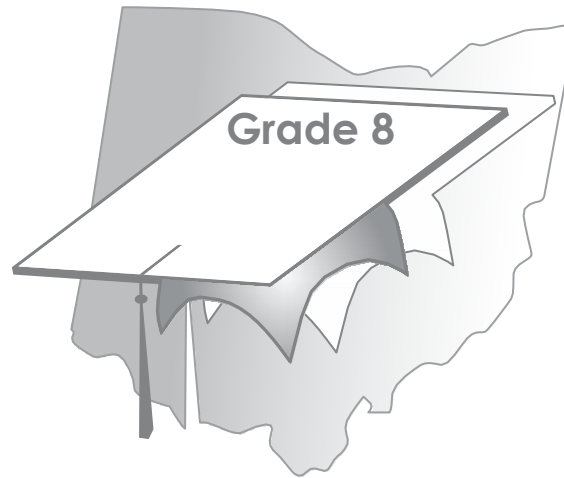


Alternate Assessment for Students with the Most Significant Cognitive Disabilities (AASCD)

Test Specifications



Grade 8 Science

Introduction

The Test Specifications provide an overview of the structure and content of Ohio’s Alternate Assessment for Students with the Most Significant Cognitive Disabilities (AASCD). This overview includes a description of the test design as well as information on the items that will appear on the test. Also included is a test blueprint, a document that identifies the range and distribution of items grouped into various reporting categories. The specifications also provide specific guidelines for the development of all items used for Ohio’s AASCD. This document is a resource not only for item writers and test designers, but also for Ohio educators and other stakeholders who are interested in a deeper understanding of the test.

Test Design Overview

The AASCD is an online assessment designed to maximize access for students with the most significant cognitive disabilities and ensure that all students are included in Ohio’s statewide assessment and accountability programs. A student who qualifies for the AASCD is unable to participate in the state’s regular assessment, even with allowable accommodations. However, it is expected that the majority of students who take the AASCD will require supports and accessibility features to access or respond to the test. This is considered in the test design and the AASCD does allow for most student accommodations of any type. Accommodations are considered to be adjustments to the standard testing conditions, test format or test administration that provide equitable access to a student.

There are three test modes for the AASCD; online, supplemental and full paper. Supplemental braille materials are also available to be used with the supplemental and full paper test modes. Regardless of test mode, questions cannot be skipped and must be administered in the order they are presented. Tests are given at each individual grade level and consist of 50 questions per test. The questions are of varying complexity levels and all questions created for the AASCD align to Ohio’s Learning Standards-Extended.

Complexity Levels

The Ohio Learning Standards-Extended (OSL-E) include three levels from “most complex” to “least complex”. The complexity levels are comprised of three targets of varying difficulty aligned to each standard from the Ohio Learning Standards (OLS). The extensions are codified individually for clear designation. The last letter in the extension code indicates the complexity level: “a” denotes the highest level of complexity, “b” denotes the middle complexity level and “c” denotes the lowest complexity level. In some instances, the verb of the extension is tiered to increase or decrease the complexity level. In other cases, the concept or skill within the OLS is tiered across the three complexity levels. **It is important to move from left to right when reading the extensions.** To determine where instruction should begin, educators should start with the general standard and then progress down through the complexity levels until finding the optimum starting point. **It’s important to note that no one should categorize students according to an extension level.** Instead, instruction should build skills across the extensions to the highest level possible based on individual student strengths which may vary across standards. Ideally, when educators apply these extensions within each grade level, one should see instruction occurring at all ranges of complexity. When citing standards for lesson and/or assessment design, educators should include the full complexity range, including the general standard. Citing standards in this way acknowledges a range of entry points and a range of learning progressions.

Blueprints

Test blueprints serve as a guide for test construction and provide an outline of the content and skills to be measured on the test. They contain information about individual tests, including the reporting category, the learning standards included for each reporting category, the item range for each reporting category and total test items for each test.

