

# AP Physics 1

Collierville High School

## Course Overview:

AP Physics 1 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of physics through inquiry-based investigations as they explore these topics: kinematics; dynamics; circular motion and gravitation; energy; momentum; simple harmonic motion; torque and rotational motion; electric charge and electric force; DC circuits; and mechanical waves and sound.

## Course Big Ideas:

**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.

**AP Exam Fee:** \$95

**Prerequisites:** Algebra II

$$F = G \frac{m_1 m_2}{d^2}$$

