CIRCUIT BUILDER LAB

CIRCUIT BUILDER LAB | PART 1: SERIES CIRCUIT

DIRECTIONS:

1. Draw a series circuit and label the parts. Parts include: a power source, a pathway, and a load. To help you identify these parts, definitions of each have been listed below.

   Power source: A power source provides power.

   Pathway: A pathway allows electricity to travel.

   Load: A load is a user of electricity.

CIRCUIT BUILDER LAB

PART 1: SERIES CIRCUIT

2. What do you observe about a series circuit?

3. If a lightbulb or load in a series circuit breaks, what happens to the series circuit? Explain why this happens.

4. Considering what you've learned about a series circuit, give an example of a series circuit found in your home or classroom.

CIRCUIT BUILDER LAB

PART 2: PARALLEL CIRCUIT

DIRECTIONS:

1. Draw a parallel circuit and label the parts. Parts include: a power source, a pathway, and a load. To help you identify these parts, definitions of each have been listed below.

   Power source: A power source provides power.

   Pathway: A pathway allows electricity to travel.

   Load: A load is a user of electricity.

CIRCUIT BUILDER LAB

PART 2: PARALLEL CIRCUIT

2. What do you observe about a parallel circuit?

3. If a lightbulb or load in a parallel circuit breaks, what happens to the parellel circuit? Explain why this happens.

4. Considering what you've learned about a parallel circuit, give an example of a parallel circuit found in your home or classroom.

CIRCUIT BUILDER LAB | PART 3: SWITCH CIRCUIT

DIRECTIONS:

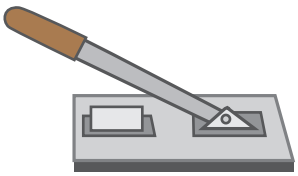
1. Draw a switch circuit and label the parts. Parts include: a power source, a pathway, a switch, and a load. To help you identify these parts, definitions of each have been listed below.

   Power source: A power source provides power.

   Pathway: A pathway allows electricity to travel.

   Load: A load is a user of electricity.

   Switch: Component that can open or close the pathway.



2. Open and close the switch. What do you observe?

3. What are you doing to the circuit when you close the switch?

4. What is the source of power?

CIRCUIT BUILDER LAB

PART 4: CONDUCTOR OR INSULATOR

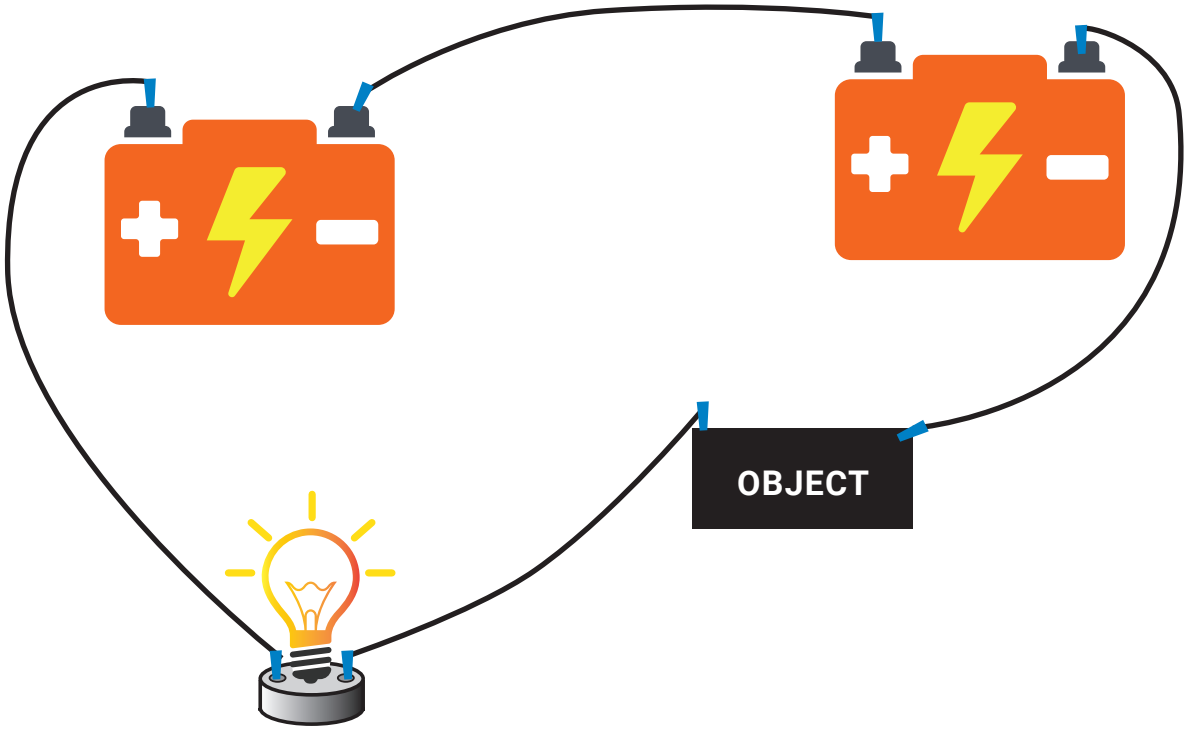
DIRECTIONS:

1. **CONNECTING THE BATTERIES LAST**, work as a team to build your circuit to look like the picture below.

2. Test the items in your bag to see if they are conductors or insulators.

A **conductor** is a material that allows electricity to move through it easily.

An **insulator** is a material that DOES NOT allow electricity to move through it easily.



Object	Type of material (wood, metal, plastic, etc)	Prediction (conductor or insulator)	Result (conductor or insulator)

CIRCUIT BUILDER LAB

PART 4: CONDUCTOR OR INSULATOR

3. Classify your tested objects as conductors and insulators.

CONDUCTORS
What objects allowed the electrical energy to pass through?

INSULATORS
What objects DID NOT allow the electrical energy to pass through?

4. Based on your observations, circle the materials that are conductors of electricity.

Glass	Metal	Wood	Ceramic
Plastic	Copper	Water	
Aluminum	Rubber	Diamonds	Silver

5. With water being a conductor, are YOU a conductor or insulator of electrical energy?