

# Electricity

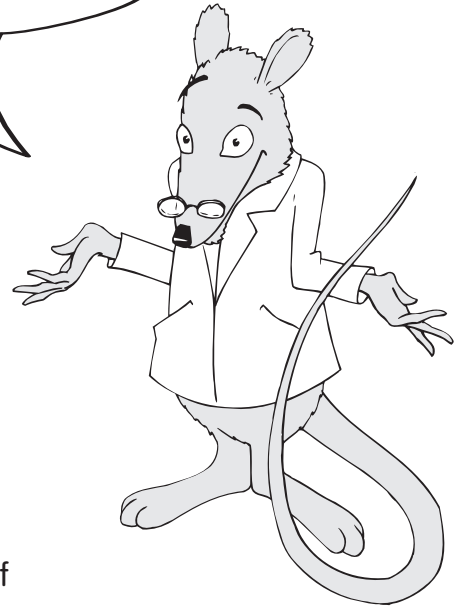
## Current and Static

Get ready to have some fun with your students!

Get one set of the materials listed on page 1 and play around with these activities yourself so you can see how easy they are. That experience will make it easy for you to plan the activities for your students. Have a great time with simple electricity.

These activities may not always come out the way you expect. Help students understand that they can learn a great deal from their mistakes or failures.

Hands-on science activities also provide a good opportunity for developing individual science journals which can become a part of your students' portfolios.



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Read through this whole book and try the activities yourself before doing the first activity with your students.

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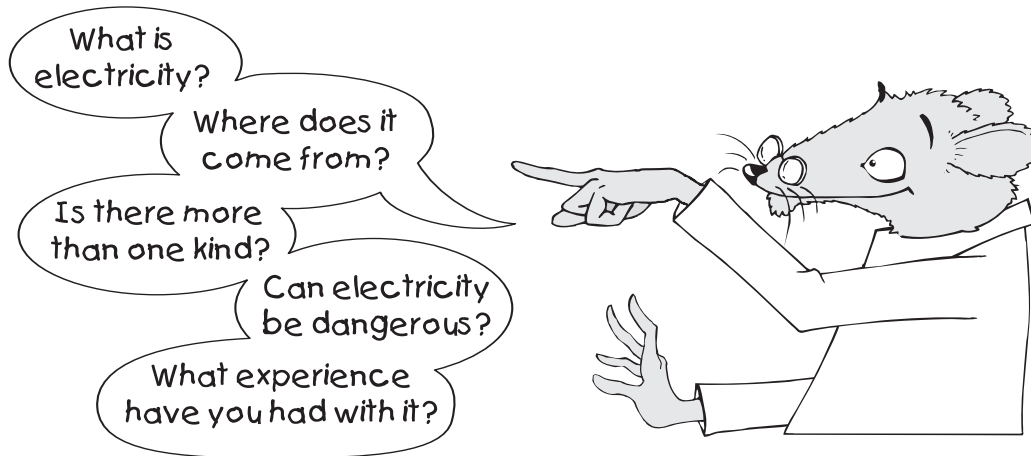
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# Opening Activity

Before launching into a new unit, it is always a good idea to survey your students to see what they already know about the area to be studied. Ask your students some questions to get an idea about their knowledge and experience with electricity:



We're going to do some safe activities with electricity.  
Let's see what we can learn and we'll have some fun doing it...

## Materials You'll Need

It doesn't take a scientific background or fancy scientific equipment to teach and learn about basic principles of electricity.

### *For Current Electricity:*

- 1 battery for each two students  
Use the cheapest batteries.  
*Do not use alkaline batteries.*  
They heat the wires too much.
- 1 light bulb for each two students  
Recommended or equivalent:  
Radio Shack # 272-1120  
Radio Shack # 272-1121
- Aluminum foil cut into 8" (20 mm) strips about 1" (3 cm) wide. (This is your "wire")
- Masking tape
- Various materials for testing as conductors or insulators (see page 6).

### *For Static Electricity:*

- Balloons
- Nylon or wool cloth (cheap socks are good)
- Paper cut into confetti-sized pieces
- Salt or sugar
- String
- Plastic spoons

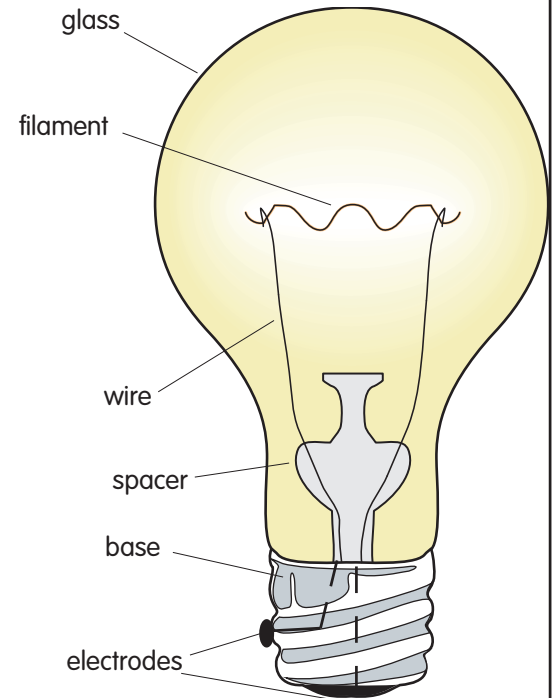
# Bulbs, Batteries, and Wires

## What is a light bulb?

Use the poster to show how a light bulb is constructed. Explain each part. Reproduce page 3 for your students to fill in as you discuss the parts of a light bulb. Have students look at a real bulb and compare it to the picture.

