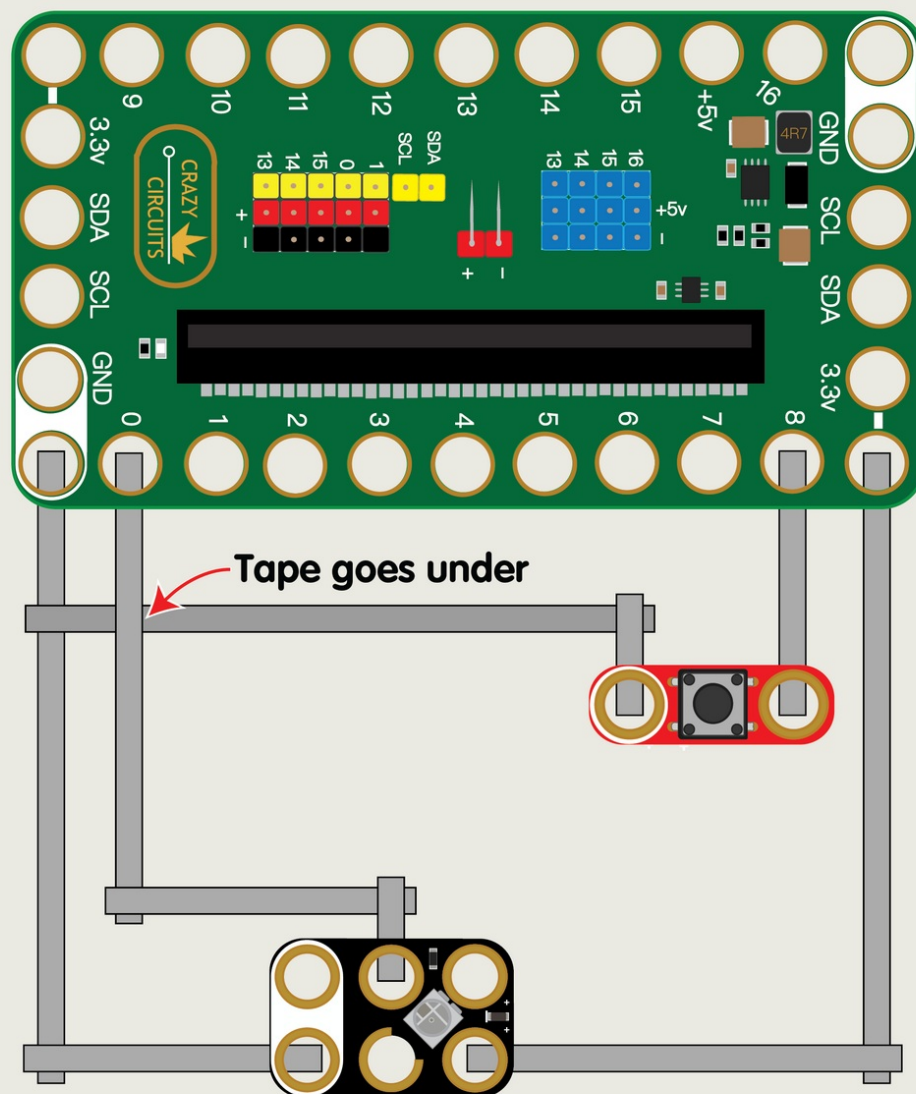




# CH18-A - NeoPixel Button RGB

Connect a Crazy Circuits NeoPixel and a Push Button to a Bit Board and control them with code.

Written By: Pete Prodoehl



# INTRODUCTION

Connect a Crazy Circuits NeoPixel and a Push Button to a Bit Board and control them with code.

We'll explore how to control an RGB LED (a "NeoPixel") using a push button.



