

## Introduction

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### 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](mailto:support@apexlearning.com).

## Hands-On Lab Materials

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### 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 O<sub>2</sub> and CO<sub>2</sub>

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
- $\frac{1}{8}$  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

## Modeling Convection in Earth's Interior

### Semester 2: 1.1.4

- 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: 2.3.2

- 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 Weathering and Erosion

### Semester 2: 2.3.5

- 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