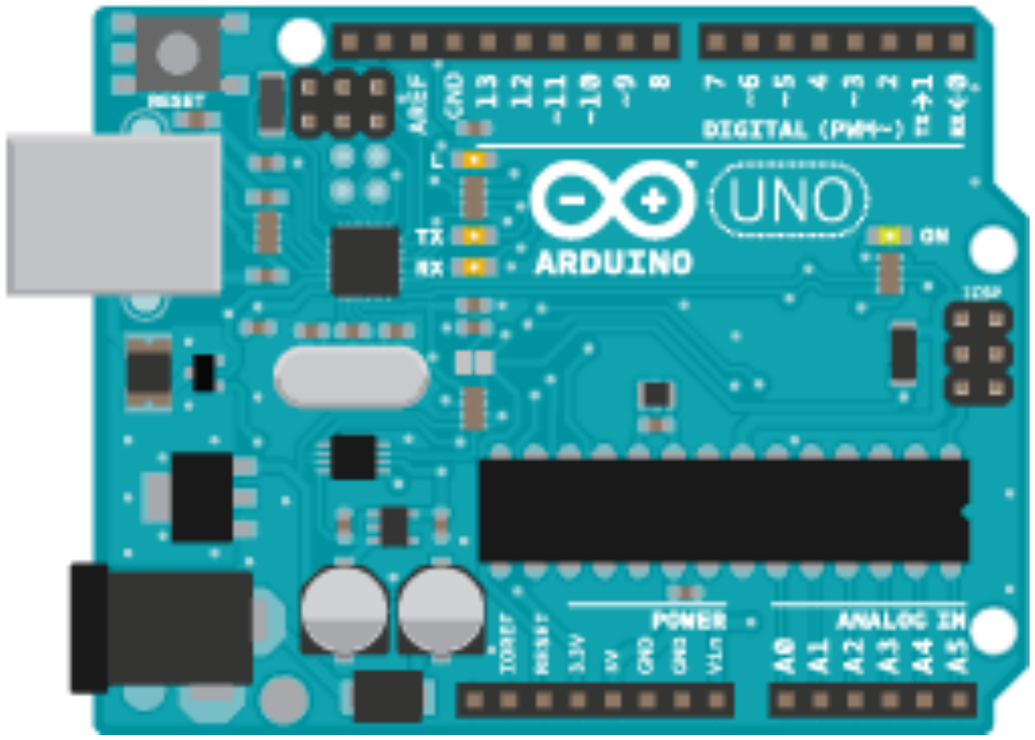
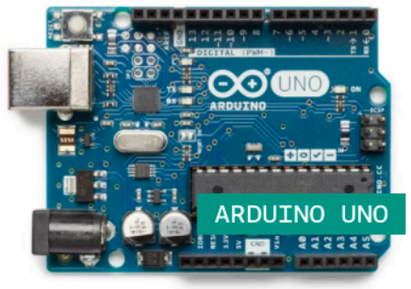


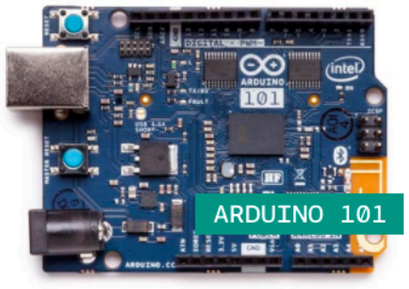
Arduino Basics

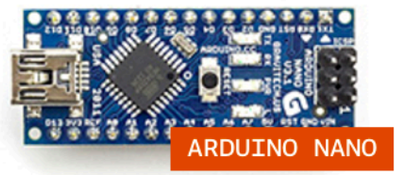
Input and output

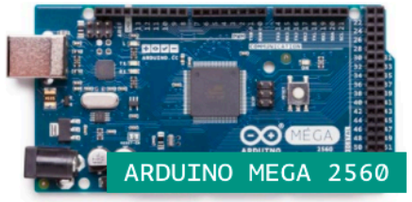
Entry Level

Get started with Arduino using Entry Level products: easy to use and ready to power your first creative projects. These boards and modules are the best to start learning and tinkering with electronics and coding. The StarterKit includes a book with 15 tutorials that will walk you through the basics up to complex projects.



