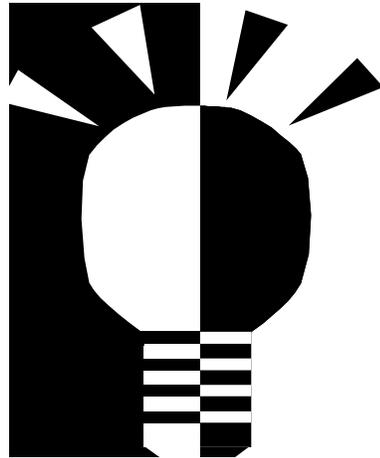


Curriculum Embedded Performance Task
Elementary School Science
Content Standard 4.4



Go With The Flow

Student Work

Connecticut State Department of Education
2011 Edition

NAME: _____

Go With The Flow

An Investigation of the Properties of Electric Circuits

Electricity is all around us. In nature, lightning is a form of electricity that is wild and out of our control. In our homes and schools, we control electricity and use it to make things work. Do you know why we don't see sparks and flashes every time we turn on a light, a T.V. or a computer?

In this activity, you and your partners will explore how different materials can be used to control electricity and light a bulb.

Gather the following materials:

Batteries	Bulb holders
Wires	Assorted classroom objects (paper clips, erasers, rulers, etc.)
Battery holders	Magnifier
Flashlight bulbs	Scissors

1. OBSERVE the wire, the battery and the bulb. Use the magnifier to take a closer look at the inside of the bulb.
2. List properties of each material in the table below:

BULB	WIRE	BATTERY

NAME: _____

Investigation 1: How many ways can you light a bulb?

1. Work with your partners to try different ways to arrange the wire, battery and bulb so electricity flows to light the bulb.
2. DRAW a diagram of each arrangement of battery, wire and bulb you try, even if the bulb does not light. Use arrows to label the path you think the electricity is traveling.

DIAGRAM	Lit	Not Lit
DIAGRAM	Lit	Not Lit
DIAGRAM	Lit	Not Lit

When the bulb is lit, you have made what’s called a “closed” or “complete” circuit.

3. Make an “open” or “incomplete” circuit. Draw a labeled diagram showing what you did to stop the flow of electricity and make the bulb go dark:

DIAGRAM OF AN OPEN CIRCUIT	Not Lit

NAME: _____

Investigation 2: Which Materials Conduct Electricity?

In Investigation 1, you constructed circuits to allow electricity to pass through wires made of a metal named copper. In this experiment, you will test different materials to find out if other materials also let electricity pass through them. Materials that let electricity flow through them are called “**conductors**”.

1. Collect assorted small objects made of different materials. **Observe** and **record** properties of each material in the chart below:

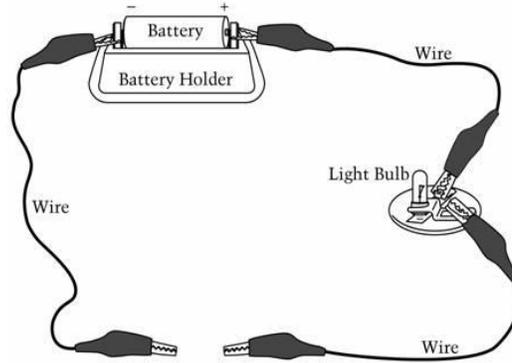
WIRE					

2. Based on your experience with copper wire in Investigation 1, **predict** which materials you think will conduct electricity and which will not. **SORT** them into two categories in a chart:

CONDUCTORS	NOT CONDUCTORS

NAME: _____

The picture below shows a way you can hook up a battery, three wires, and a light bulb to test conductivity of different materials:



3. Write the question you are investigating:

4. Write a numbered list of the steps you will follow to answer your question. Be clear and specific so someone else could repeat your experiment and get similar results. Tell what will be kept the same to make it a fair test.

NAME: _____

5. Record your findings in a data table. Notice and record any differences in the brightness of the bulb:

NAME: _____

Experiment #3: Investigating Your Own Questions

You have worked with batteries, conductors and circuits to learn some things about how electricity flows in simple circuits. What else are you curious about?

1. Build a complete circuit. Observe it carefully using your sense of touch as well as your sense of sight.
2. Record what you notice and what you wonder in a chart below:

3. Decide on an electric circuit question that you can investigate. Write the question here:

4. What is the factor you are investigating? _____

NAME: _____

6. Do your experiment and record your results in a data table:

7. Show your results in a graph OR a labeled diagram:

