CH17-A - Single CC NeoPixel RGB

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

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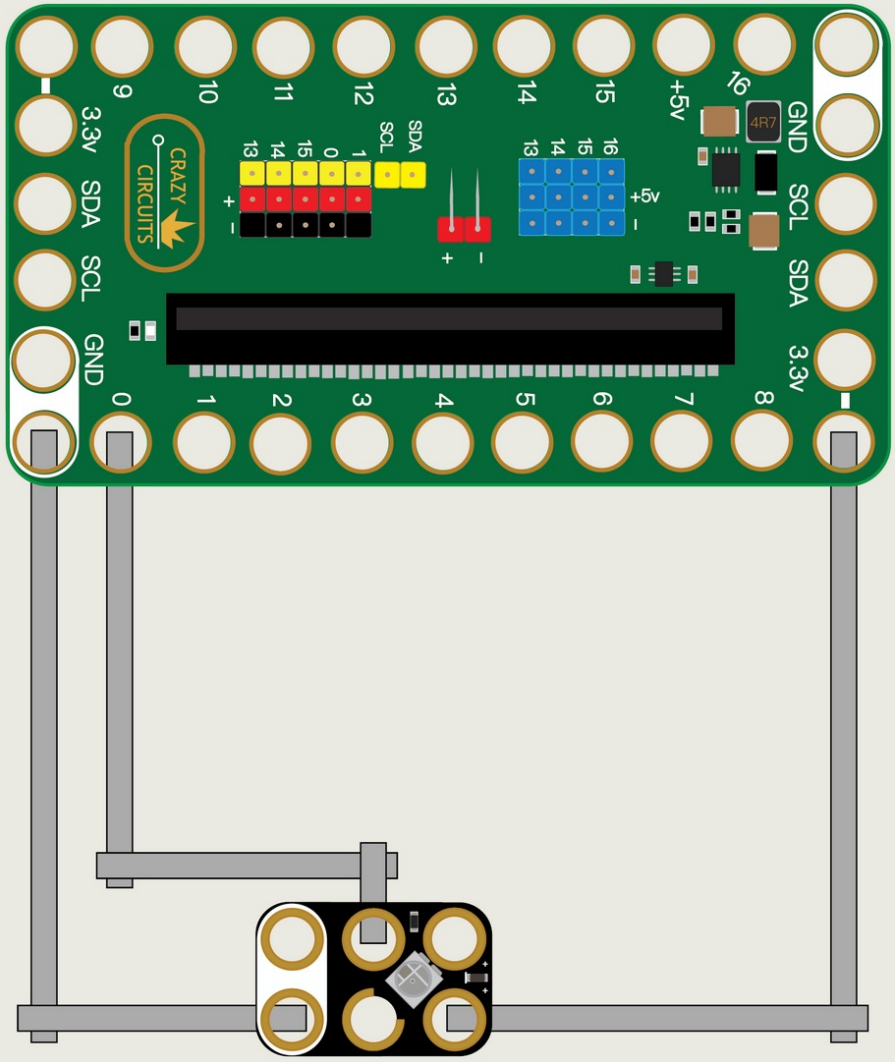


INTRODUCTION

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.

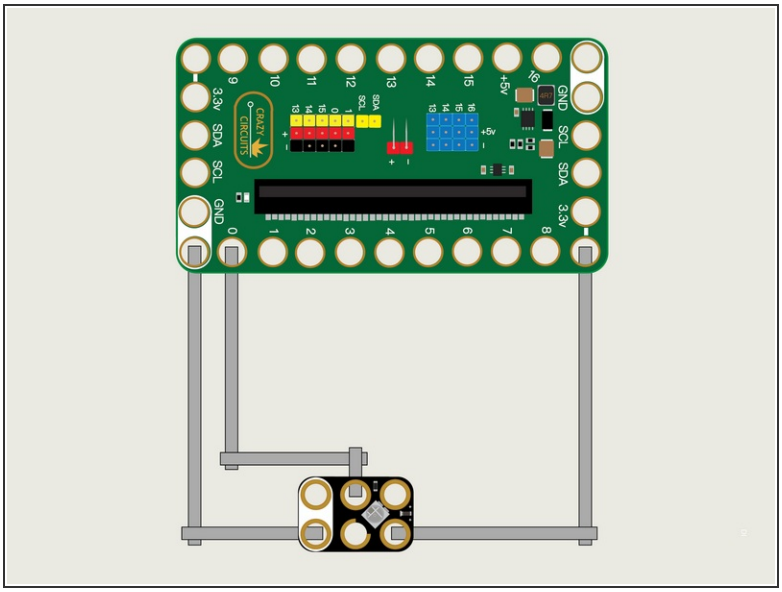
TOOLS:

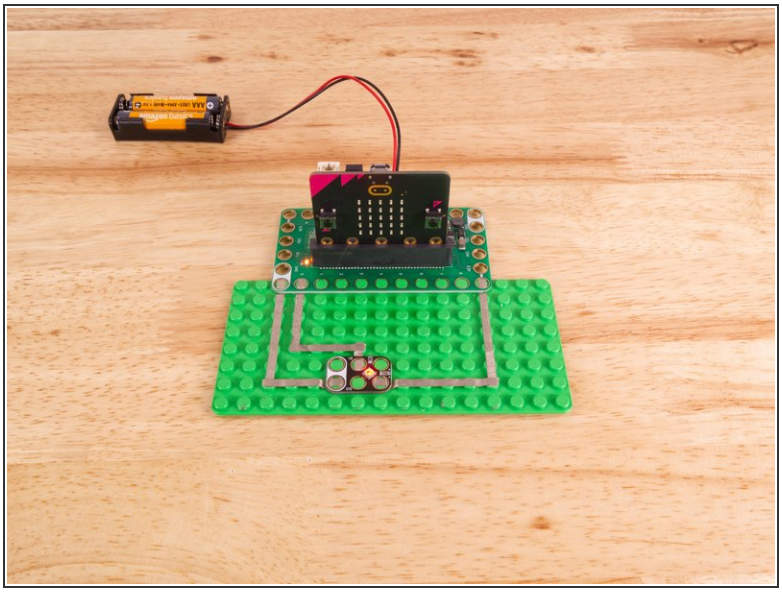
- Computer (1)
- Scissors (1)

PARTS:

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

Step 1 — Connect the NeoPixel



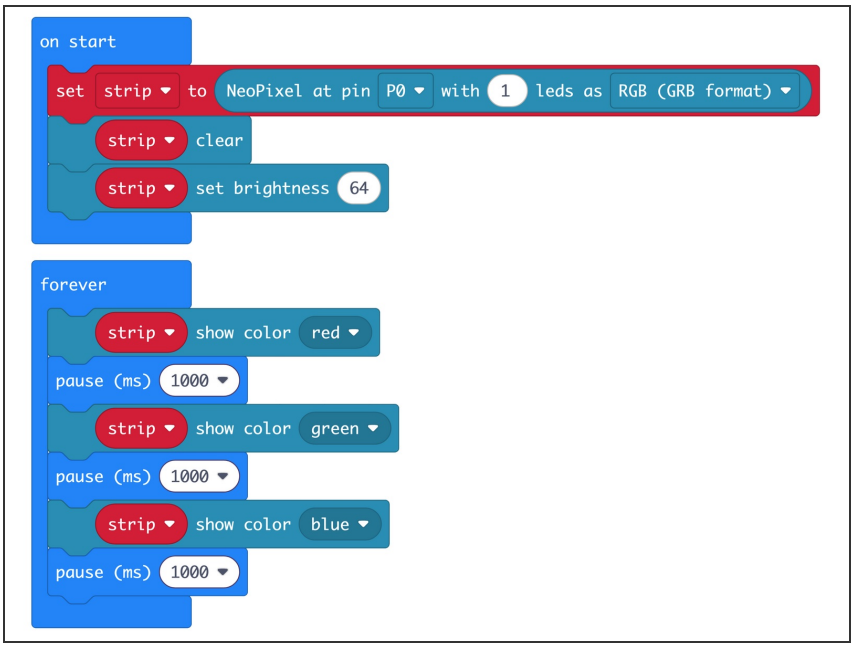


- We'll use **Maker Tape** to connect the NeoPixel to the Bit Board on a LEGO baseplate.
- To connect the NeoPixel, one side goes to **Ground** (GND) and the other side to **3.3v**
- We'll then connect the center pin labeled **DI** (for **Digital Input**) to **Pin 0**, which will control the NeoPixel.
  - 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**.

