and apply order of operations **Patterns, Relations and**

in an equation or factorization • Math verbal representation to numerals • Identify linear relation • Simplify **Data Analysis, Statistics, and Probability** • Identify numerals in a set of data or probabilities. • Identify numbers on a graph or table or chart	more than, in addition to, more, less than, half of • Identify linear relationships • Identify factors • Simplify **Data Analysis, Statistics, and Probability** •Define mean, median or mode • Gather data • Identify probabilities	**Patterns, Relations and Algebra** • Understand order of operations • Solve an equation • Understand order of operations • Write 2-step linear equations • Identify and solve linear relationships • simplify **Data Analysis, Statistics, and Probability** • Calculate central tendency • Select and use tables, charts or graphs to represent data • Identify different ways of selecting a sample • Compute probabilities • Understand probabilities	**Algebra** •Identify and extend a variety of grade-level patterns •Solve equations involving variables •Use order of operations to solve an equation •Use, explain, and create symbolic expressions for linear relationships • Translate a verbal description into a mathematical expression • Write and solve two-step linear equations • Identify, explain and solve linear relationships • Use linear equations to model and solve proportional relationships • Simplify and justify the process **Data Analysis, Statistics, and Probability** • Calculate and interpret central tendency • Select, create, interpret, and use tables, charts or graphs to represent data • Identify and compare different ways of selecting a sample • Compute probabilities • Understand probabilities

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Math Grade 8

Below Basic (30-61)	Basic (62-94)	Proficient (95-127)	Advanced (128-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of math content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of math content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of math content in the following:	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of math content in the following:
Number Sense and Operations • Understand place value • Identify numerals and symbols in ratio expressions • Match problems that use the properties or arithmetic operations • Distinguish between numerals expressed in the form of decimals, whole numbers and percents	**Number Sense and Operations** • Round to the nearest whole number, dollar, or unit of measurement • Identify ways that ratios are written • Identify the properties of arithmetic operations on rational numbers • Identify the formula or elements of the formula used to determine markups, commissions, profits, and interest	**Number Sense and Operations** • Determine estimates to a certain stated accuracy • Identify ratios within a problem • Demonstrate an understanding of the arithmetic operations on rational numbers • Select a formula to solve a problem that involves the properties of arithmetic operations on rational numbers	**Number Sense and Operations** • Determine estimates to a certain stated accuracy and use in a calculation • Solve problems using ratios • Solve problems using the properties of arithmetic operations on rational number • Solve problems that involve markups, commissions, profits, and/or simple or compound interest
Patterns, Relations and Algebra • Distinguish between equal and unequal values • Recognize a proportional relationship (e.g., for every 16 oz. carton of milk you need two 8 oz. cups) • Distinguish between negative	**Patterns, Relations and Algebra** • Set up linear equations • Distinguish between proportional and non-proportional linear equations • Recognize that the product of two negative values is a positive value $[(-x)(-y) = xy]$	**Patterns, Relations and Algebra** • Set up and/or solve linear equations • Use equations with variables to demonstrate proportional relationships (e.g., 2x=y means that for every y means that there are 2 xs) • Use a functional relationship to solve problems expressed in pictures, graphs, charts and/or equations (e.g., C=πd or ^{A}rectangle	**Patterns, Relations and Algebra** • Select and solve linear equations and/or inequalities • Use equations with variables to analyze proportional relationships (e.g., 2x=y means that for every y there are 2 xs) • Simplify algebraic expressions using the formula (-x)(-y) = xy in calculations involving distance, speed, and/or time • Explain and analyze functional relationships (i.e., a change in one variable results in a change in another

and positive values		= lxw)	variable) using pictures, graphs, charts and/or equations (e.g., C=πd or ^{A}rectangle = lxw)
Data Analysis, Statistics, and Probability • Compare various tabular or graphical representations of given sets of data • Recognize bias in the display of data sets	**Data Analysis, Statistics, and Probability** • Create tabular or graphical representation(s) of a given set and or sets data • Distinguish between data displays that may bias the analysis and data displays that do not	**Data Analysis, Statistics, and Probability** • Create and interpret tabular or graphical representations of given sets of data • Recognize practices of collecting or displaying data that may bias the analysis	**Data Analysis, Statistics, and Probability** • Select, create, interpret and use tabular or graphical representations of data • Recognize practices of collecting and/or displaying data that may bias the presentation or analysis

