

**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 and uses information from a variety of sources.
- S1c:** plans and conducts explorations and investigations based on the nature of the question.
- S1d:** employs appropriate equipment and tools to systematically gather, record, and analyze data.
- S1e:** uses revised data to construct reasonable explanations and make predictions.
- S1f:** communicates investigations and explanations 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:** demonstrates curiosity and persistence, and begins to use reasoning in thinking about and doing science.
- S2b:** knows that in science people work alone or as a team member to share and critique new information with others.
- S2c:** describes how careers in science have changed throughout history.
- S2d:** describes the variety of contributions made by men and women scientists of different cultures throughout history.

Strand:

**S3 Science in Personal and Social Perspectives**

The student demonstrates an understanding of safety, types of resources, and changes in the environment; that is, the student:

Standards:

- S3a:** practices personal and group safety when engaged in science.
- S3b:** compares the needs of a population with sources and changes in environmental resources.
- S3c:** practices conservation of resources.

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:** understands how tools, technology and inventions are designed to answer questions and help solve problems.
- S4b:** understands how tools, technology and inventions impact people and other living organisms.
- S4c:** recognizes that people are always inventing new tools, technology and inventions.

Strand:

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

Standard: **S5a:** sorts, classifies, and describes physical properties of objects and materials.

Components: **S5a.1:** Solids have a definite shape while liquids and gases take on the shape of the container.  
**S5a.2:** Heating and cooling may or may not cause changes in the properties of objects and materials. Many kinds of changes occur faster under hotter conditions.

Standard: **S5b:** describes and measures the position and motion of objects relative to other objects, time, and distance.

Components: **S5b.1:** The position of an object can be described by locating it relative to another object or the background.  
**S5b.2:** The object's motion can be described by tracing and measuring its position over time.

Standard: **S5c:** explores electricity and sound as forms of energy.

Components: **S5c.1:** Electricity can be produced by rubbing two different materials together. One material loses a charge while the other material obtains an additional charge.  
**S5c.2:** Sound is produced when objects vibrate.  
**S5c.3:** Sound travels slower through the air than it does through solids (or liquids).

Strand:

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

Standard: **S6a:** classifies plants and animals in multiple ways according to their characteristics.

Components: **S6a.1:** Living organisms can be sorted into groups based upon an organism's physical characteristics such as body covering, movement, body symmetry, or body structures.  
**S6a.2:** Features used for grouping depend on the purpose of the grouping.

Standard: **S6b:** explores how organisms clearly resemble their parents.

Components: **S6b.1:** Offspring closely resemble their parents, but are not exactly like them.  
**S6b.2:** Some likenesses are inherited and some are not.

Standard: **S6c:** describes how an organism's behavior is influenced by its environment.

Component: **S6c.1:** The behavior of individual organisms is influenced by internal cues (such as: increase in body temperature) and by external cues (such as an increase in temperature of the 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:** identifies and describes specific properties of minerals, soils, and fossils.

Components:

**S7a.1:** Earth materials have different physical and chemical properties which make them useful in different ways (e.g., building materials, sources of fuel, sources for cultivation of crops and animals, sources of energy).

**S7a.2:** Rock is composed of different combinations of minerals. Smaller pieces of rocks come from the breakage and weathering of bedrock and larger rocks. Soil is made partly from weathered rock, partly from plant remains—and may also contain many living organisms.

**S7a.3:** Fossils are the remains or traces of organisms that lived long ago. They provide evidence about the nature of the environment at that time.

Standard:

**S7b:** describes the formation and movement of clouds and their role in weather.

Components:

**S7b.1:** When liquid water disappears, it turns into a gas in the air and can reappear as a liquid when cooled, or as a solid if cooled below the freezing point of water. Clouds and fog are made of tiny droplets of water.

**S7b.2:** Clouds can provide clues about the weather. Clouds can be classified based upon their appearance (size, shape, color). Different types of clouds can indicate the type of weather one may expect.

Standard:

**S7c:** observes, records, and describes objects in the sky (e.g., sun, moon, constellations, etc.) in terms of characteristics, location, and movement.

Components:

**S7c.1:** The sun, moon, stars, clouds, birds and airplanes all have properties, locations, and movements that can be observed and described.

**S7c.2:** Planets and moons change their positions against the background of stars.

**S7c.3:** Constellations vary according to time of year and location of observer.