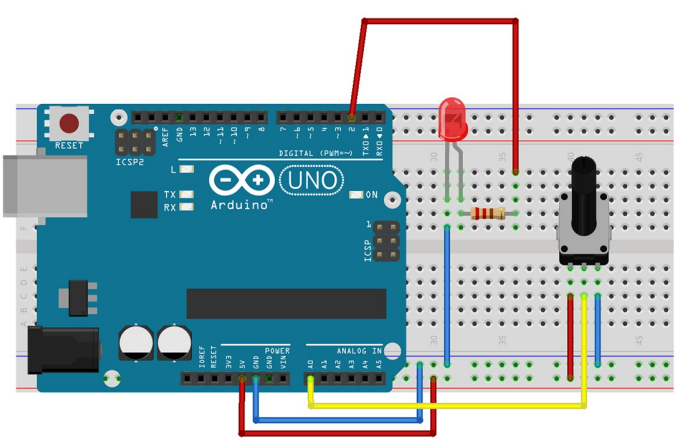
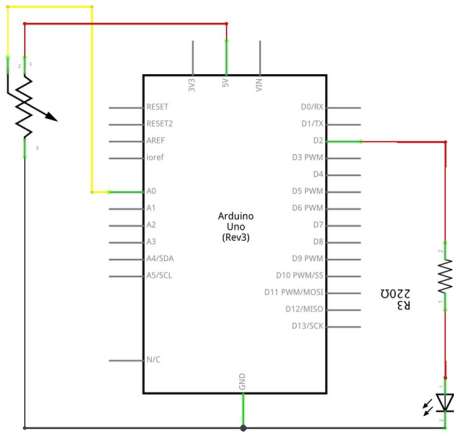
8a. Analog Sensors

The next sketch & electronics diagram demonstrates analog input by reading an analog sensor as a potentiometer (or trimpot) on analog pin 0 and turning on and off a LED connected to digital pin 2. The amount of time the LED will be on and off depends on the value obtained by `analogRead()`.

Circuit

- potentiometer: center pin of the potentiometer to the analog input 0, one side pin (either one) to ground, the other side pin to +5V
- LED: a 220Ω resister bridges digital output 2 to the anode (long leg) of the LED, the cathode (short leg) attached to ground.
  Actually the resistor can also go in between the cathode and ground as in a series circuit the order of components does not matter as the current has to pass through all the parts!





Code

```
int sensorPin = A0;   // select the input pin for the potentiometer
int ledPin = 2;      // select the pin for the LED
int sensorValue = 0;  // variable to store the value coming from the sensor

void setup() {
  // declare the ledPin as an OUTPUT
  pinMode(ledPin, OUTPUT);
  // there is no need to set our analog in pin
}

void loop() {
  // read the value from the sensor:
  sensorValue = analogRead(sensorPin);
  // turn the ledPin on
```

```
    digitalWrite(ledPin, HIGH);
    // stop the program for <sensorValue> milliseconds:
    delay(sensorValue);
    // turn the ledPin off:
    digitalWrite(ledPin, LOW);
    // stop the program for for <sensorValue> milliseconds:
    delay(sensorValue);
  }
```