

## 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. Apex Learning has partnered with a third-party vendor to create a custom laboratory kit that contains all the materials needed for this course. The kit may be purchased via Apex Learning or directly from the vendor's website at <http://www.qualitysciencelabs.com/apex-learning-science-kits/>. Once there, select the "[Apex Learning Biology Kit](#)."

### 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

---

\*Items not included in the lab kit

### Scientific Method

Semester 1: 1.3.3

- Balloons
- Binder clip
- Marker, permanent
- Paper, cut into strips 100 cm x 2 cm\*
- Tape measure\*

### Enzyme Action: How Clean Is Your Laundry?

Semester 1: 2.4.3

- Forceps
- Laundry detergents, powder (2):
  - 1 with enzymes and 1 without

- Information sheets on each detergent
- Scoop, 1 cc
- Marker, permanent
- Stir rod
- White cotton fabric
- Paper towels\*
- Scissors that can cut fabric\*
- Spoons for mixing (2)\*
- Spring water\*
- Stain makers (choose items that make a stain dark enough to see on the piece of cloth)\*:
  - To make a carbohydrate stain, choose: ketchup, sauces (eg. barbecue sauce), gravy, ice-cream, tomato sauce, pasta dishes.
  - To make an oil stain, choose: cooking oil, bacon fat, mayonnaise, butter, lard, hand lotion, suntan oil or lotion, salad dressing, cosmetics, deodorant, or lipstick.
  - To make a protein stain, choose: meat blood (e.g. beef, chicken), egg, or grass

### Why Are Cells So Small?

Semester 1: 3.4.3

- Cup, plastic 1 oz
- Dice, large size
- Dice, small size
- Filter paper with printed shapes
- Food coloring
- Scissors\*
- Watch or stopwatch\*

### Anaerobic Respiration of Yeast

Semester 1: 4.4.3

- Marker, permanent
- Balloons (3)
- Blank experiment sheet (See page 9 of Wet Lab provided in the course)
- Graduated cylinder, 100 mL
- Funnel, small
- Molecular model kit
- Ruler
- Thermometer
- Yeast packets (3)
- Camera or cell phone\*
- Clear 500 mL bottles\*
- Cooking oil\*
- Measuring spoon\*

- Sugar\*
- Timer\*
- Water\*

## Acid Rain and Brine Shrimp

Semester 1: 5.4.3

- Beaker, 150 mL
- Brine shrimp eggs
- Cups, plastic 9 oz. (6)
- Eye dropper
- Graph paper
- Magnifying glass
- Marker, permanent
- pH paper
- Scoop, large (5cc)
- Scoop, small (1cc)
- Sea salt
- Spatula, metal, small
- Thermometer
- Baking soda\*
- Lamp (Any incandescent desk or table lamp to set cups under to keep the eggs warm.)\*
- Matches\*
- Spoon for stirring\*
- Spring water\*
- Squares of paper or a few paper napkins\*
- Vinegar, white\*
- Quart or liter container\*

## DNA Fingerprinting

Semester 2: 1.4.3

No materials required

## Mutations

Semester 2: 2.4.3

- Pipe cleaners (2)
- Ruler
- Toothpicks, wooden (12)
- Black and red licorice cut into 2 cm segments (18 segments of black, 16 segments of red)\*
- Gum drops or jelly beans\*
- Knife or scissors\*

- Paper\*

## Natural Selection

Semester 2: 3.4.3

- Graph paper (One page is provided at the end of the lab to print for use.)
- 2 boxes of Teddy Grahams®\*
- 1 box of chocolate\*
- 1 box of a light-colored flavor\*
- Colored pencils or pens\*

## Bone Comparison

Semester 2: 4.4.3

- Magnifying glass
- Toothpicks
- Raw beef leg bone with the bone cut in half as a cross section\*
- Raw chicken leg with the bone cut in half as a cross section\*

## Effects of Antibiotics

Semester 2: 5.4.3

- Agar powder
- Antibiotic discs, 2 types
- Control disc
- Cotton swabs, sterile
- Forceps
- Gloves
- Goggles
- Petri dishes
- Bleach\*
- Paper towels\*
- Incubator, 37°C (optional)\*
- Water, distilled\*