

Introduction

Lab Options

This course includes the option of hands-on or dry lab activities.

- Dry labs have no required materials.
- Hands-on labs require the materials listed below.

Lab Manual

Each lab contains complete instructions – there is no lab manual for this course. It is strongly recommended that students keep a detailed notebook of their work.

Disclaimer

Apex Learning® has no liability whatsoever regarding any hands-on laboratory activities. The personnel at the school at which the student conducts the hands-on lab activities, or the student's parent or guardian if the lab activities are completed at home, are responsible for all such hands-on lab activities, including ensuring that qualified personnel are available to supervise the activities.

Questions

Contact Apex Learning Support by phone at 1-800-453-1454 or by email at support@apexlearning.com.

Hands-On Lab Materials

Conservation of Energy

Semester 1: 2.3.3

- Balance
- Ring stand
- Meter stick
- Dynamics cart
- Dynamics track
- Photogate sail
- Computer-based photogate timer
- Calculator
- Varied masses, ~0.25-1 kg
- Ring clamp

Materials for exploring further:

- Computer with graphing capability
- Scientific graphing calculator

Circuit Building

Semester 1: 3.4.3

- Copper wire and alligator clips (or insulated wires with clips already attached)
- Electrical tape
- 20 V battery
- Battery eliminator/DC power source
- Resistors (a variety, including 4, 5, 10, 12, 20, 25, 40, 50, 60, 75, 80, 100, 150 Ω)
- Insulated tweezers
- Multimeter that can measure current, voltage, and resistance
- Knife blade switch
- 3 mini lamps (bulbs) of equal wattage, and 3 sockets for the bulbs

Materials for exploring further:

- Simple plug-in night-light
- Electrostatics kit (plastic rod and electroscope)
- Small piece of wool
- Horseshoe magnet
- Cathode ray tube
- Bar magnet
- Container of iron filings
- White craft paper
- Magnetic compass

Newton's Laws

Semester 1: 5.3.3

- Hard-boiled egg
- Raw egg
- Tray of sand or dirt, at least 2 inches deep
- A medium-sized rock
- A crumpled piece of notebook paper
- "Newton's Cradle" device with a row of balls suspended with string

Wave Motion

Semester 2: 8.1.3

- Coiled spring (e.g. Slinky brand)
- Stopwatch
- Meter stick or rule
- A partner

Nuclear Physics

Semester 2: 9.4.3

- Small plastic or cardboard box with lid
- 200 pennies
- Computer with graphing software
- 50 thumbtacks (with flat, domed heads)

Investigate Weathering and Erosion

Semester 2: 10.4.3

- Graham crackers: at least 2 identical rectangular sections
- Plastic knife
- Frosting
- Bowl
- 3 clear glasses
- Eyedropper/medicine dropper
- Water
- Ice cube tray or similar freezable containers smaller than a graham cracker
- Additional materials as needed for your investigation, such as more graham crackers, hot water, ice, lemon juice, or a drinking straw