

Course Title: PHYSICAL SCIENCE IIA	Course Description
<p>Course No. 3305 Grade level: 8-12</p> <p>Text and Resources: A. <i>AGS Physical Science</i>, Part I; AGS B. <i>Science Workshop Physical Science, Matter and Energy; Steck-Vaughn</i> C. <i>Basic Science for Living, Physical Science; Steck-Vaughn</i> D. <i>Concepts and Challenges in Physical Science, Part I; Globe Fearon</i></p>	<p>Course Value: *One Semester</p> <p>Credit Value: 1 – 5 credits</p>
<p>Course Content: Key Content Standards and Course Objectives</p>	<p>In addition to some of the Grade 9-12 standards, this course will include the foundational standards from which the 9-12 physical science and chemistry standards are based. This course, along with Physical Science IIB, can serve as one component of the Alternative Education’s science credit requirement for graduation. Note that some exploratory activities are used, but the lack of facilities that conform to state safety guidelines for laboratories precludes many laboratory activities.</p> <p>*Open entry/open exit</p>
<p>This course is based on a combination of the following physics, chemistry and physical science standards:</p> <ol style="list-style-type: none"> Forces and Motion: Newton’s laws predict the motion of most objects (Physics: 9/12-1e,f), the velocity of an object is the rate of change of its position (8-1a-f), unbalanced forces cause changes in velocity (8-2a-g), an unbalanced force on an object produces a change in its momentum (Physics: 9/12-2f), tools and machines are used to apply forces to make things move (2-1d). Energy: Electricity and magnetism are related effects that have many useful applications in everyday life (4-1a-g), visible light is a small band within a very broad electromagnetic spectrum (7-6a-g), light has a source and travels in a direction (3-2), sound is made by vibrating objects and can be described by its pitch and volume (2-1g), movements of thermal energy (6-3a-d), heat flow and work are two forms of energy transfer between systems (Physics: 9/12-3a), first law of thermodynamics (Physics: 9/12-3b). Chemistry: Energy and matter have multiple forms and can be changed from one form to another (3-1a-i), elements have distinct properties and atomic structure and all matter is comprised of one or more of over 100 elements (8-3a-f), elements and their combinations account for all the varied types of matter in the world (5-1a-i). Investigation and Experimentation Students will ask meaningful questions and conduct careful investigations addressing the content of the above Physical Science standards. 	<p>Evaluation of Performance Standards</p>
<p>Methods of Study</p>	<ol style="list-style-type: none"> Students will complete all assignments with a minimum of 70% accuracy. The supervising teacher will be satisfied with the quality of the student’s work. The student must receive a minimum score of 70% on a teacher assigned final evaluation.
<ol style="list-style-type: none"> Students will complete all activities assigned. Students will participate in discussion with other class members and/or teacher. 	

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Course Outline: 3305

I. Textbook Assignment Options:

A. *AGS Physical Science, Part I (5.0 credits)*

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

B. *Science Workshop Physical Science, Matter and Energy (2.5 credits)*

- Read: Lessons 1-35.
- Complete: all activities and exercises, except experiments.
- Complete one of the Extension Activities listed below.

C. *Basic Science For Living, Physical Science (2.5 credits)*

- Read: Units 1-7.
- Complete: all Lesson Review exercises.
- Complete one of the Extension Activities listed below.

D. *Concepts and Challenges in Physical Science, Part I (5.0 credits)*

- Read: Units 1 to 11.
- Complete: all “Check” and “Apply” questions.
- Complete: all “TechTerms,” “Techterm Challenges,” “Content Challenges,” and “Understanding Features,” questions at the end of each unit.
- Complete one of the Extension Activities listed below.

II. Extension Activity Options:

1. Using a computer graphics program, such as the Microsoft WORD drawing toolbar, draw an isotope of hydrogen and lithium. Label all protons, electrons, and neutrons (if any).
2. *AGS Physical Science* Textbook: Complete one of the “Investigation” activities from Chapters 1-6.
3. *AGS Physical Science*: Complete the “Science in Your Life” activity in Chapter 2 related to the aquarium size.
4. Acid rain occurs when pollutants in the air combine with water vapor in the air to form harmful acids. Use any resource, and/or the Internet with the following search topic, to conduct more thorough research on acid rain: U.S. EPA Acid Rain Program Homepage. Write a 3-paragraph summary from your research discussing what acid rain is, what causes it, how it is measured, what are the effects of acid rain and how do we reduce it. Use Writing Rubric SII.
5. Teacher generated activity, approved by the site administrator.

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III. Evaluation

- See your teacher for a unit test.
- All Writing assignments must meet the proficient level of the rubric provided by the teacher.
- All textbook work must meet 70% accuracy level for a “C” grade.