

PHYSICS (LAB SCIENCE)

Grade Level: 10,11,12

Credit: 0.5 or 1.0

Prerequisites: Algebra I, first Semester Algebra II

The course focuses on the core concepts of Algebra based Physics preparing the student for future college level Physics courses. The key concepts of the course have a main focus on mechanical physics with introductory level electro-magnetics and wave mechanics.

Physics Lessons

Teacher Message

Unit 1: Energy, Force and Work

Lesson 1: A Balloon (lab)

Lesson 2: What Is Physics?

Lesson 3: Forms of Energy

Lesson 4: Balloon Rocket 1 (lab)

Lesson 5: Work and Energy

Lesson 6: Balloon Rocket 2 (lab)

Lesson 7: Force and Inertia

Lesson 8: Balloon Rocket 3 (lab)

Lesson 9: Force, Mass, and Acceleration

Lesson 10: Action and Reaction



Unit 2: Graphical Motion

Lesson 11: Motion and Energy Summary

Lesson 12: Interpreting and Creating Graphs

Lesson 13: Paper Helicopter (lab)

Lesson 14: Ramp and Ball (lab)

Lesson 15: Understanding Graphical Motion

Lesson 16: Bouncing a Ball (lab)

Lesson 17: Elasticity

Lesson 18: Equations of Uniformly Accelerated Motion

Lesson 19: The Mousetrap Catapult (lab)

Lesson 20: Projectile Motion and Range

Lesson 21: The Big Picture

Lesson 22: The Big Picture: Momentum

Lesson 23: Collisions with Hi-Bounce Balls (lab)

Lesson 24: Conservation of Momentum

Lesson 25: Work, Force, and Energy in Simple Machines

Lesson 26: Work, Power, and Efficiency

Unit 4: Heat and Work

Lesson 27: Heat and Temperature (lab)

Lesson 28: Temperature and Temperature Scales



Lesson 29: Heat and Work

Lesson 30: Latent Heat

Lesson 31: Heating Water (lab)

Lesson 32: Heating and Cooling Curve (lab)

Unit 5: Periodic Motions: Vibrations and Waves

Lesson 33: Hooke's Law (lab)

Lesson 34: Mass on a Spring (lab)

Lesson 35: Energy in Periodic Motion

Lesson 36: Wavelength and Velocity on a Spring (lab)

Lesson 37: Boundary and Wave Interaction

Lesson 38: Standing Waves and Resonance (lab)

Lesson 39: The Doppler Effect

Lesson 40: Light - Focal length (lab)

Lesson 41: Reflection and Refraction of Light

Lesson 42: The Colors of Pigment (lab)

Unit 6: Fields: Electrical, Magnetic and Gravitational

Lesson 43: Gravitation and Satellites

Lesson 44: Electric Fields

Lesson 45: Static Electricity (lab)



Lesson 46: Circuits

Lesson 47: Electromagnet (lab)

Lesson 48: Connections