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Math Grade 10

Below Basic (30-55)	Basic (56-85)	Proficient (86-123)	Advanced (124-150)
Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of math content in the following: **Number Sense and Operations** • Select properties of operations on real numbers to simplify calculations • Identify ratios, proportion, rates, and percentages • Use estimation **Patterns, Relations and Algebra** • Translate between various representations of a line • Identify linear functions and slope • Add, subtract or multiply polynomials • Identify factors, positive integer, simplifying, etc. • Identify equations and	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of math content in the following: **Number Sense and Operations** • Identify properties of operations on real numbers to the simplify calculations • Identify ratios, proportion, rates, and percentages • Use estimation **Patterns, Relations and Algebra** • Translate between various representations of a line • Identify linear functions and slope • Add, subtract, and/or multiply polynomials • Identify factors, positive integer, simplifying, etc. • Identify equations and	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of math content in the following: **Number Sense and Operations** • Apply properties of operations on real numbers to simplify calculations • Demonstrate an understanding of ratios, proportions, and percentages • Determine the reasonableness of an estimate **Patterns, Relations and Algebra** • Translate between various representations of a line • Identify linear functions and slope • Add, subtract, and multiply polynomials • Apply knowledge of symbolic manipulation by using factors, positive integer, and simplifying exponents. • Identify equations and	Provided supports such as assistive technology, adaptations, prompts, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of math content in the following: **Number Sense and Operations** • Apply properties of operations on real numbers to simplify calculations • Apply ratios, proportion, rates, and percentages to solve word problems • Evaluate if an answer is reasonable using estimation **Patterns, Relations and Algebra** • Translate between various representations of a line • Identify and explain linear functions and slope • Add, subtract, and multiply polynomials • Demonstrate knowledge of symbolic manipulation by using factors, positive integer, simplifying, etc. • Solve equations and inequalities • Apply appropriate graphical or symbolic methods to solve problems that can be modeled using linear or quadratic functions. • Apply graphical and algebraic methods to solve linear equations and inequalities

Inequalities • Identify linear or quadratic functions. • Identify linear equations or inequalities **Data Analysis, Statistics, and Probability** • Identify statistics **Geometry** • Identify properties of sides, diagonals, and angles in special polygons • Identify sets of points • Identify congruent and similar figures • Identify triangle angle sum property • Identify special triangles (isosceles and equilateral) • Identify transformations to solve problems • Recognize projections, cross sections, or graph points in 3-D • Identify measures of perimeter and circumference • Identify approximate error	Inequalities • Identify linear and quadratic functions. • Solve linear equations and/or inequalities **Data Analysis, Statistics, and Probability** • Identify statistics **Geometry** • Identify properties of sides, diagonals, and angles in special polygons • Identify sets of points • Identify congruent and similar figures • Identify triangle angle sum property • Identify special triangles (isosceles and equilateral) • Identify transformations to solve problems • Recognize projections, cross sections, or graph points in 3-D • Identify measures of perimeter and circumference • Identify approximate error	inequalities • Apply appropriate graphical or symbolic methods to solve problems that can be modeled using linear or quadratic functions. • Solve linear equations and/or inequalities **Data Analysis, Statistics, and Probability** • Understand statistics **Geometry** • Identify properties of sides, diagonals, and angles in special polygons • Identify sets of points • Explain congruent and similar figures • Understand triangle angle sum property • Understand the knowledge of special triangles (isosceles and equilateral) • Use transformations to solve problems • Recognize projections, cross sections, or graph points in 3-D • Identify measures of perimeter and circumference • Identify approximate error	**Data Analysis, Statistics, and Probability** • Understand statistics • Interpret graphical representations of data using statistics to compare data. • Use graphical data to compare data • Explain congruent and similar figures • Demonstrate knowledge of special triangles (isosceles and equilateral) • Apply transformations to solve problems • Recognize projections, cross sections, or graph points in 3-D • Identify measures of perimeter and circumference to solve problems **Geometry** • Apply properties of sides, diagonals, and angles in special polygons (including being able to calculate interior angles, identify parts and special segments) • Identify sets of points • Create and explain congruent and similar figures • Use triangle angle sum property to solve problems • Apply the knowledge of special triangles (isosceles and equilateral) to solve problems • Analyze and apply transformations to solve problems • Recognize projections, cross sections, or graph points in 3-D • Apply measures of perimeter and circumference • Explain approximate error

