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INTRODUCTION

Connect a Crazy Circuits NeoPixel to a Bit Board and control it with code.

We'll explore how to control an RGB LED (a "NeoPixel") for a bit more color from our LEDs.



TOOLS:

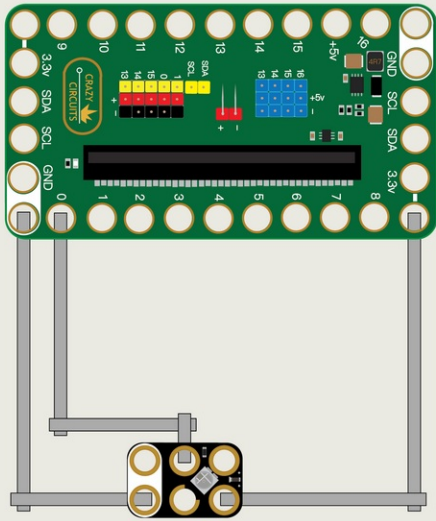
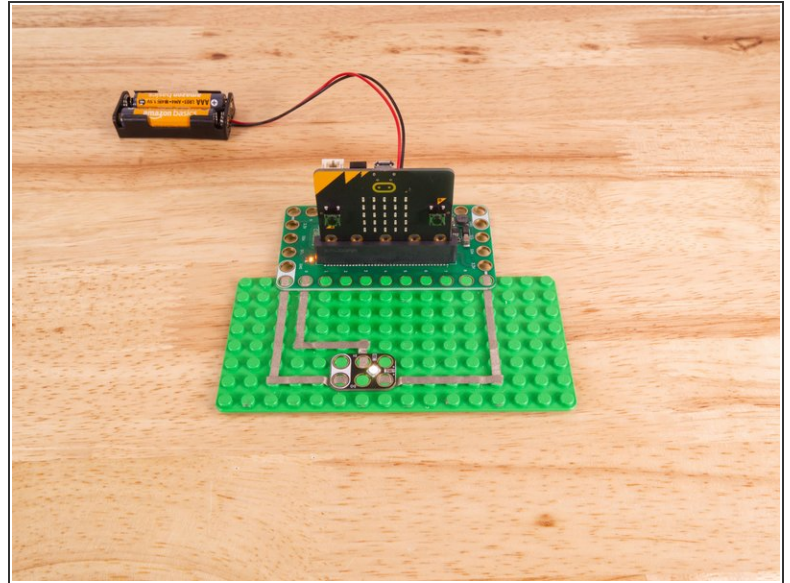
- [Computer](#) (1)
- [Scissors](#) (1)



PARTS:

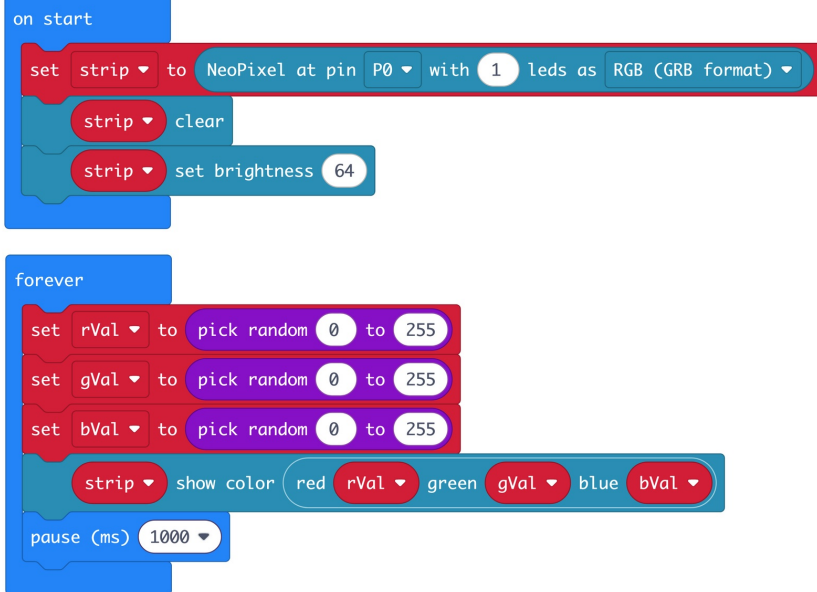
- [Crazy Circuits Bit Board](#) (1)
- [micro:bit](#) (1)
- [Maker Tape](#) (1)
1/8" Wide
- [NeoPixel Chip](#) (1)

