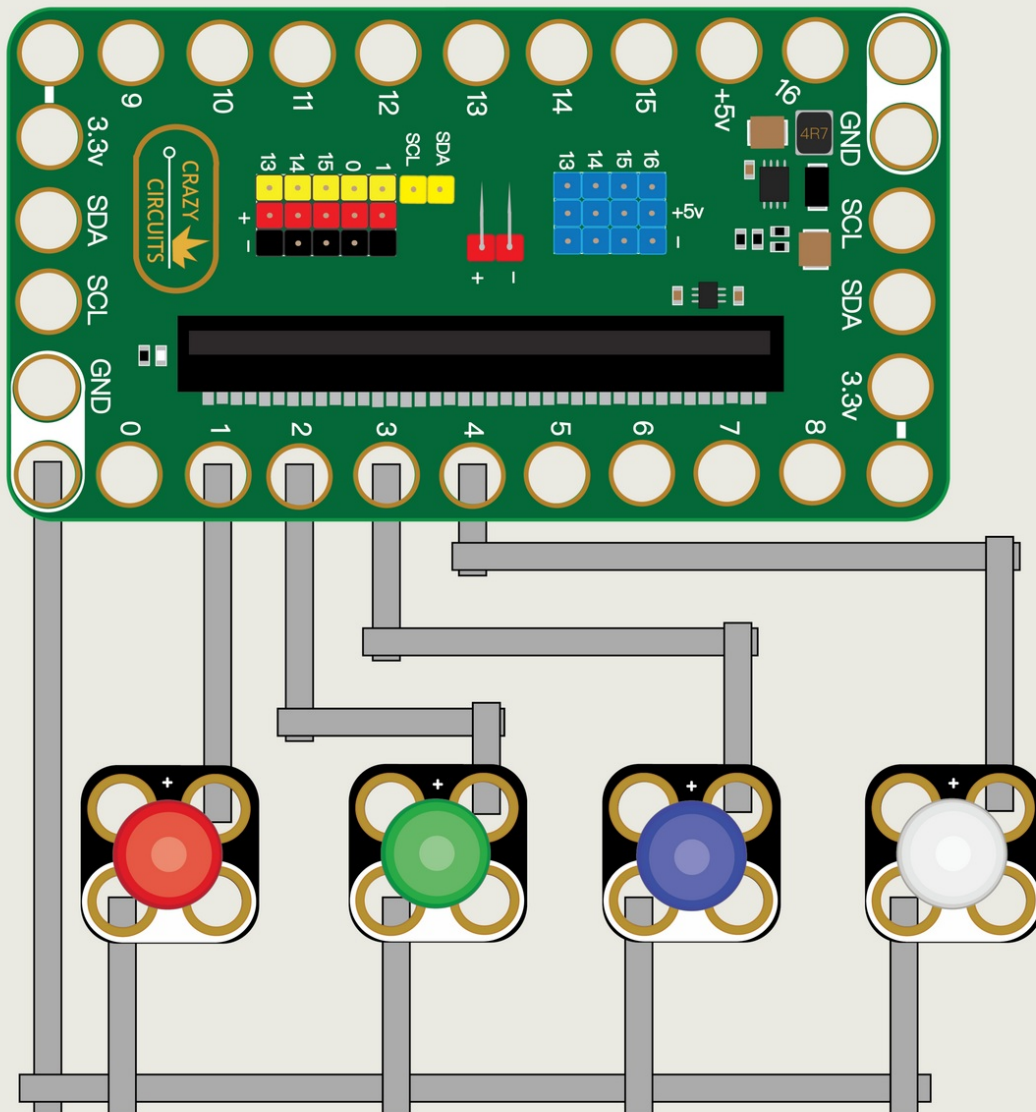




CH3-A - LED Blink Alternately

Connect four LEDs to a Bit Board and control them with a micro:bit

Written By: Pete Prodoehl



INTRODUCTION

Connect four LEDs to a Bit Board and control them with a micro:bit

We'll make the LEDs blink alternately in pairs.



