



**District of Columbia  
Comprehensive Assessment System-Alternate Science  
Assessment Portfolio**

**Procedures Handbook  
2014–2015**

Prepared by

District of Columbia Office of the State Superintendent of Education (OSSE)

&

Pearson

**PEARSON**

ALWAYS LEARNING

## Acknowledgements

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# Procedures Handbook

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# Chapter 1

## Introduction to the District of Columbia Comprehensive Assessment System-Alternate Science Assessment (DC CAS-Alt Science)

### **Purpose of the DC Comprehensive Assessment System-Alternate Science Assessment**

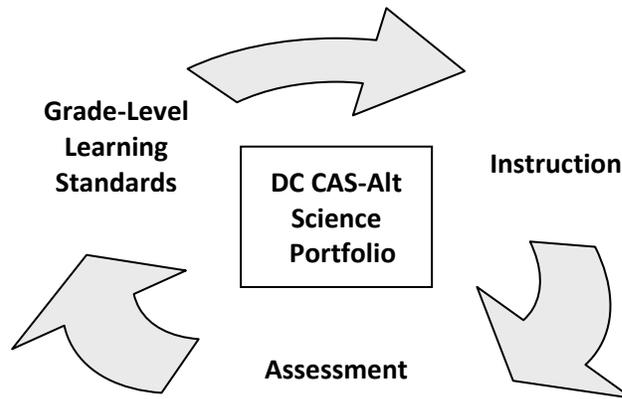
The purpose of the DC Comprehensive Assessment System-Alternate Science Assessment (DC CAS-Alt Science) is to provide a measure of progress toward achievement of the Office of the State Superintendent of Education (OSSE) learning standards in Science. This portfolio assessment is designed for students with the most significant cognitive disabilities who are unable to participate in the DC CAS Science general assessment even with accommodations.

Accountability through assessment provides equity in programmatic and educational opportunities for all students. Alternate assessment ensures a unified evaluation system that links program and student accountability to the learning standards implemented in the general curriculum.

The 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 Alternate Assessment were made in response to the No Child Left Behind Act and the reauthorization of IDEA in 2004. At that time the Alternate Assessment was renamed the DC Comprehensive Assessment System-Alternate Assessment (DC CAS-Alt). The DC CAS-Alt for Reading and Mathematics was redesigned to comply with the high technical quality standards specified in the requirements of NCLB. The DC CAS-Alt has now been revised to include Science only (DC CAS-Alt Science).

The inclusion of students with significant cognitive disabilities in the assessment and accountability system is critical for ensuring the appropriate allocation of resources and learning opportunities for all. The DC CAS-Alt Science was designed for a very small percentage of the total school population for whom traditional assessments, even with accommodations, would be an inappropriate measure of progress.

This portfolio assessment represents a multi-disciplinary approach to student learning and performance that effectively links grade-level learning standards, instruction, and assessment. Figure 1 highlights this relationship.



**Figure 1: Linkage to Instruction**

High quality assessment practices such as those employed in the development of a DC CAS-Alt Science student portfolio provide information upon which to base ongoing development of curriculum that is responsive to individual student needs. Students with severe or multiple disabilities are valued and contributing members of their schools and communities; the DC CAS-Alt Science promotes the vision of enhancing capacities and integrated life-opportunities for students who require an alternate assessment based on alternate achievement standards in order to show what they know and can do related to grade-level learning benchmarks.

### **Guiding Principles for DC Office of the State Superintendent of Education Alternate Assessment**

The following guiding principle established by the Alternate Assessment Core Team builds on the foundation provided by the OSSE Vision Statement:

“All District residents receive an excellent education.”

Therefore, the DC CAS-Alt Science

- merges curriculum, instruction, and assessment;
- ensures all students access to the general curriculum;
- encourages rigorous standards be set for all students;
- ensures that all students have the opportunity to demonstrate what they have learned; and
- meets the state assessment policy.

### **Description of DC CAS-Alt Science Assessment Portfolio**

The DC CAS-Alt Science Assessment is a flexible, dynamic, and objective documentation of student and program performance presented in a portfolio format. Evidence for the portfolio is collected throughout the school year to demonstrate the student's performance in relation to state learning standards. While the student and the special education teacher are the major contributors, all members of the instructional team are accountable for the development of the DC CAS-Alt Science

Assessment Portfolio. Students participating in general education classrooms can also have evidence submitted by their general education teacher.

Quality portfolio assessment allows teachers to identify the learning needs of individual students, review the appropriateness of curriculum goals and content, and evaluate the quality of their own teaching.

This process encourages the teacher to document student and program performance by compiling student performance data, work samples, and other documentation of student performance.

### **The Assessment Process**

The DC CAS-Alt Science Assessment continues to promote student learning as the basic building block of each portfolio. Each of the entries in the portfolio matches distinct dimensions of the scoring rubric. These dimensions include student performance on a targeted skill within the context of grade-level standards, the level of complexity, and the degree to which appropriate supports are provided. A portfolio assessment accomplishes many purposes for students with disabilities, including

- merging the processes of instruction and assessment through assessment procedures that are specifically designed to address individual learner characteristics;
- providing multiple opportunities for students to demonstrate performance;
- using authentic or real-life products from classroom instruction; and
- triangulating assessment information to provide an accurate view of student strengths and abilities.

This *DC Comprehensive Assessment System-Alternate Science Assessment Portfolio Procedures Handbook* provides information on the following topics:

- Purpose of the DC CAS-Alt Science Assessment
- Participation Criteria
- Scoring Criteria
- Learning Standards and Instruction
- Scoring Criteria
- Preparation for Submission

## Chapter Two

### Participation Guidelines

The federal No Child Left Behind Act (NCLB) of 2001 requires that all students be assessed. The District of Columbia satisfies this requirement by offering the National Center and State Collaborative (NCSC), comprised of assessments in ELA and Mathematics in grades 3–8 and 11; DC CAS Alt Science in grades 5, 8, and high school Biology. Consistent with NCLB, the Individuals with Disabilities Education Act (IDEA) requires that all students with disabilities be included in the statewide accountability system through accommodations on the regular assessment when appropriate or through an alternate assessment. The DC CAS-Alt Science is based on alternate achievement standards and is designed for those students with the most significant cognitive disabilities who are unable to participate in the regular Science assessment, even when accommodations are provided. This is done by assembling a portfolio of student work using a limited number of prioritized grade-level content standards and predetermined scoring criteria.

#### The Role of OSSE

- OSSE determines eligibility criteria.
- OSSE will review the information provided on the participation criteria form to ensure the documentation is sufficient for students determined eligible for the DC CAS Alt Science.
- Insufficient documentation will result in OSSE’s determination that a student is ineligible for the DC CAS Alt Science.
- OSSE may inform the LEA that the documentation is insufficient, at which point the school may submit additional documentation demonstrating that the student has a significant cognitive disability.

#### Student Eligibility

The Individualized Education Program (IEP) team, with participation from the student when appropriate, is responsible for making the determination of which assessment is appropriate for the student. The IEP team must first consider whether the student can participate in the regular assessment, with or without accommodations. In order to make this determination, the IEP team must have a clear understanding of the difference between the regular and the alternate assessments and the educational implications of their decision.<sup>1</sup> Additionally, the parent(s) or guardian(s) must be informed that the child’s achievement will be measured based on alternate academic achievement standards.<sup>2</sup> If the IEP team determines the student is unable to participate in the regular assessment, a statement of why the DC CAS is not appropriate and why the DC CAS-Alt Science is appropriate for the student is required in the student’s IEP.<sup>3</sup> If the decision is not reflected on the current IEP, an IEP meeting must be held to address and document the decision prior to administering the test. **Students that do not have significant cognitive disabilities are not eligible to take the DC CAS-Alt Science.**

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<sup>1</sup> 34 C.F.R. §200.1(f)(1)(iii)

<sup>2</sup> 34. C.F.R. §300.160(e)

<sup>3</sup> 34 C.F.R. §300.320(a)(6)(ii)

To determine whether the student should take the DC CAS Science assessment or the DC CAS-Alt Science, the IEP team must be knowledgeable about the following:

- Whether student needs substantial modifications or supports to meaningfully access grade-level content
- Whether student requires intensive individualized instruction to acquire and generalize knowledge
- Testing guidelines, test format, and the use of appropriate testing accommodations

The decision for which assessment to administer must be based on the individual characteristics of the student. It may not be based solely on: (a) the mere existence of an IEP or identification in a specific disability category; (b) emotional, behavioral, or physical changes; (c) language differences; (d) excessive or extended absences; or (e) social, cultural, or environmental factors.

The DC CAS-Alt Science is available only to students with the most significant cognitive disabilities who successfully meet specific criteria for participation during the following five-part process:

**Table 1: Five-Part Process for Eligibility Determination and SEDS Registration**

Action	Responsible Party	Completion Date
Part 1: Complete Participation Criteria and Participation Determination Forms	IEP Team, with parental signature	October 17, 2014
Part 2: Complete the Learner Characteristics Inventory (LCI)	Core Teacher	October 17, 2014
Part 3: Parent Acknowledgement sent	Core Teacher	October 17, 2014
Part 4: Last date to enter student data into SEDS*	Core Teacher	October 17, 2014
Part 5: Submit the Student Registration Verification Form	LEA Representative	October 24, 2014

**NOTE:** LEAs may have internal processes and due dates. Please check with your LEA Assessment Director.

Students with 504 plans are not eligible for the DC CAS-Alt Science.

### **Part 1: Participation Criteria and Performance Dimension Determination**

To qualify for the DC CAS-Alt Science or the NCSC assessment, a student’s IEP team must determine that a student is eligible based on answers to the questions below for each area considered. The criteria below characterize a student’s current educational situation. All answers should be based upon clear documentation in the student’s IEP.

- Does the student have a current IEP?
- Does the student have a documented significant cognitive disability that specifies goals and objectives in the IEP?

- Does the student’s curriculum differ significantly from that of nondisabled peers?
- Does the student require explicit and ongoing instruction in functional skills?
  - The IEP must recognize needs in all of the following areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety.
- Does the student require extensive and substantial modifications (e.g., reduced complexity of objectives and learning materials) to the general education curriculum?
  - Extensive and substantial modification means the student learns different objectives, may use different materials, and may participate in different learning activities.
- Does the student require extensive support to perform and participate meaningfully and productively in daily activities in school, home, community and work environments?
- Is the student unable to participate in the DC CAS even with accommodations?

**All questions on the Participation Criteria Form must be answered “Yes” in order for the student to be eligible for the DC CAS-Alt Science or the NCSC assessment. Failure to answer all questions in the affirmative will result in rejection of eligibility for the DC CAS-Alt Science and the NCSC assessment.**

Students who do not meet the eligibility criteria will participate in the DC CAS with or without accommodations, as appropriate, based on his/her IEP. The Participation Guidelines should be completed by **October 17, 2014**.

**Only eligible portfolios will be scored.**

#### **Performance Dimension Determination<sup>4</sup>**

If the student is determined to be eligible to participate in the DC CAS-Alt Science the Performance Dimension Determination Form must also be completed and the results of the decision to use the attainment or progress model to measure performance in Science must be entered on the LCI. To ascertain student performance, the DC CAS-Alt Science performance dimension has been designed to take into consideration a student’s mode of communication. If one of the statements under Performance Dimension A, Attainment, is the best description of the student’s mode of communication, check “yes” on the Participation Criteria form found in Appendix A. If not, check “no” and move on to Performance Dimension B, Progress. If the student’s current mode of communication is best described by one of the statements found in that section, select “yes.” “Yes” can only be selected for one option. The student’s performance will then be scored based on this option.

**Performance Dimension A., Attainment**, should be chosen if the student’s communication is best described by the following indicators:

- 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

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<sup>4</sup> Adapted from the following source: 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](http://www.naacpartners.org/Products/Files/Research_Focus_LCI.pdf)

- Student uses intentional communication but not at a symbolic language-level. The student utilizes understandable communication through such modes as gestures, pictures, objects or textures, or points, etc., to clearly express a variety of intentions.

**Performance Dimension B., Progress**, should be chosen if the student’s communication is best described by the following indicators:

- Student communicates primarily through cries, facial expressions, changes in muscle tone but no clear use of objects or textures, thought regularized gestures, pictures, signs, etc., to communicate;
  - Student alerts to sensory input from another person (e.g., auditory, visual, touch, movement) but requires actual physical assistance to follow simple directions;
- OR
- The student’s response to sensory stimuli (e.g., sound or voice, sight or gesture, touch, movement, smell) is unclear.

The Student Performance Dimension documentation should be complete by **October 17, 2014**.

### **Part 2: Learner Characteristics Inventory (LCI)**

The National Alternate Assessment Center (NAAC) has a validated fifteen-item inventory that describes a student according to his/her primary language, type of classroom setting, expressive and receptive communication, hearing, vision, motor, engagement, attendance, reading, and mathematics skills. This inventory assists teachers in selecting entry points into the DC CAS-Alt Science Learning Standards and provides readers/scorers with a general description of the student’s learning style. A designee of the IEP team must complete the Learner Characteristic Inventory for Alternate Assessments on Alternate Achievement Standards. The Learner Characteristics Inventory is found in Appendix A. The LCI must be completed by **October 17, 2014**.

### **Part 3: Parent Acknowledgement**

Parents must receive written notification that his/her child’s achievement will be measured based on alternate academic achievement standards. The notification must be issued by the school within two weeks after the determination of eligibility is made. Parental acknowledgement that the child will be assessed on alternate achievement standards is required.

Upon completion of the Alternative Assessment Participation Criteria Form, the school must acquire the necessary signatures and easy fax the form into SEDS. The parental verification process for students participating in the DC CAS-Alt Science must be completed by **October 17, 2014**.

### **Part 4: Enter Student Data into the Special Education Data System (SEDS)**

In order for a student to participate in the DC CAS-Alt Science, the student must have a documented significant cognitive disability on his/her IEP and must be entered in SEDS. For the student to be registered for the alternate assessment exam, the IEP team must indicate that alternate assessment is appropriate on the student’s IEP.

