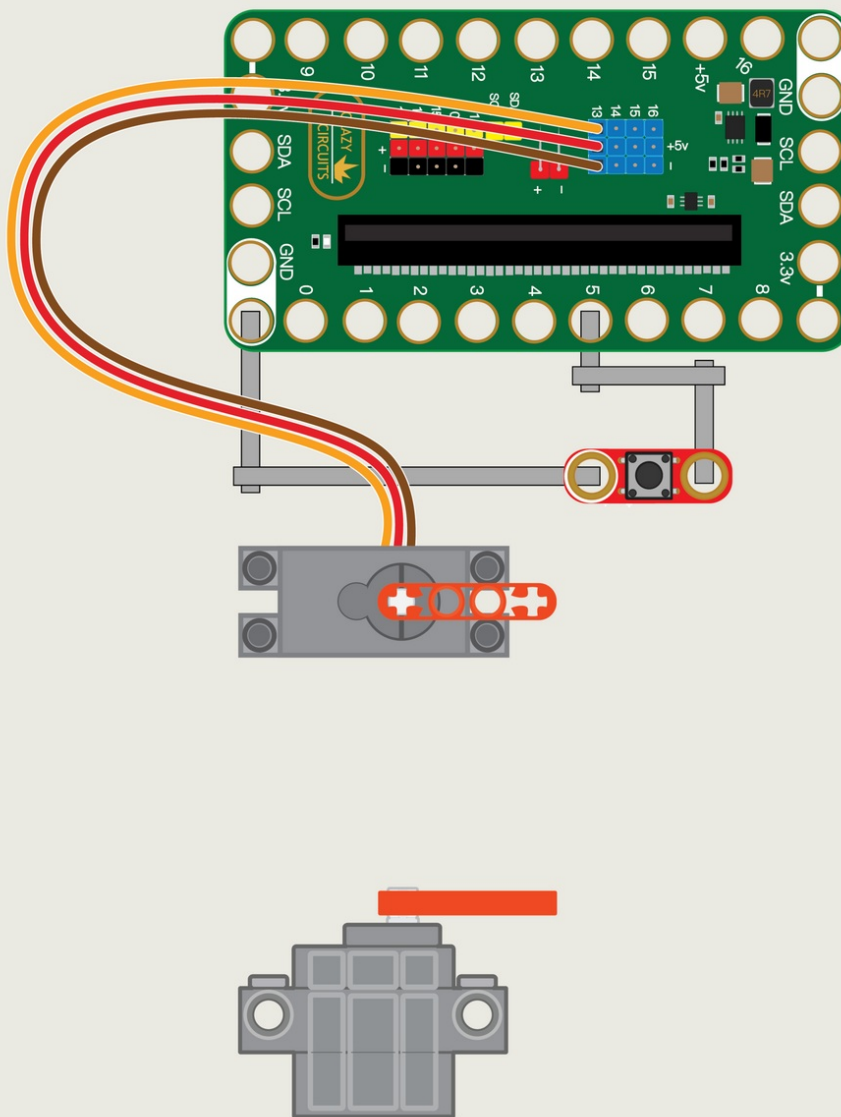




CH25-D - Servo Selector List

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:

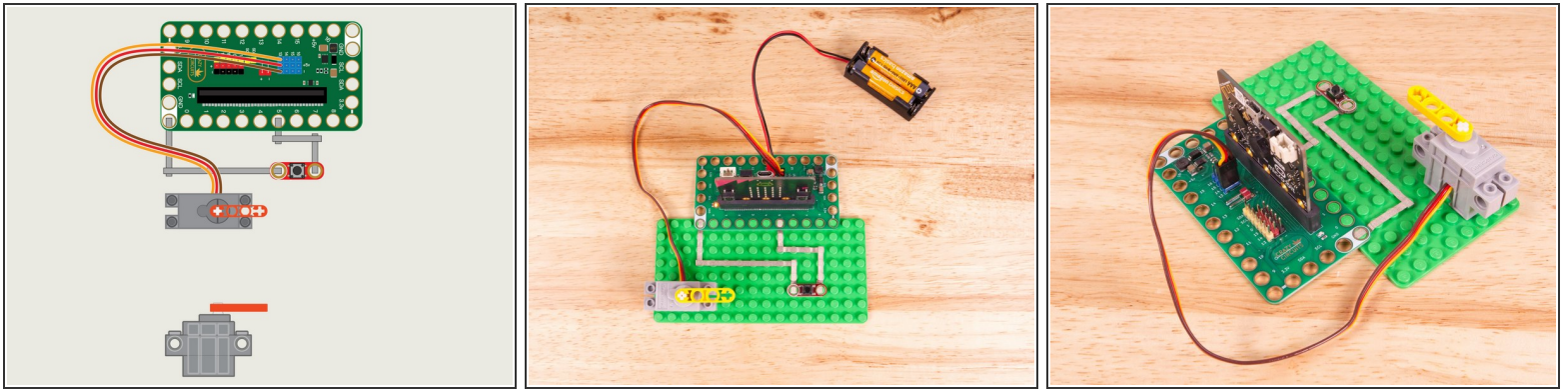
- [Computer](#) (1)
- [Scissors](#) (1)



PARTS:

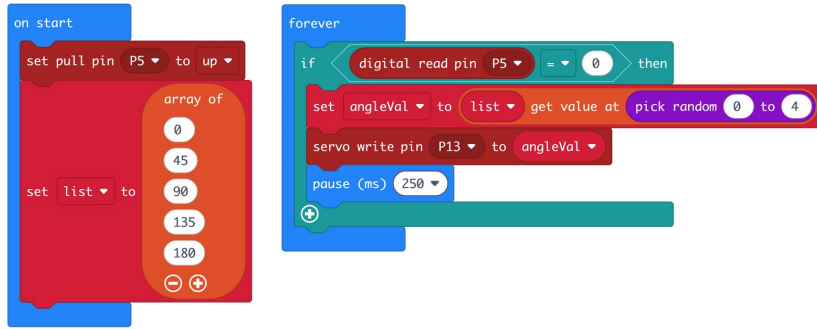
- [Crazy Circuits Bit Board](#) (1)
 - [micro:bit](#) (1)
 - [Brick Compatible 270 Degree Servo](#) (1)
 - [Standard Pushbutton Chip](#) (1)
 - [Maker Tape](#) (1)
- 1/8" Wide

Step 1 — Connect the 270° Servo and Button



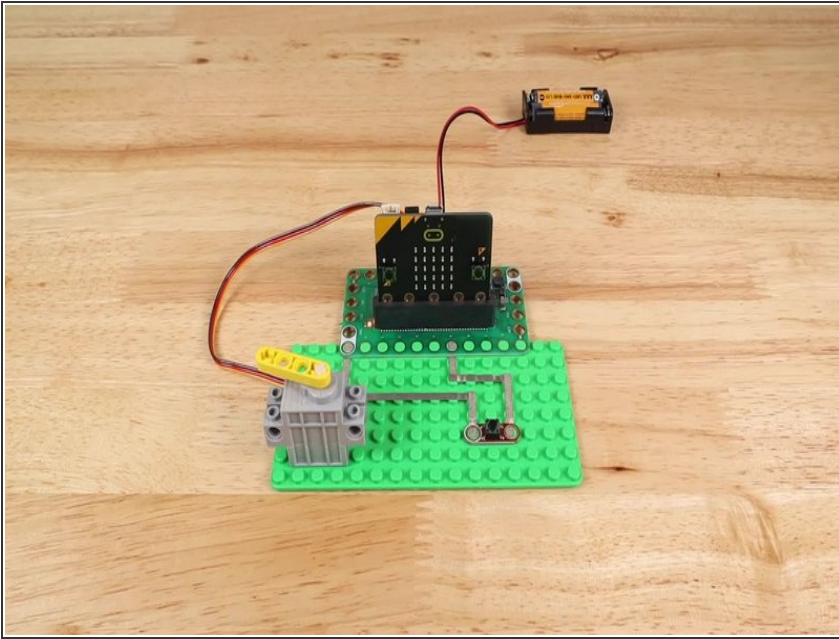
- The **270 Degree Servo Motor** has a 3-wire connector on the end that can plug directly into the pins on the back of the Bit Board.
- Make sure the **Orange Wire** is closest to the number **13** for the **Pin 13** column.
- Then the **Brown Wire** should be closest to the micro:bit (in the - row)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



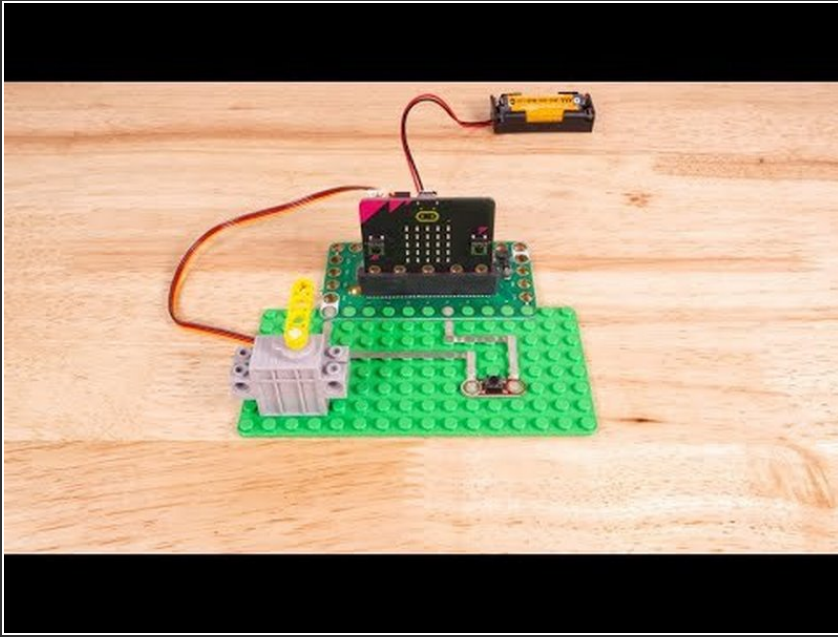
- If you've never used a micro:bit before you'll want to check out this guide: [Bit Board V2 Setup and Use](#)
- We're going to load the following code for our **Servo Selector List** program:
https://makecode.microbit.org/_VCrCAx3a0...
- This time instead of just selecting a random number we'll pull a number from a predefined list. This allows us to choose between a set of specified numbers.
- We can use our pick random to select one of the **5 values** by choosing a random number between **0** and **4**.
- ☑ Remember that when we start at **0** we include it as a value, so **0 to 4** is **five options**.
- ☑ We use the term "list" for our collection of numbers but the term **array** can also be used, and in most programming languages the two terms are interchangeable.

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.
- ① 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 pressed the servo will move to a position. It may not move if the same (random) position is selected more than once in a row.

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>