

**Guiding questions: What materials make a complete circuit?**

**Learning Goal:**

- 1. Draw an open and closed circuit**
- 2. Identify what materials make complete circuits**

**Agenda**

- 1) DSR-Electricity Definition**
- 2) Notes on drawing circuits**
- 3) Building Circuits with the circuit Board**
- 4) Testing Materials**



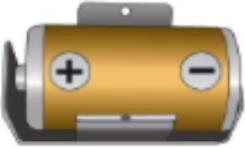





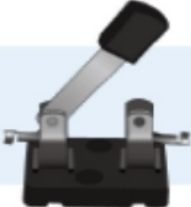

**Words of the day**

**Open Circuit**  
**Closed Circuit**  
**Insulators**  
**Conductors**

**Making and drawing circuits**

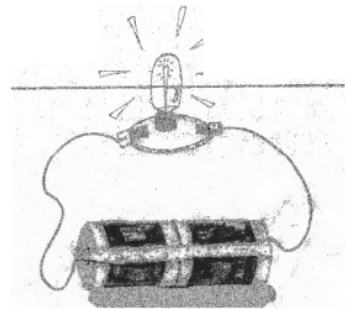
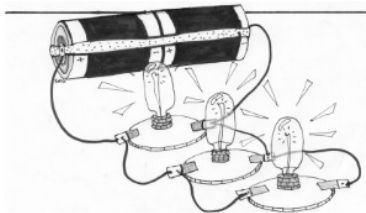
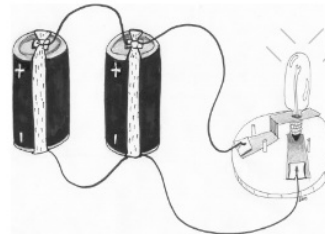
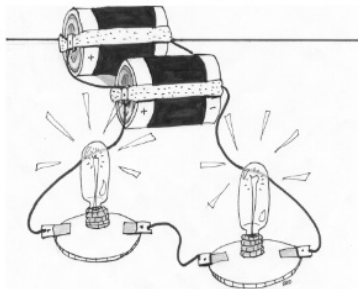
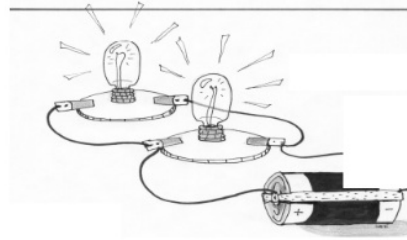
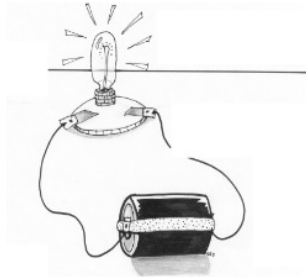
# Schematic Diagrams

DRAW IN YOUR NOTEBOOK SAVE SPACE TO GLUE A PAGE

<i>Real thing</i>		<i>Symbol</i>
	Wire	
	Battery	
	Bulb	
	Resistor	
	Switch	

# Drawing Schematic

Draw a schematic diagram for each picture



## Building Circuits

### Part 1: Building a circuit

- a. How can you tell electric current is flowing in the circuit? Can you see the current flow?
- b. How does the switch cause the current to stop flowing?
- c. Why does the bulb go out when you open the switch?
- d. Draw Schematic diagram of the circuit.
  
- e. Label the forms of energy that appear on your diagram above (Thermal, Radiant, Electrical, Chemical)
- f. **Electrons move** from negative to positive draw the movement of electrons on your diagram with arrows. Label your arrows electrons
- g. Current Moves from positive to negative the movement of electrons on your diagram with arrows. Label your arrows current.

### Part 2 Insulators and Conductors

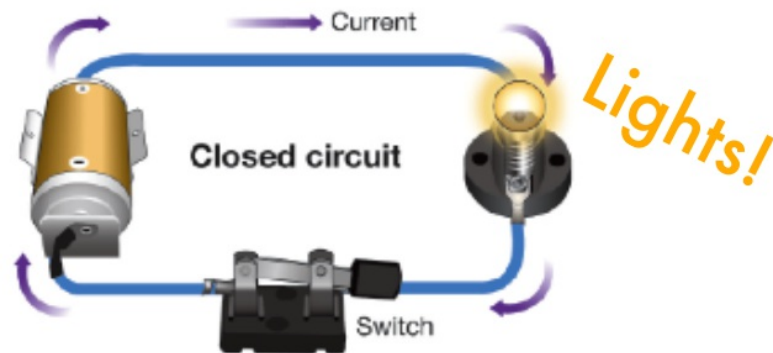
- a. Make a table listing the materials as either conductors or insulators.
  
  
  
  
  
  
  
  
  
  
- b. What characteristics are shared by the conductors you found?
- c. What characteristics are shared by the insulators you found?

