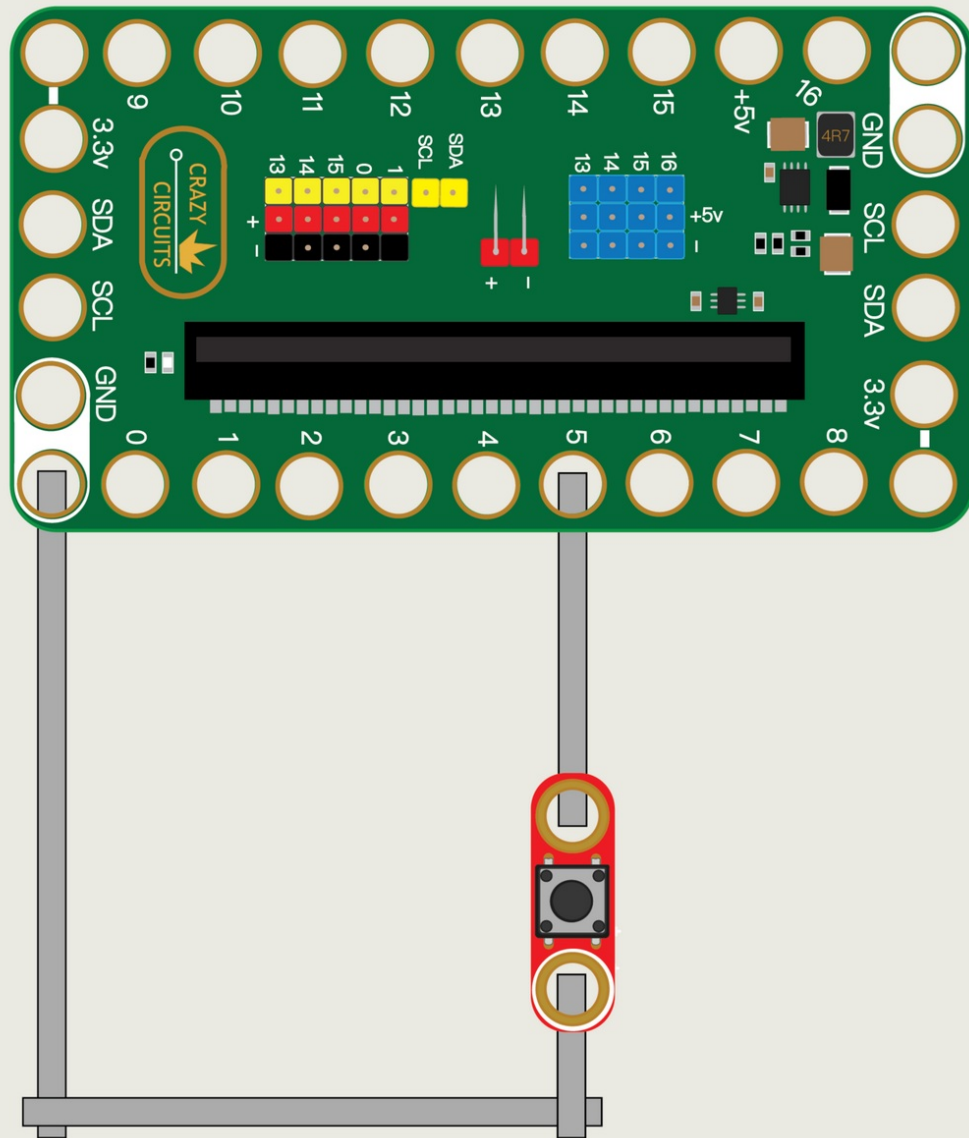




# CH9-C - LED Matrix Counter Button V3

Program the built-in LED Matrix found on the micro:bit and control it with a pushbutton.

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# INTRODUCTION

Program the built-in LED Matrix found on the micro:bit and control it with a pushbutton.

We'll explore how we can control the LED Matrix with a single pushbutton.



