

## Physical Science

<p style="text-align: center;"><b>Standard #1</b> <b>Scientific Investigation</b></p> <p>Students applied the process of scientific investigation and design, conducted, communicated about, and evaluated investigation.</p>
<p style="text-align: center;"><b>Standard #2</b> <b>Physical Science</b></p> <p>Students understood common properties, forms and changes in matter and energy.</p>
<p style="text-align: center;"><b>Standard #3</b> <b>Life Science</b></p> <p>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 style="text-align: center;"><b>Standard #4</b> <b>Earth and Space Science</b></p> <p>Students understood the processes and interactions of Earth's systems and the structure and dynamics of Earth and other space objects.</p>
<p style="text-align: center;"><b>Standard #5</b> <b>Scientific Method</b></p> <p>Students understood that the nature of science involves a particular way of building knowledge and making meaning of the natural world.</p>

### Description

Physical Science is a course designed to explain the rules of the physical world through physics, chemistry, geology, and astronomy. The 9<sup>th</sup> Grade Physical Science at Platte Canyon High School is a course designed as a continuance of education in physics and chemistry. We will be discussing and learning how the following topics interrelate with other sciences and subjects, including technology and human activity: the scientific method, interpretation of data, processes of scientific investigations, measuring, properties of matter, forms and changes of matter and energy, machines, forces, motion, energy, mechanics, atomic structure, periodic table, chemical bonds, solutions, reactions, waves, sound, light, electricity and magnetism.

**Time Allocation**  
Sixty minutes daily

**Texts/References**  
Physical Science: Concepts in Action, Wyssession, Prentice Hall, 2009  
Internet references

**Themes /Topics**  
Introduction and Scientific Method  
Science and Technology  
Measurement units, measuring equipment, and conversions  
Forces and Motion  
Simple and complex machines  
Matter  
Atomic structure  
Periodic table  
Interactions of matter  
Energy

**Assessments**  
Summative Assessments –  
    Teacher constructed written and practical tests  
    Textbook assessments  
Performance Assessments - Laboratory Write-ups  
Formative Assessments - Weekly Quizzes

**Grades and Achievement Levels**  
Grades are based on completion of assignments and projects.

**Essential Learning Physical Science**

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

- Accepted process of implementing scientific investigations and identifying errors
- Appropriate technologies to process and analyze data
- Communication of results from scientific investigations

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

- Organization and identification of substances by their physical and chemical properties
- Energy relationships
- Light and sound wave properties
- Conservation of mass, energy, and laws of motion

**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.

- Balanced use of natural resources

**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.

- Critical analysis of scientific processes, writings, web sites
- Interrelationships among science, technology and human activity can lead to further discoveries

**Expectations: Physical Science**

Standard #1	Standard #2	Standard #3	Standard #4	Standard #5
<ol style="list-style-type: none"> <li>1. Develop lab experiments in order to guide their development and implementation of scientific investigations</li> <li>2. Select appropriate technologies to process and analyze data</li> <li>3. Identify sources of error within an investigation</li> <li>4. Communicate and evaluate scientific results</li> </ol>	<ol style="list-style-type: none"> <li>1. Organize elements by their physical and chemical properties and determine chemical properties of substances</li> <li>2. Write and explain chemical equations</li> <li>3. Discuss relationships and transfers of energy</li> <li>4. Observe light and sound wave properties</li> <li>5. Apply laws and principles as they relate to conservation of mass and energy, and laws of motion</li> </ol>	<ul style="list-style-type: none"> <li>• Not assessed in this course</li> </ul>	<ol style="list-style-type: none"> <li>1. Assess costs, benefits, and consequences of using natural resources</li> </ol>	<ol style="list-style-type: none"> <li>1. Evaluate articles for scientific evidence, bias, and opinion</li> <li>2. Identify cause-effect relationships</li> <li>3. Conceptualize interrelationships among science, technology and human activity which lead to further discoveries</li> </ol>