TOOLS:

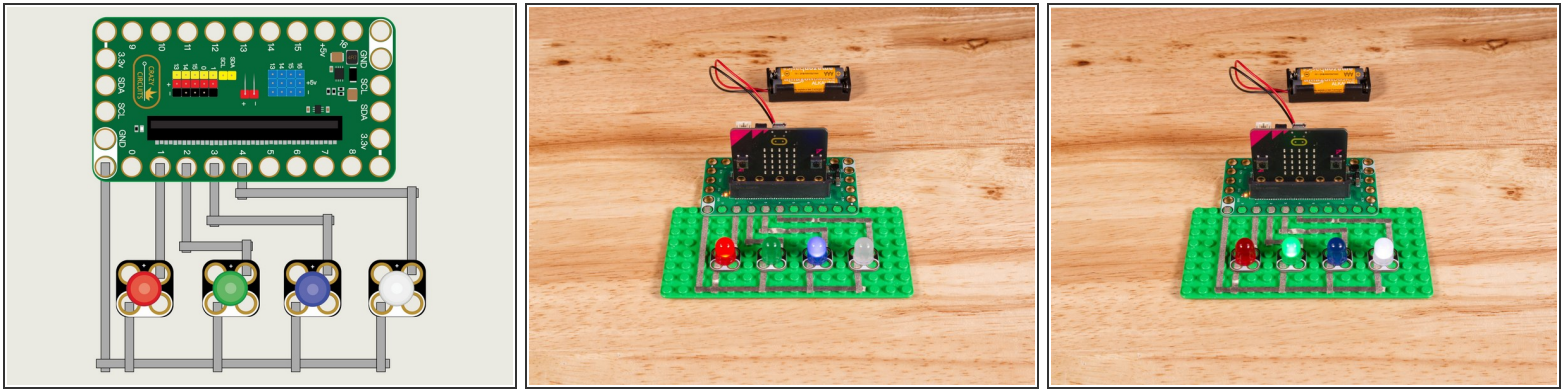
- [Computer](#) (1)
- [Scissors](#) (1)



PARTS:

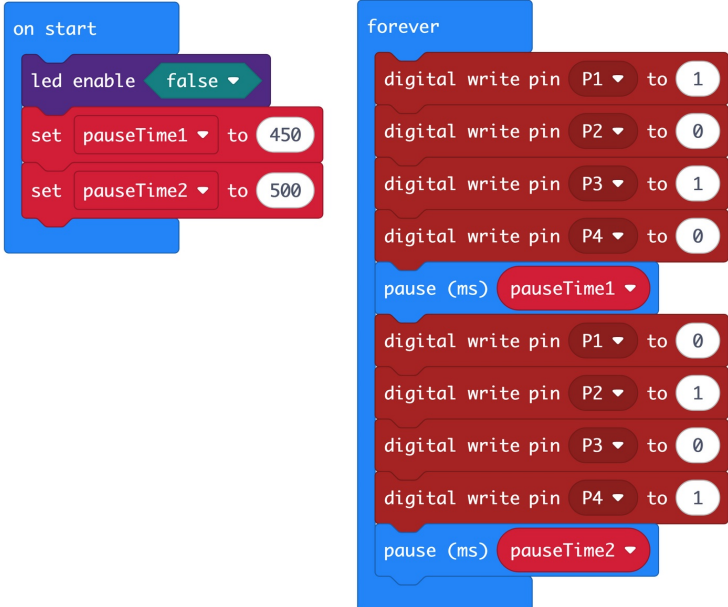
- [Crazy Circuits Bit Board](#) (1)
- [micro:bit](#) (1)
- [Maker Tape](#) (1)
1/8" Wide
- [Crazy Circuits LED Chip](#) (4)

Step 1 — Connect the LEDs



- We'll use **Maker Tape** to connect the LEDs to the Bit Board on a LEGO baseplate.
- Connect the **Negative** (-) sides of the LEDs to a **Ground** (GND) hole on the Bit Board.
- Connect the **Positive** (+) side of the first LED to **Pin 1** on the Bit Board.
- Connect the **Positive** (+) side of the second LED to **Pin 2** on the Bit Board.
- Connect the **Positive** (+) side of the third LED to **Pin 3** on the Bit Board.
- Connect the **Positive** (+) side of the fourth LED to **Pin 4** on the Bit Board.
- ☑ 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**.

