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)

Submitted to
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DC-CAS Alternate Assessment Technical Manual
Volume I: Nuts and Bolts, 2009

CHAPTER 1: OVERVIEW OF THE STATE ASSESSMENT SYSTEM

Introduction to the "Nuts and Bolts" Volume

This volume presents the empirical and logical evidence supporting the technical quality of the DC Office of the State Superintendent (OSSE) Comprehensive Assessment System—Alternate Assessment (CAS-Alt). The information presented in this volume documents the processes and procedures used to develop, administer, score, and report the results of the CAS-Alt. These procedures have been implemented to ensure, to the extent possible, the validity and comparability of scores from the CAS-Alt. While there is intentional flexibility built into the CAS-Alt to maximize the instructional usefulness of the results, the procedures described in this volume are designed to constrain unwanted variability where possible.

This volume has a discrete section for each phase of the assessment process. Each section works to tie together the argument for the validity of the alternate assessment. That is, while each section taken individually is a key component of any technical manual, we have tried to weave these sections together to demonstrate how the assessment was built to effectively evaluate the knowledge and skills of students with disabilities in the context of grade-linked content standards.

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.

Statement of Core Beliefs and Guiding Philosophy of the DC OSSE Statewide Assessment System

OSSE's Statewide Assessment System is based on a commitment to a core philosophical standpoint, particularly the belief that all students can learn and that all students' education should be guided by high expectations and standards. The state board adopted the following mission and vision for the District of Columbia Public Schools:

> ***Mission***
>
> *The mission of the District of Columbia Public Schools is to ensure that all students acquire the knowledge, skills and values necessary to live rich*

and fulfilling lives as responsible, productive and enlightened members of a democratic society.

Vision

The District of Columbia Public Schools will be known as one of the best urban school districts in this country. The District of Columbia Public Schools will offer an outstanding education to every student within a safe, healthy and educationally appropriate environment. The District of Columbia Public Schools will be among the first major urban school districts to eliminate the achievement gap among all subgroups of our student population. The District of Columbia Public Schools will dynamically engage parents and the community in the lives of our students and schools. The District of Columbia Public Schools will be the first and best choice for families living in the District of Columbia.

A Master Plan was released in February 2006 that outlined the principles for meeting this vision. The following key strategies guide the design and development of the District of Columbia curriculum and assessment system:

1. Ensure challenging curriculum and instruction for all students
2. Expect teachers and principals will deliver high-quality instruction to every student
3. Construct a seamless inclusive system that serves all students from pre-kindergarten through grade 12
4. Provide a variety of supports for students to succeed
5. Build on our community's assets
6. Organize schools to better serve the needs of students
7. Develop a strong sense of accountability
8. Make sure that every child has access to an appropriate range of educational resources

Included within those strategies are principles of inclusiveness, such as "Create a culture of inclusion that welcomes special education students into their neighborhood schools." and "Personalize support to meet students' individual learning needs."

Uses of the DC OSSE Statewide Assessment Information

In 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 No Child Left Behind (NCLB) and the Individuals with Disabilities Education Improvement Act (IDEA-2004).

Use of Data for Federal Accountability

Federal law (NCLB 2001) 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-2004 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.

Components of the Comprehensive Assessment System:

In District of Columbia, the Comprehensive Assessment System (CAS) tests students on reading and mathematics curriculum content taught during grades 3–8 and 10. Science is administered once in elementary school, once in middle school, and once in high school. In addition, writing is measured through the DC CAS Composition Test at grades 4, 7, and 10. Plans are being made to develop and administer end-of-course assessments in Algebra I, Geometry, English 9 and 10, Biology and Physics (or Chemistry) for grades 8–12. In addition, DC Public Schools uses a system of formative and benchmark testing to monitor individual student progress throughout the year. Currently benchmark assessments are given quarterly in reading and mathematics at grades 2–8.

All District of Columbia students participate in statewide assessment in one of three ways: general assessment, general assessment with accommodations, or alternate assessment based on alternate achievement standards. The CAS-Alt is a portfolio assessment given to those students who have significant cognitive disabilities that prevent them from participating in the general assessment (DC CAS) even with accommodations and/or modifications.

General Assessment

The DC CAS includes the tests mentioned above for grades 3–12. The tests for reading, writing, and mathematics were first administered in spring 2006, and the science tests were administered in spring 2008. The reading and mathematics assessments consist primaily of multiple-choice items plus three short constructed-response items per test.

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 DC 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.

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 the *Individuals with Disabilities Education Improvement* Act of 2004 (IDEA '04), and the *No Child Left Behind* Act of 2001, 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 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 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 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 DC OSSE Alternate Assessment (CAS-Alt) system is designed to provide a meaningful academic assessment experience based on alternate achievement standards for 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 (IDEA) 1997. Revisions in the DC OSSE Alternate Assessment were made in response to the No Child Left Behind Act and the reauthorization of IDEA 2004 and renamed the Comprehensive Assessment System Alternate Assessment (CAS-Alt). 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**

The DC OSSE CAS-Alt (formerly the Alternate Assessment for Special Education) is a portfolio assessment that measures the academic progress of special education students who are unable to participate in the large-scale assessment. It is designed for students who have significant cognitive and/or physical challenges as outlined in the criteria for inclusion in the state program. Working collaboratively with consultants from Inclusive Large-Scale Standards and Assessments (ILSSA), the alternate assessment was developed and piloted in School Year 2000-2001 and implemented in School Year 2001-2002. In 2003-2004 ILSSA conducted teacher and scorer training, operating a scoring center and partnered with Measured Progress to summarize and report the assessment results. Since the 2004-2005 school year, ILSSA consultants have continued to aid in the development and scoring of portfolios for DC OSSE by offering feedback, aiding staff in the implementation of recommendations, and providing training to teachers and staff in the district.

Teachers at the Mamie D. Lee and Sharpe Health Special Education Schools participated in the pilot program during the 2000-2001school year. Orientation seminars were provided for special education teachers in other schools and centers during city-wide professional development sessions. Feedback from the pilot program was used to modify the manual, training and scoring protocol used in the subsequent years.

In the first year of implementation, the District, in collaboration with ILSSA, trained teachers in 50 schools, including a charter school and four special education residential schools. The training targeted teachers in the special education schools and centers and schools where high percentages of special education students attended, although the training was open to all teachers.

Implemented in December 2001, the initial Alternate Assessment training consisted of three one-day sessions conducted by both trained District of Columbia special education teachers and a consultant from ILSSA. Additional trainings were provided for new participants in March as were follow-up sessions for previous participants. In early May, sessions were conducted to assist teachers in preparing the student portfolios for submission to scoring. Throughout the year, the District of Columbia facilitators were available to provide assistance to the participating teachers. As with the pilot year, orientation to the Alternate Assessment was provided for testing chairpersons, special education teachers and bilingual service providers and building administrators. Student portfolios were submitted and scored in June. Fifteen District of Columbia teachers were trained to score the portfolios. Approximately 300 portfolios were submitted. The results and evaluation report were made available in May 2003.

This system continued to be implemented annually following the efforts established in the pilot. While the training of special education teachers continued, a more comprehensive effort ensued in the 2002-2003 school year to provide system-wide orientation for all administrators and local school staff. The District utilized a trainer-of-trainer model of professional development to provide ongoing system-wide training. Modifications to the implementation efforts were based on the recommendations of teachers, trainers and the consultants who participated in the School Year 2001-2002 implementation.

In 2005-2006, DC adopted new grade-level learning standards for all students. Intensive training on the new standards occurred during the summer and fall of 2005 for *all* teachers. The new learning standards were much more specific and resulted in one significant change to the 2005-2006 DC CAS-ALT administration. The new standards made it a challenge to assess a targeted skill across multiple standards because of the specificity of each standard. As a result, the fall training focused on linking targeted skills to the new grade level standards and general education curriculum.

An open invitation was sent out to DC teachers whose students participate in the CAS-Alt to provide feedback on the existing CAS-Alt procedures. Recommendations from this June 2006 meeting of stakeholders and the June 2006 TAC meeting resulted in revisions implemented during the 2006-2007 school year. The revisions to the CAS-Alt center primarily on increasing the number of grade-level strands assessed and refining the scoring and reporting systems. In addition, it was important to re-examine the design of the CAS-Alt in light of IDEA's and NCLB's greater emphasis on grade level access. In addition, performance level descriptors were developed and cut scores were set in June 2007. An independent alignment study was conducted in May 2007, and the participation guidelines for the CAS-Alt were revised.

The TAC, testing contractor, ILSSA and DC OSSE met monthly to discuss the revision prior to implementation and throughout the implementation year. Several DC teachers provided formative feedback during the initial implementation year. Additionally, one ILSSA staff provided technical assistance to teachers implementing the revised procedures in their classrooms to garner further input on revisions.

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

CHAPTER 2: WHO ARE THE STUDENTS?

In effective learning environments, assessment and instruction are always linked. High-quality assessment practices provide information upon which to base ongoing development of a curriculum that is responsive to student needs. As discussed in *Volume II: The Validity Argument*, models of learning link cognition to assessment observation to interpretation in a continuous cycle. In alternate assessment, models of learning, and subsequently the linkages between curriculum, instruction and assessment, are deeply impacted by the characteristics of the students themselves. Knowing who these students are, and how they learn is critical to the design and development of effective instruction and assessment. In CAS-Alt, each portfolio-based assessment is individualized so that the learning needs of every unique student can be met with instruction that effectively promotes academic growth for that student. The carefully designed common structure underlying the development of every CAS-Alt portfolio provides a basis for comparison of performance patterns across students. The structure of the CAS-Alt portfolio assessment system illustrates both student performance and the student program. In effect, this assessment prioritizes observation of the dynamic links between models of student learning, curriculum and instruction, and relates these observations to actual student outcomes. The design of the portfolio is based upon the belief that those particular assessment events will allow students to demonstrate their understanding in a given domain, based upon a particular view of learning that takes into account important individual student differences.

How are CAS-Alt Students Identified for Participation?

All students in the grades identified by state and federal law must be included in the DC OSSE Assessment Program. Participation will occur in one of three ways:

1. General Assessment without accommodations, under conditions routinely used,
2. General Assessment with accommodations, or
3. Alternate Assessment based on alternate academic achievement standards linked to the District of Columbia Curriculum Frameworks.

The student's IEP team (which includes the parent or guardian) decides how (not if) the student will participate in the state Assessment Program. The team must document this decision in the IEP. The state has developed participation guidelines to support and inform IEP teams as they make participation decisions. Under IDEA '04, all students with disabilities must participate in state and district general assessments in one of the ways outlined above.

Only those students who have the most severe cognitive disabilities and are unable to demonstrate achievement of grade-level academic standards, even with the best instruction and with appropriate accommodations, may participate in the CAS-Alt. Four criteria must be met for a student to qualify for participation. The student must:

1. Be currently enrolled in grades 3, 4, 5, 6, 7, 8 or 10 *(or are in an ungraded program whereby the students' chronological age makes them eligible),* and
2. Have an active IEP, and

3. Demonstrate cognitive disability and adaptive behavior skills that prevent him or her from demonstrating achievement of the grade-level proficiency standards described in the District of Columbia Curriculum Frameworks, even with the best instruction and with appropriate accommodations, and
4. Have documented history (current and longitudinal across multiple settings) that confirms the student criteria listed above.

Students who participate in CAS-Alt exhibit all of the following characteristics, which occur in combination, not in isolation:

- **Limited Communication:** The student may be considered nonverbal or may have very limited expressive vocabulary and language skills. The student may use simple language structures to communicate and seldom acquires new communication skills through incidental learning.
- **Very Low Levels of Academic Achievement:** Performance in the subject matters of reading, writing, and mathematics is significantly below that of same-aged peers (e.g., performance-level expectations must be modified to a reduced or simpler level of performance from the curriculum standards set for general education or "typical" District of Columbia students). When typical general education peers are reading paragraphs and answering questions, the Alternate Assessment student might be matching objects, pictures, or symbols, and when typical peers are writing and solving equations, the Alternate Assessment student might be using objects, symbol systems, or pictures to show more basic connections.
- **Highly Specialized Instruction:** The student generally requires systematic instruction with tasks broken into small steps. In addition, the student needs deliberate instruction to apply learned skills across multiple settings (e.g., school, home, work, and other settings).
- **Ample Supports:** The student requires individualized instructional, technological, or interpersonal supports to make progress in learning. The student requires accommodations to demonstrate proficiency of even the modified performance expectation levels, such as modeling and repeated demonstration, physical hand-over-hand guidance, specially designed prompting procedures, and alternate or augmented communication systems.

Under *No Child Left Behind*, no more than 1% of the students in the District of Columbia are allowed to show proficiency in an assessment based on alternate achievement standards, such as the CAS-Alt. The other 99% of proficient scores must be earned by students who take a general assessment based on grade-level standards. The reason for this rule is to ensure that the vast majority of students are supported by their schools to learn and to show grade-level proficiency of academic content skills. CAS-Alt does not assess the achievement of grade-level content skills. Instead, CAS-Alt assesses content skills that are *linked to* grade-level academic activities but are modified to a lower level of depth, breadth, and complexity.

Decision Process

Before making a decision about whether a student should be considered for an alternate assessment or the regular assessment with or without accommodations and modifications, it is important to consider these questions:

Question	***Yes***	***No***	***DOCUMENTATION OF REASONS FOR DETERMINATION***
Has the student had access to grade-level content?			
Has the student had evidenced-based instruction?			
Was instruction taught by a highly qualified teacher[1]?			

If the IEP team answers "no" to these questions, the first step is to revisit the student's instructional plan. Under the Individuals with Disabilities Education Act (IDEA 1997) students are ensured access to "…the general curriculum, so that the child can meet the educational standards within the jurisdiction of the public agency that apply to all children." Therefore, before making a decision about the type of assessment a student should take, the instructional context should be reevaluated and revised.

Participation in the CAS-Alt should be determined based on the student's needs and best practice, not based on disability label, student's instructional setting, or where the student is likely to score highest. Decisions about whether the student should take the general education assessment with or without accommodations and modifications or the alternate assessment should be based on educational needs. IEP teams should review the participation guidelines for the CAS-Alt to determine a student's eligibility for the alternate assessment. Students who do not meet the criteria below must participate in the DC CAS, with or without accommodations, as appropriate based on their IEP. Students with 504 plans are not eligible for the DC CAS-Alt.

Part I: Participation Guidelines[2]	***Yes***	***No***
Does the student need extensive prioritization within grade-level content due to significant cognitive disabilities? • *i.e., due to the student's memory or ability to transfer learning, is there a need to limit and give precedence to what the student will learn within grade level content?*		

[1] As outlined in IDEA 1997 §300.18

[2] Adapted from US Department of Education (2006) *A Decision Framework for IEP Teams Related to Methods for Individual Student Participation in state Accountability Assessments.* Retrieved September 12, 2006, from http://www.osepideasthatwork.org/toolkit/tk_descision.asp

Part I: Participation Guidelines (continued)	***Yes***	***No***
Does the student need systematic instruction to learn essential and prioritized skills? • *i.e., is the student's access to grade-level content achieved by significantly changing the complexity or cognitive demand of the material (i.e. instruction focuses on the critical essence of content)*		
Does the student need systematic instruction in order to generalize performance? • *i.e., does the student require direct instruction to acquire, maintain, and generalize skills?*		
Does the student require extensive supports to ***access text****? (e.g., simplified symbol system, assistive technology, highly prioritized learning objectives, modeling, etc.)* • *i.e., does the student* ***access text*** *primarily through key words, memorized sight words, pictures, tactile objects, and/or auditory cues?*		

Part II: Performance Dimension Determination[3]	***Yes***	***No***
The student uses verbal or written words, signs, Braille, or language-based augmentative systems to request, initiate, and respond to questions, describe things or events, and express refusal. OR *The student uses intentional communication, but not at a symbolic language level: Student uses understandable communication through such modes as gestures, pictures, objects/textures, points, etc., to clearly express a variety of intentions.*		
	If the answer is yes, use the ***Attainment*** *Performance Dimension*	
The student communicates primarily through cries, facial expressions, change in muscle tone but no clear use of objects/textures, regularized gestures, pictures, signs, etc., to communicate. OR *The student alerts to sensory input from another person (auditory, visual, touch, movement) BUT requires actual physical assistance to follow simple directions. OR* *The student's response to sensory stimuli (e.g., sound/voice; sight/gesture; touch; movement; smell) is unclear.*	***Yes***	***No***

[3] Adapted from Kearns, Towles-Reeves, Kleinert & Kleinert (2006) *Learner Characteristics Report.* Lexington, KY: University of Kentucky, National Alternate Assessment Center. Retrieved September 14, 2006, from http://www.naacpartners.org/Products/Files/Research_Focus_LCI.pdf

Before making a decision, the IEP team needs to review District standards for graduation and discuss the student's academic goal (diploma, certificate, etc.).

The eligibility for alternate assessment cannot be caused by one of the non-eligibility criteria. The non-eligibility criteria include the following:

Non-eligibility

- *Student's eligibility is caused by poor attendance;*
- *Student's eligibility is caused by English as a Second Language;*
- *Student's eligibility is caused by social, cultural and economic differences;*
- *Student's eligibility is caused by disruptive behavior;*
- *Student's eligibility is caused by student's reading level;*
- *Student's eligibility is caused by expectations of poor performance;*
- *Student's eligibility is caused by the amount of time receiving special education services;*
- *Student's eligibility is caused by low achievement in general education;*
- *Student's eligibility is caused by categorical disability labels;*
- *Student's eligibility is caused by level of intelligence;*
- *Student's eligibility is caused by the location where the student receives services.*

Summary Decision

Based upon the review of the information above, the IEP team will determine whether the student will participate in the:

- ❑ General Assessment without accommodations
- ❑ General Assessment with accommodations (include accommodations in student's IEP)
- ❑ District of Columbia Alternate Assessment based on alternate achievement standards

Again, regardless of the number of students the IEP teams determine should take the CAS-Alt, federal regulations require that no more than 1% of the scores can count towards proficiency in school and district-level accountability.

Description of the Students Participating in CAS-Alt

Students who are appropriately recommended to participate in the CAS-Alt typically:

- Have significant cognitive disabilities in the areas memory, transfer of learning, attention, etc.;
- Require extensive prioritization within grade level content;
- Do not show grade level achievement even with appropriate and intensive instruction over significant period of time;
- Are multiple years behind grade level;
- Require supports that reduce complexity or breadth of instructional content;
- Require ongoing systematic instruction to learn new skills;
- Require ongoing systematic instruction to generalize skills and then may only transfer to similar or familiar content or contexts;
- Require key words, pictures, and auditory cues embedded in adapted or controlled text and may require a text reader to use these cues;
- Require extensive supports, such as simplified symbol system, peer models, frequent cues or prompts, repetitions, etc., to retrieve responses;

In a classroom setting these are students who may use symbolic language to communicate including written words, signs, Braille or language based augmentative systems to request, initiate, and respond to questions, describe things or events and express preferences, however they typically experience difficulty initiating and sustaining social interactions and communicating with others in real life situations.

Many of these students do not communicate at a symbolic language level but instead communicate by using gestures or signing, pointing, assistive technology or through the use of simple facial expressions or changes in muscle tone.

While they may be able to follow simple directions presented through words (e.g., spoken, signed, printed or any combination), they often also require additional cues such as gestures, pictures, models, etc. for understanding.

It is common for these students to experience impaired vision, hearing or motor skills individually or in combination. They are also students who often experience difficulty establishing and maintaining social interactions and experience frequent absences from school due to health or medical issues.

The majority of the students assessed with the CAS-Alt are not able to read fluently with basic (literal) understanding from paragraphs or short passages in print or Braille or to apply computational procedures or to solve real-life word problems from a variety of contexts or to complete computational procedures even with the use of a calculator.

Summary of the Learning Characteristics Inventory

In order for the DC OSSE to better understand the population of students completing the alternate assessment judged against alternate achievement standards (AA-AAS), they chose to participate in the Learning Characteristics Inventory (LCI) research conducted

by the National Alternate Assessment Center (NAAC). Students completing an AA-AAS represent less than 1% of the total student population and come from a variety of disability categories but represent students with the most significant cognitive disabilities. Researchers have found that the Individuals with Disabilities Education Act (IDEA) disability label that allows a student to receive special education services (i.e., autism, mental retardation, multiple disabilities) does not adequately describe the learning characteristics of this heterogeneous population (NAAC, 2005). The purpose of conducting the LCI in the District of Columbia was to investigate the true learning characteristics of students participating in the CAS-Alt in order to make informed, data-based decisions about the CAS-Alt for the 2008-2009 school year.

Surveys were completed for all students who participated in the 2008-2009 CAS-Alt administration. Teachers were trained on the LCI by watching as a model LCI was completed, defining terms, and then completing an example for one of their students. During this time, two technical assistance personnel from the Inclusive Large-Scale Standards and Assessment (ILSSA) project answered questions and clarified information. The teachers were then asked to complete the LCI for all of their students taking the CAS-Alt by February 1, 2009 for all students taking an AA-AAS. Any student new to a building or with a new IEP originating after February 1, 2009 who would need to take the AA-AAS during the 2008-2009 school year, were directed to contact the OSSE Office of Assessment to be registered for the assessment. Included in the registration was completion of the participation for eligibility for an AA-AAS followed by the LCI. If information was entered that excluded students from participating in the LCI (based on eligibility guidelines or performance dimension determination), these students were excluded from the database and not eligible to complete CAS-Alt.

Teachers completed LCIs for students in grades 3-8 and 10. The students were evenly distributed across all grades. Table 1 shows the summary of disability categories reported for each student. Students were reported to most often have the IDEA disability category labels of mental retardation, multiple disabilities, and autism. In addition, teachers reported 96 students (16.8%) were English Language Learners as shown in Table 2. Demographic characteristics of DC would suggest this number is still fairly high.

Table 1: IDEA Disability Category Label

IDEA Disability Category	N	Percent
Autism	107	18.7%
Specific Learning Disability	5	0.9%
Other Health Impaired	19	3.3%
Speech or Language Impairment	8	1.4%
Multiple Disabilities	114	19.9%

Mental Retardation	309	53.9%
Orthopedic Impairment	2	0.3%
Traumatic Brain Injury	3	0.5%
Visual Impairment	1	0.2%
Hearing Impairment	3	0.5%
Deaf-blindness	1	0.2%
Developmentally Delayed	1	0.2%
Missing	0	0.0%
Total	573	100%

Table 2: Student Performance Dimension

Student Performance Dimension	**N**	**Percent**
Attainment	540	94.2%
Progress	33	5.8%
Missing	0	0.0%
Total	573	100%

Descriptive statistics were performed on each of the ten categories of characteristics. Results from the survey can be found in Tables 5-14 of Appendix B. Important findings are summarized in the bullets below:

In the area of Communication:

- 77.1% of the students in this sample who take the alternate assessment use symbolic language to communicate expressively.
- 15.5% use intentional communication with pictures/objects and/or gestures but not at the symbolic language level.

- 98.8% of the students have some level of receptive language response, including 43.3% who can follow 1-2 step directions presented through words only, 48.9% who can follow oral instructions when provided additional cues, and an additional 6.6% who alert to sensory input from another.
- 7.3% of the sample have no clear use of words, pictures, objects, or signs to communicate expressively and a smaller percentage, 1.2% exhibit uncertain receptive responses to stimuli. In addition, this small percentage of students appear to also have limited engagement in social interactions and requires personal assistance or assistive devices for motor functioning.
- Only 12.0% of the sample use an augmentative communication system in addition to or in place of oral speech.

In the content areas of Reading/Math:

- 2.4% of the sample read fluently in print or Braille and 12.7% read with basic literal understanding.
- An additional 74.3% of the sample, read basic sight words or demonstrate basic literacy skills (i.e., awareness of print or Braille).
- 3.5% apply computational procedures to solve real-life word problems in a variety of contexts, and an additional 45.7% can do computational problems with or without a calculator.
- An additional 28.4% of the sample can count with 1:1 correspondence to at least 10, with an additional 10.3% who can rote count to at least 5.
- Finally, 10.5% have no awareness of print or Braille, and 12.0% have no observable awareness of or use of numbers.

CHAPTER 3: WHAT IS THE CONTENT?

The question, "what is the content" for instruction and assessment of students with the most significant cognitive disabilities is of great importance, and is one of the most challenging questions we have to answer. The term "content" refers to both the specific content standards as well as the performance expectations (Alternate Achievement Standards), both of which serve as the basis for the test design for the CAS-Alt. Although the research literature has limited information on how students with significant cognitive disabilities build competence in the academic content areas, either at any specific grade, or how it changes grade-by-grade, we continue to see evidence of student work from DC students and work collected by researchers (such as NAAC and ILSSA) that leads us to believe we can be successful in shifting to more challenging instruction for this population of students.

Review of Literature on Content for Students with Significant Disabilities

Federal legislation over the past decade has resulted in expectations for students with significant cognitive disabilities to have access to the general curriculum. IDEA 1997 required that all students have access to the general curriculum; and in 2001, the reauthorization of the Elementary and Secondary Education Act — the No Child Left Behind Act — required states to 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)

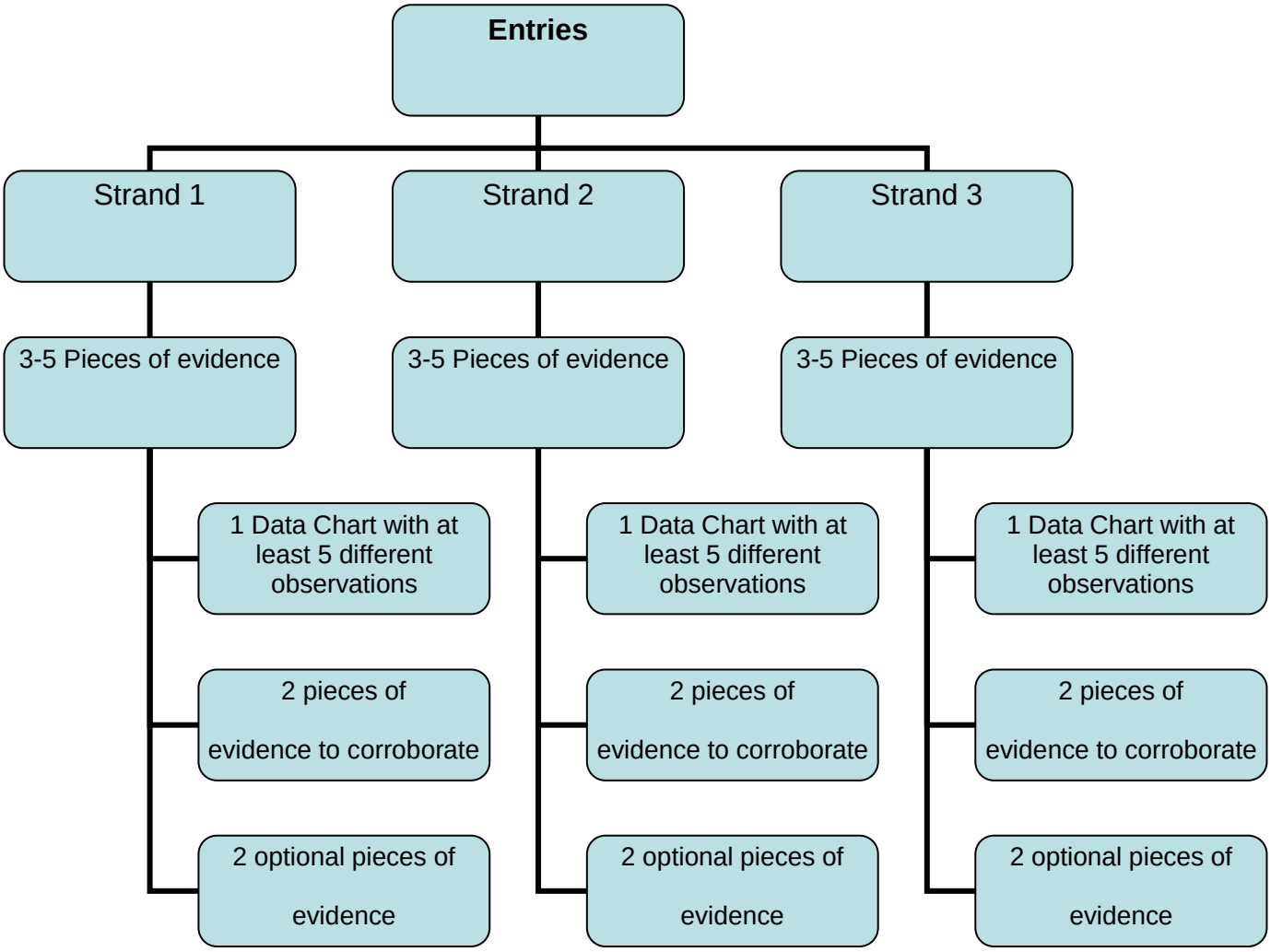
1. The content is academic and includes the major domains/strands of the content area as reflected in state and national standards (e.g., reading, math, science).
2. The content is referenced to the student's assigned grade level (based on chronological age).
3. The focus of achievement maintains fidelity 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. 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.



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 (DC 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.

Findings from the May 2007 CAS-Alt Alignment Study Related to Content

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

This criterion draws upon alignment processes developed by Achieve, Inc., and is based on a group of experts reaching consensus as to whether the test item and the intended objective(s) correspond fully, partially, or not at all. For this criterion, Entry Points (EPs) in reading and mathematics for grades 4, 7, and 10 were analyzed and compared to the corresponding grade level standards for content and performance centrality. Content and performance centrality were only considered for Entry Points coded as academic.

Content Centrality (based on NAAC definitions) is rated using a three-point scale (near, far, or none) in which the content experts rate the quality of the content link between the Entry Points and the grade level standard. The goal of content centrality is to have a 100% link (near + far) of grade-referenced content. Percents lower than 100% for content centrality reflect content that has not been identified as Foundational (skills such as pre-reading skills), but is considered a prerequisite skill or mismatch to the grade level standard, so content links are lost between the EP and standard. A strong alternate assessment system is one that expects the content fidelity to remain high.

