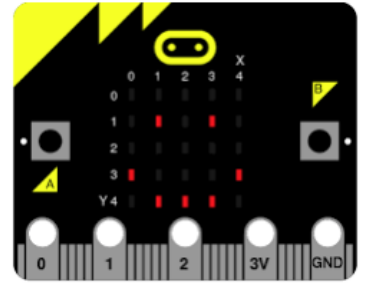
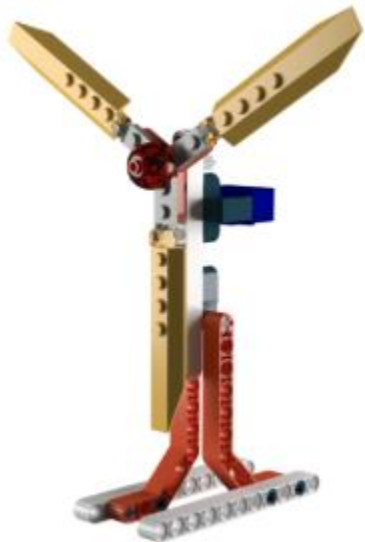


# MUSELAB



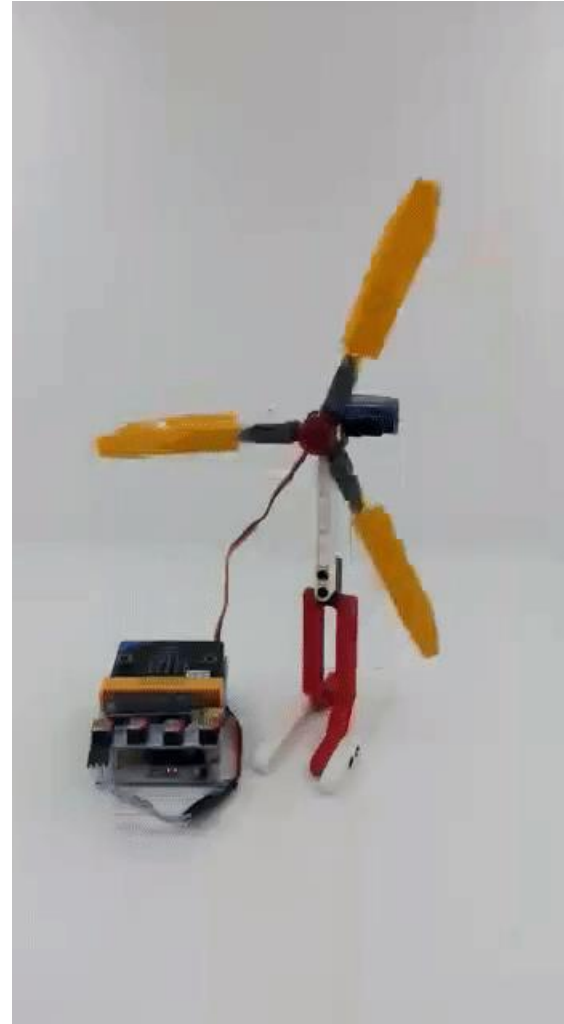
## Muse Mechanical Set 3 in 1



Windmill



# Today's mission





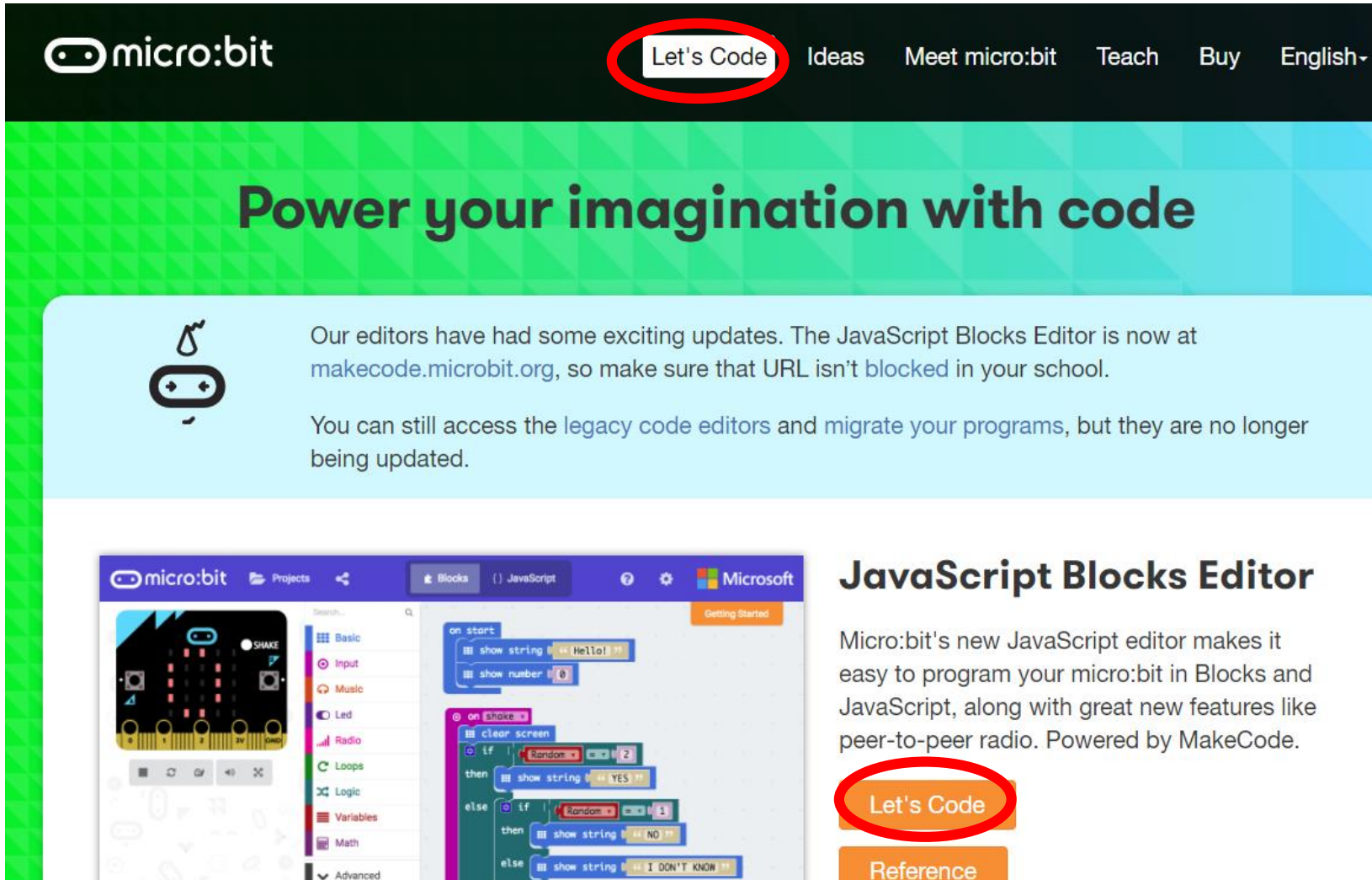
# Content

1. First time to play micro:bit
2. Muselab wifi IoT Shield
3. Build the windmill
4. Program the windmill

The background is a dark blue gradient. In the corners, there are white line-art illustrations of circuit boards or neural networks, with lines connecting to small circles.

# 1. FIRST TIME TO PLAY MICRO:BIT


# Go to [microbit.co.uk](https://microbit.co.uk)



The screenshot shows the micro:bit website homepage. At the top, the navigation bar includes the micro:bit logo, a "Let's Code" button circled in red, and links for "Ideas", "Meet micro:bit", "Teach", "Buy", and "English-". Below the navigation bar is a green and blue banner with the text "Power your imagination with code". Underneath is a light blue box with a micro:bit icon and text: "Our editors have had some exciting updates. The JavaScript Blocks Editor is now at [makecode.microbit.org](https://makecode.microbit.org), so make sure that URL isn't blocked in your school. You can still access the legacy code editors and migrate your programs, but they are no longer being updated." Below this is a screenshot of the JavaScript Blocks Editor interface, showing a micro:bit board on the left, a search bar, and a code editor with blocks for "on start" and "on shake". To the right of the editor screenshot is the heading "JavaScript Blocks Editor" and a paragraph: "Micro:bit's new JavaScript editor makes it easy to program your micro:bit in Blocks and JavaScript, along with great new features like peer-to-peer radio. Powered by MakeCode." Below this paragraph are two buttons: "Let's Code" (circled in red) and "Reference".