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Science Grade 5

Below Basic (30-55)	Basic (56-96)	Proficient (97-126)	Advanced (127-150)

Provided supports such as assistive technology, adaptations, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of science content in the following:
 	
Earth Science
• Identify a few important parts of the solar system
• Identify time indicators such as, day/night and seasons
 	
Scientific Thinking and Inquiry
• Identify different steps in the scientific method
• Understand the design and validity of an experiment by
    o Sorting claims into categories of valid or invalid
    o Naming and sequence the steps of the scientific process
    o Identifying things that can change or control the outcome of an investigation
	Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of science content in the following:
	
	Earth Science
	• Identify several important parts of the solar system
	• Identify time indicators such as, day/night and seasons
	
	Scientific Thinking and Inquiry
	• List the steps of the scientific method
	• Recognize the scientific method
	• Define scientific investigation
	• Understand the design and validity of an experiment by
	    o Sorting claims into categories of valid or invalid
	    o Naming and sequence
		Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of science content in the following:
		
		Earth Science
		• Compare and contrast the earth to other planets
		• Illustrate an understanding of time/seasons
		
		Scientific Thinking and Inquiry
		• Understand the scientific method
		• Define/describe terms such as "consistencies", "inconsistencies" and "limitations" in a scientific setting
		• Record step by step instructions when performing a new investigation
		• Use tools (e.g., charts and tables) to display scientific data
		• Understand the design and validity of an experiment by
		    o Defining terms such as "validity", "evidence, "quality", "scientific variable" and types of
			Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of science content in the following:
			
			Earth Science
			• Demonstrate/explain how the earth is a part of the larger solar system
			• Demonstrate/explain how the earth's rotation effects time/seasons
			
			Scientific Thinking and Inquiry
			• Use the scientific method to conduct experiments
			• Evaluate and understand the design and validity of an experiment by
			    o Understanding causes of potential inconsistencies and how to avoid them when conducting an experiment, or
			    o Assessing amount and quality of data, or
			    o Evaluating the results of a

o Defining basic scientific terms such as "hypothesis", "predictions" or "conclusions"
o Identifying the smaller of two sample sizes

Life Science
•Recall the basic structure of cells in plants and/or animals
•Identify organisms as native or non-native to DC
•Define or illustrate the concept of "adapt"
•Define organisms
•Identify characteristics of live things
•Define or Identify habitats/environments
•Identify a fossil

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the steps of the scientific process
o Identifying things that can change or control the outcome of an investigation
o Defining basic scientific terms such as "hypothesis", "predictions" or "conclusions"
o Identifying the smaller of two sample sizes

Life Science
• Recall the basic structure of cells in plant and/or animals
• Identify organisms as native or non-native to DC
• Understand the concept of "adapt"
• Define and give an example of organisms
• Identify characteristics of live things
• Define or Identify habitats/environments in the DC area
•Identify a fossil, how it is formed or different types of fossils

