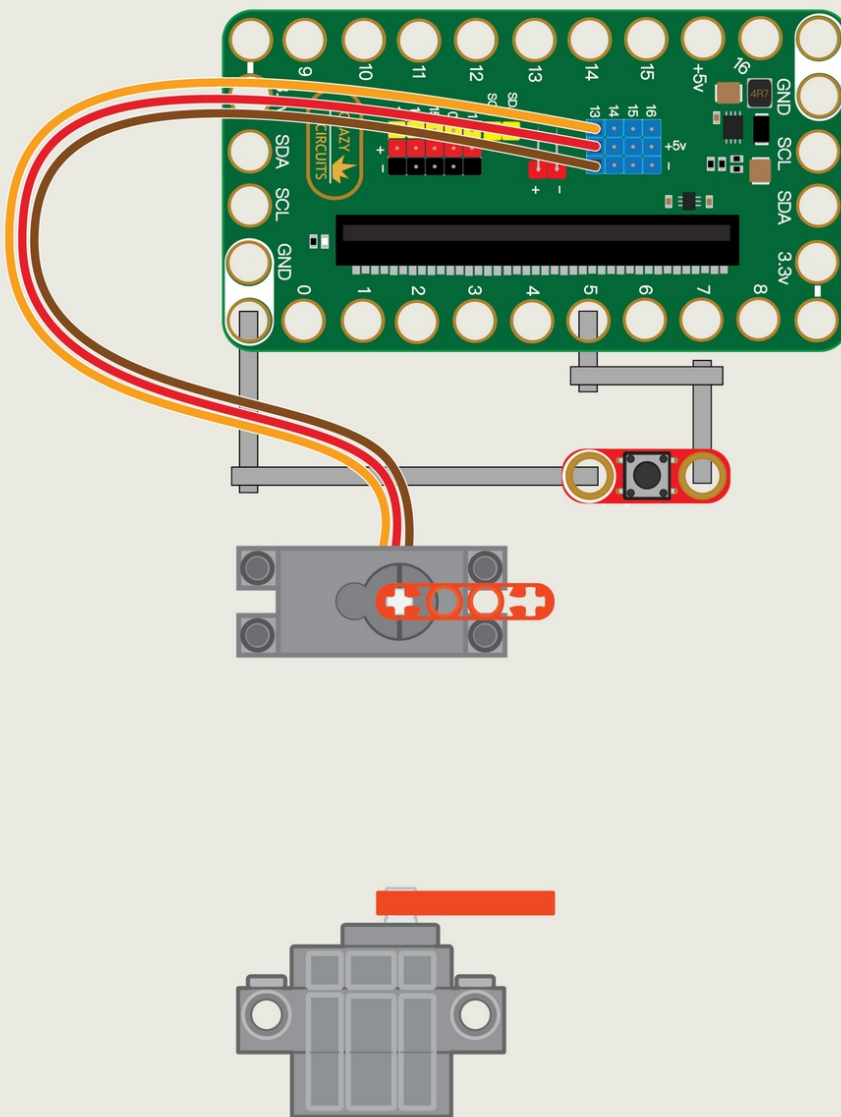




CH25-A - Servo Wiggle

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

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INTRODUCTION

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

We'll explore using a momentary push button (and some code) to control the movement of a servo motor.

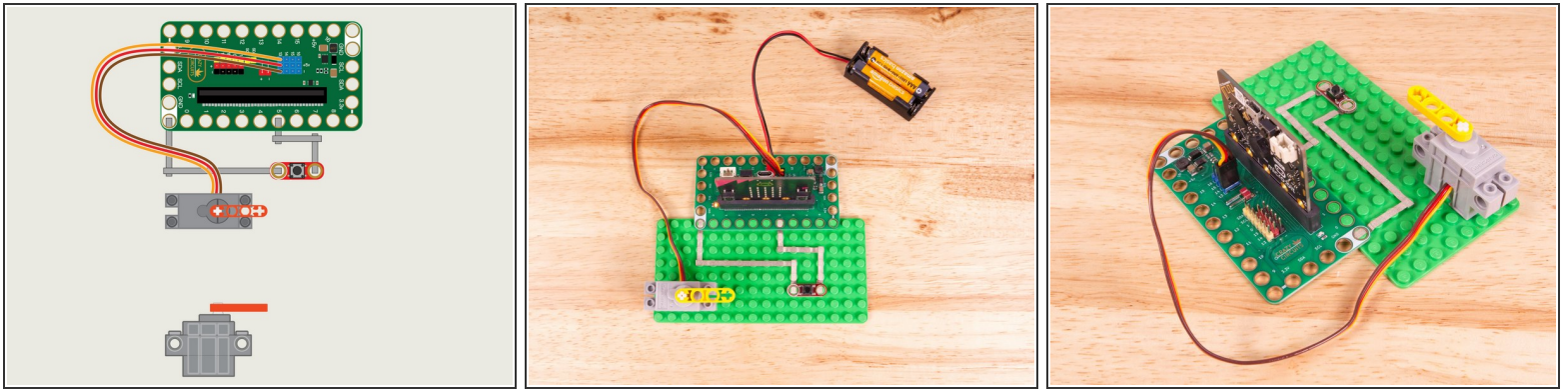
 TOOLS:

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

 PARTS:

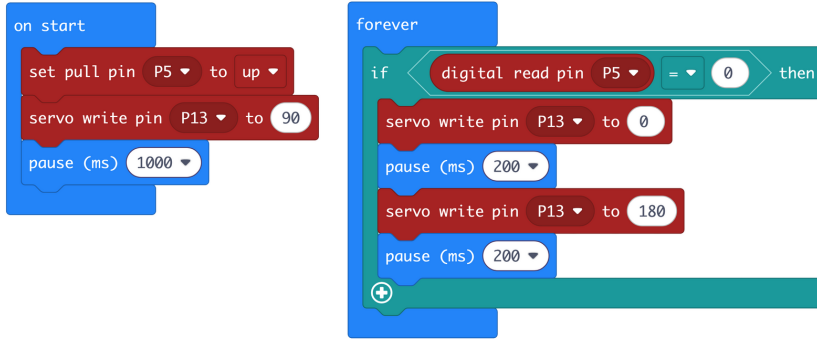
- [Crazy Circuits Bit Board](#) (1)
 - [micro:bit](#) (1)
 - [Brick Compatible 270 Degree Servo](#) (1)
 - [Standard Pushbutton Chip](#) (1)
 - [Maker Tape](#) (1)
- 1/8" Wide

Step 1 — Connect the 270° Servo and Button



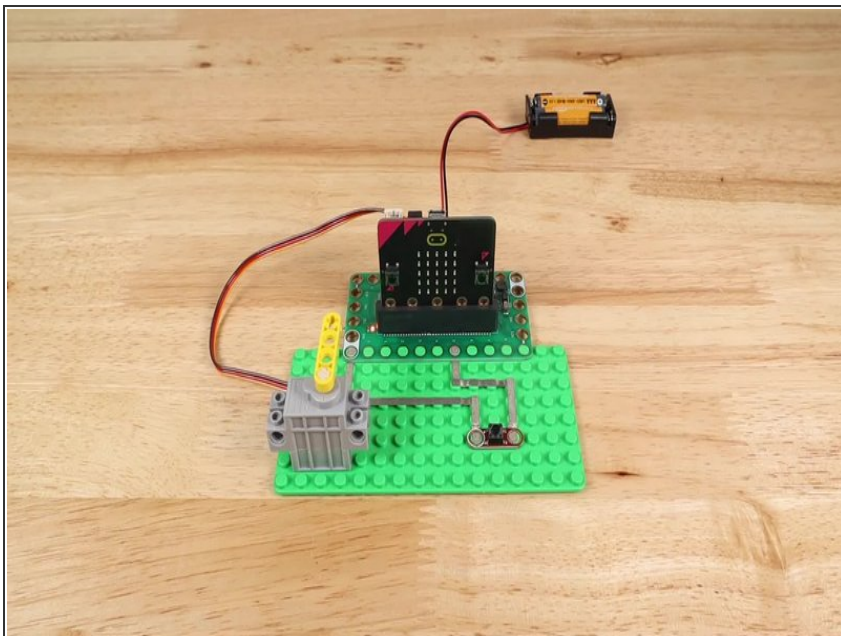
- The **270 Degree Servo Motor** has a 3-wire connector on the end that can plug directly into the pins on the back of the Bit Board.
- Make sure the **Orange Wire** is closest to the number **13** for the **Pin 13** column.
- Then the **Brown Wire** should be closest to the micro:bit (in the - row)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

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 **Servo Wiggle** program:
https://makecode.microbit.org/_MDuVYEHxi...
- We've set the servo to move only when the button is held down.
- Notice the pause time is very short after the two servo moves.
- Is **200 milliseconds** enough time for the servo to move?

Step 3 — Test it Out!

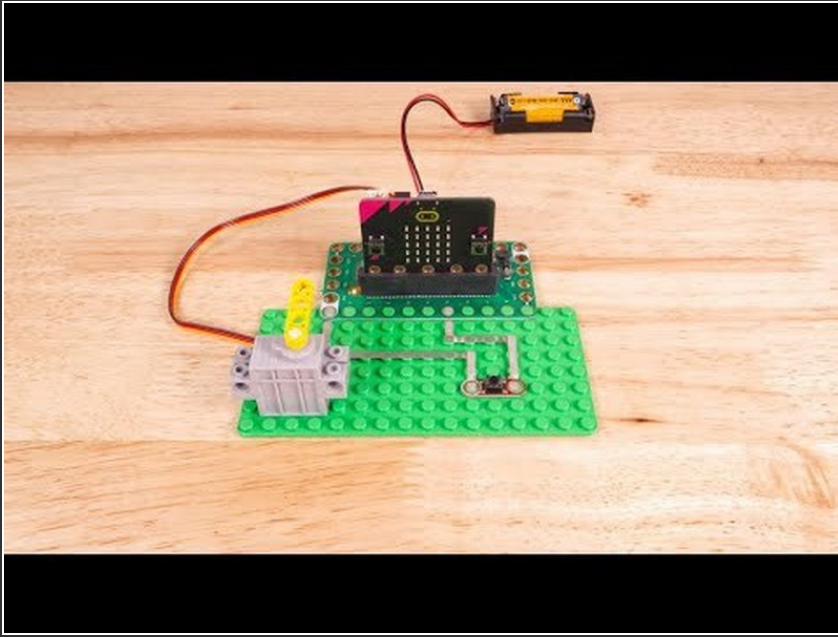


- Once the code is loaded it should start running immediately, but the servo won't move until you press the button.
- ❗ You can power the micro:bit via the USB cable you used to load the code, but now that we are using servos we recommend using a battery pack plugged into the Bit Board.

★ 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.

- When the button is held down the servo *should* sweep back and forth between **0** and **180** (or more accurately, 270) degrees...
- You'll notice the servo just sort of wiggles back and forth and doesn't go all the way to one end or the other.
- Since we're only waiting (via the pause statement) **200 milliseconds** we are not giving the servo enough time to get to one end or the other!
- If you want to experiment with how long it takes to move from one end to the other you can try to *change the 200 milliseconds in the code* to a higher value.

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/live/Og8T6cw5Ai0>