Performance Centrality (based on NAAC definitions) concerns the expected performance described in the Entry Points. Alternate assessments are expected to allow for an alternate level of performance (meaning not the same as grade level performance in DC CAS general education assessments), due to the difficulty of creating ways for students who do not yet have fluent use of printed symbols (e.g., words, pictures) to show achievement. Therefore, an Entry Point of "identify" would have some of the same performance expectations as a grade-level standard with "identify and analyze" for the same content, and would be acceptable. Performance centrality is rated on a three-point rating scale (exact match, partial match, or no match), using identified Depth of Knowledge levels for grade level standards and the CAS-Alt Entry Points.

<u>Alignment Study Findings</u>: Content and Performance Centrality

Content Centrality percents in the table below reflect the total of <u>near + far</u> links with grade-referenced content. Content centrality of the CAS-Alt was found to be very high (95-100%) for both reading and mathematics at all grade levels reviewed.

Performance Centrality percents show the total of <u>exact match + partial match</u>. A wide range of DOK levels were evident in the CAS-Alt performance tasks, indicating that they are not only focused on simple recall. Performance centrality shows a range of DOK levels across Entry Points and assessment tasks at all grade levels

Table 3.1 summarizes content and performance centrality for reading and mathematics Entry Points (extended standards). Since Entry Points tend to be of a smaller grain size than grade level standards, all EPs for each complexity level (less complex-moderately complex –more complex) were considered collectively to make decisions under Alignment Criterion #3.

Table 3.1 Summary of Content and Performance Centrality of CAS-Alt Entry Points (Summary only includes content rated as "academic" under alignment criterion #1.)

Grade Level	Reading		Mathematics	
	Content Centrality	Performance Centrality	Content Centrality	Performance Centrality
4	95%	68%	95%	58%
7	100%	55%	100%	66%
10	100%	88%	100%	55%

Table 3.2 summarizes *content centrality only* for reading and mathematics portfolio work samples reviewed at each grade level. Each portfolio task was considered individually to determine the degree of content centrality with the teacher-selected Entry Point. At all grade levels, more tasks were coded as "full" content matches than as "partial" or "no" content match.

Table 3.2 Summary of Content Centrality of CAS-Alt Portfolio Work Samples with Teacher-Selected, Grade Level Entry Points

Grade Level	Reading		Mathematics	
	Number of work samples reviewed	Content Centrality	Number of work samples reviewed	Content Centrality
3	63	95%	60	95%
4	48	98%	48	94%
5	62	89%	63	97%
6	66	95%	63	95%
7	68	93%	67	87%

8	**83**	**90%**	**84**	**94%**
10	**68**	**94%**	**66**	**94%**

Criterion 4: **The CAS-Alt content differs from grade level in range, balance, and DOK, but matches high expectations set for students with significant cognitive disabilities.**

Given that the breadth and range of content and Depth of Knowledge (DOK) of the CAS-Alt is expected to differ from the general education DC CAS at corresponding grade levels, is important to know whether there are still high expectations set for students with significant cognitive disabilities. Criterion #4 applies the work of Norman Webb's Alignment Protocols for categorical concurrence, balance of representation, and range and depth of knowledge (DOK). During the alignment study, content specialists identified DOK levels for all Entry Points, using "modified" Bloom's Taxonomy definitions for Depth of Knowledge levels established by NAAC for alternate assessment. DC CAS Test blueprints (DC CAS strands targeted for assessment and required content) served to define categorical concurrence and comparisons of balance of representation with the CAS-Alt. Special education experts used a similar process to code all portfolio work samples to determine the range of DOK assessed in the teacher-designed tasks.

"Modified" Bloom's Taxonomy **for alternate assessment alignment studies (developed by NAAC)**	
Code	**Depth of Knowledge (DOK)**
1	*Attention* (touch, look, vocalize, respond, attend)
2	*Memorize/recall* (list, describe (facts), identify, state, define, label, recognize, record, match, recall, relate)
3	*Performance* (perform, demonstrate, follow, count, locate, read)
4	*Comprehension* (explain, conclude, group/categorize, restate, review, translate, describe (concepts), paraphrase, infer, summarize, illustrate)
5	*Application* (compute, organize, collect, apply, classify, construct, solve, use, order, develop, generate, interact with text, implement)
6	*Analysis, Synthesis, Evaluation* (pattern, analyze, compare, contrast, compose, predict, extend, plan, judge, evaluate, interpret, cause/effect, investigate, examine, distinguish, differentiate, generate)

<u>Alignment Study Findings</u>: Describing the range, balance, and the Depth of Knowledge of content assessed in the CAS-Alt

Depth of Knowledge for Reading: While the majority of reading Entry Points at the three grade levels reviewed (Table 4.1R) were identified as DOK 2 (recall), there is also a wide range of DOK levels intended to be sampled.

Table 4.1R Range of DOK for Reading *Entry Points:* Percent of Reading Entry Points Intended to Sample each DOK Level

Grade Level	DOK 1 Attention	DOK 2 Recall	DOK 3 Perform	DOK 4 Comprehend	DOK 5 Apply	DOK 6 Analyze, Synthesize, Evaluate
4	0%	69%	9%	<1%	14%	7%
7	0%	47%	7%	14%	16%	16%
10	0%	29%	11%	23%	16%	21%

Reading work samples across all grades (Table 4.2R) also revealed a wide range of DOK levels targeted for assessment, meaning portfolio tasks were targeted for DOK 1 (attention) through DOK 6 (analysis, synthesis, or evaluation).

Table 4.2R Range of DOK for Reading *Using Student Work Samples:* Number of Work Samples/Assessment Tasks Addressing Each DOK Level

Grade Level	DOK 1 Attention	DOK 2 Recall	DOK 3 Perform	DOK 4 Comprehend	DOK 5 Apply	DOK 6 Analyze, Synthesize, Evaluate
3	0	1	42	8	1	10
4	3	31	4	4	7	5
5	4	39	1	9	4	4
6	4	49	9	19	10	0
7	0	24	14	23	4	6
8	0	41	3	23	14	3
10	0	17	5	17	4	23
TOTALS	11	202	78	103	44	51

Depth of Knowledge for Mathematics: As with reading, the majority of mathematics Entry Points at the three grade levels reviewed (Table 4.1M) were identified as DOK 2 (recall) with a shift towards more DOK 5 and 6 levels at the upper grade levels.

Table 4.1M Range of DOK for Mathematics *Entry Points:* Percent of Mathematics Entry Points Intended to Sample each DOK Level

Grade Level	DOK 1 Attention	DOK 2 Recall	DOK 3 Perform	DOK 4 Comprehend	DOK 5 Apply	DOK 6 Analyze, Synthesize, Evaluate
4	0%	55%	18%	0%	20%	7%
7	0%	32%	6%	9%	31%	22%
10	0%	34%	10%	4%	34%	18%

Mathematics also showed a wide range of DOK levels addressed in portfolio work samples across all grades (Table 4.2M), meaning that portfolio tasks were targeted for DOK 1 (attention) through DOK 6 (analysis, synthesis, or evaluation) and did not only focus on basic recall.

Table 4.2M Range of DOK for Mathematics *Using Student Work Samples:* Number of Work Samples/Assessment Tasks Addressing Each DOK Level

Grade Level	DOK 1 Attention	DOK 2 Recall	DOK 3 Perform	DOK 4 Comprehend	DOK 5 Apply	DOK 6 Analyze, Synthesize, Evaluate
3	2	37	16	0	6	1
4	3	24	6	2	12	11
5	3	35	7	0	14	6
6	0	0	12	44	7	24
7	0	16	16	9	15	13
8	3	17	20	6	20	13
10	0	8	24	4	21	8
TOTALS	11	137	101	65	95	76

Categorical Concurrence

The Categorical Concurrence criterion provides a very general indication of alignment if both the standards and assessment incorporate the same content. The criterion of Categorical Concurrence is met if the same or consistent categories/major strands of content appear in both the standards and assessment. For the purpose of the alignment study, the range and balance of the CAS-Alt was compared to the state's priorities for DC CAS, with consideration given to ***some coverage in all major strands of content***. Content strands identified in the CAS-Alt blueprint and required content (outlined in the *CAS-Alt Teacher's Guide*, 2006-2007) were compared to the state's priorities for the DC CAS and required content in the DC CAS test blueprint (Table 4.3).

- **Reading:** The same three major content strands are assessed in both the DC CAS and CAS-Alt: Language Development, Literary Text, and Informational (expository) Text.
- **Mathematics:** In mathematics, five major strands are assessed in the DC CAS: Number Sense & Operations; Patterns, Relations, & Algebra; Geometry; Measurement; and Data, Probability, & Statistics. The CAS-Alt blueprint requires 3 of the 5 major strands to be assessed each year, with Number Sense & Operations and Patterns, Relations, & Algebra as two of the strands sampled at all grade levels. The other strands are alternated across grade levels to ensure that the remaining strands — Geometry; Measurement; and Data, Probability, & Statistics — are included for instruction and assessment with intent across grade levels.

Table 4.3 - Categorical Concurrence with DC CAS

(Percent of DC-CAS Strands Assessed in the CAS-Alt)

Grade	Reading	Mathematics
3	100% of DC CAS reading strands	60% of DC CAS mathematics strands
4	100% of DC CAS reading strands	60% of DC CAS mathematics strands
5	100% of DC CAS reading strands	60% of DC CAS mathematics strands
6	100% of DC CAS reading strands	60% of DC CAS mathematics strands
7	100% of DC CAS reading strands	60% of DC CAS mathematics strands
8	100% of DC CAS reading strands	60% of DC CAS mathematics strands
10	100% of DC CAS reading strands	100% of DC CAS mathematics strands*

* At grade 10, any of the five mathematics strands have the potential to be assessed with the DCAS-Alt, although each student is only assessed on 3 strands.

Balance of Representation and Range of Knowledge

In addition to comparable depth and breadth of knowledge, aligned standards and assessments require that assessment of knowledge (content and skills) be distributed with intent. The Balance of Representation criterion is used to indicate the degree to which one standard/objective is given more emphasis on the alternate assessment than another.

Changes made to the test blueprint for the 2006-07 school year were intended to improve the Balance of Representation and Range of Knowledge. These changes were documented during the alignment study and have resulted in strengthening validity of the CAS-Alt.

- **Reading:** The CAS-Alt blueprint places equal emphasis on the three major reading strands at all grade levels, requiring one assessment focus for each strand. All grade-level content (defined with Entry Points) required for the CAS-Alt is also assessed in the general education DC CAS in reading.
- **Mathematics**: The CAS-Alt blueprint places emphasis on three of the five major mathematics strands at each grade level, requiring one assessment focus for each required strand. Number Sense & Operations and Patterns, Relations, & Algebra have slightly more emphasis, because they are sampled at all grade levels. The strands of Geometry, Measurement, and Data, Probability & Statistics are alternated across grades. All grade-level content required for the CAS-Alt (defined with Entry Points is also assessed in the general education DC CAS in mathematics.

Criterion 5: Is there some differentiation in content of the CAS-Alt across grade spans?

Criterion #5, as defined by NAAC, captures whether the achievement level standards and required content for assessment tasks show changing expectations over time and analyzes whether assessment tasks are age appropriate. For example, students may learn to recognize and use coins in elementary school, but there should be some change in expectation by middle and secondary levels (e.g., using dollars, recognizing prices, etc.). Extending standards for access with students with significant cognitive disabilities *should not lead to achievement (meaning instruction and assessment) of the same academic skills year after year.*

For this criterion, content experts identified how the content of Entry Points is differentiated from grade to grade. Reviewers examined and compared required content for the CAS-Alt across grades 3 through 10. Breadth, depth, and "new" content descriptions were considered in this review and examples documented. Content differentiation decisions were based on descriptions recommended by NAAC.

Content Differentiation across grades should show evidence of some…
Increasing breadth of content (e.g., broader application of target skill such as expanding

the types of graphic displays of data used in mathematics or using more features of text – index, captions, subheadings, etc.)
Increasing depth of content (e.g., deeper mastery of target skill, such as going beyond basic recall to interpretation or analysis or to more complex/abstract content)
New content introduced (e.g., content not covered in prior grade, such as new strands of content or content more appropriate for older learners)

Special education experts coded portfolio work samples for differentiation across grade levels examining age appropriateness of assessment tasks. Age-appropriateness decisions were based on descriptions recommended by NAAC.

Age-Appropriateness Coding Descriptions for Portfolio Tasks (NAAC)
1- Adapted from grade level content (e.g., Roll of Thunder, Hear My Cry)
2- Not grade specific; neutral; themes are appropriate for all ages (e.g., pets)
3- Inappropriate for teens (e.g., circus)
4- Inappropriate even for elementary age (e.g., Barney)

Additionally, draft (April 2007) DC OSSE Alternate Achievement Standards were analyzed for each grade level and content area. Differences between performance levels at each grade span, as well as differences across grade spans, were examined using NAAC guidelines.

<u>Alignment Study Findings</u>: Describing differentiation in content across grade levels or grade bands.

Content Experts identified strong evidence to support that *some* Entry Points and required content is differentiated across grade levels 3-10 for both reading (Table 5.1) and mathematics (Table 5.2).

Table 5.1 Reading Entry Points Content Differentiation Grade-by-Grade for CAS-Alt Required Content

Evidence of SOME…	**Grade 3 to 4**	**Grade 4 to 5**	**Grade 5 to 6**	**Grade 6 to 7**	**Grade 7 to 8**	**Grade 8 to 10**
Increasing breadth of content	-	YES	-	YES	YES	YES
Increasing depth of	YES	-	YES	YES	YES	YES

content						
New content introduced	YES	YES	YES	YES	YES	YES

Table 5.2 Mathematics Entry Points Content Differentiation Grade-by-Grade for CAS-Alt Required Content						
Evidence of SOME…	**Grade 3 to 4**	**Grade 4 to 5**	**Grade 5 to 6**	**Grade 6 to 7**	**Grade 7 to 8**	**Grade 8 to 10**
Increasing breadth of content	YES	YES	YES	YES	YES	YES
Increasing depth of content	YES	YES	YES	YES	YES	YES
New content introduced	YES	YES	YES	YES	YES	YES

<u>Alignment Study Findings</u>: Describing Age-appropriateness of portfolio tasks

In both reading and mathematics, and across all grade levels, nearly 100% of the assessment contexts for portfolio tasks were identified as appropriate for the age of students. Only one of the more than 900 pieces of student work reviewed was coded as "inappropriate for teens." This was a reading assessment at the grade 5 level.

Findings from the August 2008 CAS-Alt Alignment Study Related to Content

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

This criterion draws upon alignment processes developed by Achieve, Inc., and is based on a group of experts reaching consensus as to whether the test item and the intended objective(s) correspond fully, partially, or not at all. For this criterion, Entry Points (EPs) in science for grades 5, 8, and 10 were analyzed and compared to the corresponding grade level standards for content and performance centrality. Content and performance centrality were only considered for Entry Points coded as academic.

Content Centrality (based on NAAC definitions) is rated using a three-point scale (near, far, or none) in which the content experts rate the quality of the content link

between the Entry Points and the grade level standard. The goal of content centrality is to have a 100% link (near + far) of grade-referenced content. Percents lower than 100% for content centrality reflect content that has not been identified as Foundational or Pivotol, but is considered a prerequisite skill or mismatch to the grade level standard, so content links are lost between the EP and standard. A strong alternate assessment system is one that expects the content fidelity to remain high.

Performance Centrality (based on NAAC definitions) concerns the expected performance described in the Entry Points. Alternate assessments are expected to allow for an alternate level of performance (meaning not the same as grade level performance in DC CAS general education assessments), due to the difficulty of creating ways for students who do not yet have fluent use of printed symbols (e.g., words, pictures) to show achievement. Therefore, an Entry Point of "identify" would have some of the same performance expectations as a grade-level standard with "identify and analyze" for the same content, and would be acceptable. Performance centrality is rated on a three-point rating scale (exact match, partial match, or no match), using identified Depth of Knowledge levels for grade level standards and the CAS-Alt Entry Points.

Alignment Study Findings: **Content and Performance Centrality**

Content Centrality percents in the table below reflect the total of near + far links with grade-referenced content. Content centrality of the CAS-Alt was found to be 100%at all grade levels for the science CAS-Alt.

Performance Centrality percents show the total of exact match + partial match. A wide range of DOK levels were evident in the CAS-Alt performance tasks, indicating that they are not only focused on simple recall. Performance centrality shows a range of DOK levels across Entry Points and assessment tasks at all grade levels

Table 3.1S summarizes content centrality for science Entry Points and student work samples for science. Each portfolio task was considered individually to determine the degree of content centrality with the teacher-selected Entry Point. At all grade levels, more tasks were coded as "full" content matches than as "partial" or "no" content match. Since Entry Points tend to be of a smaller grain size than grade level standards, all EPs for each complexity level (less complex-moderately complex –more complex) were considered collectively to make decisions under Alignment Criterion #3.

Table 3.1S Summary of Content Centrality of CAS-Alt Entry Points and Student Work Samples

Grade Level	Science	
	Overall Content Centrality of Entry Points to Grade Level Standards	**Content Centrality of Student Work Samples to EPs**

5	**100%**	**Near Link – 57%** **Far Link – 43%** **No Link – 0%**	**Full content match - 77%** **Partial content match – 14%** **No content match – 9%**
8	**100%**	**Near Link – 55%** **Far Link – 45%** **No Link – 0%**	**Full content match - 95%** **Partial content match – 3%** **No content match - 2%**
10	**100%**	**Near Link – 97%** **Far Link – 3%** **No Link – 0%**	**Full content match - 78%** **Partial content match – 16%** **No content match -6%**

Table 3.2 Summarizes performance centrality for the CAS-Alt science Entry Points reviewed at each grade level. Entry points were compared to the intended performance (DOK level) of the grade level standards to determine the degree of performance centrality. If all DOK levels were represented by each related group of EPs, it was considered "full" performance centrality. If only some intended DOK levels were represented by each related group of EPs, it was considered "some" (partial) performance centrality.

Table 3.2S Summary of Performance Centrality of CAS-Alt Science Entry Points		
Grade Level	**Overall performance Centrality of Entry Points to grade Level Science Standards**	
5	**100%**	**Full performance centrality – 100%Some performance centrality – 0%** **No performance centrality – 0%**
8	**100%**	**Full performance centrality – 92%Some performance centrality – 8%** **No performance centrality – 0%**
10	**100%**	**Full performance centrality – 100%Some performance centrality – 0%** **No performance centrality – 0%**

Criterion 4: **The CAS-Alt content differs from grade level in range, balance, and DOK, but matches high expectations set for students with significant cognitive disabilities.**

Given that the breadth and range of content and Depth of Knowledge (DOK) of the CAS-Alt is expected to differ from the general education DC CAS at corresponding grade levels, is important to know whether there are still high expectations set for students with significant cognitive disabilities. Criterion #4 applies the work of Norman Webb's Alignment Protocols for categorical concurrence, balance of representation, and range and depth of knowledge (DOK). During the alignment study, content specialists identified DOK levels for all Entry Points, using "modified" Webb's definitions for Depth of Knowledge . DC CAS Test blueprints (DC CAS science strands targeted for

assessment) served to define categorical concurrence and comparisons of balance of representation with the CAS-Alt. Special education experts used a similar process to code all portfolio work samples to determine the range of DOK assessed in the teacher-designed tasks.

Modified Webb levels used for coding alternate assessment alignment are described as follows:

DOK Level 1 Recall of Information

Stage 1 (**DOK 1a**) Respond – touch, look, vocalize, attend, recofnize

Stage 2 (**DOK 1b**) Reproduce – copy, repeat, follow direction, replicate diagram

Stage 3 (**DOK 1c**) Recall – list, describe, identify, state, define, label, locate facts or details, perform routine operation

DOK Level 2 Basic Reasoning (Stage 4) – focus on skills and concepts, categorize, classify, compare, organize information, perform multi-step task, explain, restate, summarize, choose strategy, comprehend, make basic interpretations or predictions

DOK Level 3 Complex Reasoning (Stage 5) – requires planning and/or complex reasoning, analyze data to see trend or draw conclusions, conduct experiment, test hypothesis, create a model or diagram, compose, adapt or modify, make connections, defend, verify

Alignment Study Findings: **Describing the range, balance, and the Depth of Knowledge of science content assessed in the CAS-Alt**

Depth of Knowledge for Science: While the majority of science Entry Points at the three grade levels (Table 4.1S) were identified as DOK 1c (recall) and DOK 2 (Basic Reasoning) there is also a wide range of DOK levels intended to be sampled.

Table 4.1S Range of DOK for Science *Entry Points:* Percent of Science Entry Points Intended to Sample each DOK Level

Grade Level	DOK 1aRespond	DOK 1b Reproduce	DOK 1c Recall	DOK 2 Basic Reasoning	DOK 3 Complex Reasoning	DOK Unclear
5	0%	3%	41%	48%	7%	1%
8	1%	0%	51%	36%	8%	4%
10	0%	0%	48%	40%	12%	0%

Science work samples across all grades (Table 4.2S) also revealed a wide range of DOK levels targeted for assessment, meaning portfolio tasks were targeted for DOK 1a (respond) through DOK 3 (complex reasoning).

Table 4.2S Range of DOK for Science *Using Student Work Samples:* Number of Work Samples/Assessment Tasks Addressing Each DOK Level

Grade Level	DOK 1a Respond	DOK 1b Reproduce	DOK 1c Recall	DOK 2 Basic Reasoning	DOK 3 Complex Reasoning	Comment:
5	9	12	71	50	8	It appears that some assessment tasks were modified to provide access to students who could only respond to (1a) or reproduce (1b) correct responses.
8	0	36	107	81	8	
10	6	8	66	44	7	
TOTALS	15	56	244	175	23	

Categorical Concurrence

The Categorical Concurrence criterion provides a very general indication of alignment if both the standards and assessment incorporate the same content. The criterion of Categorical Concurrence is met if the same or consistent categories/major strands of content appear in both the standards and assessment. For the purpose of the alignment study, the range and balance of the CAS-Alt was compared to the state's priorities for DC CAS, with consideration given to ***coverage related to the distribution of emphasis on major strands of science content***. Content strands identified in the CAS-Alt blueprint and required content (outlined in the *CAS-Alt Teacher's Guide*, 2007-2008) were compared to the state's priorities (distribution of emphasis) for the science DC CAS and required content in the DC CAS science test blueprint.

Balance of Representation and Range of Knowledge

In addition to comparable depth and breadth of knowledge, aligned standards and assessments require that assessment of knowledge (content and skills) be distributed with intent. The Balance of Representation criterion is used to indicate the degree to which one standard/objective is given more emphasis on the alternate assessment than another. The CAS-Alt test blueprint was designed to reflect the content and skills emphasis in the DC CAS, giving equal emphasis to each of those three strands. Additionally, many of the grade 8 EPs have embedded science inquiry skills so that science inquire and investigation skills and concepts will be consistently taught across grade levels.

- **Grade 5 Science:** Five major strands are assessed in the grade 5 science DC CAS, with Earth Science, Life Science, and Scientific Inquiry having the most assessment emphasis (68%). These three strands of greatest emphasis are also assessed with the CAS-Alt.
- **Grade 8 Science**: Five major strands are assessed in the grade 8 science DC CAS, with Structure of Matter, Chemical Reactions, and Conservation of Energy having the most assessment emphasis (60%). These three strands of greatest emphasis are also assessed with the CAS-Alt. Many scientific inquiry skills (a fourth strand) are also assessed within the three major content strands of EPs.
- **Grade 10 Science**: Six major strands are assessed in the grade 10 Biology DC CAS, with Scientific Inquiry, Cell Biology, and Genetics having the most assessment emphasis (49%). These three strands of greatest emphasis are also assessed with the CAS-Alt.

Criterion 5: Differentiation in content of the CAS-Alt across grade spans.

Criterion #5, as defined by NAAC, captures whether the achievement level standards and required content for assessment tasks show changing expectations over time and analyzes whether assessment tasks are age appropriate. For example, students may learn to recognize and use coins in elementary school, but there should be some change in expectation by middle and secondary levels (e.g., using dollars, recognizing prices, etc.). Extending standards for access with students with significant cognitive disabilities *should not lead to achievement (meaning instruction and assessment) of the same academic skills year after year*.

For this criterion, content experts identified how the content of Entry Points is differentiated from grade 5 to grade 8 and grade 8 to grade 10. Reviewers examined and compared required content for the CAS-Alt across those grades, including application of inquiry skills. Breadth, depth, and "new" content descriptions were considered in this review and examples documented. Content differentiation decisions were based on descriptions recommended by NAAC (2007).

Content Differentiation across grades should show evidence of some…
Increasing breadth of content (e.g., broader application of target skill such as expanding the types of graphic displays of data used in mathematics or using more features of text – index, captions, subheadings, etc.)
Increasing depth of content (e.g., deeper mastery of target skill, such as going beyond basic recall to interpretation or analysis or to more complex/abstract content)
New content introduced (e.g., content not covered in prior grade, such as new strands of content or content more appropriate for older learners)

Special education experts coded portfolio work samples for differentiation across grade levels examining age appropriateness of assessment tasks. Age-appropriateness decisions were based on descriptions recommended by NAAC (2007).

Additionally, the Center for Assessment staff analyzed the DC OSSE Science Alternate Achievement Standards were analyzed for each grade level in science. Differences between performance levels, as well as differences across grade spans, were examined using NAAC guidelines.

Alignment Study Findings: **Describing differentiation in content across grade levels.**

- **Differentiation of Content:** Content experts identified strong evidence to support that EPs/required content is differentiated across grade levels for science. New content is represented by new strands assessed at each grade level. Deeper understanding of content was identified as EPs having a greater cognitive demand or requiring application of concepts and skills, rather than identification/recall only. Broader content was identified as: needing more details in descriptions; broader use of tools and methods for data collection; and expanding ways to classify materials (Table 5.1S).

Table 5.1S Science Entry Points Content Differentiation across Grades

Evidence of SOME…	**Grade 5 to 8**	**Grade 8 to 10**
Increasing breadth of content	YES	YES
Increasing depth of content	Inquiry requires deeper understanding; otherwise content is different	YES
New content introduced	Use of inquiry becomes more specific to content; Moves from basic interpretation of data to analysis of data	More depth of understanding of how to apply inquiry skills required at high school than grade 8

Alignment Study Findings: **Describing Age-appropriateness of portfolio tasks**

- **Age-appropriateness of Student Work Samples:** At all grade levels, most of the assessment contexts were identified as appropriate for the age of students. Reasons given for tasks that were "age-inappropriate" included:
    - Task: Students coloring pictures of science content, but not answering questions about content

- Materials: Students using smile faces of different colors to make a model of an atom, rather than circles with “e” for electron, “p” for proton, and “n” for neutron

- Tools: Students using tools not used by grade-level peers for the same science learning (e.g., measuring with objects instead of meter stidck or ruler)

Table 5.2S Age –appropriateness of Assessment Tasks: Percent of assessment tasks identified as age-appropriate and not age-appropriate

Grade Level	Age-Appropriate Tasks	Not Age-Appropriate Tasks
Grade 5	87%	13%
Grade 8	99%	1%
Grade 10	94%	6%

Alignment Study Findings: **Describing differentiation in alternate achievement level standards**

- **Achievement Level standards (Achievement Level Descriptors):** CAS-Alt Science Achievement Level Standards address 4 performance levels: Advanced, Proficient, Basic and Below Basic. A strength of these descriptors is that differences in achievement level descriptors at each grade level are articulated in terms of the grade-referenced content knowledge and skills for content strands. Differences in performance expectations between performance levels within one grade level and differences across adjacent grades were clear in terms of the content and cognitive demand identified.

For more information on the alignment studies conducted, refer to Chapter 6 in this manual.

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CHAPTER 4: TEST DEVELOPMENT

The DC OSSE CAS-Alt was designed 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, which is a nine-item validated inventory (developed by The National Alternate Assessment Center/NAAC) that registers students taking the alternate assessment and assists teachers in selecting entry or anchor points into the DC Learning Standards.
- Entry Cover Sheet for each Reading/ELA, Math and Science (grades 5, 8 & 10 only) Strand-based Entry listing the strand, grade-level learning standard and related targeted skill.
- Grade-Level Standards-based entries and evidence prescribed at each grade level to reflect emphasis in the test blueprint. See Table 1 for each grade. Evidence will include a data sheet and two pieces of corroborating evidence, as well as optional evidence that may include student work samples, a scripted video or audiotape, captioned photographs, notes from peers, parents, co-workers, or employers.
    - Three entries for the content area of Reading/ELA
    - Three entries for the content area of Mathematics
    - Three entries for the content area of Science (grades 5, 8 & 10 only)
- Parent Validation that is completed and submitted with the portfolio to verify agreement with the contents.
- Administrator Validation that is completed and submitted with the portfolio to verify agreement with the contents.

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.).

Role of Teachers in Developing Procedures

An open invitation was sent out to DC teachers whose students participate in the CAS-Alt to provide feedback on the existing CAS-Alt procedures and suggestions for changes. Recommendations from this June 2006 meeting of stakeholders and the June 2006 TAC meeting resulted in revisions implemented during the 2006-2007 school year. The TAC, testing contractor, ILSSA and DC OSSE met monthly to discuss the revision prior to implementation and throughout the implementation year. Several DC teachers provided formative feedback during the initial implementation year. Additionally, one ILSSA staff provided technical assistance to teachers implementing the revised procedures in their classrooms to garner further input on revisions.

Aligning Test Specifications to Grade Level Content

Following the June 2006 TAC meeting where revisions were recommended, the testing contractor and DC OSSE developed a plan to align the grade-level content to the test specifications. The following is a description of that process.

The testing contractor created a draft "front-end aligned" test blueprint that would be reviewed and approved by stakeholders and DC OSSE. Rather than initially convening a teacher group, written input gathered from previously convened teacher groups that met to prioritize learning standards after the adoption of the 2005-2006 learning standards was used as one mechanism to guide selection of recommended strands. In addition, the DC CAS test blueprint was reviewed to learn the emphasis of strands assessed at each grade. Finally, select DC teachers were asked to consider the functionality and importance of the proposed strands based on their experience in teaching these students.

This prototype was presented to the DC OSSE and TAC for examination and critique. With discussion, specific strands were recommended for inclusion in the CAS-Alt for each grade beginning with the 2006-2007 test administration. The Strands (e.g., Language Development, Literary Text, and Informational Text for ELA) are prescribed, but teachers retain the authority to select a learning standard and appropriate Entry Points from a choice narrowed from the grade level content. This approach allows student IEP teams discretion in making decisions about the student's learning priorities, while the prescribed strands ensure that the student accesses a range of the grade level content.

See Chapters 3 and 6 for more details on the alignment process. 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	Learning Standard
ELA	
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 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).

4th Grade (continued)

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.
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.

6th Grade (continued)

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., $3(2x) = 5$). *M* □*P*(*rt*̣ 1) 12*t* *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., $C = \square d$, $A = \square r2$ (A as a function of r), Arectangle = lw (Arectangle 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 lightbulb, 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.

10th Grade (continued)

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.

CHAPTER 5: ITEM ANALYSIS

Although portfolio assessments cannot be subjected to the same types of item analyses as a typical multiple-choice or short-answer test, there are various analyses that can be done on field-test data or during an alignment study to determine the difficulty, discrimination, and potential biases in selected assessment tasks.

A portfolio assessment approach assesses a smaller total number of items/tasks than a short-answer test might, but assesses them at a much deeper level, providing rich feedback to teachers about instruction and the student's learning of a grade level standard. This approach was first adopted by DC OSSE for the CAS-Alt, because of its informative nature and has continued to be refined over the years to provide meaningful student data.

The CAS-Alt currently assesses three unique targeted skills within three separate required content strands as entries for both Reading/English Language Arts, Mathematics and Science(grades 5, 8 & 10 only), for a total of six "items" in grades 3, 4, 6 & 7 and nine "items" in grades 5, 8 & 10. These items, should perhaps more appropriately be called "assessment tasks," since each task can have several items/questions, such as identifying characters in a story by matching them to pictures or descriptions. Non-the-less, this small number of items is not appropriate for the traditional analyses required in a rigorous item analysis; instead, the purposes of item analysis can be derived and collected as a part of a larger external alignment study, during a review of inter-rater reliability, or as part of the standard setting process. Examples of data collection may include such things as: a reporting of the variation in number of points earned by strand, patterns between strand score and total score, differences between strand score and disability type, and results of an alignment study to understand the degree of content centrality with grade level standard and level of rigor for assessment tasks. Data can be analyzed and serve as ways to describe the quality and value of items in the CAS-Alt.

Item Difficulty and Discrimination Studies

Because each student submits a different piece of evidence, there is no way to estimate the difficulty of any individual "item;" however, it is possible to examine and estimate the overall difficulty of a content strand. Using the content area as the unit of analysis would allow the averaging across all students taking the CAS-Alt. The score for each content area is a composite of the required and choice standard. Descriptive statistics on these content area scores, particularly across the performance dimension, provide an indication of the general difficulty of tasks. The raw frequency of students scoring at each of the five score points will be reported. A minimum *n* of 25 students will be adopted for reporting out at the content standard level in the state level technical manual.

Currently, there is no way to assess directly the confounding effects of specific tasks and response modalities on the difficulty level of Learning Standards. To quantify a standard's discrimination, the correlation of its scores with the raw score for the performance and program dimensions for the particular content area can be calculated. High correlations would be consistent with the conclusion that the set of tasks/response

modalities selected for that Learning Standard is an appropriate measure for the performance and program dimensions.

There are some other possible qualitative pieces that can be looked at – such as what dimensions of the rubric seem to score lower. Can we find any trends or patterns looking at the portfolios across content areas? Both the lowest and highest scoring portfolios can be examined to see if there are any trends in the Learning Standards chosen. For example, we can analyze the top 20% of portfolios and the bottom 20% of portfolios at a given grade level to look for trends in which Learning Standard were chosen for instruction and assessment. We can also develop frequency tables to show which standards are chosen and then within them which targeted skills (Entry Points) are selected and with what results.

A Review of Item Complexity

Findings from the 2007 reading/ELA and mathematics alignment study included a review of assessment tasks to determine which complexity level of Entry Points had been chosen for instruction and assessment. Three levels of complexity are described for each Entry Point (extended standard): less complex, moderately complex, and more complex. Teachers use Entry Point descriptors to determine both content and cognitive demand for portfolio assessment tasks.

Approximately one third of all 2006-2007 portfolios at all grade levels were examined by special educators and assessment tasks were coded to Entry Points for both content alignment (content centrality) and complexity level. The following two tables for reading and mathematics show that there is a range of complexity selected at each grade level; and that assessment tasks are not simply aligned to the least complex option available. In most cases, the most complex Entry Point was chosen more often than the other two.

Alignment Study Findings: Selection of Reading Entry Points to Design Assessment Tasks

Selection of Entry Points to Design Assessment Tasks Using Data from 2007 alignment study: The (NUMBER) and PERCENT of Student Work Samples for Each Complexity Level							
Reading Entry Points	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**Grade 10**
Less Complex	(25) 36%	**(17) 36%**	(15) 24%	(18) 27%	(16) 24%	(23) 27%	(25) 36%
Moderately Complex	(5) 7%	(13) 28%	(19) 30%	(15) 23%	(17) 26%	(21) 25%	(5) 7%
More Complex	**(40) 57%**	**(17) 36%**	**(29) 46%**	**(33) 50%**	**(33) 50%**	**(40) 48%**	**(40) 57%**
(due to rounding, totals may not equal 100%)							

<u>Alignment Study Findings</u>: Selection of Mathematics Entry Points to Design Assessment Tasks

Selection of Entry Points to Design Assessment Tasks for the CAS-Alt (2006-2007) Data from 2007 alignment study represents the (NUMBER) and PERCENT of Student Work Samples for Each Complexity Level							
Math Entry Points	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**Grade 10**
Less Complex	(9) 14%	(12) 29%	(20) 33%	(13) 21%	(17) 26%	(12) 15%	(11) 16%
Moderately Complex	(24) 38%	(12) 29%	(13) 21%	**(25) 40%**	**(27) 41%**	**(36) 44%**	(11) 16%
More complex	**(30) 48%**	**(18) 43%**	**(28) 46%**	**(25) 40%**	(22) 33%	(33) 41%	**(47) 68%**
(due to rounding, totals may not equal 100%)							

<u>Alignment Study Findings</u>: Selection of Science Entry Points to Design Assessment Tasks

Selection of Entry Points to Design Assessment Tasks for the CAS-Alt (2007-2008) Data from 2008 alignment study represents the NUMBER) of Student Work Samples for Each Complexity Level						
Grade Level	**DOK 1a** **Respond**	**DOK 1b** **Reproduce**	**DOK 1c** **Recall**	**DOK 2** **Basic Reasoning**	**DOK 3** **Complex Reasoning**	**Comment:** It appears that some assessment tasks were modified to provide access to students who could only respond to (1a) or reproduce (1b) correct responses.
5	9	12	71	50	8	
8	0	36	107	81	8	
10	6	8	66	44	7	
TOTALS	15	56	244	175	23	

Bias/Fairness Studies

Because the tasks administered to students on the CAS-Alt are designed specifically for each individual student, test bias and differential item function in the traditional sense are not applicable. However, DC OSSE is still committed to ensuring fairness in terms of

opportunities to learn and whether the structure of the assessment privileges certain types of students over others.

1. Although not necessarily an indicator of test bias, reporting overall performance by IDEA category may flag areas that DC OSSE staff should investigate concerning the administration of the alternate assessment or the curriculum. Dimension scores can be disaggregated by IDEA category and then examined to determine whether the rubric appears to preclude any student from achieving the highest score point possible.

2. The LCI data may allow identification of curriculum access issues for students with certain patterns of sensory or motor disability. Such data could assist the DC OSSE to target staff development resources to improve access to content for these students.

Finally, all members of a student's instructional team and the school principal must approve a student's portfolio. This requirement safeguards against individual teachers making a portfolio unduly easy. It also ensures that all performance tasks include the appropriate supports and accommodations.

CHAPTER 6: ALIGNMENT

Development of the CAS-Alt Portfolio

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 (IDEA) 1997. Revisions in the DC OSSE Alternate Assessment were made in response to the No Child Left Behind Act and the reauthorization of IDEA 2004 and renamed the Comprehensive Assessment System Alternate Assessment (CAS-Alt). As in previous years, the 2008-09 CAS-Alt portfolio consists of a body of evidence compiled during the school year in a portfolio that documents the student's performance.

After consideration of other assessment formats, it was determined that the body of evidence approach was assistive to teachers in their practice, and with revision to some aspects of the 2005-2006 system, meets the rigorous technical quality requirements specified in NCLB. The CAS-Alt represents a multi-disciplinary approach to assessing student learning, access and progress toward the district learning standards, and opportunities to learn. The CAS-Alt is a portfolio assessment that effectively links grade level learning standards, instruction, and assessment.

Changes to the CAS-Alt for 2006-2007 centered primarily on increasing the number of grade-level strands assessed and refining the scoring and reporting systems. As well, it was important to re-examine the design of the CAS-Alt in light of changes in purposes and uses since its design in 1997 to reflect both IDEA and NCLB's greater emphasis on grade level access and understanding of technical aspects of alternate assessment systems.

The June 29, 2006 Peer Review letter requested evidence for the following CAS-Alt features:

1. Formal adoption of cut scores and alternate achievement level descriptors for the CAS-Alt in English Language Arts and Mathematics for all grades assessed.

2. Results from a completed external alignment study for the CAS-Alt or other data confirming the alignment of the CAS-Alt with grade-level content standards.

3. Revised guidelines for participation in the CAS-Alt that clearly state that this assessment is restricted to students with the most significant disabilities.

During the July 6, 2006 meeting of the DC TAC, committee members made the following recommendations.

1. Expand the number of content strands addressed.

2. Emphasize performance dimensions over program dimensions.

3. Improve the validity and reliability of the CAS-Alt.

4. Make revisions to the systems that are more in line with the latest reauthorizations of NCLB and IDEA in terms of use and purpose.

General Design of the Alternate Assessment Alignment Study

In May 2007, the DC OSSE sponsored a study to review the degree of alignment between the DC grade-level content standards and the CAS-Alt taken by students with significant cognitive disabilities. Specifically, alternate assessment content, administration protocols, and student work samples for two content areas (reading and mathematics) at grades 3-8 and high school were reviewed and analyzed. A similar study was conducted for science in August 2008.

These alignment studies were designed to operationalize the Links for Academic Learning conceptual framework for students with significant cognitive disabilities and used coding protocols developed by the National Alternate Assessment Center (NAAC) and the University of North Carolina at Charlotte. A committee of District of Columbia educators representing both general education and special education conducted the alignment studies under the guidance of an independent contractor. General education experts reviewed the degree of alignment between the content and intended depth of knowledge of the grade-level content standards and the Entry Points used to guide assessment tasks in the CAS-Alt. Special education experts analyzed the content and depth of knowledge of the CAS-Alt (the content and instructional tasks that comprise the alternate assessment and actual student work). Secondary coding of over 900 student work samples at all grade levels and surveys related to accessibility, accommodations, scoring protocols, and differentiated expectations across the grade levels were also completed and analyzed as part of these alignment studies.

The CAS-Alt alignment studies were designed to answer these 8 questions:

1. Is the content of the CAS-Alt academic, and does it include the major strands of content areas as reflected in DC grade-level standards assessed by DC CAS?
2. Is the content of the CAS-Alt referenced to the student's assigned grade level (based on chronological age)?
3. Does the focus of achievement maintain fidelity with the content (content centrality) of the original grade level expectations and when possible, the specified performance (performance centrality)?
4. Given that the breadth and range of content and Depth of Knowledge (DOK) of the CAS-Alt is expected to differ from general education at corresponding grade levels, are there still high expectations set for students with significant cognitive disabilities?
5. Is there some differentiation in content of the CAS-Alt across grade spans?
6. Is the expected achievement for the students to show learning of grade-referenced academic content?

7. Are there potential barriers to demonstrating what students know and can do in the CAS-Alt?
8. Does the instructional program for students with significant cognitive disabilities promote learning in the general curriculum?

Description of the Relationship between Grade-Level Content Standards and Extended Content Standards (Entry Points)

Development of CAS-Alt Grade-Level Entry Points

The CAS-Alt Entry Points are a set of possible outcomes or methods for students with special needs that are aligned to the general education content standards, with a modified level of difficulty, breadth, or depth. They follow an ILSSA-developed process for "unpacking" general education standards and illustrate for teachers not only the essence of the standard, but also several pathways for teaching the content to students with significant cognitive disabilities. The Entry Points are a teaching tool educators may use to fine tune their grade-level aligned targeted skills or to think about ways students can gain access to the grade level standards. Since the development of Entry Points, special education teachers and general education content people have been asked to review them and provide feedback to DC OSSE and ILSSA about their use in aligning grade-level content for instruction and assessment.

These "Entry Points" to the standard are on a continuum from less to more complex. This continuum varies, based on the level of Revised Bloom's Taxonomy that the general education content standard accesses. For instance, if the general education standard asks the students to "analyze," then the most complex entry point illustrates a way for students to analyze while modifying the breadth, depth, and difficulty of the standard. The less complex entry points will fall lower on the Revised Bloom's Taxonomy (e.g., asking the student to "identify" or "demonstrate understanding"). Teachers can use these entry points to develop targeted skills and activities for the general education curriculum. Entry points also provide some common strategies for students with severe cognitive disabilities to access curriculum (e.g., objects, templates, matching, task analysis, etc.). An example of the format for CAS-Alt Entry Points is shown in the following table.

Example for DC CAS- Alt Entry Points Format

Grade 4 Reading			
Learning Standards as written			**Essential and Prioritized Skill**
Informational Text	**4IT-E1**	Identify the purpose and main points of a text and summarize its supporting details.	♦ Identify purpose or main points and summarize supporting details
Less Complex	**Possible Entry Points**		**More Complex**
♦ Answer questions of who, what, where, why, or how in relation to a informational text ♦ Identify people in an informational text ♦ Identify words in an informational text	♦ Identify main point (e.g., Match a cut out of the topic sentence to the topic sentence in the text.) ♦ Identify the purpose (e.g. Choose the purpose from 3 different choices.) ♦ Identify supporting details (e.g., Make an outline of the main idea and supporting details of an informational text.) ♦ Identify the purpose and supporting details of informational text ♦ Identify the main point and supporting details of informational text ♦ Identify critical details, facts, or key events involved in an informational text		♦ Summarize the main idea and supporting details from an informational text passage (e.g., choose from a list of 3 different summary choices) ♦ Using picture symbols the student will summarize the purpose and supporting details
Possible Entry Points for one grade 4 reading standard are shown here. The highlighted Entry Point under "less complex" was identified as a Foundational Skill during the 2007 alignment study. Foundational Skills, once identified, are not analyzed further in the alignment study because they are not considered to be "academic" for the purpose of determining grade-level content alignment.			

The conceptual foundation for the CAS-Alt alignment study was built upon several national alignment models for general and alternate assessment (NAAC, Achieve, Inc. and Webb). The core construct of academic content is not assumed in an alternate assessment, but instead evaluated as a first step in the alignment process. Because academic content has been underrepresented in past instruction and research with students with significant cognitive disabilities, the "extension" of content standards (meaning the content-specific entry points for the CAS-Alt) may produce assessment targets that can sometimes "miss the mark of being academic – reading, mathematics or science - even though a deliberate process was used in their development, using the DC OSSE grade-level content standards as a starting point.

To define "what is academic," and to determine to what degree the CAS-Alt includes academic content, several steps were used by general education content specialists to explore links between Entry Points and DCPS grade-level standards and between grade-level entry points and portfolio assessment tasks. Three grade levels, one at each grade span, were analyzed in depth – grades 4, 7, and 10 in both mathematics and reading. These grade levels were chosen for review because within each grade level there are three sublevels of content complexity (less-moderate-more complex) defined for each Entry Point. Review of the CAS-Alt extended standards/Entry Points prior to conducting the study showed that there was understandably some content overlap between adjacent grades; thus, analysis of each grade's three levels of complexity would not yield significant additional insights as to whether or not the content was academic. Additionally, Pivotal Skills (skills that are not content-specific, such as listening attentively) and Foundational Skills (skills that are *the assumed competence at all grade*

levels specific to an academic context, such as orienting a book or turning a page as precursors to learning to read) were identified. The same process was used in the prioritization process for the science alignment study; however, grades 5, 8 and 10 (Biology) were chosen because science is assessed in these grades.

Alignment Study Findings: Describing the Relationship between Grade-Level Content Standards and Extended Content Standards (CAS-Alt Entry Points)

A summary of findings from the alignment studies is listed below:

- The development process and format used by DC OSSE and ILSSA to create the extended standards/Entry Points has resulted in the overall system being organized by grade level and content strands that are consistent with DC CAS content and content strands.

- The inclusion of both the grade-level standards as written and "the essence and prioritized skills" of each standard ensures that teachers understand the intended learning described in Entry Points for that grade level.

- The approach of organizing content of possible Entry Points by less-to-more complex allows for students functioning at a variety of levels to access learning that is referenced to their grade level.

- Reviewers noted the need to clarify some Entry Points that were not consistently formatted or worded across grade levels, making some analyses more difficult. Refinement of those Entry Points is recommended. [**NOTE: Revisions to Entry Points were addressed in August of 2007 for Reading and Mathematics and in August of 2008 for Science**.]

- There is strong evidence to show that required content is differentiated across grade levels 3-10 for both reading and mathematics.

- Some of the required content for the CAS-Alt are lacking Entry Points in Reading and Mathematics. Continued development of the remaining Entry Points is recommended. [**NOTE: Additions to Entry Points were addressed in August of 2007**.]

Alignment Study Findings: Describing the Relationship between Extended Content Standards (CAS-Alt Entry Points) and CAS-Alt Portfolio Tasks

Table 1.1 (Reading), Table 1.2 (Mathematics) and Table 1.3 show the percent of CAS-Alt Entry Points identified as academic content or as Foundational Skills at grades 4, 7, and 10 (in left columns) in Reading and Mathematics and at grades 5, 8 and 10 in Science. In addition to the in-depth review of Entry Points by content experts,

approximately one third of all reading and mathematics portfolio work samples from 2006-07 were reviewed by special education experts and compared to determine to what degree Foundational Skills were selected for assessment. This information is represented in Tables 1.1 and 1.2. Since science had only one Entry Point identified as a Pivotal Skill in the 5th grade, all science portfolios work samples from 2007-08 were reviewed and analyzed by pairs of special education and general education teachers. Columns to the right in Tables 1.1 and 1.2 show the percent of Academic or Foundational Entry Points actually assessed in the portfolio work samples reviewed at each representative grade level. The column on the right of Table 1.3 represents the content centrality match of the work samples to the entry point task.

Table 1.1: Summary of Academic Content or Foundational/ Pivotal Skills in Reading

Reading	**CAS- Alt Entry Points**		**Entry Points Assessed in 2006-07 Portfolios *Sampled***	
Grade Level	**Academic Content**	**Foundational Skills**	**Academic Content Assessed (portfolio work samples**	**Foundational Skills Assessed (portfolio work samples)**
4	**95%**	**5%**	**Lang Dev – 100% Lit Text – 100% Info Text – 82%**	**Lang Dev – 0% Lit Text – 0% Info Text -18%**
7	**99%**	**1%**	**Lang Dev – 100% Lit Text – 96% Info Text – 100%**	**Lang Dev – 0% Lit Text – 4% Info Text -0%**
10	**98%**	**2%**	**Lang Dev – 100% Lit Text – 96% Info Text – 96%**	**Lang Dev – 0% Lit Text – 4% Info Text -4%**

Reading Content Strands
Lang Dev = Language Development
Lit Text = Literary Text **Info Text = Informational (Expository) Text**

Table 1.2: Summary of Academic Content or Foundational/Pivotal Skills in Mathematics

Mathematics	**CAS- Alt Entry Points**		**Entry Points Assessed in 2006-07 Portfolios *Sampled***	
Grade	**Academic Content**	**Foundational Skills**	**Academic Content Assessed (portfolio work samples**	**Foundational Skills Assessed (portfolio work samples)**
4	**81%**	**19%**	**NSO – 88% PRA – 88% M - 88%**	**NSO – 12% PRA – 12% M – 12%**
7	**90%**	**10%**	**NSO – 100% PRA – 96% DASP - 92%**	**NSO – 0% PRA – 4% DASP – 8%**
10	**92%**	**8%**	**AI – 92% G – 100%**	**AI – 8% G – 0%**

Mathematics Content Strands
NSO = Number Sense & Operations **PRA = Patterns, Relations, & Algebra**
M = Measurement **DASP = Data Analysis, Statistics, & Probability**
AI = Algebra I **G = Geometry**

Table 1.3: Summary of Academic Content or Pivotal Skills in Science			
Science	**CAS- Alt Entry Points**		**Entry Points Assessed in 2007-08 Portfolios *Sampled***
Grade	**Academic Content**	**Pivotal Skills**	**Academic Content Assessed (portfolio work samples)**
5	**99%**	**1%**	**Full content match – 77%** **Partial content match – 14%** **No content match – 9%**
8	**100%**	**0%**	**Full content match – 95%** **Partial content match – 3%** **No content match – 2%**
10	**100%**	**0%**	**Full content match – 78%** **Partial content match – 16%** **No content match – 6%**

Alignment Study Findings: Description of the Relationship between Alternate Achievement Standards and the Content

Achievement Level Standards (Achievement Level Descriptors)

DC Achievement Level Standards address 4 performance levels: Advanced, Proficient, Basic, and Below Basic. A strength of these descriptors is that differences in achievement level descriptors at each grade level are articulated in terms of the grade-referenced content knowledge and skills for content strands. Differences in performance expectations between performance levels within one grade level and differences across adjacent grades were clear in terms of content identified, especially between the Basic and Proficient levels, even though there is understandably some content overlap given the required strands. [**NOTE: DC Reading and Mathematics Achievement Level Standards were revised based on recommendations from the May 2007 alignment study. The revised Alternate Achievement Standards were approved by the DC Board of Education in October 2007. The DC Science Achievement Level Standards were approved by the DC OSSE in the fall of 2008. Alternate Achievement Standards are included in Appendix A of the technical manual.**]

Strengths of DC scoring protocols and Alternate Assessment Achievement Level Standards for having the potential to make high inferences about student learning:

- Inclusion of *separate* measures for accuracy and independence, so that each may be considered when making inferences about progress and learning;

- Depending on how assessment tasks are designed by teachers, they *have the potential* for demonstrating generalization across people or settings when/if contexts are varied for each of the data collections;

- Differences in content strands assessed, required content, and Entry Points at each grade level indicate that new content (meaning teacher selection of different/new content) is targeted for assessment at each grade level for reading, mathematics and science;

- Multiple data collections (3-5 pieces for each of 3 content entries) provide a baseline against which progress can be measured;

- Inclusion of consideration of level of complexity of task in scoring; and

- Program quality indicators are **not** included with student's score or with Achievement Level Standards.

Other findings from the alignment study are included in Chapter 3, "What is the Content?" and Chapter 5, "Item Analysis."

CHAPTER 7: 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

The Inclusive Large-Scale Standards and Assessment group (ILSSA) 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 ILSSA 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 a one-day training session in 2007 conducted by OSSE staff and two consultants from ILSSA. The training was organized 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.

In addition, all of the training materials were posted to the CAS-Alt website. Updates and relevant resources were added throughout the assessment period. In addition to the workshops, lead teachers and ILSSA staff provided follow-up working sessions for teachers in January, February, and March of 2008 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 November 2007 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 7 with a 1 being 'strongly disagree" and a 7 being "strongly agree." Across the 4 days of training, the average score on any item was 5.6 or above. 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 ILSSA staff person. Last of all, during the review of portfolios for the 2007 reading/ELA and mathematics alignment study and the 2008 science alignment study, any exemplars of assessment tasks or "flawed" assessment tasks (meaning lacking content alignment), were identified for use in future teacher training sessions.

CHAPTER 8: 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. The rubric is shown below.

Performance		Targeted skill is not clearly linked to the grade-level learning standard. Or baseline score is 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 above baseline)		0 -9%	10 – 24%	25 –49%	50% & over
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/difficult).
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 standard	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 standard

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 of knowledge at which a student achieves the specified standard in comparison to the depth of knowledge expected in 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 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.

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

For the "performance" dimension, if the scores given by the two readers are not the same, a third reader scores the portfolio entry. The third score is then combined with the

equivalent score. For the "performance" dimension, the scores must verify the classroom teacher's calculations and ensure that the targeted skills match the content standard. Since scorers are verifying the teacher's scores, the performance dimension scores for each scorer must be equivalent.

Level of Complexity and Support

For the "complexity" and "support" dimensions, the scores for the two readers must be the same or, at least, adjacent. If they are not, a third reader must score the entry. The third reader's score is combined with the equivalent or highest adjacent 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 8.2 below summarizes the dimension scoring.

Table 8.2 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 8.3 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 8.3: Dimension Scoring

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

The scoring rubrics for each dimension are shown below.

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 above baseline)		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/difficult).
	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

Selection of Exemplars

Exemplars are selected by table leaders and highly qualified scorers during the scoring process. As they score each portfolio, they complete a form that identifies each content area example as Below Basic, Basic, Proficient and Advanced at the time of scoring. They also determine whether the portfolio content area is considered to be a solid example or a borderline example of the proficiency level.

Scorers

Until the 2008-2009 school year, the CAS-Alt was scored by DC teachers in a scoring center. Approximately three-fourths of the scorers had acted as scorers in these centers for two or more years. As a part of those scoring procedures each scorer was assigned a unique scorer number and recorded it on each portfolio scored. At the conclusion of the scoring, each scorer's agreement and disagreement (adjacent and 2 or more point discrepancy) with the final score was calculated as a percentage. This information by scorer was reported to DC OSSE and was used when scorers were hired.

As of Spring 2009, the CAS-Alt has been scored at the ILSSA Alternate Assessment scoring center in Lexington, KY by scorers hired and trained to score the alternate assessment by ILSSA staff. Approximately one half of the scorers had acted as scorers in a previous ILSSA scoring center. As a part of those scoring procedures each scorer was

assigned a unique scorer number and recorded it on each portfolio scored. At the conclusion of the scoring, each scorer's agreement and disagreement (adjacent and 2 or more point discrepancy) with the final score was calculated as a percentage. This information by scorer was reported to DC OSSE and will be used when hiring scorers in the following years.

Selection of Scorers

Prior to Spring 2009, teachers from the DC schools were invited to participate in scoring training and certification. This invitation was extended through a memorandum sent to school principals and special education coordinators. Principals and coordinators disseminated this scoring training announcement to teachers and to former scorers. While the certification training for scoring was open to all teachers, special education teachers were targeted. Therefore, any teacher was welcome to come to the training session, as described in the next section. Those participants who meet the minimum qualification requirements were selected as scorers.

Since spring 2009, scorers are hired through the University of KY's short-term or temporary employment placement system (STEPS). ILSSA staff work with the STEPS to prepare a job announcement and develop selection criteria. Advertisement for the scoring center positions is posted in local and area newspapers and through electronic announcements, as well as, invitations to scorers from previous scoring center activities. Potential scorers are required to have a bachelor's degree. Content expertise in special education, reading, mathematics and science is highly recommended. All applicants are required to complete a pre-selection tool to gage their ability to score objectively and accurately. Potential scorers are pulled from the pool of applicants who are able to score 70% and above on the pre-selection tool. These individuals are then invited to the scorer training for the DC CAS-Alt scoring center. Those participants who meet the minimum qualification requirements (80% exact and 15% adjacent agreement) are selected as scorers.

Training and Qualifications

Prior to spring 2009, scorers of the portfolios were DC teachers and administrators. Approximately two to four weeks prior to scoring, Scorer Training was scheduled and facilitated by the testing contractor. This training lasted one day and focused on procedures for materials handling/confidentiality, dimension features, and distinctions for each score point. Past portfolio entries, with identifying information removed, served to illustrate score points. In addition, scorers practiced scoring portfolio entries from previous years (with identifying information removed). First-time scorers were required to go through a one-day training. They qualified by scoring an average of 80% exact and 15% adjacent on two complete portfolios. Returning scorers were able to refresh their skills by going through the new scorer training or qualifying through an online scoring

certification. Table Leaders qualified with exact agreement at 90% with the remainder at adjacent agreement. Recalibrations were held throughout scoring to ensure accurate scoring. During the 2007–2008 school year, the scoring center used 19 scorers to score 512 portfolios.

Since spring 2009, scorers of the portfolios have been hired through the UKY short-term or temporary employee placement (STEPS). Approximately six to eight weeks prior to scoring, the job announcement is developed and distributed. Once potential scorers are selected they are hired as scoring trainees. Scoring trainees must go through a three day training focused on procedures for materials handling/confidentiality, dimension features, and distinctions for each score point. Past portfolio entries, with identifying information removed, served to illustrate score points. In addition, scorers practice scoring portfolio entries from previous years (with identifying information removed). Trainees qualify by scoring an average of 80% exact and 15% adjacent on two complete portfolios. Table Leaders qualify with exact agreement at 90% with the remainder at adjacent agreement. Recalibrations are held throughout scoring to ensure accurate scoring. During the 2008–2009 school year, the scoring center used 35 scorers to score 582 portfolios.

Quality Control and Monitoring of Scoring

Until 2007 all portfolios were double scored with any nonexact scores going through resolution scoring of a third scorer. Beginning with the 2006-2007 CAS-Alt, exact and adjacent scores were accepted and only discrepant scores (2 or more score points off) were put through the extra step of resolution scoring by a third scorer. This decision was made with the DC Technical Advisory Committee's input and is consistent with scoring of alternate assessment portfolios nationally.

Prior to spring 2009, scorers were instructed not to score portfolios from their own schools or from friends' classrooms. They were also directed not to share information about the scoring or individual scores with anyone outside of the scoring room. The portfolios were locked in a room when not being scored and measures were taken to track the movement of portfolios if they had to be transported from one room to another for storage.