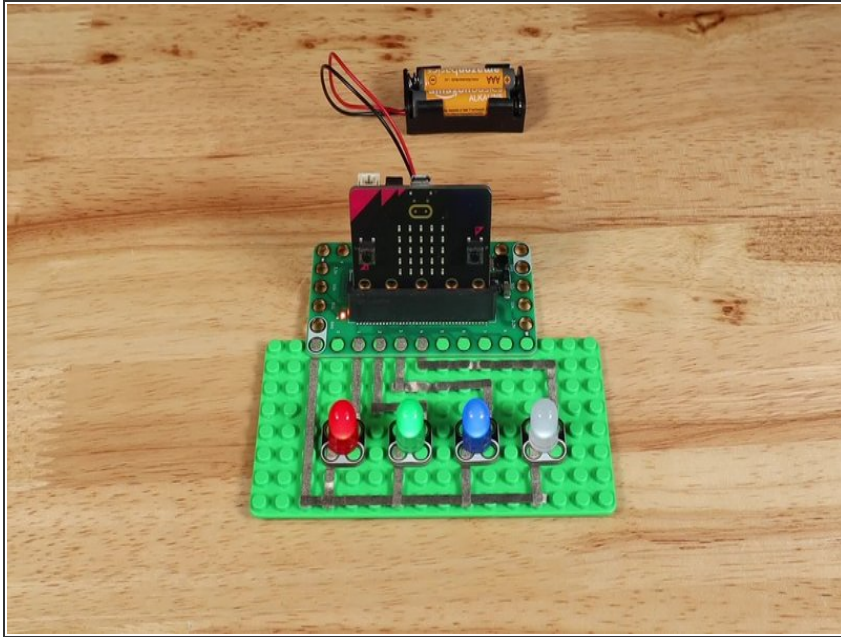
Step 2 — Load the Code



- 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 Blink Alternately** program:
https://makecode.microbit.org/_ih2Uu3bV2...
- This code will make the first and third LEDs turn on while the second and fourth LEDs are off, then alternate.
- We've created two **variables**, named **pauseTime1** and **pauseTime2** that allow us to set the length of time to pause in our code.
- You'll notice we have a command for led enable set to **false** in the on start block.
- The led enable command **enables** or **disables** the **built-in LED matrix** on the front of the micro:bit
- We need to turn off the built-in LED matrix to properly use **Pin 3** and **Pin 4** otherwise they will be available to the built-in LED matrix and conflict with our code to control our LEDs.

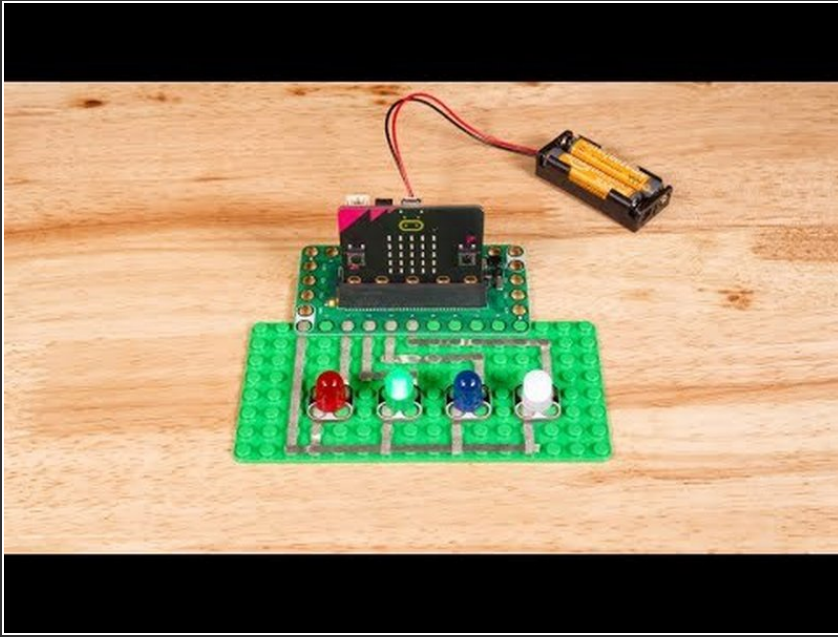
- You can see a description of the micro:bit pins here:
<https://makecode.microbit.org/device/pin...>

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.
- LED one and three should turn on while two and four are off, then they will alternate so two and four are on and one and three are off.
- ✦ In future guides we'll use four LEDs along with sensors or other input to act as a small *bar graph* or *level indicator*.

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://www.youtube.com/watch?v=_ArsMH4A...