



Three-dimensional science standards in the elementary grades lay the foundation for students to work and think like scientists and engineers. We also see strong connections to skills students will use to be successful with reading, literacy, and mathematics. In elementary grades, we will explore disciplinary core ideas in physical, life, and Earth and space sciences via phenomena in the world around us. Learners in elementary grades develop and ask testable questions, collect, and analyze different types of evidence, and write and communicate our understanding. Mastery of these standards will result in young learners who have a deep understanding of how scientific knowledge can provide solutions to practical problems we see in our world.

Expectations for 4th Grade Students:

- **Physical Science:** Recognize that energy comes in many forms such as light, heat, sound, magnetic, chemical, and electrical and can move from place to place; understand collisions between objects can impact motion; recognize that waves have regular patterns of motion, and that patterns can be used to encode, send, receive, and decode information, explain how an object can be seen.
- **Life Science:** Recognize that organisms have both internal and external structures that serve various functions, and describe how animals receive and process information through their senses.
- **Earth and Space Science:** Understand how Earth has changed over time, and how energy and fuels that humans use are derived from natural sources and their uses affect the environment in multiple ways.

Throughout 4th Grade You May Find Students:

- Using evidence to construct an explanation relating to the speed of an object, and ask questions about the changes in energy that occur when objects collide.
- Making observations to provide evidence that energy can be transferred from place to place.
- Developing models to describe the properties of waves or to describe how we see objects.
- Constructing an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- Using models to describe that animals receive and process information through their senses.
- Analyzing and interpreting data from maps to describe patterns of Earth's features.
- Identifying evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
- Obtaining and combining information to describe that energy and fuels are derived from natural resources, and their uses affect the environment.