**Let's Code** Ideas Meet micro:bit Teach Buy English-

## Power your imagination with code

 Our editors have had some exciting updates. The JavaScript Blocks Editor is now at [makecode.microbit.org](https://makecode.microbit.org), so make sure that URL isn't blocked in your school.

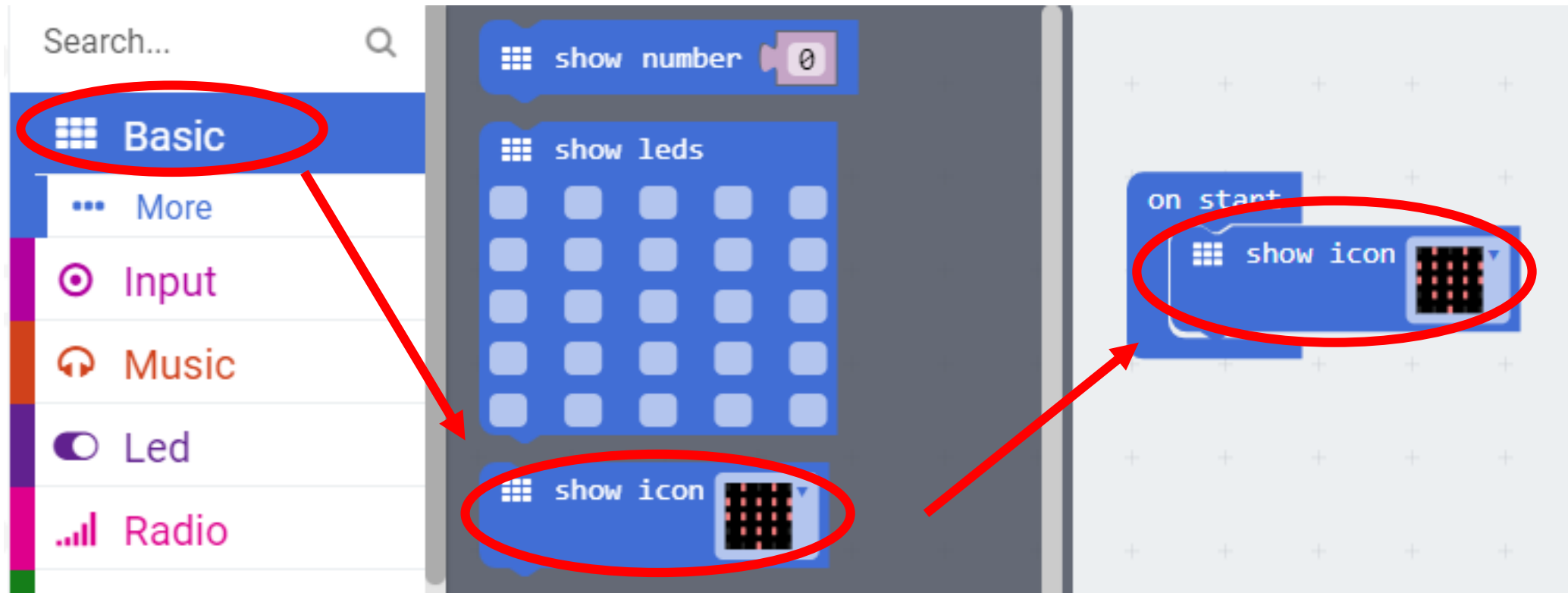
You can still access the legacy code editors and migrate your programs, but they are no longer being updated.

### JavaScript Blocks Editor

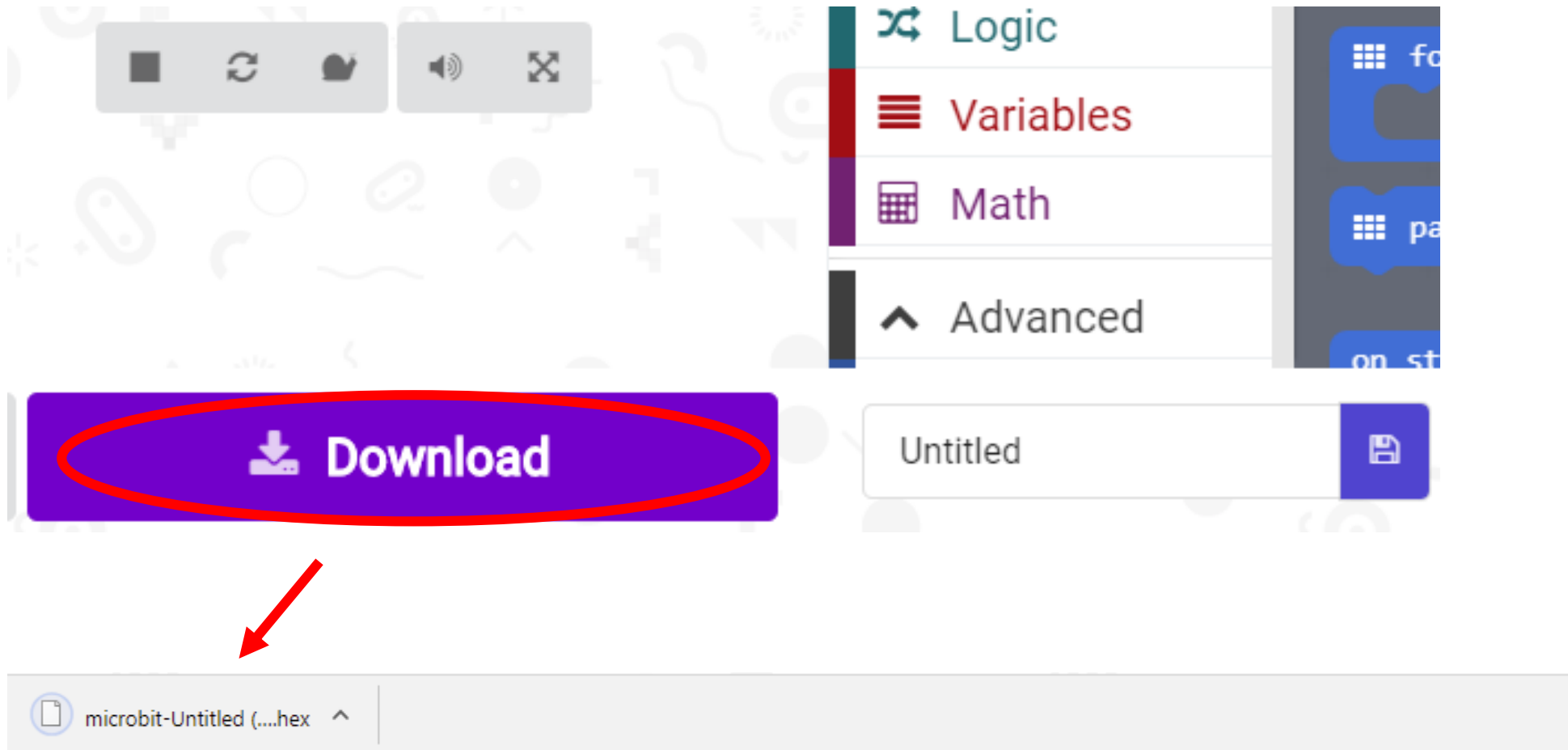
Micro:bit's new JavaScript editor makes it easy to program your micro:bit in Blocks and JavaScript, along with great new features like peer-to-peer radio. Powered by MakeCode.