Grade 8 Science			
Reporting Categories	Learning Standards*	Point Range	Total Test Points
Earth and Space Science	8.ESS.1, 8.ESS.2, 8.ESS.3, 8.ESS.4	10 - 15	40
Life Science	8.LS.1, 8.LS.2, 8.LS.3	10 - 15	
Physical Science	8.PS.1, 8.PS.2	10 - 15	

*All of the extensions for each learning standard are eligible for inclusion in the assessment.

Access Limitations

Blind and visually impaired students can be administered the AASCD online. These students should be marked in TIDE with a test mode of online (O) and also flagged in TIDE or the TA Interface as Yes under the Access Limited – Blind setting. Indicating Yes under this setting will prevent these students from receiving items on the online test that are flagged as access limited for blind or visually impaired students.

Items are flagged as access limited for blind or visually impaired students if a visual element that cannot be described with words is critical to answering the question. Items should only depend on visual elements where that is necessary to assess the extended standard.

Early-Stopping Rule

There may be instances where the district has not yet determined a student's mode of communication. For students that are unable to provide a discernible response to an item, the test administrator can select the "Mark as No Response" option from the context menu within the Student Interface for online and supplemental testers or in the Data Entry Interface (DEI) for paper testers.

The Student Interface and DEI have a built-in early stopping rule, which will automatically stop the test if the "Mark as No Response" option is submitted as the response for all four of the first four items for that test subject. Test administrators are still required to administer all other applicable subjects to a student even if the early stopping rule was enacted for another subject. If the student is able to provide a discernible response to at least one of the first four items for a test subject, the administrator should continue the assessment.

The first four items on every test mode are fixed and are low complexity items. Low complexity items are selected for the first four items to give students a chance to demonstrate that they can provide a response.

Nature of Science

One goal of science education is to help students become scientifically literate citizens that are able to use science as a way of knowing about the natural and material world. All students should have sufficient understanding of scientific knowledge and scientific processes to enable them to distinguish what is science from what is not science and to make informed decisions about career choices, health maintenance, quality of life, community and other decisions that impact both themselves and others.

Categories

6-8

Scientific Inquiry, Practice and Applications

All students must use these scientific processes with appropriate [laboratory safety techniques](#) to construct their knowledge and understanding in all science content areas.

- Apply knowledge of science content to real-world challenges.
- Identify questions that can be answered through scientific investigations.
- Design and conduct scientific investigations using appropriate [safety techniques](#).
- Use appropriate mathematics, tools and techniques to gather data and information.
- Analyze and interpret data.
- Develop descriptions, models, explanations, and predictions.
- Think critically and logically to connect evidence and explanations.
- Recognize and analyze alternative explanations and predictions.
- Communicate scientific procedures and explanations.
- Design technological/engineering solutions.

Nature of Science (continued)

One goal of science education is to help students become scientifically literate citizens that are able to use science as a way of knowing about the natural and material world. All students should have sufficient understanding of scientific knowledge and scientific processes to enable them to distinguish what is science from what is not science and to make informed decisions about career choices, health maintenance, quality of life, community and other decisions that impact both themselves and others.

6-8

Science is a Way of Knowing

Science assumes the universe is a vast single system in which basic laws are consistent. Natural laws operate today as they did in the past and they will continue to do so in the future. Science is both a body of knowledge that represents a current understanding of natural systems and the processes used to refine, elaborate, revise and extend this knowledge.

- Science is a way of knowing about the world around us based on evidence from experimentation and observations.
- Science is a continual process and the body of scientific knowledge continues to grow and change.
- Science assumes that objects and events occur in consistent patterns that are understandable through measurement and observation.
- Science should carefully consider and evaluate all data including outliers.
- Science is based on observable phenomena and empirical evidence.
- Science disciplines share common rules for obtaining and evaluating empirical evidence.

Science is a Human Endeavor

Science has been, and continues to be, advanced by individuals of various races, genders, ethnicities, languages, disabilities, family backgrounds and incomes.

- Individuals from different social, cultural, and ethnic backgrounds work as scientists and engineers.
- Scientists and engineers are guided by habits of mind, such as intellectual honesty, tolerance of ambiguity, skepticism and openness to ideas.
- Scientists and engineers rely on human qualities such as persistence, precision, reasoning, logic, imagination, and creativity.