Since spring 2009, scorers are trained on confidentiality issues and are directed not to share information about the scoring or individual scores with anyone. The portfolios are locked in a room when not being scored and the movement of portfolios is tracked by expeditors when transported from one room to another for storage.

Measures of Accuracy and Consistency of Scoring

A final scoring report is produced that presents inter-rater reliability for each content area and each of the three scoring dimensions, Performance, Complexity, and Supports by content area.

Tables 8.4R, 8.4M and 8.4S report the scoring accuracy of the 19 scorers for the 2007-2008 scoring administration of the CAS-Alt and 31 scorers for the 2008-2009 scoring administration of the CAS-Alt.

Table 8.4R: 2008 & 2009 CAS-Alt Rater Error (Reading/ELA)

2008			2009		
Rater ID	Number of items discrepant by two or more	Average discrepancy	Rater ID	Number of items discrepant by two or more	Average discrepancy
1-01	14	1.53	101	2	0.5
1-02	4	1.36	102	20	0.36
1-03	0	.30	103	18	1.771
1-07	0	.50	104	17	0.24
2-01	7	1.15	105	14	0.2069
2-02	16	2.25	106	1	12
2-03	10	2.02	201	1	0.6667
2-04	6	1.52	202	17	0.8298
2-05	8	2.41	203	16	1.1471
3-01	12	1.51	204	26	0.0313
3-02	9	1.83	205	15	2.08
3-03	11	1.75	301	3	0.3333
3-04	13	2.23	302	18	0.1020
3-07	0	0	303	17	0.1224
4-01	13	1.35	304	17	0.3462
4-02	25	1.8	305	17	0.3778
4-03	13	1.77	402	0	0.5
4-04	9	2.16	403	19	1.193
4-09	0	0	404	19	0.2344
5-01	3	2.12	405	27	0.9859
5-02	6	1.04	406	19	0.7073
5-03	6	1.14	501	5	0.0714
5-04	13	2.42	502	8	1.6154
6-22	0	0	503	16	0.6154
6-55	0	0	504	9	0.3617
9-02	1	2.5	505	20	0.9524
			601	0	0.25
			602	13	0.5476
			603	22	0.3393
			604	16	0.4571
			605	22	0.1071

Table 8.4M: 2008 & 2009 CAS-Alt Rater Error (Mathematics)

2008			2009		
Rater ID	Number of items discrepant by two or more	Average discrepancy	Rater ID	Number of items discrepant by two or more	Average discrepancy
1-01	19	2.23	101	1	0.2
1-02	3	2.23	102	21	1.42
1-03	2	3.60	103	15	1.021
1-07	0	.25	104	15	0.42
2-01	5	2.48	105	15	0.6897
2-02	14	2.17	201	0	0
2-03	12	1.76	202	3	2.833
2-04	7	2.47	203	24	0.766
2-05	8	1.76	204	19	0.4706
3-01	8	.88	205	24	0.5313
3-02	7	1.08	301	15	2.88
3-03	13	1.33	302	0	0.111
3-04	14	1.82	303	13	0.4082
3-07	0	0	304	13	1.0201
4-01	18	1.78	305	13	0.2308
4-02	30	2.42	402	12	0.2444
4-03	10	2.00	403	2	4.0
4-04	10	2.09	404	23	0.2632
4-09	0	0	405	16	0.7656
5-01	4	2.46	406	21	0.4789
5-02	6	1.09	501	19	1.5122
5-03	6	.50	502	6	0.6429
5-04	8	1.45	503	7	0.2692
6-22	0	0	504	11	0.6667
6-55	0	2	505	27	06596
9-02	1	3.0	601	14	0.4048
			602	0	0.25
			603	13	0.5476
			604	22	0.3393
			605	16	0.4571

Table 8.4S: 2008 & 2009 CAS-Alt Rater Error (Science)

2008			2009		
Rater ID	Numbers of items discrepant by two or more	Average discrepancy	Rater ID	Numbers of items discrepant by two or more	Average discrepancy
1-01	3	1.28	101	1	5.25
1-02	1	1.00	102	3	1.375
1-03	0	0	103	8	0.158
1-07	0	.25	104	7	1.6
2-01	2	.65	105	2	1.5
2-02	4	1.03	201	2	0.5
2-03	5	1.56	202	13	0.5
2-04	4	1.73	203	5	0.8235
2-05	3	3.15	204	9	1.0857
3-01	8	.80	205	6	3.1538
3-02	2	.73	301	0	0.25
3-03	5	1.41	302	9	0.8
3-04	6	1.93	303	8	1.96
3-07	0	0	304	7	0.0435
4-01	8	1.46	305	5	0.3182
4-02	7	1.37	402	0	0.0
4-03	6	1.76	403	7	0.944
4-04	2	.73	404	12	1.1071
5-01	4	6.13	405	10	0.8621
5-02	3	1.48	406	4	0.7143
5-03	4	1.23	501	0	0.0
5-04	3	1.35	502	3	0.4667
6-55	0	0	503	8	1.1905
			504	8	0.2857
			505	3	0.9524
			601	0	0
			602	5	1.333
			603	5	0.3333
			604	5	1.7333
			605	8	0.5238

The procedure for calculating interrater reliability is as follows:

Spearman's Rho: A sum score was produced for each area by adding each of the three scores (one per item) in the "subscale" together. This was done for each rater. Sum scores were used to conduct a bivariate correlation in SPSS. Findings are significant at $p \leq .01$

Discrepant by two or more: Obtained the difference between rater one and two's sum scores. Counted the number of instances in which scores differed by two or more. This total was divided by the number of cases (582).

Rater Agreement: Using sum scores, counted the number of times the raters scores differed by plus or minus one or zero.

ELA_P

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.854	23.4%	76.6%	.876	13%	87%

ELA_C

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.864	23.2%	76.8%	0.799	21%	79%

ELA_S

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.872	22.0%	78.0%	0.760	22%	78%

Overall ELA

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.884	38.0%	62.0%	0.852	19%	81%

MAT_P

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.857	22.0%	78.0%	0.876	16%	84%

MAT_C

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.876	24.6%	75.4%	0.821	17%	83%

MAT_S

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.855	24.6%	75.4%	0.764	22%	78%

Overall MAT

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.887	38.6%	61.4%	.850	18%	82%

SCI_P

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.912	20.5%	79.5%	.912	14%	86%

SCI_C

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.896	21.9%	78.1%	0.915	18%	82%

SCI_S

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.866	21.4%	78.6%	.866	19%	81%

Overall SCI

2008			2009		
Spearman's Rho Correlation	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**	**Spearman's Rho Correlation**	**Discrepant by two or more** **Rater 1 vs. Rater 2**	**Agreement**
.913	33.5%	66.5%	.914	17%	83%

CHAPTER 9: CHARACTERIZING ERROR ASSOCIATED WITH TEST SCORES

Typically, error associated with test scores is calculated through various reliability analyses; however, portfolio assessments do not lend themselves to traditional reliability analyses. Because the results are based on a teacher's documentation of a particular student's academic achievement and progress, the assessments must be subjected to different reliability and validity questions than "typical" achievement-oriented standardized instruments. Measures of reliability, in particular, will depart from standard psychometric notions of internal consistency, unidimensionality, and stability. Currently, most reporting of reliability centers on inter-rater reliability (Browder, et al. 2003). Thus, the best measure of reliability is the scorer reliability discussed in the previous chapter on scoring. Some of those results are discussed here in light of interpreting the error associated with test scores. In addition, error can be examined by looking at classification error and administrator error.

Reliability

When DC OSSE and ILSSA first began working together, ILSSA was asked to determine acceptable levels of reliability for the alternate assessment. There continue to be few studies to guide an acceptable level of reliability for portfolio approaches, so we continue to base our comments on research the Human Development Institute at the University of Kentucky conducted on alternate assessment reliability (Garrett, Towles, Kleinert, & Kearns, 2003), as well as conversations with Jim Ysseldyke, a co-author of a commonly used collegiate textbook on assessment (Salvia & Yselldyke, 2001).
Reliability, as it relates to portfolio assessment, is the measure of scoring accuracy and consistency. If an assessment is reliably scored, two or more judges should consistently arrive at the same score. Reliability may be measured by Pearson correlations, a Kappa statistic, or inter-rater agreement. Correlations and Kappa statistics are more precise measures of reliability (Salvia & Yselldyke, 2001). For each of these measures, a 1.0 indicates perfect agreement; a zero indicates an absence of any reliability.

Results of the annual scoring sessions are calculated in an attempt to measure the reliability of the scores. Traditionally, inter-rater agreement is used to determine the reliability of scores. Unfortunately, inter-rater agreement only informs us about the percentage of times two judges agree. It does not provide information about the total distribution of scores. Calculation of the Pearson Correlation describes how scores vary in their distribution. Further, a percentage of portfolios that have scores that vary widely contribute further clarification to the magnitude of the score variance.

In order to use assessment results for any purpose, it is important that the results are reliable. The degree of reliability desired is influenced by the purpose the assessment serves and how the assessment scoring is conducted. What are the consequences of the assessment? If the assessment is being used for high-stakes purposes, such as student promotion, reliability of 0.90 or higher is essential. If the assessment is used to make instructional decisions for students with significant disabilities, reliability of 0.80 or

higher is desired. Decisions that have long-term consequences for students require a higher degree of reliability (Yselldyke, 2002).

We continue to recommend 0.80 as an acceptable goal for reliability for the following reasons. As DC OSSE uses a professional development model of scoring, as well as holistic scoring aspects, higher levels of reliability would be difficult to achieve. As the long-term consequences of CAS-Alt do not have a direct bearing on the students assessed, this may be considered an acceptable goal.

Scorer Reliability Analyses

Overall scorer reliability for each school year, beginning during the 2000-2001 school year through the 2008-2009 school year, is reported below. As well, reliability for each of the dimensions of the CAS-Alt is collected and reported individually to examine if one dimension contributed to the overall reliability. These results can be found in the chapter on scoring. Results include Inter-rater Agreement, Spearman Rho Correlation, and Percent of Portfolios with dimensions that scored discrepant by 2 or more.

The first year implementing the new scoring rubric was 2007. Two dimension names remained - Performance and Supports - but the definitions of both dimensions changed. In addition, a new dimension, Complexity, was introduced. These wholesale changes appeared to have dramatically impacted agreement between Scorers 1 and 2 in spite of qualifying with 75% exact agreement and 25% adjacent agreement to be a scorer. For ELA, exact agreement was 59% and for Mathematics, 62%. In 2008, the qualifications for certifying were increased to 80% exact and 15% adjacent to be a scorer. For ELA, exact agreement was 62%, for Mathematics, 61.4% and for Science 66.4%. Although the Inter-rater Agreement was less than the agreement that OSSE desired it is important to note that OSSE double scored 100% of the portfolio entries and resolved any nonadjacent matches by a table leader (qualifying at 90% exact accuracy in training) to ensure that scores were accurate. So although the agreement was below what was considered to be acceptable, safeguards were in place.

In spring 2009, DC CAS-Alt portfolios were scored for the first time at the ILSSA Alternate Assessment Scoring Center in KY. Inter-rater Agreement significantly improved at the ILSSA scoring center in 2009, the qualifications for certifying remained at 80% exact and 15% adjacent to be a scorer. Overall inter-rater reliability for the center was 96% and exact agreement was 82% for the entire center. In ELA, exact agreement was 81%, for Mathematics, 82% and for Science 83%. It is also important to note that OSSE has maintained the double scoring of 100% of the portfolios and the resolution of any nonadjacent matches by a highly qualified scorer (90% exact accuracy and remaining adjacent in certification) to ensure that scores are accurate.

Pearson correlations described the relationship among all scores, as opposed to only looking at the instances when judges agreed exactly. By using correlations, we examined the most discrepant aspects of the scoring process and improved them. This involved increasing the number of training sessions, reliability checks during the scoring session, and monitoring of portfolio scoring. In 2007, it was decided to use the Spearman's Rho

Correlation rather than a Pearson Correlation. It was suspected that these scores are not normally distributed for this and the Spearman's Rho is more appropriate. Pearson's correlation is more appropriate for parametric distributions. Spearman's Rho is often used for "rank" or ordinal data. In 2007, the scores judged between Scorer 1 and 2 for ELA were correlated as .819 (with 1 being totally correlated and 0 having no correlation) and Math as .886. Both of these correlations were found to be significant at the .01 level. In 2008, the scores judged between Scorer 1 and 2 for ELA were correlated as .884, for Math as .887 and for Science as .913. In 2009, the scores judged between Scorer 1 and 2 for ELA were correlated as .852, for Math as .850 and for Science as .914. All of these correlations were found to be significant at the .01 level.

Another way to examine variability is to determine the percentage of instances in which Scorer 1 was 2 or more points discrepant from Scorer 2. In 2008 across dimensions, 38% of the ELA content area portfolios had at least one dimension that was discrepant by two points or more and an average of 38.6% of the Math content area portfolios had one or more dimensions that were discrepant by two points. In Science, content area portfolios were discrepant by two points or more on an average of 33.5%. This is attributed to the dramatic changes in the scoring rubric in 2007 and dimensions being scored by a majority of scorers who had scored two or more years using the previous rubric. This was however an improvement from the previous year when there was a much greater need for resolution scores on the average of 51% in Reading/ELA and 52% in Mathematics. In 2009 across dimensions, 19% of the ELA content area portfolios had at least one dimension that was discrepant by two points or more and an average of 18% of the Math content area portfolios had one or more dimensions that were discrepant by two points. In Science, content area portfolios were discrepant by two points or more for an average of 17%. This is attributed to the nature of the scoring center and the strict adherence to accuracy and recalibration of scorers. Again, it is important to emphasize that because 100% of DC CAS-Alt portfolios are double scored and any disagreements then resolved by a scorer qualifying at 90% exact agreement and remaining adjacent agreement, these inaccuracies were and are not reflected in the CAS-Alt scores.

<u>Inter-rater Data Analysis Results 2001-2009</u>

	Inter-rater Agreement								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
ELA	65%	66%	59%	57%	70%	83%	59%	62%	81%
Math	64%	66%	61%	61%	69%	85%	62%	61.4%	82%
Science								66.5%	83%
	Correlation								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
ELA	.751	.751	.751	.751	.751	.751	.751	.884	.852
Math	.748	.748	.748	.748	.748	.748	.748	.887	.850
Science								.913	.914
	Percent Discrepant by 2 or more**								

	2001	2001	2001	2001	2001	2001	2007	2008	2009
ELA	10%	10%	10%	10%	10%	10%	51%	38%	19%
Math	10%	10%	10%	10%	10%	10%	52%	38.6%	18%
Science								33.5%	17%

*Spearman's Rho Correlation was used to calculate 2007 scores
**Inter-rater Agreement and Percent Discrepant by 2 or more is calculated as agreement between Scorer 1 and 2 and the 3rd final score.

Decision Consistency and Accuracy

The main use of the CAS-Alt scores will be for school and district level accountability in the federal NCLB accountability system. The students will be classified as proficient or not proficient and included in the District's AYP calculation. In this case, the reliability of individual students' scores, albeit not ignorable, becomes much less important. The scores have been aggregated for each student to a yes/no decision and then aggregated across students.

In addition to the inter-rater reliability coefficients reported in the scoring sections, decision consistency and decision accuracy studies will be calculated for school-level accountability decisions. Although students taking the CAS-Alt only make up a small part of school accountability, it is important that these scores contribute to the validity of the classification.

Consistency in scoring is currently done through 100% double score of portfolio entries and any discrepancies are resolved by a highly qualified scorer (qualifying at 90% exact/10% adjacent agreement) to ensure that scores are accurate. Scorers who appear to be drifting are immediately recalibrated by reviewing the rubric and the evidence to guard against drift. In an attempt to measure of consistency from 2007-08 to the 2008-09 scoring center, scorers at the center were trained and certified with the same portfolios used in the spring of 2008. For the 2009-10 DC CAS-Alt scoring center, ILSSA will add an additional component to the consistency monitoring to further guard against scorer drift. The study will involve the seeding of 10% of the total number of portfolios scored during the previous scoring center into the current scoring cycle to guard against drift. OSSE is currently working with edCount to develop and implement a validity study that will involve special educators in the review of the DC CAS-Alt Performance Level Descriptors (PLDs) and categorizing students taking the DC CAS-Alt into one of the performance levels . Once scoring has been completed, edCount will compare the teacher classifications to the classifications based on the portfolio scores. Any inconsistencies will be examined to determine if the students are being classified accurately by the portfolio using the current cut scores.

Administrator Accuracy

Administrator accuracy is directly related to the generalizability of the results. Given the nature of portfolio assessments as individualized assessments with no two portfolios providing exactly the same evidence, it is anticipated that the greatest source of error will

be test administrators. ILSSA and the OSSE have sought to minimize this source of error through extensive training on designing tasks, gathering evidence, scoring tasks, and documenting progress within the portfolio. One way to test the sufficiency of this training is to ask an expert in the field of special education administration to administer and score a number of tasks. Then, an analysis can be made of the results of the tasks given by the teacher and the results of the tasks given by the expert administrator. The timing of the tasks should be close enough together to minimize any learning effect. Another possibility is to look for schools where multiple teachers are responsible for teaching students with significant disabilities and use these settings to estimate the variance (probably conservatively) associated the test administrator.

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CHAPTER 10: COMPARABILITY

Comparability is similar in concept to the logic behind the scaling and equating chapters in technical reports for general education assessments. Although portfolio results typically are not scaled, it is important to ensure that the scores are comparable from one year to the next, so that the interpretation of those scores remains the same from one year to the next.

The tables on the following pages report the mean and standard deviation of scores by content area and for each of the scoring dimensions from the inception of the CAS-Alt (2001 - 2008). Overall scores in both ELA and Mathematics have improved throughout the years. Variability in dimension scores has been attributed anecdotally to the need to tighten scoring rules in dimensions. It is important to note that the revisions to the CAS-Alt preclude any comparisons of dimensions of the 2006-07 and 2007-08 years with previous years.

	2000-01 104 Portfolios 2 schools		**2001-02** 309 Portfolios 18 schools		**2002-03** 272 Portfolios 18 schools		**2003-04** 562 Portfolios 39 schools		**2004-05** 245 Portfolios 29 schools		**2005-06** 429 Portfolios 37 schools		**2006-07**** 495 Portfolios 33 Schools		**2007-08**** 512 Portfolios 48 Schools		**2008-09**** 582 Portfolios 56 Schools	
	Mean	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*
ELA Final Score (1-30)	13.99	6.62	12.48	4.72	14.59	4.69	15.64	4.56	15.78	4.61	16.07	6.05	75.81	45.03	101.35	45.03	120.34	35.83
Math Final Score (1-30)	14.23	6.7	12.45	4.64	14.14	4.69	15.59	4.29	15.6	4.48	16.18	5.89	75.43	45.88	100.77	46.27	120.48	35.57
Science Final Score (30-150)															88.67	46.00	101.71	44.06
ELA Dimensions																		
ELA Performance Dimension (1-5) * changed in 2006	2.71	1.2	2.41	1.15	2.87	0.98	2.88	1.02	2.77	1.06	2.54	1.32	29.06	19.13	38.85	18.54	30.54	12.42
ELA Complexity Dimension* added in 2006													30.18	18.28	40.99	18.43	32.94	11.50
ELA Connection to Standard Dimension (1-5)	2.36	1.04	2.28	0.88	3.42	1.26	3.92	1.19	3.95	1.14	3.49	1.54						
ELA Self-Evaluation Dimension (1-5)	2.1	1.26	2.15	1.04	2.68	1.26	2.6	1.12	2.91	1.32	2.56	1.39						
ELA Social Relationships Dimension (1-5)	2	1.31	1.44	0.73	1.57	0.83	1.86	0.88	1.71	0.86	2.13	1.05						
ELA Settings Dimension (1-5)	2.11	1.29	1.52	0.733	1.8	0.97	2.02	1.14	1.97	1.09	2.55	1.59						
ELA Supports Dimension (1-5) * changed in 2006	2.48	1.14	2.25	0.98	2.25	0.87	2.35	0.93	2.47	1.01	2.81	1.20	16.01	9.93	21.57	9.47	16.18	2.93

*During the 2003-2004 school year, the Mean and Standard Deviation for all Reading/ELA scores are calculated from 562 portfolio entries.
**Mean score and standard deviation were calculated based on a score range of a possible 0-150 points and four performance levels (Below Basic, Basic, Proficient and Advanced).

Mathematics Dimensions

	2000-01 104 Portfolios 2 schools		2001-02 309 Portfolios 18 schools		2002-03 272 Portfolios 18 schools		2003-04 562 Portfolios 39 schools		2004-05 245 Portfolios 29 schools		2005-06 429 Portfolios 37 schools		2006-07** 495 Portfolios 33 schools		2007-08** 512 Portfolios 48 Schools		2008-09** 582 Portfolios 56 Schools	
	Mean	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*
Math Performance Dimension (1-5) * changed in 2006	2.67	1.18	2.44	1.11	2.75	1.04	2.84	1.02	2.7	1.03	2.71	1.35	29.69	19.62	38.80	19.37	30.72	12.60
Math Complexity Dimension* added in 2006													29.87	18.36	40.61	18.74	32.50	11.40
Math Connection to Standard Dimension (1-5)	2.49	1.1	2.23	0.84	3.33	1.33	3.99	1.25	3.92	1.22	3.47	1.45						
Math Self-Evaluation Dimension (1-5)	2.16	1.24	2.2	1.03	2.6	1.25	2.57	1.1	2.83	1.32	2.52	1.33						
Math Social Relationships Dimension (1-5)	1.96	1.27	1.45	0.72	1.54	0.79	1.79	0.83	1.68	0.84	2.09	1.01						
Math Settings Dimension (1-5)	2.12	1.28	1.52	0.72	1.71	0.87	2.38	0.9	1.93	1.04	2.57	1.57						
Math Supports Dimension (1-5)* changed in 2006													15.87	10.09	21.35	9.68	16.06	2.87

*During the 2003-2004 school year, the Mean and Standard Deviation for all Math scores are calculated from 559 portfolio entries.
**Mean score and standard deviation were calculated based on a score range of a possible 0-150 points and four performance levels (Below Basic, Basic, Proficient and Advanced).

Science Dimensions

	2000-01 104 Portfolios 2 schools		2001-02 309 Portfolios 18 schools		2002-03 272 Portfolios 18 schools		2003-04 562 Portfolios 39 schools		2004-05 245 Portfolios 29 schools		2005-06 429 Portfolios 37 schools		2006-07** 495 Portfolios 33 schools		2007-08** 512 Portfolios 48 Schools		2008-09** 582 Portfolios 56 Schools	
	Mean	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*
Science*** Performance Dimension															33.96	19.02	26.70	15.54
Science*** Complexity Dimension															35.81	18.72	26.82	14.98
Science*** Supports Dimension															18.90	9.84	13.38	3.76

***Science was added in the 2007-08 school year.

Linkages across Grades

The CAS-Alt is developed and administered to students in every grade 3–8 and 10. Linkages across grade spans were examined during the standard setting procedures described in the next chapter. The percentages of students scoring at or above Proficient in each grade span were examined to determine whether there seemed to be coherence from one grade span to the next.

In addition, as a part of the 2007 External Alignment Study, the CAS-Alt areas of Reading/ELA and Mathematics was examined for linkage across grades for content standards, achievement standard, and portfolio test blueprint/design. An external alignment study was conducted for Science in 2008. Discussion of the articulation across grades of content standards, achievement standards, and portfolio design is discussed in the chapter on alignment (Chapter 6).

CHAPTER 11: STANDARD SETTING

The Body of Work (BoW) Standard Setting Method (Kahl, Crockett, DePascale, & Rindfleisch, 1993) was implemented for the Comprehensive Assessment System - Alternate (CAS-Alt) Standard Setting, which was held in Washington, D.C., June 18 – 22, 2007. Performance level cut scores were established for Reading and Mathematics in grade-bands 3-5, 6-8 and 10. The CAS-Alt Standard Setting lasted four-and-a-half days, with the first day devoted to orientation and Body of Work Method training, the second day to Performance Level Description Writing, and the remaining two-and-a-half days to setting cut scores for the CAS-Alt (two days for standard setting and a half day to review findings with DCPS staff and lead teachers to confirm consistency with Performance Level Descriptors/PLDs). Standard Setting for Science was conducted in Washington, D.C., August 4 – 7, 2008. Perfomance level cut scores were established for grades 5, 8 and Biology (10th grade). The Standard Setting followed the same format and process as the Reading/ELA and Mathematics Standard Setting. In both standard setting sessions, participants recommended three cut scores, *Basic, Proficient,* and *Advanced*, which separate students into four performance levels: *Below Basic, Basic, Proficient,* and *Advanced*.

Because the CAS-Alt is a portfolio system and views student achievement in a holistic manner, it required a standard setting method that allowed for the evaluation of student performance as a whole. The BoW method best matched the system requirements, as it considers student performance as a whole.

Selection of Panelists

Educators from the District of Columbia area Schools convened to recommend performance standards for the CAS-Alt in three grade-spans (Grades 3-5, 6-8, and 10) for Reading and Mathematics and for grades 5, 8 and 10 in Science. Six separate committees were convened for the standard setting: one per grade band (Grades 3-5, 6-8, and 10) for each content area in Reading and Mathematics. Three to six DC educators participated in each grade band/content area committee for Reading and Mathematics. Three separate committees were convened for the Science standard setting: one per grade level (Grades 5, 8 and 10). Five to seven DC area educators participated in each grade level committee.

Demographic information was collected from participants and summarized as part of the evaluation process. Participants were all highly experienced educators (ranging from 8-41 years of experience in education) and held a variety of teacher and administrator positions, including special education teacher, math coach, reading coach, and IEP and Assessment Coordinator. Twelve of the panelists were special education teachers, three were general education teachers, two were math coaches, one was a school improvement specialist, and one was an IEP and assessment coordinator. Steps were taken to ensure that some of the participants had children enrolled in the DCPS schools to provide a community perspective to the feedback as well. The standard setting panels were comprised of 25 participants, three males and 22 females. Fifty-five percent of the participants self-identified as Black or African-American, five percent as Asian, and five percent as white. The remaining 20% declined to answer the question about

race/ethnicity. DCPS divided participants into three tables, per grade-band/content area, that were balanced in terms of relevant demographic characteristics (e.g., content and special education expertise, type of school setting). Steps were taken to ensure that participants came from a variety of different types of school, including public, public special education and charter schools. In addition, participants' combined experiences crossed all grade levels from Pre-K to high school. Table 11.1 shows the number of participants in each grade-band/content area.

Table 11.1 Number of Panelists in Each Grade-Band/Content Area for Standard Setting

Content Area	Grades	Number of panelists
Mathematics	**3-5**	4
	6-8	6*
	10	4
Reading	**3-5**	3
	6-8	4
	10	4
Science	5	5*
	8	5*
	10	5

* additional content specialists were brought in for developing and discussing PLDs, as well as, reviewing portfolio work to understand why it scored the way it did – in some cases, due to a lack of alignment

Training in the Body of Work Standard Setting Method for Reading/ELA and Mathematics Session (June 18 – 22, 2007)

Standard setting participants received one day of training prior to engaging in the standard setting process. As with any complex system, portfolio models require additional training time to ensure that participants understand the system well enough to make effective judgments. Training included an overview of the reasons for standard setting and the BoW standard setting method. Participants were provided with sample portfolios which scored at a low, moderate and high level.

Performance Level Descriptions for Reading and Mathematics

After training in the BoW methodology, participants were grouped by content and grade-band work groups. Each grade-band/content area group reviewed and discussed the draft performance level descriptions for *Below Basic*, *Basic*, *Proficient*, and *Advanced* students and were asked to describe students whose work would be placed at each performance level. The purpose was to have panelists review, and revise as necessary, the PLD definitions and to help them operationalize the draft PLDs in order to further familiarize them with the standards. Panelists discussed the draft PLDs until they were familiar with the performance standards' definitions and had come to agreement on any necessary revisions to each performance level description. Panelists were instructed to ensure that the PLDs represented the highest standard possible for students who would participate in the CAS-Alt, as well as, ensuring that essential skills were reflected within the PLDs.

Participants were also asked to ensure that the PLDs progressed from grade to grade and clearly linked to the content standards assessed at each specific grade.

Panelists were asked to review the definition of the *Proficient* level, and then to describe students who might meet this definition. These might be students known to the panelists, or one of the samples they have just reviewed as a large group. The purpose of this exercise was to help them operationalize the definition by thinking of how it would apply to actual student work. Once they had completed the revision of the proficient proficiency level, panelists were instructed to move onto the *Advanced* level. The process continued with the revision of the *Basic* level and the *Below Basic* level.

As a final exercise, the entire group reviewed and finalized the four definitions (Advanced, Proficient, Basic, Below Basic) ensuring that they described different performance levels and progress appropriately from one performance level to the next. In addition, the content area group came together and compared the descriptions across grade levels at this point to ensure that PLDs progressed appropriately from one grade span to the next.

On the last day of standard setting, a small group of educators and policy makers met to review all of the PLDs for both content areas. Content specialists reviewed the work to determine that there was a logical progression from one grade to the next in terms of content-specific skill sets. Minor revisions were made to descriptions in terms of content progression. Special education specialists reviewed the work to certify that the skills and knowledge present were only those that were assessed in the DC-CAS Alt. Technical specialists looked at the PLDs to assure that the highest possible expectations were held for this population and the policy makers examined the PLDs for alignment to DCPS' general education assessments and reporting systems, and overall clarity. For the sake of continuity, a general statement was adopted as the lead in for all grades and content areas. Final Performance Level Descriptions for each content area and grade are attached as an appendix (Appendix A).

Round 1 - Description of the Body of Work Process and Review of Protocols for Reading and Mathematics

In this round, each grade span group was provided with a number line, the grade band content area PLDs and thirty theoretical protocols. Panelists were instructed to use the PLDs to sort the theoretical protocols into one of the four performance levels (Below Basic, Basic, Proficient, Advanced,). Once they had completed this task they were instructed to identify those theoretical protocols that they had trouble deciding on a designation. They were instructed to use the scoring rubric to identify the scores for each of these protocols and to use that information to complete the number line.

