PLTW Launch Standards Guide

Montana Office of Public Education: Science Model Curriculum Standards

PLTW Launch (PreK-5) is designed to support your learning needs. The modules are developed to ensure an unmatched experience, combining three-dimensional learning; unique, problem-based instructional approach; real-world applied learning; as well as Spanish language options – all in one program.

This Standards Guides shows how each PLTW Launch module supports the Montana Office of Public Education: Science Model Curriculum Standards. Because schools need the flexibility to implement the curriculum in the way that best meets their students' needs, PLTW Launch is designed to support a wide range of implementations. Whether the modules are offered in all classrooms, as a specials rotation, as grade level rotations, as an after-school program, or even as a summer learning implementation, PLTW Launch offers the flexibility to meet your needs.

Use this Standards Guide in combination with the Module Descriptions PDF as planning tools to explore how you can implement PLTW Launch as your elementary learning solution.

PLTW LAUNCH

Kindergarten

	Performance Expectation	PLTW Launch Modules
Physical Science	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object	Pushes and Pulls
	Analyze data to determine whether a design solution works as intended to change the speed or direction of an object with a push or a pull	Pushes and Pulls
	Construct an explanation based on observations of the effect of sunlight on Earth's surface	Sunlight and Weather
	Use tools and materials to design and build a structure to reduce the warming effect of sunlight on an area	Sunlight and Weather
Life Science	Use observations to describe patterns of what plants and animals, including humans, need to survive	Living Things: Needs and Impacts
Earth and Space Science	Construct an argument supported by evidence for how plants and animals, including humans, can change the environment to meet their needs	Living Things: Needs and Impacts
	Use a model to represent the relationship between the needs of different plants or animals, including humans, and the places they live	Living Things: Needs and Impacts
	Communicate ideas about the impact of humans on the land, water, air, or other living things in the local environment	Living Things: Needs and Impacts
	Use and share observations of local weather conditions to describe patterns overtime	Sunlight and Weather
	Ask questions to obtain information about the purpose of weather forecasting to predict, prepare for, and respond to weather	Sunlight and Weather

First Grade

	Performance Expectation	PLTW Launch Modules
Physical Science	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	Light and Sound
	Make observations to construct an evidence-based explanation that objects can be seen only when illuminated	Light and Sound
	Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.	Light and Sound
	Design a solution or build a device that facilitates communication over distance using light or sound	Light and Sound
Life Science	Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	Designs Inspired by Nature
	Use information from print and other media to identify patterns in behavior of parents and offspring that help offspring survive	Designs Inspired by Nature
	Make an evidence-based explanation of how young plants and animals are like, but not exactly like, their parents	Designs Inspired by Nature
Earth and Space Science	Use observations of the sun, moon, and stars to describe patterns that can be predicted	Light: Observing the Sun, Moon, and Stars
	Make observations at different times of year to relate the amount of daylight to the time of year	Light: Observing the Sun, Moon, and Stars

Second Grade

	Performance Expectation	PLTW Launch Modules
Physical Science	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	Materials Science: Properties of Matter
	Conduct an investigation and analyze data to determine which materials have the properties best suited for an intended purpose.	Materials Science: Properties of Matter Materials Science: Form and Function
	Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.	Materials Science: Properties of Matter Materials Science: Form and Function
	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	Materials Science: Properties of Matter
Life Science	Plan and conduct a cause and effect investigation to determine whether plants need sunlight and water to grow.	Living Things: Diversity of Life
	Develop a simple model that mimics the structure and function of an animal in dispersing seeds or pollinating plants.	Materials Science: Form and Function
	Make observations of plants and animals to compare and contrast the diversity of life in different habitats.	Living Things: Diversity of Life
Earth and Space Science	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.	The Changing Earth
	Construct explanations to compare multiple physical and naturally built designs which impact wind or water's effect on the shape of the land.	The Changing Earth
	Develop models to represent the shapes and kinds of land and bodies of water in an area.	The Changing Earth
	Obtain information to identify where water is found on Earth and that water can be solid, liquid, or gas.	The Changing Earth

