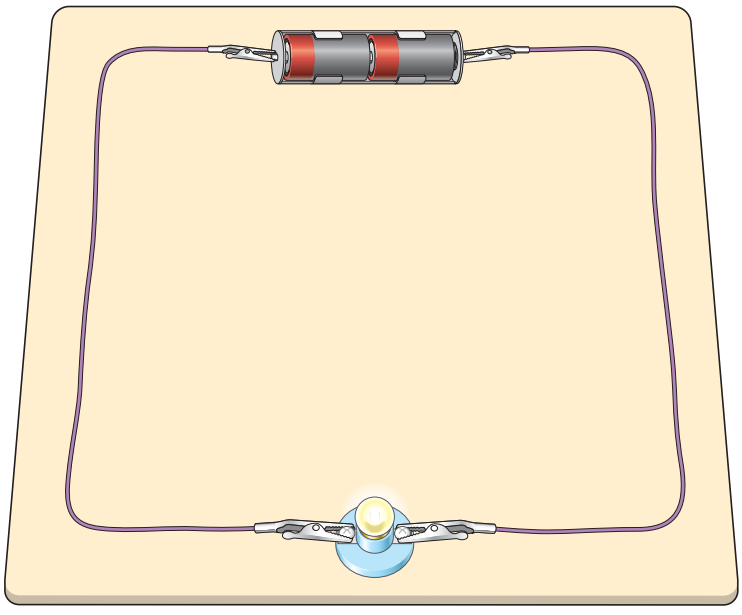
6 Switches

Switches are used to break the circuit and control the flow of electricity.

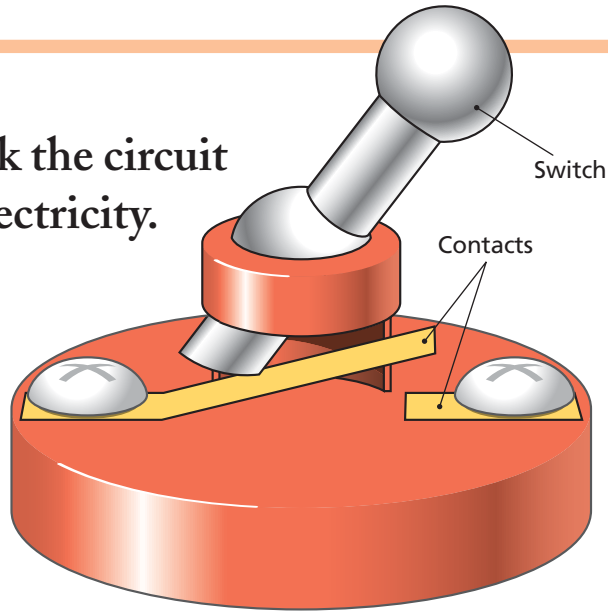
Electricity flows when all the parts of a circuit make a loop. Electricity flows from one end, or terminal, of the battery, through the wires, bulbs, and whatever else is connected, and then back to the other end, or terminal, of the battery (Picture 1).

The current flows because every part is joined in a loop. If one part of the circuit is not joined to the next, no current flows and the circuit does not work.

This is not always a bad thing. For example, we may not want to leave a light bulb on all the time, because then the battery will soon be worn out.



(Picture 1) There is no easy way of controlling the way electricity flows in this circuit.



(Picture 2) A switch has two contacts that are pushed together when the switch is on. They spring apart when the switch is off.

The switch

To stop the flow of electricity, you need to break the circuit. You could simply pull the wires off the bulb or the battery, but this is a slow and awkward method, and the wires would soon get broken.

A **SWITCH** is a small device that reliably breaks and remakes the circuit. The switch in Picture 2 contains two springy metal plates called contacts. When the switch is turned off (opened), the contacts spring apart.

You can see how a switch controls a circuit in Pictures 3 and 4. When the switch is off, the contacts spring apart and the bulb goes off (Picture 3); when the switch is turned on (closed), the contacts are pushed together and the bulb lights up (Picture 4).

Summary

- **A switch is used to control the flow of electricity.**

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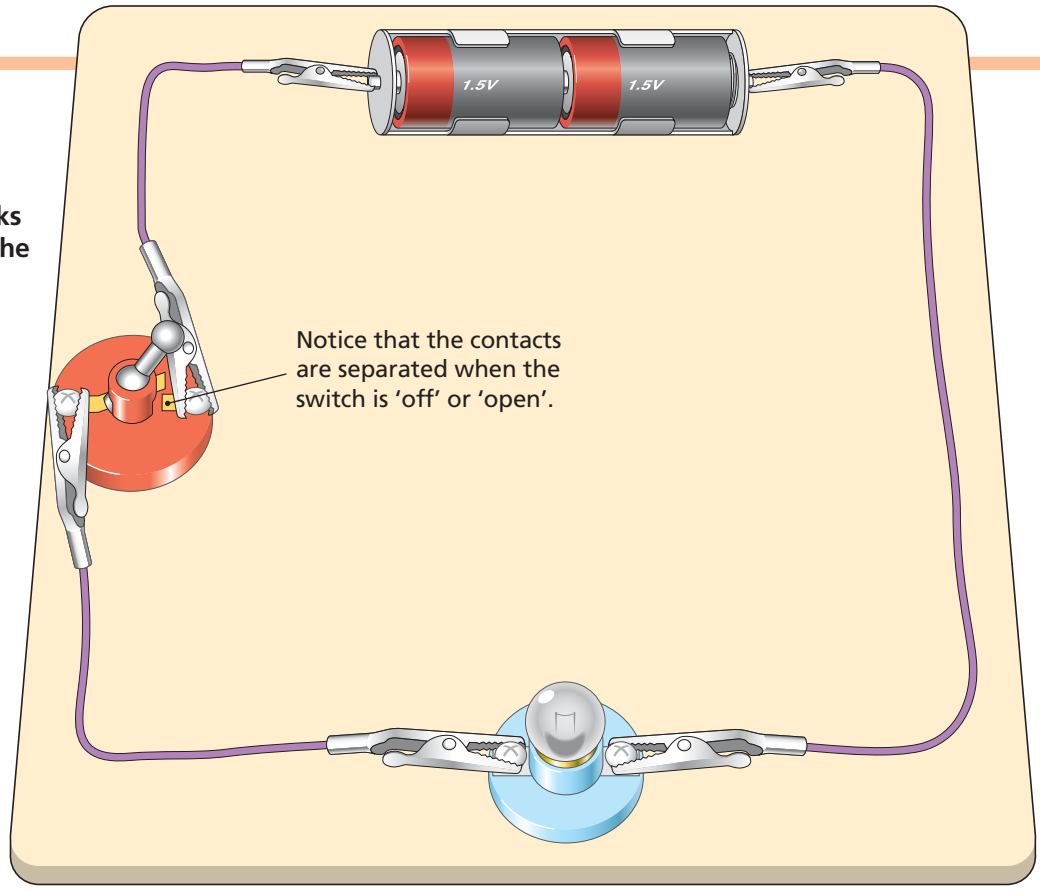
(Picture 3)
A circuit with a switch in it looks like this. Here the switch is off.



(Picture 4)
Now the switch is at the 'on' position. Notice the contacts are closed.