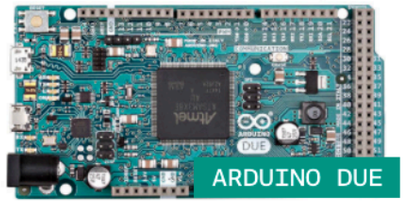




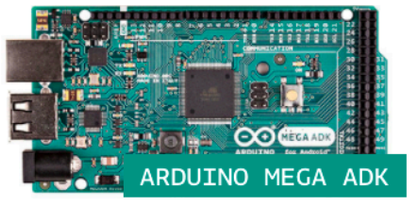


ARDUINO MEGA 2560

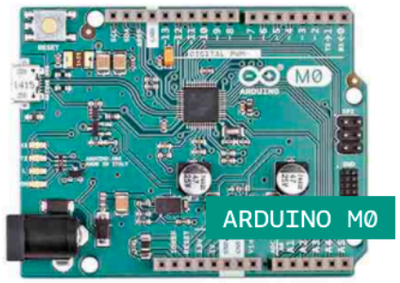
ARDUINO ZERO



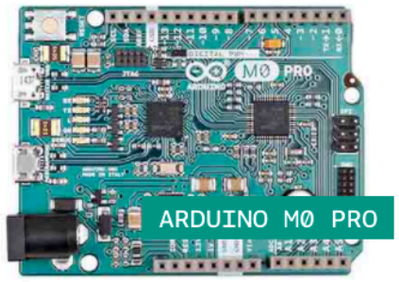
ARDUINO DUE



ARDUINO MEGA ADK

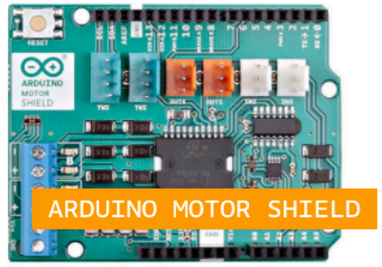


ARDUINO MØ

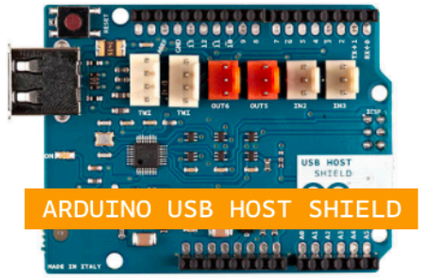


ARDUINO MØ PRO

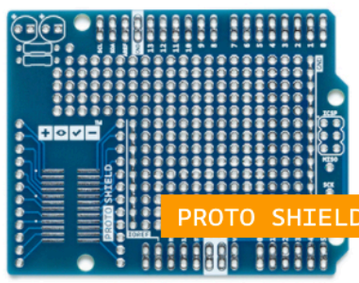
ARDUINO MKR ZERO



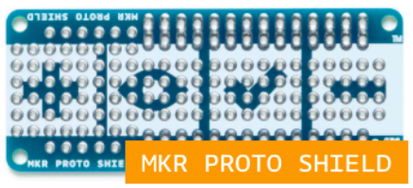
ARDUINO MOTOR SHIELD



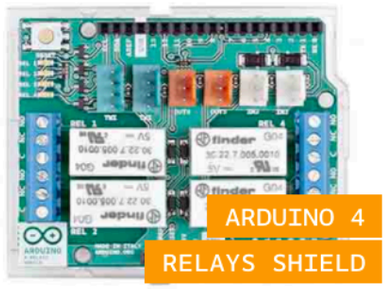
ARDUINO USB HOST SHIELD



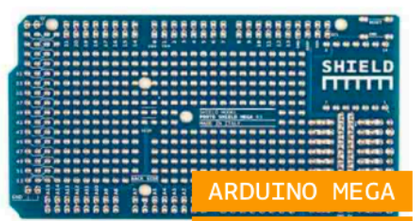
PROTO SHIELD



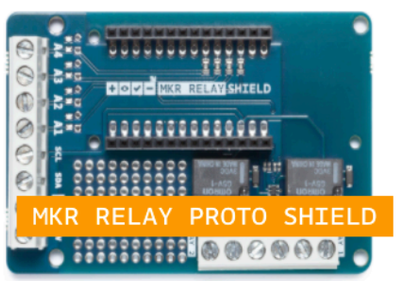
MKR PROTO SHIELD



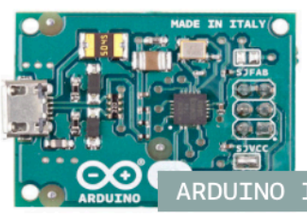
ARDUINO 4
RELAYS SHIELD



ARDUINO MEGA
PROTO SHIELD



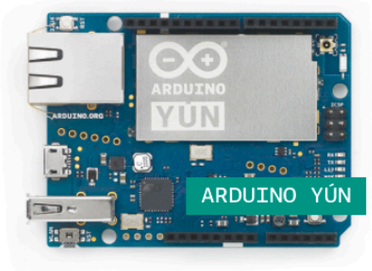
MKR RELAY PROTO SHIELD

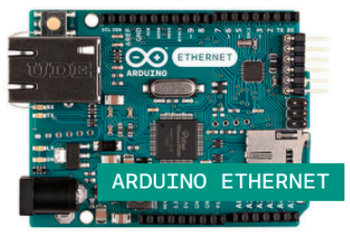


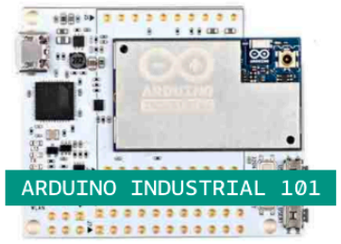
ARDUINO ISP

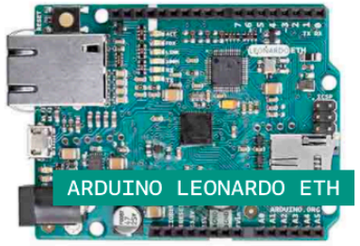
Internet of Things

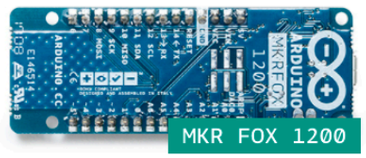
Make connected devices easily with one of these IoT products and open your creativity with the opportunities of the world wide web.