The procedure for entering the student in SEDS is as follows. In the section labeled Classroom Accommodations and Testing Participation select the appropriate option for participation in testing. If the Participation Level in testing is “Alternate Assessment,” select the link to the “Participation Guidelines Criteria” in the Accommodations column to open the document that outlines the criteria for alternate assessment. Additional guidance on using the SEDS data base can be found at: <https://sites.google.com/a/dc.gov/seds-help-resources/home>  
Student registration in SEDS must be completed by **October 17, 2014**.

### **Part 5: Complete the NCSC/ DC CAS-Alt Science Student Registration Verification Form**

Local Education Agencies (LEAs) must confirm that all eligible students have been appropriately assigned to the DC CAS Alt in SEDS. The DC CAS Alt Student Registration Verification Form serves as the final verification that:

- The LEA has followed OSSE guidance.
- Each student assigned to the DC CAS Alt has a completed participation criteria form.
- Only students with the most significant cognitive disabilities will participate in the alternate assessment

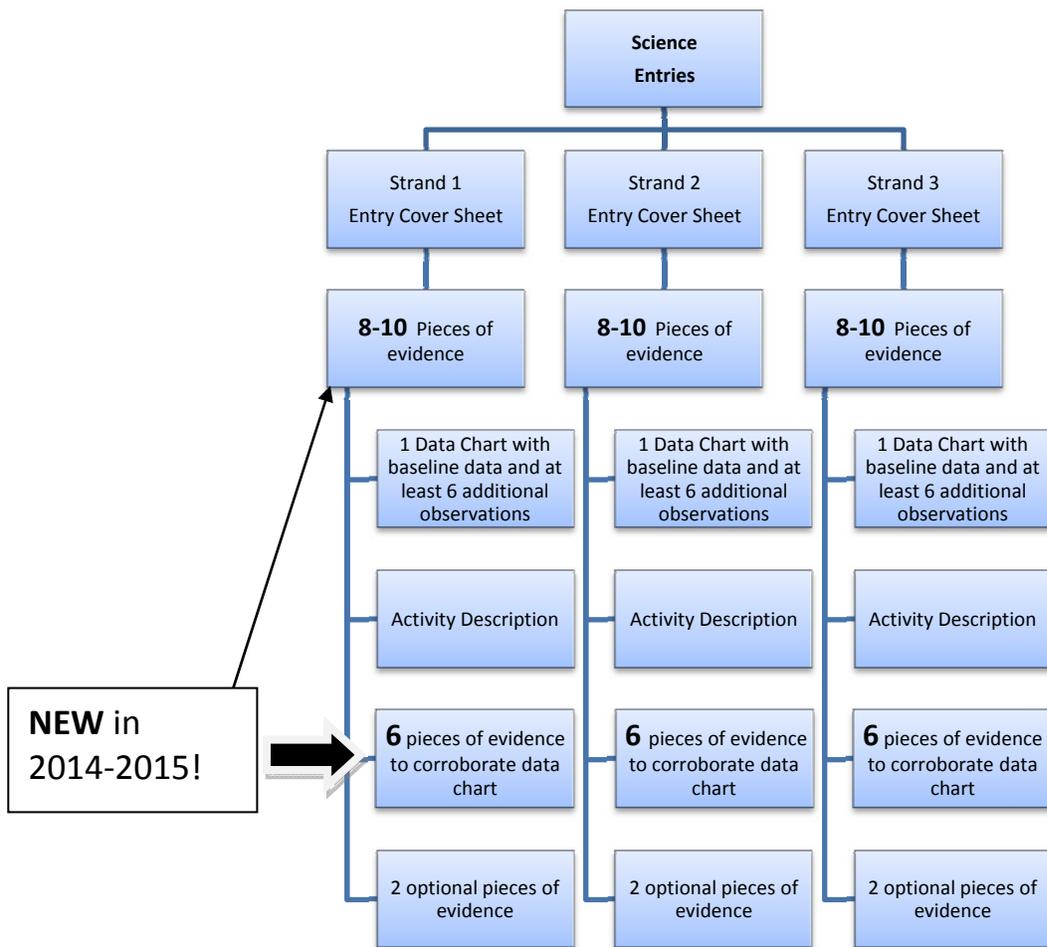
The DC CAS-Alt Science Student Registration Verification Form must be completed and submitted by the LEA DC CAS-Alt Science representative by **October 24, 2014**.

**NOTE:** The forms discussed in this chapter can be found in Appendix A and on the Office of the State Superintendent of Education (OSSE) website at <http://osse.dc.gov/service/dc-cas-alt-participation-criteria-and-forms>

# Chapter Three

## DC CAS-Alt Science Portfolio Contents

The DC CAS-Alt Science portfolio will consist of a body of evidence compiled during the school year that documents the student’s performance. Specific strands and learning standards have been identified for assessment within each content area.



**Figure 2: Portfolio Requirements**

**Note: There must be a minimum of two calendar days (48 hours) between data collection activities for each of the three separate strands required for Science.**

## Requirements for Each Grade

Three separate entries are required for the Science content area in each grade that is assessed. The outline below represents the different learning strands at the levels presented.

### Required Strands for Science

- Grade 5
  - Science and Technology
  - Earth and Space Science
  - Life Science
- Grade 8
  - Matter and Reactions
  - Energy and Waves
  - Forces
- Biology
  - Biology: Cell Biology and Biochemistry
  - Biology: Genetics and Evolution
  - Multicellular Organisms: Plants and Animals

## Required Portfolio Components

A completed Alternate Science Assessment Portfolio must contain the following items:

### Section 1

- Table of Contents
- Learner Characteristics Inventory
- Parent Validation
- Administrator Validation

### Section 2

- Three entries for Science (Grades 5, 8, and Biology only)
  - Entry Cover Sheet(s) for Science Entries
  - 8-10 pieces of evidence for each entry, including 1 Data Collection Sheet, 1+ Activity Description(s), and 6-8 samples of corroborating evidence

## Table of Contents

The Table of Contents provides identifying information that allows readers and scorers to verify the portfolio contents and gives them a sense of its organization, size, and complexity.

The Table of Contents must be filled out completely. Identifying information to be provided includes the following:

- Student Name: name under which the student is enrolled
- Student Nickname (if applicable): name student uses in school environments, if it is different from the enrolled name
- Date of Birth

- Enrolled Grade Level: grade level based on chronological age/grade chart
- Student Identification Number: ten digit USI assigned by OSSE
- Performance Model Used (attainment or progress)

**EXAMPLE: All grades**

Student Name \_\_\_\_\_ Student Nickname \_\_\_\_\_

Date of Birth \_\_\_\_\_ Enrolled Grade Level \_\_\_\_\_

Student Identification Number \_\_\_\_\_

This portfolio is based on  Attainment Model for Performance  
 Progress Model for Performance

**Section 1** of the Table of Contents documents the Learner Characteristics Inventory, Parent and Administrator validation forms, and the optional Parent Permission form for photography/ audio/videotape. Page numbers should be applied, starting with Page 1 as the first page of the LCI.

**EXAMPLE: All grades**

<b>SECTION 1</b>	<b>Page(s)</b>
Learner Characteristics Inventory	<u>1</u>
Parent Validation	<u>4</u>
Administrator Validation	<u>5</u>
Parent Permission to Audio/Videotape	_____

**Sections 2–4** of the Table of Contents follow the same format. Each separate entry within the content area should be designated with a range of pages. Learning strands and the alpha-numeric codes for the learning standards must be provided for all entries. Additionally, the number of pieces of work evidence should be documented in the Table of Contents.

**EXAMPLE: Grade 8**

<b>SECTION 2 SCIENCE</b> (Add strand names and codes for the standards used)	<b>Page(s)</b>
Science Strand 1 <u>Matter and Reactions</u> <u>8.3.2</u>	<u>6-15</u>
<input checked="" type="checkbox"/> Entry Cover Sheet	
<input checked="" type="checkbox"/> Activity Description	
<input checked="" type="checkbox"/> Data Collection Sheet	
<input checked="" type="checkbox"/> Evidence—number of pieces <u>7</u>	

Science Strand 2	Energy and Waves	8.15.4	16–24
<input checked="" type="checkbox"/>	Entry Cover Sheet		
<input checked="" type="checkbox"/>	Activity Description		
<input checked="" type="checkbox"/>	Data Collection Sheet		
<input checked="" type="checkbox"/>	Evidence—number of pieces	6	
Science Strand 3	Forces	8.11.2	25–36
<input checked="" type="checkbox"/>	Entry Cover Sheet		
<input checked="" type="checkbox"/>	Activity Description		
<input checked="" type="checkbox"/>	Data Collection Sheet		
<input checked="" type="checkbox"/>	Evidence—number of pieces	8	

Checkboxes are provided for each component of an entry as a reminder for teachers to ensure all required parts of the entry are present.

**TIP:** If you are presenting multi-page evidence, the first page of the activity should be designated with the page number, followed by “a,” (e.g., 15a). Subsequent pages in the work activity sample should be given alphabetic designations, “b,” through enough letters to complete the sample. For example, if there are four pages in a single piece of evidence, the pages would be numbered 15a, 15b, 15c, and 15d. All pages related to a multi-page piece of work-evidence will have the same page number. Student name and date must appear on all pages; the score for the activity will appear on the first page only. Do not staple multi-page evidence samples.

### **Learner Characteristics Inventory**

The DC CAS-Alt Science registration process, including the completion of the participation guidelines and the Learner Characteristics Inventory (LCI), must be completed by **October 17, 2014**. The original copy of the LCI must be submitted in the student’s portfolio.

### **Parent and Administrator Validation Forms**

Both forms must be completed and submitted with the portfolio to verify agreement with the contents.

### **Parent Permission to Photograph, Audiotape, or Videotape**

This form is used only as needed. If photographs, audiotape, or videotape is included in the student’s portfolio, a Parent Permission form for these activities must be included in Section 1 of the portfolio.

## Grade-Level Standards-Based Entries

The portfolio will contain three standards-based entries for Science at grades 5, 8, and high school Biology. The Entry Cover Sheet is the first page, followed by 6-8 pieces of evidence that include a Data Collection Sheet, Activity Description, and at least six pieces of corroborating evidence for each of the three standards. The entry must be clearly linked to the strand and specific standards identified for instruction and assessment.

### Entry Cover Sheets

Inclusion of an Entry Cover Sheet is required for each content area. A single cover sheet can be submitted for each set of three content area entries, or Entry Cover Sheets may be presented separately with their corresponding entries within a content area. Information on the Entry Cover Sheet must include the following:

- Student Name: student's first and last name
- School Year: the school year the entry was developed (i.e., 2014–2015)
- Strand: provided in Appendix D of this manual or on the pre-printed Entry Cover Sheet
- Substrand: provided in Appendix D of this manual (only needed for Biology entries)
- Learning Standard: the alpha-numeric code and the text of the standard written verbatim from the Learning Strands and Standards document found in Appendix D
- Standards-Based Activity: a description of how the student is performing the targeted skill

**NOTE:** The Standards-Based Activity, as presented on the Entry Cover Sheet, will serve as the official reference to this portfolio component for scoring purposes. **It is essential that the Standards-Based Activity appear on the Entry Cover Sheet.**

- Targeted Skill: a description of what the student is expected to do; measureable and observable behavior clearly linked to the grade-level learning standard at which the student is expected to perform

**TIP:** Entry Cover Sheet templates that provide a single sheet for all three entries in a content area are found in Appendix B. These sheets can be presented as they appear or can be presented as separate entities appearing in the front of the entry for each strand. Either strategy is acceptable.

### Evidence

#### Data Collection Sheet

A Data Collection Sheet is a required component of the evidence for these three content entries. Information that must appear on the data collection sheet includes the following:

- Student Name: the student's first and last name
- Standard Code: the specific alpha-numeric code of the learning standard that is supported by the evidence
- Targeted Skill: the targeted skill
- Observation Dates: including month, day, and year
- Baseline Data: the first data collected (typically takes place before instruction begins)
- Observations: five additional observations, after baseline data is taken must be documented

- Percentage Correct: performance summary score for each data observation, expressed as a percentage
- A Key or Legend: describes the notations made on the data sheet, including correct and independent responses, incorrect responses, prompt codes, and any other relevant information that will make the data clear to the reader

## Evidence

### Activity Descriptions

Activity Descriptions are a required part of the portfolio. The Activity Description documents the Supports Scoring Dimension and explains the activity and work performed, as it relates to the targeted skill. Activity Descriptions will also support the accompanying work evidence. If different activities are presented as work evidence within an entry, it is possible to have a separate Activity Description for each.

The following information must be provided to clarify the accompanying evidence:

- Student Name: the name of the student whose evidence is being described
- Date: the date(s), (month, day, year), that reflects the work evidence submitted.
- Evidence Page: the page number(s) of the evidence that the label is describing (not needed for the Composition entry)
- Brief Description of Activity: the nature of the instructional activity
- Supports: the types of materials, accommodations, adaptations, and assistive technology that the student used during the activity. Do not limit the responses to simply checking the relevant examples given on the form; make sure to include all the supports provided to the student.

## Evidence

### Work Evidence

**SIX** pieces of corroborating evidence that correspond to **six** of the data collection observations are required. There should be separate activity descriptions if different activities presented. Corroborating evidence may consist of student work samples, a scripted videotape or audiotape, or captioned photographs. All corroborating evidence must show the student demonstrating the targeted skill.

Information that must appear on the work evidence includes the following:

- Student Name: the student's first and last name
- Date: the month, day, and year
- Standard Code: the specific alpha-numeric code of the learning standard that is supported by the evidence
- Targeted Skill: the targeted skill
- Percentage Correct: a summary score for each data observation, expressed as a percentage

A key or legend should be included on the work sample if the notations made regarding student work require explanation. This might include notation for correct and incorrect responses, prompt codes, or any other relevant information that will make the data clear to the reader.

Two additional pieces of corroborating evidence can be included in the entry at the discretion of the student and/or the teacher. No more than eight pieces of student work evidence should be included in a portfolio entry.

**TIP:** Score student work precisely and report accurate scores on the work evidence and the Data Collection Sheet. For example, if the student scores 5/6 during one observation, report the percentage score as 83% rather than rounding the score to the nearest ten, or 80%.

