

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>

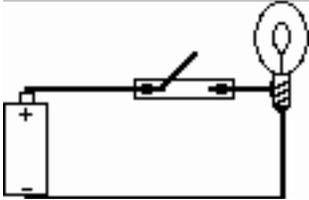
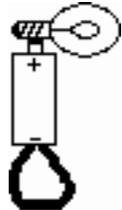
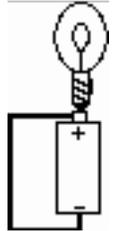
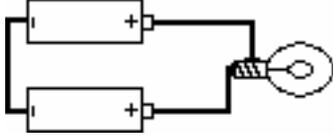
<http://www.physicsclassroom.com/Class/circuits/u9l2c.html>

<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.

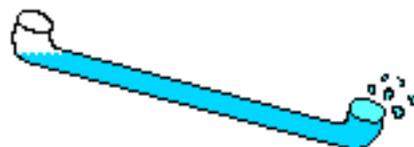
Utilize your understanding of these requirements to state whether charge would flow through the following circuits. If there is no charge flow, then explain why not.

 <p style="text-align: center;">Charge Flow: Yes or No?</p> <p style="text-align: center;">Explanation:</p> <hr style="width: 80%; margin: 0 auto;"/> <hr style="width: 80%; margin: 0 auto;"/>	 <p style="text-align: center;">Charge Flow: Yes or No?</p> <p style="text-align: center;">Explanation:</p> <hr style="width: 80%; margin: 0 auto;"/> <hr style="width: 80%; margin: 0 auto;"/>
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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.



Water won't flow if the two ends of the pipe are at the same potential.



If the two ends of the pipe are at different potentials, then water will flow.