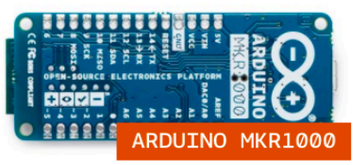


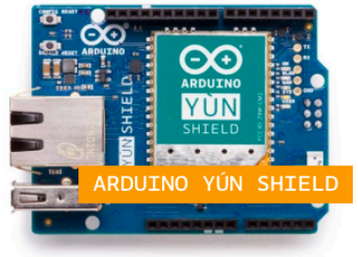


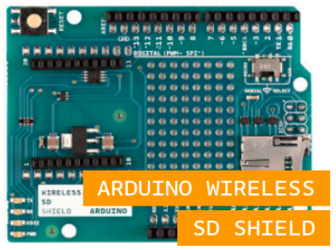


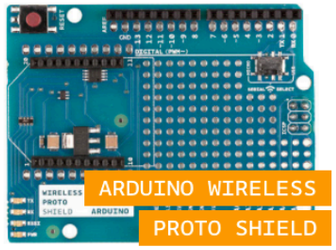


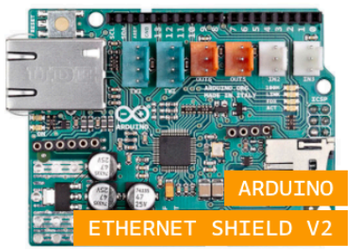


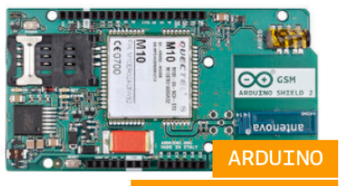


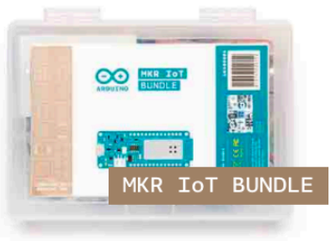




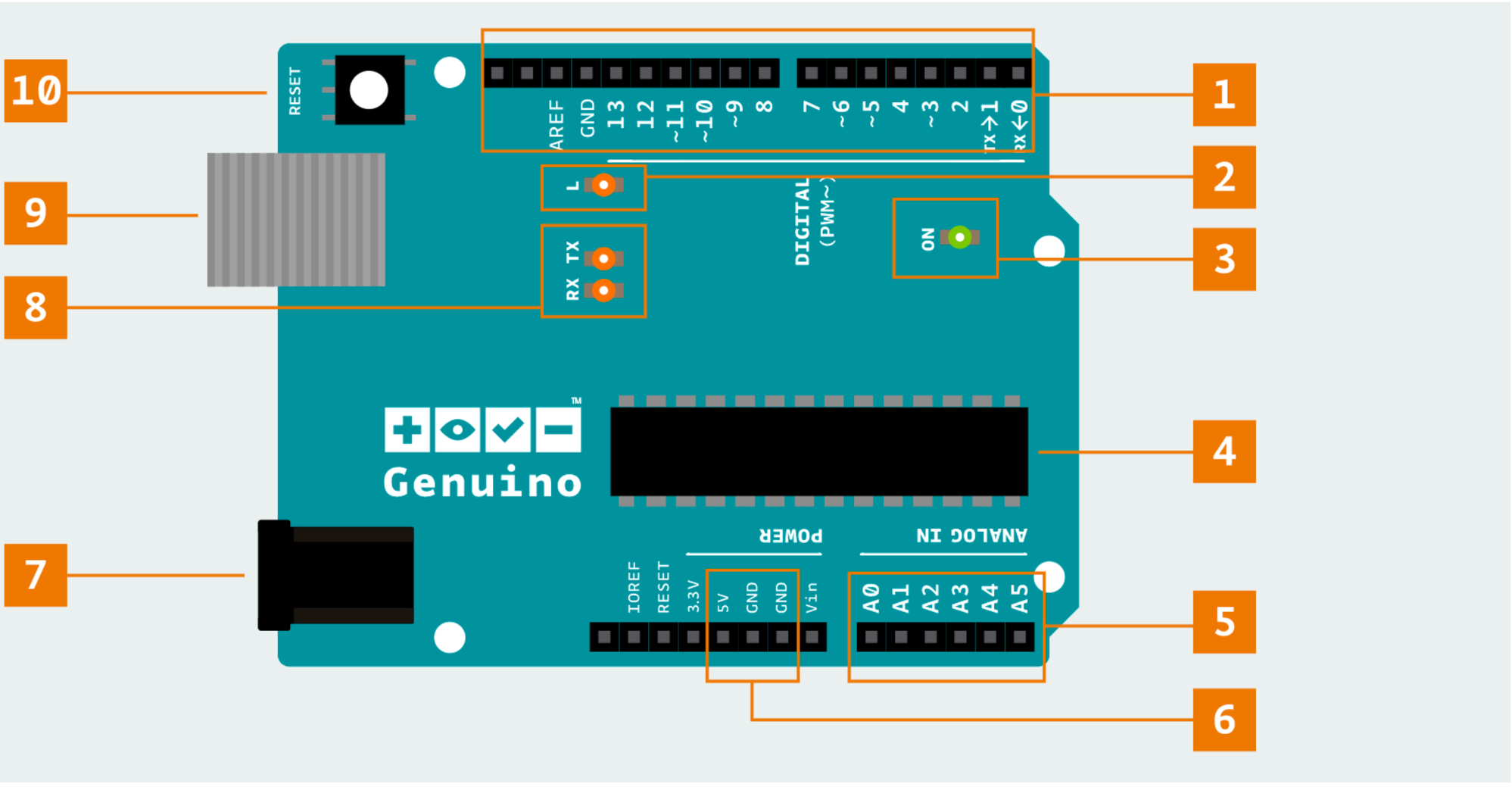