## TOOLS:

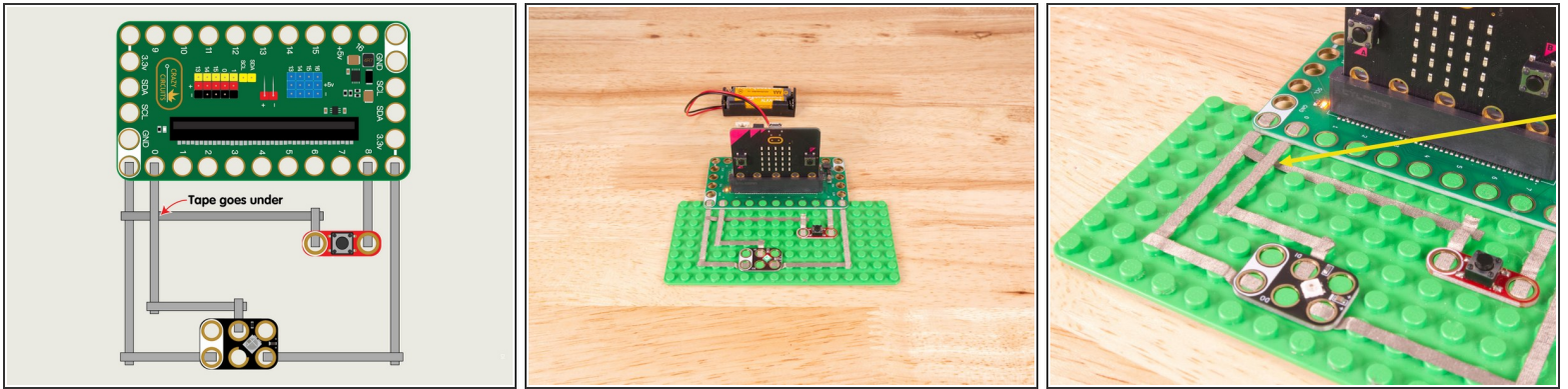
- [Computer](#) (1)
- [Scissors](#) (1)



## PARTS:

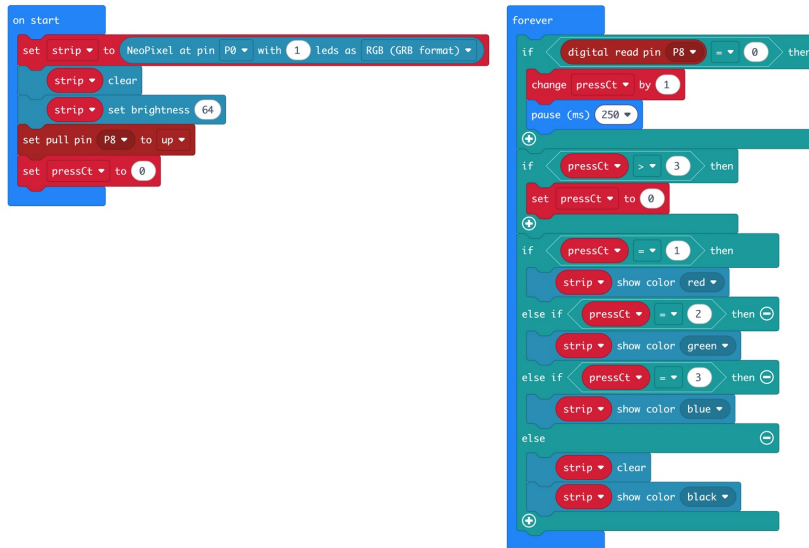
- [Crazy Circuits Bit Board](#) (1)
- [micro:bit](#) (1)
- [Maker Tape](#) (1)  
1/8" Wide
- [NeoPixel Chip](#) (1)
- [Standard Pushbutton Chip](#) (1)

