

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

#### Semester 1.1

- 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

## Investigate Weathering and Erosion

### Semester 1.2

- 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 Using a Dichotomous Key

### Semester 1.3

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

## Investigate Cycling of Matter and Energy

### Semester 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 (optional)
- Sphagnum moss (optional)
- 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

## Investigate Resource Consumption

### Semester 2.1

- 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 2.2

- 15 – 20 small plastic cups
- Scissors
- Permanent marker
- Tray or bin
- Potting soil
- Radish seeds (or other fast-sprouting seeds)
- Distilled water
- Salt
- Measuring cups and spoons
- Stirrer
- Pollutants needed for investigation (could be oil, vinegar, detergent, window cleaner, etc.)
- pH strips from a pool supply or aquarium store

## Investigate Your Ecological Footprint

### Semester 2.3

- No materials required

## Investigate Food Security

### Semester 2.4

- 10 foods found at home or in a grocery store
- Computer with Internet access
- Paper and pencil
- Map of North and Central America
- Calculator