Table 11.2 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants following Round 1 for English Language Arts Grades 3-5 by participant, the mean cut scores for round 1, and the standard deviation of each participant's recommended cut scores. Table 11.3 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants following round 1 for English Language Arts

Grades 6-8 by participant, the mean cut scores for round 1, and the standard deviation of each participant's recommended cut scores. Table 11.4 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants following round 1 for English Language Arts Grade 10 by participant, the mean cut scores for round 1, and the standard deviation of each participant's recommended cut scores.

Table 11.2 Participant-recommended cut scores for the CAS-Alt based on Round 1 for English Language Arts Grades 3-5.

Participants	1st Cut Scores		
	Basic	***Proficient***	***Advanced***
1	60	90	120
2	60	90	120
3	66	96	119
Mean Cut Score	**62**	**92**	**120**
Standard Deviation	**3.46**	**3.46**	**0.58**

Table 11.3 Participant-recommended cut scores for the CAS-Alt based on Round 1 for English Language Arts Grades 6-8.

Participants	1st Cut Scores		
	Basic	***Proficient***	***Advanced***
1	55	79	119
2	67	104	131
3	70	111	131
4	53	72	113
Mean Cut Score	**61**	**92**	**124**
Standard Deviation	**8.50**	**18.91**	**9.0**

Table 11.4 Participant-recommended cut scores for the CAS-Alt based on Round 1 for English Language Arts Grade 10.

Participants	1st Cut Scores		
	Basic	***Proficient***	***Advanced***
1	66	118	128
2	61	98	133
3	51	91	128
4	51	91	126
Mean Cut Score	**57**	**100**	**129**
Standard Deviation	**7.50**	**12.77**	**2.99**

Table 11.5 shows the mathematics grades 3-5 participant-recommended cut scores for the CAS-Alt, as taken from participants following round 1, the mean cut scores for round 1, and the standard deviation of each participant's recommended cut scores. Table 11.6 shows the participant-recommended cut scores for the CAS-Alt, as taken from the

mathematics grades 6-8 participants following round 1, the mean cut scores for round 1, and the standard deviation of each participant's recommended cut scores. Table 11.7 shows the mathematics grade 10 participant-recommended cut scores for the CAS-Alt, as taken from participants following round 1, the mean cut scores for round 1, and the standard deviation of each participant's recommended cut scores.

Table 11.5 Participant-recommended cut scores for the CAS-Alt based on Round 1 for Mathematics Grades 3-5.

Participants	1st Cut Scores		
	Basic	***Proficient***	***Advanced***
1	62	90	121
2	69	96	123
3	73	95	115
4	61	95	121
Mean Cut Score	**66**	**94**	**120**
Standard Deviation	**5.74**	**2.71**	**3.46**

Table 11.6 Participant-recommended cut scores for the CAS-Alt based on Round 1 for Mathematics Grades 6-8.

Participants	1st Cut Scores		
	Basic	***Proficient***	***Advanced***
1	61	91	128
2	71	104	128
3	70	108	129
4	57	105	128
Mean Cut Score	**65**	**102**	**128**
Standard Deviation	**6.85**	**7.53**	**0.50**

Table 11.7 Participant-recommended cut scores for the CAS-Alt based on Round 1 for Mathematics Grade 10.

Participants	1st Cut Scores		
	Basic	***Proficient***	***Advanced***
1	57	101	128
2	50	75	125
3	66	95	123
Mean Cut Score	**58**	**90**	**125**
Standard Deviation	**8.02**	**13.61**	**2.52**

Round 2 - Theoretical Protocol Sort for Reading and Mathematics

In round 2, each sub-group reviewed their number line designations and received the scores for each of the thirty theoretical protocols. Using the thirty theoretical protocols as examples, the group discussed their reasoning for placing each protocol in a specific proficiency level with attention paid to borderline decisions. The goal was not to have

individuals change their ratings, nor to arrive at group cut-scores at this point, but to expose them to differences in opinion and to determine reasons why other panelists made the designations that they did.

Table 11.8 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants following round 2 for English language arts Grades 3-5 by participant, the mean cut scores for round 2, and the standard deviation of each participant's recommended cut scores. Table 11.9 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants following round 2 for English language arts Grades 6-8 by participant, the mean cut scores for round 2, and the standard deviation of each participant's recommended cut scores. Table 11.10 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants following round 2 for English language arts Grade 10 by participant, the mean cut scores for round 2, and the standard deviation of each participant's recommended cut scores.

Table 11.8 Participant-recommended cut scores for the CAS-Alt based on Round 2 for English Language Arts Grades 3-5.

Participants	2nd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	60	90	120
2	60	90	120
3	66	96	120
Mean Cut Score	**62**	**92**	**120**
Standard Deviation	**3.46**	**3.46**	**0.00**

Table 11.9 Participant-recommended cut scores for the CAS-Alt based on Round 2 for English Language Arts Grades 6-8.

Participants	2nd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	55	79	119
2	70	104	131
3	71	104	126
4	42	76	121
Mean Cut Score	**60**	**91**	**124**
Standard Deviation	**13.77**	**15.35**	**5.38**

Table 11.10 Participant-recommended cut scores for the CAS-Alt based on Round 2 for English Language Arts Grade 10.

Participants	2nd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	75	111	128
2	75	111	128
3	55	101	126
4	55	90	126
Mean Cut Score	**65**	**103**	**127**
Standard Deviation	**11.55**	**10.01**	**1.15**

Table 11.11 shows the mathematics grades 3-5 participant-recommended cut scores for the CAS-Alt, as taken from participants following round 2, the mean cut scores for round 2, and the standard deviation of each participant's recommended cut scores. Table 11.12 shows the participant-recommended cut scores for the CAS-Alt, as taken from the mathematics grades 6-8 participants following round 2, the mean cut scores for round 2, and the standard deviation of each participant's recommended cut scores. Table 11.13 shows the mathematics grade 10 participant-recommended cut scores for the CAS-Alt, as taken from participants following round 2, the mean cut scores for round 2, and the standard deviation of each participant's recommended cut scores.

Table 11.11 Participant-recommended cut scores for the CAS-Alt based on Round 2 for Mathematics Grades 3-5.

Participants	2nd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	62	89	122
2	71	95	120
3	71	95	120
4	67	95	123
Mean Cut Score	**68**	**94**	**121**
Standard Deviation	**4.27**	**3.00**	**1.50**

Table 11.12 Participant-recommended cut scores for the CAS-Alt based on Round 2 for Mathematics Grades 6-8.

Participants	2nd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	66	96	128
2	65	100	128
3	70	108	129
4	57	105	128
Mean Cut Score	**65**	**102**	**128**
Standard Deviation	**5.45**	**5.32**	**0.50**

Table 11.13 Participant-recommended cut scores for the CAS-Alt based on Round 2 for Mathematics Grade 10.

Participants	2nd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	57	105	128
2	53	79	125
3	69	96	123
Mean Cut Score	**60**	**93**	**125**
Standard Deviation	**8.33**	**13.20**	**2.52**

Round 3 - Portfolio Sort for Reading and Mathematics

In round 3, each of the panelists examined content area entries (English Language Arts or mathematics) from fifteen actual portfolios for their grade span. These portfolios contained the evidence for the subject area entries for the content area being reviewed. The panelists reviewed the student work for their subject area and designated the performance level of each portfolio on the portfolio rating sheet.

Figure 1 shows the rating of each portfolio by participants in the ELA Grades 3-5 grade band group. In round 1, the participants agreed on the proficiency level of two of the 15 portfolios (one at *Below Basic* and one at the *Basic* level). **Figure 2** shows the rating of each portfolio by participants in the ELA Grades 6-8 grade band group. Participants agreed on the proficiency level for one of the 15 portfolios. **Figure 3** shows the rating of each portfolio by participants in the ELA Grade 10 group. Participants were in agreement on three of the 15 portfolios (one at *Below Basic*, one at the *Basic* level, and one at the *Proficient* level).

Figure 1. Round One Rating Agreement of Elementary (Grades 3-5) ELA Portfolios

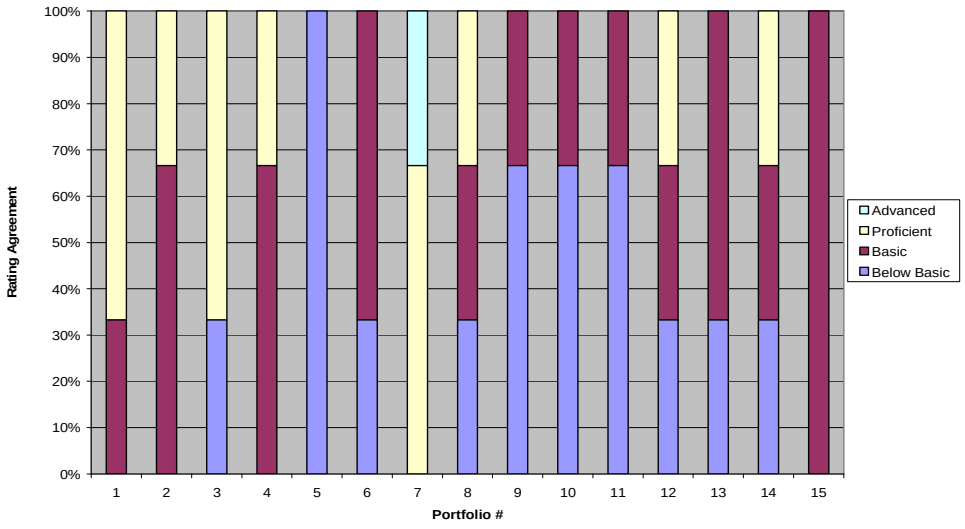


Figure 2. Round One Rating Agreement of Middle School (Grades 6-8) ELA Portfolios

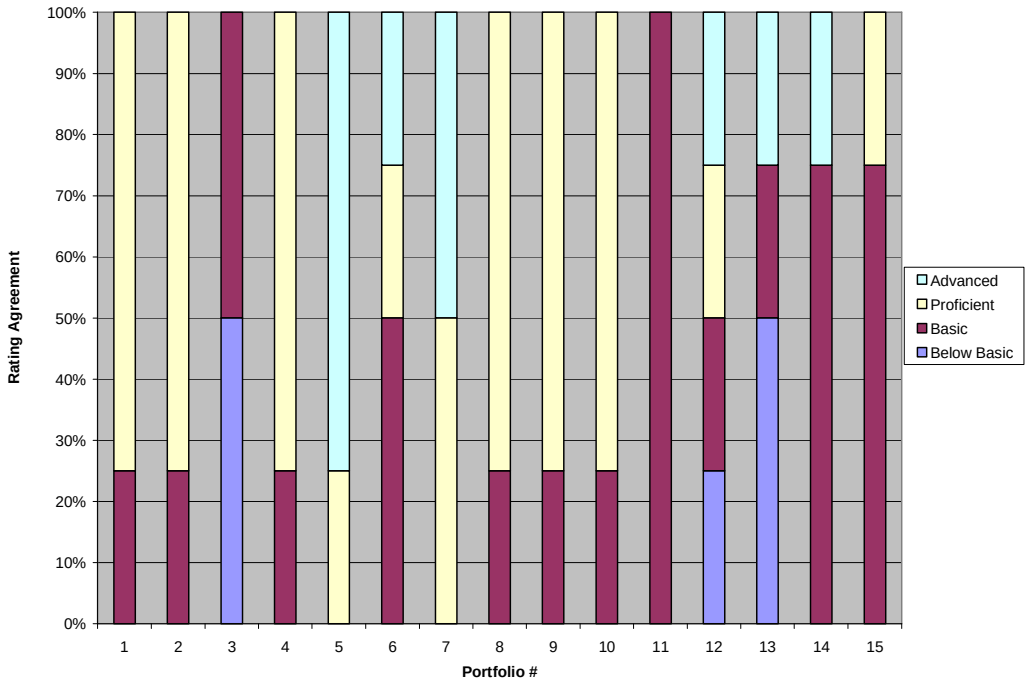


Figure 3. Round One Rating Agreement of High School (Grade 10) ELA Portfolios

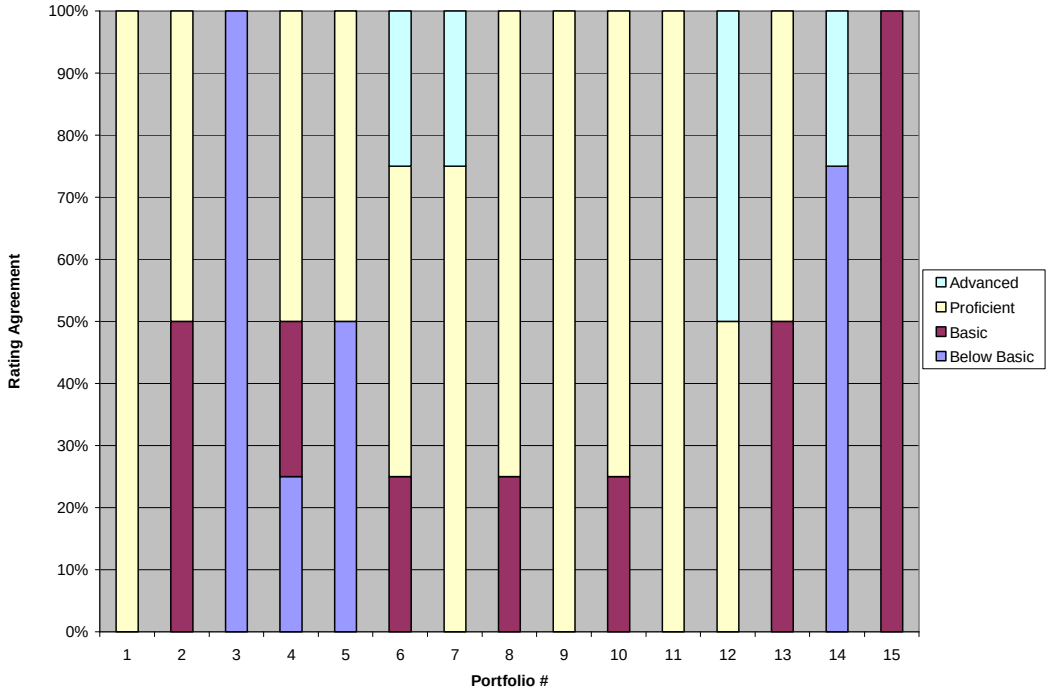


Figure 4 shows the rating of each portfolio by participants in the Mathematics Grades 3-5 grade band group. In round 1, participants were in agreement on six of the 15 portfolios (five at the *Basic* level and one at the *Proficient* level). **Figure 5** shows the rating of each portfolio by participants in the Mathematics Grades 6-8 grade band group. Participants

agreed on the performance level for five of the 15 portfolios (one *Below Basic* level, three at the *Basic* level, and one at the *Proficient* level). **Figure 6** shows the rating of each portfolio by participants in the Mathematics Grade 10 group. Participants were in agreement of four of the 15 portfolios (two *Below Basic* level, one at the *Basic* level, and one at the *Proficient* level).

Figure 4. Round One Rating Agreement of Elementary (Grades 3-5) Mathematics Portfolios

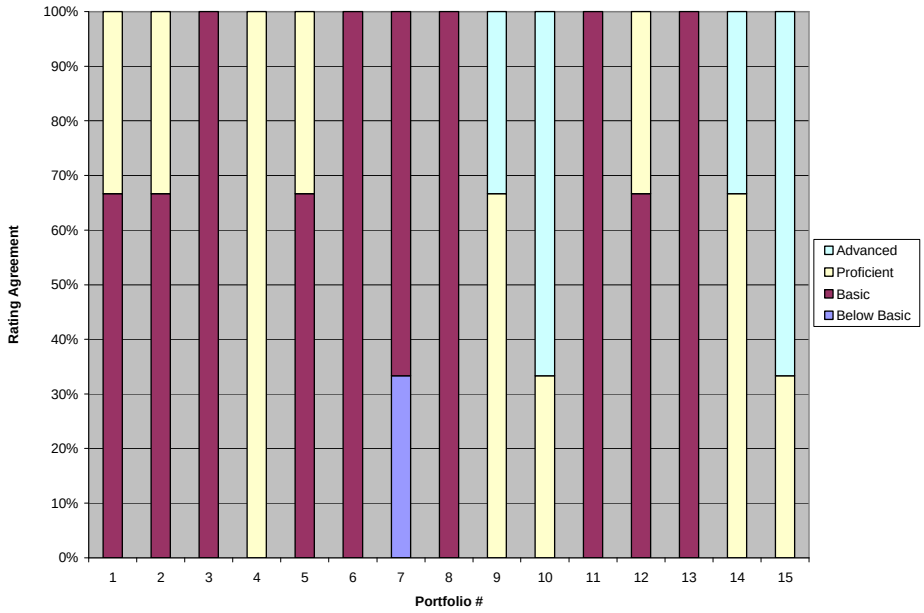


Figure 5. Round One Rating Agreement of Middle School (Grades 6-8) Mathematics Portfolios

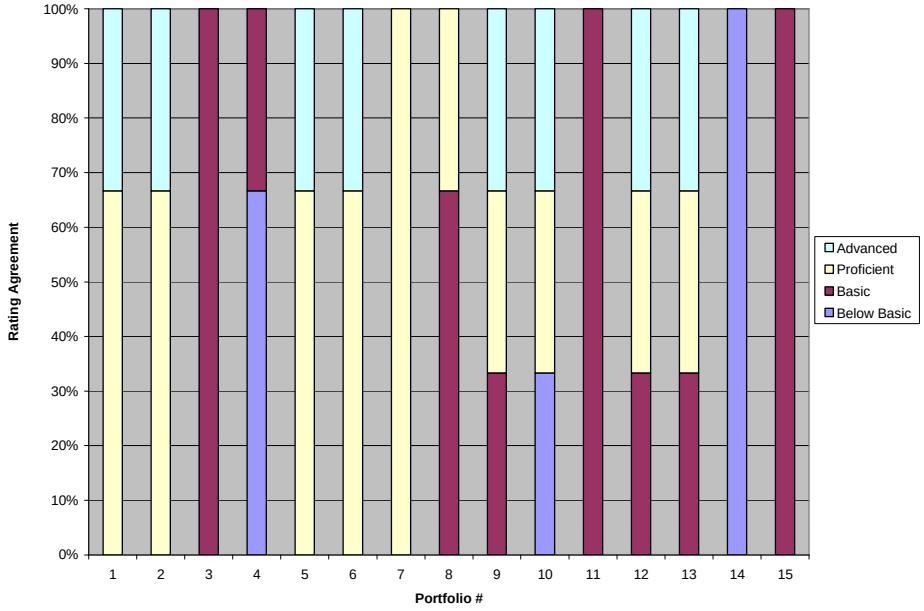
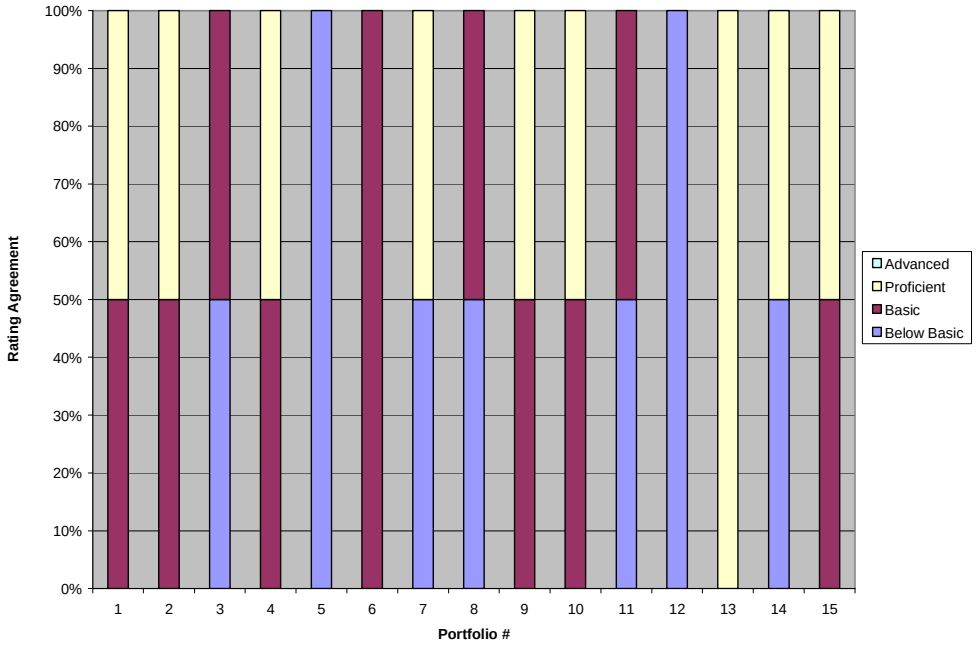


Figure 6. Round One Rating Agreement of High School (Grade 10) Math Portfolios



After the first round of rating the portfolios, the facilitator led a discussion of how the group rated each portfolio. The individual ratings were shown on a summary chart and the group discussed those areas of disagreement to determine whether they could come to agreement on the performance level designation. Panelists were told that they did not have to change their ratings – simply document any areas of disagreement after the discussion on the tally sheet.

Round 4 - Portfolio Sort for Reading and Mathematics

In this final round of ratings, each of the panelists within each grade-band content area subgroup was given the scores for each of the 15 portfolios and directed to re-examine the content area entries from the fifteen portfolios. The panelists reviewed the student work, the scores given to the work, and designated the performance level for each portfolio on the portfolio rating sheet.

After the second round of rating the portfolios, the facilitator led a discussion of how the group rated each portfolio. The individual ratings were shown on a summary chart and the group discussed those areas of disagreement to determine whether they could come to agreement on the performance level designation. Group discussions then led to consensus on the performance level designation for each grade-band content area group set of portfolios. The facilitator offered panelists the ability to review additional content area portfolios at other scores points, if they wished to review additional score points.

Figure 7 shows the rating of each portfolio by participants in round two for ELA Grades 3-5 grade band group. At the start of round 2, participants were in agreement on six of the 15 portfolios (two at the *Basic* level, and four at the *Proficient* level). Following round 2 discussions, the group was in complete agreement on all fifteen portfolios.

Figure 7. Round Two Rating Agreement of Elementary (Grades 3-5) ELA Portfolios **(**Following round 2 discussions, the group was in complete agreement on all fifteen portfolios.)

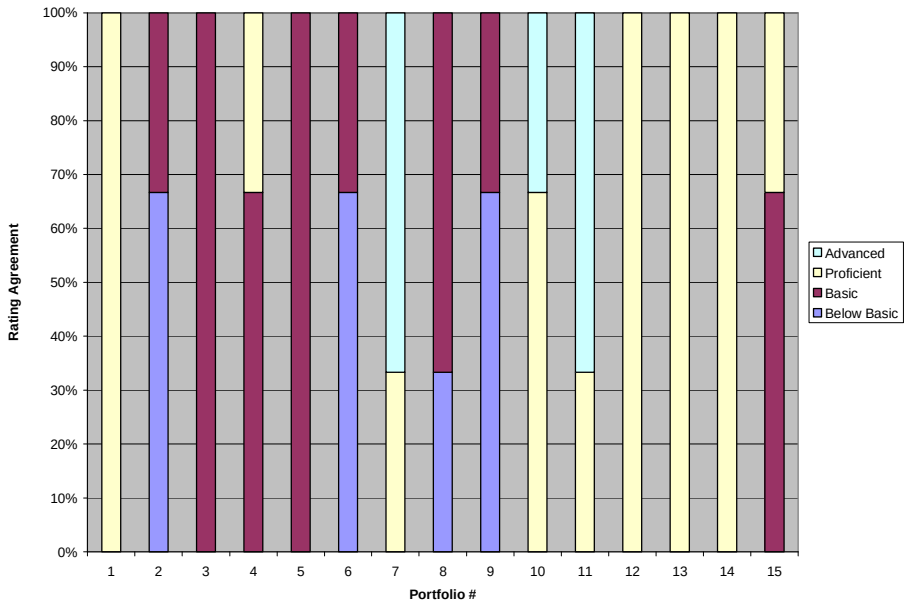


Figure 8 shows the rating of each portfolio by participants in round two for ELA Grades 6-8 grade band group. During round 2, participants were in agreement on two of the 15 portfolios, both at the *Proficient* level. **Figure 9** shows the rating of each portfolio by participants following round 2 discussions for the ELA Grades 6-8 grade band group. Following the round 2 discussions, participants were in agreement on ten of the 15 portfolios (one at the *Below Basic* level, six at the *Basic* level, and three at the *Proficient* level).

Figure 8. Round Two Rating Agreement of Middle School (Grades 6-8) ELA Portfolios

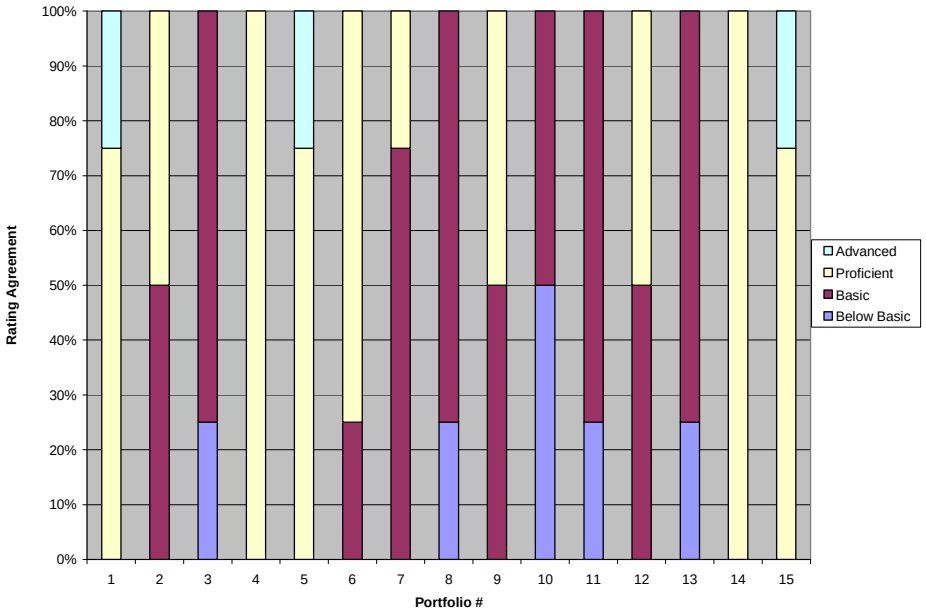


Figure 9. Rating Agreement of Middle School (Grades 6-8) ELA Portfolios *after* Round Two Discussions

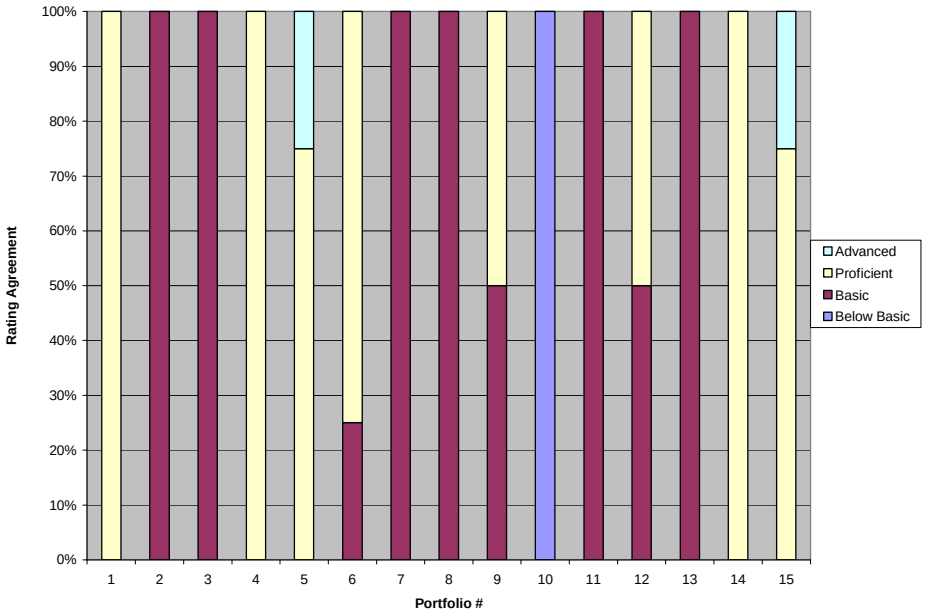


Figure 10 shows the rating of each portfolio by participants in round two for ELA Grade 10 group. In round 2, participants were in agreement on all fifteen portfolios and maintained this agreement following their discussion of the portfolios.

Figure 10. Round Two Rating Agreement (before *and after* discussions) of High School (Grade 10) ELA Portfolios

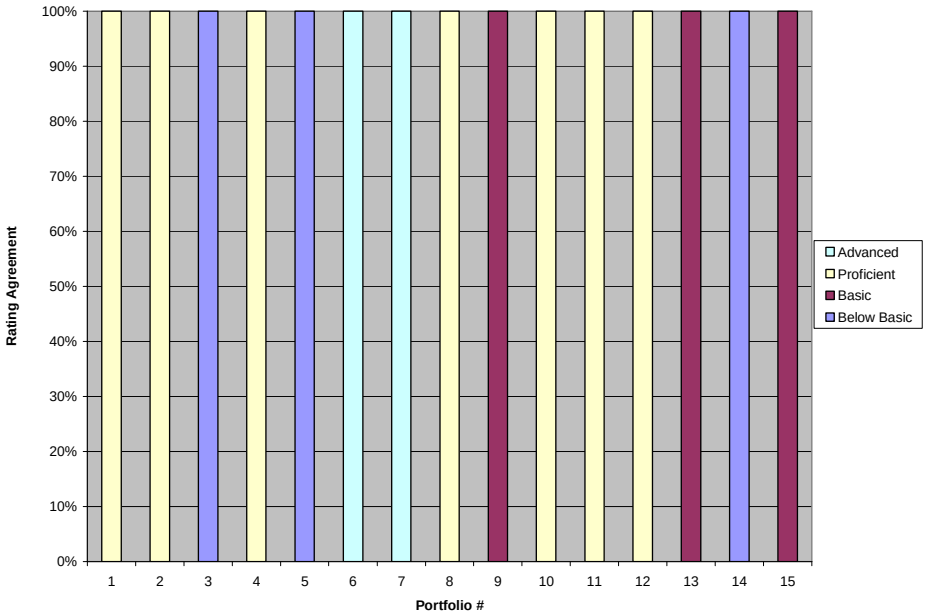


Figure 11 shows the rating of each portfolio by participants in round two for the mathematics Grades 3-5 grade band group. In round 2, participants agreed on the performance level of eight of the fifteen portfolios (three at the *Below Basic* level and five at the *Proficient* level). Following discussion, participants did not make any changes to their ratings.

