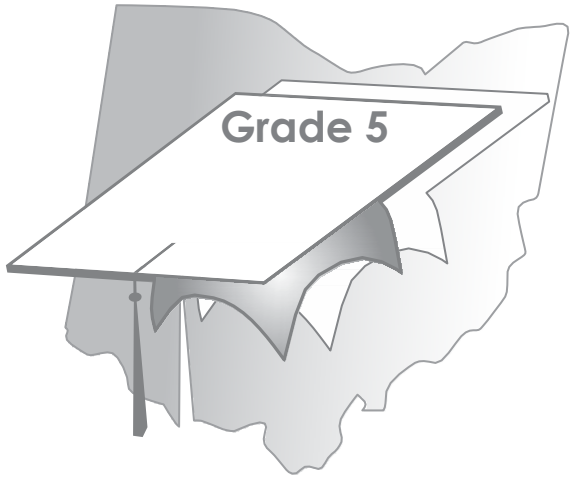
Ohio Department of Education

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

Test Specifications



Grade 5 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 5 Science			
Reporting Categories	**Learning Standards***	**Point Range**	**Total Test Points**
Earth and Space Science	5.ESS.1.1, 5.ESS.1.2, 5.ESS.1.3, 5.ESS.2.1, 5.ESS.2.2, 5.ESS.2.3, 5.ESS.3	10 - 15	40
Life Science	5.LS.1.1, 5.LS.1.2, 5.LS.2	10 - 15	
Physical Science	5.PS.1, 5.PS.2.1, 5.PS.2.2	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	**3-5**
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.	• Observe and ask questions about the world 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. • Develop and communicate descriptions, models, explanations, and predictions. • Think critically and ask questions about the observations and explanations of others. • Communicate scientific procedures and explanations. • Apply knowledge of science content to real-world challenges.

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 both a body of knowledge and processes to discover new knowledge. • Science is a way of knowing about the world around us based on evidence from experimentation and observations. • Science assumes that objects and events occur in consistent patterns that are understandable through measurement and observation.
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.	
Categories	**3-5**
Science is a Human Endeavor Science has been, and continues to be, advanced by individuals of various races, genders, ethnicities, languages, abilities, family backgrounds and incomes.	• People from many generations and nations contribute to science knowledge. • People of all cultures, genders, and backgrounds can pursue a career in science. • Scientists often work in teams. • Science affects everyday life. • Science requires creativity and imagination.
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 develops theories based on a body of scientific evidence. • Science explanations can change based on new scientific evidence.

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	**5.ESS.1 The solar system includes the sun and all celestial bodies that orbit the sun. Each planet in the solar system has unique characteristics.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.ESS.1.a1 Compare different celestial bodies including composition and size.	**5.ESS.1.b1** Match a set of descriptions to the corresponding set of celestial bodies.	**5.ESS.1.c1** Identify celestial bodies in our solar system.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Models may be constructed by creating diagrams or by using images or representative objects for the sun, Earth and moon system or for the sun and planets. • Items may include diagrams of the solar system and characteristics such as relative size. • Items should focus on similarities and differences among Earth, the moon, sun, and other planets. Similarities and differences among the planets are assessed in a later extension. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	How does the size of the sun compare with the sizes of Earth and the moon?
Moderate Complexity Level B	Which table correctly matches the objects in our solar system with their descriptions?
Low Complexity Level C	Which object is part of our solar system?

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	**5.ESS.1 The solar system includes the sun and all celestial bodies that orbit the sun. Each planet in the solar system has unique characteristics.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.ESS.1.a2 Explain what would happen to orbits if there was no gravitational force.	**5.ESS.1.b2** Identify examples of celestial objects that are being affected by a gravitational force resulting in an orbit.	**5.ESS.1.c2** Identify a representation of an orbital path within our solar system.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Models may be constructed of orbital paths by creating diagrams or by using images or representative objects for the sun, Earth, and moon system or for the sun and other celestial bodies. • Items may include diagrams showing the nearly circular orbits of the moon around Earth or of the planets and the sun. • Items should include Earth, moon, sun, and/or planets and other objects held in orbit by the force of gravity. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	Earth revolves around the sun. How would the motion of Earth change if there was no longer a gravitational pull from the sun?
Moderate Complexity Level B	Which object moves around another object due to gravity?
Low Complexity Level C	Which movement shows an object in an orbit?

