
PETERS TOWNSHIP HIGH SCHOOL

COURSE SYLLABUS: PHYSICAL SCIENCE ACADEMIC

Course Overview and Essential Skills

Physical Science Academic is designed for 9th grade high school students and introduces the fundamental topics associated with physics, chemistry, and biochemistry. It includes an overview of motion, Newton's Laws, simple machines, work, power, energy, electricity, waves, light, sound, atomic structure, the periodic table, chemical bonding, acids, bases, and an analysis of water's structure and behavior. It is designed to prepare students for further studies in science. Students will develop skills critical for success in science, including problem solving, graphing, metric conversions, and correct vocabulary usage. During lab activities, students will demonstrate proper lab techniques. During class several instructional modes will be used including: lectures, individual work, small group work, large class discussions, problem solving sessions, question/answer sessions, hands on activities, and lab activities. The student will also have the opportunity to use the Internet for research, experiments and projects.

Course Textbook and Required Materials

McLaughlin, Thompson and Zike. (2017). *Glencoe Physical Science*. McGraw-Hill Education. ISBN #978-0-07-677456-2.

Online textbook, supplemental resources and homework supplied through McGraw-Hill ConnectED <https://connected.mcgraw-hill.com/connected/login.do>

Three ring binder for notes, handouts and lab activities, pen and pencil and a scientific calculator

Course Outline of Material Covered:

Unit	Concepts/Skills/Resources	Approximate Weeks
Physical Science Skills	<ul style="list-style-type: none">• <i>Safety</i>• <i>Measurement</i>• <i>Metric System and Unit Conversions</i>• <i>Graphing and Data Analysis</i>	4
Motion and Forces	<ul style="list-style-type: none">• Motion• Forces and Newton's Laws	7
Energy	<ul style="list-style-type: none">• <i>Work and Energy</i>• <i>Thermal Energy</i>• <i>Electricity</i>	8
Waves	<ul style="list-style-type: none">• <i>Introduction to Waves</i>• <i>Sound</i>• <i>Electromagnetic Waves</i>• <i>Light</i>• <i>Mirrors and Lenses</i>	8
Introductory Chemistry for Biological Sciences	<ul style="list-style-type: none">• <i>Atoms, Elements and the Periodic Tables</i>	9

	<ul style="list-style-type: none">• <i>Intermolecular and Intramolecular Forces</i>• <i>Water and the pH Scale</i>	
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**Depending on the needs of the class or changes in the school year, the course outline is subject to change.*