

[Montana Science Interim Assessments Overview](#)

For elementary, middle, and high school science, the Montana Office of Public Instruction offers access to a set of short, fixed-form, online interim assessments. Each testlet includes one “science cluster” focused on a specific NGSS-based standard, as indicated below. Also listed below are the corresponding [Montana Content Standards for Science](#) that are assessed each spring.

Interim assessments are meant to support classroom teaching and learning. Scores are not used for any accountability purposes and are not reported at the federal level. The OPI may use interim results to track general trends and identify research needs, but student- and class-level results are not collected.

Instead, we encourage educators to use the science interims like the Focused Interim Assessment Blocks are used for ELA and math (available from Smarter Balanced), to identify student needs and focus instruction related to a specific standard. Additional content support and instructional guidance can be found on the [NGSS](#) site.

ELEMENTARY SCHOOL INTERIMS	
Test Name	Corresponding Montana Standard
Earth and Space Science	
Interim ES Earth and Space Science - Earth's Systems 1: 4-ESS2-1	Make observations or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.
Interim ES Earth and Space Science - Earth's Systems 2: 5-ESS2-2	Graph and explain the proportion and quantities of water and fresh water in various natural and human-made reservoirs to provide evidence about the distribution of water on earth.
Interim ES Earth and Space Science - Weather and Climate: 3-ESS2-1	Obtain and represent data using tables and graphical displays to describe observed and predicted weather conditions during a particular season.
Life Science	
Interim ES Life Science - Common Ancestry and Diversity: 3-LS4-1	Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.
Interim ES Life Science - Ecosystems: 5-LS2-1	Develop and critique a model to describe the movement of matter among plants, animals, decomposers, and the environment.
Interim ES Life Science - Inheritance of Traits: 3-LS3-1	Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

Physical Science

Interim ES Physical Science - Chemical Reactions: 5-PS1-4	Conduct an investigation that produces quantitative and qualitative data to analyze whether the mixing of two or more substances results in new substances.
Interim ES Physical Science - Energy Transfer: 4-PS3-4	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.
Interim ES Physical Science - Forces and Interaction: 5-PS2-1	Support an argument that the gravitational force exerted by earth on objects is directed toward the center of the earth.
Interim ES Physical Science - Forces and Motion: 3-PS2-2	Observe and record qualitative and quantitative data about an object's motion to provide evidence that a pattern can be used to predict future motion.
Interim ES Physical Science - Properties of Matter: 5-PS1-2	Measure and graph quantities to provide evidence that the total mass of matter is conserved regardless of the type of change that occurs when heating, cooling, or mixing substances.
Interim ES Physical Science - Waves Properties 1: 4-PS4-1	Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.
Interim ES Physical Science - Waves Properties 2: 4-PS4-2	Develop a model communicating that light reflected from objects into the eye allows objects to be seen.
Interim ES Physical Science - Waves Properties 3: 4-PS4-3	Generate and compare multiple solutions that use patterns to transfer information.

MIDDLE SCHOOL INTERIMS	
Test Name	Corresponding Montana Standard
Earth and Space Science	
Interim MS Earth and Space Science - Earth's History: MS-ESS1-4	Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize earth's 4.6 billion-year-old history.
Interim MS Earth and Space Science - Earth's Systems 1: MS-ESS2-1	Develop a model to describe the cycling of earth's materials and the flow of energy that drives this process.
Interim MS Earth and Space Science - Earth's Systems 2: MS-ESS2-5	Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.
Interim MS Earth and Space Science - Human Impacts on Earth Systems: MS-ESS3-3	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
Interim MS Earth and Space Science - Space Systems 1: MS-ESS1-1	Develop and use a model of the earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
Interim MS Earth and Space Science - Space Systems 2: MS-ESS1-2	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.
Life Science	
Interim MS Life Science - Adaptation: MS-LS4-6	Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.
Interim MS Life Science - Ecosystems: MS-LS2-2	Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
Interim MS Life Science - Inheritance of Traits 1: MS-LS3-2	Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
Interim MS Life Science - Inheritance of Traits 2: MS-LS3-1	Develop and use a model to describe why structural changes to genes, such as mutations, may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.
Interim MS Life Science - Matter and Energy in Organisms: MS-LS1-7	Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth, release energy, or both, as this matter moves through an organism.

