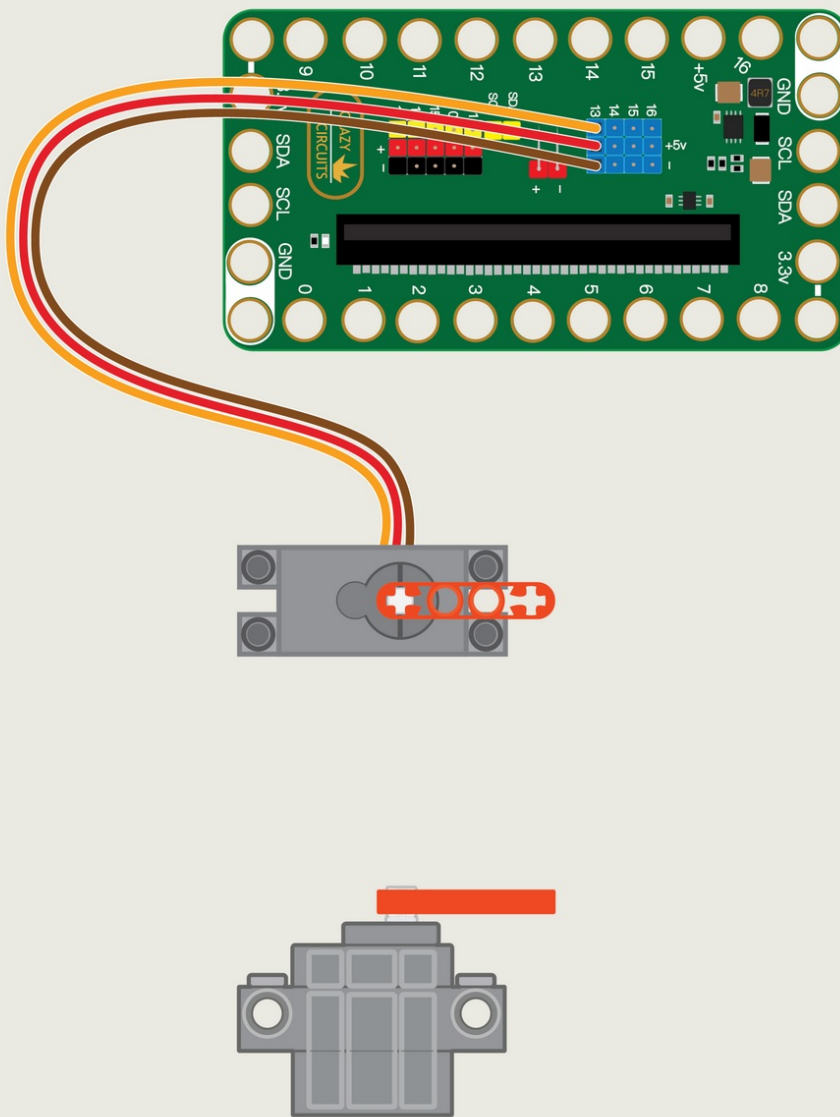




CH24-A - Servo Sweep

Connect a 270° Servo to a Bit Board and control it with code.

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INTRODUCTION

Connect a 270° Servo to a Bit Board and control it with code.

We'll explore how to control a servo motor.



TOOLS:

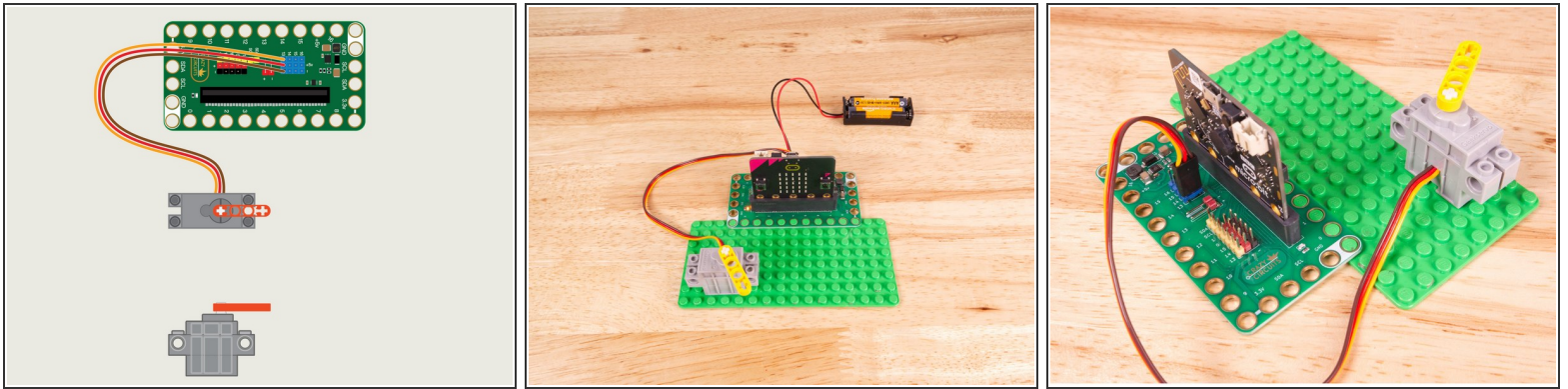
- Computer (1)



PARTS:

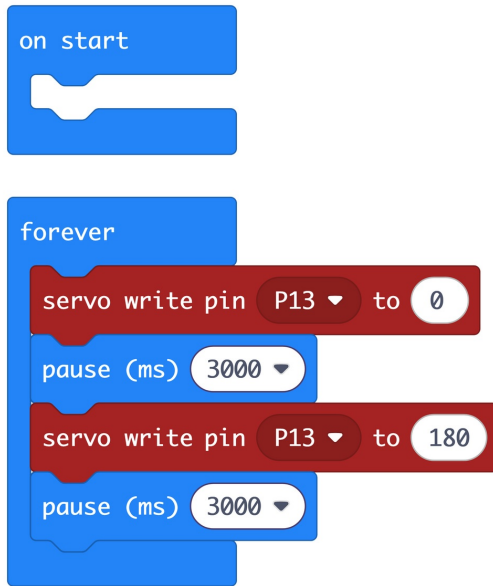
- Crazy Circuits Bit Board (1)
- micro:bit (1)
- Brick Compatible 270 Degree Servo (1)

Step 1 — Connect the 270° Servo



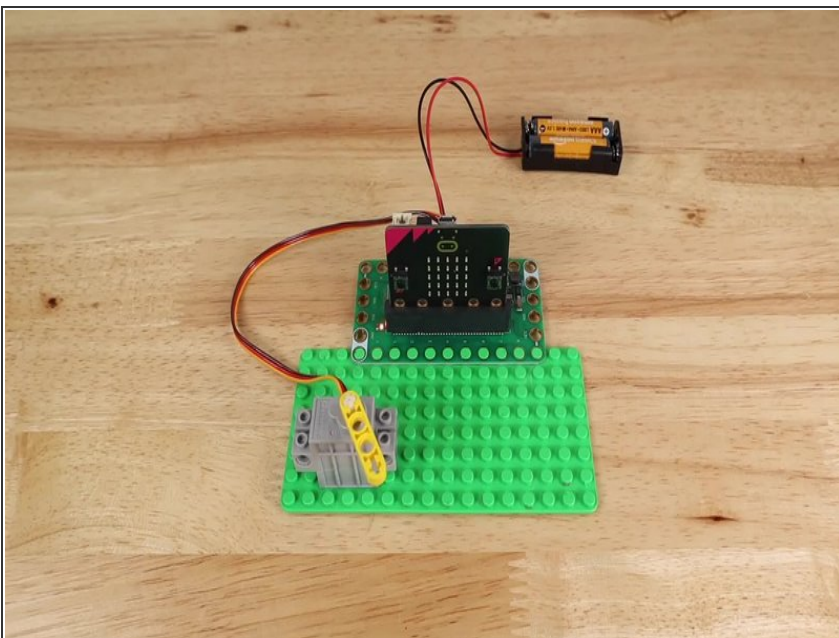
- The **270 Degree Servo Motor** has a 3-wire connector on the end that can plug directly into the pins on the back of the Bit Board.
- Make sure the **Orange Wire** is closest to the number **13** for the **Pin 13** column.
- Then the **Brown Wire** should be closest to the micro:bit (in the - row) and the **Red Wire** will be in the middle (the **+5v** row).

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](https://makecode.microbit.org/_W1EC3K5z2...)
- We're going to load the following code for our **Servo Sweep** program:
https://makecode.microbit.org/_W1EC3K5z2...
- The **Pins** section contain the blocks you'll need to control a 270 servo.
- We're just going to set the servo to the **0** position, wait 3 seconds, then move it to the **180** position, and wait another 3 seconds. (And then repeat!)

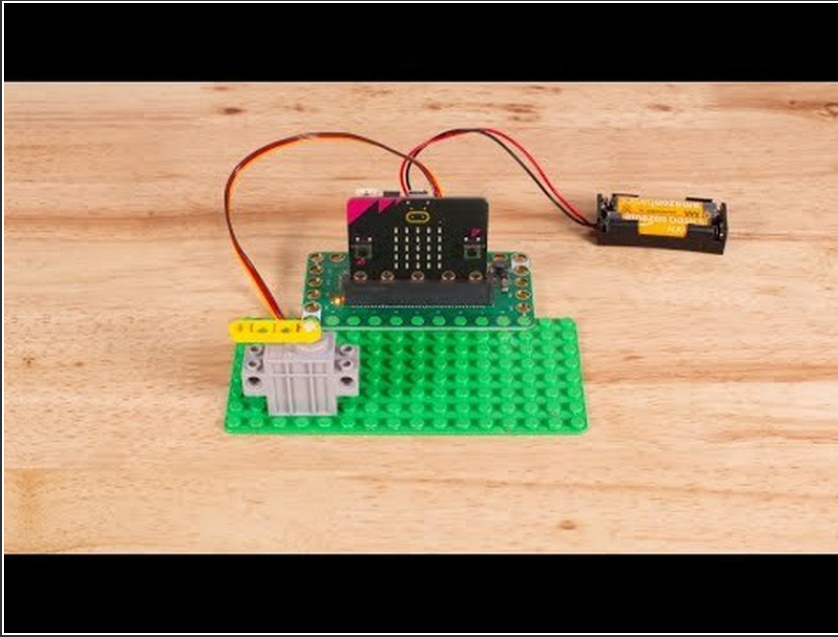
Step 3 — Test it Out!



- 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, but now that we are using servos we recommend using a battery pack plugged into the Bit Board.

- ✦ The [Blue Pins](#) on the Bit Board provide extra power (5 volts instead of 3 volts) by **boosting the voltage** coming from the battery pack. This helps improve servo performance, especially with multiple servos.
- ✦ You can see the difference in power and speed by first running the code with just the USB cable powering the the micro:bit and then plugging in the battery pack to the Bit Board.
- The servo should sweep back and forth between **0** and **180** degrees... but wait! This is a 270 degree servo, so it will actually move from **0** to (approximately) **270** degrees.
- ✦ MakeCode expects 180 degree servos, not 270 degree servos, but we can still make it work. We'll discuss this limitation in future guides, and you can see our other guide: [LEGO Compatible 270 Degree Servo](#) for a more in-depth look.

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://youtube.com/live/T8jrPuhOp_g