**Let's Code**

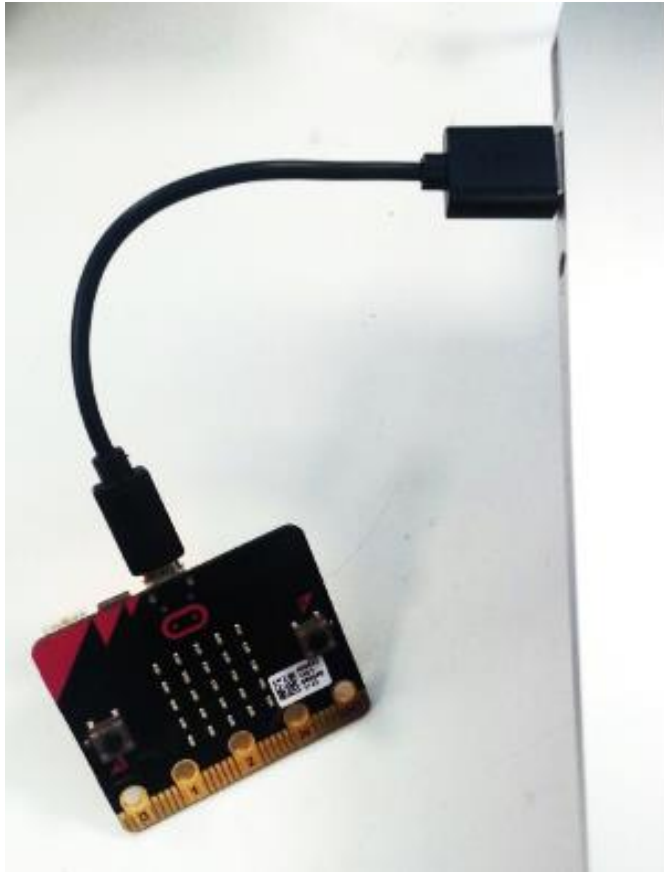
Reference



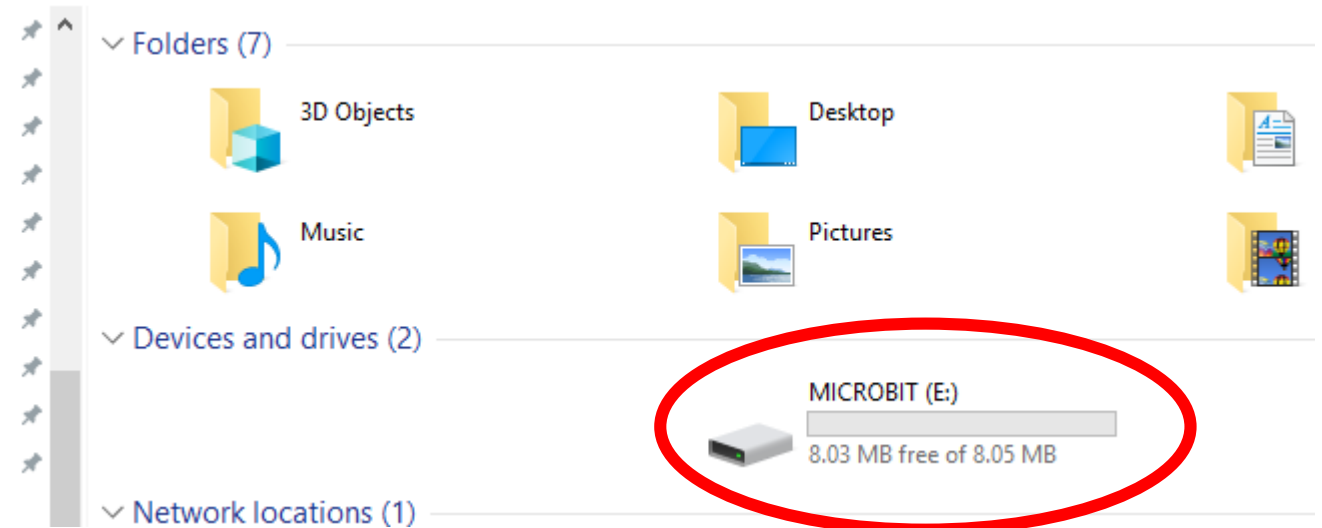
# Download the program



# Connect Micro:bit to your pc

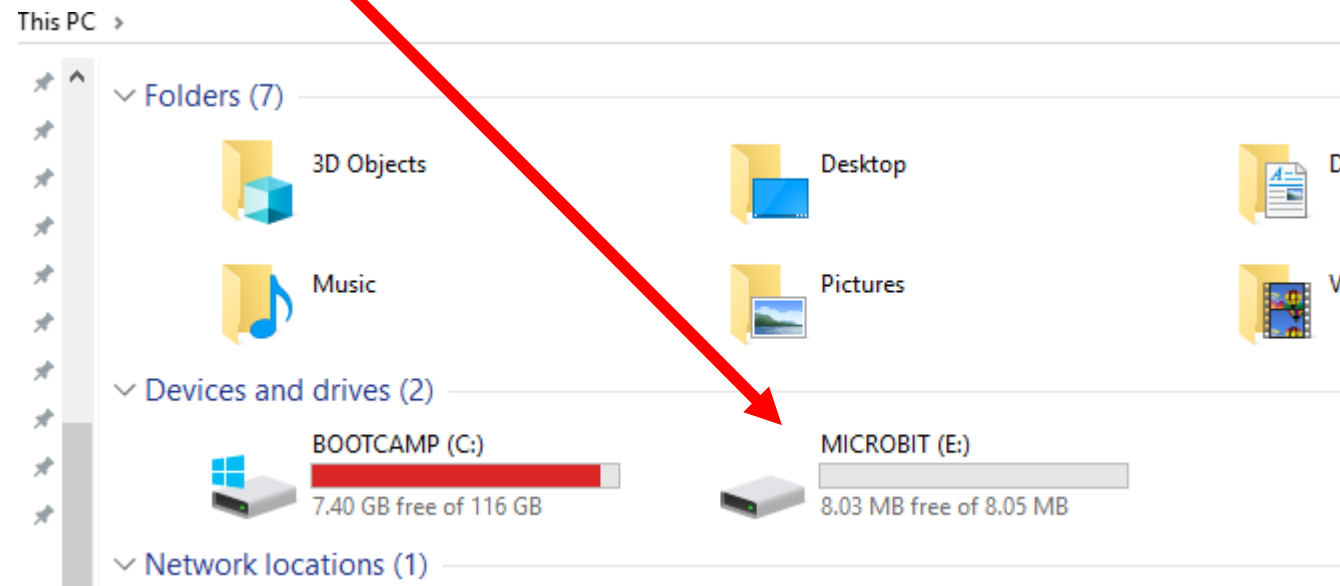
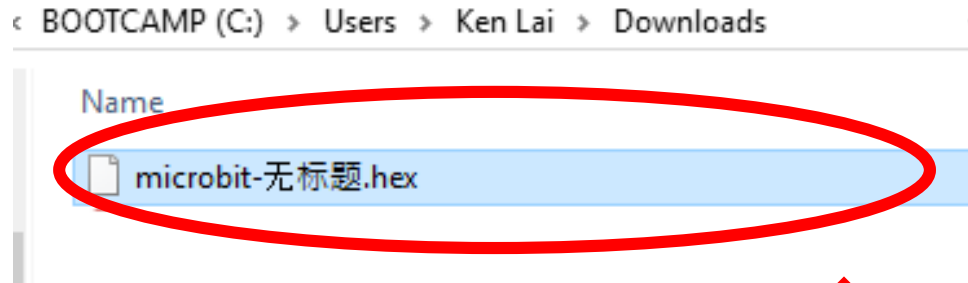


