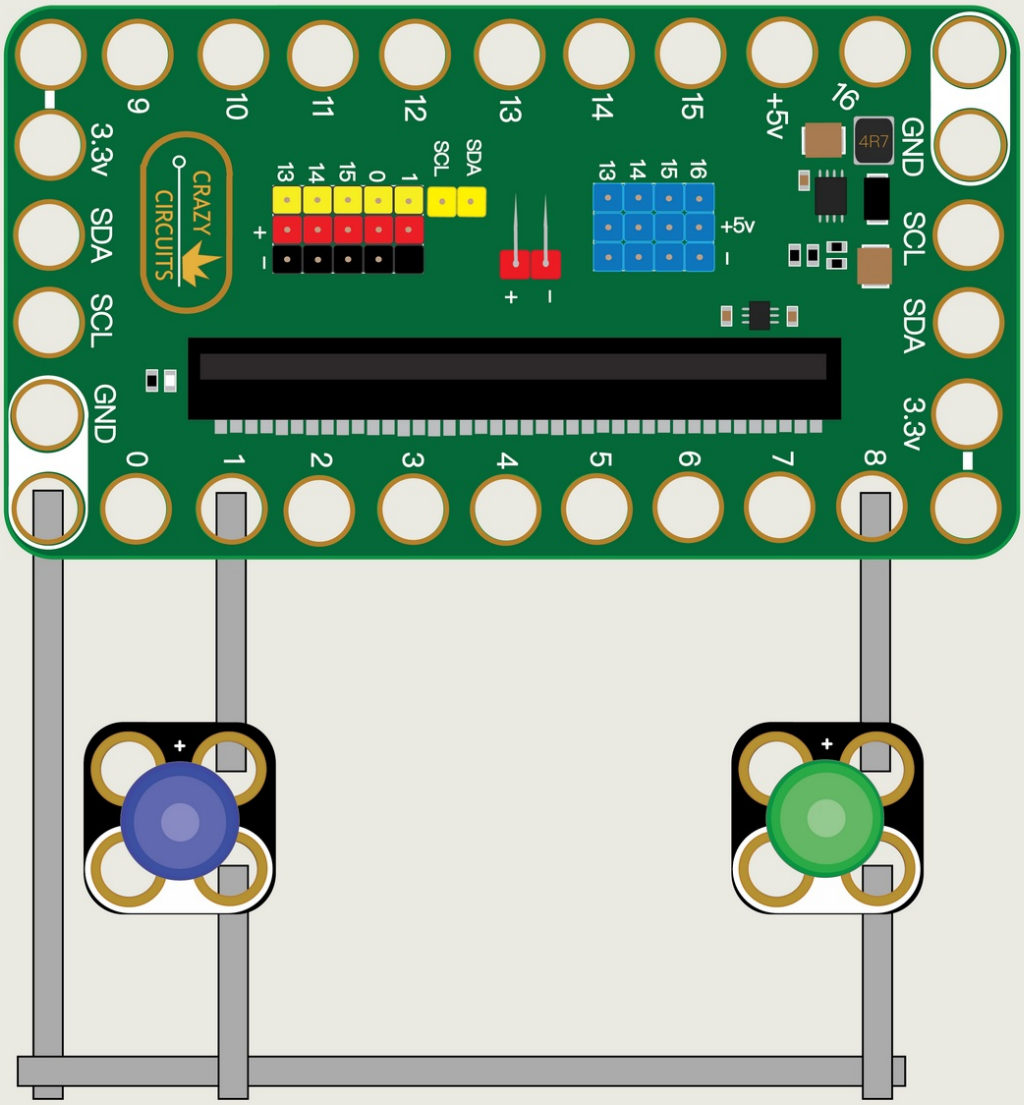
CH2-A - LED Blink Together

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

Written By: Pete Prodoehl



INTRODUCTION

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

We'll make the LEDs blink on and off together.

