

### Electric Circuits and Electric Current

Read from **Lesson 2** of the **Current Electricity** chapter at **The Physics Classroom**:

<http://www.physicsclassroom.com/Class/circuits/u9l2b.html>

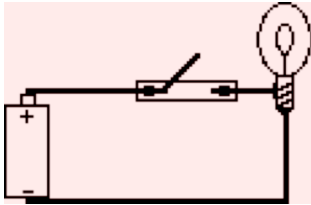

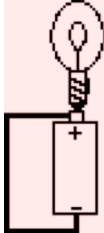
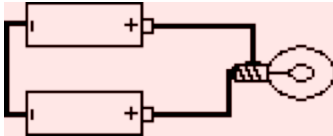
<http://www.physicsclassroom.com/Class/circuits/u9l2c.html>

<http://www.physicsclassroom.com/Class/circuits/u9l2e.html>

**MOP Connection:** Electric Circuits: sublevel 1

1. To maintain a charge flow in an electric circuit, at least two requirements must be met:
  - #1: An external energy supply (e.g., battery, wall outlet, generator, etc.) to pump the charge through the internal circuit and establish a potential difference across the circuit.
  - #2: The external circuit must make up a "closed conducting loop" between the + and - terminal.

Utilize your understanding of these requirements to state whether charge would flow through the following circuits. If there is no charge flow, then explain why not.

 <p><b>Charge Flow: Yes or No?</b></p> <p><b>Explanation:</b></p> <p>_____</p> <p>_____</p>	 <p><b>Charge Flow: Yes or No?</b></p> <p><b>Explanation:</b></p> <p>_____</p> <p>_____</p>
 <p><b>Charge Flow: Yes or No?</b></p> <p><b>Explanation:</b></p> <p>_____</p> <p>_____</p>	 <p><b>Charge Flow: Yes or No?</b></p> <p><b>Explanation:</b></p> <p>_____</p> <p>_____</p>

Charge flow in a circuit is often compared to water flow. For water to flow between two points, there must be a difference in water pressure between the points. Water pressure is like electric potential. Water will only flow through a pipe if there is a difference in potential between the two ends. Charge will only flow through a wire if there is an electric potential difference across its ends.

