

## Text: Series and Parallel Electrical Circuits

Mrs. Côté

Mission B: Electric Circuits

Science 9

**\*\*NOTE: PLEASE DO NOT WRITE ON THIS PAGE AND RETURN TO MRS. COTE\*\***

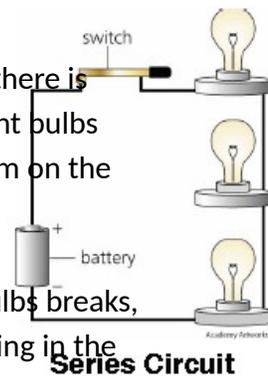
**Directions:** Read the text below and use it to help you fill in the “double bubble” graphic organizer. When you are done please make sure to return this article to Mrs. Côté and add your completed work to your mission.

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Some electrical devices, such as calculators, simple cameras, and flashlights only work one electrical load at a time. However, when strings of decorative lights or lights on a car are turned on, several electrical loads are operating at the same time. Two basic kinds of electrical circuits are used to connect these loads: the series circuit and the parallel circuit.

A series circuit is when you take and join multiple loads together in one circuit so there is only one pathway for the electricity to flow through. For example if you took 3 light bulbs and connected them one after the other with one wire. Please refer to the diagram on the side of the page.

When you join the light bulbs, the electrical loads, in series and one of the light bulbs breaks, all of the light bulbs will go out. This happens because there is now a gap or opening in the circuit and the circuit is considered to be “open” or “off”.



Every time you add new light bulbs in a series circuit, you are adding more resistance to the circuit. When this happens the current slows down. The current hits the first bulb and slows, hits the second bulb and slows down some more. This continues to happen as you keep adding more light bulbs in series.

A parallel circuit is when you take and join multiple loads together in one circuit so there is more than one pathway for the electricity to flow through. For example, if you took 3 light bulbs and connected them one on top of the other with many wires. Please refer to the diagram on the side of the page.

When you join the light bulbs, the electrical loads, in parallel and one of the light bulbs breaks, the rest of the light bulbs will continue to work. This happens because there is another pathway for the current to move, therefore is no gap or opening so the circuit is considered “closed” or “on”.

Every time you add a new light bulb in a parallel circuit, you are creating another pathway for the current to flow through, therefore the current speeds up. This means the resistance decreases if the current is able to move more easily.