Go to my computer, E drive

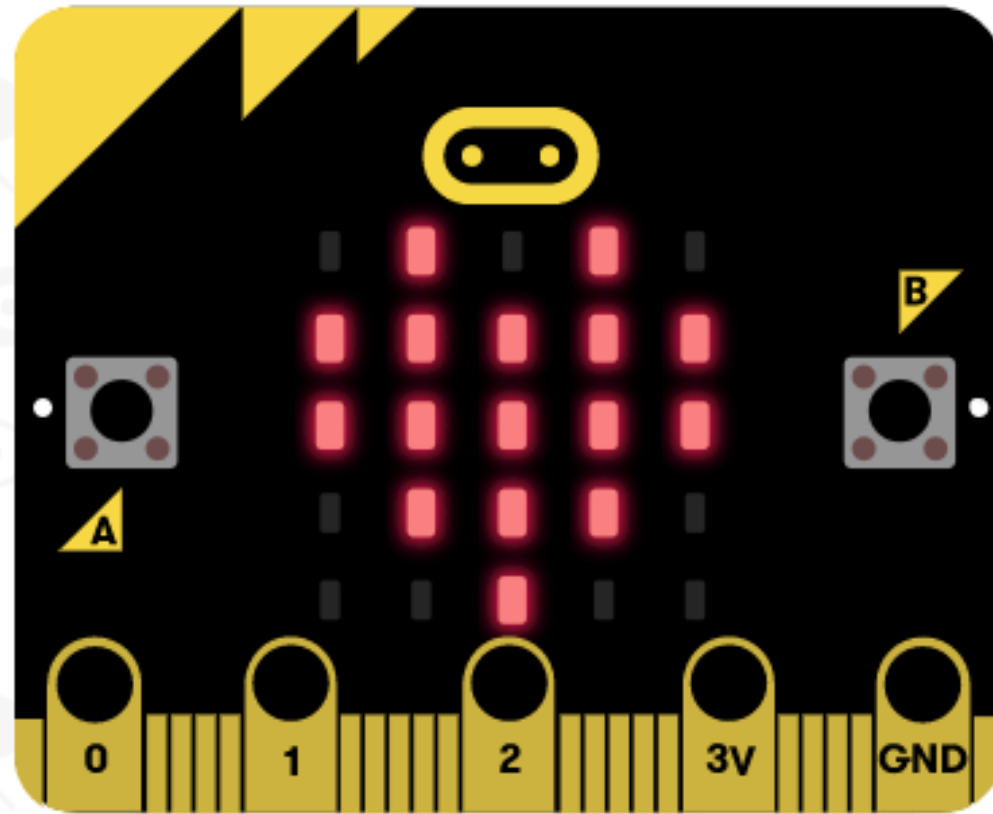




# Drag your download HEX file to the E drive



Test it! You will get a heart!



The background is a dark blue gradient. In the corners, there are decorative white line-art patterns resembling circuit traces or data paths, with small circles at the end of the lines.

