

Teaching Unit: **AP PHYSICS**

Essential Understandings

The Advanced Placement Physics B is algebra-based course in general Physics. Its syllabus is designed by the College Board. The course is equivalent to an introductory algebra-based university level physics course and will be covered in two semesters. The emphasis in the course is on understanding of the concepts and skills at using the concepts and formulae to solve problems. Laboratory work will be included as an integral part of the course.

Sub Topic:

Knowledge and Skills

Kinematics (2 weeks)

- Introduction
- Units and Dimensions
- Scalars and Vectors
- Motion in one Dimension
- Projectile Motion

Newton's Laws (3 weeks)

- Newton's Law's of Motion
- Weight and Weightlessness
- Friction Inclined Plane
- Uniform Circular Motion
- Newton's Law of Gravitation Circular Orbits

Work, Energy, and Power(2.5 weeks)

- Work, Energy, and Power
- Conservation of Energy
- Conservation of Mechanical Energy

Linear Momentum(1 week)

- Linear Momentum
- Impulse-Momentum Theorem
- Law of Conservation of Linear Momentum

Rotational Dynamics (1 week)

- Torque Mechanical Equilibrium
- Angular Momentum
- Law of Conservation of Angular Momentum

Simple Harmonic Motion (1.5 weeks)

- Simple Harmonic Motion
- Hooke's Law
- Graphs of SHM
- Simple Pendulum
- Spring-Mass system

Fluids (2 weeks)

- Hydrostatics
- Fluid Pressure
- Pascal's Principle
- Archimedes' Principle
- Fluid Dynamics
- Continuity Equation
- Bernoulli's Equation