Figure 11. Round Two Rating Agreement (before *and after* discussions) of Elementary Mathematics Portfolios

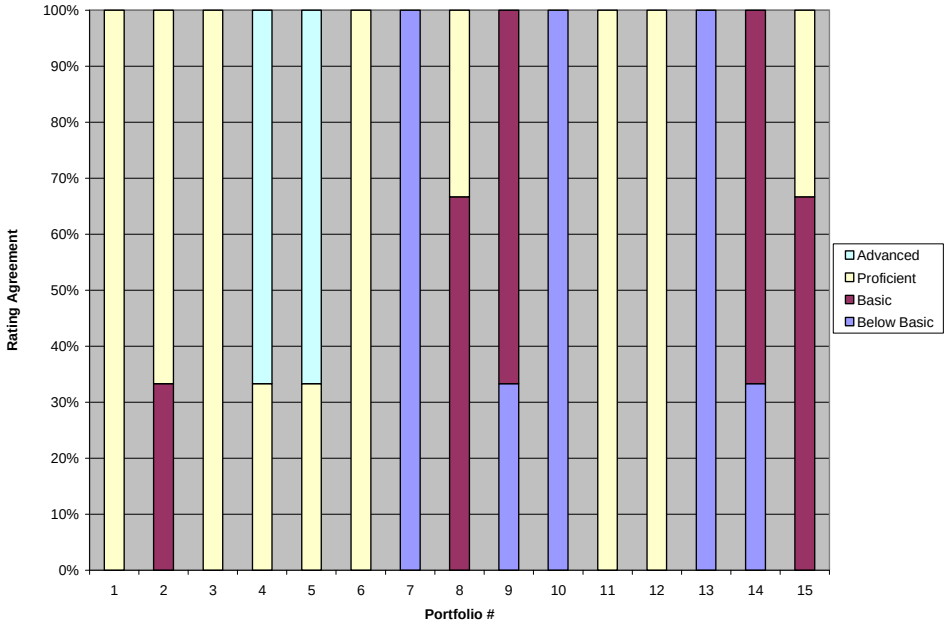


Figure 12 shows the rating of each portfolio by participants in round two for mathematics Grades 6-8 grade band group. In round 2, participants were in agreement on the performance level determination for all 15 portfolios. No changes were made following round 2 discussions of the portfolios.

Figure 12. Round Two Agreement (before *and after* discussions) of Middle School (Grades 6-8) Mathematics Portfolios.

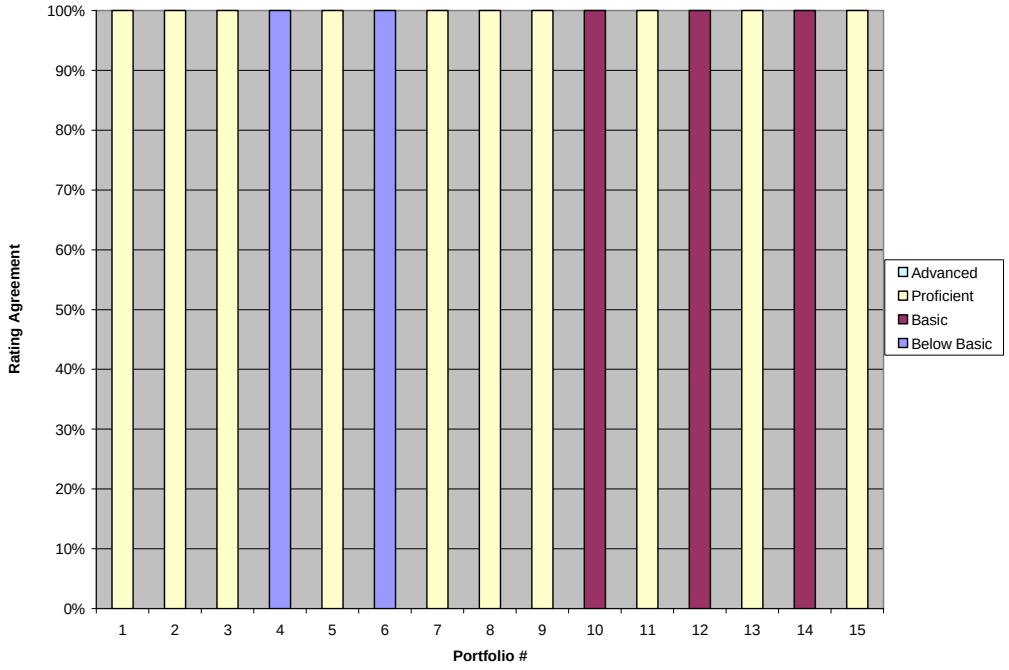
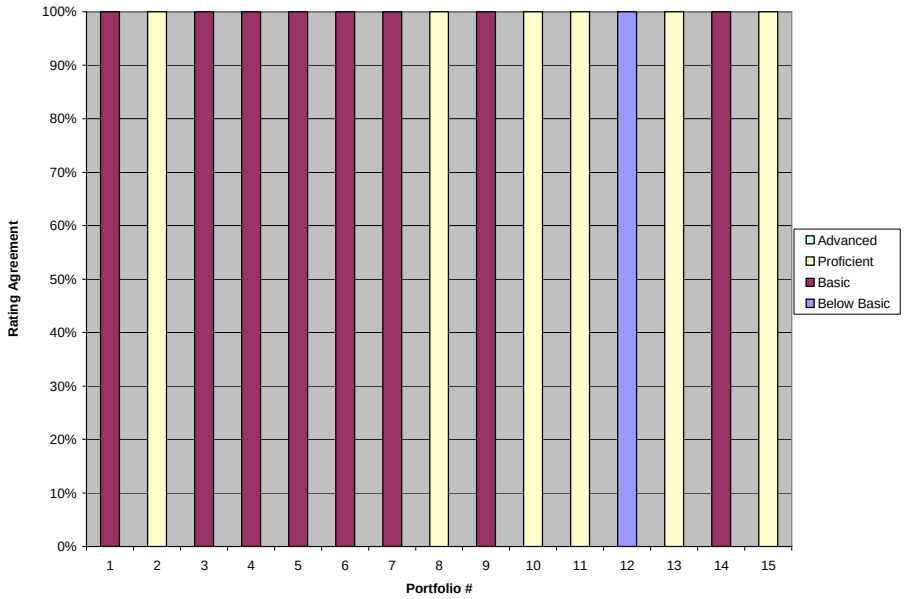


Figure 13 shows the rating of each portfolio by participants in round two for mathematics Grade 10 group. In round 2, participants were in agreement on the performance level determination for all 15 portfolios. No changes were made following round 2 discussions of the portfolios.

Figure 13. Round Two Agreement (before *and after* discussions) of High School (grade 10) Mathematics Portfolios.



Following the group discussion, each panelist was provided with another individual number line and asked to make a recommendation for cut scores. Several content area grade-band groups decided to submit consensus cut scores at this point. The exceptions were middle school (6-8) Reading and elementary (3-5) Mathematics.

Table 11.14 shows the participant-recommended consensus cut scores for the CAS-Alt, as taken from participants' round 3 group recommendations for reading grade-bands 3-5 and 10, as well as, mathematics grade-bands 6-8 and 10.

Table 11.14. Participant-recommended consensus cut scores for the CAS-Alt based on Round 3 for Elementary (3-5) and High School (10) Reading and Middle School (6-8) and High School (10) Mathematics

		Round 3 Consensus Cut Scores		
Content Area	**Grade-band**	***Basic***	***Proficient***	***Advanced***
Reading	**3-5**	62	92	120
	10	55	91	126
Mathematics	**6-8**	62	95	126
	10	55	80	121

Table 11.15 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants following round 3 for reading/English language arts Grades 6-8 by

participant, the mean cut scores for round 3 and the standard deviation of each participant's recommended cut scores.

Table 11.15. Participant-recommended cut scores for the CAS-Alt based on Round 3 for Reading/English Language Arts Grades 6-8

Participants	3rd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	51	71	111
2	61	101	126
3	51	71	111
4	55	74	113
Mean Cut Score	**54**	**79**	**115**
Standard Deviation	**4.73**	**14.57**	**7.23**

Table 11.16 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants following round 3 for mathematics Grades 3-5 by participant, the mean cut scores for round 3 and the standard deviation of each participant's recommended cut scores.

Table 11.16. Participant-recommended cut scores for the CAS-Alt based on Round 3 for Mathematics Grades 3-5

Participants	3rd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	56	95	123
2	69	96	123
3	56	95	123
4	56	95	123
Mean Cut Score	**59**	**95**	**123**
Standard Deviation	**6.50**	**0.50**	**0.00**

Review of Impact Data and Performance Level Descriptions (PLDs) for Reading/ELA and Mathematics

Panelists were given an opportunity to see what the current cut scores would mean in terms of the percent of students placed at each performance level for the 2006-2007 school year in each content area. The goal was to show panelists what the impact would be of the designations that had been made, and give them one additional opportunity to modify their designations based on this new information.

After reviewing the impact data panelists were allowed to make their final recommendation concerning the numbers on the number line that fall in each proficiency level, based on the rounds of portfolios reviewed and the impact of their previous cuts.

Table 11.17 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants' Round 4 group recommendations for Grade-bands 3-5, 6-8, and 10.

Table 11.18 shows the impact data associated with the cut scores shown in Table 11.17. Impact data are the percentages of students who are classified in each performance level based on the recommended cut scores.

Table 11.17. Participant-recommended cut scores for the CAS-Alt based on Round 4 for Grades 3-5, 6-8, and 10.

		Cut Scores		
Content Area	**Grade-band**	***Basic***	***Proficient***	***Advanced***
Reading	**3-5**	52	83	120
	6-8	53	76	121
	10	55	90	121
Mathematics	**3-5**	56	95	123
	6-8	62	95	128
	10	56	86	124

Table 11.18. Impact data for the CAS-Alt associated with cut scores shown in Table 11.1.

		Cut Scores			
Content Area	**Grade-band**	***Below Basic***	***Basic***	***Proficient***	***Advanced***
Reading	**3-5**	35.45%	10.58%	20.11%	33.86
	6-8	43.29%	8.23%	28.57%	19.91%
	10	46.67%	10.67%	22.67%	20.00%
Mathematics	**3-5**	38.10%	14.29%	25.40%	22.22%%
	6-8	46.75%	10.39 %	23.38%	19.48%
	10	44.00%	12.00%	29.33%	14.67%

Evaluations for Reading and Mathematics Standard Setting Session

Participants completed an evaluation of the CAS-Alt Reading and Mathematics Standard Setting. Participants were asked to rate their comfort level with the standard setting rounds completed, the adequacy of the performance level descriptions, their confidence in each performance level recommendation set by their group, and their overall confidence that the standard setting method would lead to appropriate standards for the performance levels. The evaluation and its results are included in Appendix B.

Effectiveness of Training

An indication of the overall effectiveness of the standard setting process may be found in the participant evaluations. Table 11.19 shows participant comfort level with the standard setting rounds and group discussions and Table 11.20 shows participant response to adequacy of training. Overall, participants reported that they were comfortable or very comfortable with the standard setting rounds and that the training was adequate (25%) or totally adequate (63%).

Table 11.19. Participants' Comfort Level with Standard Setting Rounds

Performance Levels	Very Comfortable	Comfortable	Uncomfortable	Very Uncomfortable
Round 2	56%	38%	6%	0%
Round 3	63%	38%	0%	0%
Round 4	75%	25%	0%	0%
Group Discussions	88%	12%	0%	0%

Table 11.20. Adequacy of Training

Totally Adequate	Adequate	Inadequate	Totally Inadequate
63%	25%	12%	0%

Perceived Validity

An indication of the successfulness of the revisions made to the PLDs is found in the participants' perception of adequacy of the performance level descriptions. Overall, participants felt that the revised PLDs were adequate. Table 11.21 shows participant confidence in the *Advanced*, *Proficient*, *Basic*, and *Below Basic* Performance Level Description recommendations. The majority of participants (96%) reported that they felt the *Advanced* and *Proficient* Performance Level Descriptions were adequate or totally adequate and all participants (100%) reported that they felt the *Basic* and *Below Basic* Performance Level Descriptions were adequate or totally adequate.

Table 11.21. Participants' comfort level with the Performance Level Descriptions for Reading and Mathematics.

Performance Levels	Totally Adequate	Adequate	Inadequate	Totally Inadequate
Advanced	44%	50%	6%	0%
Proficient	50%	44%	6%	0%
Basic	56%	44%	0%	0%
Below Basic	50%	50%	0%	0%

Another indication of the successfulness of the standard setting may be found in the participants' perceived validity of the standard setting. Table 11.22 shows the participants' confidence with the final cut scores for each performance level. The majority of participants reported that they were satisfied with the final cut scores recommended. Table 11.23 shows the percentage of participants' confidence that the Body of Work (BoW) standard setting method produced valid cut scores. The majority of participants reported that the BoW produced valid cut scores.

Table 11.22. Participant Confidence in the Final Cut Scores for Each Performance Level in Reading and Mathematics

Performance Levels	Very High	High	Medium	Low
Advanced	50%	31%	13%	6%
Proficient	50%	38%	12%	0%
Basic	50%	38%	12%	0%
Below Basic	44%	44%	6%	6%

Table 11.23. Participant Confidence that the Body of Work Standard Setting Method Produced Valid Standards for Reading and Mathematics

Very Confident	Confident	Somewhat Confident	Not Confident at all
38%	44%	19%	0%

Following the standard setting, the OSSE staff and lead teachers from each content area standard setting committee convened to review the performance level descriptions (PLDs) and cut score recommendations. The leadership team reviewed the participant recommended cut scores and associated impact data and suggested changes to promote cross-grade articulation of the PLDs.

Training in the Body of Work Standard Setting Method for Science Session (August 4 – 7, 2008)

Standard setting participants received one day of training prior to engaging in the science standard setting process. Training included an overview of the reasons for standard setting and the BoW standard setting method. Participants were provided with sample portfolios which scored at a low, moderate and high level.

Performance Level Descriptions for Science

After training in the BoW, participants were grouped by grade level work groups. Each grade level group reviewed and discussed the draft performance level descriptions for *Below Basic*, *Basic*, *Proficient*, and *Advanced* students and was asked to describe students whose work would be placed at each performance level. The purpose was to have panelists review and revise as necessary the definitions and to help them operationalize the draft PLDs in order to further familiarize them with the standards. Panelists discussed the draft PLDs until they were familiar with the performance standards' definitions and had come to agreement on any necessary revisions to each performance level description. They were instructed to ensure that the PLDs represented the highest standard possible for students who would participate in the Science portion of the CAS-Alt, as well as, ensuring that essential skills were reflected within the PLDs.

Panelists were asked to review the definition of the proficient proficiency level, and then to describe students who may meet this definition. These might be students known to the panelists, or one of the samples they had just reviewed as a large group. The purpose of this exercise was to help them operationalize the definition by thinking of how it would apply to actual student work. Once they had completed the revision of the proficient proficiency level, panelists were instructed to move onto the advanced proficiency level. The process continued with the revision of the basic proficiency level and the below basic proficiency level.

As a final exercise, the entire group reviewed and finalized the four definitions (Advanced, Proficient, Basic, Below Basic) ensuring that they described different performance levels. In addition, the grade-level groups came together and compared the descriptions across grade levels to ensure that PLDs progressed appropriately from one grade level to the next.

Following standard setting a small group of educators and policy makers reviewed all of the PLDs for both content areas. Content specialists reviewed the work to determine that there was a logical progression from one grade to the next in terms of skill sets. Minor revisions were made in terms of content progression. Special education specialists reviewed the work to certify that the skills and knowledge present were only those that were assessed in the CAS-Alt. Technical specialists looked at the PLDs to assure that the highest possible expectations were held for this population and the policy makers examined the PLDs for alignment to OSSE's general education assessments and reporting systems, and overall clarity. For the sake of continuity, a general statement (also used for Reading /ELA and Mathematics) was adopted as the lead in for the Science PLDs. Final Performance Level Descriptions for each content area and grade are found in Section A.

Round 1 - Description of the Body of Work Process and Review of Protocols for Science

In this round, each grade level group was provided with a number line, the revised grade level Science PLDs and thirty theoretical protocols. Panelists were instructed to use the PLDs to sort the theoretical protocols into one of the four performance levels (below basic, basic, proficient or advanced). Once they had completed this task they were instructed to identify those theoretical protocols that they had trouble deciding on a designation. They were instructed to use the scoring

rubric to identify the scores for each of these protocols and to use that information to complete the number line. The theoretical protocols, number line, and rubric are included in Section E.

Table 11.24 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 1 for Grade 5 by participant, the mean cut scores for round 1 and the standard error of measurement of each participant's recommended cut scores. Table 11.25 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 1 for Grade 8 by participant, the mean cut scores for round 1 and the standard error of measurement of each participant's recommended cut scores. Table 11.27 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 1 for Biology by participant, the mean cut scores for round 1 and the standard error of measurement of each participant's recommended cut scores.

Table 11.24. Participant-recommended cut scores for the CAS-Alt based on Round 1 for Grade 5 Science.

Participants	**1st Cut Scores**		
	Basic	***Proficient***	***Advanced***
1	76	101	126
2	76	109	131
3	75	100	126
4	70	96	121
Mean Cut Score	**74**	**101**	**126**
Standard Error	**1.44**	**2.72**	**2.04**

Table 11.25. Participant-recommended cut scores for the CAS-Alt based on Round 1 for Grade 8 Science.

Participants	1st Cut Scores		
	Basic	***Proficient***	***Advanced***
1	67	111	129
2	78	89	129
3	79	95	128
4	77	106	126
Mean Cut Score	**75**	**100**	**128**
Standard Error	**2.78**	**5.02**	**.71**

Table 11.26. Participant-recommended cut scores for the CAS-Alt based on Round 1 for Biology.

Participants	1st Cut Scores		
	Basic	***Proficient***	***Advanced***
1	104	110	128
2	61	91	121
3	72	128	132
4	55	91	124
5	50	80	121
Mean Cut Score	**68**	**100**	**125**
Standard Error	**9.63**	**8.50**	**2.15**

Round 2 - Theoretical Protocol Sort for Science

In round 2, each sub-group reviewed their number line designations and received the scores for each of the thirty theoretical protocols. Using the thirty theoretical protocols as examples the group discussed their reasoning for placing each protocol in a specific proficiency level with attention paid to borderline decisions. The goal was not to have individuals change their ratings nor to arrive at group cut-scores at this point, but to expose them to differences in opinion and to determine reasons why other panelists made the designations that they did.

Table 11.28 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 2 for Grade 5 by participant, the mean cut scores for round 2 and the standard error of measurement of each participant's recommended cut scores. Table 11.29 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 2 for Grade 8 by participant, the mean cut scores for round 2 and the standard error of measurement of each participant's recommended cut scores. Table 11.30 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 2 for Biology by participant, the mean cut scores for round 2 and the standard error of measurement of each participant's recommended cut scores.

Table 11.28. Participant-recommended cut scores for the CAS-Alt based on Round 2 for Grade 5 Science.

Participants	**2nd Cut Scores**		
	Basic	***Proficient***	***Advanced***
1	75	104	127
2	76	104	127
3	75	103	127
4	76	101	125
Mean Cut Score	**76**	**103**	**127**
Standard Error	**.29**	**.71**	**.50**

Table 11.29. Participant-recommended cut scores for the CAS-Alt based on Round 2 for Grade 8 Science.

Participants	2nd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	74	108	126
2	77	106	126
3	77	105	129
4	76	106	127
Mean Cut Score	**76**	**106**	**127**
Standard Error	**.71**	**.63**	**.71**

Table 11.30. Participant-recommended cut scores for the CAS-Alt based on Round 2 for Biology.

Participants	2nd Cut Scores		
	Basic	***Proficient***	***Advanced***
1	64	96	128
2	61	91	121
3	55	91	121
4	60	91	124
5	60	90	120
Mean Cut Score	**60**	**92**	**123**
Standard Error	**1.45**	**1.07**	**1.46**

Round 3 - Portfolio Sort for Science

In round 3, each of the panelists examined Science entries from fifteen actual portfolios for their grade level. These portfolios contained the evidence for the strand and standards-based Science portfolios entries. The panelists reviewed the student work and designated the performance level of each portfolio on the portfolio rating sheet.

Figure 14 shows the rating of each portfolio by participants in the Grade 5 Science group. In round 1, the participants agreed on the proficiency level of one of the 15 portfolios. Figure 15 shows the rating of each portfolio by participants in the Grade 8 group. Participants agreed on the proficiency level for one of the 15 portfolios. Figure16 shows the rating of each portfolio by participants in the Biology group. Participants were not in agreement on any of the 15 portfolios.

Figure 14. Rating of Grade 5 Science Portfolios.

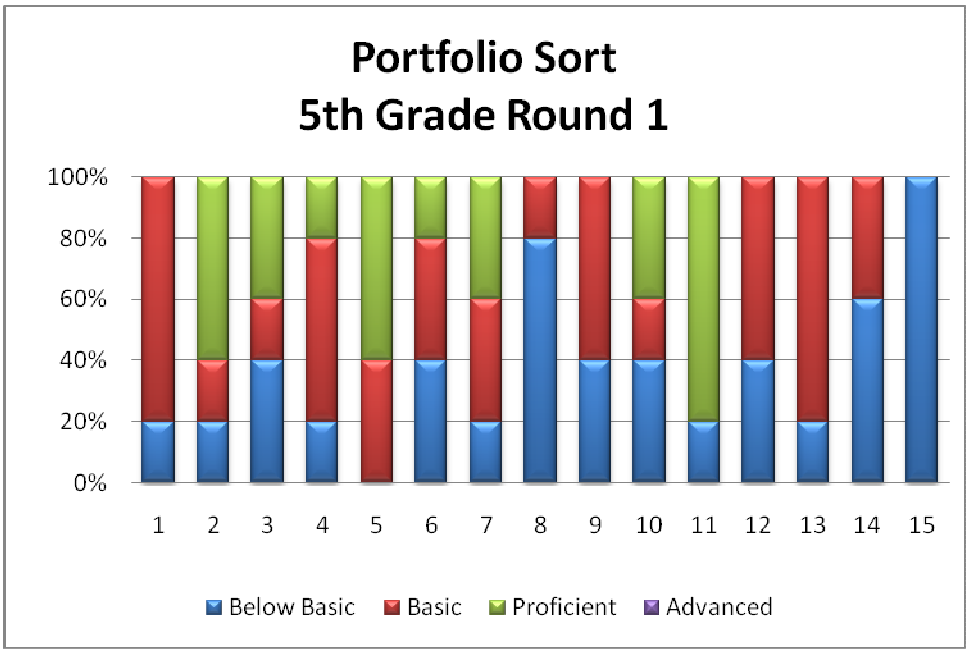


Figure 15. Rating of Grade 8 Science Portfolios.

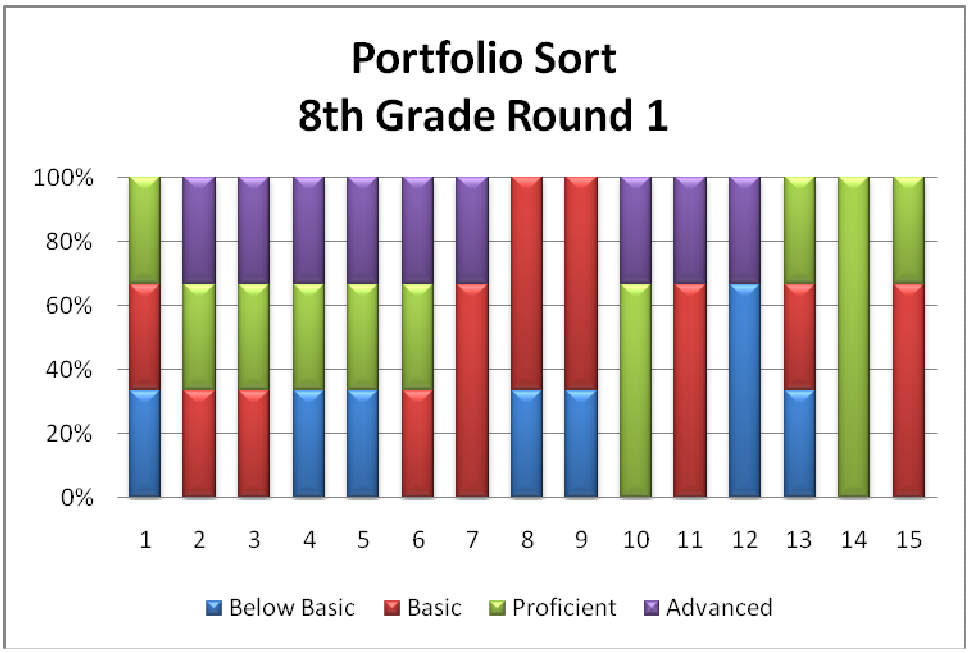
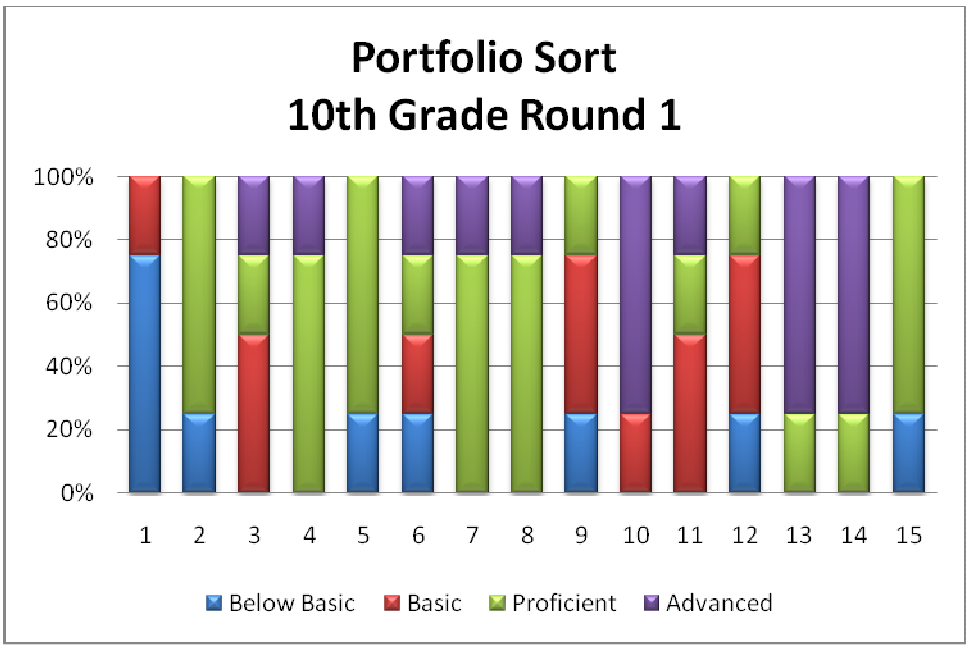


Figure 16. Rating of Biology Portfolios.



After the first round of rating the portfolios, the facilitator led a discussion of how the group rated each portfolio. The individual ratings were shown on a summary chart and

the group discussed those areas of disagreement to determine whether they could come to agreement on the performance level designation. Panelists were told that they did not have to change their ratings – simply document any areas of disagreement after the discussion on the tally sheet.

Round 4 - Portfolio Sort for Science

In this final round of ratings, each of the panelists within each grade level was given the scores for each of the 15 portfolios and directed to re-examine the Science entries from the fifteen portfolios. The panelists reviewed the student work, the scores given to the work, and designated the performance level for each portfolio on the portfolio rating sheet.

After the second round of rating the portfolios, the facilitator led a discussion of how the group rated each portfolio. The individual ratings were shown on a summary chart and the group discussed those areas of disagreement to determine whether they could come to agreement on the performance level designation. Group discussions then led to consensus on the performance level designation for each grade level group set of portfolios. The facilitator offered panelists the ability to review additional content area portfolios at other scores points, if they wished to review additional score points.

Figure 17 shows the rating of each portfolio by participants in round two for Grade 5 Science. In round 2, participants were in agreement on eight of the 15 portfolios. Following round 2 discussions, the group was in complete agreement on all fifteen portfolios.

Figure 17. Round Two Rating of Grade 5 Science Portfolios.

