

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

Investigate Weathering and Erosion

Semester 1: 2.4.3

- 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

Investigate the Water Cycle

Semester 1: 3.1.4

- A clear 2- or 3-liter plastic soda bottle
- Marker
- Scissors
- Gravel, pebbles, or small stones

- Potting soil or dirt from a yard or field
- Activated charcoal*
- Sphagnum moss*
- Small plants or seeds (e.g., beans, peas, radishes, wheat grass, marigolds, zinnias)
- Water
- Gloves
- Small invertebrates (e.g., pill bugs, ladybugs, crickets, flies, earthworms, mealworms, etc.)
- Scrap paper

*Optional materials

Investigate Cycling of O₂ and CO₂

Semester 1: 4.2.2

- 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
- 1/8 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

Investigate Using a Dichotomous Key

Semester 1: 5.4.3

- Glass jar or sealed container
- Gloves
- Pencil or pen
- Paper for making observations
- Computer with Internet access

Investigate Cycling of Matter and Energy

Semester 2: 1.4.3

- A clear 2- or 3-liter plastic soda bottle
- Marker
- Scissors
- Gravel, pebbles, or small stones
- Potting soil or dirt from a yard or field
- Activated charcoal*
- Sphagnum moss*
- Small plants or seeds (e.g., beans, peas, radishes, wheat grass, marigolds, zinnias)
- Water
- Gloves
- Small invertebrates (e.g., pill bugs, ladybugs, crickets, flies, earthworms, mealworms, etc.)
- Scrap paper

*Optional materials

Modeling Convection in Earth's Interior

Semester 2: 2.1.3

- Water source with both cool and hot water (or a source of cool water plus a hot plate or microwave)
- Room-temperature water
- Clear plastic tub (or a large glass bowl or aquarium)
- 2 plastic foam cups
- Sharpened pencil
- Masking tape
- Eyedropper
- Red food coloring or dye
- Blue food coloring or dye
- Ice cubes

Optional Additional Materials for Part 2

- Sealable plastic bag that can hold ice cubes
- Mug, bowl, or cup that can hold hot water
- Books or objects that can support the weight of the clear plastic tub when it is full of water and keep it level

Investigating How Water Affects Earth's Rock

Semester 2: 3.3.2

- Safety goggles
- Tap water

- Vinegar
- 6 clear plastic cups
- Teaspoon
- Playground sand
- Table salt (sodium chloride)
- Crushed white chalkboard chalk (containing calcium carbonate)
- Paper towels
- Plastic tub (for collecting wastewater)

Optional Additional Materials for Part 2

- Carbonated water, such as unflavored seltzer or sparkling water
- Eyedropper or pipette
- Coffee filters
- Laboratory balance or kitchen scale
- Graduated cylinder
- Plastic plates or shallow trays

Investigate Resource Consumption

Semester 2: 5.4.3

- 100 pieces of cereal
- Table
- 2 spoons of the same size
- Cup
- Timer or clock that shows seconds
- Other small items (e.g., paper clips, beans, pasta, rice, etc.)
- Other grasping devices (e.g., tweezers, tongs, fingers, etc.)
- Pencil
- Paper

Investigate How Pollutants Affect Plants

Semester 2: 6.4.3

- 15 – 20 small plastic cups
- Scissors
- Permanent marker
- Tray or bin
- Potting soil
- Radish seeds (or other fast-sprouting seeds)
- Distilled water