

Electrical Circuits

-What did you learn from working with snap circuits?

Electrical Circuits

-In the handout I gave you, it has symbols to draw the different parts of electrical circuits? Why do we have these set symbols for drawing circuits?

Electrical Circuits

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It is important to make sure that everyone you work with uses the same terms and language.

Lesson 2-Circuits

What's in a Circuit?

Conducting Material: The Path

-carries electricity (usually a wire)



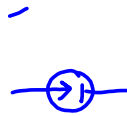
Electrical Device: The Load

-anything that requires electricity to operate

-light bulb



-LED light



-motor



-heater



-electromagnet



Energy Source

-all circuits need some type of energy source

-we usually use a battery



Switch

-this controls the flow of electricity by breaking or completing the circuit

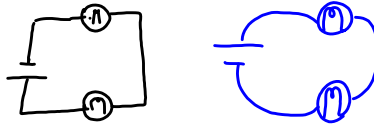
-there are many types of switches



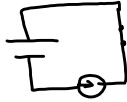
Lesson 2-Circuits

Drawing Circuits:

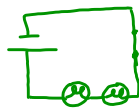
-one battery connected to two light bulbs



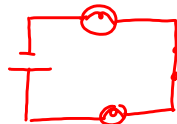
-one battery and one LED with a switch that is on



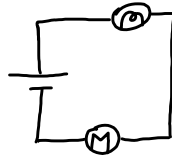
-one battery and two light bulbs with a switch that can turn both lights on.



-one battery and two light bulbs with a switch that only controls one light bulb.



-one battery connecting a motor and a light bulb.



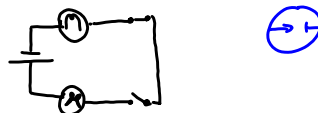
-one battery connecting an electromagnet and three light bulbs.



-one battery connecting a switch that controls a heater that is off.

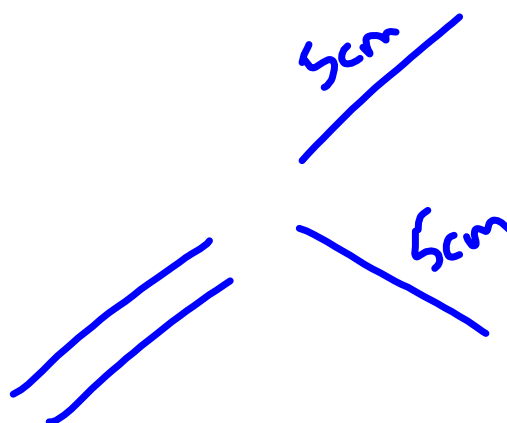


-one battery and two LEDs with two switches so that one light is on and one light is off.



Types of Circuits:

Series:



Parallel:

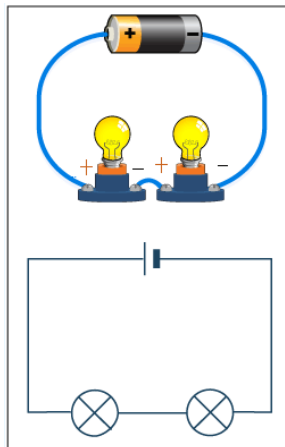
Lesson 2-Circuits

Types of Circuits:

Series:

If you can place your finger on any part of the circuit and trace a single path back to the start.

Used in electrical devices that only have one function and run independently. (example, flashlight)



Parallel:

If you can place your finger on any part of the circuit and trace a path, there will be a point where you have to choose which wire to follow.

Allows operation of more than one device at a time. (For example, if your tv is turned off, you can still listen to your stereo.)