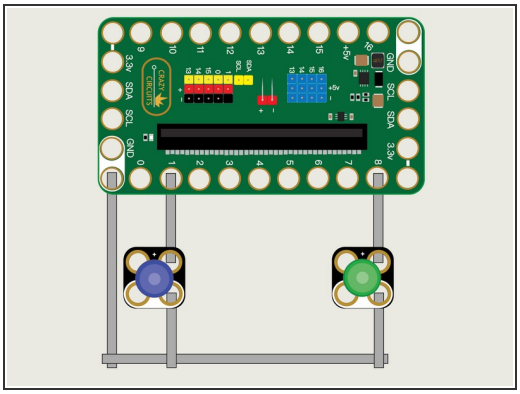
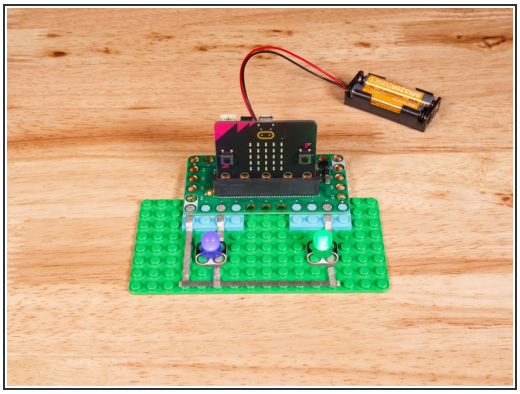
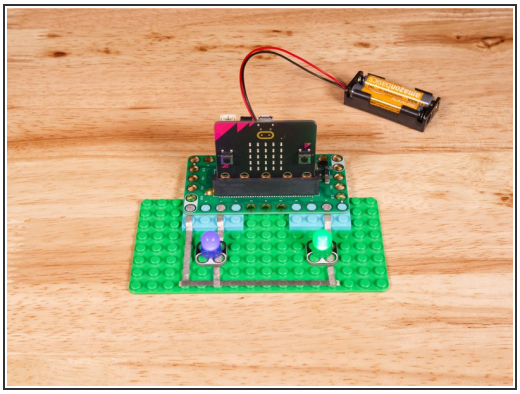
TOOLS:

- Computer (1)
- Scissors (1)

PARTS:

- Crazy Circuits Bit Board (1)
- micro:bit (1)
- Maker Tape (1)
  1/8" Wide
- Crazy Circuits LED Chip (2)

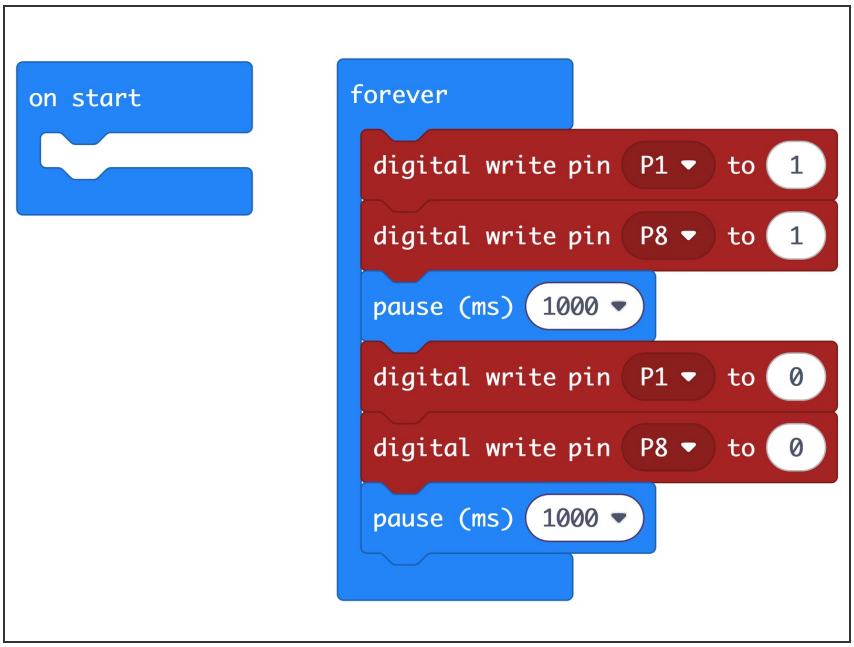
Step 1 — Connect the LEDs

- 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 8** on the Bit Board.

