

Course Title: GRADE EIGHT SCIENCE-A	Course Description
<p>Course No. N/A Grade level: 8</p> <p>Text and Resources: A. <i>Holt Science and Technology: Physical Science</i>; Holt, Rinehart, Winston B. <i>Physical Science</i>, AGS C. <i>Science Explorer: Physical Science</i>; Prentice Hall D. <i>Concepts and Challenges in Physical Science</i>; Globe Fearon</p>	<p>*Course Value: One Semester</p> <p>Credit Value: One Course</p>
<p>Course Content: Key Content Standards and Course Objectives</p>	
<p>The following objectives are based on the Grade 8 content standards:</p> <ol style="list-style-type: none"> Motion: The velocity of an object is the rate of change of its position. Forces: Unbalanced forces cause changes in velocity. Structure of Matter: Elements have distinct properties and atomic structure. All matter is comprised of one or more of over 100 elements. Earth in the Solar System: The structure and composition of the universe can be learned from the study of stars and galaxies, and their evolution. Reactions: Chemical reactions are processes in which atoms are rearranged into different combinations of molecules. Chemistry of Living Systems: Principles of chemistry underlie the functioning of biological systems. Periodic Table: The organization of the Periodic Table is based on the properties of the elements and reflects the structure of atoms. Density and Buoyancy: All objects experience a buoyant force when immersed in a fluid. <p><u>Investigation and Experimentation</u></p> <p>Students will ask meaningful questions and conduct careful investigations addressing the content of the above Physical Science standards.</p>	<p>Physical science is the area of focus in eighth grade. Students study topics in physics such as motion, forces, and the structure of matter. Earth, the solar system, chemical reactions, chemistry of biological processes, The Periodic Table, and density and buoyancy are also topics that eighth grade students should learn about. Students should begin to grasp four concepts that help to unify physical science: force and energy; the laws of conservation; atoms, molecules and the atomic theory; and kinetic theory.</p> <p>Mastery of the eighth grade physical science content will greatly enhance the ability of students to succeed in high school science classes.</p> <p>*Open entry/open exit</p>
<p>Methods of Study</p>	<p>Evaluation of Performance Standards</p>
<ol style="list-style-type: none"> Students will complete all activities assigned. Students will participate in discussion with other class members and/or teacher. 	<ol style="list-style-type: none"> Students will complete all assignments and assessments with a minimum of 70% accuracy. The supervising teacher will be satisfied with the quality of the student's work.

GRADE EIGHT SCIENCE A

Course Outline

I. Textbook Assignment Options:

A. *Holt Science and Technology, Physical Science (1 Course)*

- Read: Units 1-3.
- Complete: all Section Review questions.
- Complete: “Using Vocabulary” and “Understanding Concepts” in the Chapter Reviews.
- Complete one Extension Activity

B. *Concepts and Challenges in Physical Science (1998 Edition) (1 Course)*

- Read: Units 1-10.
- Complete: “Check” and “Apply” exercises in Lesson Summaries.
- Complete: Unit Challenges: “Tech Terms,” “Content Challenges,” and “Reading Critically” exercises.
- Complete one Extension Activity

C. *Science Explorer, Physical Science (1 Course)*

- Read: Chapters 1-11.
- Complete: Section Review exercises (omit “Thinking Critically”)
- Complete: Chapter Assessments “Reviewing Content,” and “Checking Concepts”
- Complete: one Extension Activity.

D. *AGS Physical Science (1 Course)*

- Read: Chapters 1-6.
- Complete: all “Self-Check” or “Lesson Review” exercises.
- Complete: “Chapter Review” exercises.
- Complete one of the Extension Activities.

II. Extension Activities

1. Using the Internet, and the search term “Newton’s laws of motion,” conduct research on one of Sir Isaac Newton’s laws of gravity. Use at least two different web sites for your information, and write a 4-paragraph essay based upon your research. Include a graphic depicting the law of motion that you are writing about. The graphic can either be imported from the Internet, or hand-drawn. Use Writing Rubric Exp. III.
2. Create a computer drawing with Microsoft Word showing how an inclined plane, wheel and axle, screw, and pulley can be used together to unload a transatlantic container ship
3. Create a PowerPoint presentation illustrating at least three types of simple machines and how they work. Your presentation must include at least 10 slides with labeled simple machines. Include a Title/Cover page in your presentation.
4. Teacher generated activity, approved by the site administrator.

III. Evaluation

- Unit and/or final test.
- All textbook work must meet the 70% accuracy level for a “C” grade.