**TIP:** Several examples of data collection charts are available in Appendix B. These charts are for teacher use and they can be reproduced as desired. Teachers are also encouraged to develop and use their own data collection charts that may more specifically meet the needs of the task and the student. Care must be taken to include all required information listed in this handbook on teacher-made Data Collection Sheets.

**NOTE:** All forms mentioned in this chapter except the LCI can be found in Appendix B in this Handbook and on the Office of the State Superintendent of Education (OSSE) website: <http://osse.dc.gov/service/dc-cas-alt-participation-criteria-and-forms>. The LCI can be located in Appendix A.

# Chapter Four

## Grade-Level Learning Standards and Instruction

### Articulating Grade-Level Standards

Since NCLB and IDEA 97, the focus of instruction for students with disabilities requires all students to have access to and to show progress in the general education curriculum. This includes access to the grade-level content, grade- and age-appropriate instructional activities, and materials. Best practice also includes access to grade- and age-appropriate peers and instructional settings.

Some students with significant cognitive disabilities or multiple disabilities have individual achievement far below that of their same-age peers. The following is a process for planning instruction and for identifying appropriate grade-level learning standards for students with highly diverse needs.

### Providing Access to Grade-Level Content

#### Review the Learning Standards

Start by reviewing the learning standards at the grade level for which the student is enrolled or would be enrolled if he/she did not have a disability. Use the chronological age/grade chart to check the accuracy of the student's grade enrollment. If the student is in an ungraded program, grade level is determined by the student's birth year. **The student must work on grade-level standards, as determined by the above criteria. It is not permissible to use standards from an earlier or later grade for the alternate assessment.** Grade-level Science learning standards are made up of strands; there are sub-strands identified in high school Biology. DC learning standards specify what students should know and be able to do at the end of each grade level, or course. Students are held responsible for learning standards listed at earlier grades, as well as for their current grade.

#### Plan for Instruction

Identify the outcome of instruction and instructional activities. After choosing a standard, select the instruction and choose an instructional activity, or activities, in which students of that typical age would participate in to learn the identified content. These activities can include individual, small group, or large group activities used in the general education classroom. The student may participate in these activities in a variety of settings, including general or specialized environments.

When planning for instruction it is beneficial to collaborate with a general education teacher or a curriculum specialist in the identification, selection, and modification of the learning standards. This cooperation will help to ensure that the intent of the standard is not changed or modified so it no longer represents the intended content or grade level. The Entry Points Document can be a useful tool to assist with finding ways to access grade-level content for students with cognitive disabilities. The Entry Points Document can be located online at and on the Office of the State Superintendent of Education (OSSE) website at <http://osse.dc.gov/service/dc-cas-alt-participation-criteria-and-forms>. For students with significant cognitive disabilities, the expectation of performance that is written in the learning standard may be too complex or difficult. Performance requirements can be modified to lessen the complexity while maintaining the cognitive demand, or both complexity and cognitive demand can be lowered. Complexity is the depth of knowledge the student needs to have in order to

master that standard (e.g., remembering, understanding, applying, analyzing, evaluating, and creating<sup>5</sup>). Difficulty can be determined by examining how much the student needs to know (e.g., theme, plot, characters, etc.). Bloom's Revised Taxonomy can be used to adjust skills to address lower levels of complexity and difficulty. A tool based on Bloom's Revised Taxonomy can be found in Appendix E of this Handbook and on the Office of the State Superintendent of Education (OSSE) website at <http://osse.dc.gov/service/dc-cas-alt-participation-criteria-and-forms>. The following steps can assist with the process of determining how to modify the performance expectations of the grade-level learning standards:

- Identify the grade-level learning standard.
- Examine and identify the complexity of the standard. This is the level of thinking or types of cognitive processes needed to master the knowledge or skill. Use Bloom's Revised Taxonomy to assist with determining the complexity level.
- Identify the difficulty of the standard. This is the number of things the student needs to know.
- Reduce the complexity and/or difficulty of the standard, as needed, to meet the individual learning goal of the student.
- Be sure to keep the essence of the grade-level learning standard and use appropriate adaptations and assistive technology to instruct and assess the content.

Some examples of what modified performance might look like can be found in the Pathways to Learning document. Pathways to Learning can be located online at on the Office of the State Superintendent of Education (OSSE) website at <http://osse.dc.gov/service/dc-cas-alt-participation-criteria-and-forms>.

Choose instructional activities appropriate to the age and grade of the student in order to teach the learning standard. Collaborating with general education teachers can assist in identification of grade-level activities that all students participate in as they learn grade-level concepts and skills.

Identify supports, adaptations, and assistive technology. Think of ways the student can actively participate in the instructional activity through supplementary support and alternate forms of presentation, expression, and response by using low- to high-level assistive technologies.

To individualize the activities for a student, identify the current supports and adaptations the student uses daily in the classroom and integrate them, as needed, into the activities for that student. If additional or new supports are needed to teach the skill or concept, it may be necessary to teach the student how to use the new supports. Growth in performance may be delayed while the student learns to use new supports or strategies.

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<sup>5</sup> Based on the work by Lorin Anderson and the revision of Bloom's *Taxonomy*. For more information, please check the following: Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational objectives: Complete edition*, New York : Longman or oz-TeacherNet. (2001). oz-TeacherNet: Teachers helping teachers: Revised Bloom's Taxonomy. Retrieved October 3, 2006 from <http://rite.ed.qut.edu.au/oz-teachernet/index.php?module=ContentExpress&func=display&ceid=29>

### **Target-Specific Objectives from the IEP**

Identify and write a targeted skill for each learning standard. The targeted skill must specifically measure a skill within the content standard. Identify other IEP skills that can be taught, learned, and practiced within the context of the instructional activity. These may be skills such as communication, vocabulary, or making choices. Use the skill descriptors provided in the Entry Points Document as a place to start. These descriptors are not targeted skill statements and will need revision to meet the requirements of a well-written targeted skill.

### **Choose an Assessment Strategy and Identify Portfolio Evidence**

Choose an assessment strategy that is compatible with the selected instructional activity. Think about which methods of engagement, presentation, and response will allow the student to be most successful:

- Does he/she require physical positioning to be able to respond independently?
- What tools can be most effectively used when the student makes a written, oral, or gestural response?
- What other means can be used for students to independently and accurately demonstrate what they know and can do?

Using data from instruction and student work samples produced during the activity are good ways to assess whether the student has demonstrated learning of the content standard. Please review the protocol for collecting data to ensure that evidence collected is appropriate for an assessment.

Collection of evidence of student learning should be an ongoing process throughout the instructional year and should represent the skills the student is working on related to standards-based learning. Classroom instruction throughout the year represents best practice to assist students in increasing the likelihood of progress and higher achievement on targeted skills. The team should examine the scoring criteria for each dimension to help identify what is specifically required to document each of these dimensions within the evidence. The Scoring Rubric can be found on page 28 of this handbook and in Appendix C.

# Chapter Five

## Test Administration Protocols and Data Collection for Science

There are specific procedures in place to ensure standard test administration and data collection in Science. The following sections describe these procedures.

### Task Direction, Prompts, and Supports

When providing instruction or collecting data, it is necessary to understand the differences between task directions, prompts, and supports in order to improve instruction and accurately document student work.

**Task direction is the information provided to the student at the beginning of a work sample, test, or activity.** This information tells the student how to complete the activity, offers expectations about the activity, provides background information needed for the activity, or simply asks the question. The following are examples of task directions:

Example 1: “We are going to answer some questions about the forces in the motion lab activity we just finished. I want you to look at three pictures. Which one of these pictures represents an unbalanced force?”

Example 2: “Find all the triangles.”

The task directions above provide the student with some background information and/or pose a question that allows the student to demonstrate his or her understanding of a skill or concept; the directions are not considered to be prompts.

**“Cueing” or “clueing” are the instructional details that teachers provide to students in order to lead or guide the student to the correct response during instructional activities or tests.**

While the purpose of cueing is to guide the student to the correct answer, the degree of intrusiveness varies depending on the type of cue given. A verbal cue specifically reminds the student about information that will assist him or her in answering the question. Gestural and/or model cues require some type of visual representation to guide the student to the correct response. When providing a model cue, the teacher may actually demonstrate the skill that he or she wants the student to replicate or use in order to answer the question. The most intrusive cue or clue a teacher can provide is physical. A physical cue requires physical contact between the student and the teacher to ensure the student responds correctly.

**Supports are the instructional and assistive tools that students use to increase independence and to facilitate their access to educational materials and activities.** Supports can range from “no-tech” to “high-tech” and can be used to

- aid the student in maintaining appropriate body position;
- facilitate the student’s communication;
- assist the student in accessing the computer or other technological device; and/or
- improve the student’s ability to express and receive information.

Readers and scribes are examples of “no-tech” supports that assist students with receiving information and expressing what they know. Several examples of “low-tech” supports include pictures, symbols or objects to represent words or ideas, pointers (or other devices) to push a keyboard button or to activate simple machines, pencil grips, markers, etc. The “high-tech” supports include Alternative Augmentative Communication (AAC) devices, switches, adaptive software, and computer peripherals. Other examples of “high-tech” devices are computer programs that have speech recognition and word prediction, or software programs that read aloud the text that is on the computer screen, AAC (or voice output) devices and adaptive devices such as computer touch screens or adaptive keyboards that facilitate access. The most important thing to remember is that supports garner independence and facilitate access; they do not lead the student to the correct answer the way that a cue or clue does.

## Test Administration Protocol

An assessment probe is an observation of the student performance under testing conditions. The criterion for these observations is independent and accurate performance on the targeted skill. **There must be a minimum of two calendar days (48 hours) between data collection for each of the three required strands for Science.** In other words, data collection for each Science strand should be done consecutively, not concurrently, and there must be two days between data collection activities for each strand.

**One data point is collected prior to instruction to establish a baseline or starting point. A minimum of six additional data points (each conducted on a different date) throughout and at the end of the instructional period is collected to establish the highest criterion achieved.** Each of the six data points must result in a measure of accurate responses. Independent performance is expected, and if the response is prompted, or cued, it must be scored as inaccurate. However, use of a setting event (i.e., the placement of the student in a position that allows him/her to demonstrate the skill, or by providing the task direction) or support (e.g., adaptations, modifications, assistive technology, and/or instructional tools such as manipulatives) is acceptable when expecting independent performance. The length of time for the instructional period is determined by the teacher and is based on, but not limited to, the following considerations:

- Adequate time for the student to learn the skill
- Pacing of the general education instruction
- Data decisions based on ongoing data collection
- Student attendance
- Classroom curriculum map

**Correct administration procedures** include all of the following (which is not an exhaustive list):

- Using supports (e.g., assistive technology, adaptations, and modifications)
- Providing the student with instructional and assessment materials (e.g., books, math manipulatives) necessary to demonstrate the knowledge, skill, or concept as indicated on the targeted skill
- Providing a minimum of three possible answers if the student is responding to multiple choice questions (i.e., two incorrect answers along with the correct choice)
- Providing assessment task direction (e.g., “point to the picture that represents digestive system,” or “Tell how many protons are in an oxygen atom,” etc.)

- Observing the student at a different time if the session is interrupted by medical or behavioral issues
- Indirect verbal direction/redirection (e.g., “think about what we practiced,” or “check your answer,” etc.)

**Incorrect administration procedures** would include the following (which is not an exhaustive list):

- Conducting multiple probes on the same day
- Providing the student the answer in the assessment/test environment
- Scoring responses as correct when not independent
- Excluding incorrect responses from the session
- Direct verbal or gestural cues(e.g., telling or showing the student the correct response)
- Physically guiding the student to the correct response
- Physically guiding the student through the performance task
- Only providing one or two answers in a multiple-choice assessment format

### **Corroborating Evidence**

In addition to a data chart with baseline data and a minimum of six data points representing the student’s performance on a targeted skill that is linked to a grade-level standard, a minimum of **six** pieces of corroborating evidence must be included for each strand within a content area. There are several ways to gather corroborating evidence, including a work sample, photographs, or video and audio clips. Corroborating evidence must

- illustrate the student working on the targeted skill and standard and be documented in the data chart;
- match the date, accuracy level, and type of work for two different data points represented on the data chart; and
- meet the requirements illustrated below for a work sample, photographs, or video and audio clips of the student demonstrating the targeted skill.

The work sample is a piece of student work that has been completed in the context of instruction, in the special education or general education class, or at home, etc. It must represent the student’s level of communication and show evidence of the grade-level standard.

**Student work must clearly demonstrate the student working on the targeted skill and must have the student’s name, date, standard code, targeted skill, and score on it to be accepted as evidence.**

### **The work sample must**

- be connected to the targeted skill;
- include the accuracy of each item or activity scored;
- include the date (month/day/year) the work was completed;

- be original whenever possible;
- be labeled and show the student working on the targeted skill if a photograph or video is used as evidence;
- show linkage to the grade-level standard; and
- represent the student’s communication level.

### **Photographs**

Photographs may be used as corroborating evidence, especially for students whose work may not be captured through paper and pencil tasks. Photographs must

- connect to the targeted skill that links to the grade-level standard;
- include a Release form indicating that the parent or guardian approved of taking photographs of the student (included in Section 1 of the portfolio);
- contain a caption with the student’s name, date, score for that trial, and brief description of the student’s actions when the photograph was taken; and
- clearly demonstrate the student working on the targeted skill (e.g., the student work should be visible, as well as the student interacting with the task). A photograph of a completed task or of the student sitting or laying near a task is not conclusive evidence.

### **Scripted Video or Audio Tape**

Audio taping and videotaping are other ways to provide corroborating evidence for students whose work is not easily captured through other means. Audiotape or videotape for evidence must

- connect to the targeted skill that already links to the grade-level standard;
- include a Release form indicating that the parent or guardian approved of recording the student (included in Section 1 of the portfolio);
- contain a Videotape/Audiotape Evaluation Script, found in Appendix B, to describe what is being said on the tape;
- have segments shorter than one minute in length (editing is permitted);
- show the same targeted skill at least three times;
- be recorded or filmed in an easily usable format (e.g., cassette tapes, VHS or DVD, or standard-sized cassette tape); and be labeled and attached securely to the portfolio.