IF YOU ARE DONE USE THE SUPPLIES IN THE ROOM TO BUILD MORE CIRCUITS

WOD

# Closed Circuit

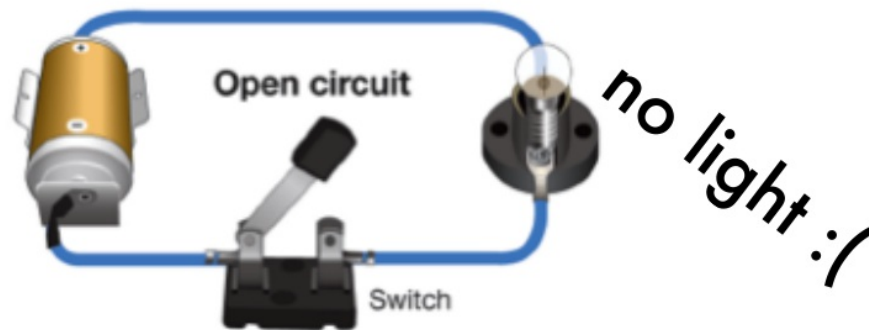
Closed circuit means a complete electrical connection around which current flows or circulates.



WOD

## Open Circuit

An electric circuit through which current cannot flow because the path is broken or interrupted by an opening.



## Insulators

**Materials that blocks the flow of electrons, electrical current is blocked**

**Conductors**



**Insulators**



# Conductors

Materials that allows for the flow of electrons.

Conductors



Insulators







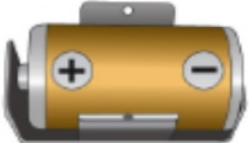
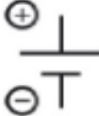




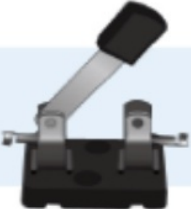

**DSR Today**



# Schematic Diagrams

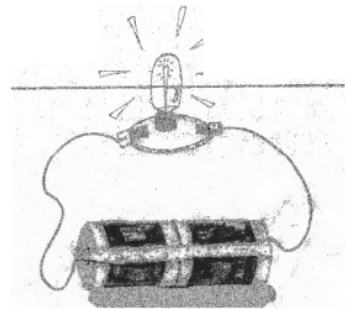
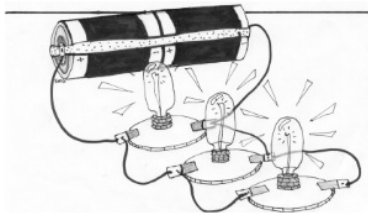
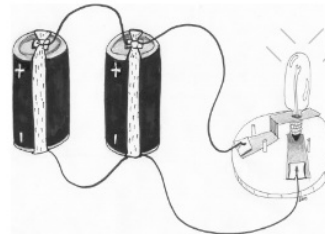
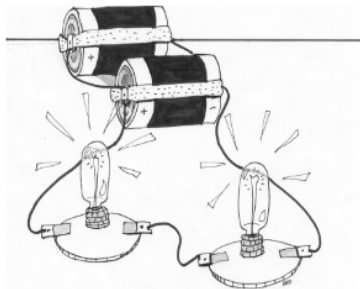
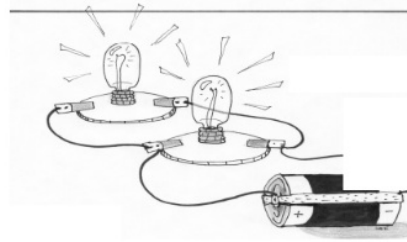
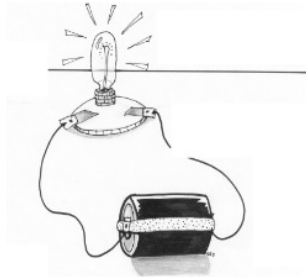
*Real thing*

*Symbol*

	Wire	
	Battery	
	Bulb	
	Resistor	
	Switch	

# Drawing Schematic

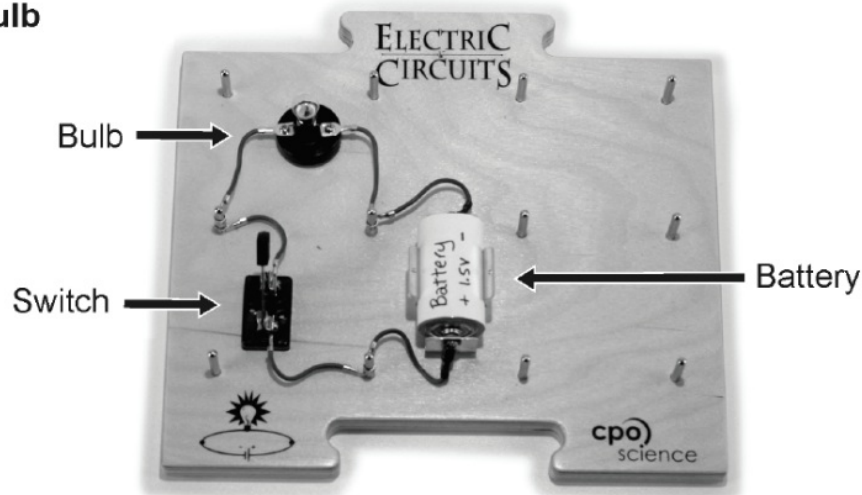
Draw a schematic diagram for each picture



## Part 1

1. Build the circuit shown in the diagram with one battery, a switch, and a bulb.
2. Open and close the switch and see what happens.