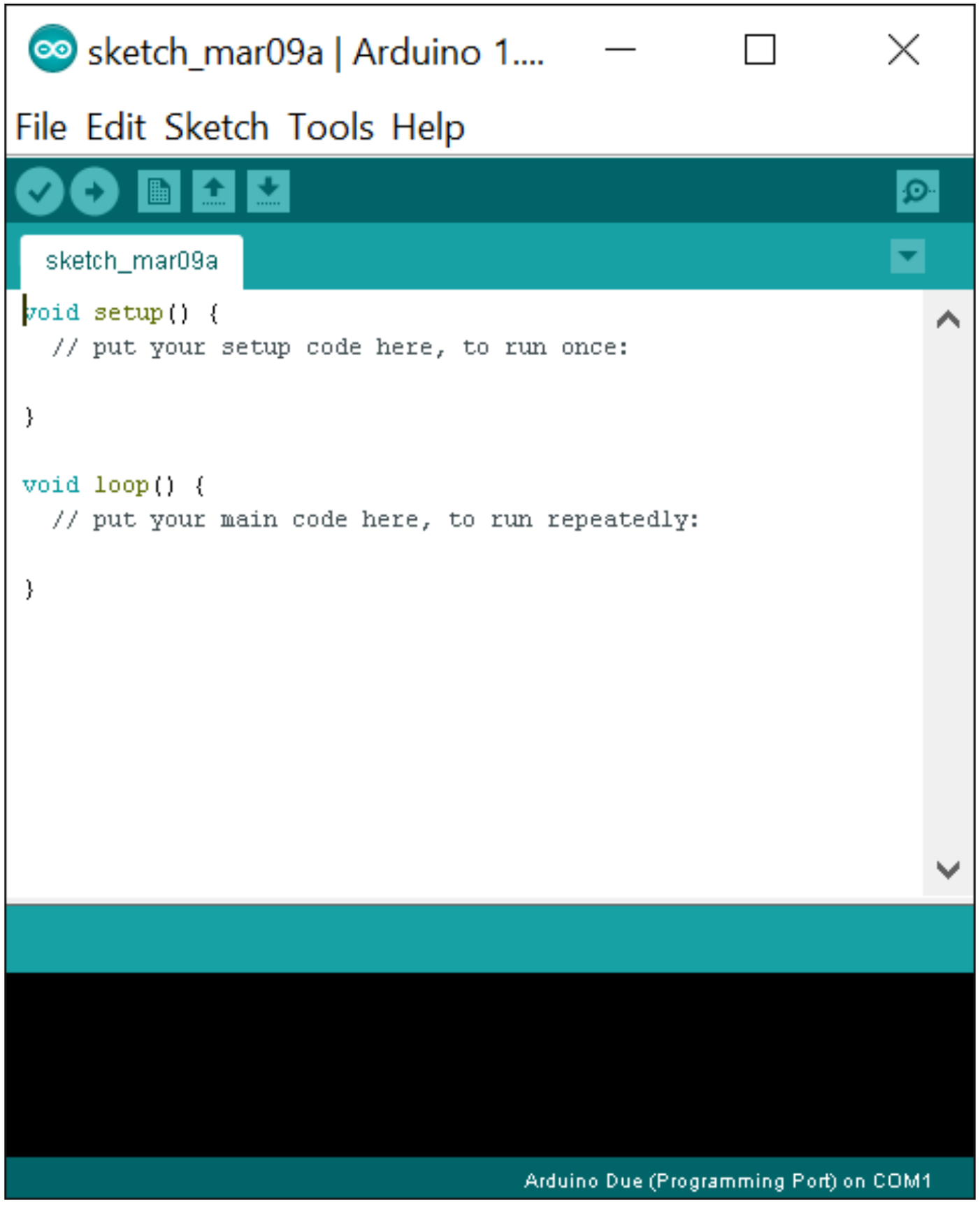






Board Layout

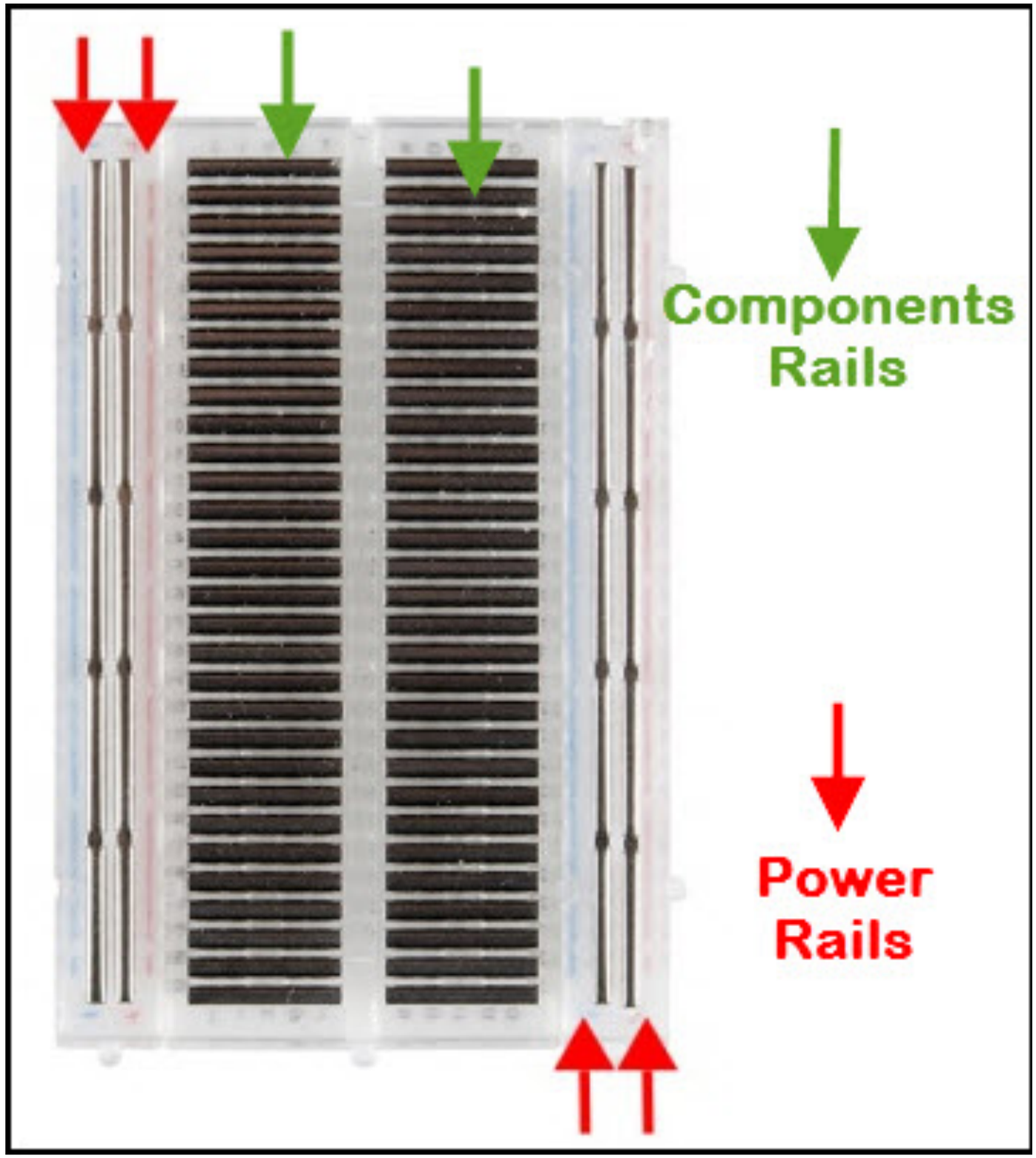


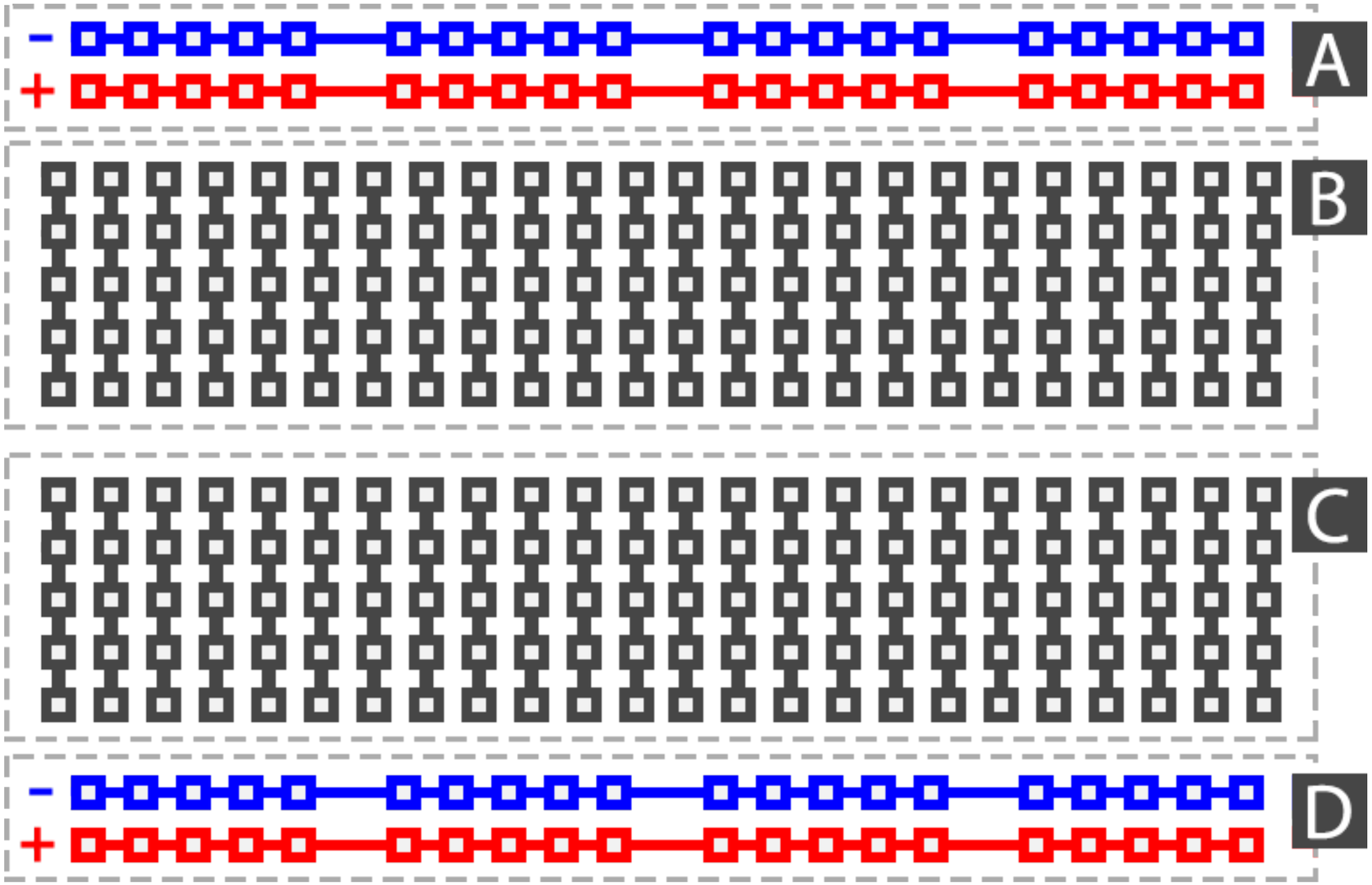

sketch_mar09a | Arduino 1....
File Edit Sketch Tools Help
sketch_mar09a
void setup() {
// put your setup code here, to run once:
}
void loop() {
// put your main code here, to run repeatedly:
}
Arduino Due (Programming Port) on COM1