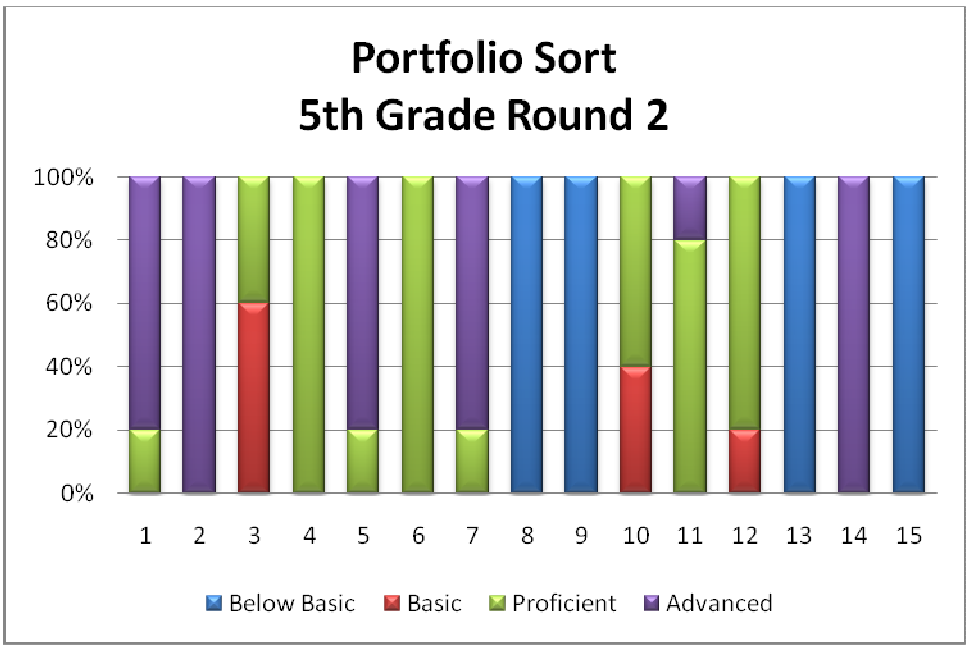


Figure 18 shows the rating of each portfolio by participants in round two for Grade 8 Science. In round 2, participants were in agreement on 13 of the 15 portfolios. Following round 2 discussions, the group was in complete agreement on all fifteen portfolios.

Figure 18. Round Two Rating of Grade 8 Science Portfolios.

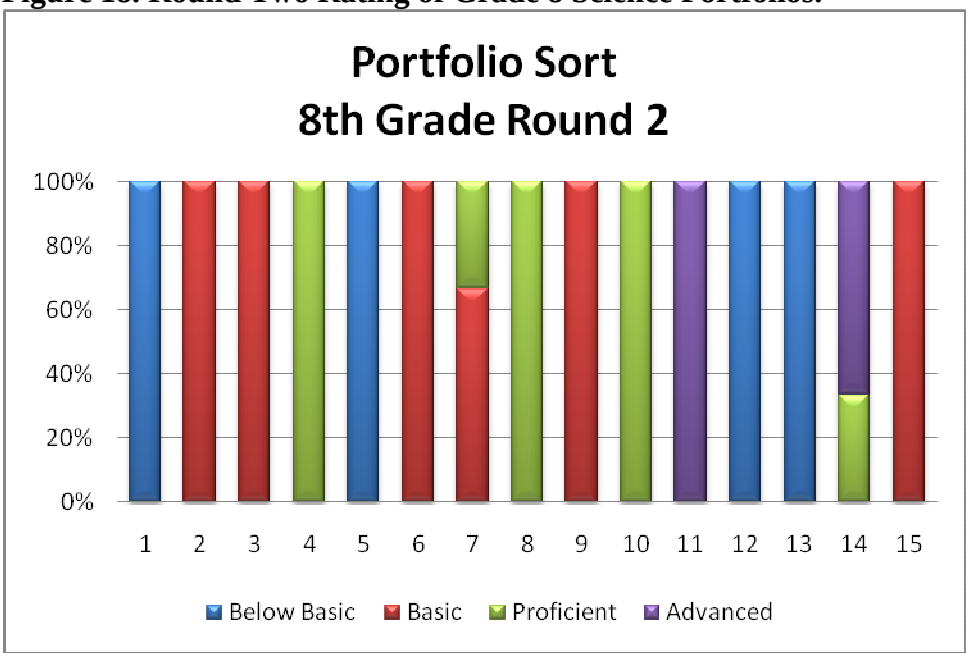
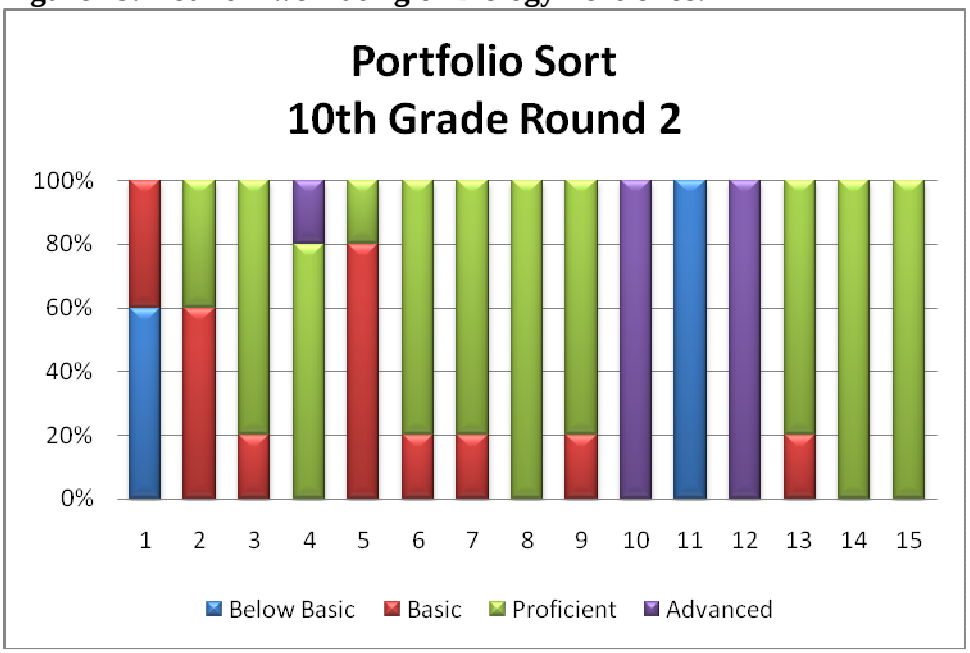


Figure 19 shows the rating of each portfolio by participants in round two for Biology. In round 2, participants were in agreement on six of the fifteen portfolios. Following round 2 discussions, the group was in complete agreement on all fifteen portfolios.

Figure 19. Round Two Rating of Biology Portfolios.



Following the group discussion, each panelist was asked to make a recommendation for cut scores on their individual number lines. Each grade level science group decided to submit consensus cut scores at this point.

Table 11.31 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 3 for Grade 5 by participant, the mean cut scores for round 3 and the standard error of measurement of each participant's recommended cut scores. Table 11.32 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 3 for Grade 8 by participant, the mean cut scores for round 3 and the standard error of measurement of each participant's recommended cut scores. Table 11.33 shows the participant-recommended cut scores for the Science portion of the CAS-Alt, as taken from participants following Round 3 for Biology by participant, the mean cut scores for round 3 and the standard error of measurement of each participant's recommended cut scores.

Table 11.31. Participant-recommended cut scores for the CAS-Alt based on Round 3 for 5th Grade Science.

Round 3 Cut Scores			
Participants	**Basic**	**Proficient**	**Advanced**
1	76	111	131
2	75	106	130
3	76	108	131
4	75	109	131
5	78	101	130
Mean Cut Score	**76**	**107**	**131**
Standard Error of Measurement	**.55**	**1.70**	**.25**

Table 11.32. Participant-recommended cut scores for the CAS-Alt based on Round 3 for 8th Grade Science

Round 3 Cut Scores			
Participants	**Basic**	**Proficient**	**Advanced**
1	71	108	124
2	71	107	125
3	NA	NA	NA
4	74	105	128
Mean Cut Score	**72**	**107**	**126**
Standard Error of Measurement	**1.00**	**.88**	**1.20**

Table 11.33. Participant-recommended cut scores for the CAS-Alt based on Round 3 for Biology

Round 3 Cut Scores			
Participants	**Basic**	**Proficient**	**Advanced**
1	62	91	122
2	64	96	121
3	61	91	121
4	55	90	121
5	66	91	124
Mean Cut Score	**62**	**92**	**122**
Standard Error of Measurement	**1.86**	**1.07**	**.58**

Review of Impact Data and Performance Level Descriptions (PLDs) for Science

Panelists were given an opportunity to see what the current cut scores would mean in terms of the percent of students placed at each performance level for the 2007-2008 school year in Science. The goal was to show panelists what the impact would be of the designations that had been made, and give them one additional opportunity to modify their designations based on this new information.

After reviewing the impact data panelists were allowed to make their final recommendation concerning the numbers on the number line that fall in each proficiency level, based on the rounds of portfolios reviewed and the impact of their previous cuts.

Table 11.34 shows the participant-recommended cut scores for the CAS-Alt, as taken from participants' Round 4 group recommendations for Grades5, 8, and Biology. Table 11.35 shows the impact data associated with the cut scores shown in Table 11.35. Impact data are the percentages of students who are classified in each performance level based on the recommended cut scores.

Table 11.34 Participant-recommended cut scores for the Science portion of the CAS-Alt based on Round 4 for Grades 5, 8, and Biology.

		Cut Scores		
Content Area	**Grade Level**	***Basic***	***Proficient***	***Advanced***
Science	**5**	56	97	127
	8	66	106	127
	Biology	62	91	130

Table 11.35. Impact data for the Science portion of the CAS-Alt associated with cut scores shown in Table 11.34.

		Cut Scores			
Content Area	**Grade Level**	***Below Basic***	***Basic***	***Proficient***	***Advanced***
Science	**5**	40.54%	8.11%	10.81%	40.54%
	8	34.38%	27.08%	20.83%	17.71%
	Biology	34.69%	8.16%	28.57%	28.57%

Quality Control Procedures

ILSSA met with the CAS-Alt leadership team, as well as, lead members of the CAS-Alt Science Standard Setting and Alignment Study teams to review the recommended PLDs and potential cut scores. The leadership team recommended that the DC OSSE adopt the same introductory statement for the Reading/ELA and Mathematics PLDs and to present the final group consensus cut scores for 8th Grade Science and Biology. They felt the need to present an additional option for 5th Grade Science cut scores to the OSSE. The group thought it best to leave it up to the OSSE to make the determination of whether or not to smooth the cut scores further across grade levels. Table 11.36 shows the leadership team's recommendation for cut scores for the 5th Grade Science portion of the CAS-Alt and the impact data associated with the cut scores.

Table 11.36. Leadership team recommended cut scores and associated impact data for the 5th Grade Science portion of the CAS-Alt.

		Cut Scores and Impact Data			
Content Area	**Grade 5**	***Below Basic***	***Basic***	***Proficient***	***Advanced***
Science	**Cut Score**	30 - 60	61 - 100	101 - 130	131 - 150
	Impact Data	41.89%	8.11%	14.86%	35.14%

Evaluations for Science Standard Setting Session

Participants completed an evaluation of the Science portion of the CAS-Alt Standard Setting. Participants were asked to rate their comfort level with the standard setting rounds completed, the adequacy of the performance level descriptions, their confidence in each performance level recommendation set by their group, and their overall confidence that the standard setting method would lead to appropriate standards for the performance levels. The evaluation and its results are included in Appendix B.

Effectiveness of Training

An indication of the overall effectiveness of the standard setting process may be found in the participant evaluations. Overall, participants reported that they were comfortable (15%) or very comfortable (62%) with the standard setting rounds and group discussions. Overall, participants reported that they were comfortable or very comfortable with the standard setting rounds and that the training was adequate (15%) or totally adequate (69%).

Perceived Validity

An indication of the successfulness of the revisions made to the PLDs is found in the participants' perception of adequacy of the performance level descriptions. Overall, participants felt that the revised PLDs were adequate. Table 11.37 shows participant confidence in the Advanced, Proficient, Basic, and Below Basic Performance Level Description recommendations. The majority of participants (92%) reported that they felt the Advanced Level Description was adequate or totally adequate and all participants (100%) reported that they felt the Proficient, Basic and Below Basic Performance Level Descriptions were adequate or totally adequate.

Table 11.37. Participants' comfort level with the Performance Level Descriptions.

Performance Levels	Totally Adequate	Adequate	Inadequate	Totally Inadequate
Advanced	69%	23%	8%	0%
Proficient	77%	23%	0%	0%
Basic	77%	23%	0%	0%
Below Basic	77%	23%	0%	0%

Another indication of the successfulness of the standard setting may be found in the participants' perceived validity of the standard setting. Table 11.38 shows the participants' confidence with the final cut scores for each performance level. The majority of participants reported that they were satisfied with the final cut scores recommended. Table 11.39 shows the percentage of participants' confidence that the Body of Work (BoW) standard setting method produced valid cut scores. The majority of participants reported that the BoW produced valid cut scores.

Table 11.38. Participant confidence in the final cut scores for each performance level.

Performance Levels	Very High	High	Medium	Low
Advanced	69%	1%	15%	0%
Proficient	62%	23%	8%	0%
Basic	54%	31%	8%	0%
Below Basic	69%	15%	8%	0%

Table 11.39. Participant confidence that the BoW standard setting method produced valid standards.

Very Confident	Confident	Somewhat Confident	Not Confident at all
46%	54%	0%	0%

CHAPTER 12: REPORTING

DC 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 system levels. A score interpretation session is held annually. Reports are provided and information on how to interpret these reports is provided.

Critical Information Included in Reports

Individual Student Report. 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.

School Roster Reports. The District 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 are provided for each school and for the entire district. For each of these aggregation levels, data are 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 ILSSA 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.

References

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association.

District Of Columbia - Office of the State Superintendent of Education

DC Comprehensive Assessment System- Alternate (DC CAS - ALT)

Portfolio Assessment **School Year 2008-2009**

INDIVIDUAL STUDENT REPORT
SY 2008-2009

Student Name:
Student ID:
Grade:
School:

Content Area	Raw Score	Performance Level
Reading / English Language Arts	0	Below Basic
Mathematics	146	Advanced

English Language Arts	Performance Dimension (60)	Level of Complexity Dimension (60)	Supports Dimension (30)	TOTAL SCORE (150)
ELA Entry 1	0	0	0	0
ELA Entry 2	0	0	0	0
ELA Entry 3	0	0	0	0
	Performance Total: 0	LOC Total: 0	Supports Total: 0	0

Mathematics	Performance Dimension (60)	Level of Complexity Dimension (60)	Supports Dimension (30)	TOTAL SCORE (150)
MATH Entry 1	20	20	10	50
MATH Entry 2	20	20	10	50
MATH Entry 3	16	20	10	46
	Performance Total: 56	LOC Total: 60	Supports Total: 30	146

Raw Score represents the number of points assigned to the portfolio content area.
Performance level shows the degree of student mastery of the content area. The levels are **Below Basic, Basic, Proficient**, and **Advanced**.
The number in parentheses represents the total number of points possible for each dimension.
Portfolio dimension represents the categories and criteria against which portfolios are evaluated. Scores within each dimension represent points obtained on each entry within a dimension.
Total scores represent by entry and by content area the raw score obtained across all of the portfolio dimensions measured.

Individual Student Report Page 2

District of Columbia Comprehensive Assessment System-Alternate Assessment

*Abbreviated Performance Level Descriptors

English Language Arts
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.
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.
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.
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.

Mathematics
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.
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.
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.
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.

Appendix A

Alternate Achievement Standards

DC 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 • Locate basic stated facts in a text • Identify basic text features **Literary Text** • Identify information stated	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 • 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	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 in a text • Locate specific information in graphic representations • Locate and sequence	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 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

in a text • Identify the problem/solution of a text	from text/text features **Literary Text** • Identify/explain information stated in a text • Identify the problem/solution in a text	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	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

DC 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 • Identify a poem	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, recipes, labels, forms). **Literary Text** • Identify similarities between the author's life and the text • Identify theme and plot of a story	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, 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

	• Identify rhymes • Identify a poem	• Identify character’s traits, relationships and feelings • Identify morals of fables • Identify patterns of sounds or rhythm patterns in poetry	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

DC 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	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	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.	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 • Identify sensory details	**Literary Text** • Identify theme • Identify plot • Identify sound effects in words • Identify sensory details	**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 details, imagery, and/or figurative language	**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 • Identify and evaluate author's use of sensory details, imagery, and figurative language

DC 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 • Identify universal themes • Identify figurative language	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 • Compare text with universal themes • Demonstrate understanding	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 text • Respond to and analyze figurative language and

		of figurative language	graphics to interpret the meaning of a poem

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

DC 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: **Language Development** • Identify unknown words • Identify shades of meaning **Informational Text** • Identify central ideas from readings • Identify author's purpose •	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 unknown words • Identify shades of meaning **Informational Text** • Identify central ideas and/or problems from readings • Identify author's purpose	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** • Define unknown words • Identify shades of meaning **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	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 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** • 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 (alliteration, internal rhyme & rhyme scheme)	**Literary Text** • Identify different genres • Identify character’s traits and emotions • Identify setting and problem • Identify sound, figurative language (personification, metaphor, simile, hyperbole) and graphics	**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, length, word position) • Identify style, mood, tone, and meaning	**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 • Draw conclusions about style, mood, tone, and meaning of prose, poetry, or drama based on author's use of figurative language

DC 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: **Language Development** • Identify literal meanings of words **Informational Text** • Identify if a statement is true or false	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 literal and/or figurative meanings of words **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	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 literal and figurative meanings of words **Informational Text** • Identify evidence that supports an arguement • Identify author's stated and implied purpose • Compare known information in a text with unknown information	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** • Distinguish between the literal and figurative meaning of words and explain the emotion or feeling a word can express **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 • Identify theme as it relates to the story	**Literary Text** • Answer questions about fiction techniques • Identify narrator’s point of view, tone, characterization and plot • Identify figurative language in poetry • Identify theme as it relates to the universal theme	**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. • Explain how the theme relates real life, supported with text

DC 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
• Identify operational and relational symbols
	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
	• Identify operational and relational symbols
		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
		• Identify operational and relational symbols
		• Solve for variables in addition,
			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
			• Solve division problems
			• Identify and understand fractions
			• Use and compare fractions with like denominators
			
			Patterns, Relations and Algebra

• 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	• 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	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	• 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

DC 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: **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 **Patterns, Relations 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 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	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** • 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 **Patterns, Relations and Algebra**	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 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 equivalent forms of decimals and fractions **Patterns, Relations and Algebra** • Understand and extend geometric and numeric patterns

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	**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	• 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	• 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

DC CAS-Alt PERFORMANCE LEVEL DESCRIPTORS
Math Grade 5

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 (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 • Solve multiplication and division problems • Multiply decimals and whole numbers	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 • Solve addition and subtraction problems involving fractions • Add and subtract decimals • Solve multiplication and division problems • Multiply decimals and whole 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, decimals, and percents • Identify and understand improper fractions and mixed numbers • Solve addition and subtraction problems involving fractions and express them in simplest form

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

DC 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: 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 Algebra • Disaggregate shapes (e.g.,	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 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 the relationship between variables	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 • 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 • Estimate to solve problems involving fractions, mixed numbers, decimal or percentages.	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 • 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 • 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

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	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	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	• 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

DC 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 in an equation or factorization	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 more than, in addition to, more, less than, half of	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	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

• 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	• Identify linear relationships • Identify factors • Simplify **Data Analysis, Statistics, and Probability** • Define mean, median or mode • Gather data • Identify probabilities	simplify problems • Write two-step linear equation **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	**Patterns, Relations and 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

DC 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: 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 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 and positive values	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 • 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 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	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 • 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 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 *x*s) • Use a functional relationship to solve problems expressed in pictures, graphs, charts and/or equations (e.g., C=π*d* or ^{A}rectangle = *lxw)*	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 • 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 • Select and solve linear equations and/or inequalities • Use equations with variables to analyze proportional relationships (e.g., 2*x*=*y* means that for every *y* there are 2 *x*s) • 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 variable) using pictures, graphs, charts and/or equations (e.g., C=π*d* 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	positive value [(-x)(-y) = xy] 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

DC 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 inequalities	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 inequalities	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	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

• 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	• 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	symbolic manipulation by using factors, positive integer, and simplifying exponents. • Identify equations and 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	linear or quadratic functions. • Apply graphical and algebraic methods to solve linear equations and inequalities **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

		perimeter and circumference • Identify approximate error	• 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

DC 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	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	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	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 study, or o Understanding and identifying types of variables, or o Understanding the

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 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	invalid o Naming and sequence 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	as “validity”, “evidence, “quality”, “scientific variable” and types of 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	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 understand and compare the evolution of organisms

	• Identify a fossil, how it is formed or different types of fossils	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 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	across time

DC 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: **Structure of Matter** • Identify atom • Name elements • Identify periodic table • Identify electron, neutron, proton • Define ions • Recognize and identify scientists • Recognize isotope **Reactions** • Define Atomic Identity (Atomic Number) • Identify a compound • Define slow and fast reaction • Identify catalyst • Identify acids, bases and/or neutrals	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: **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 **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	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: **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 **Reactions** • Compare the size 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: **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** • Explain or use Dalton's Atomic Theory • Distinguish the difference between an element and a compound • Describe different types of reactions

Conservation of Energy • 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)	slow and fast reaction • Define reaction rate • 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”	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 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	• Determine what changes the rate of reaction • Describe the difference between acidic, basic and neutral solutions • 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

DC 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: **Scientific Investigation and Inquiry** • List terms associated with solving scientific problems • Identify scientific "data" and/or "graphs" • Locate graphs in a real world environment **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", "active	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: **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 **Cell Biology** • Describe prokaryotic or eukaryotic cells • Describe commonly found organelles in plants or animals • Label diagrams of plant and animal cells	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: **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 **Cell Biology** • Classify cells as prokaryotic or eukaryotic • Compare OR contrast prokaryotic and eukaryotic	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** • 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** • 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"

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",	• Define "diffusion", "active transport" or "selective permeability" • Define "lipids", "proteins", "carbohydrates", and/or "nucleic 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	• 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 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	and "selective permeability" • Compare and contrast diffusion, active transport, and passivwe 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

"sexual reproduction", or "gamete" • List components of sexual reproduction (sperm, egg, gamete) • Identify organisms that reproduce sexually	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, gamete) • Identify organisms that reproduce sexually and/or asexually	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	offspring in genes • Identify and describe similarities and differences among multiple offspring of the same parents (plant or animal) • 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

		• Determine that organs of the body have specialized cells • Explain the function of specialized cells • Describe the components of sexual reproduction (sperm, egg, and gamete) • Describe how traits of an offspring depend on the combination of dominant and recessive alleles	

Appendix B

Standard Setting Evaluation Results

DC CAS-Alt Standard Setting Meeting
Background Information

The purpose of this form is to collect information on the background of the panelists who served on the Standard Setting panel for the DCPS Alternate Assessment. This information will be tabulated and provided in summary form in the technical report on the Alternate Assessment Standard Setting.

1) Name: _____

2) Gender ☐ Male ☐ Female

3) OPTIONAL: What is your race/ethnicity? (Please choose one.)

☐ American Indian or Alaska Native ☐ Black or African American
☐ Native Hawaiian or Other Pacific Islander ☐ Asian
☐ White ☐ Hispanic
☐ Other _____

4) Where do you teach/work?
School _____

Check all that apply:

☐ Public ☐ Private
☐ Charter ☐ Special Education School

5) Currently, are you a:

☐ Teacher (check all that apply)
- ☐ Regular education
- ☐ ESOL/bilingual education
- ☐ Special education

☐ Administrator: Title _____
☐ Other _____

6) Throughout your career, for how many years have you been:

A teacher _____
- Regular education _____
- ESOL/bilingual education _____
- Special education _____

An administrator _____
Other _____

7) At what grade level(s) do you currently teach or work with?

☐ Preschool	☐ 3rd grade	☐ 7th grade	☐ 11th grade
☐ Kindergarten	☐ 4th grade	☐ 8th grade	☐ 12th grade
☐ 1st grade	☐ 5th grade	☐ 9th grade	
☐ 2nd grade	☐ 6th grade	☐ 10th grade	

8) How long have you been teaching the grade level(s) your currently teach?

_____

9) Additional comments – List any committees, certifications, or specialized roles (e.g., related to curriculum, assessment, or special education) you have been involved with in the past 5 years (e.g., curriculum committee work, training in alternate assessment scoring, etc.):

_____

_____

_____

_____

Name	Sex	Ethnicity	School	Type of school
Ernestine Pierce	female	black or african	Sharpe Health	special education
Michaela Cecilinia Samuel	female	black or african	DCPS office of Academic Serivces School Improvement	Public
Stephanie Jackson	female		Springarm Center	Public special education
Helen Jackson-Baker	female	black or african	Emery ES	Public
Benita	female	black or african	Green/Neval Thomas	Public
Wynetta Jackson	female	black or african	Sharpe Health	Public special education
Laurie Warf	female	black or african	Sharpe Health	Public special education
Celestine L. Alvarez	female		Office of Academic Services	public
Lavern Reid	female	black or african	Kelly Miller	Public
Deborah Williams Robinson	female	black or african	Emery ES	Public
Audrey Hudson	female	black or african	Mamie D Lee	Public special education
S. de Torres	female	asian	Ludlow-Taylor	Public
Stephen L. Snyder	male	white	Mamie D Lee	Public special education
Roxanne Caple-Kelly	female	black or african	Mamie D Lee	Public special education
Josephine Nicholson	female		Garnet-Patterson MS	Public
Stephanie Curothers	female	black or african	Mamie D Lee	Public special education
Avis Sykes	female	black or african	Sharpe Health	Public special education
Rosita Roy	female	black or african	Sharpe Health	Public special education
Cheryl Norgrove-Gooding	female	black or african		public
Dave Knight	male		St. Coletta Special Ed PCS	charter special ed

Position	years experience
special ed teacher	8 (regular ed) 33 (special ed)
school improvement specialist	12 (teacher: 10 gened, 2 ESOL) 2 administrator
regular ed teacher	13
special ed teacher	29
regular ed teacher	30
special ed teacher	22
special ed teacher	22
Numeracy Coach	32 (teacher) 3 (other)
Spanish teacher	10 (teacher) (spanish)
special ed teacher	19
special ed teacher	33
special ed teacher	8
special ed teacher / other	
special ed teacher	12
regular ed teacher	32
special ed teacher	15
special ed teacher	26
special ed teacher	23
math coach	20 (teacher) 1 (other)
IEP and Assessment Coordinator	7 (teacher) 14 (special ed teacher), 5 (administr

Presch	K	1	2	3	4	5	6	7	8	9	10	11	12	Years teaching current grade level
										1	1	1	1	33
1	1	1	1	1	1	1	1							
										1				13
					1	1	1							10
1	1	1	1	1	1	1	1							
							1	1	1	1	1			22
1	1	1	1	1										1
							1	1	1					3
		1	1	1	1									5
												1		1
					1	1	1							3
				1	1	1	1	1	1		1			36
				1	1	1								5/6 10 years
								1	1					28
											1	1		1
						1	1	1	1	1				5
								1	1	1	1			3
										1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	

additional comments
assessment, LSRT, textbook
English as a second language (pk-12); bilingual special ed; special ed (non-categorical) elenentary ed (K-6); school psychologist (pk-12)
instructional councel--public charter, school AP English, Testing committee, committtee for higher academic achievement, school improvement team
Training in alternate assessmetn, trianing in alt scoring, scoring alternate assessment
reading k12 classroom K-6, committees: assessment-standards-curriculum (assessment standard setting, item selection, item review)
adult ed certification, special ed certification
alternate assessment scoring
mathematics resource
committees include: testing committee, LSRT, special ed committee chairperson, certified alternate assesser in 2002, 2003, 2004, 2005
lead teacher, table leader, scorer, standard workshop presenter, scoring training workshop, standard alignment, SCAC, department chair (I can't remember what else)
scorer DC-CAS Alt, curriculum writer --10th grade reading DCPS
lead teacher--7 years; scorer of alt assessment (7 years); course work: authentic assessment, rubric writing. Assisted in development of Teacher's Guide (both versions), Entry Points--summer 06, participation guidelines summer 06, Designed curriculum, assessments and instruction for DC-CAS ALT for all students at Mamie D Lee 2003-2007, personal chauffer to ILSSA staff 2003-2007
worked on DcPS curriculum writing team summer 2004, trained on differentiated Instruction summer 2006
DC-CAS ALT scorer for 2 years, certified categorical K-12 MR
training in alternate assessment scoring
coordinated and completed DC-CAS Alt, IMAP, Alt-MSA, VAAP, DC-PASS portfolio, qualified 2 years to score, scored this past year, participated in alignment study

STANDARD SETTING STUDY
EVALUATION FORM[1]
Day One

The purpose of this Evaluation Form is to provide feedback about the standard setting study. Your opinions will be used to evaluate the standard-setting process. A summary of the results will be provided in the technical report.

Please do not include your name on this evaluation form. We want you to answer candidly. Thank you.

1. Please rate your comfort level with each of the tasks you were asked to perform (please put N/A if not applicable)

Task	Very Comfortable	Comfortable	Uncomfortable	Very Uncomfortable
a. Introduction to DC-CAS Alt				
b. Introduction to scoring				
c. Sample portfolio walk				
d. Review of Draft Performance Level Descriptors				
e. Group Discussions on Proficient Level Descriptor				
f. Revised Proficient Level Descriptor				
g. Group Discussions on Advanced Level Descriptor				
h. Revised Advanced Level Descriptor				

Please explain what could be done to improve your comfort level with each of the tasks:

2. How clear were the explanations provided about the overall standard setting process?

___Very Clear
___Clear
___Unclear
___Very Unclear

2a. If any areas were unclear, please let us know which ones and what could be done to clarify:

[1] Hambleton, Ronald K (2001) "Setting Performance Standards on Educational Assessments and Criteria for Evaluating the Process" in Setting Performance Standards: Concepts, Methods, and Perspectives Edited by Gregory J. Cizek. Pg. 89-116.