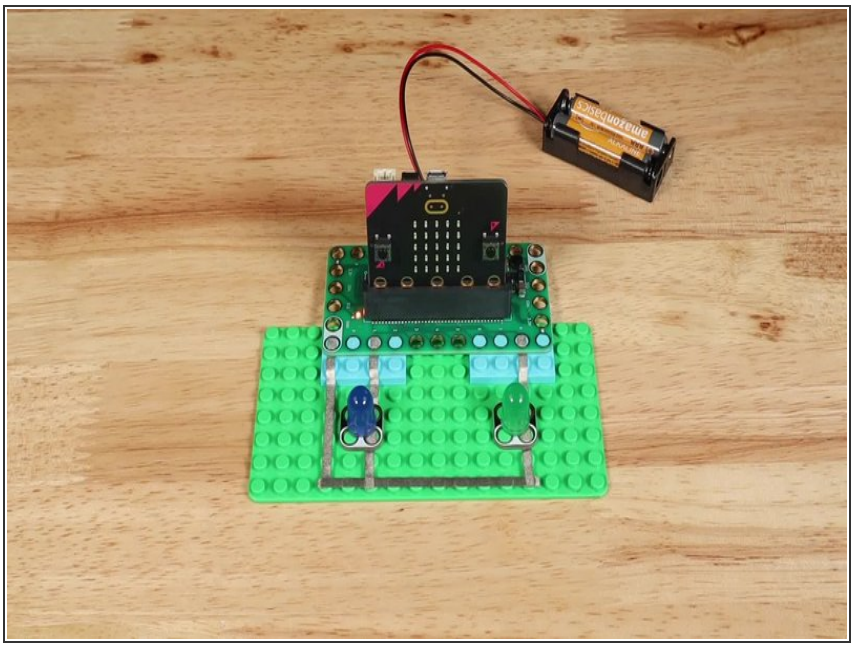
☒ You'll notice the **Ground** on the Bit Board (as well as the LED and other Crazy Circuits components we'll use) is color coded **White**.

Step 2 — Load the Code



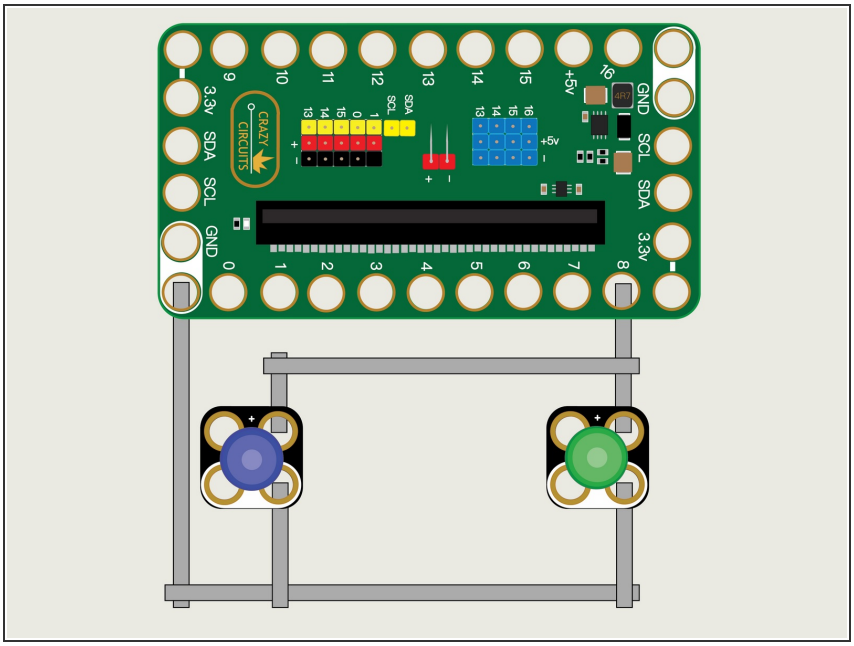
- If you've never used a micro:bit before you'll want to check out this guide: Bit Board V2 Setup and Use
- We're going to load the following code for our **LED Blink Together** program: https://makecode.microbit.org/_hU7TEbA4Y...
- This code will make both LEDs turn on, wait one second, turn them both off, wait another second, and then repeat.
- The digital write command can be set to **1** or **0** to set a pin **high** or **low** which will turn **on** or **off** an LED in this example.
- We can choose which pin will be affected using the drop down control in the digital write command. Here we have chosen **Pin 1** and **Pin 8**.

