



AP Physics 1 (Grades 10-12)

Course Description:

AP Physics 1 is organized around six big ideas that bring together the fundamental science principles and theories of general physics. These big ideas are intended to encourage students to think about physics concepts as interconnected pieces of a puzzle. The solution to the puzzle is how the real world around them actually works. The students will participate in inquiry-based explorations of these topics to gain a more conceptual understanding of these physics concepts. Students will spend less of their time in traditional formula-based learning and more of their effort will be directed to developing critical thinking and reasoning skills.

Essential Understandings:

1. Big Idea 1: Objects and systems have properties such as mass and charge. Systems may have internal structure.
2. Big Idea 2: Fields existing in space can be used to explain interactions.
3. Big Idea 3: The interactions of an object with other objects can be described by forces.
4. Big Idea 4: Interactions between systems can result in changes in those systems.
5. Big Idea 5: Changes that occur as a result of interactions are constrained by conservation laws.
6. 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.

Reference Documents

[AP Physics 1 Course Syllabus](#)

[AP Physics 1 College Board Course Description](#)