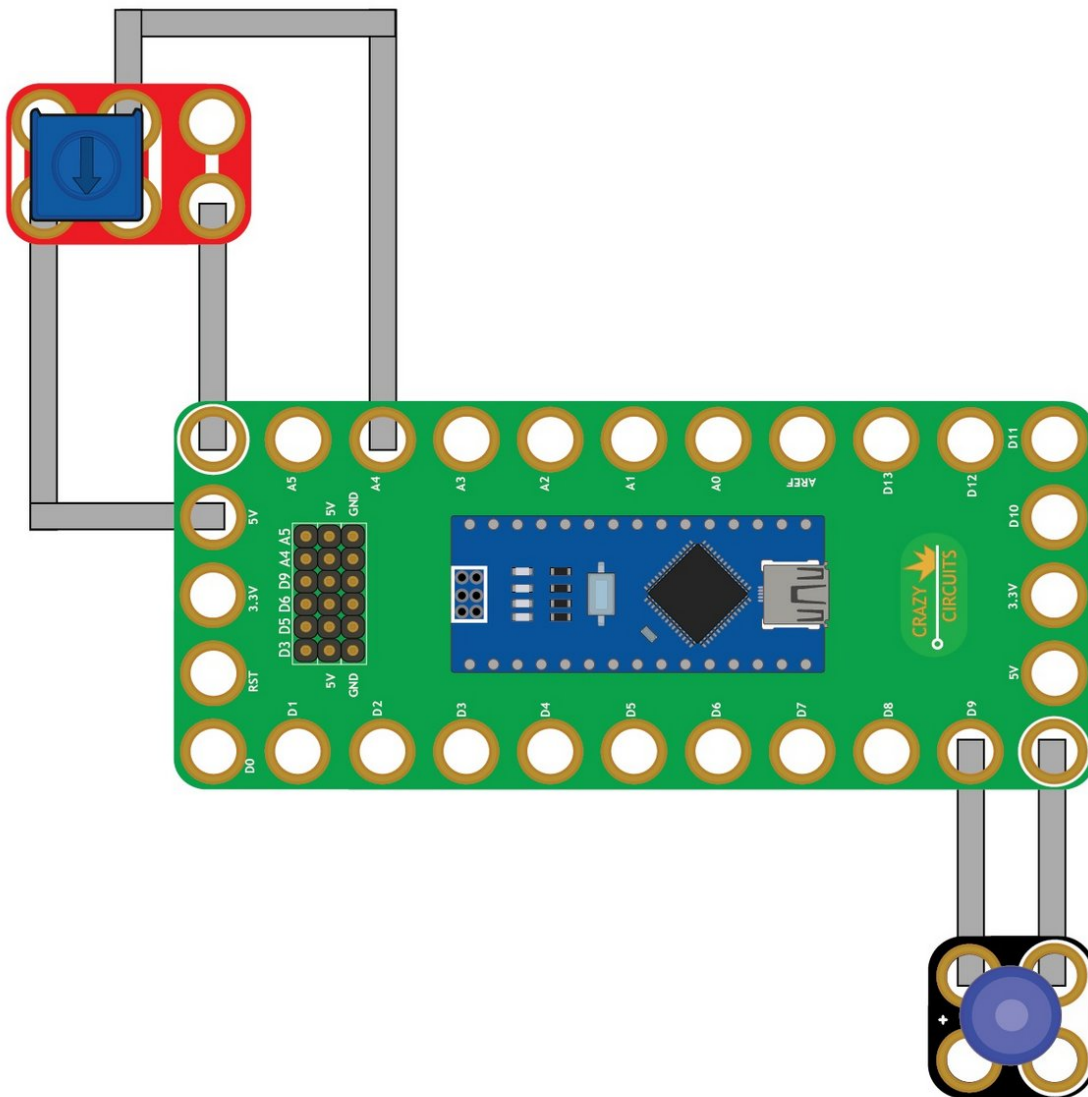




05 - Potentiometer with LED

Use our Programming 101 kit to control an LED with a potentiometer.