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	**5.ESS.1 The solar system includes the sun and all celestial bodies that orbit the sun. Each planet in the solar system has unique characteristics.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.ESS.1.a3 Compare the composition and sizes of the major planets.	**5.ESS.1.b3** Match the composition of the major planets as related to their position in the solar system (e.g., rocky planets are close to the sun, gas giants are further from sun).	**5.ESS.1.c3** Identify Earth's place in our solar system.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Models may be constructed by creating diagrams or by using images or representative objects for the sun and inner and outer planets. • Items may include diagrams of the solar system and characteristics such as relative size and composition of the planets. • Items should focus on similarities and differences among the inner and outer planets. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	What does the chart show about the size of the planets and composition?
Moderate Complexity Level B	Where in our solar system are the giant gas planets located?
Low Complexity Level C	Where in our solar system is Earth located?

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	**5.ESS.2: The sun is one of many stars that exist in the universe.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.ESS.2.a1 Compare the Sun to stars beyond our solar system.	**5.ESS.2.b1** Explain the relationship of our Sun to our solar system and to our universe.	**5.ESS.2.c1** Identify that the Sun is a star and that the Sun is the only star in our solar system.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items may include images of the sun and other stars, charts with characteristics of the sun and other stars, or diagrams that show the solar system. • Items may include images and descriptions of the sun or stars. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	What do the sun and other stars have in common?
Moderate Complexity Level B	Where in our solar system is the sun located?
Low Complexity Level C	How many stars are in our solar system?

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	**5.ESS.2: The sun is one of many stars that exist in the universe.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.ESS.2.a2 Explain how a constellation can be used for navigation.	**5.ESS.2.b2** Explain that the pattern of stars within a constellation stays constant.	**5.ESS.2.c2** Identify a visual representation of a constellation.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items may include images and descriptions of constellations or notable stars used in navigation. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	How can explorers use the Big Dipper constellation to know their direction of travel?
Moderate Complexity Level B	Some stars are arranged in a pattern to make a constellation. What will the pattern look like in 6 months?
Low Complexity Level C	Which image shows a constellation?

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	**5.ESS.2: The sun is one of many stars that exist in the universe.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.ESS.2.a3 Compare the characteristics of different stars (e.g., size, brightness, age).	**5.ESS.2.b3** Describe the characteristics of the Sun that make it a star.	**5.ESS.2.c3** Identify the characteristics of the Sun that make it a star.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items may include images of the sun and other stars, charts with characteristics of the sun and other stars, or diagrams that show the solar system. • Items may include images and descriptions of the sun or stars. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	How does the size of the sun compare with the size of other stars?
Moderate Complexity Level B	Which characteristics describe the sun?
Low Complexity Level C	What is the sun's composition? What makes up the sun?

Content Area	Science		
Strand	Earth and Space Science		
Reporting Category	Earth and Space Science		
Gen-Ed Standard	**5.ESS.3 Most of the cycles and patterns of motion between the Earth and sun are predictable.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.ESS.3.a Explain the difference between Earth's revolution and Earth's rotation.	**5.ESS.3.b** Sort patterns into those that result from Earth's revolution and those that result from Earth's rotation.	**5.ESS.3.c** Identify patterns that result from Earth's revolution and rotation.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items may include diagrams or descriptions of Earth's movement in relation to the sun. • Items may include diagrams that show the movement of Earth around the sun as well as the rotation of Earth on its axis. • Items may focus on the meaning of the words "revolve," "rotate," and "axis." • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	How does the time of Earth's revolution compare with the time of Earth's rotation?
Moderate Complexity Level B	This diagram shows location X on the side of Earth that is facing away from the sun. It is nighttime at location X. What causes daytime and nighttime on Earth?
Low Complexity Level C	What results from Earth revolving around the sun?

Content Area	Science		
Strand	Physical Science		
Reporting Category	Physical Science		
Gen-Ed Standard	**5.PS.1 The amount of change in movement of an object is based on the mass* of the object and the amount of force exerted.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.PS.1.a Given a change in mass or force, explain the effect that change will have on the speed of an object.	**5.PS.1.b** Identify a change that can be made to an object to change its speed (e.g., add more mass, use more force).	**5.PS.1.c** Demonstrate how the speed of an object can be changed by adding mass or exerting a force.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items should use common everyday objects to compare the mass and speed of objects. • Items should focus on a change in movement. • Models may be constructed by creating diagrams or by using images of objects where a change is made. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	A toy car travels along a straight path. A student adds a 2-pound mass to the top of the car. How will the speed of the car change after the weight is added?
Moderate Complexity Level B	The picture shows a car sliding down a ramp. How can the student make the car go slower?
Low Complexity Level C	The picture shows a car sliding down a ramp. How will the speed of the car change if the student gives the car a push?