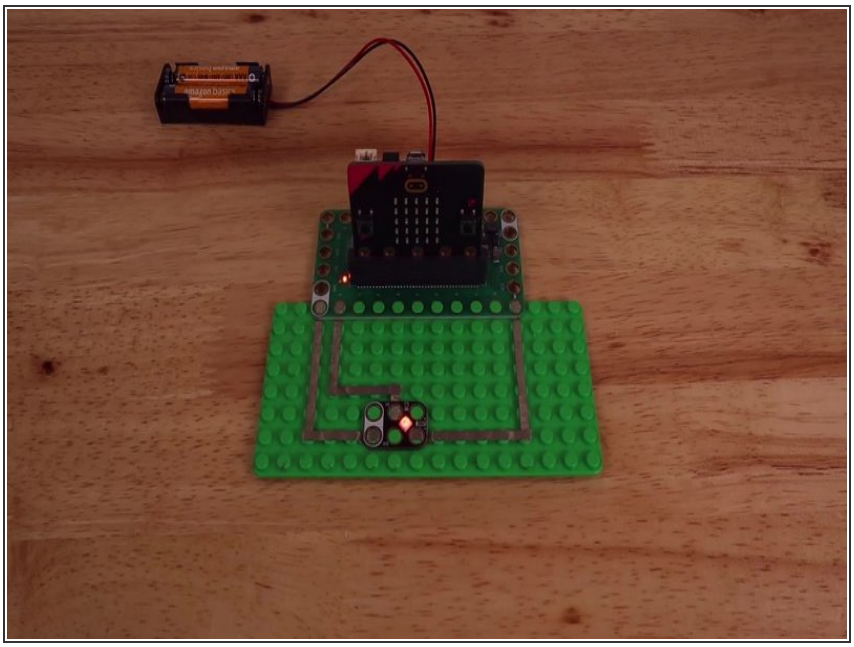
☑ The **3.3v** hole on the Bit Board is labeled and is actually two holes right next to each other on the Bit Board. (There is a small line showing the connection between them.)

Step 2 — Load the Code



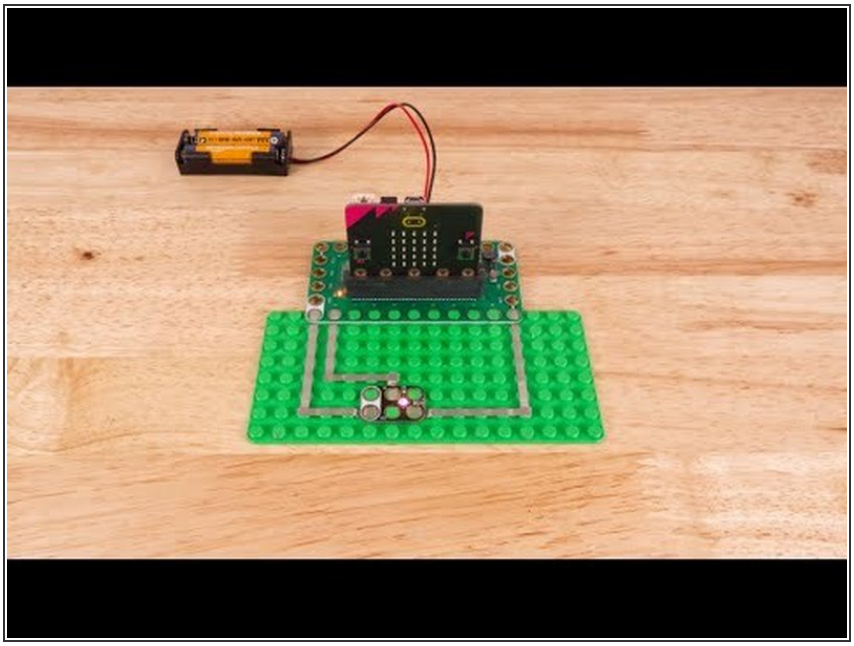
- If you've never used a micro:bit before you'll want to check out this guide: Bit Board V2 Setup and Use
- We're going to load the following code for our **NeoPixel RGB** program: https://makecode.microbit.org/_8YbArTcCX...
- The NeoPixel extension allows us to control the NeoPixel. In this example we'll just set it up and set it to different colors; red, then green, then blue.

Step 3 — Test it Out!



- Once the code is loaded it should start running immediately.
- ⓘ 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 red, green, and blue in a loop, pausing one second after each color change.

Step 4 — Follow Along



- Follow along with our recorded Live Stream!

ⓘ You can watch the full video of us walking through this project, along with explaining and exploring the code: https://youtube.com/live/DL4SOdBmF5w