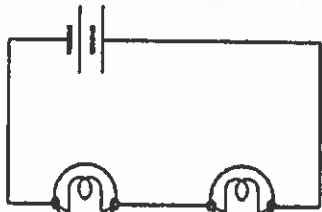
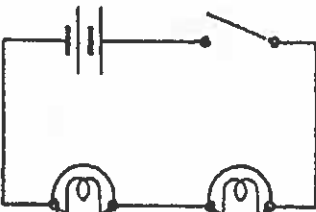
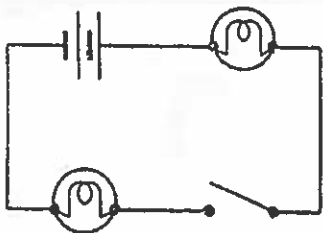
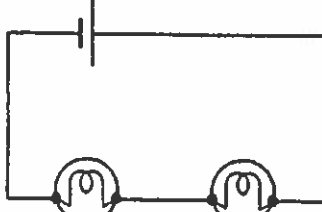
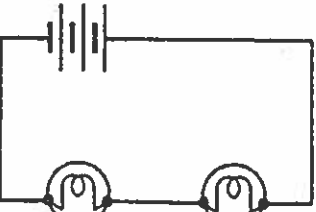
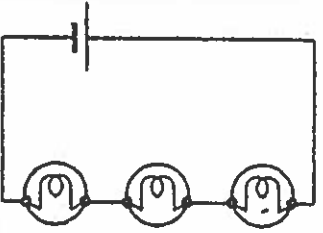
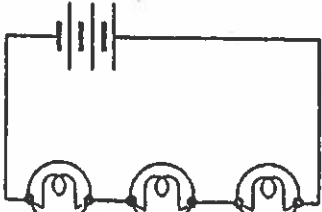
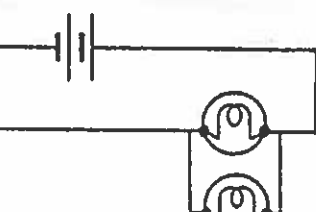
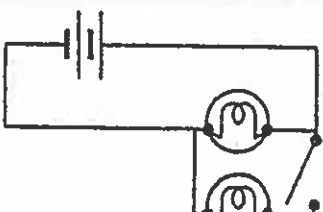
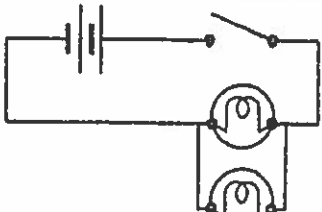
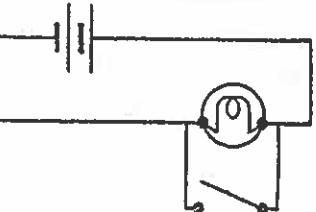
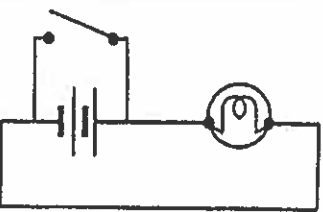


Electric circuits are used to convert electrical energy into the other forms of energy we need (heat, light, sound, ...). When the switch is closed and current is flowing, there is said to be a closed circuit. But what will happen when ...

TASK

Answer the following questions. If you are not sure what will happen, use the "PhET circuit construction kit (DC only)" to build and then test each circuit.

<http://phet.colorado.edu/en/simulation/circuit-construction-kit-dc>

 <p>1. one bulb is unscrewed? <i>both go out</i></p>	 <p>2. the switch is pressed on? <i>both go on</i></p>	 <p>3. the switch is pressed on? (Does it matter where the switch is?) <i>no</i></p>
 <p>4. a weak battery is used? <i>bulbs are dimmer</i></p>	 <p>5. a strong battery is used? <i>bulbs are brighter</i></p>	 <p>6. a weak battery is used, with three bulbs like this? <i>dimmer</i></p>
 <p>7. a strong battery is used, with three bulbs like this? <i>brighter</i></p>	 <p>8. one bulb is unscrewed? <i>other bulb stays on</i></p>	 <p>9. the switch is pressed on? <i>bottom bulb goes a</i></p>
 <p>10. the switch is pressed on? <i>both bulbs on</i></p>	 <p>11. the switch is pressed on? <i>bulb on</i></p>	 <p>12. the switch is pressed on? <i>bulb on</i></p>

NOTE: Diagrams 11 & 12 are special situations. They are known as short circuits. Because there is no electrical load to use up the energy from the battery, the circuit heats up and may become hot enough to start a fire.