Kindergarten Standards

		Animal Camouflage	Animal Homes & Habitat	Animal Tracks	Animals in Winter	Apple Cidering	Bees & Honey	Birds Around Us	Critter Walk	Dead or Alive	Marsh Explorers	Maple Syruping	Nature's Needs
K-PS2-1.	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.					*							
K-PS2-2.	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.												
K-PS3-1.	Make observations to determine the effect of sunlight on Earth's surface.		*									*	*
K-PS3-2.	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.												
K-ESS2-1.	Use and share observations of local weather conditions to describe patterns over time.		*					*					*
K-ESS2-2.	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.		*		*						*		
K-ESS3-1.	Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.				*						*		*
K-ESS3-2.	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.		*					*					*
K-LS1-1.	Use observations to describe patterns of what plants and animals (including humans) need to survive.												*
K-ESS3-3	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.									*			

	First Grade Standards	Animal Camouflage	Animal Homes & Habitat	Animal Tracks	Animals in Winter	Apple Cidering	Bees & Honey	Birds Around Us	Cold-blooded Critters	Critter Walk	Dead or Alive	Food Web	Insect Study	Life Cycle	Maple Syruping	Marsh Explorers	Migration & Hibernation	Muskrat Safari	Nature's Needs	Snowshoeing	Trees, Leaves & Seeds
1-PS4-1.	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.																				
1-PS4-2.	Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.																				
1-PS4-3.	Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.																				
1-PS4-4.	Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.																				
1-LS1-1.	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.		*						*				*				*	*			*
1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.							*											*		
1-LS3-1.	Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.																				
1-ESS1-1.	Use observations of the sun, moon, and stars to describe patterns that can be predicted.																				

Second Grade Standards

		Animal Camouflage	Animal Homes & Habitat	Animal Tracks	Animals in Winter	Apple Cidering	Bees & Honey	Birds Around Us	Cold-blooded Critters	Critter Walk	Dead or Alive	Dinosaurs	Food Web	Insect Study	Life Cycle	Maple Syruping	Marsh Explorers	Migration & Hibernation	Muskrat Safari	Nature's Needs	Snowshoeing	Trees, Leaves & Seeds
2-PS1-1.	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	*	*					*	*	*												*
2-PS1-2.	Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose		*																*		*	
2-PS1-3.	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.		*					*			*								*			
2-PS1-4.	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.										*		*			*			*			
2-LS2-1.	Plan and conduct an investigation to determine if plants need sunlight and water to grow.																					*
2-LS2-2.	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.																					*
2-LS4-1.	Make observations of plants and animals to compare the diversity of life in different habitats.		*				*	*		*				*	*		*			*		*
2-ESS1-1.	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.																					
2-ESS2-1.	Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.																					
2-ESS2-2.	Develop a model to represent the shapes and kinds of land and bodies of water in an area.																					
2-ESS2-3	Obtain information to identify where water is found on Earth and that it can be solid or liquid.																*			*		

	Third Grade Standards	Animal & Plant Adaptations	Animal Homes & Habitat	Animal Tracks	Apple Cidering	Bees & Honey	Birds Around Us	Cold-blooded Critters	Endangered Species	Food Web	Insect Study	Life Cycle	Maple Syruping	Marsh Explorers	Migration & Hibernation	Native American Life	Predator/Prey	Snowshoeing	Soil, Rocks & Minerals	Water Cycle	Weather	Wild Edible Plants
3-PS2-1.	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.																					
3-PS2-2.	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.																					
3-PS2-3.	Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.																					
3-PS2-4.	Define a simple design problem that can be solved by applying scientific ideas about magnets																					
3-LS1-1.	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.												*									
3-LS2-1.	Construct an argument that some animals form groups that help members survive.									*								*				
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	*						*							*							*
3-LS3-2.	Use evidence to support the explanation that traits can be influenced by the environment.	*									*											
3-LS4-1.	Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.																		*			
3-LS4-2.	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.	*					*	*				*		*								
3-LS4-3.	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.		*											*	*		*					
3-LS4-4	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.		*											*			*					
3-ESS2-1.	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.																				*	
3-ESS2-2.	Obtain and combine information to describe climates in different regions of the world.																					
3-ESS3-1.	Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.																					

	Fourth Grade Standards	Animal & Plant Adaptations	Animal Homes & Habitat	Animal Tracks	Apple Cidering	Bees & Honey	Birds Around Us	Cold-blooded Critters	Endangered Species	Food Web	Insect Study	Light & Energy	Maple Syruping	Marsh Explorers	Migration & Hibernation	Native American Life	Predator/Prey	Snowshoeing	Soil, Rocks & Minerals	Water Cycle	Weather	Wild Edible Plants
4-PS3-1.	Use evidence to construct an explanation relating the speed of an object to the energy of that object.																					
4-PS3-2.	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.												*									
4-PS3-3.	Ask questions and predict outcomes about the changes in energy that occur when objects collide.																					
4-PS3-4.	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.																					
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.																					
4-PS4-2.	Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.												*									
4-PS4-3.	Generate and compare multiple solutions that use patterns to transfer information.																					
4-LS1-1.	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	*				*	*	*			*				*							*
4-LS1-2.	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.	*				*		*														
4-ESS1-1.	Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.																		*			
4-ESS2-1.	Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.													*					*		*	
4-ESS2-2.	Analyze and interpret data from maps to describe patterns of Earth's features.																					
4-ESS3-1.	Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.																					
4-ESS3-2.	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.																					

