



Nazareth Area School District

AP Physics 1

The AP Physics 1 Course is a full-year course that meets every other day with 75 minute class periods. This course has been developed by the College Board as an algebra-based college-level course equivalent physics class. At the end of this course, students will be prepared to take the AP Physics 1 Exam. Topics covered include: kinematics, dynamics, gravitation, oscillatory motion, momentum, energy, rotational physics, basic electricity and circuits, and mechanical waves and sound. For more detailed information about AP Physics 1, please feel free to visit the AP Physics 1 course home page on the College Board website.

The content of this course is based on six big ideas which allow students to develop enduring, conceptual understandings of foundational physics concepts. These six big ideas are:

- **Big Idea 1** – Objects and systems have properties such as mass and charge. Systems may have internal structure.
- **Big Idea 2** – Fields existing in space can be used to explain interactions.
- **Big Idea 3** – The interactions of an object with other objects can be described by forces.
- **Big Idea 4** – Interactions between systems can result in changes in those systems.
- **Big Idea 5** – Changes that occur as a result of interactions are constrained by conservation laws.
- **Big Idea 6** – Waves can transfer energy and momentum from one location to another without the permanent transfer of mass and serve as a mathematical model for the description of other phenomena.

Students may choose to take AP Physics 2 after completion of AP Physics 1. A student **MUST** schedule AP Physics 1 as an 11th grade student if they want to take AP Physics 2.