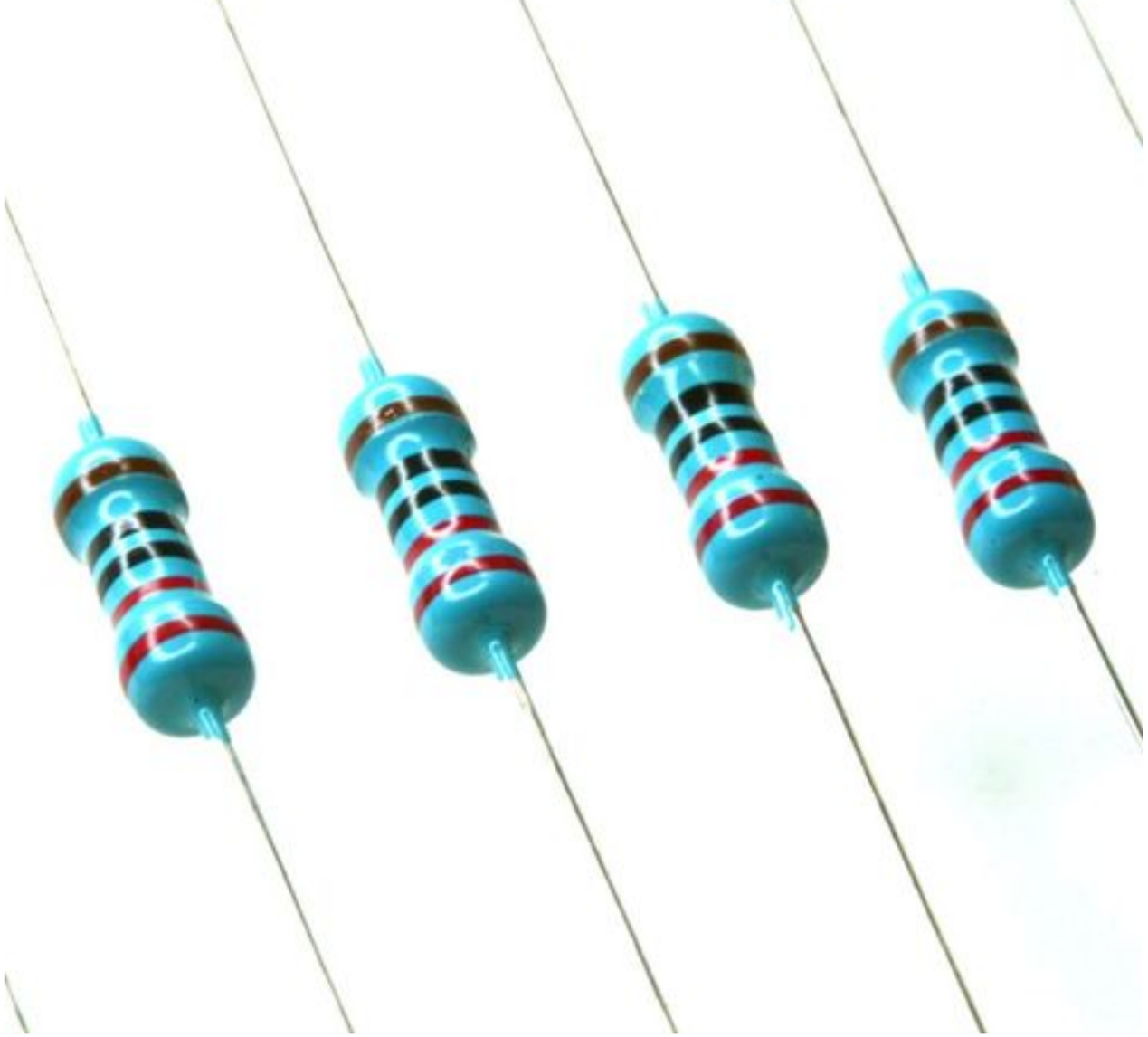
Hello World

Our first expample a.k.a. blink

Breadboard



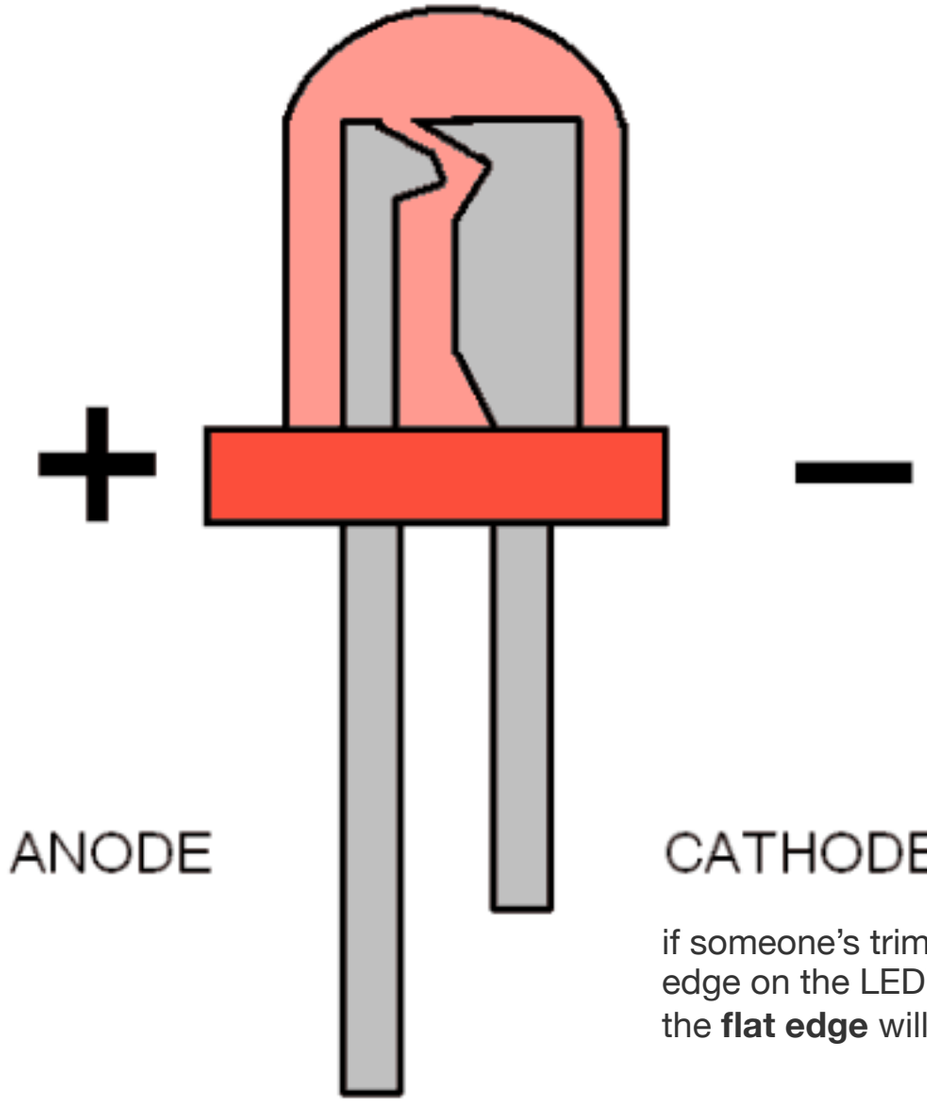

A
B
C
D



Resistors resist the flow of electricity and the higher the value of the resistor, the more it resists and the less electrical current will flow through it. We are going to use this to control how much electricity flows through the LED and therefore how brightly it shines.

https://learn.adafruit.com/adafruit-arduino-lesson-2-leds/resistors

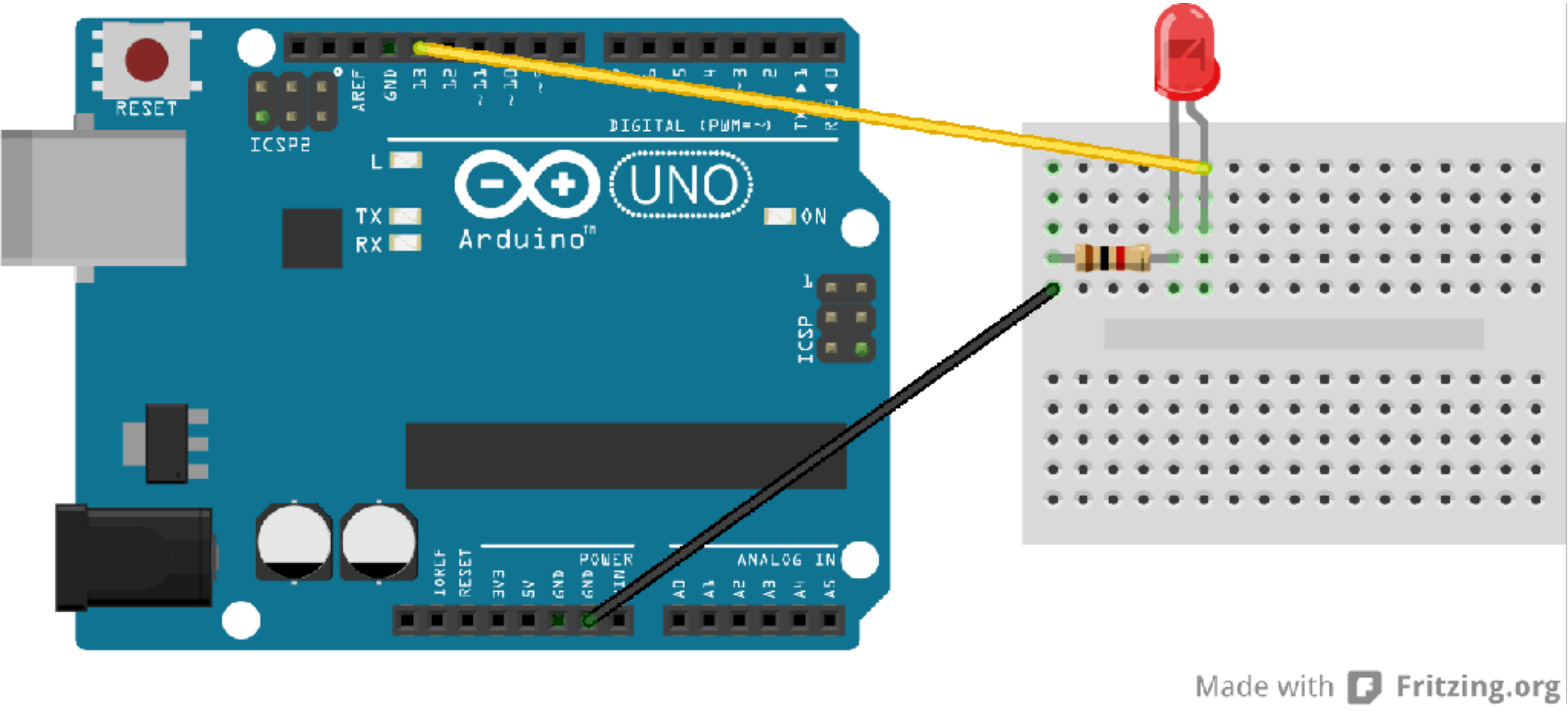
LED



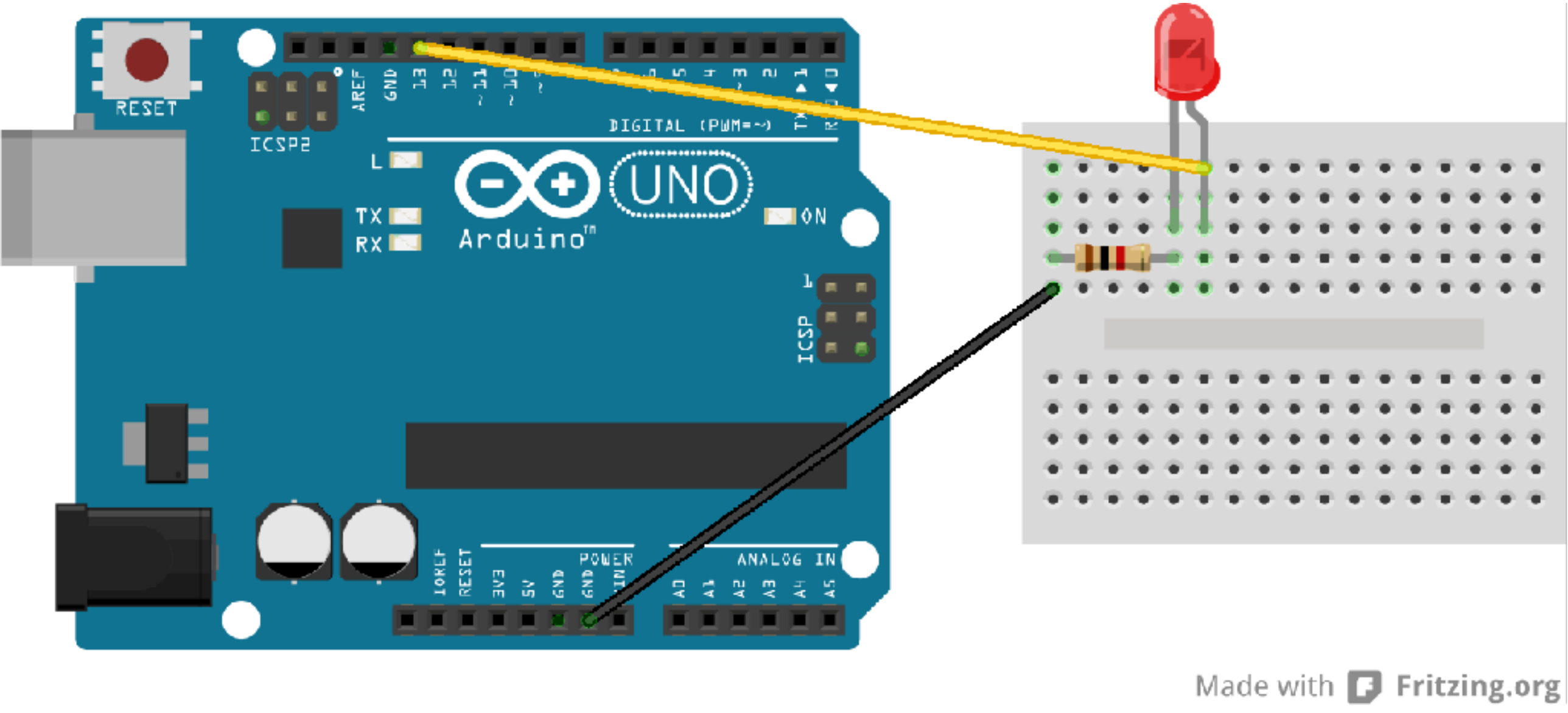
if someone's trimmed the legs, try finding the flat edge on the LED's outer casing. The pin nearest the **flat edge** will be the negative, cathode pin.