	Fifth Grade Standards	Animal & Plant Adaptations	Animal Homes & Habitat	Animal Tracks	Apple Ciderring	Bees & Honey	Birds Around Us	Cold-blooded Critters	Endangered Species	Food Web	Insect Study	Light & Energy	Maple Syruping	Marsh Explorers	Migration & Hibernation	Native American Life	Predator/Prey	Snowshoeing	Soil, Rocks, & Minerals	Water Cycle	Weather	Wild Edible Plants
5-PS1-1.	Develop a model to describe that matter is made of particles too small to be seen.																					
5-PS1-2.	Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.																					
5-PS1-3.	Make observations and measurements to identify materials based on their properties.																					
5-PS1-4.	Conduct an investigation to determine whether the mixing of two or more substances results in new substances.																					
5-PS2-1.	Support an argument that the gravitational force exerted by Earth on objects is directed down.																					
5-PS3-1.	Use models to describe that energy in animals' food (used for body repair, growth, and motion and to maintain body warmth) was once energy from the sun. [Clarification Statement: Examples of models could include diagrams, and flow charts.]				*	*				*			*				*					*
5-LS1-1.	Support an argument that plants get the materials they need for growth chiefly from air and water.												*									*
5-LS2-1.	Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment									*												
5-ESS1-1.	Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.																					
5-ESS1-2.	Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.																					
5-ESS2-1.	Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.																					
5-ESS2-2.	Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.																			*		
5-ESS3-1.	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.								*											*		
3-5-ETS1-1.	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.																					
3-5-ETS1-2.	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.																					
3-5-ETS1-3.	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.																					

	Sixth-Eighth Grade Standards	Birds Around Us	Cross-Country Skiing	Endangered Species	Flight	Human Impacts on Earth's Resources	Insect Study	Invasive Species	Light & Engergy	Maple Syruping	Marsh Explorers	Predator/Prey	Snowshoeing	Soil, Rocks & Minerals	Survival Shelters	Water Cycle	Water Quality	Weather	Wild Edible Plants
MS-PS1-1.	Develop models to describe the atomic composition of simple molecules and extended structures.																		
MS-PS1-2.	Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.																		
MS-PS1-3.	Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.					*													
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.																		
MS-PS1-5.	Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.																		
MS-PS1-6.	Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.																		
MS-PS2-1.	Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.																		
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.																		
MS-PS2-3.	Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.																		
MS-PS2-4.	Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.																		
MS-PS2-5.	Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.																		
MS-PS3-1.	Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.																		
MS-PS3-2.	Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.																		
MS-PS3-3.	Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.														*				
MS-PS3-4.	Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.																		
MS-PS3-5.	Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.				*														
MS-PS4-1.	Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.																		
MS-PS4-2.	Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.								*										
MS-PS4-3.	Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.																		

	Sixth-Eighth Grade Standards	Birds Around Us	Cross-Country Skiing	Endangered Species	Flight	Human Impacts on Earth's Resources	Insect Study	Invasive Species	Light & Engergy	Maple Syruping	Marsh Explorers	Predator/Prey	Snowshoeing	Soil, Rocks & Minerals	Survival Shelters	Water Cycle	Water Quality	Weather	Wild Edible Plants
MS-LS1-1.	Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.										*								
MS-LS1-2.	Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.																		
MS-LS1-3.	Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.																		
MS-LS1-4.	Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.																		
MS-LS1-5.	Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.			*				*											
MS-LS1-6.	Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.									*									*
MS-LS1-7.	Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.									*									
MS-LS1-8.	Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.																		
MS-LS2-1.	Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.					*		*									*		
MS-LS2-2	Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems	*		*		*		*				*							
MS-LS2-3.	Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.															*		*	
MS-LS2-4.	Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.			*		*		*			*	*					*		
MS-LS2-5.	Evaluate competing design solutions for maintaining biodiversity and ecosystem services.					*													
MS-LS3-1.	Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.																		
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.																		
MS-LS4-1.	Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.													*					
MS-LS4-2.	Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.													*					
MS-LS4-3.	Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.																		
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.			*								*							
MS-LS4-5.	Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.					*		*											
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.			*								*							

	Sixth-Eighth Grade Standards	Birds Around Us	Cross-Country Skiing	Endangered Species	Flight	Human Impacts on Earth's Resources	Insect Study	Invasive Species	Light & Engergy	Maple Syruping	Marsh Explorers	Predator/Prey	Snowshoeing	Soil, Rocks & Minerals	Survival Shelters	Water Cycle	Water Quality	Weather	Wild Edible Plants
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.																		
MS-ESS1-2.	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.																		
MS-ESS1-3.	Analyze and interpret data to determine scale properties of objects in the solar system.																		
MS-ESS1-4.	Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.															*		*	
MS-ESS2-1.	Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.													*		*		*	
MS-ESS2-2.	Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.													*				*	
MS-ESS2-3.	Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.													*					
MS-ESS2-4.	Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.															*			
MS-ESS2-5.	Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.																		*
MS-ESS2-6.	Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.																		
MS-ESS3-1.	Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.																		
MS-ESS3-2.	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.																		
MS-ESS3-3.	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.					*													
MS-ESS3-4.	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.					*													
MS-ESS3-5.	Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.					*													