

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: 1.4.3

- 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

Thermodynamics

Semester 2: 8.3.3

- Water source with both hot and cold water, or cold water and a hot plate, or cold water and ring stand/ring stand screen and burner
- Calorimeter
- 2 500 mL beakers
- 2 temperature data acquisition probes
- 2 Celsius thermometers
- Computer
- Small block of metal (approximately 500 g)
- Balance
- Tweezers
- Ring clamp

Materials for exploring further:

- Computer with word-processing, spreadsheet, and scientific database functionality available

Investigate Cycling of O₂ and CO₂

Semester 2: 9.3.3

- 6 clean, small-mouth bottles (plastic or glass)
- Permanent marker
- 3 large drinking glasses (clear plastic or glass)
- Tape (clear or masking)
- Distilled water or dechlorinated tap water
- Baking soda
- Scissors
- 3 sprigs (4 – 6 inches long) of a living plant*
- Strong light source (e.g., sunny windowsill, table lamp, flashlight [no LEDs])
- Teaspoon measure
- 3 packets of dry baker's yeast
- ½ cup of granular sugar
- Measuring cup
- Tap water, very warm
- 6 medium balloons (12 inches)
- Clock
- Measuring tape

*Suggestions (water plants): waterweed (*Elodea canadensis*) or stonewort (*Chara*), found in freshwater streams and at pet stores. Suggestions (landscape plants): fresh cuttings of the new growth of tender plants such as roses or rosemary, or seedlings of beans, radishes, or tomatoes