**Note: The data collection window for DC CAS-Alt Science extends from October 2014 until March 6, 2015. Data collected after March 6 will not be scored.**

## **Chapter Six**

### **DC CAS-Alt Science Scoring Criteria**

The DC CAS-Alt Science 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 subscore. The subscores 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 by state cut scores. It is important to note that proficiency levels cannot be determined by using the revised scoring rubric alone. A complete version of the rubrics used for DC CAS-Alt Science can be found in Appendix C.

#### **Rubric Descriptions**

The following elaboration and clarifications to the scoring rubric are provided as guides. These clarifications are derived from the key language in the scoring rubric, which has two parts. The first part indicates the level of student performance, as well as the relationship of that performance to the state standards. The second part of the rubric is programmatic in nature and addresses the opportunities provided to the student that allow him/her to demonstrate progress.

#### **Student Performance in Science**

Each entry will be scored based on the progress the student makes on the targeted skill developed in the context of the grade-level learning standard. 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 (i.e., objects, textures, pictures, etc.) are considered to be communicating at the pre-symbolic level.

Symbolic communication forms the foundation for the Science assessment. To ensure that students who communicate pre-symbolically are adequately assessed, the scoring rubric dimension of performance has been broken into two types: progress (i.e., percentage points above baseline) and 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 more information on determining a student's communication level, refer to Chapter 2, Participation Guidelines.

**Table 2: Performance Dimension - Science**

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.  (0–40% accurate)	Student performance of the targeted skill is limited or inconsistent.  (41–74% accurate)	Student performance of the targeted skill is mostly accurate.  (75–89% accurate)	Student performance of the targeted skill is accurate and consistent.  (90–100% accurate)
Attainment						
Progress (% points above baseline)			0–9%	10–24%	25–49%	50% & above

**Performance:** Students qualify for the attainment or progress model based on the answers provided on the Performance Dimension Determination Form located in Appendix A. Performance accuracy and points above baseline will be calculated using an average of the final three data points on the data chart.

**Guiding questions:**

1. Is the targeted skill clearly linked to the grade-level standard?
2. Was the baseline score at or below 50% (for both attainment and progress students)?
3. How much growth was made?
  - a. Attainment: What accuracy level did the student reach? Average the last three data points on the data chart.
  - b. Progress: How much growth did the student make? Average the last three data points on the data chart and subtract the baseline score.

**Data Points:** The baseline score is the first data point or observation of the student performing the targeted skill. This is typically performed before formal instruction begins to determine the student’s level of knowledge prior to learning. This must be an observation of the behavior described by the targeted skill.

**Attainment model:** Measures the attainment level the student demonstrates on a targeted skill linked to a grade-level content standard. **The baseline cannot be above 50%** in order to ensure growth in proficiency throughout the assessment timeline.

Performance using the attainment model is determined by averaging the percentage scores from the final three data points provided on the data sheet. The score is determined by matching the average percentage score to the scoring rubric.

**Progress model:** Measures the amount of progress toward attainment of the targeted skill by considering the percentage points above baseline. **The baseline cannot be above 50%** in order to ensure growth in proficiency throughout the assessment timeline.

Performance using the progress model is determined by averaging the percentage scores from the final three data points provided on the data sheet. This average score will be compared to the baseline point to determine the amount of growth made during the assessment period. This places emphasis on progress, rather than mastery, for students who are pre-symbolic language learners. For example, if a student performed the targeted skill independently and accurately at 10% during the baseline pretest observation, then scored independently and accurately at 35% for the final post-test observations, the student score would have increased 25 points above baseline.

**Non-Examples of Student Performance:**

- Entry contains insufficient evidence
  - Missing Entry Cover Sheet
  - Entry Cover Sheet is incomplete
  - No name and/or date on the data chart or student work
- Targeted skill does not link to the grade-level learning standard
- LCI is missing or there is a wrong determination of performance level
- Use of a learning standard not identified on the list of possible grade-level learning standards

**Complexity Dimension for Science**

**Table 3: Complexity Dimension - Science**

<b>Level of Complexity</b>	Entry reflects no basis in the DC 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 <b>modified to a lower cognitive demand</b> 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 or difficulty).
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**Complexity:** measures the depth and breadth of knowledge at which a student achieves the specified standard in comparison to the depth and breadth of knowledge expected in the general education standard. The scoring continuum moves from no evidence of the grade-level learning standard ⇒ to performance of an access skill or introductory skill within the context of a grade-level learning standard-based activity ⇒ to performance of a targeted skill at a lower cognitive demand than that represented by the grade-level learning standard ⇒ to performance of a targeted skill that addresses part or some of the cognitive demand and complexity represented by the grade-level learning standard ⇒ to performance of a targeted skill that addresses all of the cognitive demand represented by the grade-level learning standard.

- Complexity will be evidenced in student work samples.
- It may also be evidenced in the way in which the student demonstrates the targeted skill.

- The type of communication the student uses (verbal, augmentative communication, etc.) will not adversely affect the complexity.
- If a targeted skill indicates the student will be working on one complexity level but the work sample indicates a different level of complexity, then the level of complexity will be determined by examining the work sample.

**Guiding Questions:**

1. Is the entry on grade level?
2. What is the cognitive demand and complexity of the grade-level learning standard?
3. Was the student working on a targeted skill at the same cognitive demand-level as the grade-level learning standard?
  - a. If not, is the targeted skill close to the cognitive demand of the grade-level learning standard?
  - b. Is the targeted skill a lower cognitive demand and complexity than the grade-level learning standard? (e.g., identifying an operation rather than solving problems; finding an element on a periodic table versus distinguishing between a family and a period on a periodic table)
  - c. Is the targeted skill an access skill or an introductory skill?
    - Access skill example: student was learning to activate a switch—when asked, “The story was about whom?” the student was given a switch that says the name of the main character. There was no expectation to choose the correct response; it was simply a pre-recorded message.
    - Introductory skill examples: number recognition rather than identifying the operation or solving problems; identifying the periodic table versus finding an element on a periodic table or distinguishing between a family and a period on a periodic table.

**Non-Examples of Level of Complexity:**

- Targeted skill and student work does not link to the grade-level content standard
- Learning standard is not from the correct strand
- Use of a learning standard is not identified on list of possible grade-level learning standards
- Entry contains insufficient evidence

## Supports Dimension for Science

Supports may include but are not limited to accommodations, modifications, and assistive or augmentative technology.

**Table 4: Supports Dimension - Science**

<b>Supports</b>	There is 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 <b>but</b> 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 <b>and</b> 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 <b>and</b> the grade-level learning standards.
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**Supports:** This dimension measures the degree to which the supports are appropriate and meaningful and allow access to the grade-level learning standard.

- Supports can include adaptations, modifications, and assistive technology that assist the student in becoming more independent and accurate in his/her performance.
- A sophisticated device will not score any higher than a simple strategy (e.g., reducing the amount of text).
- Consideration will be given to
  - the appropriateness for the individual student's communication, which is determined by information provided on the Learning Characteristics Inventory;
  - the degree to which the support connects to the targeted skill; and
  - the appropriateness in assisting the student with access to grade-level standards.

### Guiding Questions:

1. Is there evidence that adaptations/modifications (supports) were made?
2. Are the adaptations/modifications directly linked to the student's Learning Characteristics Inventory?
3. Are the adaptations/modifications age-appropriate?
4. Does the student make any progress on the targeted skill?
5. Are the adaptations/modifications connected to the demonstration of the targeted skill? (e.g., academic supports for academically targeted skills)

6. Do the modifications/adaptations promote the demonstration of the grade-level learning expectations? (e.g., by using academic supports, student is able to work toward grade-level standards that have not been modified to a lower cognitive demand)

**Non-Examples of Supports:**

- Student Learner Characteristics Inventory or Activity Description is missing
- No evidence of adaptations or modifications linked to the student’s learning characteristics
- Use of age-**inappropriate** materials
  - Use of content/materials not linked to the acquisition of the knowledge addressed by the grade-level learning standard
- Use of age-**inappropriate** activities
  - Activities and materials do not reflect the grade-level of the student
- Entry contains insufficient evidence
- Use of a learning standard not identified on list of possible grade-level learning standards

**Table 5: DC CAS-Alternate Science Assessment Scoring Rubric**

Performance	Targeted skill is not clearly linked to the grade-level learning standard. OR Baseline 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.
		(0–40% accurate)	(41–74% accurate)	(75–89% accurate)	(90–100% accurate)
		0–9%	10–24%	25–49%	50% & above
Level of Complexity	Entry reflects no basis in the DC 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 <b>modified to a lower cognitive demand</b> for the student in this strand.	Student work reflects part of the cognitive demand of the grade-level expectation in this strand.	Student work reflects the same cognitive demand as the grade-level expectation in this strand (may reflect a different level of complexity/difficulty).
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 <b>but</b> 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 <b>and</b> 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, <b>and</b> the grade-level learning standards.

## Scoring Process for the DC CAS-Alt Science

Each entry of the DC CAS-Alt Science 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 assessment activity according to the revised Bloom’s *Taxonomy*.
- **Supports:** This dimension evaluates programs in the use of supports that students are utilizing that maximize independence.

Science scores are reported based on three entries. Entries that are incomplete, inappropriate, or missing will be reported as un-scored; therefore, the proficiency level, student progress, level of complexity, and supports will be reported as void.

Each Science entry will be reviewed and scored by at least two readers and will be given a rating for each dimension of the rubric. If the scores given by the two readers are not equal or adjacent, a third reader will score the discrepant dimension(s). The third reader score will then be combined with the equivalent or highest adjacent score.

The first two dimensions, Performance and Complexity, are weighted; that is, the two reader scores are added together and doubled for each dimension, per entry. The Supports Dimension is not weighted; the score is derived by the addition of the two reader scores. Table 6 below, summarizes the dimension scoring.

**Table 6: Dimension Scoring**

Subject	Number of Entries Required	Dimension	Scores of Two Readers
Science	3	Performance	Add & Double
		Level of Complexity	Add & Double
		Supports	Add

## The IEP and the Alternate Assessment

The IEP should clarify the specially designed instruction, including adaptations, modifications, and delivery of instruction that supports access to the content standards that are assessed. IEP goals can be designed to move the child toward attainment of the content standards, either by writing specific objectives that address individual standards or by targeting skills that will facilitate learning of the standards (e.g., switch activation that assists student in accessing information and demonstrating understanding of the standards).

# Chapter Seven

## Preparation for Submission

After all student data and work samples have been collected and compiled for Science, organize the portfolio materials and prepare them for shipping.

### Directions for Assembling Student Portfolios for DC CAS-Alt Science

Pearson will provide a binder for each student's Science entry. It is important that portfolios be prepared and packaged for submission in the following manner to ensure accurate log-in, tracking, and scoring.

#### General Instructions:

1. The Table of Contents is the first document in the portfolio. It provides demographic information and identifies which performance dimension is being used by the student, and gives an organizational structure to the portfolio. Check-boxes are provided to teachers as a general reminder of required components.
2. Activity Description Labels are a requirement for 2014-2015. The labels should appear in each entry after the Data Collection sheet. Consider presenting multiple Activity Description Labels if there are different types of student work in each entry.
3. Apply page numbers after the portfolio is organized. If you are presenting multi-page evidence, the first page of the activity should be designated with the page number followed by "a," (e.g., 15a). Subsequent pages in the work activity sample should be given alphabetic designations "b" through enough letters to complete the sample. For example, if there are four pages in a single piece of evidence, the pages would be numbered 15a, 15b, 15c, and 15d. All pages related to a single piece of work evidence will have the same page number. Student name and date must appear on all pages; the score for the activity will appear on the first page only.
4. **Do not staple** any pages in the portfolio, including the multi-page work samples.

#### Standard 3-Ring Binder:

- In October 2014 Pearson will ship binders to schools for each student preparing a portfolio. Keep the boxes for return shipment in March 2015.
- If additional binders are needed, please contact your LEA DC CAS-Alt Science Coordinator.

Each student portfolio must be organized in the provided binder, as follows:

#### Table of Contents

<b>Section 1</b>	Learner Characteristics Inventory
	Parent Validation
	Administrator Validation
	Parent Permission to Photograph, Audiotape, or Videotape (as needed)

## Section 2

### Science (grades 5, 8, and Biology)

#### *Strand 1*

- Entry Cover Sheet (this sheet may contain information for all three strands or for Strand 1 only)
- Strand 1 Data Collection Sheet
- Activity Description
- First piece of corroborating evidence
- Second piece of corroborating evidence
- Third piece of corroborating evidence
- Fourth piece of corroborating evidence
- Fifth piece of corroborating evidence
- Sixth piece of corroborating evidence
- No more than two additional pieces of evidence (optional)

#### *Strand 2*

- Entry Cover Sheet (needed only if presenting separate Entry Cover Sheets for each Science strand)
- Strand 2 Data Collection Sheet
- Activity Description
- First piece of corroborating evidence
- Second piece of corroborating evidence
- Third piece of corroborating evidence
- Fourth piece of corroborating evidence
- Fifth piece of corroborating evidence
- Sixth piece of corroborating evidence
- No more than two additional pieces of evidence (optional)

#### *Strand 3*

- Entry Cover Sheet (needed only if presenting separate Entry Cover Sheets for each Science strand)
- Strand 3 Data Collection Sheet
- Activity Description
- First piece of corroborating evidence
- Second piece of corroborating evidence
- Third piece of corroborating evidence
- Fourth piece of corroborating evidence
- Fifth piece of corroborating evidence
- Sixth piece of corroborating evidence
- No more than two additional pieces of evidence (optional)

## **Instructions for Submitting Video/Audio Tapes**

The videotape should be appropriately labeled and placed in the labeled bag for the student. The script form (found in Appendix B) for audio tapes or videotapes should be included in the appropriate entry of the portfolio after the Activity Description Label.

## **Portfolio Submission Procedures**

In February 2015 participating schools will receive a shipping packet for those students who are registered to participate in the DC CAS-Alt Science. This packet will be sent to the school and will contain materials and directions for preparing portfolios for shipment. These materials will be used to package and label student alternate assessment portfolios.

