

Domain	PE	Standard
LS	K-LS1-1	All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)
ESS	K-ESS2-1	Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. (K-ESS2-1)
ESS	K- ESS3-2	Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (K- ESS3-2)
ESS	K-ESS3-3	Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3) (secondary to K-ESS2-2)
LS	2-LS2-1	Plants depend on water and light to grow. (2-LS2-1)
LS	2-LS2-2	Plants depend on animals for pollination or to move their seeds around. (2-LS2-2)
ESS	2-ESS1-1	Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (2-ESS1-1)
ESS	2-ESS2-1	Wind and water can change the shape of the land. (2-ESS2-1)
ESS	2-ESS2-2	Maps show where things are located. One can map the shapes and kinds of land and water in any area. (2-ESS2-2)
ESS	2-ESS2-3	Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (2-ESS2-3)
PS	2-PS1- 1	Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (2-PS1- 1)
PS	2-PS1-3	A great variety of objects can be built up from a small set of pieces. (2-PS1-3)
PS	2-PS1- 4	Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. (2-PS1- 4)
LS	3-LS1- 1	Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1- 1)
LS	3-LS4-4	When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4)
LS	3-LS2-1	Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size (Note: Moved from K–2). (3-LS2-1)
LS	3- LS3-1	Many characteristics of organisms are inherited from their parents. (3- LS3-1)
LS	3- LS3-1	Different organisms vary in how they look and function because they have different inherited information. (3- LS3-1)
LS	3- LS3-2	The environment also affects the traits that an organism develops. (3- LS3-2)

LS	3-LS4-1	Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (Note: moved from K-2) (3-LS4-1)
LS	3-LS4-1	Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1)
LS	3-LS4-2	Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)
ESS	3-ESS2-1	Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1)
ESS	3-ESS3-1 4-ESS3-2	A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1) (4-ESS3-2.)
PS	3-PS2-1	Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. (Boundary: Qualitative and conceptual, but not quantitative addition of forces are used at this level.) (3-PS2-1)
PS	3-PS2-2	The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it. (Boundary: Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.) (3-PS2-2)
PS	3-PS2-1	Objects in contact exert forces on each other. (3-PS2-1)
PS	3-PS2-3 3-PS2-4	Electric, and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. (3-PS2-3),(3-PS2-4)
LS	4-LS1-1	Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)
LS	4-LS1-2	Different sense receptors are specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (4-LS1-2)
PS	5-PS1-4	When two or more different substances are mixed, a new substance with different properties may be formed. (5-PS1-4)
PS	4-PS3-1	The faster a given object is moving, the more energy it possesses. (4-PS3-1)
PS	4-PS3-2 4-PS3-3	Energy can be moved from place to place by moving objects or through sound, light, or electric currents. (4-PS3-2),(4-PS3-3)
PS	4-PS3-2 4-PS3-3	Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another, thereby changing their motion. In such collisions, some energy is typically also transferred to the surrounding air; as a result, the air gets heated and sound is produced. (4-PS3-2),(4-PS3-3)

PS	4-PS3-2	Light also transfers energy from place to place. (4-PS3-2)
PS	4- PS3-2 4-PS3-4	Energy can also be transferred from place to place by electric currents, which can then be used locally to produce motion, sound, heat, or light. The currents may have been produced to begin with by transforming the energy of motion into electrical energy. (4- PS3-2),(4-PS3-4)
PS	4-PS3-3	When objects collide, the contact forces transfer energy so as to change the objects' motions. (4-PS3-3)
PS	4-PS3- 4	The expression "produce energy" typically refers to the conversion of stored energy into a desired form for practical use. (4-PS3- 4)
PS	4- PS4-1	Waves, which are regular patterns of motion, can be made in water by disturbing the surface. When waves move across the surface of deep water, the water goes up and down in place; it does not move in the direction of the wave except when the water meets the beach. (Note: This grade band endpoint was moved from K–2.) (4- PS4-1)
PS	4-PS4-1	Waves of the same type can differ in amplitude (height of the wave) and wavelength (spacing between wave peaks). (4-PS4-1)
PS	4-PS4-2	An object can be seen when light reflected from its surface enters the eyes. (4-PS4-2)
PS	4-PS4-3	Digitized information transmitted over long distances without significant degradation. High-tech devices, such as computers or cell phones, can receive and decode information—convert it from digitized form to voice—and vice versa. (4-PS4-3)
LS	5-PS3-1	Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary to 5-PS3-1)
LS	5- LS1-1	Plants acquire their material for growth chiefly from air and water. (5- LS1-1)
LS	5-LS2-1	The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as "decomposers." Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)
ESS	5-ESS1-2	The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year. (5-ESS1-2)

ESS	5-ESS2-1	Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1)
ESS	5-ESS2-2	Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere. (5-ESS2-2)
ESS	5-ESS3-1	Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)
PS	5-PS1-2	The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish. (5-PS1-2)
PS	5-PS1-3	Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic-scale mechanism of evaporation and condensation.) (5-PS1-3)
PS	5-PS1-2	No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.) (5-PS1-2)
PS	5-PS2-1	The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (5-PS2-1)
PS	5-PS3-1	The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). (5-PS3-1)