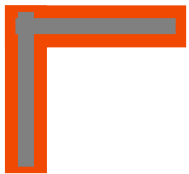


ASSEMBLY 101

Placement

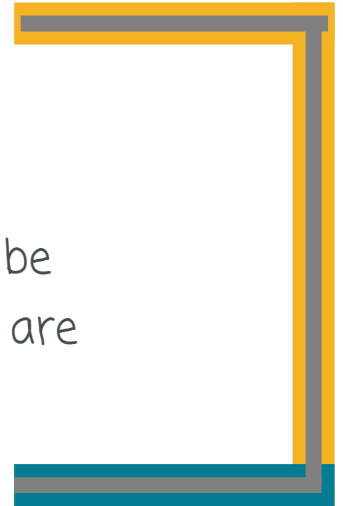
1. Cut the conductive tape into pieces to stick over the lines.
2. Overlap the tape at the corners so the tape always touches.

Conductive tape lets current flow from one part of the circuit to another



Take a look at this illustration.

Your connections don't need to be perfect. Just be sure the wires are touching in the corners!



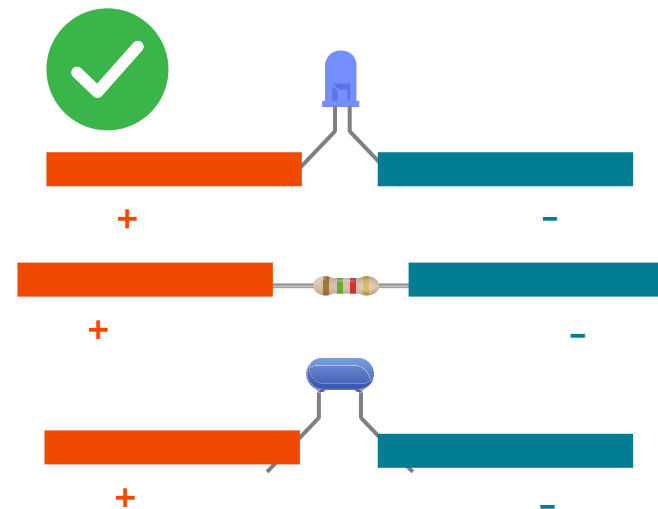
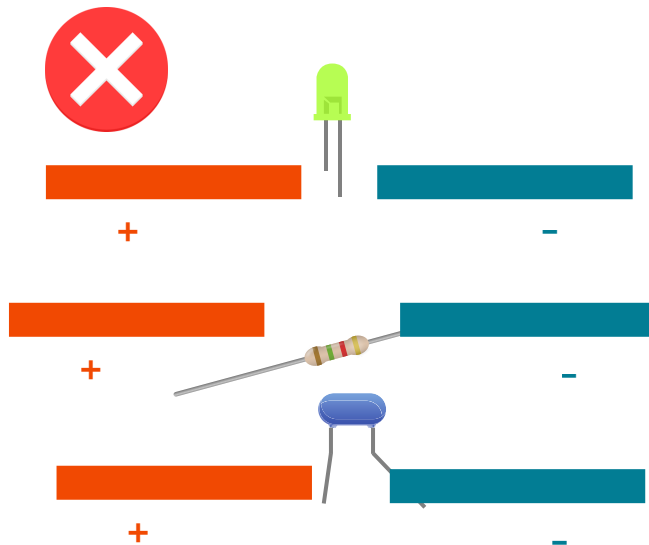
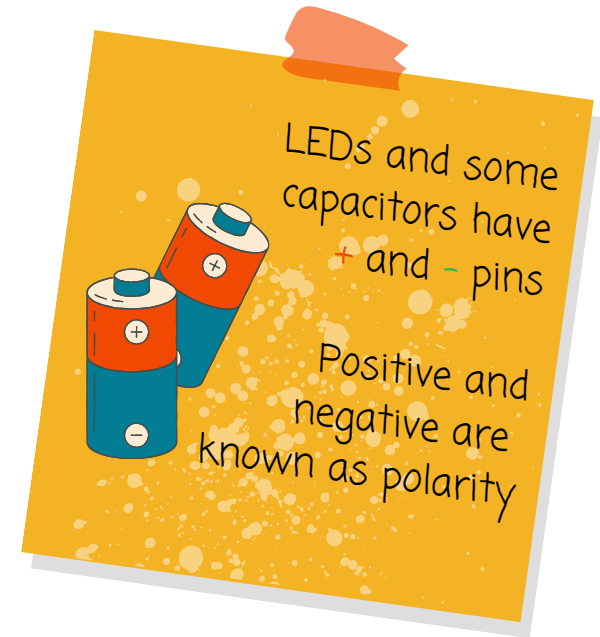
STEAMROCKET 