The following materials will be provided in the shipment so schools can submit the completed portfolios:

- Return shipping instructions
- Preprinted Student Identification Labels
- 14" X 19" white security envelopes
- Pre-paid UPS Labels
- Material Return Labels

The boxes from the October shipment that contained the binders and other materials should be used for return shipment.

## **Student Pre-Identification Labels**

Pre-identification labels will be provided for all registered students. The procedure for accessing and affixing the labels are as follows:

- Locate the pre-identification labels provided in the Return Material Shipment, or obtain the labels from your Building Assessment Coordinator or principal.
- Separate the labels by student and place the labels with the appropriate student portfolio.
- Apply 1 label to the spine of the 3-ring binder.
- Apply 1 label to the upper right-hand corner of the Table of Contents.
- Apply 1 label to the upper right-hand corner of the LCI worksheet.
- Apply 1 label to the security envelope.

## **Placing the Student Portfolio in a Security Envelope**

- Verify that the pre-identification label on the spine of the portfolio binder matches the evidence within the portfolio.
- Verify that the pre-identification label on the security envelope matches the pre-identification label on the portfolio binder.
- Insert the portfolio into the bag, open end first.
- Remove the tape strip and seal the bag.

### Packing Portfolios for Shipping—General

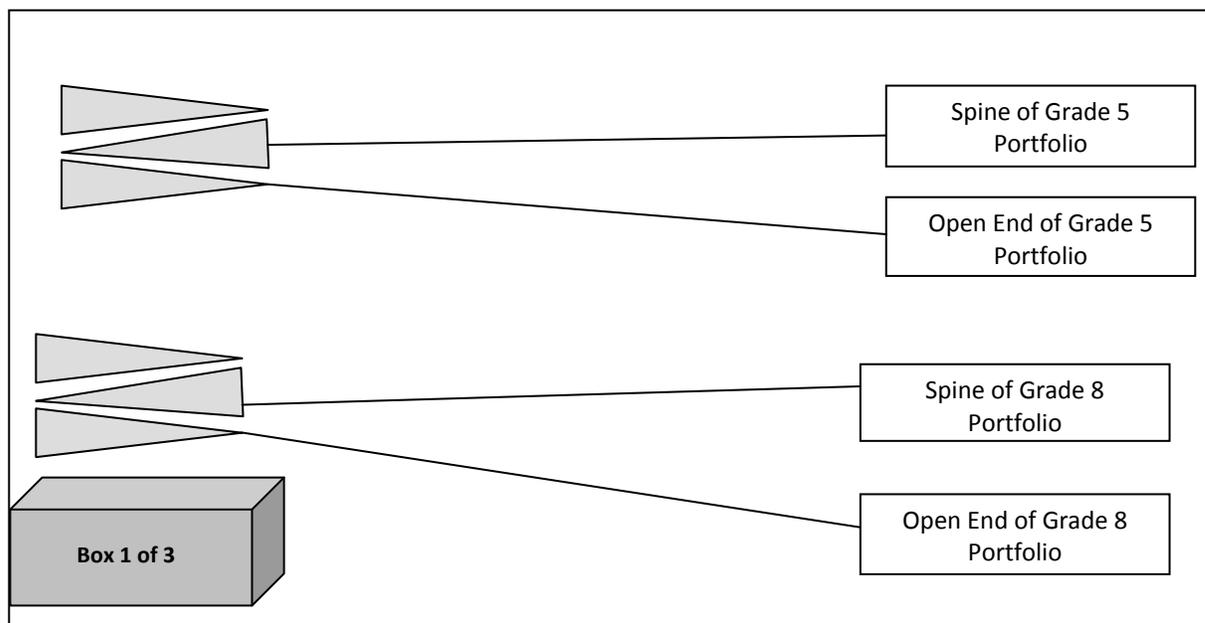
Locate the remaining items from the materials shipment:

- Pre-paid UPS Labels
- Material Return Labels
- Boxes in which materials were received in October 2014

One Material Return Label and 1 Pre-paid UPS Label is needed for each box being shipped. If materials are missing, or if additional materials are needed, please contact your LEA DC CAS-Alt Science Coordinator.

### Packing the Boxes

- Prior to packing the portfolios, sort the portfolios by grade level.
- Place portfolios flat into the box, alternating the spines, keeping grade levels together, until the box is full. See Figure 3, below.

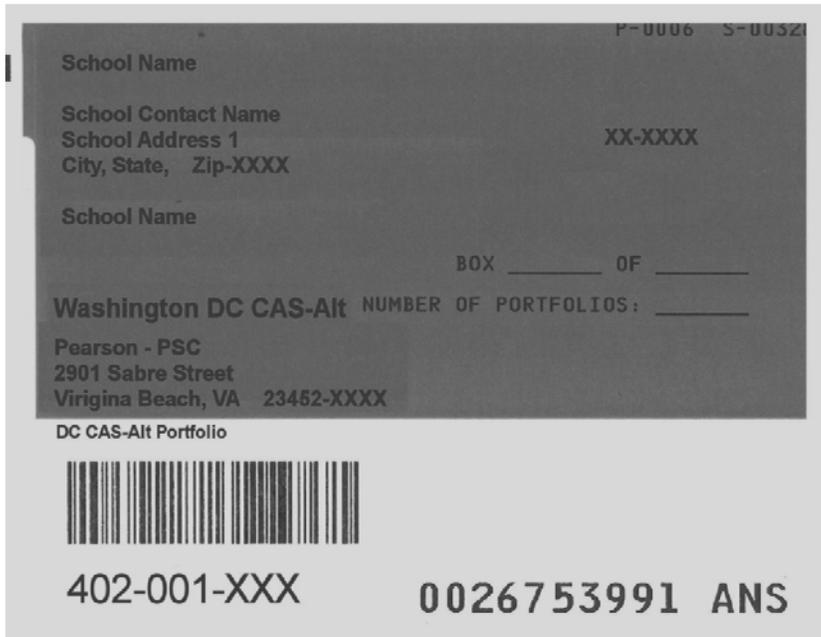


**Figure 3: Packing the Boxes**

## Material Return Labels

Material Return Labels are provided to assist with tracking material from each participating school. The labels identify how many portfolios are packed into each box and how many boxes of student portfolios are being shipped from each school.

Affix one Label to each box that is shipped. An example of a Material Return Label is printed below.



The image shows a sample Material Return Label. At the top right, it has the alphanumeric code "P-0006 S-00521". The label contains several fields for school information: "School Name", "School Contact Name", "School Address 1", "City, State, Zip-XXXX", and another "School Name" field. Below these is a "BOX \_\_\_\_ OF \_\_\_\_" field. The label is for "Washington DC CAS-Alt" and includes the text "NUMBER OF PORTFOLIOS: \_\_\_\_". The sender's address is listed as "Pearson - PSC, 2901 Sabre Street, Virginia Beach, VA 23452-XXXX". Below the address is a barcode and the text "DC CAS-Alt Portfolio". At the bottom, there are two tracking numbers: "402-001-XXX" and "0026753991 ANS".

## Pre-paid UPS Labels

One Pre-paid UPS label per box will be provided in order to return the portfolios for scoring. The shipping procedure is as follows:

- Place the Pre-paid UPS Label on the box next to the Material Return Label.
- Contact UPS to arrange your pick-up.
- UPS Phone: 1-800-823-7459. Account numbers will be on the return labels received.

**The last day for shipment is March 13, 2015.** Portfolios may be shipped earlier, if desired.

## Glossary of Terms

**accommodation:** Changes in how a test or assessment is presented or in the response a test-taker gives (e.g., test format, response format, setting, timing, or schedule). The changes do not affect level, content, or performance criteria but provide equitable instructional and assessment accessibility for students with disabilities. Accommodations are intended to mediate the effects of a student's disability during test-taking. Accommodations are not intended to reduce learning expectations.

**adaptations:** Changes made to existing materials or instructional delivery in order to meet the needs of a student (e.g., photographs, symbols paired with real objects, real objects, enlarged pictures, textured or raised pictures, high contrast color or coactive signs, head pointers).

**age appropriate:** The degree to which the skills taught, the activities and materials selected, and the language used reflects the chronological age of the student.

**alignment:** The effort to ensure that what educators teach is in accord with what the curriculum says will be taught and what is tested on official assessments. The alignment of expectations for student learning with assessments for measuring students' attainment of these expectations is an essential attribute for an effective standards-based education system. Without adequate alignment between standards and assessments, teachers and students become confused about educational expectations. Among other things, this can result in learning expectations being lowered for some students while being raised for others, creating potential inequities.

**alternate assessment:** An assessment that is different from the regular assessment and is used to determine the educational progress of students with significant cognitive disabilities who do not participate in the regular state assessments. The term has multiple meanings related to the regular assessment, with some changes being made (i.e., level of the assessment, reduction in tasks required, and/or the task requested). Basically, it is a different way of assessing the same content as the regular assessment.

**analytic scoring:** Ratings of performance on individual dimensions, content areas and/or components of an assessment, which when compiled, become the raw score.

**assessment:** The process by which a student's knowledge and skills can be measured.

**assessment probe:** An observation of the student performance under testing conditions. The criterion for these observations is the accuracy of the independent performance. Only correct and independent performances count toward the criterion specified in the performance dimension.

**assistive technology:** Tools and strategies used to assist students in developing and participating in meaningful academics, social relationships, and employment activities. The strategies can range from low technology (e.g., unaided communication systems, sign language, etc.) to high technology (e.g., computers with switch interfaces, etc.).

**attainment:** Mastery or completion of a set of tasks or behaviors. The highest level of achievement on the post-test performance with the established baseline being under 50%.

**augmentative communication:** Low, medium, or high technology system that assists the student in expressive language (e.g., making a request, initiating and responding to questions, describing things or events, and expressing refusal).

**authentic assessment:** A type of performance assessment that requires the students to do a task they would normally have to do in the world outside of school (Kentucky Department of Education).

**cognitive demand:** The level of thinking required to accomplish a task or activity.

**complexity:** The amount of difficulty or number of steps or processes used in accomplishing a task or activity.

**contexts:** The degree to which the activities for instruction, performance, and generalization are age-appropriate, functional, and meaningful (i.e., promote increased independence).

**cue:** Cues, or clues, direct the student to the correct answer and interfere with independent performance during assessment. Cues can be verbal, gestural/model, or physical. While useful during instructional phases, cues interfere with independent performance during assessment probes.

**cut scores:** Set by the standards setting committee; cut scores are demarcations on a scale of all possible raw scores that show the beginning and ending points for each performance level.

**data:** Factual information about objectively defined behaviors (tasks) by an observer. Notations might include prompt levels, independence, and response times. The data reports reflect change/progress and are used to make instructional decisions.

**evaluation:** The student identifies and describes those steps in an activity that were performed well and those steps that need improvement.

**evidence:** Student-generated products that document the student's performance (e.g., actual student work, instructional program data, and peer and adult narratives).

**full participation:** Participating in the regular assessment with or without accommodations.

**functional:** The degree to which an activity or skill has meaning for a student in current or future integrated environments, which results in increased capacity or independence. Functional skill instruction is based on a student's needs in his or her home, school, community, and workplace.

**generalization:** The ability to transfer learned skills to other settings and to demonstrate those skills with other people, materials, and similar tasks.

**Individualized Education Program (IEP):** A written program for a child with a disability that includes, in part, a statement of the child's present level of educational performance; annual goals and short-term instructional objectives; related services; the extent of participation in the general education program; the projected dates of initiation of services; anticipated duration of services; appropriate objective criteria and evaluation procedures; and an evaluation schedule for annual determination of short-term objectives.

**instructional team:** Persons responsible for day-to-day skill instruction and implementation of the student's individual educational plan (i.e., regular education teacher, special education teacher,

teaching assistant, therapists, special-area teachers, etc.). The members of the instructional team may or may not be members of the IEP team.

**Learner Characteristics Inventory (LCI):** A questionnaire that assists the teacher in understanding the individuality of each student in nine areas: expressive communication, receptive communication, hearing, vision, motor, engagement, attendance, reading skills, and mathematics skills.

**learning standards:** Specific statements of knowledge and/or skills within a goal. Taken together, the standards clearly define the learning needed to reach that goal. The standards represent the results of schooling and may be considered exit standards. The standards define the desired results, with further definition supplied through classroom and district tests, and share examples of student work that meets high expectations.

**measurable/observable skill:** A targeted behavior that can be seen and measured through data collection or pre-tests and post-tests.

**mode of communication:** The student's method of expressing information. This method is evidenced throughout the portfolio (i.e., communication board, signs, picture symbols, etc.).

**modifications:** Substantial changes in what a student is expected to learn and demonstrate, with changes being made in the instructional level, content, or performance criteria.

**performance assessment:** A method of measurement that requires a student to demonstrate essential knowledge and skills by doing, creating, or performing. Performance assessments usually share many aspects of authentic assessment.

**performance standard:** The agreed-upon level of proficiency that a student is expected to achieve. It describes how well a student must accomplish a task to demonstrate proficient knowledge of a content standard, or progress toward an outcome.

**portfolio:** Showcase of student work that documents, measures, and reflects student performance and program effectiveness. Portfolio tasks should be a natural part of daily instruction and should provide opportunities for a wide range of instructional strategies.

**pre-symbolic:** A communication level that is inconsistent, using concrete objects, gestures, or cries for expression.

**progress:** The forward movement of student performance for a targeted skill, IEP goal, or outcome from a beginning to a more advanced level.

**reading passage:** A reading selection presented as part of the Composition assessment.

**regular assessment:** Refers to the state assessment system, DC CAS.

**rubric:** A scoring guide.

**setting event:** Instructions given to the student that explain what he/she is expected to do.

**standards:** What a student must know and be able to do in a particular subject area.

**student dignity:** Treating individuals with respect in accordance with their chronological age, individual differences, and personal preferences.

**student progress:** Documented by teacher data collection and graphing.

**supports:** Accommodations, adaptations, modifications, and assistive technology that are provided during learning and that assist the student in becoming more independent.

**symbolic:** A communication system that is relatively consistent and includes the use of a symbol system (e.g., signs, words, pictures) for expressive communication.

