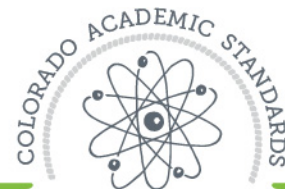




# At the end of Sixth Grade, students can...



Science

Sixth Grade



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## Science Learning Expectations for Sixth Grade

### Physical Science

Recognize that all matter is made of atoms that may stick together as molecules or be packed together in large arrangements; identify the unique properties of elements; distinguish physical characteristics and changes of solid, liquid, and gas states; distinguish between mass, weight, volume, and density and explain relationships among them.

### Life Science

Explain how changes in environmental conditions can affect the survival of individual organisms, populations, and entire species; describe ways that organisms interact with each other and their environment to create an ecosystem.

### Earth Science

Recognize that relationships exist between Earth's structure and constructive and destructive forces (earthquakes, landslides); analyze how water on Earth is distributed and circulated (oceans, glaciers, rivers, ground water, and the atmosphere); identify the role that Earth's natural resources provide for human society's physical needs; distinguish non-renewable and renewable natural resources.

## Throughout the Sixth Grade, you may find students...

- Using a model of matter to illustrate characteristics of different substances (particle model); explaining the similarities and differences between elements and compounds; explaining how the arrangement and motion of particles in a substance determine its state

(liquid, solid, gas); describing the relationship between states and temperature.

- Explaining that the mass of an object does not change, but its weight changes due to gravitational forces; predicting how changes in acceleration due to gravity affect the weight of an object; measuring mass and volume to calculate density.
- Interpreting and analyzing data about changes in environmental conditions and populations that describe why a specific population might be increasing or decreasing; modeling balance in an ecosystem.
- Developing, communicating, and justifying an evidence-based explanation using various resources (text, internet, computer simulations); designing a food web diagram to show the flow of energy through an ecosystem and compare and contrast that flow with the cycling of matter in ecosystems.
- Using various resources to help explain the formation of Earth's surface features and the connection to constructive and destructive forces.
- Gathering and analyzing data from various resources and investigations to account for local and world-wide water circulation and distribution patterns including where water goes after it is used; identifying problems, and proposing solutions related to local and global water quality (pollution), circulation, and distribution.
- Researching data and information about types of natural resources (renewable and nonrenewable), their availability, and use in communities; using information to determine the advantages and disadvantages of using fossil fuels and alternative energy sources.