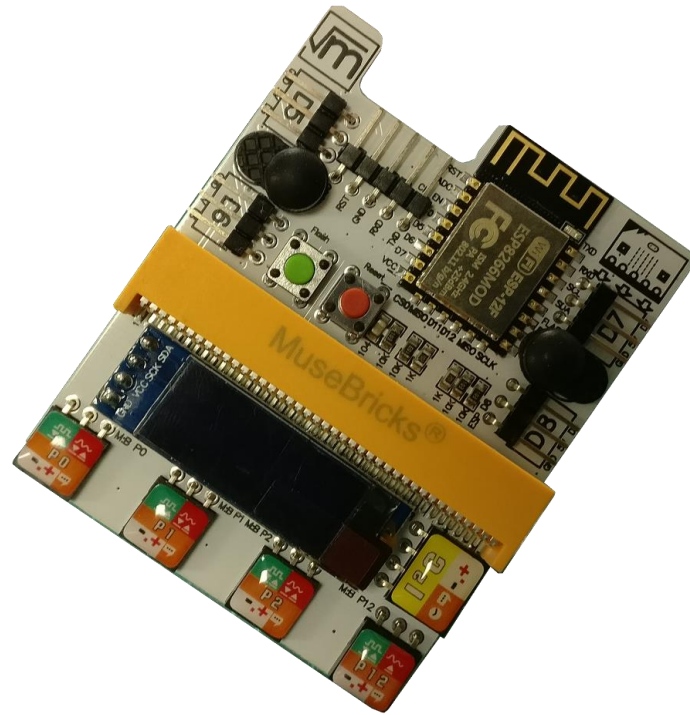
## 2. MUSELAB WIFI IOT SHIELD

# MuseLab WiFi IoT Robotic Shield Kit SET

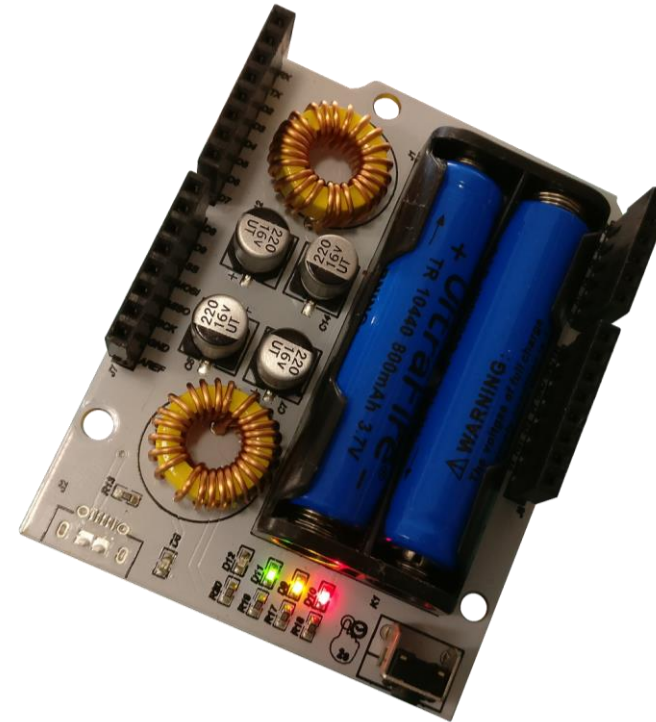


**MuseBricks®**



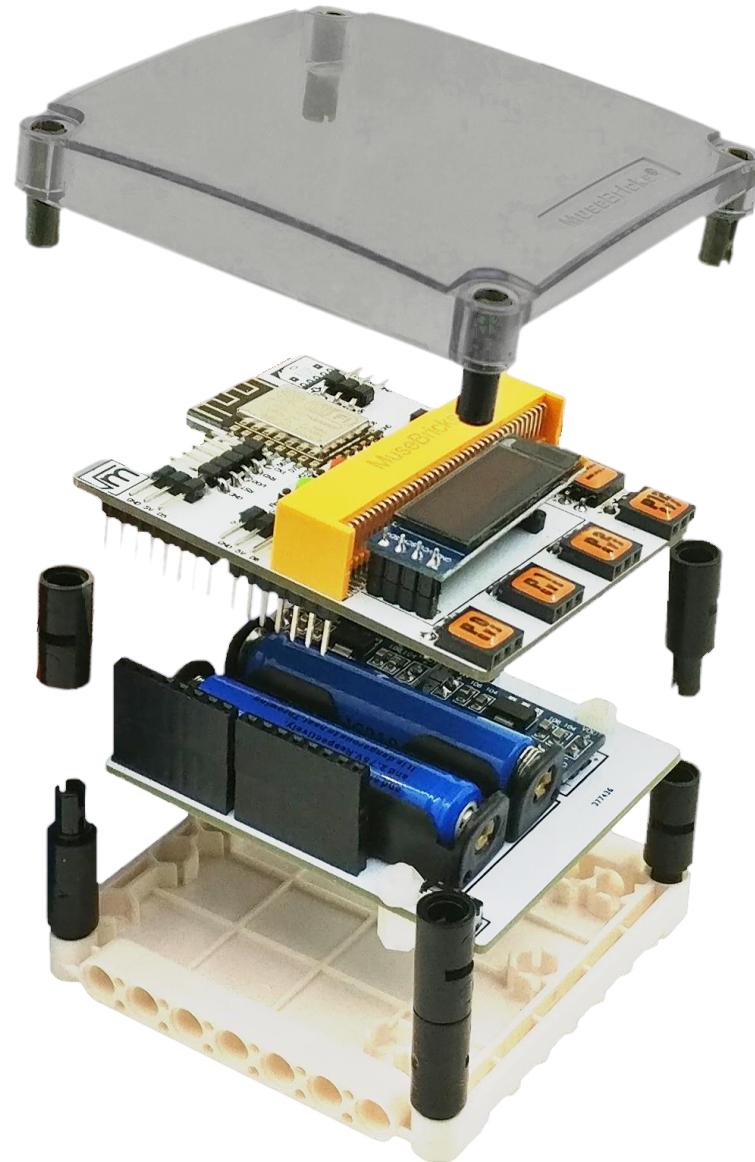


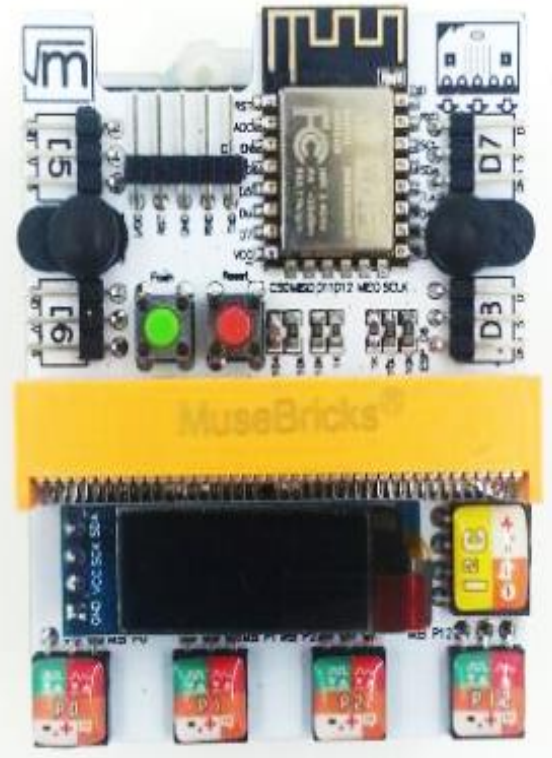
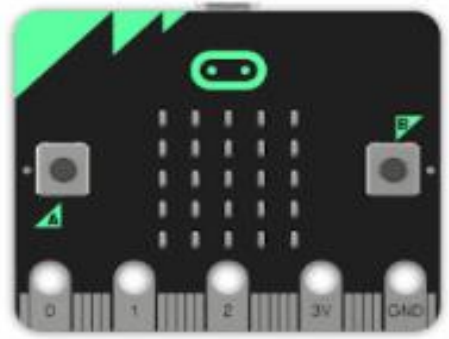
**Muse IoT Robotic  
Shield**



**Muse Power Shield**

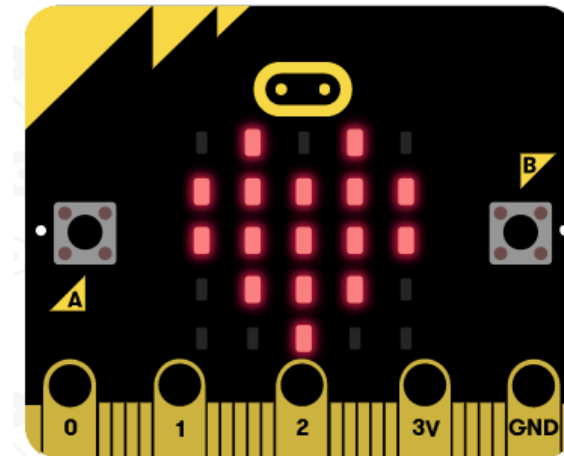
# How to build???





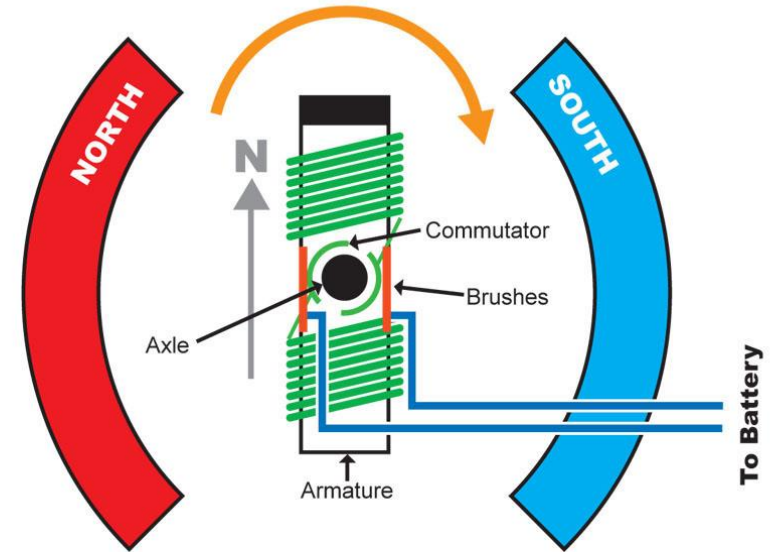
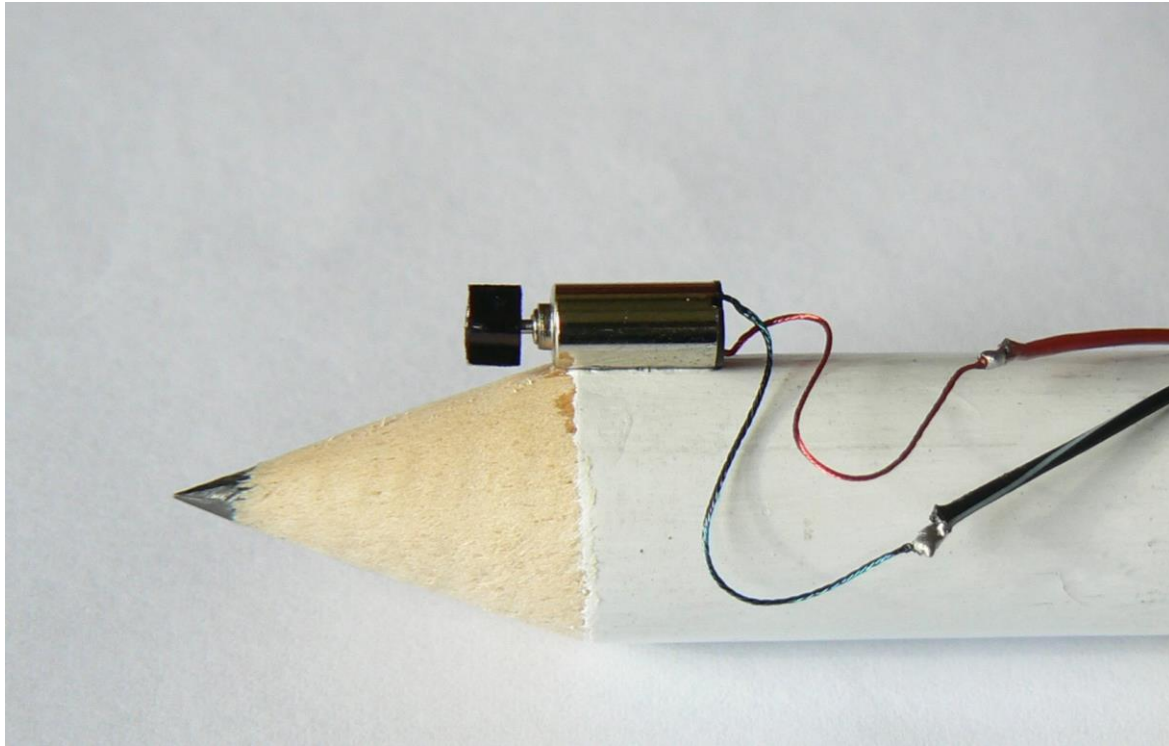


Without USB, it works!



### **3. KNOW A MOTOR**

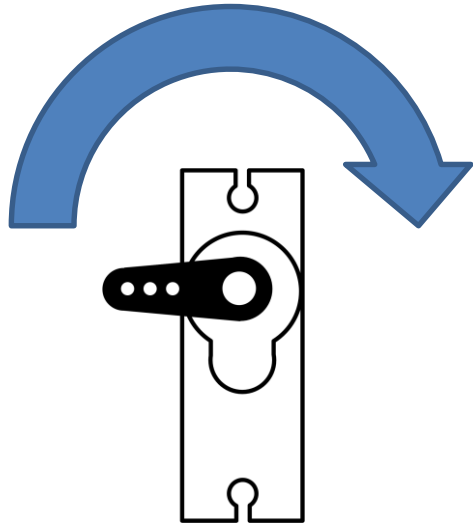
# What is a motor?