Interim MS Life Science - Natural Selection: MS-LS4-4	Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.
Interim MS Life Science - Structure and Function: MS-LS1-3	Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
Physical Science	
Interim MS Physical Science - Chemical Reactions: MS-PS1-5	Develop, use, and critique a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.
Interim MS Physical Science - Energy: MS-PS3-3	Apply scientific principles to design, construct, and test a device that minimizes or maximizes thermal energy transfer.
Interim MS Physical Science - Forces and Motion: MS-PS2-2	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
Interim MS Physical Science - Properties of Matter: MS-PS1-4	Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.
Interim MS Physical Science - Wave Properties 1: MS-PS4-2	Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
Interim MS Physical Science - Wave Properties 2: MS-PS4-1	Use mathematical representations to describe a simple model for waves that includes how the amplitude and wavelength of a wave is related to the energy in a wave.

HIGH SCHOOL INTERIMS

Test Name	Corresponding Montana Standard
Earth and Space Science	
Interim HS Earth and Space Science - Earth's History: HS-ESS1-6	Apply scientific reasoning and evidence from ancient earth materials, meteorites, and other planetary surfaces to construct an account of earth's formation and early history.
Interim HS Earth and Space Science - Earth's Systems 1: HS-ESS2-3	Develop a model based on evidence of earth's interior to describe the cycling of matter by thermal convection.
Interim HS Earth and Space Science - Earth's Systems 2: HS-ESS2-4	Use a model to describe how variations in the flow of energy into and out of earth's systems result in changes in climate.
Interim HS Earth and Space Science - Human Impacts on Earth Systems 1: HS-ESS3-4	Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.
Interim HS Earth and Space Science - Human Impacts on Earth Systems 2: HS-ESS3-3	Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, biodiversity, and investigate and explain how some American Indian tribes use scientific knowledge and practices in managing natural resources.
Interim HS Earth and Space Science - Space Systems: HS-ESS1-3	Communicate scientific ideas about the way stars, over their life cycle, produce elements.
Interim HS Earth and Space Science - Weather and Climate: HS-ESS3-5	Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to earth systems.
Life Science	
Interim HS Life Science - Inheritance of Traits: HS-LS3-2	Make and defend a claim based on evidence from multiple sources that inheritable genetic variations may result from: 1. new genetic combinations through meiosis; 2. viable errors occurring during replication; or 3. mutations caused by environmental factors
Interim HS Life Science - Matter and Energy in Organisms: HS-LS1-5	Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
Interim HS Life Science - Molecules to Organisms: HS-LS1-2	Develop and use a model to illustrate the organizational structure of interacting systems that provide specific functions within multicellular organisms.

Interim HS Life Science - Structure and Function: HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
Physical Science	
Interim HS Physical Science - Energy: HS-PS3-1	Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component and energy flows in and out of the system are known.
Interim HS Physical Science - Forces and Interactions: HS-PS2-5	Plan and conduct investigations to provide evidence that electric currents can produce magnetic fields and changing magnetic fields can produce electric currents.
Interim HS Physical Science - Forces and Motion: HS-PS2-2	Use mathematical representations to demonstrate how total momentum of a system is conserved when there is no net force on the system.
Interim HS Physical Science - Properties of Matter 1: HS-PS1-1	Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.
Interim HS Physical Science - Properties of Matter 2: HS-PS1-2	Construct and revise an explanation for outcomes of simple chemical reactions based on outer electron states of atoms, trends in the periodic table, and patterns of chemical properties.
Interim HS Physical Science - Wave Properties: HS-PS4-1	Use mathematical representations to support a claim regarding relationships among the frequency, amplitude, wavelength, and speed of waves traveling in various media.
Interim HS School Earth and Space Science - Space Systems 2: HS-ESS1-4	Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.
Interim HS School Life Science - Common Ancestry and Diversity: HS-LS4-1	Evaluate and communicate scientific information about how common ancestry and biological evolution are supported by multiple lines of empirical evidence.