

# ACTIVITY SUMMARIES—QUARTER 4

## ACTIVITIES 31 & 32—Using a Thermometer

Students learn how to read a thermometer calibrated in both degrees Fahrenheit (°F) and degrees Celsius (°C). They use the thermometer to measure the temperatures of cold and warm water. They compare the temperature readings on thermometers left in sunlight and shade, and infer that the Sun is a source of heat on Earth. Students also discuss other sources of heat, such as friction and burning.

## ACTIVITY 33—What Is a Shadow?

Students go outdoors on a sunny day and explore their shadows. They identify three things needed to produce a shadow: light, an object to block the light, and a surface on which the shadow is cast.

## ACTIVITY 34—Shadow Drawings

Students work indoors with an artificial light source. They make silhouettes of their hands and then compare them with their actual hands, noting the similarity in the shapes. They discuss the correct order of the three things needed to produce a shadow.

## ACTIVITY 35—What Makes a Shadow?

Students discover that not all objects cast shadows. They observe that light passes through some objects and not others and that some objects produce dark shadows while others produce light shadows. They discover that if light passes through an object, the object will produce no shadow or only a light shadow, whereas if light cannot pass through an object, the object will produce a dark shadow.

## ACTIVITY 36—Shadows Change Places

Students go outside and observe that shadows change over time. They record the changes in a shadow from morning to midday to afternoon and infer that some shadow changes are caused by changes in the position of the Sun.

## ACTIVITIES 37 & 38—Simple Circuits

Students learn how to build a simple circuit with a D-cell battery, a small bulb, and a length of wire. They explore different ways to connect the circuit elements correctly to make the bulb light. Students describe the flow of electric current through the circuit. They then apply what they have learned to complete a circuit with a prewired buzzer.

## ACTIVITY 39—A Paper-Clip Switch

Students use a paper clip and metal paper fasteners to make a simple “on-off” switch, then incorporate the switch into a circuit to turn a small light bulb on and off. Using what they learned about the flow of electric current through a closed circuit, students explain why the bulb goes on and off when the switch is operated.

## ACTIVITY 40—Circuit Experiments

Students again build a one-battery/one-bulb circuit, then add another battery to the circuit and compare the brightness of the bulb with its brightness in the one-battery circuit. Based on their observations, students infer that adding a second battery to the circuit increases the strength of the electric current flowing through the circuit.