ASSEMBLY 101

Two-pin components

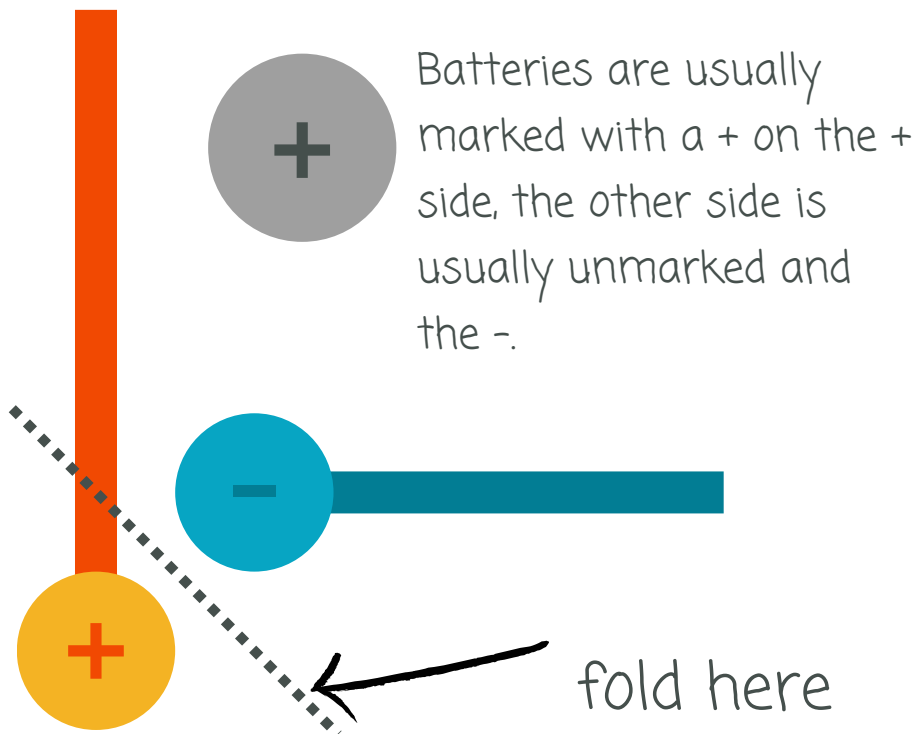
1. Bend the pins apart if needed to attach each side of the wires.
2. Tape the pins under the lengths of wire.



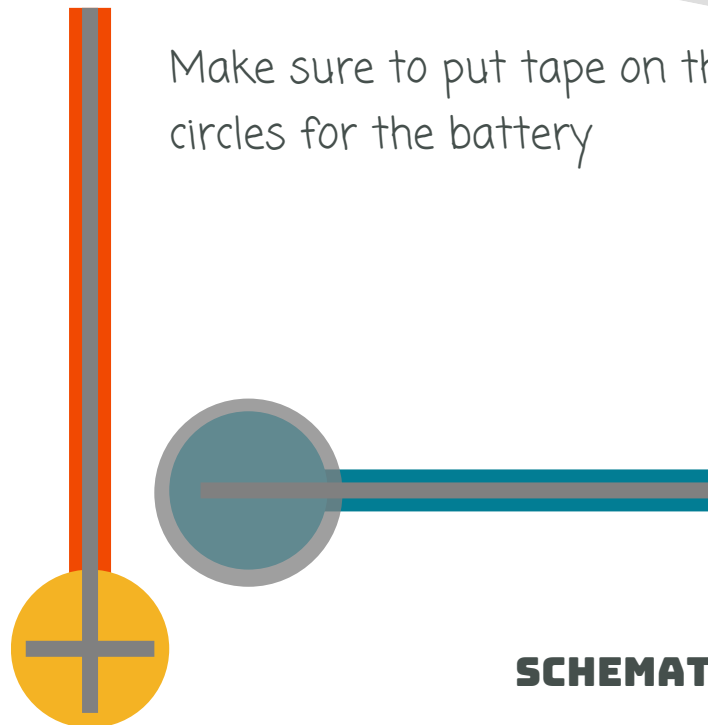
ASSEMBLY 101

Batteries

1. Use CR2032 or CR2016 coin-cell batteries.
2. Fold the paper along the dotted line
3. Put the battery on the - circle, fold the + side, and hold it together with a paperclip



