

Grade Band Theme: Interconnections within Systems

This theme focuses on helping students recognize the components of various systems and then investigate dynamic and sustainable relationships within systems using scientific inquiry.

Earth and Space Science (ESS)

Topic: Earth's Surface

This topic focuses on the variety of processes that shape and reshape Earth's surface.

Content Statements

- Earth's surface has specific characteristics and landforms that can be identified.
 - About 70 percent of the Earth's surface is covered with water and most of that is the ocean. Only a small portion of the Earth's water is freshwater, which is found in rivers, lakes and ground water.
 - Earth's surface can change due to erosion and deposition of soil, rock or sediment. Catastrophic events such as flooding, volcanoes and earthquakes can create landforms.
- The surface of Earth changes due to weathering.
 - Rocks change shape, size and/or form due to water or ice movement, freeze and thaw, wind, plant growth, gases in the air, pollution and catastrophic events such as earthquakes, mass wasting, flooding and volcanic activity.
- The surface of Earth changes due to erosion and deposition.
 - Water, wind and ice physically remove and carry (erosion) rock, soil and sediment and deposit the material in a new location.
 - Gravitational force affects movements of water, rock and soil.

Physical Science (PS)

Topic: Electricity, Heat and Matter

This topic focuses on the conservation of matters and the processes of energy transfer and transformation, especially as they relate to heat and electrical energy.

Content Statements

**Science
Grade 4**

- The total amount of matter is conserved when it undergoes a change.
 - When an object is broken into smaller pieces, when a solid is dissolved into a liquid or when matter changes state (solid, liquid, gas), the total amount of matter remains constant.
- Energy can be transformed from one form to another or can be transferred from one location to another.
 - Energy transfers from hot objects to cold objects as heat, resulting in a temperature change.
 - Electric circuits require a complete loop of conducting materials through which an electrical energy can be transferred.
 - Electrical energy in circuits can be transformed to other forms of energy, including light, heat, sound and motion.

Life Science (LS)

Topic: Earth's Living History

This topic focuses on using fossil evidence and living organisms to observe that suitable habitats depend upon a combination of biotic and abiotic factors.

Content Statements

- Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.
 - Ecosystems can change gradually or dramatically. When the environment changes, some plants and animals survive and reproduce and others die or move to new locations. An animal's patterns of behavior are related to the environment. This includes the kinds and numbers of other organisms present, the availability of food and resources, and the physical attributes of the environment.
- Fossils can be compared to one another and to present-day organisms according to their similarities and differences.
 - The concept of biodiversity is expanded to include different classification schemes based upon shared internal and external characteristics of organisms.
 - Most types of organisms that have lived on Earth no longer exist.
 - Fossils provide a point of comparison between the types of organisms that lived long ago and those existing today.