Diodes only allow current to flow in one direction, and they're *always* polarized. A diode has two terminals. The positive side is called the *anode*, and the negative one is called the *cathode*.

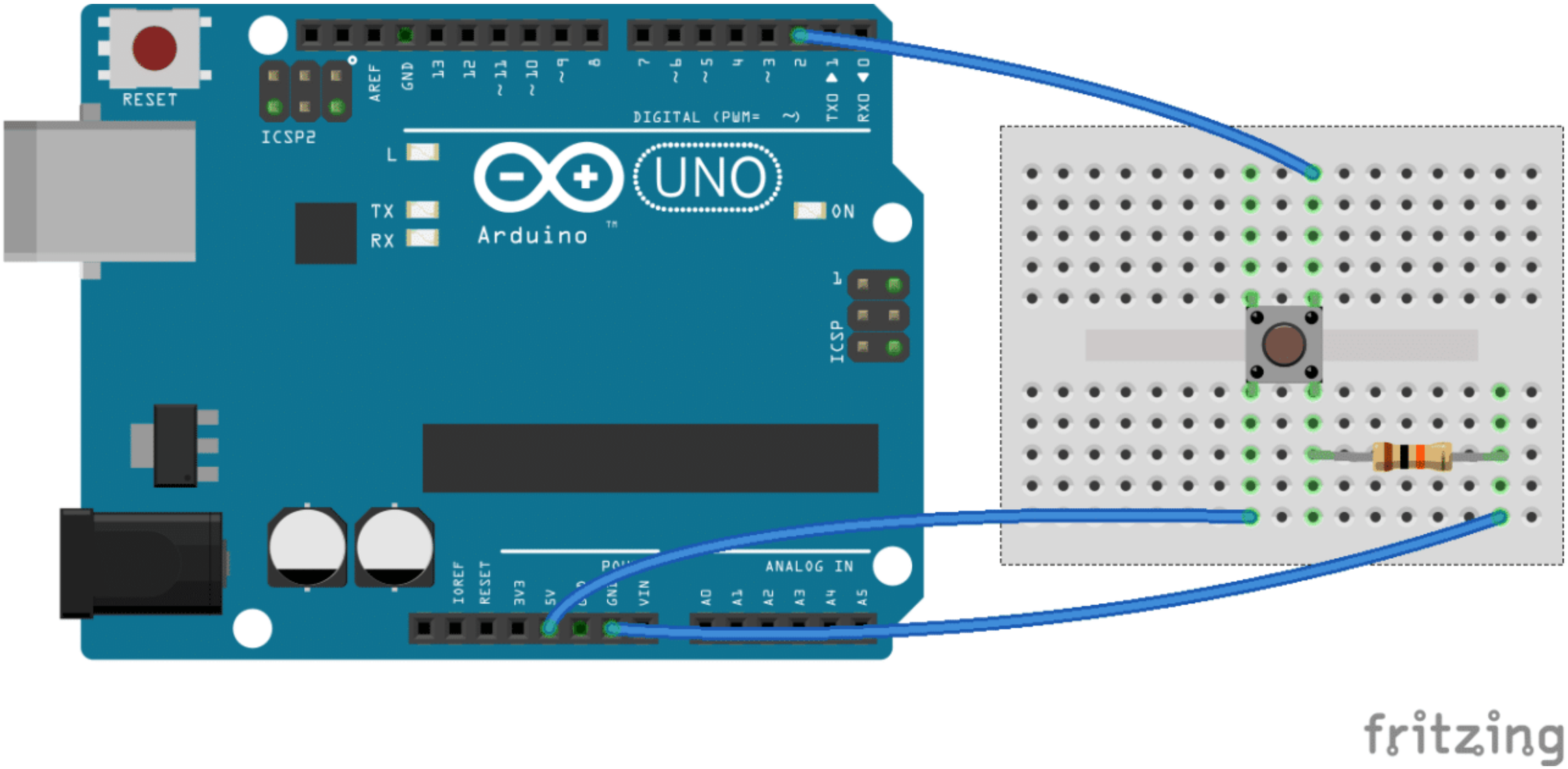
BLINK!


RESET
ICSP2
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
DIGITAL (PWM=~)
L
TX
RX
ON
UNO
Arduino™
ICSP
IOREF
RESET
3V3
5V
GND
GND
VIN
POWER
ANALOG IN
A0
A1
A2
A3
A4
A5
Made with Fritzing.org

