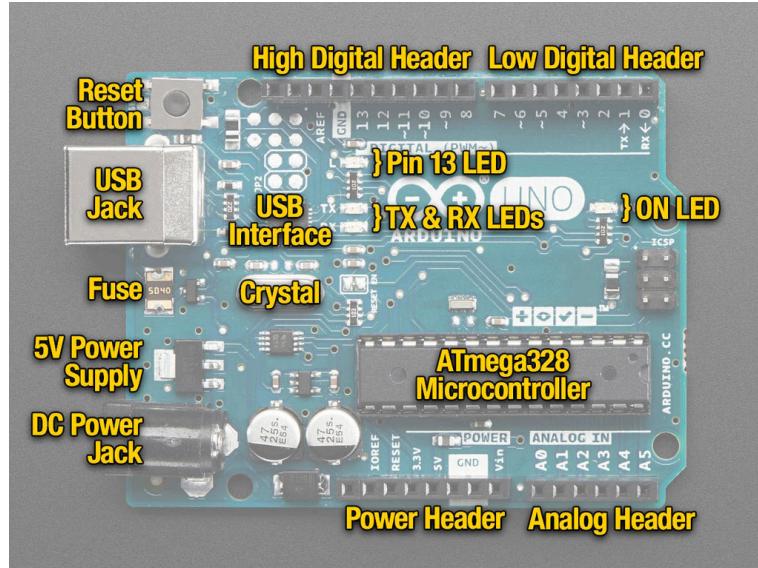


Structure of Arduino UNO R3

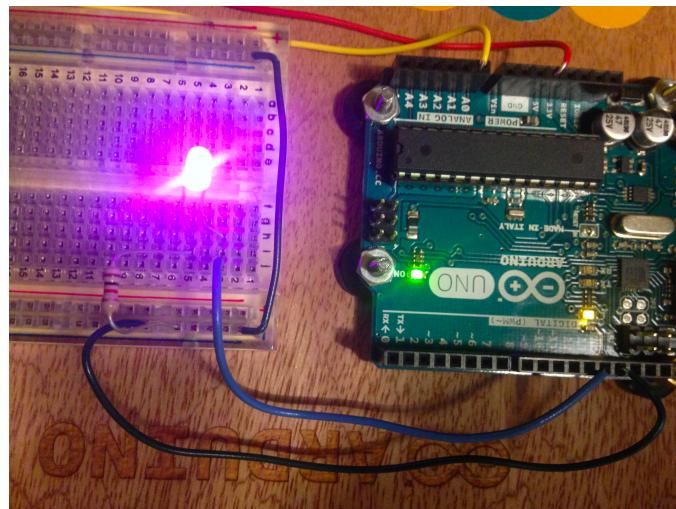
(At the time of writing it's the most popular Arduino. Each part is covered in more detail in the next sections)

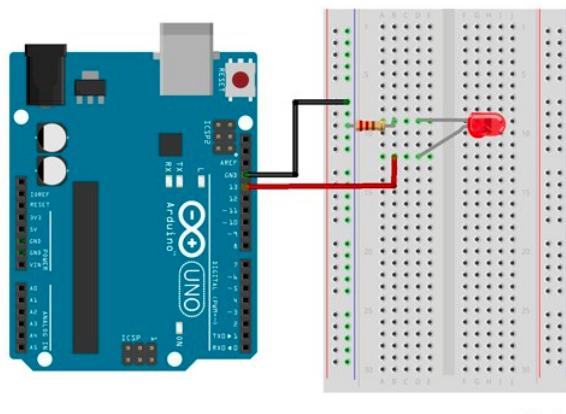


Other Notes:

LEDs must always be used with resistors so they don't burn out. The resistor value can be anywhere from 220 ohm to 1k ohm. The lower the resistance, the brighter the light:

Here's a picture showing how to connect the LED and resistor on the breadboard:

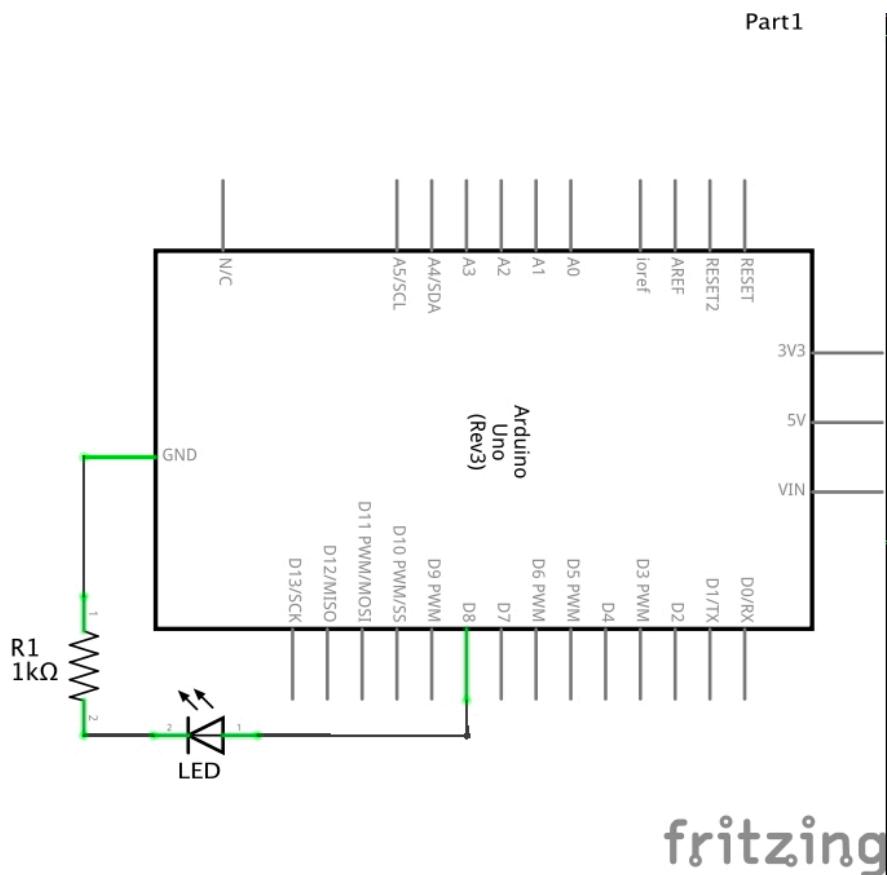




Made with
fritzing

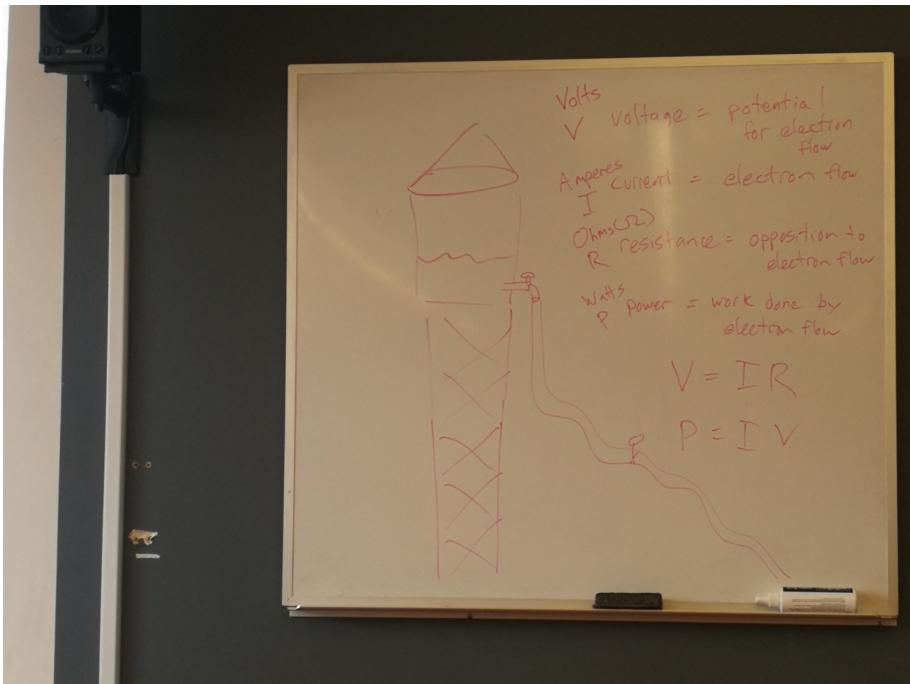
Here is another view of this circuit:

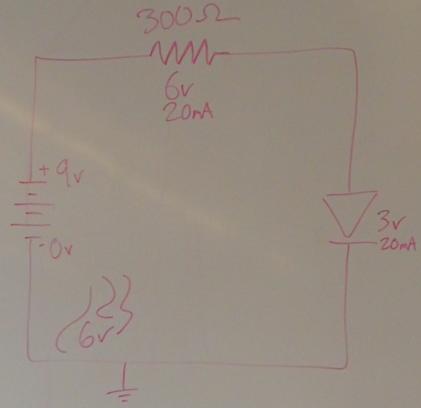
And here is a schematic of this circuit:



Electronics Basics

- circuits: complete, open, closed, and short
- water analogy
- voltage, current, resistance, and power
- metric prefixes (if necessary)





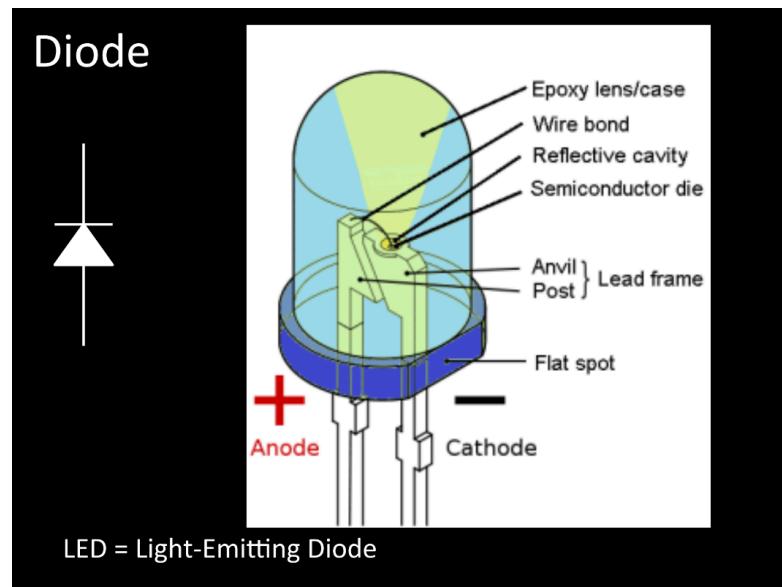
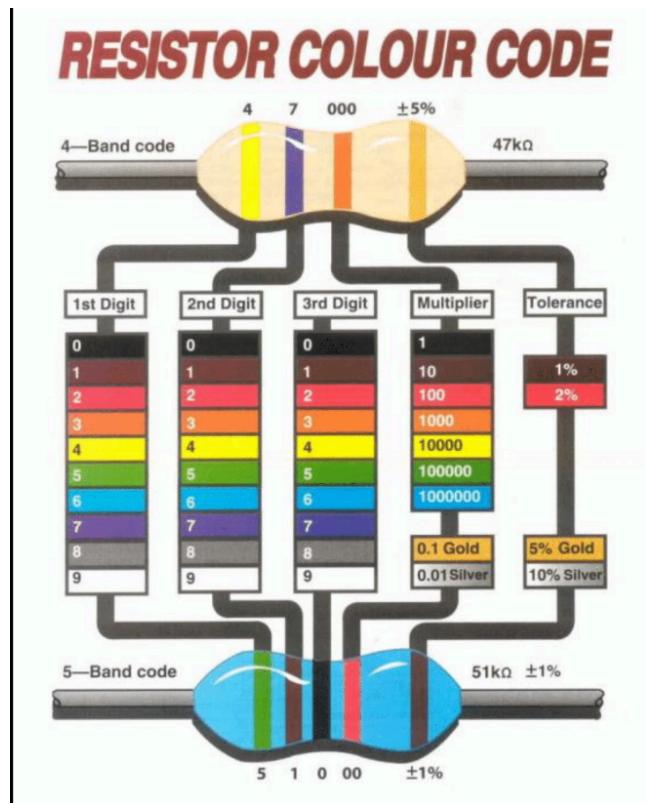
$$V = IR$$

$$R = \frac{V}{I}$$

$$R = \frac{6}{0.02}$$

$$R = 300\Omega$$

Electronic Components:



For LED, the long leg is +, and the short leg is -.