

AP PHYSICS 2

Fluids

- Fluid Systems
- Density
- Fluids: Pressure and Forces
- Buoyancy
- Conservation of Energy in Fluid Flow
- Conservation of Mass Flow Rate in Fluids

Thermodynamics

- Thermodynamic Systems
- Pressure, Thermal Equilibrium, and the Ideal Gas Law
- Thermodynamics and Forces
- Thermodynamics and Free-Body Diagrams
- Thermodynamics and Contact Forces
- Heat and Energy Transfer
- Internal Energy and Energy Transfer
- Thermodynamics and Elastic Collisions: Conservation of Momentum
- Thermodynamics and Inelastic Collisions: Conservation of Momentum
- Thermal Conductivity
- Probability, Thermal Equilibrium, and Entropy

Electric Force, Field, and Potential

- Electric Systems
- Electric Charge
- Conservation of Electric Charge
- Charge Distribution – Friction, Conduction, and Induction
- Electric Permittivity
- Introduction to Electric Forces
- Electric Forces and Free-Body Diagrams
- Describing Electric Force
- Gravitational and Electromagnetic Forces
- Vector and Scalar Fields
- Electric Charges and Fields
- Isolines and Electric Fields
- Conservation of Electric Energy



Electric Circuits

- Definition and Conservation of Electric Charge
- Resistivity and Resistance
- Resistance and Capacitance
- Kirchhoff's Loop Rule
- Kirchhoff's Junction Rule and the Conservation of Electric Charge

Magnetism and Electromagnetic Induction

- Magnetic Systems
- Magnetic Permeability and Magnetic Dipole Moment
- Vector and Scalar Fields
- Monopole and Dipole Fields
- Magnetic Fields and Forces
- Magnetic Forces
- Forces Review
- Magnetic Flux

Geometric and Physical Optics

- Waves
- Electromagnetic Waves
- Periodic Waves
- Refraction, Reflection, and Absorption
- Images from Lenses and Mirrors
- Interference and Diffraction

Quantum, Atomic, and Nuclear Physics

- Systems and Fundamental Forces
- Radioactive Decay
- Energy in Modern Physics (Energy in Radioactive Decay and $E = mc^2$)
- Mass-Energy Equivalence
- Properties of Waves and Particles
- Photoelectric Effect
- Wave Functions and Probability



Science Practices

- Modeling
- Mathematical Routines
- Scientific Questioning
- Experimental Methods
- Data Analysis
- Argumentation
- Making Connections