## TOOLS:

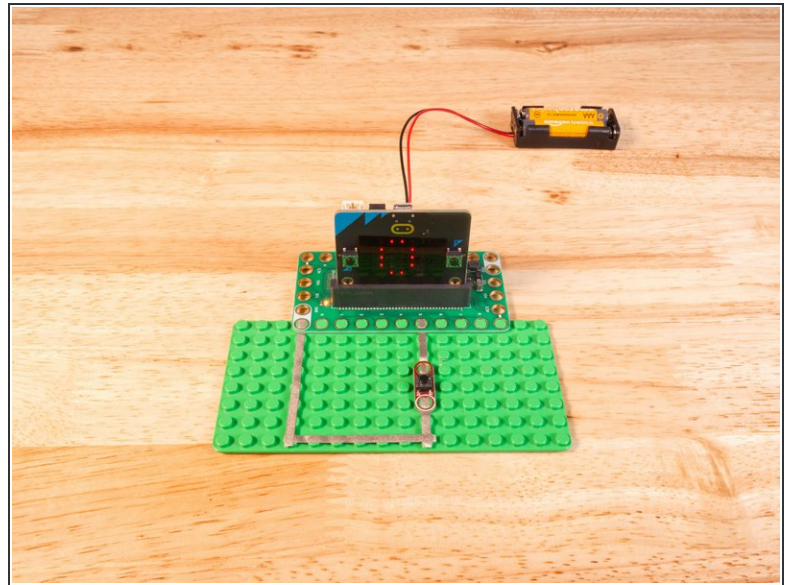
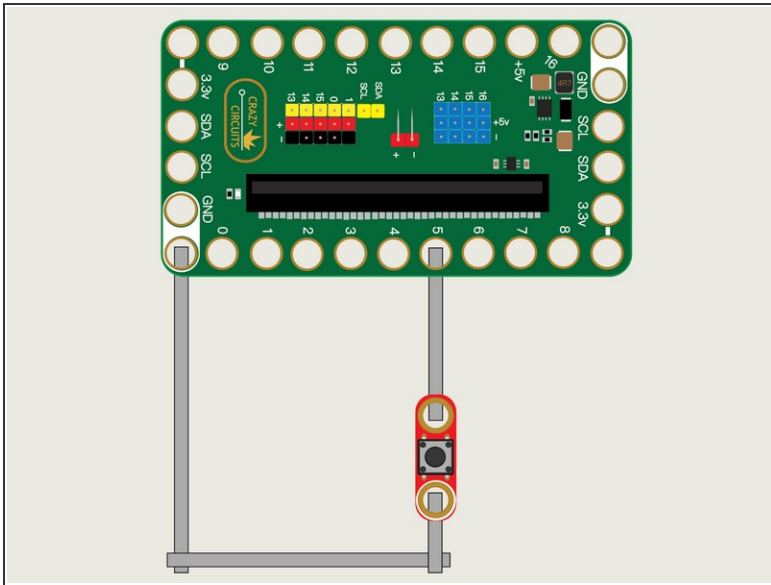
- [Computer](#) (1)
- [Scissors](#) (1)



## PARTS:

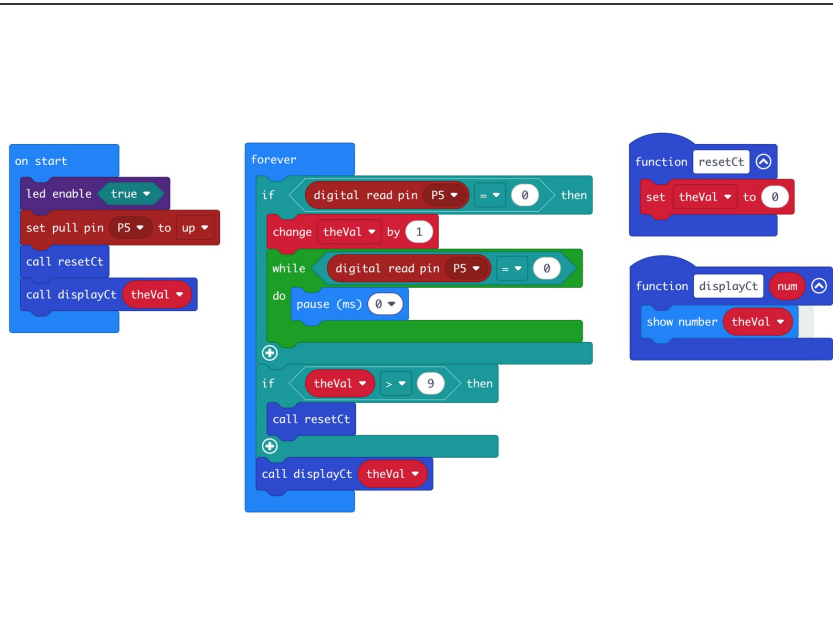
- [Crazy Circuits Bit Board](#) (1)
- [micro:bit](#) (1)
- [Maker Tape](#) (1)  
1/8" Wide
- [Standard Pushbutton Chip](#) (1)