Single bulb circuit



Answer the question in your notebook for Part 1

# Building Circuits

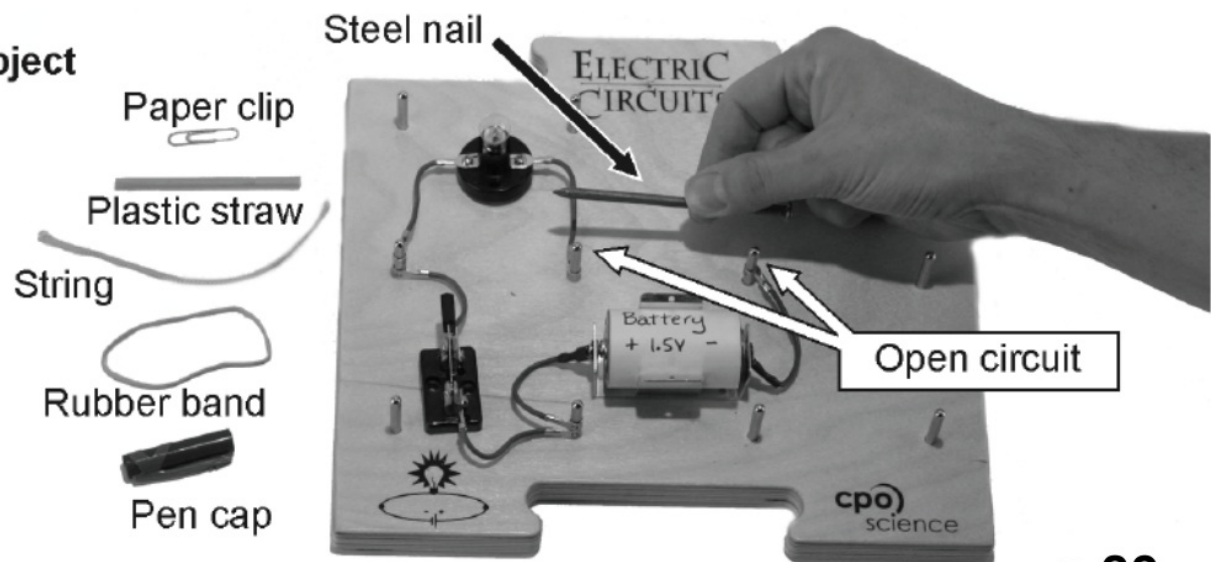
## Part 1: Building a circuit

- a. How can you tell electric current is flowing in the circuit? Can you see the current flow?
- b. How does the switch cause the current to stop flowing?
- c. Why does the bulb go out when you open the switch?
- d. Draw Schematic diagram of the circuit.
  
- e. Label the forms of energy that appear on your diagram above (Thermal, Radiant, Electrical, Chemical)
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- g. Current Moves from positive to negative the movement of electrons on your diagram with arrows. Label your arrows current.

1. Break one connection in your one-bulb circuit.
2. Complete the circuit by touching different materials between the wire and the post.
3. Which materials allow the bulb to light and which do not?

Materials in which electric current flows easily are called conductors.  
Materials that current does not flow through easily are called insulators.

Connect circuit  
through each object

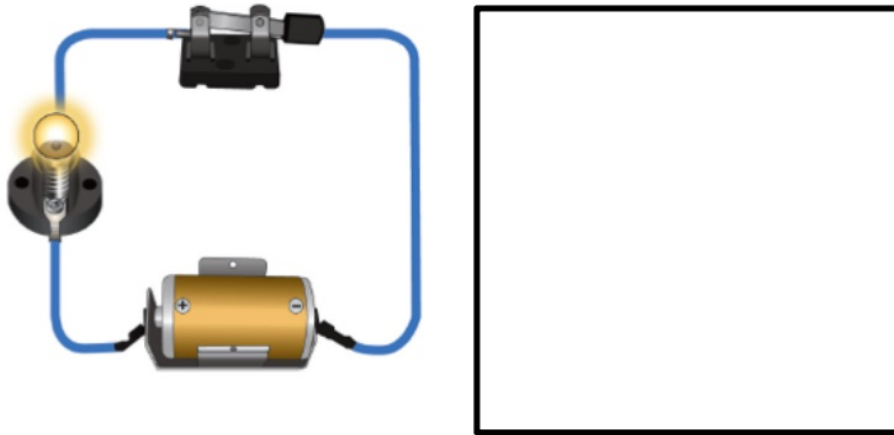


Answer the questions in your notebook for part 2



## Exit Ticket

1. Draw the circuit in symbol form in your notes



2. Label the diagrams as OPEN or CLOSED circuits