Make sure to put tape on the + and - circles for the battery

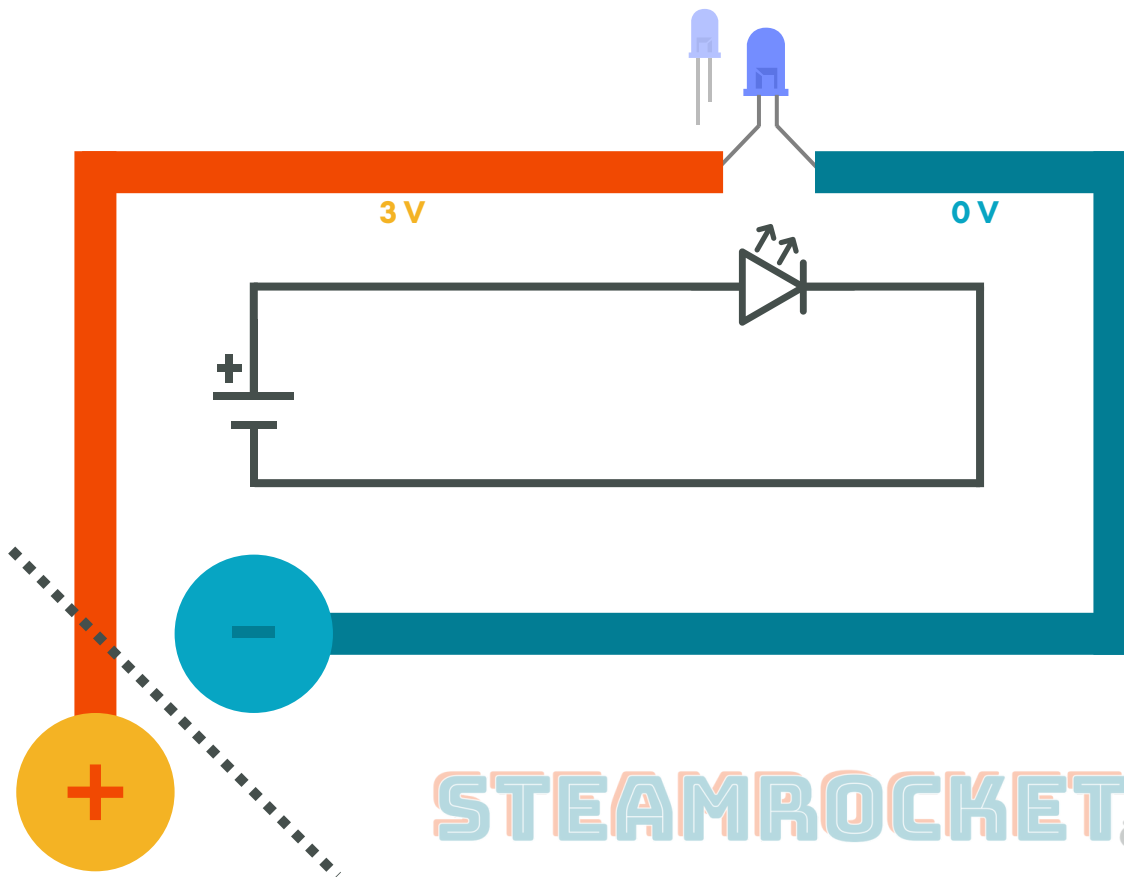
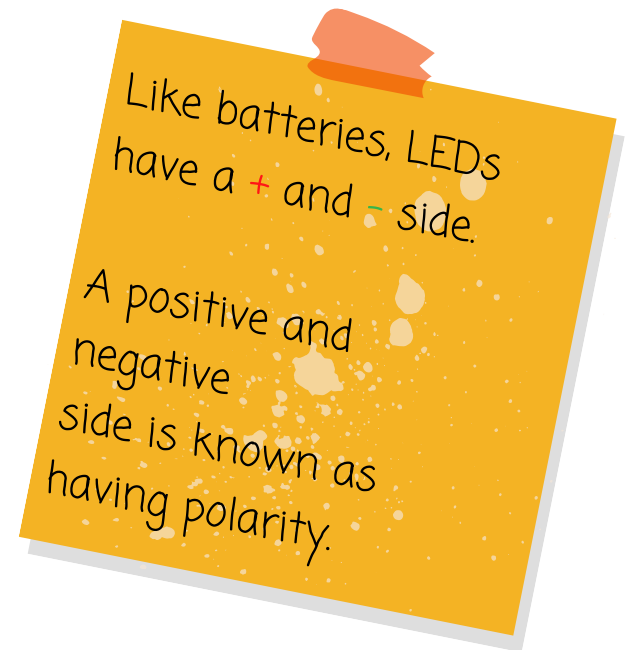


