

How can you make an object that moves? TE

**STEM Investigate Lab**

## How can you make an object that moves?

Engineers study different ways objects move. How can you design and build an object that moves?

### Design and Build

- ☐ 1. Choose the materials you will use. **Draw a design** of your object on a piece of paper.
- ☐ 2. Make a plan to build your object and test how it moves. Show your plan to your teacher.
- ☐ 3. Conduct your test.

**WASHES-ON LAB**  
SC.2.P.13.1, SC.2.N.1.1

**Suggested Materials**

- scissors
- cardboard tubes
- cardboard box
- egg cartons
- lids from jars
- bottle tops
- pipe cleaners
- straws
- glue
- string

**Be careful** using scissors.

**Investigate Lab**

## INVESTIGATE

**STEM**

### How can you make an object that moves?

**Objective** Students will design and build an object that moves. Students will evaluate what needs to be done to make the object move. **DOK4**

**Time** 20 **Grouping** 2

### Evaluate Your Design

- 4. **Evaluate** How did your design work?  
**Answers will vary.**
- 5. **Evaluate** What did you do to get your object to move?  
**Sample answer: I used both a push and pull to make my object move.**

**Engineering Practice**  
You **draw a design** to plan how to build something.

Lesson 2 Motion and Force 143

### Guiding Inquiry

If students need more direction on this lab, use the following procedure.

1. Choose an object for the base of your moving object. You may

### Understanding the Engineering Practice

After exploring the given materials, students will draw a design to help them plan how to build an object that moves. They then test their design and use observations from this exploration to explain how it works.

**Connect to STEM** Students plan, build, and test a design.

**Materials** Go online to download the master materials list, which also identifies kit materials.

**What to Expect** Some groups may plan an object that rolls. Others may plan one that slides. They will observe that greater amounts of force produce a greater change to an object's motion.


Go online to the Lab Center to get an editable version of this lab.

## Guiding Inquiry

If students need more direction on this lab, use the following procedure.

1. Choose an object for the base of your moving object. You may choose a cardboard box or an egg carton.
2. Choose objects to use as wheels to place on the base of your moving object. You may choose cardboard tubes, lids from jars, or bottle tops.
3. Choose a way to attach the wheels to the base of your moving object. You may choose pipe cleaners, straws, glue, or string.
4. Draw a design of your moving object. Show your design to your teacher.
5. Build your moving object by attaching the wheels to the base.
6. Use different pushes or pulls to test how your object moves.

They will observe that greater amounts of force produce a greater change to an object's motion.

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## Focus on Mastery!

**Asking and Answering Questions** Have students ask and answer the question "how do you know?" as they plan their designs. For example, how do you know which material will make an object roll?

- When students evaluate their object after building it, they should ask "How do you know?" when faced with the question of how their object will move. Encourage students to use words associated with movement.