Content Area	Science		
Strand	Physical Science		
Reporting Category	Physical Science		
Gen-Ed Standard	**5.PS.2 Light and sound are forms of energy that behave in predictable ways.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.PS.2.a1 Given an object, explain how it would change the path of light (e.g., a mirror will reflect light, a dark cloth will absorb light, etc.).	**5.PS.2.b1** Identify objects that will change the path of light.	**5.PS.2.c1** Demonstrate the observable characteristics of how light travels.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items should use common objects that transmit, reflect, or block light. • Items may focus on mirrors and glass showing reflections. • Models may be constructed by creating diagrams or by using images of objects that change the path of light. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	A beam of light shines on a mirror. Where will the light travel after it hits the mirror?
Moderate Complexity Level B	Which object will change the path of light?
Low Complexity Level C	A student shines a light in an open room. Where will that light travel?

Content Area	Science		
Strand	Physical Science		
Reporting Category	Physical Science		
Gen-Ed Standard	**5.PS.2 Light and sound are forms of energy that behave in predictable ways.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.PS.2.a2 Given an object, explain how you could make a change that would change its pitch.	**5.PS.2.b2** Identify properties that affect pitch (e.g., a large bell makes a deeper sound than a smaller bell).	**5.PS.2.c2** Match objects/tools/instruments to examples of sounds of various pitch.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items should use common noise-making objects. • Items should focus on the pitch of sounds. • Items may include the comparison of the pitch produced by common objects and instruments. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	Here is a rubber band stretched tight. It makes a sound when Jon hits it. How can Jon make a higher pitched sound with the rubber band?
Moderate Complexity Level B	Which size bell makes the deepest sound?
Low Complexity Level C	Which object makes a high-pitched sound?

Content Area	Science		
Strand	Life Science		
Reporting Category	Life Science		
Gen-Ed Standard	**5.LS.1 Organisms perform a variety of roles in an ecosystem.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.LS.1.a1 Explain the role of a producer, consumer, or decomposer in a food web**.**	**5.LS.1.b1** Given a set of organisms, match them to their roles in a food web.	**5.LS.1c1** Identify a producer, consumer, and decomposer.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items should use simple food chain and food web diagrams and focus on the relationships among organisms. • Items should focus on common animals and plants. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	What does a decomposer do?
Moderate Complexity Level B	Here is a food web. Which part of this food web is a consumer?
Low Complexity Level C	Which organism is a producer?

Content Area	Science		
Strand	Life Science		
Reporting Category	Life Science		
Gen-Ed Standard	**5.LS.1 Organisms perform a variety of roles in an ecosystem.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.LS.1.a2 Trace the flow of energy through a food web.	**5,LS.b2** Sequence components of a food web.	**5.LS.1.c2** Sequence components of a simple food chain**.**
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items should use simple food chain or food web diagrams. • Items should focus on the direction that energy and matter move within a food chain or food web. • Items should focus on common animals and plants. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	Here is a food web. How does the mouse get energy to survive and grow?
Moderate Complexity Level B	An insect eats plants. A bird eats insects. A mouse also eats insects. An owl eats smaller birds and mice. Which diagram shows the correct food web?
Low Complexity Level C	An insect eats plants. A bird eats insects. Which diagram shows the correct food chain?

Content Area	Science		
Strand	Life Science		
Reporting Category	Life Science		
Gen-Ed Standard	**5.LS.2 All of the processes that take place within organisms require energy.**		
Extensions	**Extension A: High Complexity**	**Extension B: Moderate Complexity**	**Extension C: Low Complexity**
	5.LS.2.a Use a food web to explain how an organism can get a constant flow of energy.	**5.LS.2.b** Identify that producers transform sun energy into energy it uses to grow and that consumers get their energy to grow by a transfer of energy from another organism.	**5.LS.2.c** Identify ways that organisms can obtain energy.
The Standard, Extensions and Text Characteristics support the following task demands:			
Content Limits	• Items should use simple food chain or food web diagrams and focus on the movement of energy starting with the sun. • Items should focus on common animals and plants. • Nature of Science skills and attributes related to this content.		

Sample Items	
Item Models	
High Complexity Level A	Here is a food web. How are the insects able to get the energy they need to grow and reproduce?
Moderate Complexity Level B	Where do producers get the energy they need to grow?
Low Complexity Level C	Here is a food chain. How does the owl get its energy?