Third Grade

	Performance Expectation	PLTW Launch Modules
Physical Science	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.	Stability and Motion: Science of Flight Stability and Motion: Forces and Interactions
	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.	Stability and Motion: Science of Flight Stability and Motion: Forces and Interactions
	Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.	Stability and Motion: Forces and Interactions
	Define a simple design problem that can be solved by applying scientific ideas about magnets.	Stability and Motion: Forces and Interactions
Life Science	Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	Environmental Changes
	Make a claim about the effectiveness of a solution to a problem caused when the environment changes and that the types of plants and animals that live there may change.	Environmental Changes
	Construct a cause and effect argument communicating some animals, including humans, form groups and communities that help members survive.	Life Cycles and Survival
	Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.	Environmental Changes
	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.	Life Cycles and Survival
	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.	Variation of Traits
	Use evidence to support the explanation that traits can be influenced by the environment.	Variation of Traits
	Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.	Variation of Traits
Earth and Space Science	Obtain and represent data using tables and graphical displays to describe observed and predicted weather conditions during a particular season.	Weather: Factors and Hazards
	Obtain and combine information to describe climate patterns in different regions of the world.	Weather: Factors and Hazards
	Make a claim based on information about the merit of a design solution that reduces the impacts of a weather- related hazard.	Weather: Factors and Hazards

Fourth Grade

	Performance Expectation	PLTW Launch Modules
Physical Science	Use evidence to construct an explanation relating the speed of an object to the energy of that object.	Energy Exploration
	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.	Energy Exploration
	Ask questions and predict outcomes about the changes in energy that occur when objects collide.	Energy Exploration
	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.	Energy Exploration
	Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.	Waves and the Properties of Light
	Develop a model communicating that light reflected from objects into the eye allows objects to be seen.	Waves and the Properties of Light
	Generate and compare multiple solutions that use patterns to transfer information.	Input/Output: Computer Systems
Life Science	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	Organisms: Structure and Function
	Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	Organisms: Structure and Function
Earth and Space Science	Obtain and combine information from a variety of sources to communicate that energy and fuels are derived from natural resources and their uses affect the environment.	Earth: Human Impact and Natural Disasters
	Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.	Earth: Past, Present, and Future
	Make observations or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	Earth: Past, Present, and Future
	Analyze and interpret data from maps as evidence to make a claim about patterns of Earth's features.	Earth: Past, Present, and Future
	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.	Earth: Human Impact and Natural Disasters

Fifth Grade

	Performance Expectation	PLTW Launch Modules
Physical Science	Develop a model to communicate that matter is made of particles too small to be seen.	Matter: Properties and Reactions
	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.	Matter: Properties and Reactions
	Observe and record qualitative and quantitative evidence to support identification of materials based on their properties.	Matter: Properties and Reactions
	Conduct an investigation that produces quantitative and qualitative data to analyze whether the mixing of two or more substances results in new substances.	Matter: Properties and Reactions
	Use models to describe that energy in animals' food was once energy from the sun.	Ecosystems: Flow of Matter and Energy
	Support an argument that the gravitational force exerted by Earth on objects is directed toward the center of the Earth.	Earth's Water and Interconnected Systems
Life Science	Support an argument that plants get the materials they need for growth chiefly from air and water.	Ecosystems: Flow of Matter and Energy
	Develop and critique a model to describe the movement of matter among plants, animals, decomposers, and the environment.	Ecosystems: Flow of Matter and Energy
Earth and Space Science	Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, or atmosphere interact.	Earth's Water and Interconnected Systems
	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.	Earth's Water and Interconnected Systems
	Obtain and combine information from various sources about ways individual communities use science ideas to protect the Earth's resources, environment, and systems and describe examples of how American Indians use scientific knowledge and practices to maintain relationships with the natural world.	Earth's Water and Interconnected Systems
	Use evidence or models to support the claim that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.	Patterns in the Universe
	Graph the daily changes in the length, shape, and direction of shadows; lengths of day and night; and the seasonal appearance of select stars to communicate the patterns of the Earth's movement and describe how astronomical knowledge is used by American Indians.	Patterns in the Universe