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variables (independent/controlled), or
o Using data to support scientific claims, or
o Recognizing when different types of variables are used, or
o Distinguishing between qualitative and quantitative research
•Distinguish between observations, inferences, predictions, and conclusions

Life Science
• Identify the structure and/or function of cells in plants and/or animals
• Understand how DC area organisms and their habitat have an effect on each other as illustrated by
o Understanding that different traits make survival more likely in a particular environment
o Providing examples of non-native organisms
o Describing how non-native organisms change their new habitat, or
o Describing survival needs of various organisms, or
o Matching an organism to its habitat, or
o Identifying specific traits that can be inherited, or
o Listing examples of how the weather may affect an

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study, or
o Understanding and identifying types of variables, or
o Understanding the differences of sample size have on the ability to make inferences/predictions, or
o Making predictions based on data, or
o Explaining why repeating an experiment is important
Life Science
• Understand and describe the structure and/or function of cells in plants and/or animals
• Clearly understand how DC area organisms and their habitat have an effect on each other as illustrated by
o Describing how non-native organisms change their new habitat, or
o Describing survival needs of various organisms based on their habitats, or
o Understanding what will happen if an organism is moved to a very different environment, or
o Comparing and contrasting how different organisms interact with their environments, or
o Describing how changes in a habitat (flood, fire, etc.) may affect an organism
• Use fossil records to

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		environment, or o Describing major types of environments, or o Describing how changes in a habitat (flood, fire, etc.) may affect an organism • Understand that fossils are related to live organisms	understand and compare the evolution of organisms across time

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Science Grade 8

Below Basic (30-65)	Basic (66-93)	Proficient (94-126)	Advanced (127-150)
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of science content in the following:	Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of science content in the following:	Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of science content in the following:	Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of science content in the following:
Structure of Matter • Identify atom • Name elements • Identify periodic table • Identify electron, neutron, proton • Define ions • Recognize and identify scientists • Recognize isotope	**Structure of Matter** • Define atom • Recognize elements • Use periodic table to identify atomic number • Identify electron, neutron, proton • Define isotope • Define and locate ions • Match scientists to their contributions	**Structure of Matter** • Describe each particle of an atom • Understand that elements have a certain number of atoms • Classify isotopes of common atoms • Distinguish between family and period • Recognize the perfect rule of eight in noble gases or transfer of electrons • Place different scientists on a timeline in relationship to their contributions to the Modern Atomic Theory	**Structure of Matter** • Create a model of an atom and its components • Calculate the differences of atoms and their isotopes • Use the atomic weight to determine which atom/isotope is heavier • Use a model to explain how ions are formed • Explain covalent and electrovalent bonds • Explain how scientists have contributed to the Modern Atomic Theory
Reactions • Define Atomic Identity (Atomic Number) • Identify a compound • Define slow and fast reaction • Identify catalyst • Identify acids, bases and/or neutrals Conservation of Energy	**Reactions** • Match atoms to their Atomic Identity (Atomic Number) • When given a compound, identify that the number of atoms stay the same • Distinguish between a slow and fast reaction • Define reaction rate	**Reactions** • Compare the size of atomic masses • Describe different elements that make up given compounds • Identify ways to change reaction rates • Identify catalysts that change reaction rates • Interpret pH strips as acid, base or	**Reactions** • Explain or use Dalton's Atomic Theory • Distinguish the difference between an element and a compound • Describe different types of reactions • Determine what changes the rate of reaction • Describe the difference between acidic, basic and neutral solutions