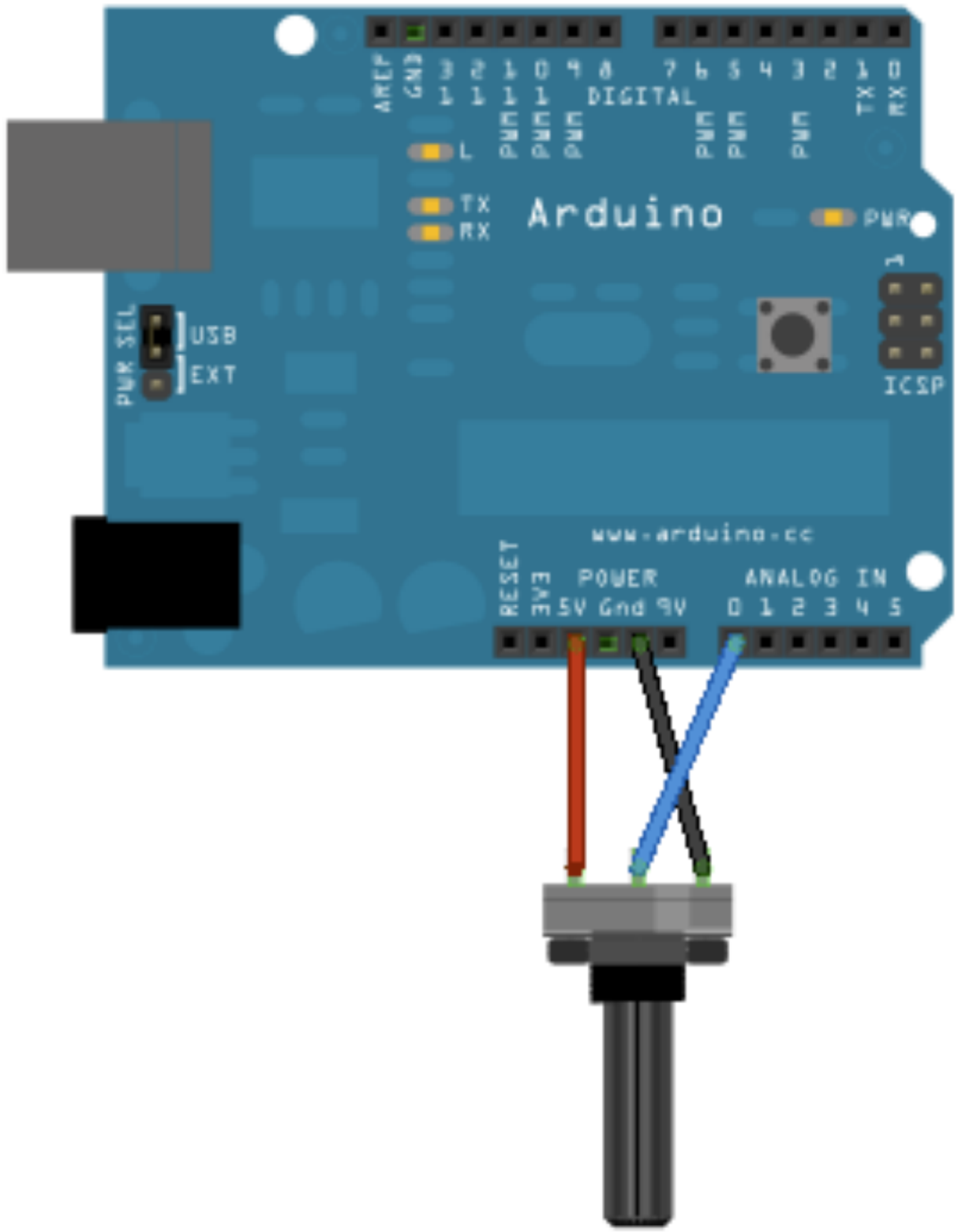
FADE - wait this is the same thing



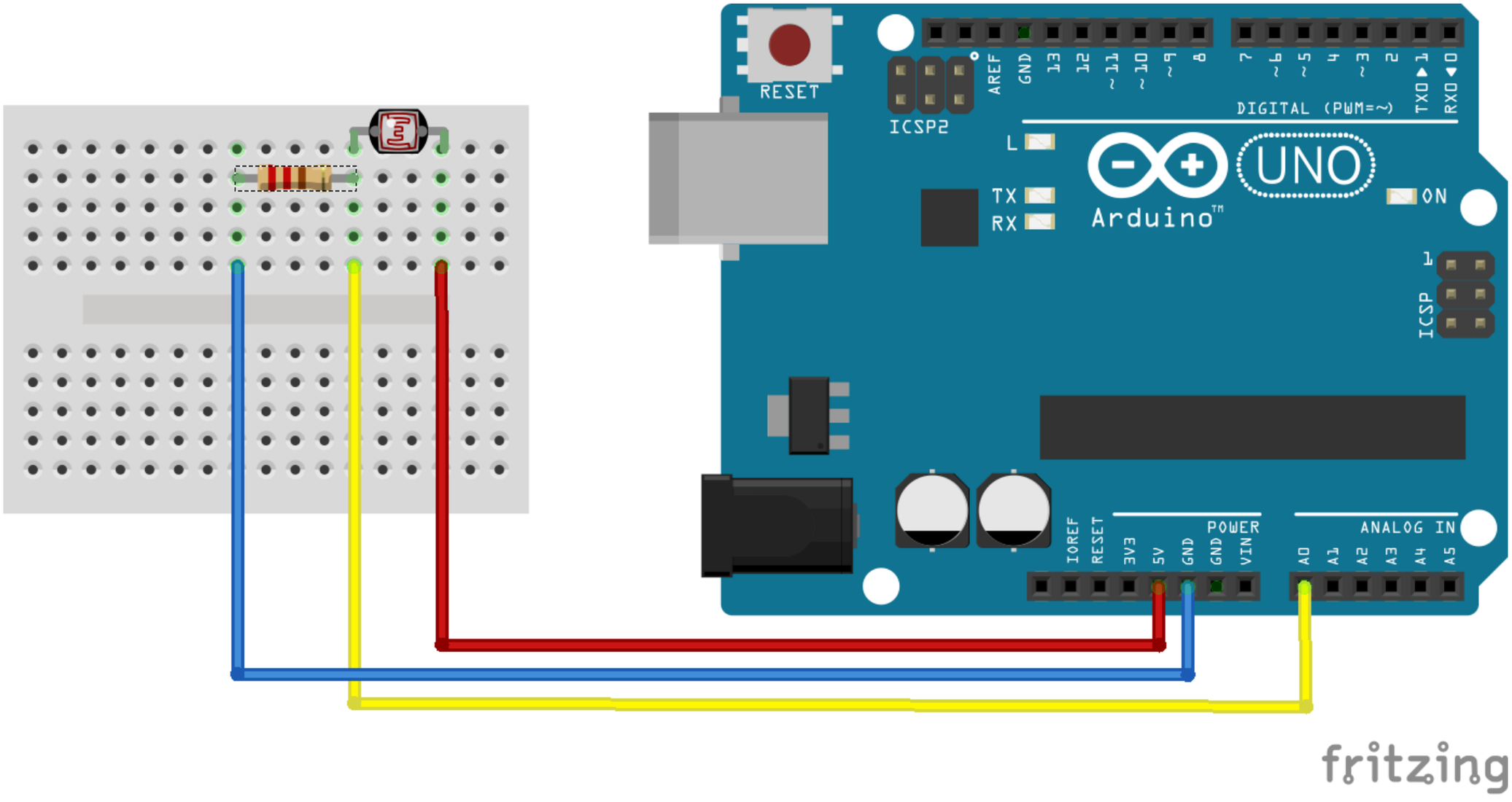
Push Button


RESET
ICSP2
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
DIGITAL (PWM=~)
L
TX
RX
ON
UNO
Arduino™
ICSP
IOREF
RESET
3V3
5V
GND
VIN
ANALOG IN
A0
A1
A2
A3
A4
A5
fritzing