Scientific Knowledge is Open to Revision in Light of New Evidence

Science is not static. Science is constantly changing as we acquire more knowledge.

- Science explanations are subject to revision and improvement in light of scientific evidence or new understanding of scientific evidence.

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	8.ESS.1 The composition and properties of Earth’s interior are identified by the behavior of seismic waves.		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.ESS.1a Match properties to the correct layer of Earth.	8.ESS.1b Identify Earth’s core, mantle, outer core, and inner core.	8.ESS.1c Recognize that the inside of the Earth is made up of distinct layers.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Items may focus on the core being the inner most layer and that there are two different parts of the core: one liquid and one solid; the mantle is solid but can be flowing and drives movement of crustal plates; and the crust is the smallest layer. • Items may use models and images that show one or more layers of the Earth. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	Which layer causes the plates on the crust to move?
Moderate Complexity Level B	Which layer is in the center of Earth?
Low Complexity Level C	Choose the picture that shows what Earth looks like inside.

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	8.ESS.2 Earth's lithosphere consists of major and minor tectonic plates that move relative to each other.		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.ESS.2a Identify the different types of plate boundaries (e.g., convergent, divergent, transform).	8.ESS.2b Recognize that the crust is broken into plates that move.	8.ESS.2c Identify the layer of Earth that we live on as the crust.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Items may use models and images of plates, plate boundaries, and world maps. • Items may use models and images that describe the movement that occurs at each boundary type. • Items may use models and images that show the crust. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	Which plate boundary has two plates moving away from each other?
Moderate Complexity Level B	Which phrase best describes the crust of the Earth?
Low Complexity Level C	Which layer of Earth do we live on?

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	8.ESS.3 A combination of constructive and destructive geologic processes formed Earth's surface.		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.ESS.3a Categorize geologic processes as constructive (e.g., depositions, volcanoes spreading new layers) or destructive (e.g., flooding, volcanoes forming craters).	8.ESS.3b Identify destructive and constructive processes that change Earth's surface.	8.ESS.3c Identify a destructive process that changes Earth's surface.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Items may use models and images of Earth processes. • Items may focus on processes such as flooding, landslides, volcanoes, erosion, and deposition of sediment by wind, water, and volcanoes. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	Which process is constructive?
Moderate Complexity Level B	Which event can build up new material on Earth's surface?
Low Complexity Level C	Which event can break down landforms on Earth's surface?

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	8.ESS.4 Evidence of the dynamic changes of Earth's surface through time is found in the geologic record.		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.ESS.4a Explain how fossils indicate Earth's history and environment changes.	8.ESS.4b Explain that fossils are millions of years old.	8.ESS.4c Identify that humans can study Earth's past by looking at layers of rocks and fossils.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Items may use images of the geologic timeline and rock layers to relate to Earth's history. • Items should focus on how fossils show life in the past. • Items may use an image or a description of a fossil. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	What does this fossil show about the environment at the time the organism lived?
Moderate Complexity Level B	A scientist finds a fossil. What is a reasonable prediction for the age of the fossil?
Low Complexity Level C	What is one way that humans study Earth's past?

Content Area	Science		
Strand	Physical Science		
Reporting Category	Physical Science		
Gen-Ed Standard	8.PS.1 Objects can experience a force due to an external field such as magnetic, electrostatic, or gravitational fields.		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.PS.1a Given an interaction, determine what type of force is acting on the object.	8.PS.1b Determine the type of interaction between objects (e.g., magnetic, electrostatic, or gravitational fields).	8.PS.1c Recognize that an object has experienced a force from an external field (e.g., magnetic, electrostatic, or gravitational fields).
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Gravitational interactions should focus on objects falling back to Earth or simple space science examples. • Magnetic interactions should focus on hand-held magnetic objects. • Electrostatic interactions should focus on common events such as a balloon sticking to a wall or hair standing on end. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	A girl throws a ball straight up into the air. Which force causes the ball to fall back to the ground?
Moderate Complexity Level B	The image shows a balloon sticking to a wall after it was rubbed on a shirt. What causes the balloon to stick the wall?
Low Complexity Level C	Ron holds a magnet close to a metal nail. What will happen to the nail?