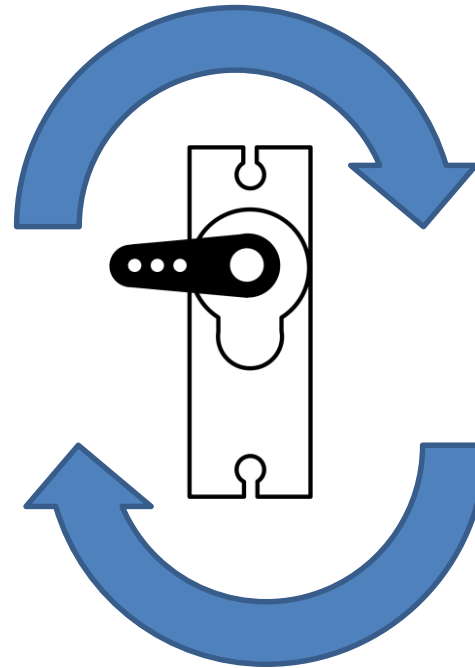
# What is a servo motor?



# The two types of a servo motor?



180 degree servo



360 degree servo

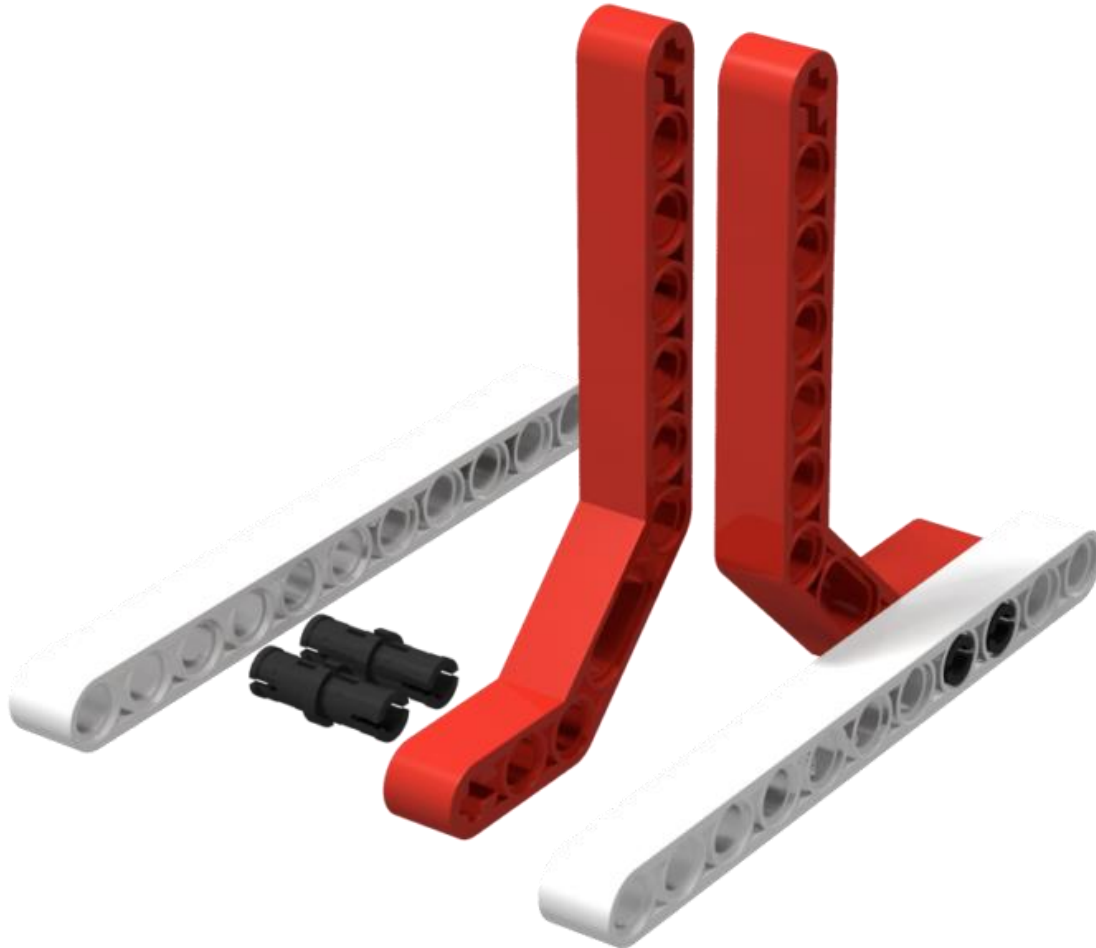
The background is a dark blue gradient. In the corners, there are white line-art graphics resembling circuit boards or neural networks, with lines connecting to small circles.

