



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



Science

Seventh Grade



**COLORADO**  
Department of Education

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## Science Learning Expectations for Seventh Grade

### Physical Science

Separate mixtures of substances based on their properties (solubility, boiling points, magnetic properties, and densities).

### Life Science

Recognize that individual organisms with certain traits are more likely than others to survive and have offspring in a specific environment; recognize that the human body is composed of organ systems that have specific structures, functions and interactions; understand that photosynthesis and cellular respiration are processes by which energy is acquired and utilized by organisms; recognize the multiple lines of evidence that demonstrate organisms have changed over time.

### Earth Science

Understand that major geologic events (earthquakes, volcanic eruptions, mid-ocean ridges, and mountain formation) are associated with plate boundaries and attributed to plate motions; determine how geologic time, history, and changing life forms are indicated by fossils and successive sedimentation, folding, faulting, and uplifting of layers of sedimentary rock.

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

- Developing and designing a scientific investigation to separate the components of a mixture based on properties (solubility, boiling points, magnetic properties, and densities).
- Using information, data, and technology tools about specific adaptations to provide evidence and develop claims about differential survival and reproductive success associated with specific traits in a given environment.
- Communicating and justifying an explanation regarding the functions and interactions of the human body (circulatory system and the respiratory system working together).
- Using models to develop, communicate, and justify an evidence-based scientific explanation of the different types of cells, their structures, components, and functions; comparing and contrasting the basic structures and functions of plant cells, animal cells, and single-celled organisms.
- Using evidence, including computer simulations, to describe the relationship between photosynthesis and cellular respiration within plants and between plants and animals.
- Interpreting and analyzing data from the fossil record to support a claim that organisms and environments have changed over time; analyzing and critiquing the evidence regarding the causes and effects of a mass extinction event.
- Using maps and models to locate geologic “hot spots” (the Pacific Ocean’s ring of fire) and assist with communicating an explanation of Earth’s plates, plate motions, and the results of plate motions.
- Identifying and describing the impact of major historical geologic events of life on Earth; using evidence to determine the sequence of events in geologic time.