

# Lab Activities and Project Materials

## Physics 1 (SCIH 035 059)

The Laboratory Activities and Projects in this course require special materials that can be found your local hardware store. All of these materials will need to be provided by you, the student. Before doing an activity, gather all the items you will need for that and put them on a clear work space. Doing the lab activities will be more enjoyable if you have the materials ready and available to use as you need them. The lab and project instructions are found within the lessons of your course.

### Project 3: Projectile Motion with Stomp Rockets

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| <ul style="list-style-type: none"><li>• 1/2" PVC pipe (5 pieces around 18" or 1/2 meter each)</li><li>• 1/2" PVC 4 way connector</li><li>• 1/2" PVC t-joint</li><li>• 1/2" PVC 45 degree elbow</li><li>• 1/2" PVC 90 degree elbow (Qty. 2)</li></ul> | <ul style="list-style-type: none"><li>• 2-L soda bottles (empty)</li><li>• cardstock or plastic for fins</li><li>• paper</li><li>• cellophane tape</li><li>• weight of at least 2 pounds</li><li>• water</li></ul> |
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The **lab activities** in this course that are *not* submitted for grading are provided as supplementary learning activities. These lab activities are not required for the successful completion of the course, but will enhance your overall learning experience.

### Lesson 2: Mass and Falling Objects

- 5 pennies
- cellophane tape
- meterstick
- stopwatch

### Lesson 3: What Does Acceleration Look Like?

- long board
- thin book
- tennis ball
- stopwatch
- meterstick

**Lesson 4: Newton's First Law Applied**

- 1/2 of a 3 X 5 index card (or similar piece of cardstock)
- 1 coin
- heavy paper (card stock)

**Lesson 5: Forces on a Plane**

- 1 spring scale
- 500-g object (package of stick butter)
- flat wooden board
- protractor
- string
- cellophane tape

**Lesson 6: Graphing the Motion of an Object**

- masking tape
- meterstick
- watch with a second hand
- pen or pencil
- toy car
- stack of books
- wooden ramp (at least 50 cm long)
- graph paper

**Lesson 7: Apparent Weightlessness**

- 2 plastic or foam cups
- 2 extra-large rubber bands (about 4 inches in length)
- masking tape
- water
- 1 jumbo paperclip
- 2 washers (about 6 g each)

**Lesson 8: Rolling Objects**

- meterstick
- foam board
- a ball
- a solid can
- a hollow (emptied out) can

**Lesson 9: Conservation of Momentum**

- carbon paper (4 sheets)
- thin tracing paper (4 sheets)
- 1 metric ruler with a groove down its face
- 3 marbles (two of identical size and mass)
- cellophane tape
- paper or notebook for making sketches

**Lesson 10: Muscle Up!**

- bleachers and/or stairs
- watch with a second hand
- meterstick (or equivalent)
- weights (or equivalents)
- rope (about 6-8 ft. long)

**Lesson 11: Energy of a Bouncing Ball**

- basketball
- metric ruler
- graph paper

**Lesson 12: How Can You Make a Cloud?**

- water tap water
- 2-L soda bottle with cap (empty)
- match

### **Lesson 13: What Makes Water Move through a Straw?**

- water-filled cup
- straws
- scissors