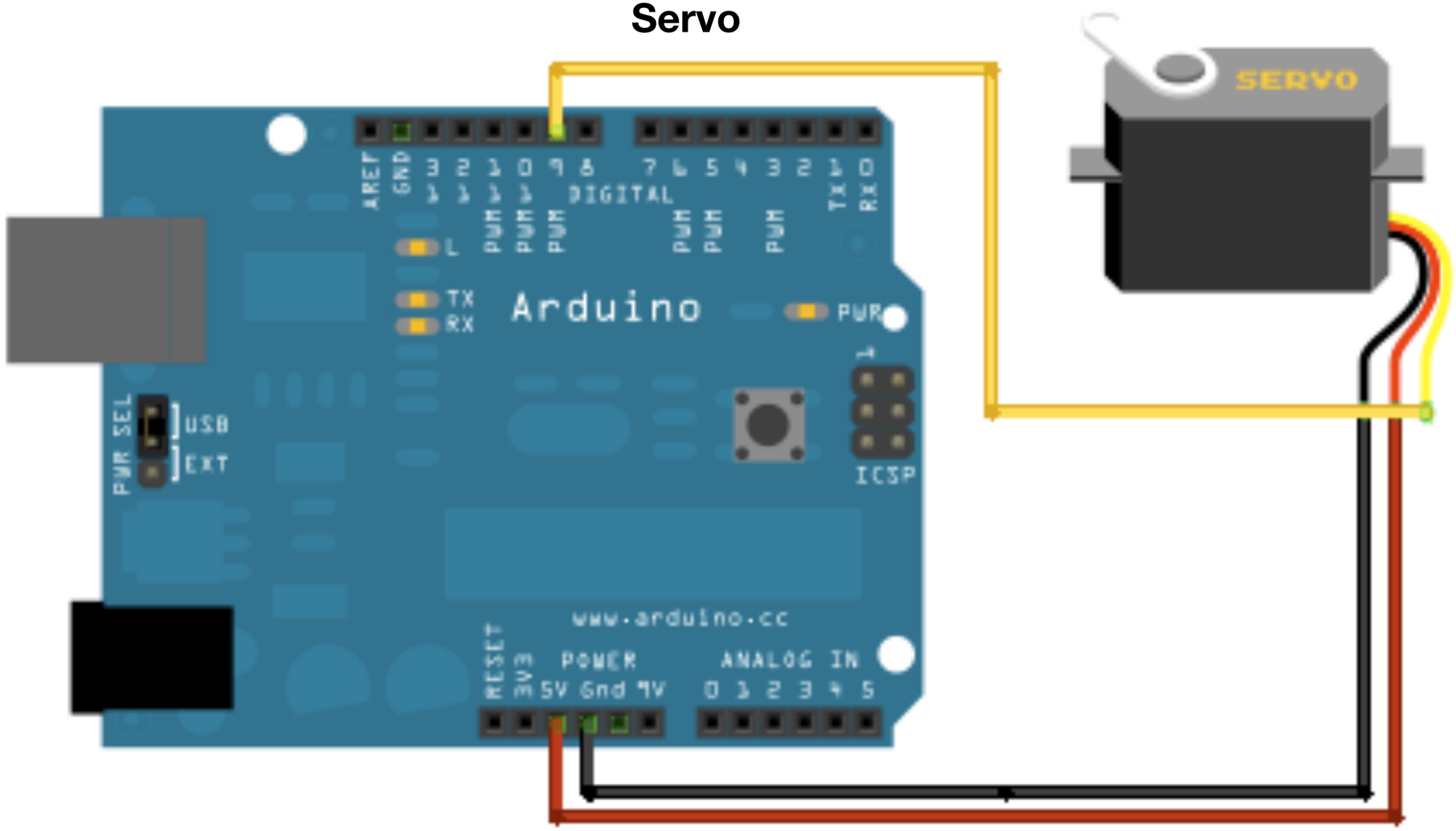
Potentiometer



Photoresistor

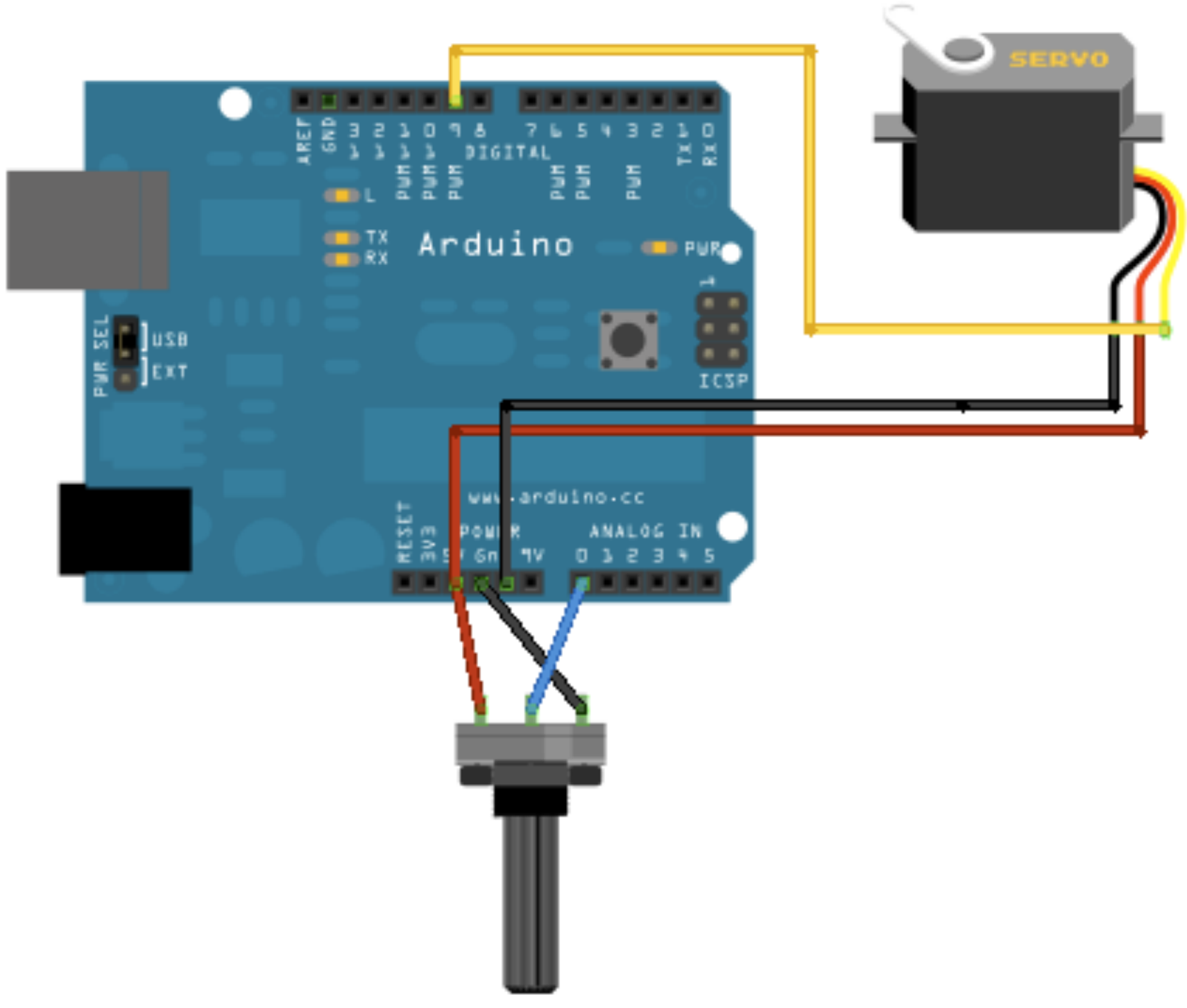


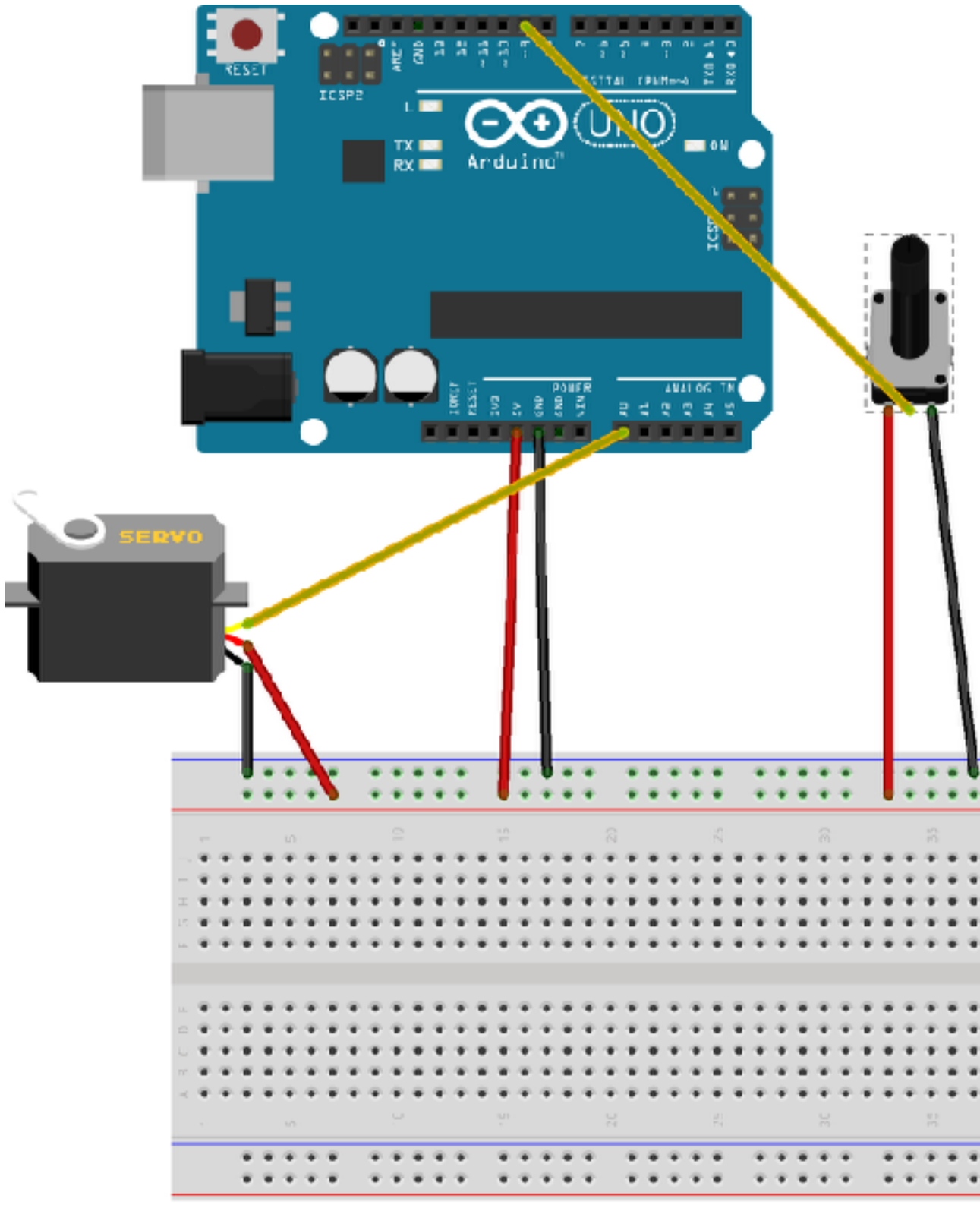
Servo



The power wire is typically red, and should be connected to the 5V pin on the Arduino board. The ground wire is typically black or brown and should be connected to a ground pin on the Arduino board. The signal pin is typically yellow, orange or white and should be connected to a digital pin on the Arduino board

Let’s combine input and output!





Let's take advantage
Of the power rails

Using a speaker