Content Area	Science		
Strand	Physical Science		
Reporting Category	Physical Science		
Gen-Ed Standard	8.PS.2 Forces can act to change the motion of objects.		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.PS.2a Complete a force diagram.	8.PS.2b Predict the result of an application of force in a particular direction.	8.PS.2c Show how a force on an object can change its direction.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Force diagrams should be simple, with simple objects or boxes used in the diagrams. • Items should use simple, common objects, such as toy cars, balls, boxes, or books. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	Part of a force diagram is shown for a book sitting on a table. Where should the arrow go on the force diagram to show the force of gravity on the book?
Moderate Complexity Level B	The picture shows a hand pushing a car on a table. Which direction will the car move on the table?
Low Complexity Level C	The picture shows a toy car sitting still on the floor. The teacher then gives the car a hard push from the right. What direction will the car move after the push?

Content Area	Science		
Strand	Life Science		
Reporting Category	Life Science		
Gen-Ed Standard	8.LS.1 Diversity of species, a result of variation of traits, occurs through the process of evolution and extinction over many generations. The fossil records provide evidence that changes have occurred in number and types of species.		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.LS.1a Explain how fossils indicate how traits have changed over Earth's history.	8.LS.1b Identify how a trait could be helpful or harmful to the animal's survival after a change in an environmental condition.	8.LS.1c Explore animal traits and how they are useful for survival.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Items may use images of fossils and focus on how these fossils show the changes in traits of animals that lived in the past. • Items should focus on common animals and common traits they need for survival, such as thick fur for warmth and sharp teeth for food. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	<p>The image shows three fossils of shark teeth from long ago. Fossil 1 is the oldest tooth. Fossil 3 is the youngest tooth.</p> <p>What do the shark tooth fossils show about the changes in the shark species over time?</p>
Moderate Complexity Level B	<p>A mudslide clears away many plants that are low to the ground.</p> <p>Which trait could be helpful to animals that live in this area?</p>
Low Complexity Level C	<p>Which trait helps an animal survive in cold weather?</p>

Content Area	Science		
Strand	Life Science		
Reporting Category	Life Science		
Gen-Ed Standard	8.LS.2 Every organism alive today comes from a long line of ancestors who reproduced successfully every generation.		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.LS.2a Explain a survival benefit of sexual reproduction and a survival benefit of asexual reproduction.	8.LS.2b Describe that asexual reproduction results in the exact same traits as the parent and that sexual reproduction results in a mixing of traits from both parents.	8.LS.2c Identify the number of parents required for sexual and asexual reproduction.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Items may focus on how living things reproduce so that their kind can continue to live. • Items may focus on how two parents are needed for sexual reproduction, while asexual reproduction comes from one parent. • Items may focus on the differences between sexual and asexual reproduction in terms of the traits that are passed down. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	Which survival benefit is a result of sexual reproduction?
Moderate Complexity Level B	Here is an organism that reproduces asexually. In this organism, how many of the parent's traits will be passed to its offspring?
Low Complexity Level C	How many parents are required for asexual reproduction?

Content Area	Science		
Strand	Life Science		
Reporting Category	Life Science		
Gen-Ed Standard	8.LS.3 The characteristics of an organism are a result of inherited traits received from parent(s).		
Extensions	Extension A: High Complexity	Extension B: Moderate Complexity	Extension C: Low Complexity
	8.LS.3a Communicate how characteristics are a result of the DNA inherited from parents.	8.LS.3b Identify DNA as the source of traits.	8.LS.3c Identify an inherited trait.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
Content Limits	<ul style="list-style-type: none"> • Items should focus on visible traits that can be passed from parent to offspring. • Traits should be common and easily determined, such as fur color and face shape. • Items may focus on the difference between inherited and acquired traits. • Items should focus on the fact that traits get passed through DNA to offspring. • Nature of Science skills and attributes related to this content. 		

Sample Items	
<i>Item Models</i>	
High Complexity Level A	Jennifer and her mother both have freckles. Which statement explains why they both have freckles?
Moderate Complexity Level B	What is the source of your physical traits?
Low Complexity Level C	Which trait was inherited?