•Identify energy •List types of energy •Label visible, ultraviolet or florescent light •Name colors of visible light using a prism •Identify heat energy •List examples of energy transformation (radiation, conduction, convection)	• Define catalyst • Classify solutions/foods as acidic, basic or neutral • Define pH Conservation of Energy •Define energy •Identify potential or kinetic energy •Identify visible, ultraviolet or florescent light •Describe how colors relate to light using a prism •Define heat energy •Define energy transformation •Define potential or kinetic energy •Label examples of "radiation" or "conduction" or "convection"	neutral • Identify pH scales Conservation of Energy •Demonstrate or describe potential or kinetic energy •Using scientific tools, identify the sun as the source of most visible light •Order wavelengths from shortest to longest •Explain how heat energy is transferred in one particular example (e.g., machines, plants) •Use objects or pictures to demonstrate or classify kinetic or potential energy •Identify different forms of heat energy •Explain 3 ways heat is transferred •Identify similarities of heat energy	• Use a pH scale to determine the pH of a solution • Explain how the amount of hydrogen ion determines the pH Conservation of Energy •Understand the difference between potential and kinetic energy •Know the different types of electromagnetic wavelengths emitted by the sun and other light sources •Explain how energy is transferred •Define the law of conservation of energy •Identify different forms of energy •Compare and contrast different forms of heat energy

Cas-Alt PERFORMANCE LEVEL DESCRIPTORS
Science Grade 10

Below Basic (30-61)	Basic (62-90)	Proficient (91-129)	Advanced (130-150)
Provided supports such as assistive technology, adaptations, and/or modifications, and a skill reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates inaccurate or minimal knowledge of science content in the following:	Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that is reduced in complexity (cognitive demand) and difficulty (breadth of knowledge), the student demonstrates a limited understanding of science content in the following:	Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in complexity (cognitive demand) and/or difficulty (breadth of knowledge), the student demonstrates an observable understanding of science content in the following:	Provided supports such as assistive technology, adaptations, and/or modifications, and a skill that may be reduced in difficulty (breadth of knowledge), the student demonstrates an observable understanding and application of science content in the following:
Scientific Investigation and Inquiry • List terms associated with solving scientific problems • Identify scientific "data" and/or "graphs" • Locate graphs in a real world environment	**Scientific Investigation and Inquiry** • Define terms associated with solving scientific problems • Identify a scientific problem • Define "data", "graphs" and "analyze" • Select the appropriate graph for reporting scientific data	**Scientific Investigation and Inquiry** • Describe the steps used to solve problems using the scientific method • Utilize the steps of scientific investigation and inquiry to solve a problem • Select the appropriate graph to display a given set of data • Explain how graphs are used to interpret data	**Scientific Investigation and Inquiry** • Analyze a situation to determine and execute the steps of an experiment using the scientific method • Draw conclusions by collecting, organizing and analyzing data • Construct or interpret data on a graph • Demonstrate an understanding of scientific experiment
Cell Biology • Identify prokaryotic or eukaryotic cells • Identify commonly found organelles in plants or animals • Label diagrams of plant and animal cells • Identify cell membrane • Demonstrate "diffusion",	**Cell Biology** • Describe prokaryotic or eukaryotic cells • Describe commonly found organelles in plants or animals • Label diagrams of plant and animal cells • Define "diffusion", "active transport" or "selective permeability" • Define "lipids", "proteins", "carbohydrates", and/or "nucleic	**Cell Biology** • Classify cells as prokaryotic or eukaryotic • Compare OR contrast prokaryotic and eukaryotic • Distinguish between plant and animal cells • Classify organelles of plants and animals by their characteristics • Explain how some materials can move through a membrane while others cannot • Classify scenarios as active transport, diffusion, or selective permeability • Describe the concepts of diffusion, active transport, and selective permeability • Describe the basic functions of the cell	**Cell Biology** • Compare and contrast organisms that have prokaryotic and eukaryotic cells • Distinguish between prokaryotic and eukaryotic cells • Compare and contrast animal and plant cells/organelles • Demonstrate or explain how cell membranes are semi-permeable • Demonstrate and explain "diffusion", "semi-permeable" and "selective permeability"

"active transport" or "selective permeability"
• Give examples of "lipids", "proteins", or "carbohydrates"
• Identify "cell function" or "cell structure"
• Give example of "pH", "acid", or "base"
• Identify tools used to measure pH or temperature
• Label or illustrate "respiration" or "cellular respiration"
• Name basic function of photosynthesis
• Identify "mitosis', "meiosis" or "daughter cells"

