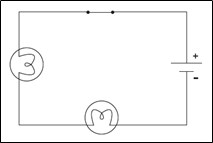
**Series and Parallel Circuits**



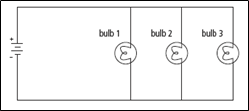
**Series circuit:** a circuit in which current can only flow along ONE path

With a series circuit, there is only **one** pathway through which current can flow. The current is **equal** in **all** parts of the circuit.



Example of a series circuit:

Some decorative lights are connected in such a way that if one bulb burns out the rest of the lights **won’t** work.



**Parallel circuit:** a circuit that has at least one branch point where the current splits into two or more pathways

With a parallel circuit, the current **splits** into different paths. In each path, the current is **reduced.**



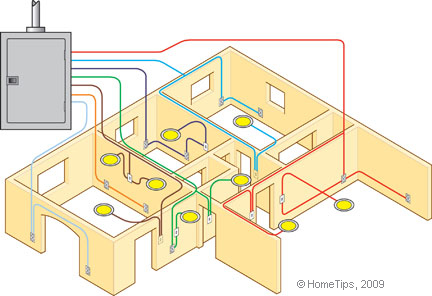
Example of a parallel circuit:

Appliances in your kitchen are connected so that if one appliance is turned off the rest **will** work.

In parallel circuits each device is controlled by its own switch without shutting off the others. When all the devices are on, a large amount of **current** is passing through the **conductor** near the source. When large amounts of current flow through a wire, it can get **very hot** and it becomes a safety hazard.

Would having only one parallel circuit in your house be convenient? Why or why not?

In buildings, such as your school and house, many **separate** parallel circuits are installed.

With this system large electrical cables carry **electrical energy** from a **power source** to the building. This is then connected to a **circuit panel (fuse box)**, which connects to each of the **parallel circuits** inside the panel. 

This separation of the parallel circuits helps to decrease the amount of **current** flowing through the conductors, which decreases the chance of a possible fire being caused by extremely hot wires.

For a review of series and parallel circuits, watch this!

<https://youtu.be/O8GgRIIB1Yc>

Perform Circuit Challenge Activity on pg. 238. In the boxes below draw your circuits using symbols to represent the: switch, light bulbs, wire, and battery.

|  |
| --- |
| Circuit #1: |
| Circuit #2: |
| Circuit #3: |