Curriculum Embedded Performance Task

Elementary School Science

Content Standard 4.4

Go With The Flow

Connecticut State Department of Education
Bureau of Curriculum and Instruction

Student Name _____

Date _____

Name _____ Date _____

Go With The Flow (Structured) - Experiment 1

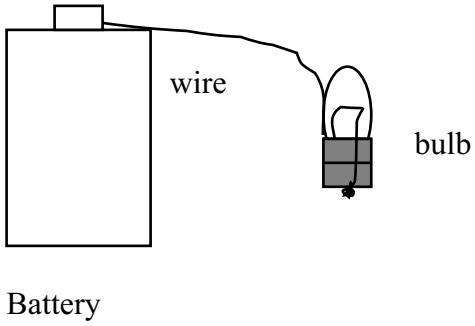
With your partner, fill in the chart below by answering these questions:
What do you know about electricity?
What do you wonder about electricity?

I Know	I Wonder
Electricity makes electric appliances work.	Why can't I see electricity?

Task: You are to use 1 battery, 1 wire, and 1 light bulb to make the bulb light.

1. **Draw** and **label** a *detailed* diagram of each material (the wire, bulb, and battery.) Use the magnifying glass to help you see details.

2. Find as many ways as you can to make the light bulb go on. For each experiment you try, draw and label what you did. Fill in as many boxes as you can; one box for each attempt to light the bulb. (You may not be able to fill in all of the boxes – but try!)

Bulb lights	Bulb doesn't light
	

Bulb lights	Bulb doesn't light

3. Look at all of your diagrams that show the **lighted bulb**. In what way are all of these diagrams the same? (Why did all of the bulbs light?)

4. Look at all of your diagrams that show the **unlit bulb**. In what way are all of these diagrams the same? (Why didn't these bulbs light?)

5. When you had the **lighted bulb** you made a **closed circuit**. What do you think makes a closed circuit? Write the definition for a closed circuit.

6. When the **bulb did not light** you made **an open circuit**. What do you think makes an open circuit? Write the definition for an open circuit.

7. **Build** a closed circuit with 3 wires, 1 bulb holder, 1 bulb, 1 battery. **Draw** your closed circuit and use **arrows** to show how the **electricity flows** from the battery through the wires and light bulb and back to the battery. (Start at the positive end.)

8. Can you stop the bulb from being lit? What did you do?

_____

_____

_____

_____

9. Use your magnifying glass to draw a "Close up" detailed diagram of your light bulb. Use arrows to show how electricity flows through filament.

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Go With the Flow (Structured)- Experiment 2

1. Look at the wires. Why does electricity go through the wire? Explain your thinking.

_____

_____

_____

_____

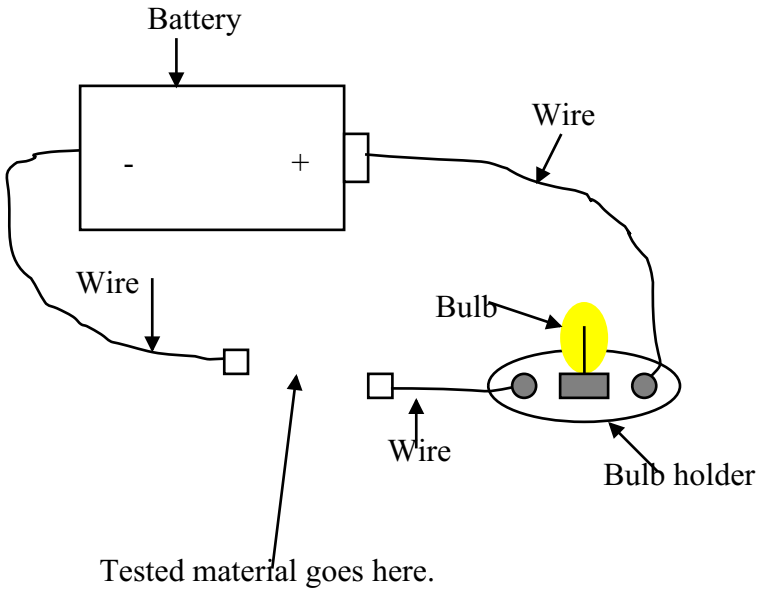
_____

Use the materials you bought from home to see if they allow electricity to pass through them.

2. Some materials allow electricity to go through them. These are called **conductors.** Some materials prevent electricity from going through them. These are called **insulators.**
Separate your materials into two groups. Put them into the group you think they belong and explain why.

Insulators	Conductors	Why?

3. You and your partner will build a **Tester,** like the one below, to find out which **materials conduct electricity** and which **materials do not conduct electricity**.



4. Fill in the chart below for the materials you tested.

Material tested	Bulb- bright, dim, out

5. **Analyze** your results. What did all of the materials that lit the bulb have in common? (Think about the properties of the materials.)

6. Is there anything **similar** about the materials that did not light the bulb? **Explain**.

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Go with the Flow (Structured)- Experiment 3

Now that you have worked with electricity and circuits, it's your turn to create some experiments.

1. What did you **wonder** about when you were working with the science materials? Make a **list** of at least **5 questions** you would like to examine of test. **Star the one you will test.**

1.
2.
3.
4.
5.
6.

2. Plan your experiment. What materials do you need?

_____

_____

_____

_____

3. What will you do? Write the steps you will follow.

1._____

_____

_____

_____

_____

4. Record your observations. What happened?

5. What did you learn? Did you answer your question?

6. What new questions do you have now that you tested your own idea?