

## Overview

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This course includes the option of either hands-on or dry lab activities.

- In order to conduct the hands-on laboratory activities in this course, you will need to obtain the materials listed in this document.
- No lab materials are needed to complete the dry lab activities.

## Lab Manual

There is no lab manual required for this course. Each lab contains complete instructions on how to perform the experiments. Apex Learning® recommends that all students keep a detailed lab notebook as evidence of their lab 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 the Apex Learning support team by phone at 1-800-453-1454 or by email at [support@apexlearning.com](mailto:support@apexlearning.com).

## **Hands-On Lab Materials by Experiment**

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*(In parentheses: Semester, Unit, Lesson, and Activity number in Apex Learning course)*

### **Wet Pennies**

*(Semester 1: 1.2.3)*

- 3 pennies
- Medicine dropper or pipette
- Liquid dish soap
- Food coloring
- 3 small glasses of water

### **Falling Bodies**

*(Semester 1: 2.2.2)*

- Plastic drinking cup with small holes in the bottom that are large enough for water to drip through
- Book approximately the size of the flat sheet of paper
- 2 sheets of notebook paper
- 2 Ziploc sandwich bags
- Feather
- Leaf from a tree or bush

### **Newton's Laws**

*(Semester 1: 3.1.2)*

- "Newton's Cradle" device with a row of balls suspended with string
- Tray of sand or dirt, at least 2 inches deep
- Hard-boiled egg
- Raw egg

### **That Rubs Me the Wrong Way**

*(Semester 1: 3.2.2)*

- Ruler, meter stick, or measuring tape
- Paperback book
- Flat eraser
- Key
- Notebook

### **Losing My Marbles**

*(Semester 1: 4.1.2)*

- No materials needed

### **Smile and Wave**

*(Semester 1: 5.1.2)*

- Coiled spring (e.g. Slinky brand)
- Stopwatch
- Meter stick or ruler
- Partner

### **Bend It Like Beckham**

*(Semester 1: 5.4.2)*

- Small drinking glass that fits inside the larger glass
- Large, clear drinking glass
- Water
- Cooking oil
- Wood pencil

### **A Shocking Tale**

*(Semester 1: 6.1.2)*

- Balloon
- Small pieces of tissue paper
- Plastic comb
- Empty soda can
- Paper plate
- Salt and pepper

### **Braving the Elements**

*(Semester 2: 1.1.4)*

- Periodic table of elements
- Graph paper
- Ruler
- Pencil

### **Elements from Outer Space**

*(Semester 2: 1.3.2)*

- Periodic table of elements
- The set of clues provided in the lab report
- A keen sense of reasoning

### **Edible Molecules**

*(Semester 1: 2.2.3)*

- Small box of dots or other small, round candy that a toothpick can pierce
- Package of large white marshmallows
- Package of small white marshmallows
- Package of mixed-color small marshmallows
- Toothpicks

### **How Do You Color Your Eggs?**

*(Semester 2: 2.3.3)*

- 4 small bowls or cups (each big enough for an egg)
- Small tub of water (for rinsing eggs)
- 2 teaspoons of food coloring
- 2 cups of water
- Vinegar
- 1 tablespoon salt
- 1 tablespoon sugar
- Pencil
- Masking tape
- 4 spoons
- 4 eggs

### **I'm Having a Reaction**

*(Semester 2: 3.1.3)*

- Laboratory balance or equivalent scale
- Calcium chloride
- Baking soda
- Teaspoon
- Small capped vial with phenol red
- Small plastic sandwich bag that can be sealed

### **Can You Feel the Heat?**

*(Semester 2: 4.1.2)*

- Stopwatch or timer
- Thermometer
- 4 Styrofoam drinking cups
- Ice cubes, preferably of similar shape and size
- Hot, but not boiling, water
- Room-temperature water
- 3 stirring rods, made of wood or plastic
- Cold water, from the refrigerator

### **Homemade Ice Cream**

*(Semester 2: 4.3.3)*

- Large baby-food jar or sandwich- sized sealable plastic bag
- Large coffee can with lid or similar container
- 1 cup half-and-half
- 1 cup whole milk
- ¼ cup sugar
- 3 tablespoons vanilla pudding mix
- ¼ teaspoon vanilla
- 2 kg crushed ice
- Apron
- 300 g rock salt
- Thermometer
- Towel
- Spoons

### **Nuclear Decay Chain**

*(Semester 2: 5.1.4)*

- Periodic table of elements