

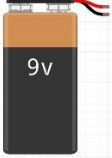

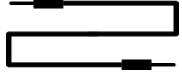

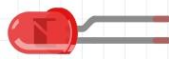



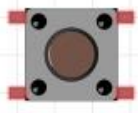
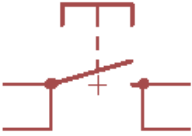
HIMALAYAN MAKERS GUILD

Foundation Activity 2

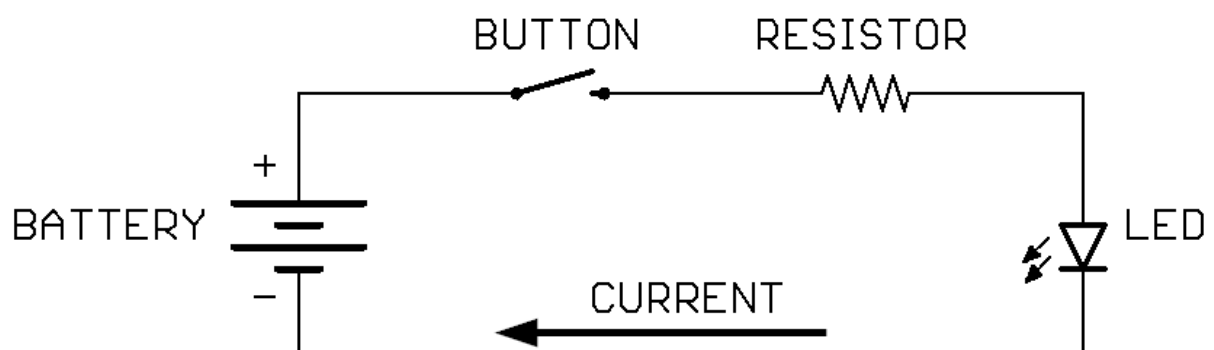
LED Light Circuit

CIRCUIT DIAGRAMS

Diagrams use symbols to represent circuits that we can build in the real world.

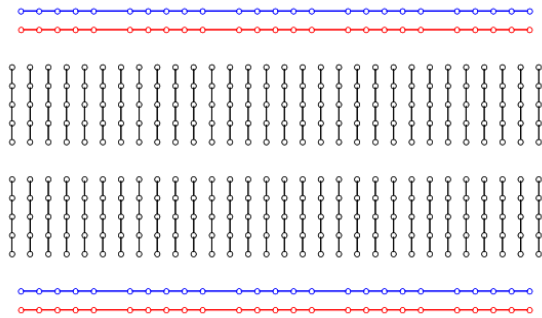
Image	Symbol		
		<i>Battery</i>	The voltage source for the circuit.
		<i>Wire</i>	A pathway for current to move along.
		<i>LED</i>	Light Emitting Diode. Current will only flow in one direction, where the "arrow" is pointing.
		<i>Resistor</i>	Limits the flow of current through the circuit.
		<i>Button</i>	Like a door for current to flow through. When the button is pressed, the circuit is connected and current will flow.

This is the circuit we will build to light up the LED:



¹ Part images from Fritzing, except the wire.

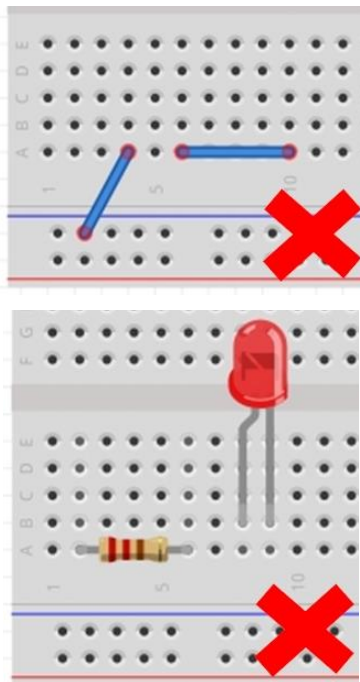
BUILDING CIRCUITS ON A BREADBOARD



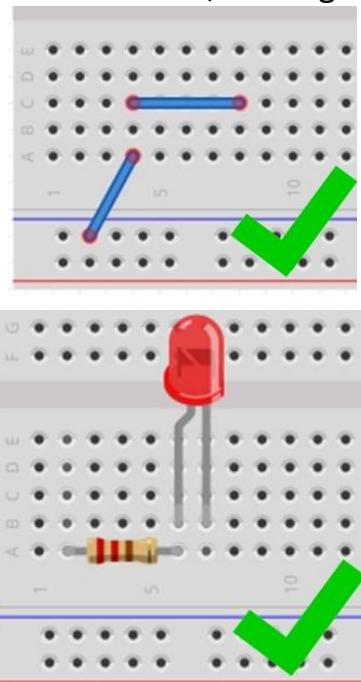
Breadboards are used to build circuits that can be put together and taken apart without needing special tools.

Parts inserted into the same line are electrically connected by metal inside the board.

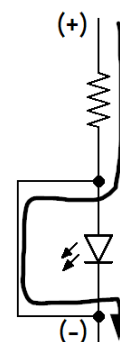
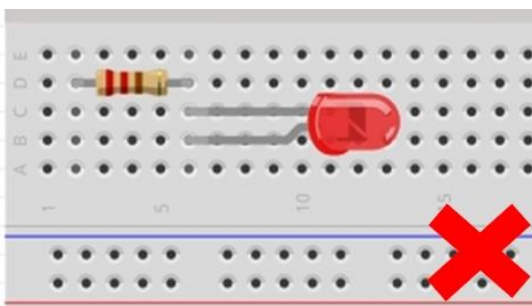
Parts inserted in **different** lines. They are **NOT** connected.



Parts inserted on the **same** line. They **ARE** connected, making a node.



One part inserted with **both ends** inserted in the **same** line will **NOT** work.



Because the two pins of the LED are connected in the same node, there will be no voltage difference between them, so no current will flow from the (+) pin, through the LED, and out the (-) pin (a flat hill in the rockslide analogy of electricity). If we connect this circuit to a voltage, current will flow around the LED through the low-resistance metal of the breadboard (like a wire).

Remember:

