

A collage of various Arduino components including microcontrollers, boards, and modules. The components are arranged around the central text. At the top left is a green PCB with a USB connector and a microcontroller. To its right is a small black DIP package. Further right is a square QFN package labeled 'ATMEGA328 AU 0907'. At the top right is a blue USB-to-UART module with a yellow USB connector. Below the top left is a long black DIP package labeled 'ATMEGA328P-PU'. To its right is another small black DIP package. Further right is a square QFN package labeled 'ATMEGA328 AU 0907'. At the bottom left is a long black DIP package labeled 'ATMEGA1409 ATMEGA328P-PU'. To its right is a square QFN package labeled 'ATMEGA328 AU 0907'. At the bottom right is a blue Arduino Uno board. To its right is a small black DIP package. Further right is a long black DIP package labeled 'ATMEGA328P-PU'.

Arduino Workshop

By MakerSpace@Yahoo

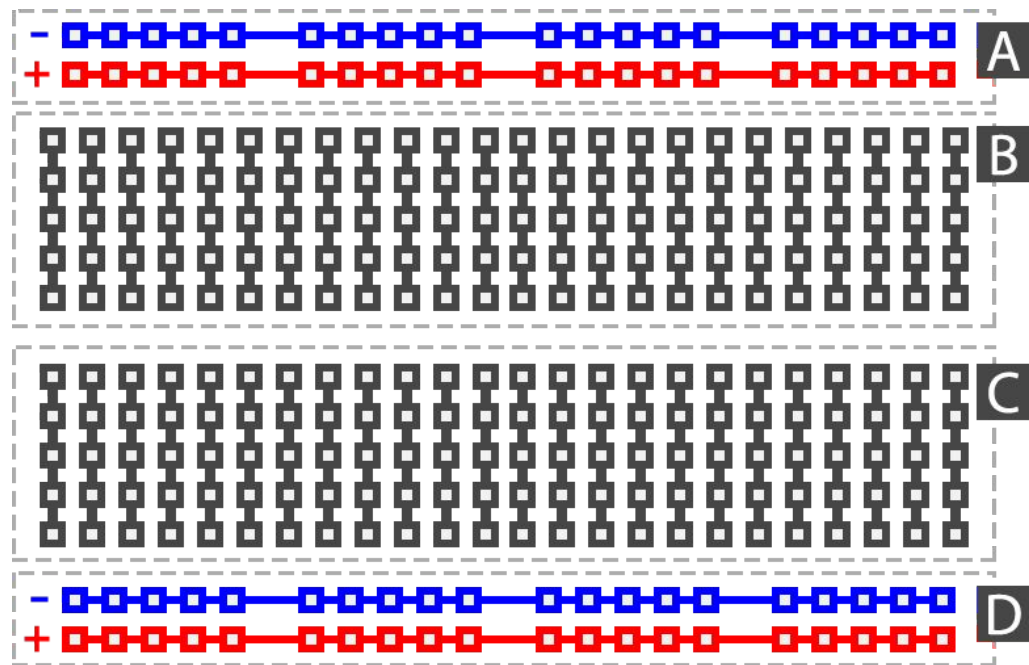
<http://bit.ly/makerspace-arduino-101>



Components

- Breadboard
- Resistors
- Light Emitting Diode
- Push Button
- Potentiometer
- Light Dependent Resistor

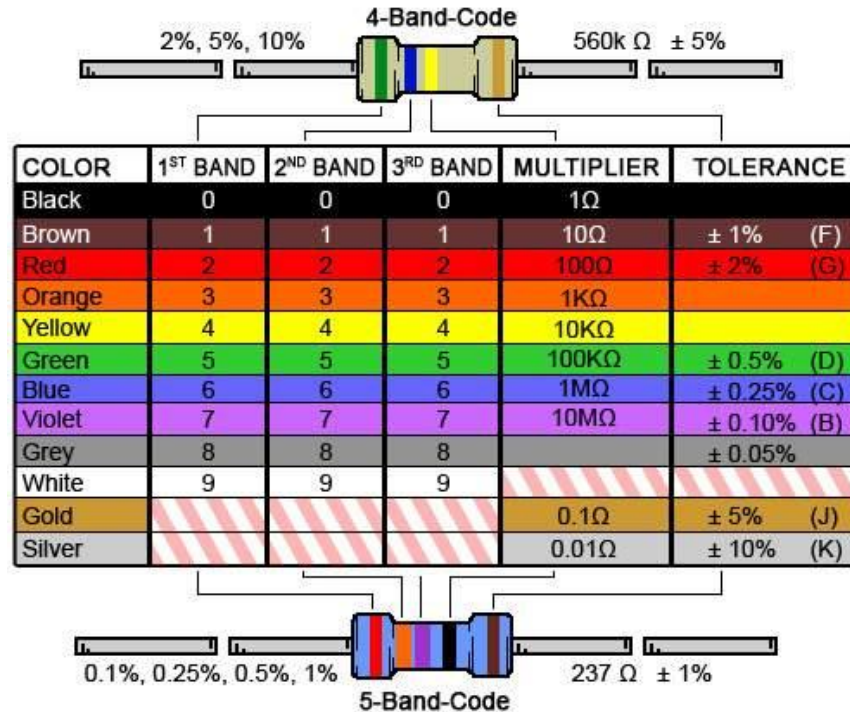
Breadboard



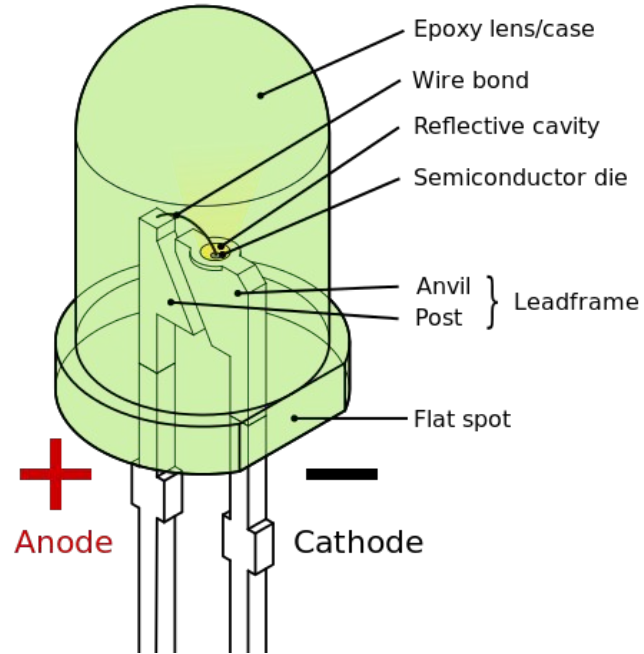
Resistors



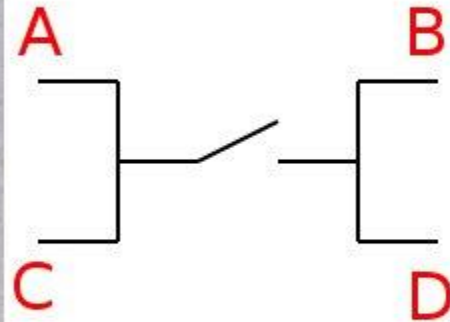
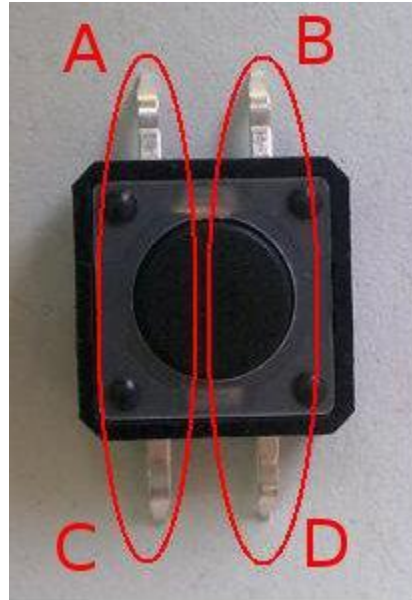
Resistor Color Code



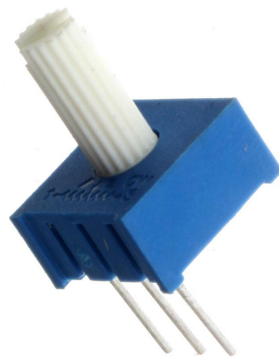
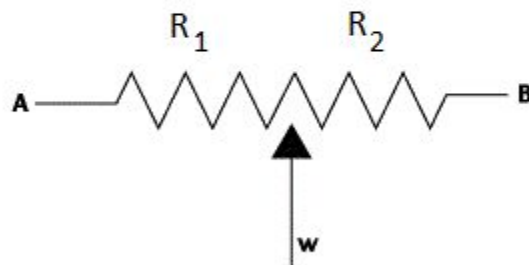
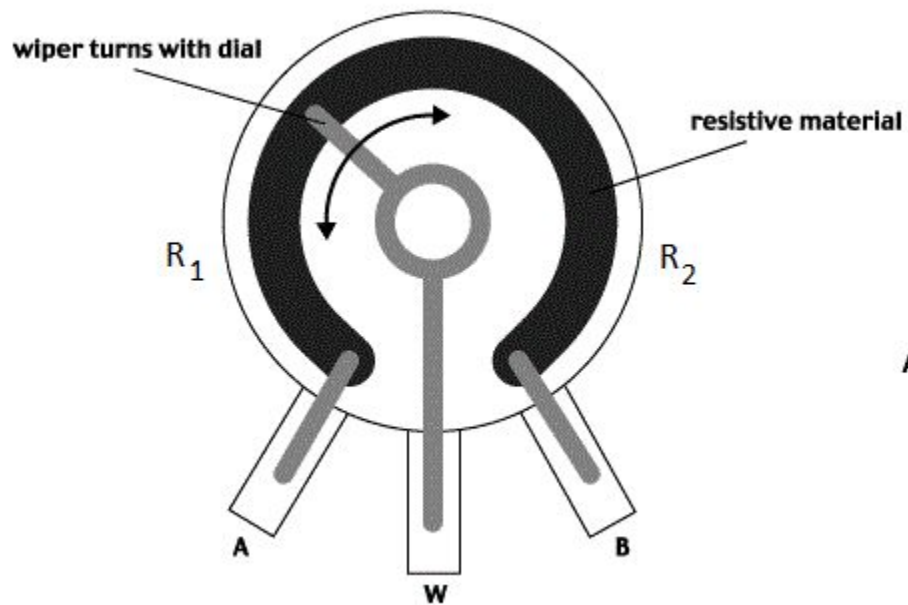
Light Emitting Diode



Push Button



Potentiometer



Light Dependent Resistor

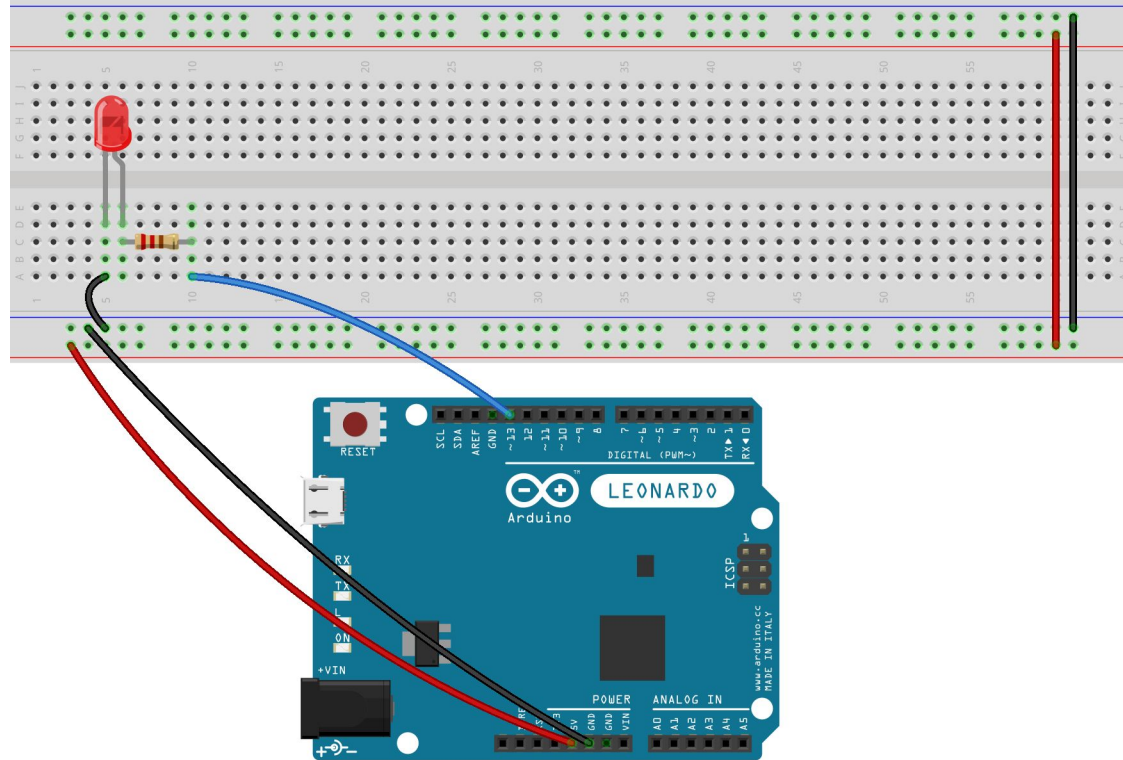


Make the LED blink

<http://bit.ly/makerspace-arduino-blink>



Wire the LED



Control the brightness of the LED

<http://bit.ly/makerspace-arduino-pulse>



Pulse Width Modulation

50% duty cycle



75% duty cycle



25% duty cycle

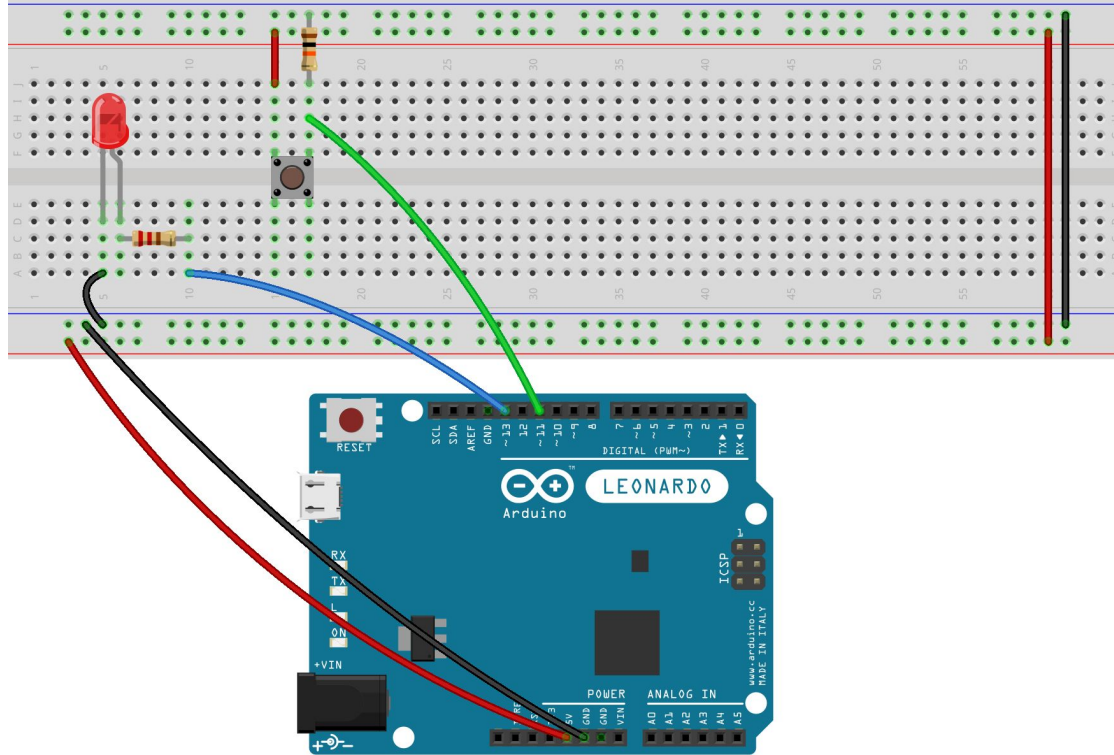


Press button to turn on LED

<http://bit.ly/makerspace-arduino-button>



Wire push button

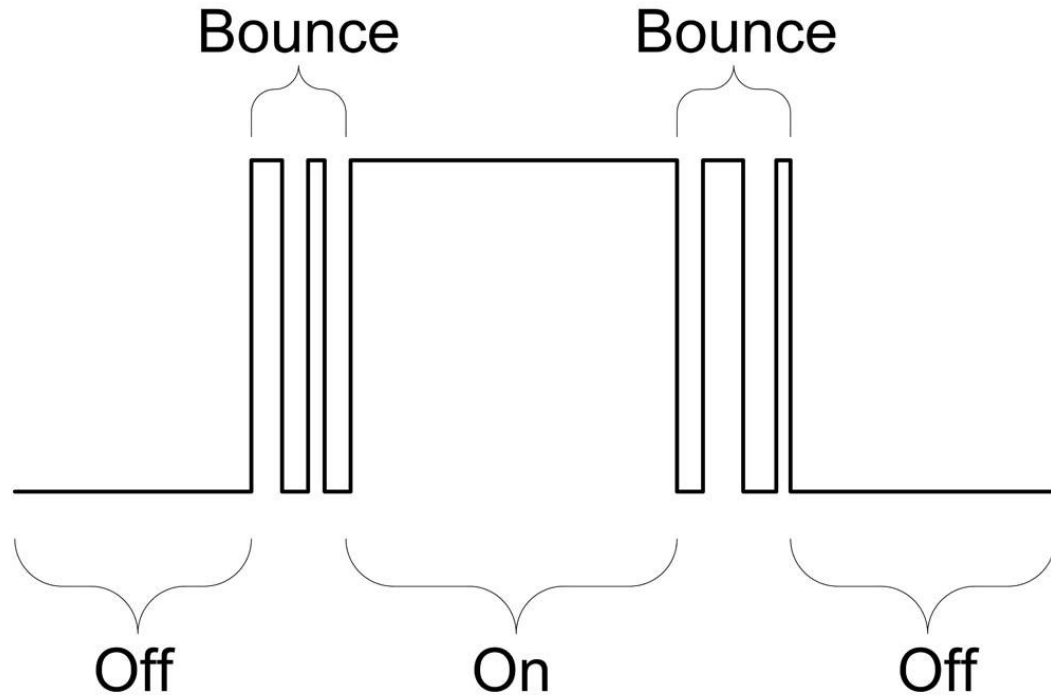


Press button to toggle LED state

<http://bit.ly/makerspace-arduino-debounce>



Debouncing

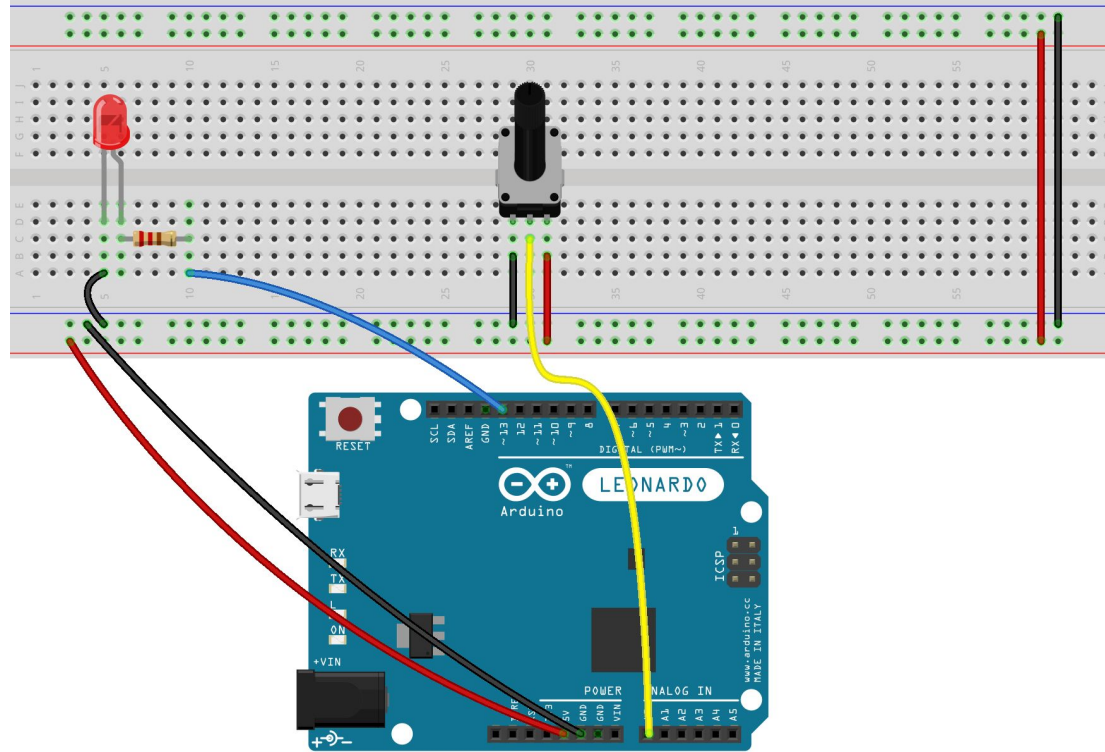


Control the brightness of the LED with pot

<http://bit.ly/makerspace-arduino-pot>

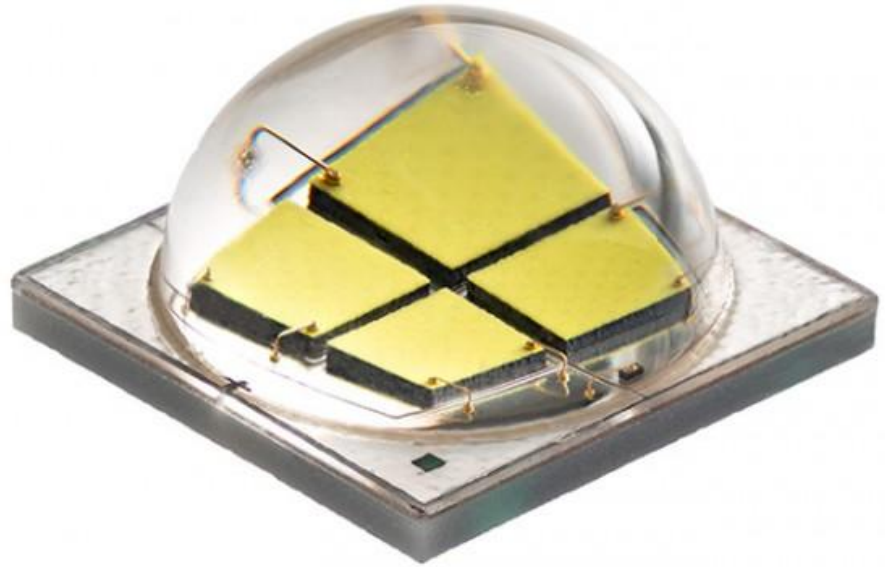


Wire the potentiometer

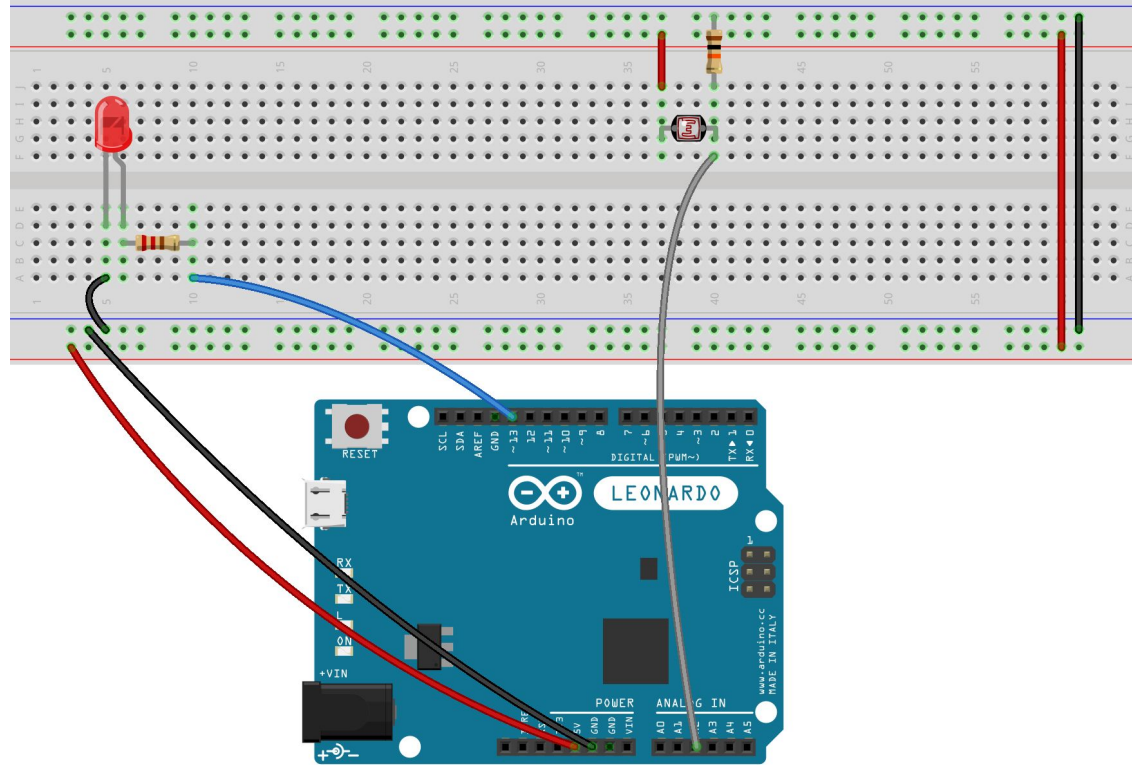


Control the brightness of the LED with light

<http://bit.ly/makerspace-arduino-ldr>



Wire the light dependent resistor

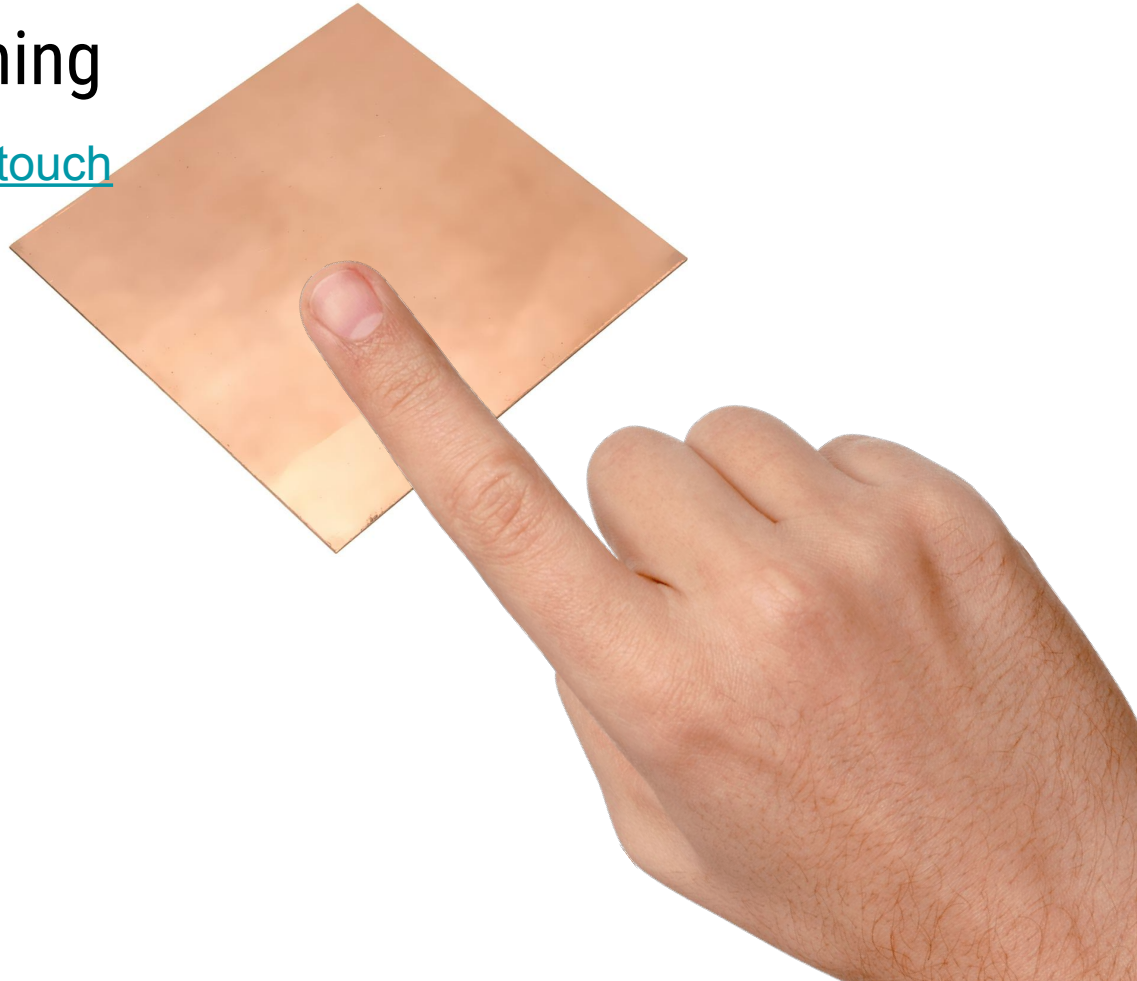


Download Capacitive Sense Library

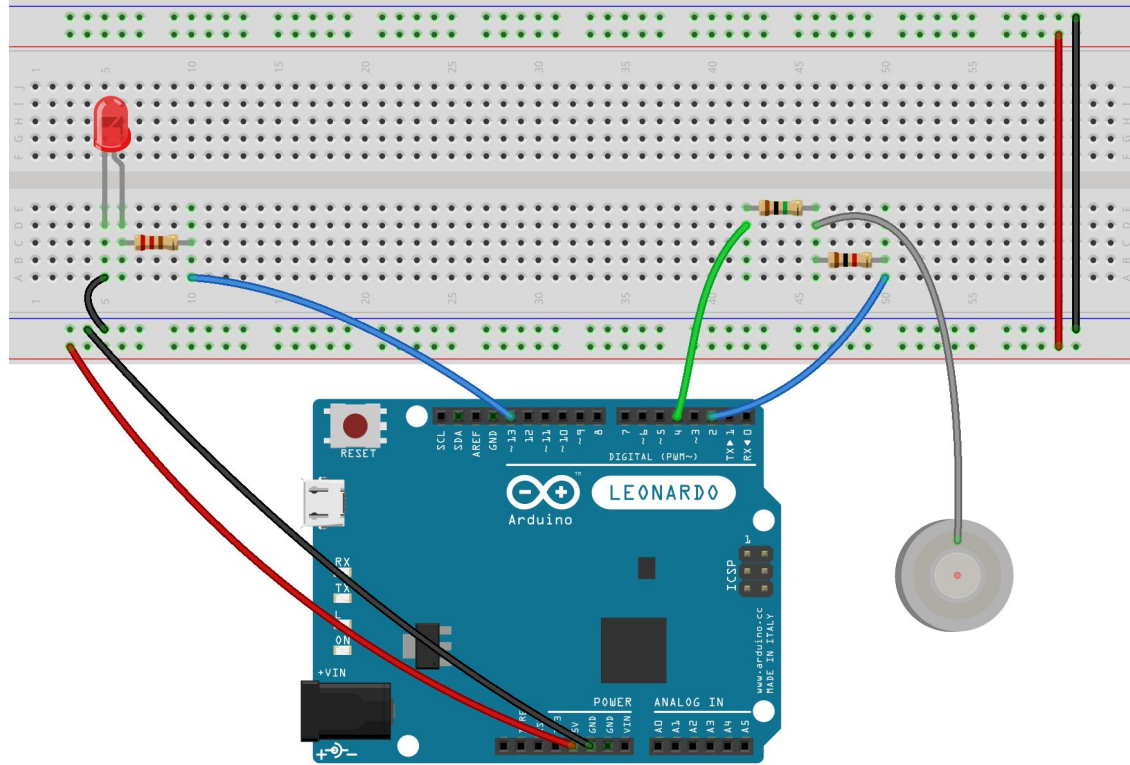
1. Close Arduino IDE
2. Open Terminal
3. Execute these commands
 - `cd ~/Documents/Arduino/libraries`
 - `git clone https://github.com/arduino-libraries/CapacitiveSensor.git`
4. Re-open Arduino IDE

Toggle the LED by touching

<http://bit.ly/makerspace-arduino-touch>



Wire the touch sensor



Q & A