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 LEDs should turn on together, then after one second turn off together, then after another second turn on again, and repeat.

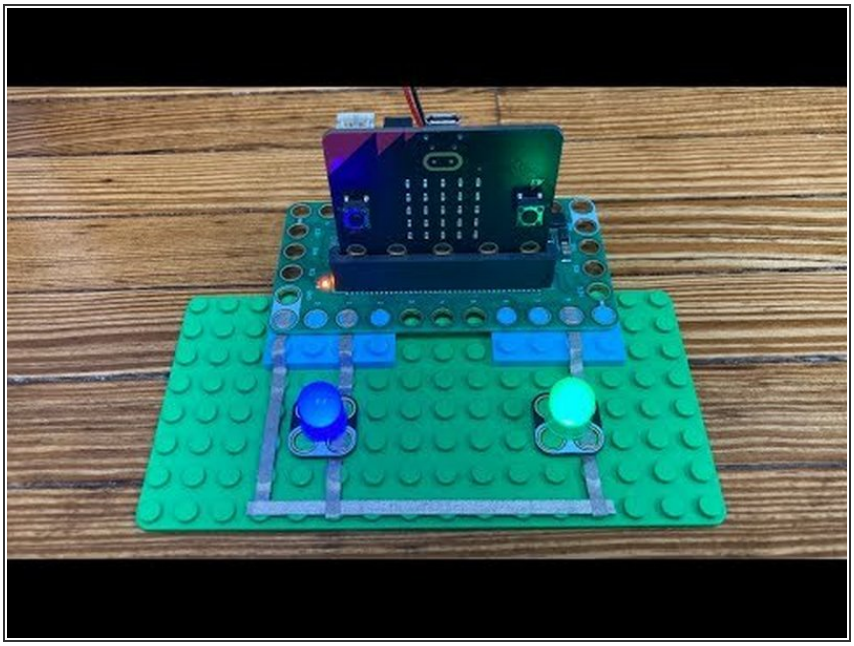
Step 4 — Another Connection Method



- You may be wondering if we could just connect **two** LEDs to **one single pin**...
- The short answer is "Yes" but the long answer is "Maybe", so we'll explain.
- In this specific case, connecting two Crazy Circuits LEDs to one single pin on the Bit Board... It will work.

- But! there are a few caveats. First, our Crazy Circuits LEDs have **built-in resistors** which limit the amount of current they draw. So while connecting two LEDs is okay in this case, we shouldn't make it a habit.
- Other LEDs may not have resistors built in. (Most do not!) We do it for ours to make getting started learning electronics a little easier.
- As we delve into other components it will be rare that we'll be able to connect multiple parts to a single pin. So while worth mentioning here, we won't make a habit of it.
- Finally, this connection method limits us to always controlling the LEDs together, and who wants to be limited?
- In the next guide we'll cover how to control two LEDs separately!

Step 5 — 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/QZck9h1C3A8