FLINN SCIENTIFIC

Name_____

How a Fuse Works Worksheet

Observations

Draw the completed circuit as it was initially set up by your instructor. Label the following: battery, lightbulb, fuse.

Discussion Questions

1. How was a short circuit created? Why is it called a short circuit?

2. Describe what happened after the short circuit was created. What is the purpose of the fuse?

3. Ohm's law describes the relationships between current (*I*), voltage (*V*), and resistance (*R*) and is represented by the equation $V = I \times R$. The lightbulb provides a certain amount of resistance in the circuit. What effect does creating a short circuit have on the current? Explain in terms of Ohm's law.

4. When a fuse blew in a household circuit, a once-common practice to temporarily reestablish current was to place a penny in place of the melted filament until a new fuse could be obtained. Why is this procedure unsafe?