Written By: Pete Prodoehl



INTRODUCTION

Use our Robotics Board to control an LED with a potentiometer.



TOOLS:

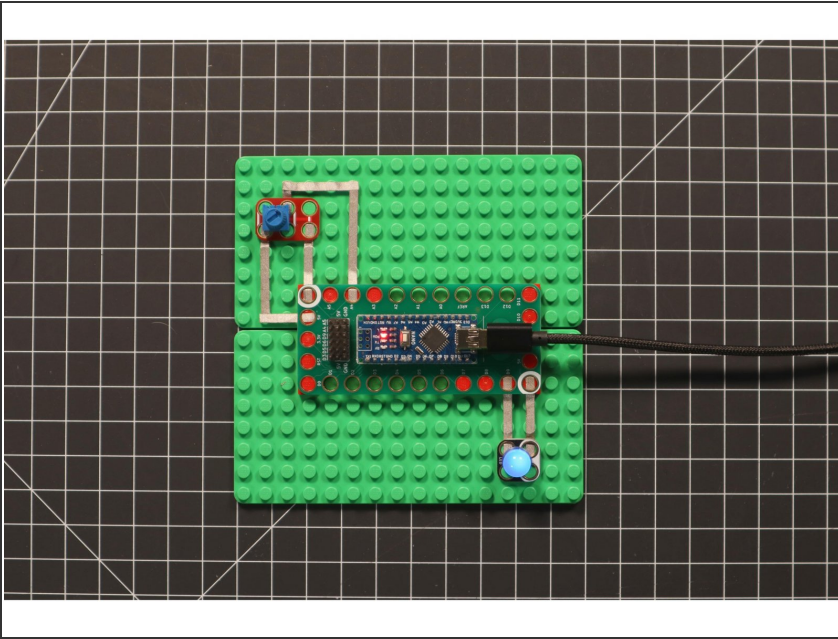
- [Scissors](#) (1)
- [Computer](#) (1)



PARTS:

- [Crazy Circuits Robotics Board](#) (1)
- [Crazy Circuits Potentiometer Chip](#) (1)
- [Crazy Circuits LED Chip](#) (1)
- [Maker Tape 1/8th inch](#) (1)

Step 1 — Build the Circuit



- Build the circuit as shown in the diagram using the components specified.

Step 2 — Upload the Code

```
Potentiometer_with_LED | Arduino 1.8.13

1 //
2 #include <Arduino.h>
3 #include <math.h>
4 #include <SPI.h>
5 #include <Wire.h>
6 //
7 //
8 //
9 //
10 // set variable name for an analog input pin
11 int PotentiometerPin = A0;
12 //
13 // set variable name to hold the input value
14 int PotentiometerValue;
15 //
16 // set variable name to hold the adjusted value
17 int PotentiometerValueMapped;
18 //
19 // set variable name for a digital output pin with Pulse Width Modulation
20 // pins 3, 5, 6, 9, 10, 11 support PWM
21 int LEDpin = 5;
22 //
23 //
24 // the setup runs once at the beginning of the sketch
25 void setup() {
26 //
27 // analog pins are set to input by default but
28 // we still need to set the LED pin for output
29 pinMode(LEDpin, OUTPUT);
30 //
31 }
32 //
33 // the loop runs forever after the setup is complete
34 void loop() {
35 //
36 // by default the analog pins are set as input
37 // so we don't need to specify that in setup
38 //
39 // assign the value of input using analogRead on the pin
40 PotentiometerValue = analogRead(PotentiometerPin);
41 //
42 // use the map function to set scale of 0-255 to scale of 0-1023
43 PotentiometerValueMapped = map(PotentiometerValue, 0, 1023, 0, 255);
44 //
45 // write the value between 0-255 to the PWM pin
46 analogWrite(LEDpin, PotentiometerValueMapped);
47 //
48 }
```

- Upload the Arduino sketch to the Robotics Board.
- You can find the code here:
<https://github.com/BrownDogGadgets/Progr...>