## Step 1 — Connect the NeoPixel and Button



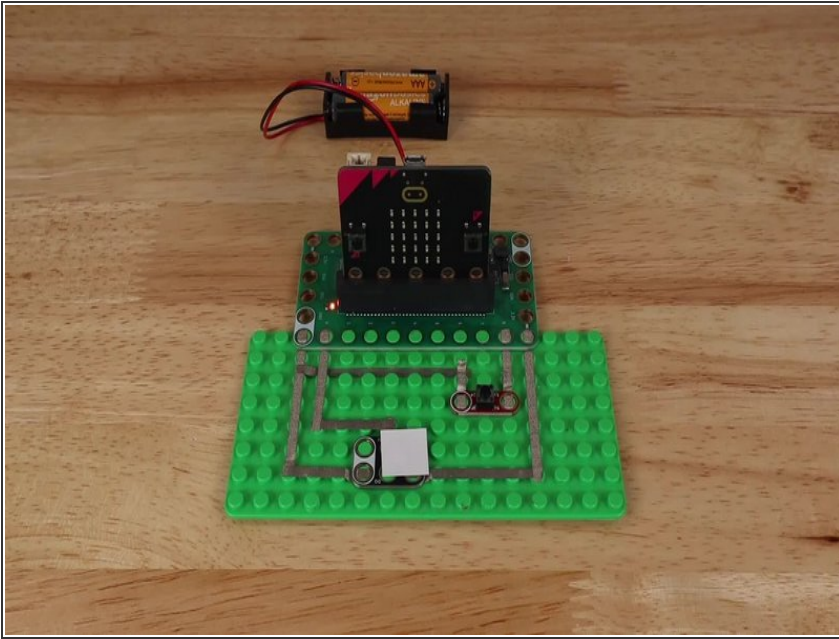
- We'll use **Maker Tape** to connect the NeoPixel and the Button to the Bit Board on a LEGO baseplate.
- We'll connect our **Button** to **Pin 8** and to **Ground** (GND) **BUT!** We're going to use the "gutter" between the LEGO baseplate studs so we can have **two layers of tape** that do not touch.
  - See the photos to show how this works. It's a technique we'll use for certain projects. It can also be used when you're tight on space for tape paths.
- Once the Button is connected we'll need 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. *Run the tape on top of the studs so it does not touch the tape connected to the Button.*
- ☑ 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



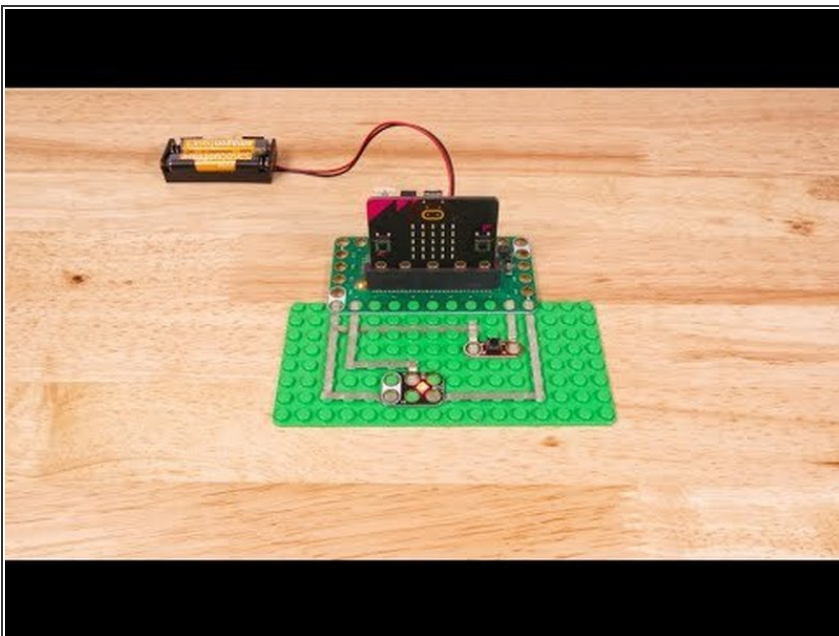
- If you've never used a micro:bit before you'll want to check out this guide: [Bit Board V2 Setup and Use](#)
- We're going to load the following code for our **NeoPixel Button RGB** program: [https://makecode.microbit.org/\\_CTFMg4DD9...](https://makecode.microbit.org/_CTFMg4DD9...)
- We'll use the Button to cycle through different colors by keeping track of the number of presses.
- ⓘ Notice in the else of our if/then block we make the NeoPixel "black" which is just shorthand for "turn it off".

## 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.
- Press and release the Button and it will change color each time.
- Try holding down the button, it should cycle through the colors continuously.
- ⚠ We've added a small piece of paper on top of the NeoPixel so you can see it better in video.

## 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/9q4F1wQKCTs>