Genetics
• Identify "traits"
• Identify characteristics that are inherited
• Identify DNA or protein molecules
• Identify genetic disorders
• Identify a genetic disorder based on characteristics
• List different types of cells found in the body
• Identify "allele", "sexual reproduction", or "gamete"

acids"
• Explain the difference between "cell function" and "cell structure"
• Define "pH", "acid", "base", "solution" and "temperature"
• Identify tools used to measure pH and temperature
• Define "respiration", "cellular respiration", "mitochondria", "ATP", and/or "metabolism"
• Explain basic function of photosynthesis
• Define "mitosis', "meiosis" and "daughter cells"
• Identify mitosis or meiosis
• Recognize that cells reproduce

Genetics
• Recognize characteristics that are inherited
• Label parts of DNA molecule
• Identify DNA and protein molecules •Define genetic disorders as a result of genetic mutation
•Describe some genetic disorders based on characteristics
•Describe cell specialization
•Define several different types of cells found in the body
•Define "allele", "sexual reproduction", and "gamete"
•Explain the functions of components of sexual reproduction (sperm, egg,

membrane
• Identify the types of macromolecules and the function they serve
• Describe the characteristics of macromolecules
• Describe how different pH levels OR temperatures effect human cell function
• Classify various metabolic activities or uses of energy
• Explain the vital metabolic functions that require ATP energy
• Explain that mitosis is the division of body cells
• Explain that meiosis is the division of sex cells
• Classify cell division as mitosis or meiosis
Genetics
•Explain the role of offspring, genes, DNA and chromosomes in the heredity process
•Explain that genes are passed from parent to offspring
•Explain that sexual reproduction leads to offspring with traits similar to each parent
•Explain that asexual reproduction results in offspring identical to the parent
•Explain the relationship between DNA and protein molecules
•Explain parts of DNA molecule
•Explain how and when genetic disorders are passed to offspring
•Classify diseases and disorders, as either genetic or non-genetic
•Explain how DNA can change or mutate
• Determine that organs of the body have specialized cells
• Explain the function of specialized cells

• Compare and contrast diffusion, active transport, and passive transport
• Describe why the body needs macromolecules (lipids, etc) and micromolecules
• Illustrate cell structure and identify how each organelles contributes to cell function
• Demonstrate how the environment affects cell function (e.g., pH levels)
• Compare cellular respiration and ATP
• Describe the role of ATP in metabolism
• Explain how cells get energy from cellular respiration
• Describe how the products of photosynthesis are used in cellular respiration and ATP
• Differentiate between cellular respiration and photosynthesis
• Differentiate/compare mitosis and meiosis
• Illustrate mitosis or meiosis

Genetics
• Describe the relationship between genes and chromosomes or between DNA and chromosomes
• Describe the structure of chromosomes (genes) and explain how hereditary information is passed to offspring in genes
•Identify and describe similarities and differences among multiple offspring of the same parents (plant or animal)

•List components of sexual reproduction (sperm, egg, gamete) •Identify organisms that reproduce sexually	gamete) •Identify organisms that reproduce sexually and/or asexually	• Describe the components of sexual eproduction (sperm, egg, and gamete) • Describe how traits of an offspring depend on the combination of dominant and recessive alleles	•Distinguish between DNA and protein molecules •Describe the make-up of a DNA molecule •Describe how genetic disorders are caused by genetic mutations •Explain how mutations can be beneficial or harmful •Compare specialized cells and organs of the body •Describe the specific function of different types of cells •Summarize the types of organisms that carry out sexual reproduction using a graphic organizer to describe the sperm (male), egg (female), and gamete of human offspring •Explain how sexual reproduction leads to variation in offspring •Identify single-gene traits and describe all possible genotypic and phenotypic combinations

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