**targeted skill:** An observable, measurable skill the student demonstrates that is linked to the grade-level standard.

## **Appendix A**

### Participation Guidelines and DC CAS-Alt Science Student Registration Process

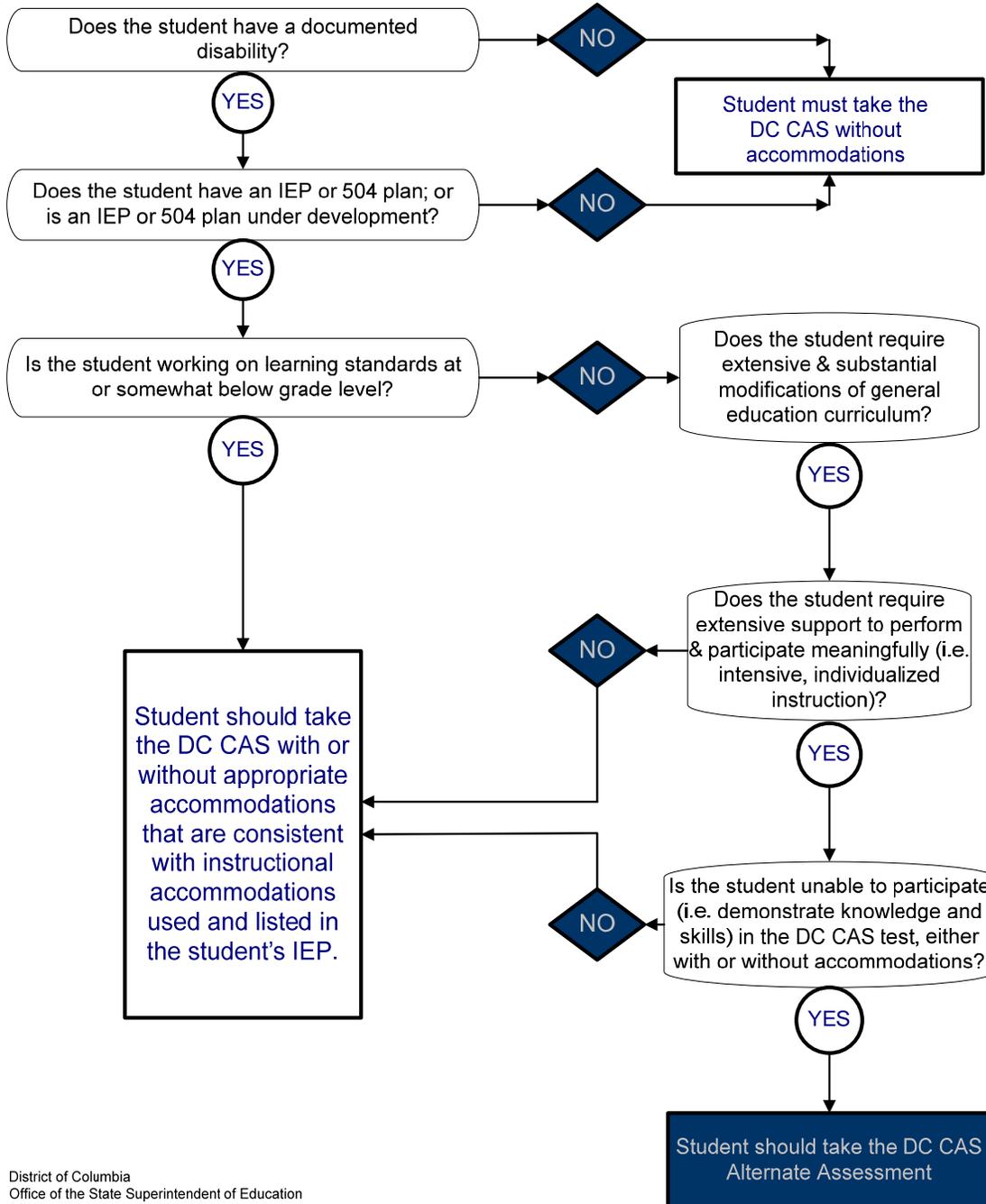
#### Forms Included in this Appendix:

DC CAS-Alt Science Alternate Assessment Participation Criteria Form  
Performance Dimension Determination Form  
Parent Letter Template  
Learner Characteristics Inventory  
NCSC/DC CAS-Alt Science Student Registration Verification Form

## Assessment Decision-Making Process

Participation in the DC CAS-Alt Science should be determined based on the student’s needs and best practice. It is not, however, based on disability label, student’s instructional setting, or how the student may perform on different assessments. Decisions about whether the student should take the general education assessment, with or without accommodations and modifications, or the alternate assessment should be based only on educational considerations. The IEP team should follow the process below when making assessment decisions.

### DC CAS Participation Guidelines for IEP/504 Team Decision-Making



District of Columbia  
Office of the State Superintendent of Education  
2009

## Alternate Assessment Criteria and Registration

The student DC CAS Alternate Assessment (DC CAS-Alt Science) registration process includes five steps:

1. Completion of DC CAS-Alt Science Assessment Participation Criteria Form and Performance Dimension Determination Forms
2. Completion of the Learner Characteristics Inventory (LCI)
3. Parental acknowledgement that his/her child will be assessed on alternate achievement standards
4. Assignment of the alternate assessment in the student's IEP within SEDS
5. Submission of the NCSC/ DC CAS-Alt Science Student Registration Verification Form

### **Step 1:** *Participation Criteria and Performance Dimension Determination Forms*

The Individualized Education Program (IEP) team, with participation from the student when appropriate, is responsible for making the determination on which assessment is appropriate for the student. The IEP team must first consider whether the student can participate in the regular assessment, with or without accommodations. In order to make this determination, the IEP team must have a clear understanding of the difference between the regular (DC CAS Science) and the alternate (DC CAS-Alt Science) assessments and the educational implications of their decision.

To determine whether the student should take the DC CAS Science or DC CAS-Alt Science, the IEP team must be knowledgeable about the following:

- Whether the student needs substantial modifications or supports to meaningfully access the grade-level content;
- Whether the student requires intensive individualized instruction to acquire and generalize knowledge; and
- Testing guidelines, test format and the use of appropriate testing accommodations.

The decision on which assessment to administer must be based on the individual characteristics of the student but **not** on: (a) the mere existence of an IEP or identification in a specific disability category, (b) emotional, behavioral or physical changes, (c) language differences, (d) excessive or extended absences, or (e) social, cultural or environmental factors.

In order for a student to participate in the DC CAS-Alt Science, the student must have a documented significant cognitive disability on his/her IEP in the Special Education Data Base (SEDS) and meet specific criteria. After completing the Assessment Decision-Making Process, if the IEP team believes the student should take the DC CAS-Alt Science, the special education coordinator should complete the DC CAS-Alt Science Participation Criteria Form. All questions on the Participation Criteria Form must be answered yes in order for the student to be eligible for the DC CAS-Alt Science. **Failure to answer all questions in the affirmative will result in the student being ineligible to take the DC CAS-Alt Science.** If the student is determined to be eligible to participate in the DC CAS-Alt Science the Performance Dimension Determination Form must also be completed and the results of the decision to use the attainment or progress model to measure performance must be entered on the LCI.

Upon completion of the Alternative Assessment Participation Criteria Form, the school must acquire the necessary signatures and easy fax the form into SEDS.

***Step 2: Learner Characteristic Inventory (LCI)***

A designee of the IEP team must complete the Learner Characteristic Inventory. The LCI helps determine which performance dimension, Progress or Attainment, for which the student will be scored. The criteria for both dimensions can be found on the Performance Dimension Determination form within this Appendix. **Only portfolios that have been registered according to the official procedures will be scored during the scoring session in April.**

***Step 3: Parental Acknowledgment***

Parent(s) must receive written notification that his/her child's achievement will be measured based on alternate academic achievement standards. The notification must be issued by the school within two weeks after the determination of eligibility is made. Parental acknowledgement that their child will be assessed on alternate achievement standard is required.

***Step 4: Assignment of the Alternate Assessment in the Special Education Database System (SEDS)***

For the student to be registered for the alternate assessment exam, the IEP team must indicate the alternate assessment is appropriate on the student's IEP. If the IEP team determines the student is unable to participate in the regular assessment, a statement of why the DC CAS is not appropriate and why the DC CAS-Alt Science is appropriate for the student is required in the student's IEP. If the decision is not reflected on the current IEP, an IEP meeting must be held to address and document the decision prior to administering the test. Students that do not have significant cognitive disabilities but are tested on the DC CAS-Alt Science will have their results invalidated and be counted as non-participants.

***Step 5: Complete the NCSC/DC CAS-Alt Science Student Registration Verification Form***

Local Education Agencies (LEAs) must confirm that all eligible students have been appropriately assigned to the DC CAS Alt in SEDS by submitting the NCSC/DC CAS-Alt Science Student Registration Verification Form.

**NOTE: The Participation Criteria and Performance Dimension Determination Forms, Learner Characteristics Inventory, and Parent Acknowledgment must be completed by October 17, 2014. The alternate assessment must be chosen in SEDS October 17, 2014 in order for the student to be registered for the DC CAS-Alt Science. Each LEA DC CAS-Alt Science Coordinator must submit the student registration verification form to OSSE by October 24, 2014.**

## DC CAS Alternate Science Assessment Participation Criteria Form and NCSC Decision Form

Directions: To qualify for the District of Columbia Alternate Assessment (DC CAS-Alt Science or NCSC assessment), a student's IEP team must determine that a student is eligible based on answers to the questions below for each area considered. **The form must be uploaded into a student's record in SEDS by October 17, 2014.**

### *Student Background Information*

Student information	
Student Name:	Student ID Number:
Date of Birth:	Student Grade on IEP:
Primary Disability:	
Did the student participate in the DC CAS-Alt last year?	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
School Information	
School Name:	School Year:
Case Manager:	
Case Manager E-mail:	
School DC CAS-Alt Science Coordinator:	
Coordinator E-mail:	
Student History	
What assessment did the student participate in the last assessed year?	
<input type="checkbox"/> DC CAS <input type="checkbox"/> DC CAS-Alt <input type="checkbox"/> New to DC <input type="checkbox"/> N/A: Student is entering third grade	

*Participation Criteria*

The following questions should be answered by a designee student’s IEP team. **A response of “No” for any question indicates that the student is not eligible for the DC CAS-Alt Science. For any question where “Yes” is selected, there must be specific evidence documented in the student IEP directly related to the question.**

Students who do not meet the criteria below and/or do not have the specific documentation required in the IEP will participate in the DC CAS Science with or without accommodations, as appropriate, based on his/her IEP.

The criteria below characterize a student’s current educational situation. All answers should be based upon clear documentation in the student’s IEP.	YES	NO
1. Does the student have a current IEP?		
2. Does the student have a documented significant cognitive disability that specifies goals and objectives in the IEP?		
3. Does the student’s curriculum differ significantly from that of their nondisabled peers?		
4. Does the student require explicit and ongoing instruction in functional skills? An evaluation of the instruction in functional skills requires a holistic view of the child including whether the child receives instruction in communication, self care, home living, social and interpersonal skills, use of community resources, self direction, functional academic skills, work, leisure, and health and safety. The student’s IEP and course of study must reflect such need and curriculum.		
5. Does the student require extensive and substantial modifications (e.g. reduced complexity of objectives and learning materials) of general education curriculum? This means the student learns different objectives, may use different materials, and may participate in different learning activities.		
6. Does the student require extensive support to perform and participate meaningfully and productively in daily activities in school, home, community, and work environments?		
7. Is the student unable to participate in the DC CAS, either with or without accommodations?		

*Signature*

By signing below, the Special Education Coordinator, child's parent, and school administrator attest to the accuracy of the information provided and the understanding and acknowledgement that the student will be assessed on alternate achievement standards.

\_\_\_\_\_  
Parent

Date \_\_\_\_\_

\_\_\_\_\_  
Special Education Coordinator/School Representative

Date \_\_\_\_\_

\* A copy of this form must be given to the parent and another kept with the student's IEP records

## Performance Dimension Determination<sup>6</sup>

The following tables are to be used as a guide to aid in decision making about the performance dimension on which a student's portfolio will be scored. Information an IEP team designee inputs into the Learner Characteristic Inventory (LCI) will serve as the official record for the test vendor, Pearson. **The Performance Dimension Determination form must be completed by an IEP team designee by November 16, 2014.**

<b><i>Performance Dimension A: Attainment</i></b>	<b>YES</b>	<b>NO</b>
1. Does the student use 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?		
2. Does the student use intentional communication, but not at a symbolic language level: Student uses understandable communication through modes as gestures, pictures, objects/textures, points, etc., to clearly express a variety of intentions?		
		If the answer to either is yes, then use the Attainment Performance Dimension

<b><i>Performance Dimension B: Progress</i></b>	<b>YES</b>	<b>NO</b>
1. Does the student communicate primarily through cries, facial expressions, change in muscle tone but no clear use of objects/textures, regularized gestures, pictures, and sign to communicate?		
2. Does the student alert to sensory input from another person (auditory, visual, touch, movement) BUT requires actual physical assistance to follow simple directions; or is the student's response to sensory stimuli (e.g., sound/voice, sight/gesture, touch, movement; smell) unclear?		
		If the answer to either is yes, then use the Progress Performance Dimension

<sup>6</sup> 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](http://www.naacpartners.org/Products/Files/Research_Focus_LCI.pdf)

## Parent Letter Template

We suggest using the following letter template to create your own individualized letter to the student's parents to inform them that their child will be assessed on alternate achievement standards.

Dear Parent,

The Elementary and Secondary Education Act, as amended by the No Child Left Behind Act (NCLB) requires that all students be assessed annually. The District of Columbia satisfies this requirement by offering the Partnership for Assessment of Readiness for College and Careers (PARCC), comprised of assessments in Reading and Mathematics for grades 3-8 and 10; and DC CAS Science for grades 5, 8, and high school Biology. Consistent with NCLB, the Individuals with Disabilities Education Act (IDEA) requires that all students with disabilities be included in the statewide accountability system, provided accommodations on the regular assessment when appropriate, or provided an "alternate assessment."

