

Strand:

S1 Scientific Inquiry

The student demonstrates abilities necessary to do scientific inquiry and an understanding about scientific inquiry; that is, the student:

Standards:

- S1a:** asks questions about objects, organisms, events, and relationships in the environment.
- S1b:** accesses, evaluates and uses information from a variety of sources.
- S1c:** plans, conducts and records simple investigations based upon the nature of the questions to be answered.
- S1d:** employs simple instruments such as rulers, magnifiers, and thermometers to systematically gather, record, analyze, and interpret data.
- S1e:** uses data to construct reasonable explanations and to make predictions.
- S1f:** reviews and asks questions about the reports and results of other scientists' work.
- S1g:** communicates findings and conclusions of investigations using scientific language and mathematics.

Strand:

S2: History and Nature of Science

The student demonstrates an understanding of science as a human endeavor; and the history and nature of science; that is, the student:

Standards:

- S2a:** recognizes that doing science requires varying human abilities, interest, and habits of mind (such as: reasoning, insight, skill, creativity, flexibility, and skepticism).
- S2b:** demonstrates and models working alone or as a team member to share and critique new information.
- S2c:** explains developments throughout history that have impacted science as a career option.
- S2d:** explains how men and women in science have made contributions that impact the quality of life.

Strand:

S3 Science in Personal and Social Perspectives

The student demonstrates an understanding of safety, types of resources, changes in environments, and science and technology in local challenges; that is, the student:

Standards:

- S3a:** identifies the benefits and practices of appropriate personal safety, health, nutrition, and resource conservation.
- S3b:** identifies natural hazards in the environment.
- S3c:** recognizes that science and technology are used to identify ways to help solve social problems.

Strand:
S4 Science and Technology The student demonstrates an understanding about science and technology, and the nature of technological design; that is, the student:

- Standards:
- S4a:** recognizes and explains how specific tools, technology and inventions assist humans to work efficiently or live more conveniently.
 - S4b:** explains how inventions and technology impact people and other living organisms.
 - S4c:** explores/invents/designs possible solutions to an identified problem.

Strand:
S5 Physical Science The student demonstrates a conceptual understanding of matter, motion, and energy; that is, the student:

Standard: **S5a:** compares and contrasts observable properties (i.e., size, weight, color) of matter, and the ability to react with other substances.

- Components:
- S5a.1:** Matter is described through observable properties—conduction, insulation, buoyancy, response to magnets, solubility, and transparency.
 - S5a.2:** Matter may or may not react to mixing, heating, freezing, cutting, wetting, dissolving, bending, and exposing to light.

Standard: **S5b:** develops relationships between motion and applied forces.

Component: **S5b.1:** Changes in speed or direction of motion are caused by forces. The greater the force is, the greater the change in motion will be. The more massive an object is, the less effect a given force will have.

Standard: **S5c:** contrasts electricity and magnetism as forms of energy.

- Components:
- S5c.1:** Electricity and magnetism are closely related. Each can be used to produce the other.
 - S5c.2:** Electricity in circuits can produce light, heat, sound and magnetic effects.
 - S5c.3:** Electric circuits require a complete loop through which an electrical current can pass.
 - S5c.4:** Without touching them, material that has been electrically charged pulls on all other materials and may either push or pull other charged materials.
 - S5c.5:** Without touching them, a magnet pulls on all things made of iron and either pushes or pulls on other magnets.

Strand:
S6 Life Science The student demonstrates a conceptual understanding of organisms, and their environments; that is, the student:

Standard: **S6a:** distinguishes between plants and animals based on their structures and functions.

Component: **S6a.1:** Plants or animals have different structures that serve different functions in growth, survival, and reproduction.

Standard: **S6b:** describes how the characteristics of organisms are inherited from their parents and developed from interactions with the environment.

- Components:
- S6b.1:** Characteristics may be inherited from parents during reproduction.
 - S6b.2:** Inherited characteristics include the color of flowers and the number of limbs of an animal.

S6b.3: Other features, such as the ability to ride a bicycle, are learned through interactions with the environment and cannot be passed on to the next generation.

Standard: **S6c:** develop simple food chains and food webs.

Components: **S6c.1:** Some source of “energy” is needed for all organisms to stay alive and grow.

S6c.2: Almost all kinds of animals’ food can be traced back to plants.

S6c.3: Food chains and food webs demonstrate the relationships between organisms and their food and among multiple organisms in an environment.

Strand:

S7 Earth and Space Sciences

The student demonstrates a conceptual understanding of Earth materials, objects in the sky, and changes in Earth and sky; that is, the student:

Standard: **S7a:** examines fossils in relation to Earth materials.

Components: **S7a.1:** Fossils are formed in three ways: through burial in sedimentary material (e.g., imprint), through mineral replacement (e.g., petrified wood), and through capture (e.g., insect in amber).

S7a.2: Fossils provide evidence about the plants and animals that lived long ago and the nature of the environment at that time.

S7a.3: Fossils can be compared to one another and to living organisms according to their similarities and differences. Some organisms that lived long ago are similar to existing organisms, but some are quite different.

Standard: **S7b:** demonstrates and describes how various types of weather impact materials on Earth.

Components: **S7b.1:** Things change in steady, repetitive, or irregular ways—or sometimes in more than one way at the same time. Often the best way to tell which kinds of change are happening is to make a table or graph of measurements.

S7b.2: Different types of weather (e.g., precipitation, storms, drought) have different affects on the Earth’s surface.

S7b.3: Some changes are due to slow processes (e.g., erosion and weathering), and others are due to rapid processes (e.g., landslides, volcanic eruptions, and earthquakes).

Standard: **S7c:** compares and contrasts objects in the sky by describing motion, orbit, rotation, and gravitational forces of Earth, sun, and moon.

Components: **S7c.1:** Objects in the sky demonstrate patterns of movement called orbits. For example, the sun appears to move across the sky in the same way every day, but its path changes slowly over the seasons. The moon moves across the sky on a daily basis much like the sun.

S7c.2: Stars are like the sun, some being smaller and some larger, but so far away that they look like points of light.

S7c.3: Earth pulls on objects without touching them.

S7c.4: Stars, planets, and moons rotate on their axes.