2b. If any areas were clear, please let us know which ones and any comments about how to further strengthen the explanations:

3. Please rate the adequacy of the performance level descriptions:

Performance Level Description	**Totally Adequate**	**Adequate**	**Inadequate**	**Totally Inadequate**
Advanced				
Proficient				
Basic				
Below Basic				

4. How would you judge the amount of time spent on training on the DC-CAS Alt and scoring in preparing you to revise the performance level descriptors?

   a. About right
   b. Too much time
   c. Too little time

5. How confident are you that the *Standard-Setting Method* will produce a suitable set of standards for the performance levels: Basic, Proficient, Advanced?

   a. Very Confident
   b. Confident
   c. Somewhat Confident
   d. Not Confident at all

6. Please provide us with suggestions for ways to improve the standard-setting process and this training?

D.C. Standard Setting - day one

Respondent	1a.	1b.	1c.	1d.	1e.	1f.	1g.	1h.	What could be done to improve your comfort level?	2. How clea	2a. If a	2b. If	3. Pleas	3b.Profi	3c. Basi	3d. Below	4. How w	5. How c	6. suggestions?
1	4	4	4	4	4	4	4	4	coffee please!	3	none		we didn't do this!				a	a	coffee please!
2	4	4	4	na	na	na	na	na		4							a	b	
3	3	3	3	na	na	na	na	na		3							a	a	
4	4	4	4	3	3	4	4	3	samples of evaluator response	4			4	4	3	3	a	a	
5	3	3	3	3	2	2	na	na		3	none at this time								
6	4	4	3	na	na	na	na	na		3								a	
7	4	4	2	na	na	na	na	na	less information about DC-CAS/ALT	3	Exactly what are we going to do?						b	c	
8	3	3	3							3								b	
9	4	3	3	na	na	na	na	na		3			3	3	3	3	a	b	
10	3	3	3	na	na	na	na	na		3			3	3	3	3	a	c	
11	3	3	3	na	na	na	na	na		3							a	b	
12	3	3	3	na	na	na	na	na		3							a	b	
13	3	3	3	na	na	na	na	na		4							a	a	
14	3	3	3	na	na	na	na	na	Reviewing portfolios to be sure that I should know exactly what we're looking at.	3									
15	4	3	3	na	na	na	na	na		3		Introduction					a		
16	3	2	3	2					Reviewing more examples of what was done and why it was done.	2	For reg	Exam	3	3	3	3	a	c	
17	4	4	4	na	na	na	na	na		4							a	a	okay
18	4	4	4	na	4	4	4	4		4			4	4	4	4	a	a	
19	4	4	4	4	na	na	na	na		4			4	4	4	4	a	a	
20	4	4	4	4						4							a	a	
21	4	4	2	na	na	na	na	na	I was working with general education/content folks and am not sure how effective I was in explaining the Alternate Assessment portfolios of the only points handing them out was helpful. The folks at my table did not seem to have an accurate understanding of the alternate assessment. Not sure what can be done about that at this point.	3	The ge	I've been doing this for years, so my unde					a	b	
Average Score	4	3	3	3	3	4	4	4		3.29			3.50	3.50	3.33	3.33			

Question 4 rated as follows: a-About right, b-Too much time, c-Too little time

Questions 1a. Through 1h. Have been scored as follows: 4 very comfortable, 3 comfortable, 2 uncomfortable, and 1 very uncomfortable.

Question 2 is rated as follows: 4 very clear, 3 clear, 2 unclear, and 1 very unclear.

Question 5 rated as follows: a-Very Confident, b-Confident, c-Somewhat Confident, d-Not at all Confident

Question number 3a. Through 3d. are rated as follows: 4 Totally Adequate, 3 Adequate, 2 Inadequate, 1 Totally Inadequate

EVALUATION FORM[1]
Day Two

The purpose of this Evaluation Form is to provide feedback about the standard setting study. Your opinions will be used to evaluate the standard-setting process. A summary of the results will be provided in the technical report.

Please do not include your name on this evaluation form. We want you to answer candidly. Thank you.

1. Please rate your comfort level with each of the tasks you were asked to perform

Task	Very Comfortable	Comfortable	Uncomfortable	Very Uncomfortable
a. Review of yesterday's work				
b. Review of Draft Performance Level Descriptors				
c.. Group Discussions on Proficient Level Descriptor				
d. Revised Proficient Level Descriptor				
e.. Group Discussions on Basic Level Descriptor				
f. Revised Basic Level Descriptor				
g. Group Discussions on Below Basic Level Descriptor				
h. Revised Below Basic Level Descriptor				
i. Introduction to the standard setting process				
j. Description of Body of Work method				
k. Round one				

Please explain what could be done to improve your comfort level with each of the tasks:

[1] Hambleton, Ronald K (2001) "Setting Performance Standards on Educational Assessments and Criteria for Evaluating the Process" in Setting Performance Standards: Concepts, Methods, and Perspectives Edited by Gregory J. Cizek. Pg. 89-116.

2. How clear were the explanations provided about the performance level descriptions?

___Very Clear
___Clear
___Unclear
___Very Unclear

2a. If any areas were unclear, please let us know which ones and what could be done to clarify:

2b. If any areas were clear, please let us know which ones and any comments about how to further strengthen the explanations:

3. Please rate the adequacy of the performance level descriptions:

Performance Level Description	**Totally Adequate**	**Adequate**	**Inadequate**	**Totally Inadequate**
Advanced				
Proficient				
Basic				
Below Basic				

4. How adequate was the training provided on the DC-CAS Alt portfolios and scoring to prepare you to classify the student portfolios?

a. Totally Adequate
b. Adequate
c. Somewhat Adequate
d. Totally Inadequate

5. How would you judge the amount of time spent on training on the DC-CAS Alt and scoring in preparing you to classify the student portfolios?

a. About right
b. Too much time
c. Too little time

D.C. Standard Setting - day two

Respondent	1a.	1b.	1c.	1d.	1e.	1f.	1g.	1h.	1i.	1j.	1k.	Wh	2. How cle	2a. If a	2b. If	3. Plea	Profici	Basic	Below	4. How ade	5. How would you juc
1	4	2		3	3	3	3	3	n/a	n/a	n/a		3							b	a
2	4	4	4	3	3	3	3	3					4							a	a
3	3	3	3	3	3	3	3	3	n/a	n/a	n/a		3			3	3	3	3	c	
4	3	n/a	n/a	n/a	3	3	3	3		n/a	n/a										
5		4	4	4	4	4	4	4					3							b	a
6	3	3	3	3	3	3	3	3	n/a	n/a	n/a										
7	n/a	3	3	3	3	3	3	3													
8	4	3	3	3	3	3	3	3	n/a	n/a	n/a	Hav	2	For me as a		3	3	3	3		
9	1	1	1	1	1	1	1	1	n/a	n/a	n/a										
10	4	3	4	3	4	4	3	3	n/a	n/a	n/a		2								
11	4	4	4	4	4	4	4						4			4	4	4	4	a	
12	3	3	3	3	3	3	3	3	n/a	n/a	n/a		3	Some of the		3	3	3	3		
13	3	4	4	4	4	4	4	4	n/a	n/a	n/a	It w	2	Time was wa		3	3	3	3		
14	n/a	4	4	3	3	3	3	3	n/a	n/a	n/a		3	Vague	No co	3	3	3	3	n/a	n/a
15	4	4	4	4	3	3	3	3	n/a	n/a	n/a	A c	4			4	4	4	4	a	a
16		3	4	3	4	3	4	3	n/a	n/a	n/a		3	It was made		3	3	3	3		
17	3	3	3	3	3	3	3	3	n/a	n/a	n/a		4			3	3	3	3		
18																					
19																					
20																					
21																					
Average Score	3	3	3	3	3	3	3	3	###				3.08			3.22	3.22	3.22	3.22		

Questions 1a. Through 1k. Have been scored as follows: 4 very comfortable, 3 comfortable, 2 uncomfortable, and 1 very uncomfortable.

Question 2 is rated as follows: 4 very clear, 3 clear, 2 unclear, and 1 very unclear.

Question number 3 is rated as follows: 4 Totally Adequate, 3 Adequate, 2 Inadequate, 1 Totally Inadequate

EVALUATION FORM[1]
Day four

The purpose of this Evaluation Form is to provide feedback about the standard setting study. Your opinions will be used to evaluate the standard-setting process. A summary of the results will be provided in the technical report.

Please do not include your name on this evaluation form. We want you to answer candidly. Thank you.

1. Please rate your comfort level with each of the tasks you were asked to perform

Task	Very Comfortable	Comfortable	Uncomfortable	Very Uncomfortable
a. Round two				
b. Round three				
c. Round four				
d. Group discussions				

Please explain what could be done to improve your comfort level with each of the tasks:

2. How clear were the explanations provided about the overall standard setting process?

___Very Clear
___Clear
___Unclear
___Very Unclear

2a. If any areas were unclear, please let us know which ones and what could be done to clarify:

2b. If any areas were clear, please let us know which ones and any comments about how to further strengthen the explanations:

3. Please rate the adequacy of the performance level descriptions:

Performance Level Description	**Totally Adequate**	**Adequate**	**Inadequate**	**Totally Inadequate**
Advanced				
Proficient				
Basic				
Below Basic				

[1] Hambleton, Ronald K (2001) "Setting Performance Standards on Educational Assessments and Criteria for Evaluating the Process" in Setting Performance Standards: Concepts, Methods, and Perspectives Edited by Gregory J. Cizek. Pg. 89-116.

4. How adequate was the training provided on the DC-CAS Alt portfolios and scoring to prepare you to classify the student portfolios?

a. Totally Adequate
b. Adequate
c. Somewhat Adequate
d. Totally Inadequate

5. How would you judge the amount of time spent on training on the DC-CAS Alt and scoring in preparing you to classify the student portfolios?

a. About right
b. Too much time
c. Too little time

6. Indicate the importance of the following factors in your classification of student performance.

Factor	**Very Important**	**Important**	**Somewhat Important**	**Not Important**
The descriptions of Below Basic, Basic, Proficient, and Advanced				
Your perceptions of the abilities of students taking the DC-CAS Alt				
Your perceptions of the quality of teaching illustrated in the portfolios				
Your own classroom experience				
Your initial classification of student performance on each entry				
Panel discussions				
The initial classifications of other panelists				

7. How would you judge the time allotted to the do the *first* classifications of the student performance on each booklet section?

a. About right
b. Too much time
c. Too little time

8. How would you judge the time allotted to *discuss* the *first* set of panelists' classifications?

a. About right
b. Too much time
c. Too little time

9. What confidence do you have in the classification of students at the ADVANCED level?

a. Very High
b. High
c. Medium
d. Low

10. What confidence do you have in the classification of students at the Proficient level?

a. Very High
b. High
c. Medium
d. Low

11. What confidence do you have in the classification of students at the Basic level?

a. Very High
b. High
c. Medium
d. Low

12. What confidence do you have in the classification of students at the Below Basic level?

a. Very High
b. High
c. Medium
d. Low

13. How confident are you that the *Standard-Setting Method* will produce a suitable set of standards for the performance levels: Basic, Proficient, Advanced?

a. Very Confident
b. Confident
c. Somewhat Confident
d. Not Confident at all

Please answer the following questions about your classification of student performance

14. What strategy did you use to assign students to performance categories?

15. Were there any specific problems or exercises that were *especially influential* in your assignment of students to performance categories? If so, which ones?

16. Please provide us with suggestions for ways to improve the standard-setting process and this training.

DC Standard Setting - Day four

Respond	1a.	1b.	1c.	1d.	Please explain what could be done to improve your comfort level.
1	4	4	4	4	
2	4	4	4	4	More time!
3	4	4	4	4	
4	4	4	4	4	
5	3	4	4	4	n/a
6	4	4	4	4	None.
7	4	4	4	4	
8	4	4	4	3	Power Point examples.
9	4	4	4	4	
10	2	3	3	4	More exposure to rating portfolios and practice viewing them.
11	3	4	4	4	Given maybe the average percentage of overall test scores, where do most state performance level look like.
12	3	3	4	4	
13	4	3	3	4	Hear more examples of what special educators deal with on a daily basis with the 1% group we are writing standards for.
14	3	3	3	3	More hands on - detailed instructions.
15	3	3	3	4	We needed more prior knowledge. It would have been very difficult if we had not teamed with knowledgeable people.
16	3	3	4	4	With increased experience, things become clearer, method used was great.
17					
18					
19					
20					
21					
Average	4	4	4	4	

Questions 1a. through 1d. are scored as follows: 4 very comfortable, 3 comfortable, 2 uncomfortable, and 1 very uncomfortable.

Que

2. How cle	2a.	2b.	3. Ple	Profic	Basic	Below	4. How a	5. Ho	6a.	6b.	6c.	6d.	6e.	6f.	6g.
4			4	4	4	3	a	a	4	4	4	4	4	4	4
4	Nor	Prin	4	4	3	3	a	a	2	1	2	2	4	4	2
4			3	3	3	3	a	a	4	4	4	4	4	4	4
4			4	4	4	4	a	a	4	4	4	4	4	4	4
4	n/a	Cut	4	4	4	4	a	a	4	4	4	4	3	4	3
4	Nor	Non	3	3	3	3	b	a	4	4	4	3	3	3	3
4			4	4	4	4	a	a	4	4	4	4	4	4	4
4	Samples		3	3	4	3	b	a	4	4	4	3	4	4	4
3			3	3	3	3	a	a	4	2	2	4		4	4
4			3	3	4	4	c	c	4	4	4	4	4	4	4
3	Exactly v		3	4	4	4	a	b	4	3	2	4	3	4	4
3		As a	4	4	4	4	a	a	4	4	4	4	4	4	4
3			2	2	4	4	b	a	3	3	3	2	3	3	3
3			3	3	3	3	c	a	4	4	4	4	4	2	4
3	I always		3	3	3	3	b	a	4	4	4	4	4	4	4
4		Guic	4	4	3	4	a	a	4	4	4	4	4	4	4
3.625			3.38	3.44	3.56	3.50			3.81	3.56	3.56	3.63	3.73	3.75	3.69
		Question 3 is scored as follows: 4 Totally Adequate, 3 Adequate, 2 Inadequate, and 1 Totally Inadequate.													
								Questions 6a. Through 6g. are scored as follows: 4 Very Important, 3 Important, 2 Somewhat Important, 1 Not Important.							
		Question 4 is scored as follows: a-Totally Adequate, b-Adequate, c-Inadequate, and d-Totally Inadequate.													
estion 5 rated as follows: a-About right, b-Too much time, c-Too little time															

7. How	8. How wo	9. What confiden	10. What confide	11. What confidence do	12. What confide	13. How confident are
a	a	a	a	b	b	b
a		a	b	c	c	b
a	a	c	c	c	d	b
a	a	a	a	a	a	a
a	a	a	a	a	a	a
a	a	b	b	b	b	b
a	a	a	a	a	a	a
a	b	a	a	a	a	b
	a	b	b	a	b	b
c	a	a	a	a	a	a
a	a	c	b	b	a	c
a	a	a	a	a	a	a
a	a	d	c	b	b	c
a	a	b	b	b	b	c
a	a	b	b	b	b	b
a	a	b	a	a	b	a

Questions 7 & 8 are scored as follows: a-About Right, b-Too Much time, c-Too little time.

Questions 9-12 are scored as follows: a-Very High, b-High c-Medium and d-Low.

Question 13 is scored as follows: a-Very Confident b-Confident c-Somewhat Confident d-Not Confident

14. What strategy did ou use to assign students to performance categories?
Reviewed portfolios - without scores, then with scores.
Holistic look, scoring experience, scores in individual dimensions.
Discussion, viewing performance level descriptors.
I used the strategies provided.
Mathematical.
Logical, mathematical strategies.
We used analgation of the score.
Task Performance.
Collaboration.
Performance % and the descriptors of each level.
Level of difficulty. Age appropriate.
Look at sstudents ability or inability physically.
I followed the formula.
Score and tally each area.

15. Were there any specific problems or exercises that were *especially influential* in your assignment of students to performance categor
Forgot.
None, all the same.
No.
No.
None.
The exercises that were especailly influential in my assignment of students to performance categories was the performance level descriptors and the portfolios.
Samples
No.
Just the discussion with my group was just so helpful.
When the performance was low or all 1's and the other two dimension had high scores.
Activity not matching stated skill.
The fact that we are dealing with 1% of a population.
No.
Whether skills were targeted; age appropriateness; clarity of examples; required items included.

16. Please provide us with suggestions for ways to improve the standard-setting process and this training.

More time - felt rushed.

I agreed with the method.

Give the general picture clearer in advance.

More detailed presentation on day one.

Many more opportunities to to work with people to achieve their goal.

Monitor the pace of each group.

Need to be more realistic when dealing with the 1% group as far as Basi-BB-P & A status.

You definitely need to team regular education teachers with special education teachers and those who had experience with the process.

2008 DC Standard Setting Evaluations
DAY 1
16 total

1. Please rate your comfort level with each of the tasks you were asked to perform

Task	Very Comfortable	Comfortable	Uncomfortable	Very uncomfortable
Introduction to DC-CAS Alt	**11 (69%)**	**5 (31%)**		
Introduction to scoring	**10 (63%)**	**5 (31%)**	**1 (6%)**	
Sample Portfolio walk	**10 (63%)**	**5 (31%)**	**1 (6%)**	
Review of draft performance level descriptors	**10 (63%)**	**4 (25%)**	**1 (6%)**	
Group discussions on proficient level descriptor	**10 (63%)**	**3 (19%)**	**1 (6%)**	

Please explain what could be done to improve your comfort level with each of the tasks:

-More comfy chairs
-Great presentation as a presenter she was good at her craft
-Using computers during the workshop
-Today is the first day! I am sure by the end of the sessions I will be very comfortable with the process
-Review and state implication for Gen. Ed. teacher implication
-Show example earlier. I was a little lost during the powerpoint seeing a data sheet earlier would make the powerpoint more relevant
-Actual experience. Sample scoring

2. How clear were the explanations provided about the overall standard setting process?

Very Clear: **10 (63%)**
Clear: **6 (37%)**

2a. If any areas were unclear, please let us know which ones and what could be done to clarify:

-At first I was lost about scoring, but it became clearer with visuals and explanations
-Outstanding
-I just need more hands on on the process
-P.P. was long and I was lost until the portfolio walk
-It may be helpful to anyone who may be new to know that if they want a "5"; the more complex category must be used

2b. If any areas were clear, please let us know which ones and any comments about how to further strengthen the explanations.

-Rubric
-I understand the data charts and what could be in a portfolio
-Clear explanation on the overview
-ok so far

3. How would you judge the amount of time spent on training on the DC-CAS Alt and scoring in preparing you to revise the performance level descripors?

About right: **14 (88%)**
Too much time: **1 (6%)**

4. How confident are you that the *Standard Setting Method* will produce a suitable set of standards for the performance levels: Basic, Proficient, Advanced?

a. Very confident…….**6 (43%)**
b. Confident ……**5 (36%)**
c. Somewhat confident **3 (21%)**

5. Please provide us with suggestions for ways to improve the standard setting process and this training..

-Less review of powerpoint-more hands on interaction/review of portfolios
-Things seem to be on target
-On point so far I'll keep you posted

DAY 2
14 total

1. Please rate your comfort level with each of the tasks you were asked to perform

Task	Very Comfortable	Comfortable	Uncomfortable	Very uncomfortable
a. Review of yesterday's work	**11 (79%)**	**3 (21%)**		
b. Review of Draft performance level descriptors	**13 (93%)**	**1 (7%)**		
c. Group discussions proficient level descriptor	**12 (86%)**	**2 (14%)**		
d. revised proficient level descriptor	**11 (79%)**	**3 (21%)**		
e. group discussions on below basic descriptor	**12 (86%)**	**2 (14%)**		
f. revised basic level descriptor	**12 (86%)**	**2 (14%)**		
g. group discussions on below basic level descriptor	**11 (79%)**	**3 (21%)**		
h. Revised below basic level descriptor	**12 (86%)**	**2 (14%)**		

Please explain what could be done to improve your comfort level with each of the tasks:
-I am very comfortable with the group that I am working with even though we argued back and forth there is a level of respect for each other

How clear were the explanations provided about the performance level descriptions
Very clear: **9 (64%)**
Clear: **5 (36%)**

-The process became clearer to me when all three groups were giving feed back
-I worked with a great group

2a. If any areas were unclear, please let us know which ones and what could be done to clarify:
-The process became clearer to me when all three groups were giving feed back
-I worked with a great group

2b. If any areas were clear, please let us know which ones and any comments about how to further strengthen the explanations:

3. Please rate the adequacy of the performance level descriptions:

Performance level description	**Totally adequate**	**Adequate**	**Inadequate**	**Totally inadequate**
Advanced	**13 (93%)**	**1 (7%)**		
Proficient	**11 (79%)**	**2 (15%)**		
Basic	**10 (71%)**	**2 (15%)**		
Below Basic	**10 (71%)**	**1 (7%)**		

Day 3
13 total

1. Please rate your comfort level with each of the tasks you were asked to perform

Task	Very Comfortable	Comfortable	Uncomfortable	Very Uncomfortable
a. Introduction to the standard setting process	**9 (69%)**	**4 (31%)**		
b. Description of Body of Work method	**8 (62%)**	**5 (38%)**		
c. Round one	**4 (31%)**	**6 (46%)**	**3 (23%)**	
d. Round two	**7 (54%)**	**6 (46%)**		
e. Group Discussions	**10 (77%)**	**2 (15%)**	**1 (8%)**	

Please explain what could be done to improve your comfort level with each of the tasks:
-Explain the procedure more
-Provide purpose for sorting

2. How clear were the explanations provided about the overall standard setting process?
Very Clear: **6 (46%)**
Clear: **7 (54%)**

2a. If any areas were unclear, please let us know which ones and what could be done to clarify:
2b. If any areas were clear, please let us know which ones and any comments about how to further strengthen the explanations:

3. Please rate the adequacy of the performance level descriptions

Performance level description	**Totally adequate**	**Adequate**	**Inadequate**	**Totally inadequate**
Advanced	**8 (62%)**	**4 (31%)**		
Proficient	**9 (69%)**	**4 (31%)**		
Basic	**8 (62%)**	**4 (31%)**		
Below Basic	**8 (62%)**	**4 (31%)**		

4. How adequate was the training provided on the DC-CAS Alt portfolios and scoring to prepare you to classify the student portfolios?
   a. Totally Adequate: **6 (46%)**
   b. Adequate: **4 (31%)**
   c. Somewhat Adequate:**2 (15%)**

5. How would you judge the amount of time spent on training on the DC-CAS Alt and scoring in preparing you to classify the student portfolios?
   a. About right: **11 (85%)**
   b. Too much time: **1 (8%)**
   c. Too little time: **0**

6. Indicate the importance of the following factors in your classification of student performance.

Factor	Very Important	Important	Somewhat Important	Not Important
The descriptions of Below Basic, Basic, Proficient, and Advanced	**9 (69%)**	**4 (31%)**	0	

Your perceptions of the abilities of students taking the DC-CAS Alt	**11 (85%)**	**0**	**1 (8%)**	
Your perceptions of the quality of teaching illustrated in the portfolios	**9 (69%)**	**2 (15%)**	**0**	
Your own classroom experience	**12 (92%)**	**0**	**0**	
Your initial classification of student performance on each entry	**7 (54%)**	**4 (31%)**	**2 (15%)**	
Panel discussions	**9 (69%)**	**4 (31%)**	**0**	
The initial classifications of other panelists	**8 (62%)**	**5 (38%)**	**0**	

7. How would you judge the time allotted to the do the *first* classifications of the student performance?
   a. About right: **11 (85%)**
   b. Too much time: **0**
   c. Too little time: **1 (8%)**

8. How would you judge the time allotted to *discuss* the *first* set of panelist's classifications?
   a. About right: **10 (77%)**
   b. Too much time: **0**
   c. Too little time: **1 (8%)**

9. What confidence do you have in the classification of student at the ADVANCED level?
   a. Very High: **7 (54%)**
   b. High: **5 (38%)**
   c. Medium: **1 (8%)**

10. What confidence do you have in the classification of students at the proficient level?
   a. Very High: **7 (54%)**
   b. High: **5 (38%)**
   c. Medium: **1 (8%)**

11. What confidence do you have in the classification of students at the Basic level?
   a. Very High: **6 (46%)**
   b. High: **5 (38%)**
   c. Medium: **2 (15%)**

12. What confidence do you have in the classification of students at the Below Basic level?
   a. Very High: **8 (62%)**
   b. High: **4 (31%)**
   c. Medium: **1 (8%)**

13. How confident are you that the *Standard-Setting Method* will produce a suitable set of standards for the performance levels: Basic, Proficient, Advanced?
   a. Very confident: **5 (38%)**
   b. Confident: **5 (38%)**
   c. Somewhat Confident: **3 (23%)**

14. What strategy did you use to assign students to performance categories?

-Looking for convergence in cut off scores
-Looked at portfolios globally and sorted based on "gut" feeling compared to scoring rubric. Those that were not easily in one category or the other, I scored and then determined if it was a "high lower" area or "low higher"
-Reviewed performance rubric and PLDs
-Using the descriptors DCCAS was most helpful
-Assigning scores
-I looked at the descriptions and rubrics to determine the categories
-I used the 2 cut of 3 method
-Decision on how targeted skill is linked to the grade level standard
-I used data presented; collaborated with peers when in trouble
-Recognize if student was progress/attainment….analyze of theoretical protocol individually and used formula to assign score

15. Were there any specific problems or exercises that were *especially influential* in your assignment of students to performance categories? If so, which ones?
-Comparing cut off scores
-An intimate understanding of the scoring rubric was essential.
-The method we used was assigning numbers based on the performance rubric
-Getting the correct score for the classification of proficient, advanced, ect.
-The second process to compare with initial
-I have very high expectations with students on their performance
-Level of support given to the student
-All data was important

16. Please provide us with suggestions for ways to improve the standard-setting process and this training.
-Score sheets- should have number scores in each category (not just performance)
-More direct instruction on concepts that are not inherent to special educators or general educators. For example I understand the scoring rubric, but the denied instruction on how to sort for the first round of scoring.
-Everything is being presented in an appropriate, teacher-friendly manner

Day 4
13 total

1. Please rate your comfort level with each of the tasks you were asked to perform.

Task	Very Comfortable	Comfortable	Uncomfortable	Very Uncomfortable
a. round three	**11 (85%)**	**2 (15%)**		
b. round four	**8 (62%)**	**2 (15%)**		
c. Group discussions	**8 (62%)**	**2 (15%)**		

Please explain what could be done to improve your comfort level with each of the tasks:
-This was a part of the training that allowed me to truly understand how to score the documentation
-Need more practice in applying what is learned to evaluating portfolio

2. How clear were the explanations provided about the overall standard setting process?
Very Clear: **10 (77%)**
Clear: **3 (23%)**

2a. If any areas were unclear, please let us know which ones and what could be done to clarify:
-Review of cutoff score

2b. If any areas were clear, please let us know which ones and any comments about how to further strengthen the explanations:
-Examining student portfolios

3. Please rate the adequacy of the performance level descriptions:

Performance level description	Totally adequate	Adequate	Inadequate	Totally inadequate
Advanced	**9 (69%)**	**3 (23%)**	**1 (8%)**	
Proficient	**10 (77%)**	**3 (23%)**		
Basic	**10 (77%)**	**3 (23%)**		
Below Basic	**10 (77%)**	**3 (23%)**		

4. How adequate was the training provided on the DC-CAS Alt portfolios and scoring to prepare you to classify the student portfolios?
a. Totally Adequate: **9 (69%)**
b. Adequate: **2 (15%)**
c. Somewhat Adequate:**2 (15%)**

5. How would you judge the amount of time spent on training on the DC-CAS Alt and scoring in preparing you to classify the student portfolios?
a. About right: **11 (85%)**
b. Too much time: **0**
c. Too little time: **2 (15%)**

6. Indicate the importance of the following factors in your classification of student performance.

Factor	Very Important	Important	Somewhat Important	Not Important
The descriptions of Below Basic, Basic, Proficient, and Advanced	**10 (77%)**	**3 (23%)**		
Your perceptions	**10 (77%)**	**2 (15%)**		

of the abilities of students taking the DC-CAS Alt				
Your perceptions of the quality of teaching illustrated in the portfolios	**10 (77%)**	**3 (23%)**		
Your own classroom experience	**10 (77%)**	**2 (15%)**	**1 (8%)**	
Your initial classification of student performance on each entry	**9 (69%)**	**2 (15%)**	**2 (15%)**	
Panel discussions	**6 (46%)**	**3 (23%)**		
The initial classifications of other panelists	**8 (62%)**	**4 (31%)**		

7. How would you judge the time allotted to the do the *first* classifications of the student performance?
   a. About right: **9 (69%)**
   b. Too much time: **0**
   c. Too little time: **1 (8%)**

8. How would you judge the time allotted to *discuss* the *first* set of panelist's classifications?
   a. About right: **11 (85%)**
   b. Too much time: **0**
   c. Too little time: **1 (8%)**

9. What confidence do you have in the classification of student at the ADVANCED level?
   a. Very High: **9 (69%)**
   b. High: **1 (8%)**
   c. Medium: **2 (15%)**

10. What confidence do you have in the classification of students at the proficient level?
   a. Very High: **8 (62%)**
   b. High: **3 (23%)**
   c. Medium: **1 (8%)**

11. What confidence do you have in the classification of students at the Basic level?
   a. Very High: **7 (54%)**
   b. High: **4 (31%)**
   c. Medium: **1 (8%)**

12. What confidence do you have in the classification of students at the Below Basic level?
   a. Very High: **9 (69%)**
   b. High: **2 (15%)**
   c. Medium: **1 (8%)**

13. How confident are you that the *Standard-Setting Method* will produce a suitable set of standards for the performance levels: Basic, Proficient, Advanced?
   a. Very confident: **6 (46%)**
   b. Confident: **7 (54%)**
   c. Somewhat Confident: **0**

14. What strategy did you use to assign students to performance categories?
-DC-CASS -ALT performance and performance descriptions
-Using the PLD
-I looked at work samples and aligned these with the scoring rubrics, entry points and descriptions
-I looked at the level of complexity
-Close adherence to the PLDs combined with the scorability factors of the rubric weighing the content of portfolio vs. whether or not it was scorable
-Achievment of target skills
-Looking at the large graphs
-Looked at the portfolios argued, debated with collegues based on expectations
-Participation in several rounds of cut score/development based on portfolio analysis

15. Were there any specific problems or exercises that were *especially* ***influential*** in your assignment of students to performance categories? If so, which ones?

-Descriptions were sometimes confusing
-I'm still a little confused about how to interpret data.
-Individual learner characteristic
-Group talk
-To high expectations that the teachers placed on their students
-We used the portfolio to establish the cut scores we arrived at

16. Please provide us with suggestions to ways to improve the standard setting process and this training.