

# Physical Science 8

## Course Syllabus



### Supervising Teacher

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### Course Description:

#### *Physical Science 8*

*The student will understand the process of physical science, measurement, the tools used, and the role of science in society. The student will develop an appreciation of: matter; the structure, composition, properties of matter; and energy.*

### Recommended Textbook Options:

*Harcourt Holt: Science & Technology – Physical Science*  
*McGraw-Hill Glencoe: Introduction to Physical Science*  
*Pearson Prentice Hall: Science Explorer – Physical Science*

### Course Evaluation:

#### ***Home Participation and Portfolio: 100% of grade***

*Home participation is to be determined by the home educator. The participation may include, but is not limited to, textbook activities, quizzes, unit tests, projects, oral reports, or research papers. Grades for home participation will be submitted to the contact teacher. A portfolio of student work will be presented to the contact teacher once per semester.*

*A comprehensive semester examination is available upon request during exam week each semester. Semester examinations will be given in the home by the home educator.*

### Pacing Guide

The topics and standards for this course have been divided between the two semesters.

<b>Semester 1(Fall)</b>	<b>Semester 2 (Spring)</b>
Scientific Investigation/Nature of Science	Motion and Forces
Matter	Work, Power, and Energy
Elements, Compounds, Mixtures	Electricity, Electromagnetism, and Electronics
Atoms	Waves, Light, and Sound
Chemical interactions	

In order to fulfill this pacing requirement, the recommended texts have been broken down by chapter. Covering the chapters in the order listed will insure that all topics on the final exam will be covered during the appropriate semester.

***Harcourt Holt: Science & Technology – Physical Science***

<b>Semester 1(Fall)</b>	<b>Semester 2 (Spring)</b>
Chapter 1	Chapters 5-7
Chapters 2-4	Chapters 8-10
Chapters 11-12	Chapters 17-19
Chapters 13-16	Chapters 20-23

***McGraw-Hill/Glencoe: Introduction to Physical Science***

<b>Semester 1(Fall)</b>	<b>Semester 2 (Spring)</b>
Chapters 1-2	Chapters 10-12
Chapters 3-5	Chapters 13-15
Chapters 6-7	Chapters 16-19
Chapters 8-9	Chapters 20-22

***Pearson Prentice Hall: Science Explorer – Physical Science***

<b>Semester 1(Fall)</b>	<b>Semester 2 (Spring)</b>
Chapter 1	Chapters 9-12
Chapters 2-3	Chapters 13-14
Chapters 4-5	Chapters 15-16
Chapters 6-7	Chapters 17-18
Chapters 8	Chapters 19-20
	Chapter 21-22

**I-DEA Student Honor Code:**

With any form of valid proof of dishonesty with regard to student work or testing, the instructor may elect from a range of actions. Academic dishonesty could lead to a zero grade for the assignment or even failure for the entire course following consultation between the instructor, Secondary Supervisor, and Director.

All students must adhere to the **Honor Code:**

*“On my honor, I will maintain the highest possible standards of honesty, integrity and personal responsibility. This means I will not lie, cheat or steal, and as a member of this academic community, I am committed to creating an environment of respect and mutual trust.”*

## IDAHO CONTENT STANDARDS: Physical Science

### **Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	8-9.PS.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)	8-9.PS.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)					
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	8-9.PS.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)	8-9.PS.1.2.2 Develop models to explain concepts or systems. (648.02b)	8-9.PS.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)				
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	8-9.PS.1.3.1 Measure changes that can occur in and among systems. (648.03b)	8-9.PS.1.3.2 Analyze changes that can occur in and among systems. (648.03b)	8-9.PS.1.3.3 Measure and calculate using the metric system. (648.03c)				
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	8-9.PS.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)	8-9.PS.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)	8-9.PS.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)	8-9.PS.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)	8-9.PS.1.6.5 Analyze alternative explanations and models. (649.01e)	8-9.PS.1.6.6 Communicate and defend a scientific argument. (649.01f)	8-9.PS.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)
<b>Goal 1.8: Understand Technical Communication</b>	8-9.PS.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)						

## **Standard 2: Physical Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	8-9.PS.2.2.1 Explain motion using Newton's Laws of Motion. (650.04b)						
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	8-9.PS.2.3.1 Explain that energy can be transformed but cannot be created nor destroyed. (650.05a)	8-9.PS.2.3.2 Classify energy as potential and/or kinetic and as energy contained in a field. (650.05b)					
<b>Goal 2.4: Understand the Structure of Atoms</b>	8-9.PS.2.4.1 Describe the properties, function, and location of protons, neutrons, and electrons. (650.01a)	8-9.PS.2.4.2 Explain the processes of fission and fusion. (650.01b)	8-9.PS.2.4.3 Describe the characteristics of isotopes. (650.01c)	8-9.PS.2.4.4 State the basic electrical properties of matter. (650.01d)	8-9.PS.2.4.5 Describe the relationships between magnetism and electricity.		
<b>Goal 2.5: Understand Chemical Reactions</b>	8-9.PS.2.5.1 Explain how chemical reactions may release or consume energy while the quantity of matter remains constant. (650.03a)						

## **Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	8-9.PS.5.2.1 Explain how science advances technology. (655.01a)	8-9.PS.5.2.2 Explain how technology advances science. (655.01a)	8-9.PS.5.2.3 Explain how science and technology are pursued for different purposes. (656.01b)				