- |               |  |
|---------------|--|
| 1. base       | fits into socket of electricity source     |
| 2. electrodes | where electricity goes in or out           |
| 3. glass      | protects wires and filament                |
| 4. wires      | carry electricity to and from the filament |
| 5. filament   | lights up when electricity goes through it |
| 6. spacer     | keeps wires from touching each other       |

Show the two spots where electricity can go either in or out when it flows through the bulb.



## What is a battery?

Also use the poster to explain that a battery is a storage place for electricity. Explain to your students that the batteries you will be using are 1½ volts. This is not strong enough to hurt them. Point to the various battery parts and have your students fill in the names of the parts in this order:

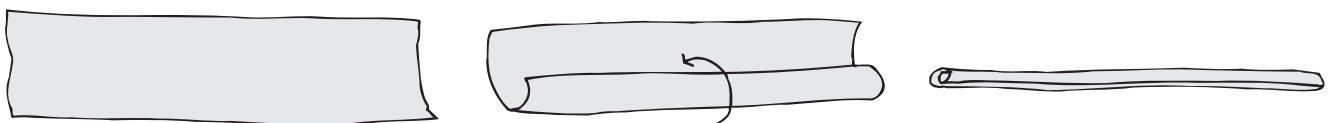
1. battery case
2. electrode on each end
3. put a + on the end with the "bump"
4. put a - on the "flat" end
5. put "electricity goes in here" by the + end
6. put "electricity comes out here" by the - end

Have your students compare their drawing to a real battery.



## What is a wire?

Anything made out of metal can act as a wire. You will be using strips of aluminum foil to create wire for the activities in this book. Provide your students with 6" x 1" (15 X 2.5 cm) strips of foil, and have them roll the foil into pieces of 6" (15cm) wire. Provide enough foil strips for each student to make 2 wires.



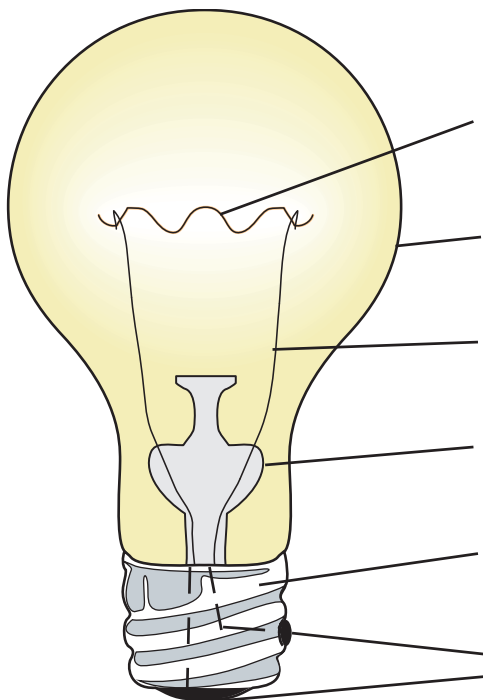
Note: Use this page with the directions on page 2.

# Bulbs, Batteries, and Wires

What is a light bulb?

Write labels:

Describe what it does:



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

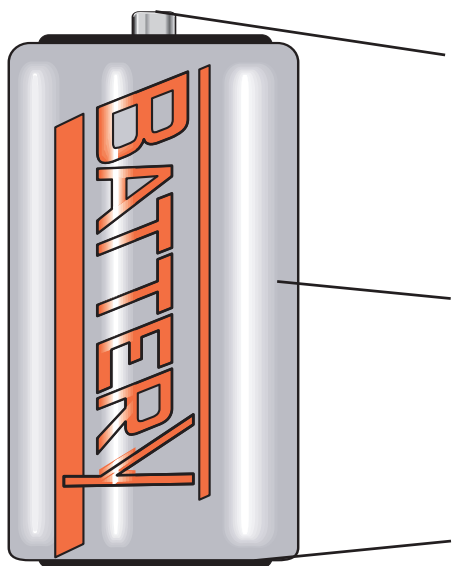
\_\_\_\_\_

\_\_\_\_\_

What is a battery?

Write labels

Describe what happens:



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

What is a wire?

A wire is anything that \_\_\_\_\_.