According to your child's Individualized Education Program (IEP), he or she will be assessed in Reading and Mathematics using the National Center and State Collaborative (NCSC) and Science using the DC CAS-Alt Science Assessment Portfolio (DC CAS-Alt Science) for grades 5, 8, and high school Biology. It is designed for students with the most significant cognitive disabilities who are unable to participate in the PARCC assessments, even when accommodations are provided. These assessments are based on revised grade level content standards that are directly linked to the general assessments. If you have any questions, please contact your child's IEP team coordinator.

Sincerely,

(Place student Pre-ID label here)

## Learner Characteristics Inventory for Alternate Assessments Based on Alternate Achievement Standards

Purpose:

The National Center and State Collaborative (NCSC) is a project of five national assessment and special education policy centers and 26 states, including yours. Its purpose is to develop a new comprehensive assessment system for students with the most significant cognitive disabilities. The goal of NCSC is to produce an alternate assessment based on alternate achievement standards (AA-AAS) based on the best practice-oriented research available, along with supportive professional development and instructional modules for teachers. As part of this project, you are asked to complete the Learner Characteristics Inventory.

This inventory will be used to create a profile of the population of students who participate in the AA-AAS in each state. edCount, LLC will use these data to provide important information to the assessment design and professional development teams, as well as to assess the validity of the assessment system once it is developed. We will not collect any identifying information about you or your school or district, and we do not want student names or ID numbers. We will report the results of the study only by state, which will be identified by region (aggregate data in a Western, Midwestern, Northeastern, or Southeastern state). The risks associated with providing this information are minimal. If you have any questions about this study, and you would prefer not to correspond with your AA-AAS coordinator, you may call the University of Minnesota Research Subjects' Advocate Line at 612-625-1650.

**Based on the decisions from the participation guidelines and performance dimension determination for the DC CAS-Alt Science, on which performance dimension will the student be scored?**

- Attainment (A)
- Progress (B)

Questions:

1. **Student's grade:** \_\_\_\_\_
2. **Student's age in years:** \_\_\_\_\_
3. **Is your student's primary language a language other than English?**
  - Yes
  - No
4. **If yes, what is your student's primary language** (the dominant language spoken in the student's home)? \_\_\_\_\_

- 5. What is the student's primary classroom setting?**
- Special school
  - Primarily self-contained, some special inclusive (students go to art, music, PE but return to their special education class for most of school day).
  - Primarily self-contained, some academic inclusive (students go to some general education academic classes (reading, math, science) but return to special education 80% or more of school day).
  - Primarily resource room (students come for services and then go back to their general education classrooms for at least 50% of the school day)
  - Primarily inclusive/collaborative (students based in general education classes, special education services are primarily delivered in the general education classes (at least 80% of the school day in general education classes)
- 6. Expressive Communication** (check the best description)
- Uses symbolic language to communicate: 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.
  - 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.
  - Student communicates primarily through cries, facial expressions, change in muscle tone, etc., but no clear use of objects/textures, regularized gestures, pictures, signs, etc., to communicate.
- 7. Does your student use an augmentative communication system in addition to or in place of oral speech?**
- Yes
  - No
- 8. Receptive Language** (check the best description)
- Independently follows 1-2 step directions presented through words (e.g. words may be spoken, signed, printed, or any combination) and does NOT need additional cues.
  - Requires additional cues (e.g., gestures, pictures, objects, or demonstrations/models) to follow 1-2 step directions.
  - Alerts to sensory input from another person (auditory, visual, touch, movement) BUT requires actual physical assistance to follow simple directions.
  - Uncertain response to sensory stimuli (e.g., sound/voice; sight/gesture; touch; movement; smell).
- 9. Vision** (check the best description)
- Vision within normal limits.
  - Corrected vision within normal limits.
  - Low vision; uses vision for some activities of daily living.
  - No functional use of vision for activities of daily living, or unable to determine functional use of vision.

**10. Hearing** (check the best description)

- Hearing within normal limits.
- Corrected hearing loss within normal limits.
- Hearing loss aided, but still with a significant loss.
- Profound loss, even with aids.
- Unable to determine functional use of hearing.

**11. Motor** (check the best description)

- No significant motor dysfunction that requires adaptations.
- Requires adaptations to support motor functioning (e.g., walker, adapted utensils, and/or keyboard).
- Uses wheelchair, positioning equipment, and/or assistive devices for most activities.
- Needs personal assistance for most/all motor activities.

**12. Engagement** (check the best description)

- Initiates and sustains social interactions.
- Responds with social interaction, but does not initiate or sustain social interactions.
- Alerts to others.
- Does not alert to others.

**13. Health Issues/Attendance** (check the best description)

- Attends at least 90% of school days.
- Attends approximately 75% of school days; absences primarily due to health issues.
- Attends approximately 50% or less of school days; absences primarily due to health issues.
- Receives Homebound Instruction due to health issues.
- Highly irregular attendance or homebound instruction due to issues *other* than health.

**14. Reading** (check the best description)

- Reads fluently with critical understanding in print or Braille (e.g., to differentiate fact/opinion, point of view, emotional response, etc).
- Reads fluently with basic (literal) understanding from paragraphs/short passages with narrative/informational texts in print or Braille.
- Reads basic sight words, simple sentences, directions, bullets, and/or lists in print or Braille.
- Aware of text/Braille, follows directionality, makes letter distinctions, or tells a story from the pictures that is not linked to the text.
- No observable awareness of print or Braille.

**15. Mathematics** (check the best description)

- Applies computational procedures to solve real-life or routine word problems from a variety of contexts.
- Does computational procedures with or without a calculator.
- Counts with 1:1 correspondence to at least 10, and/or makes numbered sets of items.
- Counts by rote to 5.
- No observable awareness or use of numbers.

**16. Writing** (check the best description)

- Conveys thoughts in complete sentences using correct spelling, grammar, and writing mechanics.
- Writes words or sentences from a model or uses word cards or sentence strips to compose a complete sentence.
- Uses pictorial representations to convey thoughts; writes alphabet letters on demand; writes name.
- Locates print; understands that print has a purpose; recognizes name in print.
- No observable awareness or use of print.



## NCSC/ DC CAS-Alt Science Student Registration Verification Form

The Office of the State Superintendent of Education is requesting that local education agencies (LEAs) confirm that all eligible students have been appropriately assigned to the alternate assessment (NCSC/ DC CAS Alt Science) in SEDS. This form serves as the final verification that the LEA has followed OSSE guidance, each student assigned to the alternate assessment has a completed participation criteria form, and only students with the most significant cognitive disabilities are placed on the alternate assessment.

Please verify the following and sign below. For every student assigned to the NCSC/ DC CAS-Alt Science assessment the LEA confirms that:

- IEP teams convened a meeting to review and completed the new student participation criteria form;
- Students meet all requirements for eligibility; and
- Students have a completed and parent signed participation criteria form in SEDS.

LEA name \_\_\_\_\_

LEA representative name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

## **Appendix B**

### Frequently Used Forms

Table of Contents  
Parent Validation  
Administrator Validation  
Parent Permission to Photograph, Audiotape, or Videotape  
Entry Cover Sheets  
Activity Description  
Data Collection Forms  
Audiotape/Videotape Evaluation Script  
Teacher Checklist

2013 – 2014 DC CAS-Alt Science Portfolio  
 TABLE OF CONTENTS

(place student Pre-ID label here)

Student Name \_\_\_\_\_ Nickname \_\_\_\_\_

Date of Birth \_\_\_\_\_ Enrolled Grade Level \_\_\_\_\_

Student Identification Number \_\_\_\_\_

- This portfolio is based on  Attainment Model for Performance  
 Progress Model for Performance

<b>SECTION 1</b>	<b>Page(s)</b>
Learner Characteristics Inventory	_____
Parent Validation	_____
Administrator Validation	_____
Parent Permission for Photos/Video (optioional)	_____
<b>SECTION 2 SCIENCE (GRADES 5, 8, AND Biology)</b> (Add strand names and codes for the standards used)	

Science Strand 1 \_\_\_\_\_

- Entry Cover Sheet
- Data Collection Sheet
- Activity Description
- Evidence - number of pieces \_\_\_\_\_

Science Strand 2 \_\_\_\_\_

- Entry Cover Sheet
- Data Collection Sheet
- Activity Description
- Evidence - number of pieces \_\_\_\_\_

Science Strand 3 \_\_\_\_\_

- Entry Cover Sheet
- Data Collection Sheet
- Activity Description
- Evidence - number of pieces \_\_\_\_\_

## Parent Validation

I have reviewed \_\_\_\_\_ pages of \_\_\_\_\_ pages of my child's portfolio. I certify that it is his/her work, and reflects his/her performance.

Comments:

---

(Signature and Date)

## Administrator Validation

Date:

Dear \_\_\_\_\_,  
(Teacher's Name)

I have reviewed the learner characteristics and entries of

\_\_\_\_\_ 's Collection of Evidence  
(Student's Name)

and I certify it is his/her work.

Comments:

\_\_\_\_\_  
(Signature of Building Administrator)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(School)

## Parent Permission to Photograph, Audiotape, or Videotape

I give my permission for \_\_\_\_\_ to provide  
(teacher name)

- photographs,
- audiotape,
- videotape

for my son /daughter \_\_\_\_\_ . I understand this information will be included in my son/daughter's Collection of Evidence for the DC CAS-Alt Science portfolio and will be used for educational purposes only. Any reproduction of my son/daughter's assessment for scoring or training purposes will require that all identifying information be removed.

\_\_\_\_\_ Parent/Guardian

\_\_\_\_\_ Date

## Entry Cover Sheets for Science

## Entry Cover Sheet/Science (Grade 5)

Student: \_\_\_\_\_ School Year: \_\_\_\_\_

<p><b>Strand:</b></p> <p><i>Science and Technology</i></p>	<p><b>Learning Standard:</b></p> <p><b>Standards Based Activity:</b></p> <p><b>Targeted Skill:</b></p>
<p><b>Strand:</b></p> <p><i>Earth and Space Science</i></p>	<p><b>Learning Standard:</b></p> <p><b>Standards Based Activity:</b></p> <p><b>Targeted Skill:</b></p>
<p><b>Strand:</b></p> <p><i>Life Science</i></p>	<p><b>Learning Standard:</b></p> <p><b>Standards Based Activity:</b></p> <p><b>Targeted Skill:</b></p>

## Entry Cover Sheet/Science (Grade 8)

Student: \_\_\_\_\_ School Year: \_\_\_\_\_

<b>Strand:</b>  <i>Matter and Reactions</i>	<b>Learning Standard:</b>  <b>Standards Based Activity:</b>  <b>Targeted Skill:</b>
<b>Strand:</b>  <i>Energy and Waves</i>	<b>Learning Standard:</b>  <b>Standards Based Activity:</b>  <b>Targeted Skill:</b>
<b>Strand:</b>  <i>Forces</i>	<b>Learning Standard:</b>  <b>Standards Based Activity:</b>  <b>Targeted Skill:</b>

# Entry Cover Sheet/Science (Biology)

Student: \_\_\_\_\_ School Year: \_\_\_\_\_

<p><b>Strand:</b> <i>Biology</i></p> <p><b>Sub-Strand:</b> <i>Cell Biology and Biochemistry</i></p>	<p><b>Learning Standard:</b></p> <p><b>Standards Based Activity:</b></p> <p><b>Targeted Skill:</b></p>
<p><b>Strand:</b> <i>Biology</i></p> <p><b>Sub-strand:</b> <i>Genetics and Evolution</i></p>	<p><b>Learning Standard:</b></p> <p><b>Standards Based Activity:</b></p> <p><b>Targeted Skill:</b></p>
<p><b>Strand:</b> <i>Molecular Organisms</i></p> <p><b>Sub-strand:</b> <i>Plants and Animals</i></p>	<p><b>Learning Standard:</b></p> <p><b>Standards Based Activity:</b></p> <p><b>Targeted Skill:</b></p>

## **Sample Data Collection Forms**



# Data Sheet for Accuracy and Independence/Prompt Level

Student Name: \_\_\_\_\_ Standard Code: \_\_\_\_\_

Targeted Skill: \_\_\_\_\_

Steps or Trials	Dates (M/D/Y)									
	Baseline									
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
<b>Performance Summary</b> (% of correct responses)										
<b>Comments</b>										
<b>Accuracy</b> + Correct —Incorrect										

# Task Analysis Data Sheet

Student Name: \_\_\_\_\_

Standard Code: \_\_\_\_\_

Targeted Skill: \_\_\_\_\_

Task Analyzed Steps ↓	Dates (M/D/Y)									
	Baseline									
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
Total										
Performance Summary (%)										
Comments										
<b>Key: Accuracy</b> <b>+ Correct and Independent    — Incorrect or Prompted (tell, show or physically guide to correct answer)</b>										

# Task Analysis Data Sheet

Student Name: \_\_\_\_\_ Standard Code: \_\_\_\_\_

Targeted Skill: \_\_\_\_\_

Task Analyzed Steps ↓	Dates (M/D/Y)									
	Baseline									
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
Total										
Performance Summary (%)										
Comments										
<b>Key: Accuracy</b> <b>+ Correct and Independent</b> <b>— Incorrect or Prompted (tell, show or physically guide to correct answer)</b>										

## ACTIVITY DESCRIPTION

Student Name \_\_\_\_\_

Date(s) \_\_\_\_\_

Page Number(s): \_\_\_\_\_

Brief Description of Activity: \_\_\_\_\_

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**Supports:** Provide a detailed and specific list of the supports provided the student that promoted independent responses to the task. Think about what modifications in setting, task presentation, and student response were used. Also consider what strategies were used to ensure student involvement in the task.

Check all that apply below and add any other supports and/or strategies used by the student during instruction and assessment that promoted independent access to learning and the general curriculum.

Note: This is not meant to be an exhaustive list of possible supports.