## Step 1 — Connect the Button



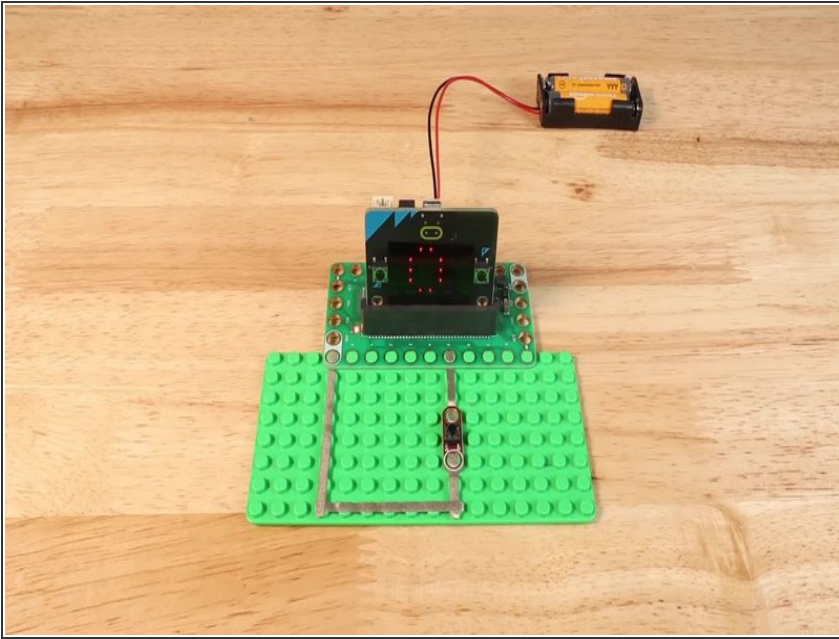
- We'll use **Maker Tape** to connect the Button to the Bit Board on a LEGO baseplate.
- We'll connect our **Button** to **Pin 5** and to **Ground (GND)**.
- ☑ You'll notice the **Ground** on the Bit Board (as well as the LED and other Crazy Circuits components we'll use) is color coded **White**.
- ☑ While some components have **Polarity** our **Button** does not. If you connect it the other way around *it will still work fine*.

## Step 2 — Load the Code



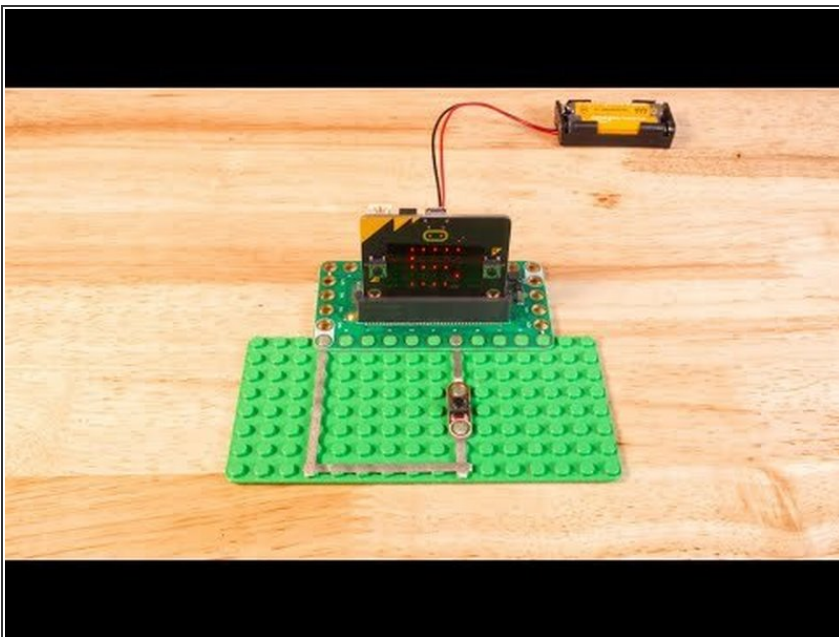
- If you've never used a micro:bit before you'll want to check out this guide: [Bit Board V2 Setup and Use](#)
- We're going to load the following code for our **LED Matrix Counter Button V3** program: [https://makecode.microbit.org/\\_DkH9Yj1aD...](https://makecode.microbit.org/_DkH9Yj1aD...)
- Our code will change the number displayed on the LED Matrix when the button is pressed.
- If the button is pressed *more than 9* times the count will be reset to **0**.
- ① While the micro:bit **can** display two-digit numbers they scroll horizontally across the screen, making them difficult to read.
- For this version we've simplified the code a bit and have added **functions** for resetting the count and displaying the count.

### 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.
- The LED Matrix will show **0**, and with each button press the number will increase by one.
- Try holding down the button... this time the number will not keep incrementing!
- ❗ While we tried to simplify the code for this one, it seems the least reliable at catching button presses.

### 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/geFYVuV-DI8>