SCHEMATIC SYMBOL



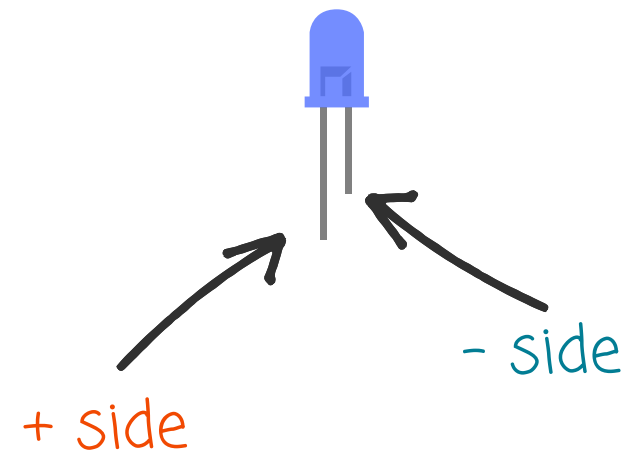
LED

1. A light that glows when current flows through it.
2. Current flows from the + side of the battery to the - side.
3. Voltage drops as it works in the circuit.
4. The LED turns on when the circuit is completed.



STEAMROCKET

LEDs

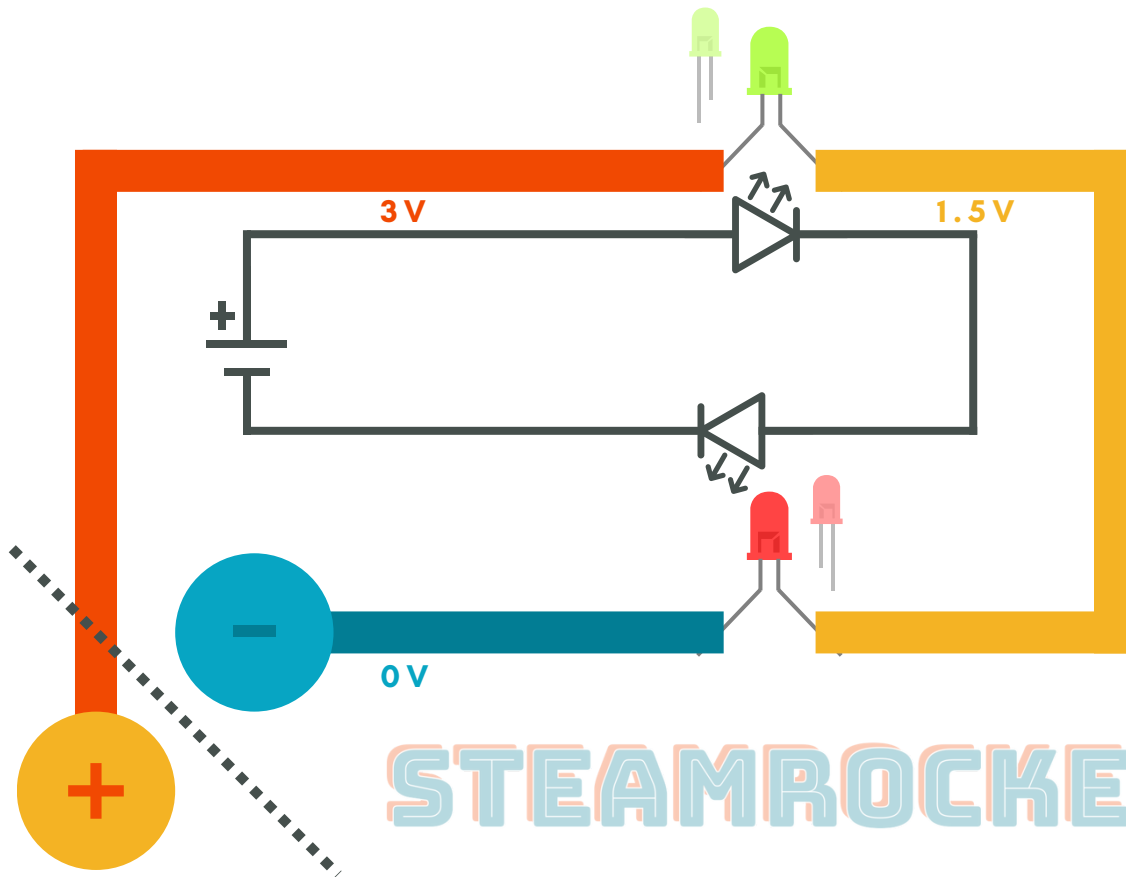


SCHEMATIC SYMBOL



2 LEDs

1. Using two LEDs is the same as one.
2. Voltage drops even more in the circuit since there are two LEDs.



Remember to keep
the + and - side
pointed the right
way!

Connecting it
backwards may
break the LED.

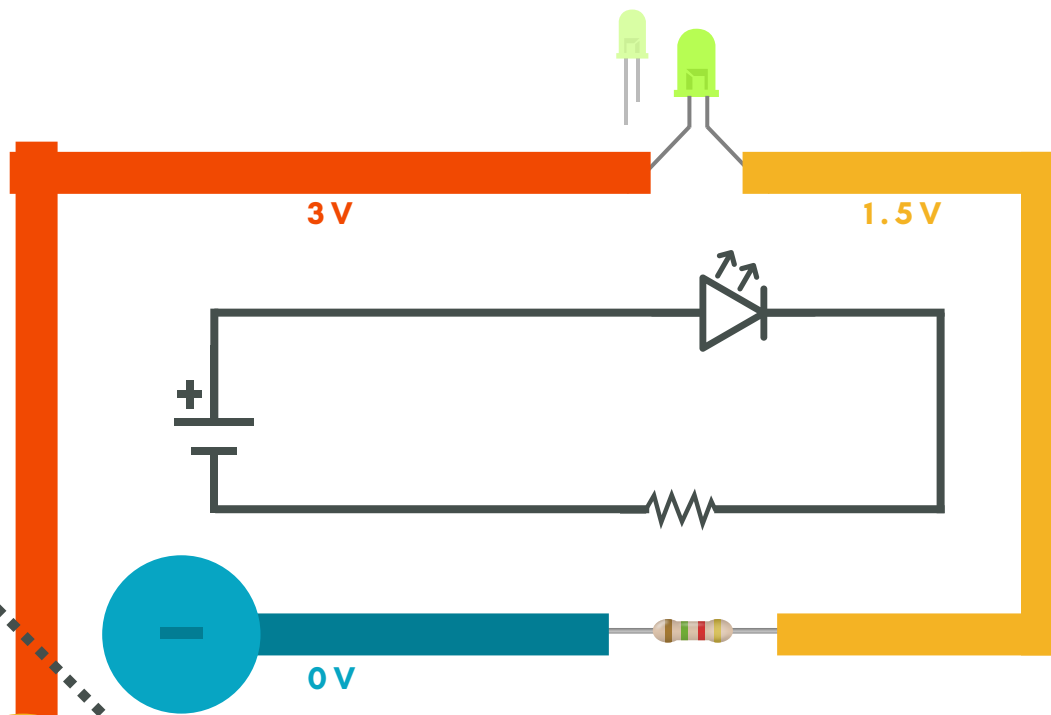


LED BRIGHTNESS

1. Adding a resistor drops the current flowing through the circuit
2. Dropping current lowers LED brightness
3. The higher the value of the resistor in ohms, the more it lowers current

A schematic symbol is like a map, but instead of highways and landmarks, they use symbols.

Refer to schematics page for more.



Resistors



no difference between the pins

colored bands tell you the value in ohms

STEAMROCKET



SCHEMATICS

Notes:

A schematic shows how all the wires and parts in a circuit are connected.

Instead of showing a picture of a wire or resistor, a symbol is used. Wires are just lines, resistors, LEDs and all the other parts have their own symbols.

Learning how to read and use schematics is a fundamental electrical engineering skill.



Resistor



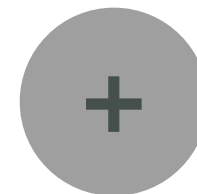
SCHEMATIC SYMBOL 

LED



SCHEMATIC SYMBOL 

Battery



SCHEMATIC SYMBOL 