## 4. BUILD THE WINDMILL

# Step 1: Build the bottom



## Step 2: other side

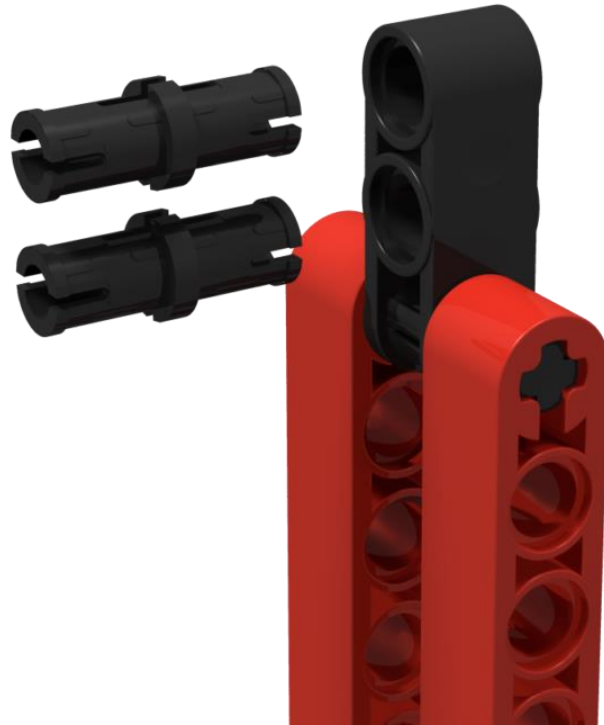




# Step 3: Connect together



# Step 4:



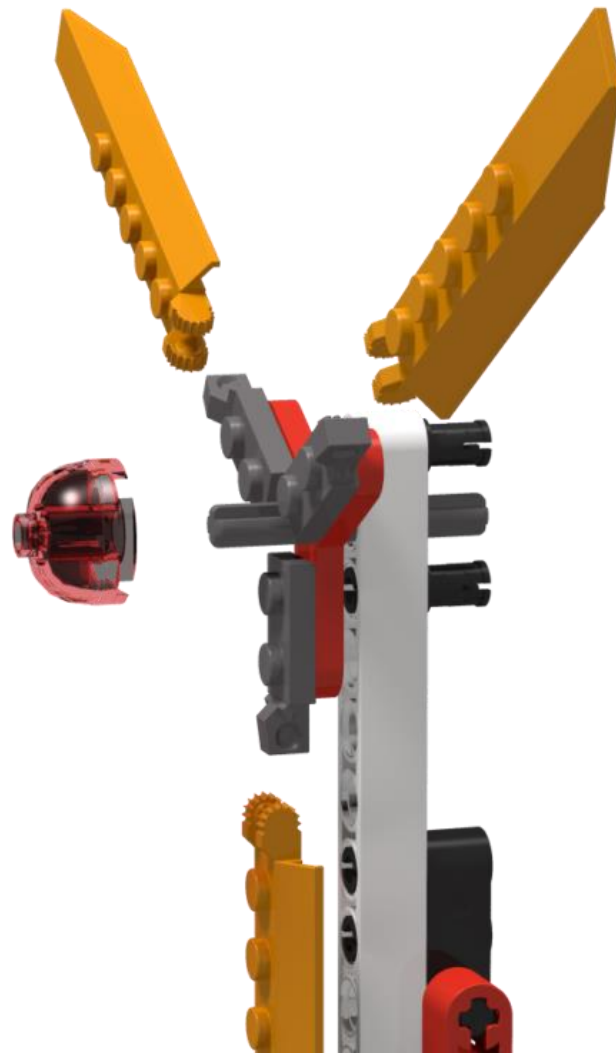
# Step 5: make it higher



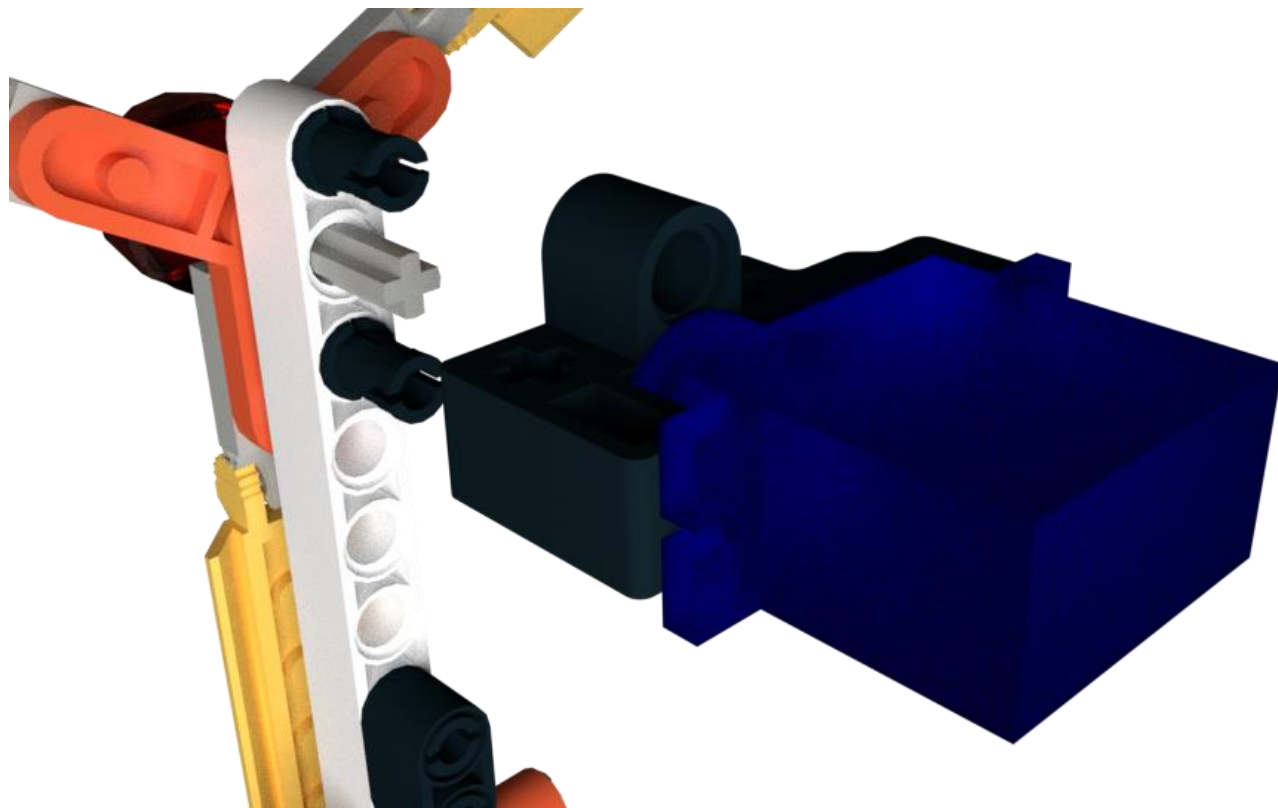
# Step 6: fan part



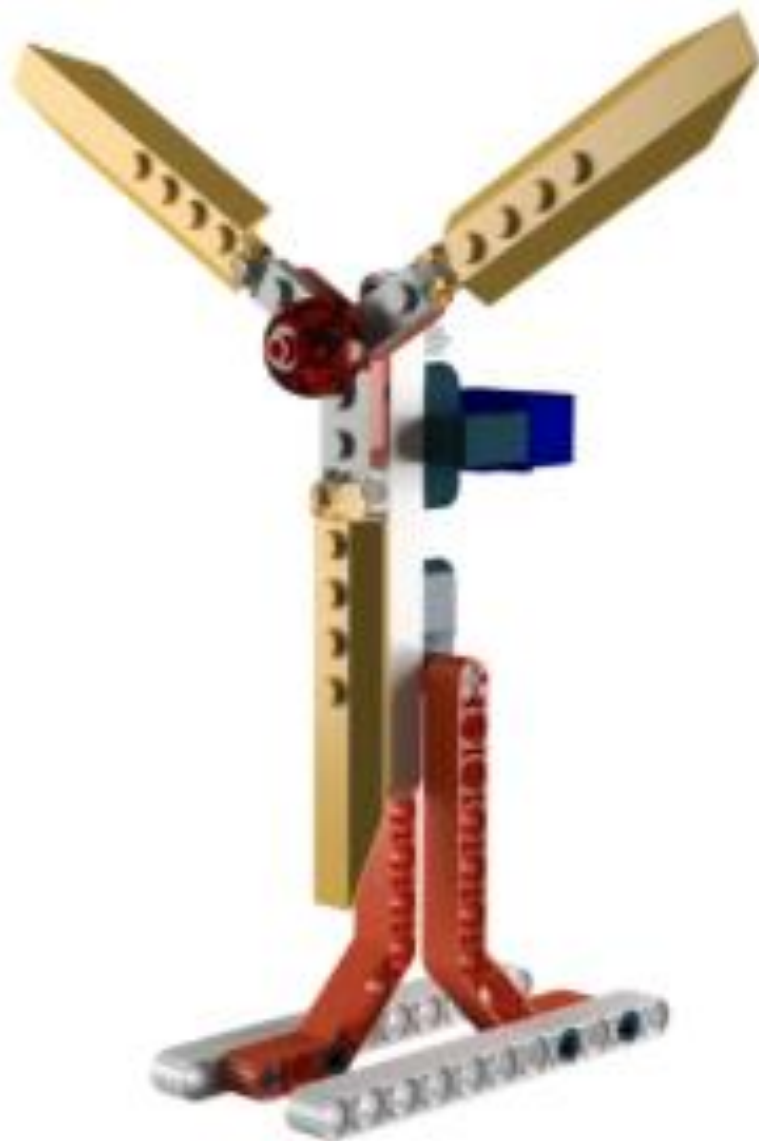
# Step 7: the remaining parts from fan



# Step 8: Install servo



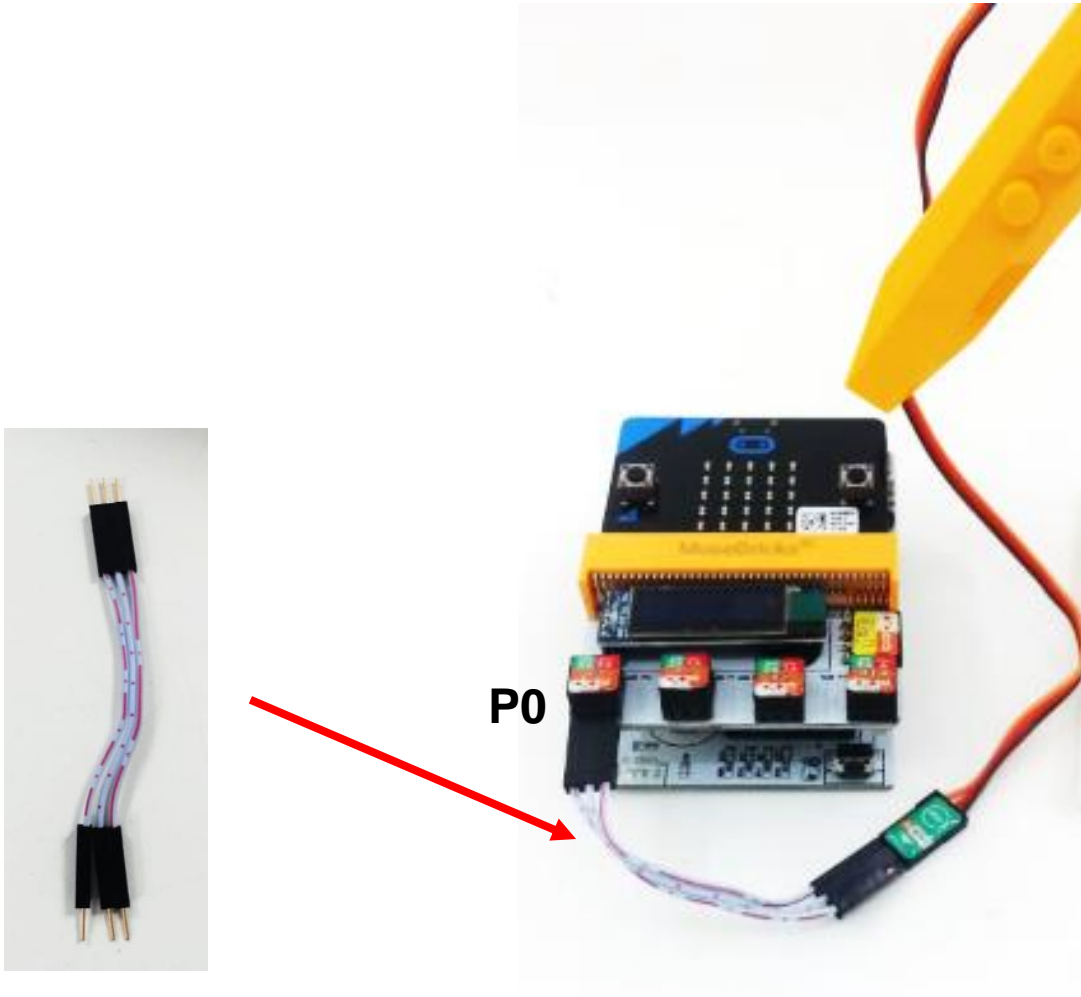
Finished!



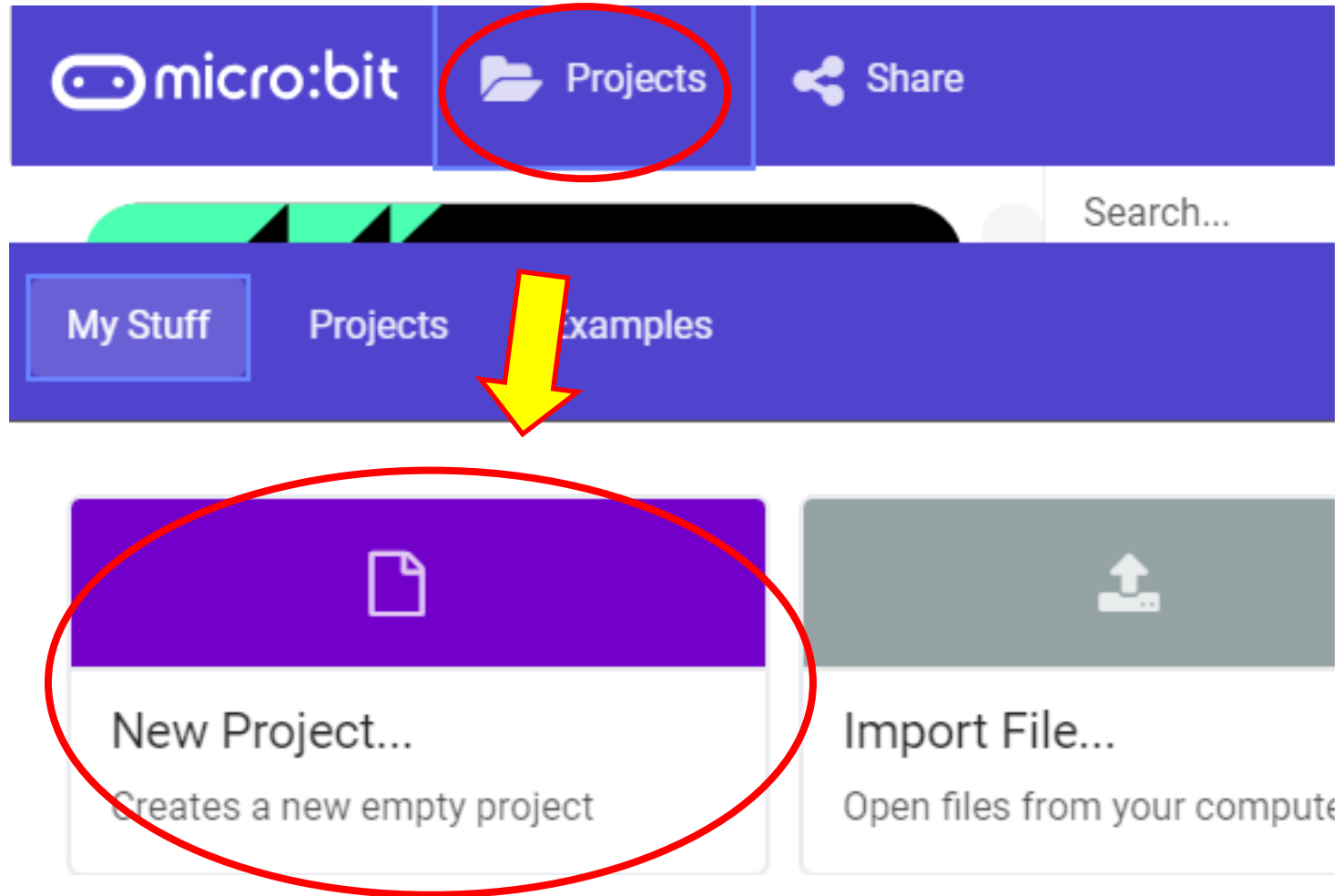