Step 1 — Connect the NeoPixel



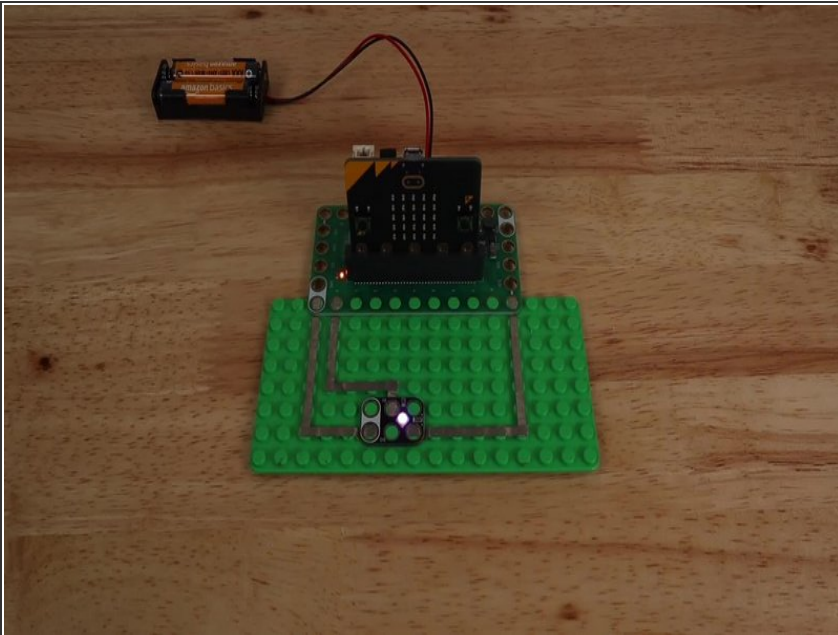
- We'll use **Maker Tape** to connect the NeoPixel to the Bit Board on a LEGO baseplate.
- To connect the NeoPixel, one side goes to **Ground** (GND) and the other side to **3.3v**
- We'll then connect the center pin labeled **DI** (for **Digital Input**) to **Pin 0**, which will control the NeoPixel.
 - A NeoPixel is a "Smart LED" which is actually three LEDs (a red, green, and blue LED).
- ☑ You'll notice the **Ground** on the Bit Board (as well as the NeoPixel and other Crazy Circuits components we'll use) is color coded **White**.
- ☑ The **3.3v** hole on the Bit Board is labeled and is actually two holes right next to each other on the Bit Board. (There is a small line showing the connection between them.)

Step 2 — Load the Code



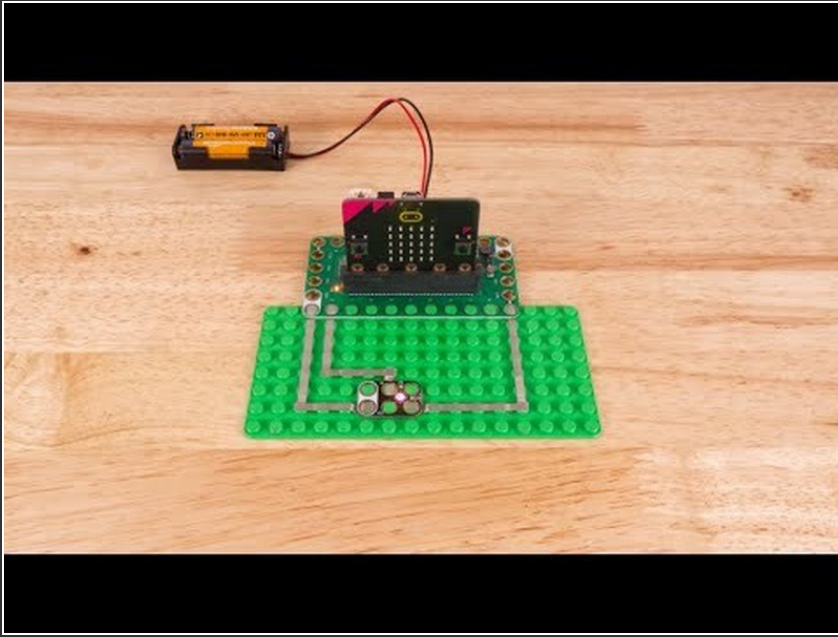
- If you've never used a micro:bit before you'll want to check out this guide: [Bit Board V2 Setup and Use](#)
- We're going to load the following code for our **NeoPixel Random** program:
https://makecode.microbit.org/_H80Mis7VF...
- After setting up our NeoPixel our code will generate three random numbers and then use those as the RGB values when setting the color shown.

Step 3 — Test it Out!



- Once the code is loaded it should start running immediately.
- ① You can power the micro:bit via the USB cable you used to load the code or you can use a battery pack plugged into the Bit Board.
- You'll see the NeoPixel cycle through various random colors.

Step 4 — Follow Along



- Follow along with our recorded Live Stream!
- ① You can watch the full video of us walking through this project, along with explaining and exploring the code:
<https://youtube.com/live/DL4SOdBmF5w>