



The Nature of Matter

Standard 1:

The student understands that all matter has observable, measurable properties. (SC.A.1.1)

1. knows that objects can be described, classified, and compared by their composition (e.g., wood or metal) and their physical properties (e.g., color, size, and shape).
2. recognizes that the same material can exist in different states.
3. verifies that things can be done to materials to change some of their physical properties (e.g., cutting, heating, and freezing), but not all materials respond the same way (e.g., heating causes water to boil and sugar to melt).

Standard 2:

The student understands the basic principles of atomic theory. (SC.A.2.1)

1. recognizes that many things are made of smaller pieces, different amounts, and various shapes.

Energy

Standard 1:

The student recognizes that energy may be changed in form with varying efficiency. (SC.B.1.1)

1. knows that the sun supplies heat and light energy to Earth.
2. knows that light can pass through some objects and not others.
3. describes a model energy system (e.g., an aquarium or terrarium).
4. knows that heat can be produced in many ways (e.g., by burning and rubbing).
5. knows that every human action requires energy that comes from food.

Standard 2:

The student understands the interaction of matter and energy. (SC.B.2.1)

1. recognizes systems of matter and energy.

Force and Motion

Standard 1:

The student understands that types of motion may be described, measured, and predicted. (SC.C.1.1)

1. understands that different things move at different speeds.
2. knows that there is a relationship between force and motion.

Standard 2:

The student understands that the types of force that act on an object and the effect of that force can be described, measured, and predicted. (SC.C.2.1)

1. knows that one way to change how something is moving is to give it a push or a pull.
2. knows that sound is caused by vibrations (pushing and pulling) to cause waves.

Processes that Shape the Earth

Standard 1:

The student recognizes that processes in the lithosphere, atmosphere, hydrosphere, and biosphere interact to shape the Earth. (SC.D.1.1)

1. recognizes that the solid materials making up the Earth come in all sizes, from boulders to grains of sand.
2. knows that life occurs on or near the surface of the Earth in land, air, and water.
3. recognizes patterns in weather.

Standard 2:

The student understands the need for protection of the natural systems on Earth. (SC.D.2.1)

1. understands that people influence the quality of life of those around them.

Earth and Space

Standard 1:

The student understands the interaction and organization in the Solar System and the universe and how this affects

life on Earth. (SC.E.1.1)

1. knows that the light reflected by the moon looks a little different every day but looks the same again about every 28 days.
2. knows that the appearance of sunrise and sunset is due to the rotation of Earth every 24 hours.

Standard 2:

The student recognizes the vastness of the universe and the Earth's place in it. (SC.E.2.1)

1. knows that there are many objects in the sky that are only visible at night.

Processes of Life

Standard 1:

The student describes patterns of structure and function in living things. (SC.F.1.1)

1. knows the basic needs of all living things.
2. knows how to apply knowledge about life processes to distinguish between living and non-living things.
3. describes how organisms change as they grow and mature.
4. understands that structures of living things are adapted to their function in specific environments.
5. compares and describes the structural characteristics of plants and animals.

Standard 2:

The student understands the process and importance of genetic diversity. (SC.F.2.1)

1. knows that living things have offspring that resemble their parents.
2. knows that there are many different kinds of living things that live in a variety of environments.

How Living Things Interact with Their Environment

Standard 1:

The student understands the competitive, interdependent, cyclic nature of living things in the environment. (SC.G.1.1)

1. knows that environments have living and non-living parts.

2. knows that plants and animals are dependent upon each other for survival.
3. knows that there are many different plants and animals living in many different kinds of environments (e.g., hot, cold, wet, dry, sunny, and dark).
4. knows that animals and plants can be associated with their environment by an examination of their structural characteristics.

Standard 2:

The student understands the consequences of using limited natural resources. (SC.G.2.1)

1. knows that if living things do not get food, water, shelter, and space, they will die.
2. knows that the activities of humans affect plants and animals in many ways.

The Nature of Science

Standard 1:

The student uses the scientific processes and habits of mind to solve problems. (SC.H.1.1)

1. knows that in order to learn, it is important to observe the same things often and compare them.
2. knows that when tests are repeated under the same conditions, similar results are usually obtained.
3. knows that, in doing science, it is often helpful to work with a team and to share findings with others.
4. knows that people use scientific processes including hypotheses, making inferences, and recording and communicating data when exploring the natural world.
5. uses the senses, tools, and instruments to obtain information from his or her surroundings.

Standard 2:

The student understands that most natural events occur in comprehensible, consistent patterns. (SC.H.2.1)

1. knows that most natural events occur in patterns.

Standard 3:

The student understands that science, technology, and society are interwoven and interdependent. (SC.H.3.1)

1. knows that scientists and technologists use a variety of tools (e.g., thermometers, magnifiers, rulers, and scales) to obtain information in more detail and to make work easier.