

# 8-2D Measuring Current

## Find Out ACTIVITY

In this activity, you will construct a circuit from a circuit diagram and use an ammeter to correctly measure current. If you need to convert the units for the current, remember that  $1.0 \text{ A} = 1000 \text{ mA}$ .

### Safety



- Make sure that the positive terminal of the ammeter is connected to the positive terminal of the battery, and the negative terminal of the ammeter is connected to the negative terminal of the battery.
- Never connect an ammeter directly across the terminals of a battery.
- There must be a load, like a light bulb, in the circuit to limit the flow of electrons.
- If the wires get hot, disconnect them immediately.

### Materials

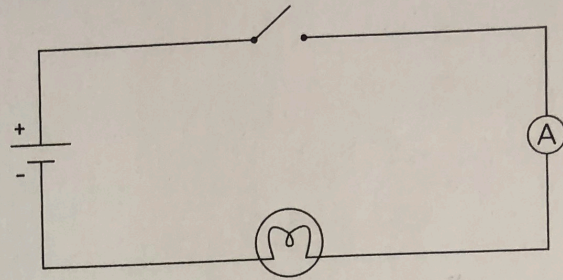
- 1.5 V cell
- various flashlight bulbs (1.5 V, 3.0 V, 6.0 V)
- connecting wires
- knife switch
- ammeter

### What to Do

1. Copy the following table into your notebook. Give your table a title.

Bulb Type (V)	Measured Current (mA)

2. Using one of the light bulbs, connect the circuit as shown in the circuit diagram below.



In step 2, connect the circuit but leave the switch open.

### Science Skills

Go to Science Skill 11 for information on using an ammeter.

3. Close the switch briefly and measure the current. Open the switch. Record the measurement in your data table.
4. Repeat step 3 with the remaining light bulbs.

### What Did You Find Out?

1. (a) Which circuit had the largest current?  
(b) Which circuit had the smallest current?
2. Why is it important to connect the positive lead of the ammeter to the positive side of the battery?
3. What is the purpose of the switch in this circuit?
4. When you measure an unknown current, you should start with the meter set to a large current scale and then decrease the scale. Explain the purpose of starting with a higher setting.