- |   |   |
|---|---|
| <input type="checkbox"/> Body positioning   | <input type="checkbox"/> Scribe                               |
| <input type="checkbox"/> Limited distractions   | <input type="checkbox"/> Bolded/highlighted key words         |
| <input type="checkbox"/> Manipulatives  | <input type="checkbox"/> Sentence starter                     |
| <input type="checkbox"/> Modified (shortened/simplified) text   | <input type="checkbox"/> Digital/electronic text              |
| <input type="checkbox"/> Graphic Organizer  | <input type="checkbox"/> Communication device                 |
| <input type="checkbox"/> Number/letter stamp  | <input type="checkbox"/> Voice recognition software           |
| <input type="checkbox"/> Reader (while student follows along with pictures, signs, textures, objects) | <input type="checkbox"/> Markers or other large writing tools |

Other strategies and tools:

## VIDEOTAPE/AUDIOTAPE EVALUATION SCRIPT

Student: \_\_\_\_\_ Dates: \_\_\_\_\_

Teacher: \_\_\_\_\_

Label the audiotape or videotape with the above information. Keep a copy of this script with the tape.

Segment Number	Segment Length	People Involved	Activity

# DC CAS-Alt Science Portfolio Checklist 2014 – 2015

with portfolio

\*\*\* For teacher use only – do not submit

Student Name \_\_\_\_\_

Table of Contents

**Section 1**

Learner Characteristics Inventory

Parent Validation

Principal Validation

Permission to Photograph/Videotape (optional)

Key: S1 – Strand 1 S2 – Strand 2 S3 – Strand 3 Shadowed boxes: Information may not be required or needed. Patterned boxes: Discretionary use is recommended.	Name			School Year or Date			Learning Standard			Standards Based Activity			Targeted Skill			Score			Legend		
	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1	S2	S3
Section 2 Science (Grades 5, 8, Biology)																					
Entry Cover Sheet <input type="checkbox"/> Composite or <input type="checkbox"/> 3 separate																					
Data Collection Sheet																					
Activity Description																					
Evidence 1 Date matches data probe <input type="checkbox"/>																					
Evidence 2 Date matches data probe <input type="checkbox"/>																					
Evidence 3 Date matches data probe <input type="checkbox"/>																					
Evidence 4 Date matches data probe <input type="checkbox"/>																					
Evidence 5 Date matches data probe <input type="checkbox"/>																					
Evidence 6 Date matches data probe <input type="checkbox"/>																					
Evidence 7 Optional																					
Evidence 8 Optional																					

## **Appendix C**

### Scoring Rubric for Science

## DC CAS-Alt Science Scoring Rubric for Science 2014-2015

<b>Performance</b>	Targeted skill is not clearly linked to the grade-level learning standard.	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.
	OR Baseline score is above 50%.	(0–40% accurate)	(41–74% accurate)	(75–89% accurate)	(90–100% accurate)
<b>Attainment</b>					
<b>Progress</b> (% points above baseline)		0–9%	10–24%	25–49%	50% & above
<b>Level of Complexity</b>	Entry reflects no basis in the DC 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 <b>modified to a lower cognitive demand</b> for the student in this strand.	Student work reflects part of the cognitive demand of the grade-level expectation in this strand.	Student work reflects the same cognitive demand as the grade-level expectation in this strand (may reflect a different level of complexity/difficulty).
<b>Supports</b>	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 <b>but</b> 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 <b>and</b> 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, <b>and</b> the grade-level learning standards.

## **Appendix D**

### Required Learning Strands and Standards By Grade Level

## REQUIRED LEARNING STANDARDS BY GRADE LEVEL

The following are the required learning strands and possible learning standards broken out by grade level. **Choose one of the listed learning standards for each strand.**

### 5<sup>th</sup> Grade

Choose one of the listed learning standards for each strand.

Science Strand	Learning Standard
<b>Science and Technology</b>	<p>5.1.1 Evaluate the validity of claims based on the amount and quality of the evidence cited.</p> <p><i>Or</i></p> <p>5.2.1 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.</p> <p><i>Or</i></p> <p>5.2.5 Identify the controlled variable and at least one independent variable in a scientific investigation, when appropriate.</p>
<b>Earth and Space Science</b>	<p>5.5.1 Describe the Earth as part of a system called the solar system, which includes the sun (a star), planets, comets, asteroids, and many moons.</p> <p><i>Or</i></p> <p>5.5.3 Demonstrate how the Earth orbits the sun in a year’s time, and Earth rotates on its axis about once every 24 hours.</p>
<b>Life Science</b>	<p>5.12.2 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.</p> <p><i>Or</i></p> <p>5.12.4 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).</p> <p><i>Or</i></p> <p>5.12.5 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.</p> <p><i>Or</i></p> <p>5.12.9 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.</p>

## 8<sup>th</sup> Grade

Choose one of the listed learning standards for each strand.

Science Strand	Learning Standard
<b>Matter and Reactions</b>	<p><b>8.3.2</b> Construct a model of an atom and know the atom is composed of protons, neutrons, and electrons.</p> <p><i>Or</i></p> <p><b>8.4.1</b> 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.</p> <p><i>Or</i></p> <p><b>8.5.5</b> 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.</p> <p><i>Or</i></p> <p><b>8.7.2</b> Explain how the idea of atoms 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.</p> <p><i>Or</i></p> <p><b>8.8.3</b> 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.</p> <p><i>Or</i></p> <p><b>8.8.4</b> 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 pH scale is used to describe how acidic or basic a solution is (each increase of one in the pH scale is an increase of 10 times in concentration).</p>
<b>Energy and Waves</b>	<p><b>8.12.2</b> 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).</p> <p><i>Or</i></p> <p><b>8.12.6</b> Know the sun’s radiation consists of a wide range of wavelengths, mainly visible light and infrared and ultraviolet radiation.</p> <p><i>Or</i></p> <p><b>8.15,2</b> Explain that heat energy is a common product of an energy transformation, such as in biological growth, the operation of machines, the operation of a light bulb, and the motion of people.</p> <p><i>Or</i></p> <p><b>8.15.4</b> Compare and contrast how heat energy can be transferred through radiation, convection, or conduction.</p> <p><i>Or</i></p> <p><b>8.16.1</b> 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.</p>

## 8th Grade (cont.)

<b>Forces</b>	<b>8.10.1</b> Explain that every object exerts an attractive gravitational force on every other object. <i>Or</i> <b>8.11.1</b> Recognize that a force has both magnitude and direction. <i>Or</i> <b>8.11.2</b> Observe and explain that when the forces on an object are balanced (equal and opposite forces that add up to zero), the motion of the object does not change.
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## Biology

Choose one of the listed learning standards for each strand.

Science Strand	Learning Standard
<b>Biology: Cell Biology and Biochemistry</b>	<p><b>B.3.3</b> 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.</p> <p><i>Or</i></p> <p><b>B.3.7</b> Recognize and describe that cellular respiration is important for the production of adenosine triphosphate (ATP), which is the basic energy source for cell metabolism.</p> <p><i>Or</i></p> <p><b>B.4.3</b> 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).</p> <p><i>Or</i></p> <p><b>B.4.4</b> 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.</p> <p><i>Or</i></p> <p><b>B.7.5</b> 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.</p>
<b>Biology: Genetics and Evolution</b>	<p><b>B.7.2</b> 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.</p> <p><i>Or</i></p> <p><b>B.8.2</b> 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.</p> <p><i>Or</i></p> <p><b>B.8.3</b> Understand and explain that specialization of cells is almost always due to different patterns of gene expression rather than differences in the genes themselves.</p> <p><i>Or</i></p> <p><b>B.9.2</b> Explain the mechanisms of genetic mutations and chromosomal recombinations, and when and how they are passed on to offspring.</p> <p><i>Or</i></p> <p><b>B.9.3</b> 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.</p>

## Biology (cont.)

<b>Multicellular Organisms: Plants and Animals</b>	<p><b>B.12.3</b> Explain that during the process of photosynthesis, plants release oxygen into the air.</p> <p><b>Or</b></p> <p><b>B.13.1</b> Identify the roles of plants in the ecosystem: Plants make food and oxygen, provide habitats for animal, make and preserve soil, and provide thousands of useful products for people (e.g., energy, medicines, paper, resins).</p> <p><b>Or</b></p> <p><b>B.14.1</b> Explain the major systems of the mammalian body (digestive, respiratory, reproductive, circulatory, excretory, nervous, endocrine, integumentary, immune, skeletal, and muscular) and how they interact with each other.</p>
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## **Appendix E**

### **Bloom's Revised Taxonomy: Process Verbs and Possible Products for the Cognitive Domain**

**Bloom’s Revised Taxonomy:  
Process Verbs and Possible Products for the Cognitive Domain\***

	<b>Remembering</b>	<b>Understanding</b>	<b>Applying</b>	<b>Analyzing</b>	<b>Evaluating</b>	<b>Creating</b>
<b>Definition</b>	Recall previously learned information	Demonstrate understanding of the facts	Use knowledge in a new or novel situation	Break down ideas/concepts into component parts to support understanding	Make judgments about the value of ideas or materials	Put component parts together to form a new product or solution
<b>Process Verbs</b>	<ul style="list-style-type: none"> <li>• Choose</li> <li>• Describe</li> <li>• Estimate</li> <li>• Find</li> <li>• Give example</li> <li>• Identify</li> <li>• Label</li> <li>• List</li> <li>• Locate</li> <li>• Match</li> <li>• Name</li> <li>• Quote</li> <li>• Recite</li> <li>• Recognize</li> <li>• Relate</li> <li>• Retrieve</li> <li>• Select</li> <li>• Show</li> <li>• State</li> <li>• Tell</li> </ul>	<ul style="list-style-type: none"> <li>• Classify</li> <li>• Compare</li> <li>• Comprehend</li> <li>• Convert</li> <li>• Define</li> <li>• Demonstrate</li> <li>• Describe</li> <li>• Discuss</li> <li>• Distinguish</li> <li>• Estimate</li> <li>• Explain</li> <li>• Extend</li> <li>• Generalize</li> <li>• Give example</li> <li>• Interpret</li> <li>• Outline</li> <li>• Paraphrase</li> <li>• Predict</li> <li>• Recognize</li> <li>• Retell</li> <li>• Review</li> <li>• Summarize</li> <li>• Translate</li> </ul>	<ul style="list-style-type: none"> <li>• Adapt</li> <li>• Calculate</li> <li>• Change</li> <li>• Complete</li> <li>• Construct</li> <li>• Demonstrate</li> <li>• Determine</li> <li>• Dramatize</li> <li>• Draw</li> <li>• Execute</li> <li>• Exhibit</li> <li>• Illustrate</li> <li>• Implement</li> <li>• Make</li> <li>• Manipulate</li> <li>• Modify</li> <li>• Operate</li> <li>• Produce</li> <li>• Sequence</li> <li>• Show</li> <li>• Solve</li> <li>• Use</li> </ul>	<ul style="list-style-type: none"> <li>• Appraise</li> <li>• Attribute</li> <li>• Calculate</li> <li>• Categorize</li> <li>• Compare</li> <li>• Debate</li> <li>• Deconstruct</li> <li>• Diagram</li> <li>• Dissect</li> <li>• Draw conclusions</li> <li>• Examine</li> <li>• Explain</li> <li>• Experiment</li> <li>• Group</li> <li>• Investigate</li> <li>• Order</li> <li>• Organize</li> <li>• Question</li> <li>• Separate</li> </ul>	<ul style="list-style-type: none"> <li>• Argue</li> <li>• Check</li> <li>• Choose</li> <li>• Compare/contrast</li> <li>• Critique</li> <li>• Debate</li> <li>• Decide</li> <li>• Defend</li> <li>• Detect</li> <li>• Infer</li> <li>• Judge</li> <li>• Justify</li> <li>• Measure</li> <li>• Prioritize</li> <li>• Reject</li> <li>• Rate</li> <li>• Revise</li> <li>• Select</li> <li>• Tell why</li> <li>• Test</li> <li>• Validate</li> <li>• Verify</li> </ul>	<ul style="list-style-type: none"> <li>• Assemble</li> <li>• Compile</li> <li>• Compose</li> <li>• Construct</li> <li>• Design</li> <li>• Develop</li> <li>• Devise</li> <li>• Generate</li> <li>• Hypothesize</li> <li>• Imagine</li> <li>• Invent</li> <li>• Make</li> <li>• Organize</li> <li>• Plan</li> <li>• Prepare</li> <li>• Produce</li> <li>• Propose</li> <li>• Set up</li> </ul>
<b>Possible Products</b>	<ul style="list-style-type: none"> <li>• Definition</li> <li>• Facts chart</li> <li>• Label</li> <li>• List</li> <li>• Quiz</li> <li>• Reproduction</li> <li>• Vocabulary</li> <li>• Worksheet</li> </ul>	<ul style="list-style-type: none"> <li>• Basic calculations</li> <li>• Collection</li> <li>• Definition</li> <li>• Example</li> <li>• Explanation</li> <li>• Outline</li> <li>• Show and tell</li> <li>• Story problems</li> <li>• Summary</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration</li> <li>• Diagram</li> <li>• Diary</li> <li>• Illustration</li> <li>• Interview</li> <li>• Journal</li> <li>• Model</li> <li>• Performance</li> <li>• Presentation</li> <li>• Puzzle game</li> <li>• Sculpture</li> <li>• Simulation</li> <li>• Scrap book</li> </ul>	<ul style="list-style-type: none"> <li>• Analogy</li> <li>• Chart</li> <li>• Checklist</li> <li>• Database</li> <li>• Graph</li> <li>• Mobile</li> <li>• Report</li> <li>• Spreadsheet</li> <li>• Survey</li> </ul>	<ul style="list-style-type: none"> <li>• Conclusion</li> <li>• Debate</li> <li>• Editorial</li> <li>• Evaluation</li> <li>• Investigation</li> <li>• Judgment</li> <li>• Panel</li> <li>• Persuasive speech</li> <li>• Recommendation</li> <li>• Scale</li> <li>• Survey</li> </ul>	<ul style="list-style-type: none"> <li>• Compose</li> <li>• Design</li> <li>• Devise</li> <li>• Film</li> <li>• Invention</li> <li>• New game</li> <li>• New product</li> <li>• Painting</li> <li>• Project</li> <li>• Story</li> </ul>

\*The verbs listed here are not the all of the possible choices for each category. Please note that some verbs are found in multiple categories because there are ways to demonstrate the verb at different levels of complexity. Additionally, this is not meant to be an exhaustive list of products.

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