

Science: Grade Eight

<p>Standard #1 Scientific Investigation Students applied the process of scientific investigation and design, conducted, communicated about, and evaluated investigation.</p>
<p>Standard #2 Physical Science Students understood common properties, forms and changes in matter and energy.</p>
<p>Standard #3 Life Science Students understood the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.</p>
<p>Standard #4 Earth and Space Science Students understood the processes and interactions of Earth's systems and the structure and dynamics of Earth and other space objects.</p>
<p>Standard #5 Scientific Method Students understood that the nature of science involves a particular way of building knowledge and making meaning of the natural world.</p>

Description

The eighth grade science program focuses on the Earth Sciences. The major units of study are an introduction into interactions of matter, investigation into space, dynamics of the earth, water on our planet, mineralogy of the earth and Colorado, and weather interactions on the planet. Students investigate these areas through a multitude of processes, that include, but are not limited to, laboratory investigations, comparison and contrast papers, lectures, use of computer technology, scientific vocabulary usage, and final examinations.

Time Allocation
 Fifty minutes daily

Texts/References
Earth Science, Feather, Glencoe, 2008

Themes /Topics
 Scientific Investigation
 Astronomy
 Weather and Climate
 Water
 Earth's Changing Surface
 Inside the Restless Earth
 Chemistry

Assessments
 Teacher constructed tests
 Textbook assessments
 Lab Reports

Grades and Achievement Levels
 Grades are based on class participation, completion of assignments, and projects. Each student receives an effort grade, and an achievement grade. The effort grade is class participation and homework, while the achievement grade is based on demonstrating knowledge of the Earth Science standards.

Essential Learning Science Grade Eight

**Standard # 1
Scientific Investigation**
Students applied the process of scientific investigation and design, conducted, communicated about, and evaluated investigation.

- Scientific method
- How to communicate results in a lab report
- How to design and conduct a scientific investigation

**Standard # 2
Physical Science**
Students understood common properties, forms and changes in matter and energy.

- Not assessed in this course

**Standard # 3
Life Science**
Students understood the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.

- Not assessed in this course

**Standard # 4
Earth and Space Science**
Students understood the processes and interactions of Earth's systems and the structure and dynamics of Earth and other space objects.

- There is a relationship between rocks and minerals
- Some resources are renewable and others are not renewable
- How the Earth's surface is shaped by forces such as weathering and erosion
- Tectonic plate movement causes geological events.
- Layers of rock and fossils are used to determine age
- Composition of the atmosphere
- How weather is formed.
- Formation of solar systems
- Distances in space

**Standard # 5
Scientific Method**
Students understood that the nature of science involves a particular way of building knowledge and making meaning of the natural world.

- Experiments must be repeatable
- Scientific knowledge changes
- Science is universal throughout the world
- Technology has advanced scientific knowledge

Expectations: Science Grade Eight

Standard #1	Standard #2	Standard #3	Standard #4	Standard #5
<ol style="list-style-type: none"> 1. Asked questions and stated hypotheses 2. Used the metric system 3. Used the appropriate tools 4. Interpreted and evaluated data 5. Demonstrated that scientific ideas are used to explain the past and predict future events 6. Identified alternative explanations 7. Communicated experiment findings in a lab report 	<ul style="list-style-type: none"> • Not assessed in this course 	<ul style="list-style-type: none"> • Not assessed in this course 	<ol style="list-style-type: none"> 1. Knew there is an interrelationship between rocks and minerals 2. Recognized the difference between renewable and non renewable resources 3. Described how processes such as weathering and erosion shape the Earth's surface 4. Knew major geological events are a result of plate movements 5. Understood fossils are used as evidence that life has changed over time. 6. Described how layers of rock are used to determine age 7. Knew the atmosphere is a necessary component for life on earth 8. Knew that weather conditions are due to quantitative changes in the environment 9. Knew there are large scale and local weather conditions 10. Described how the world's fresh water is circulated through the water cycle 11. Described that the ocean has certain physical and chemical properties 12. Recalled that the universe consists of billions of galaxies 13. Described how stars and solar systems form and break apart 14. Understood that technology is needed to explore space 15. Demonstrated that the motion of the earth moon and sun have observable effects 	<ol style="list-style-type: none"> 1. Explained why a controlled experiment must have comparable results 2. Understood that scientific knowledge changes 3. Discussed that people from different times and cultures have contributed to the advancement of science 4. Described how models can be used to predict change 5. Knew that technology has been used to advance science