

# Science and Technology/Engineering

## Grade 4

### *Earth and Space Science Standards*

#### *Soil*

- ❖ Explain and give examples of the ways in which soil is formed (the weathering of rock by water and wind) and from the decomposition of plants and animals
- ❖ Recognize and discuss the different properties of soil including color, texture (size of particles) the ability to retain water, and the ability to support the growth of plants

#### *Earth's History*

- ❖ Give examples of how the surface of the earth changes due to slow processes such as erosion and weathering and rapid processes such as landslides

#### *The Earth in the Solar System*

- ❖ Recognize that the Earth is a part of a system called the solar system that includes the sun (a star), planets, and many moons. The Earth is the 3<sup>rd</sup> planet from the sun in our solar system
- ❖ Recognize that the Earth revolves around (orbits) the sun in a year's time and that the Earth rotates on its axis once approximately every 24 hours. Make connections between the rotations of the Earth and day/night and the apparent movement of the sun, moon, and stars across the sky
- ❖ Describe the changes that occur in the observable shape of the moon over the course of a month

### *Physical Sciences Standards*

#### *Forms of Energy*

- ❖ Identify the basic forms of energy (light, heat, sound). Recognize that energy is the ability to cause motion or to create change
- ❖ Give example of how energy can be transferred from one form to another

#### *Sound Energy*

- ❖ Recognize that sound is produced by vibrating objects and requires a medium through which to travel. Relate the rate of vibrations to the pitch of the sound

#### *Light Energy*

- ❖ Recognize that light travels in a straight line until it strikes an object or travels from one medium to another, and that light can be reflected, refracted, or absorbed

#### *Magnetic Energy*

- ❖ Recognize that magnets have poles that repel and attract each other
- ❖ Identify and classify objects and materials that a magnet will attract and that a magnet will not attract

#### *Electrical Energy*

- ❖ Recognize that electricity in circuits requires a complete loop through which an electrical current can pass and that electricity can produce light, heat, and sound.
- ❖ Identify and classify objects and materials that conduct electricity and that are insulators
- ❖ Explain how electromagnets can be made and give example of how they can be used