# 5. CONTROL THE WINDMILL



# Install servo on P0



# New project





1

- ☰ Variables
- 📊 Math
- ⬆️ **Advanced**
- ƒ(x) Functions
- ☰ Arrays
- 📄 Text
- 🎮 Game
- 🖼️ Images
- 🎯 **Pins**
- ⋮ More
- 🔌 Serial

2

```
digital read pin P0
digital write pin P0 to 0
analog read pin P0
analog write pin P0 to 1023
map 0
  from low 0
  from high 1023
  to low 0
  to high 4
analog set period pin P0 to (μs) 20000
servo write pin P0 to 180
```

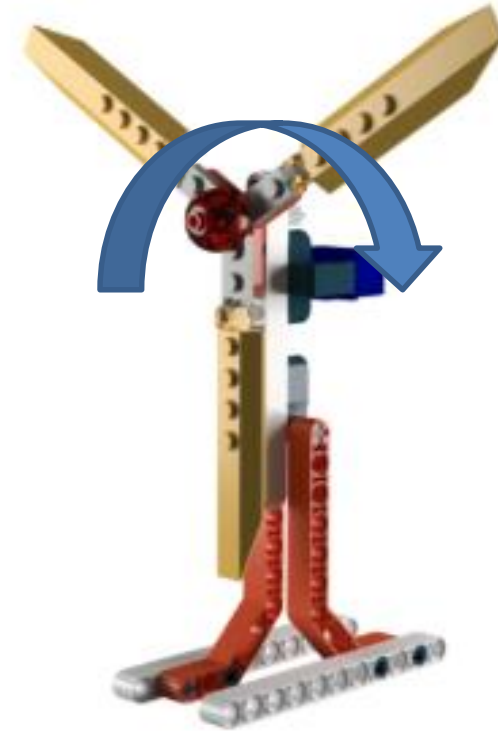
3

```
on start
  servo write pin P0 to 180
```



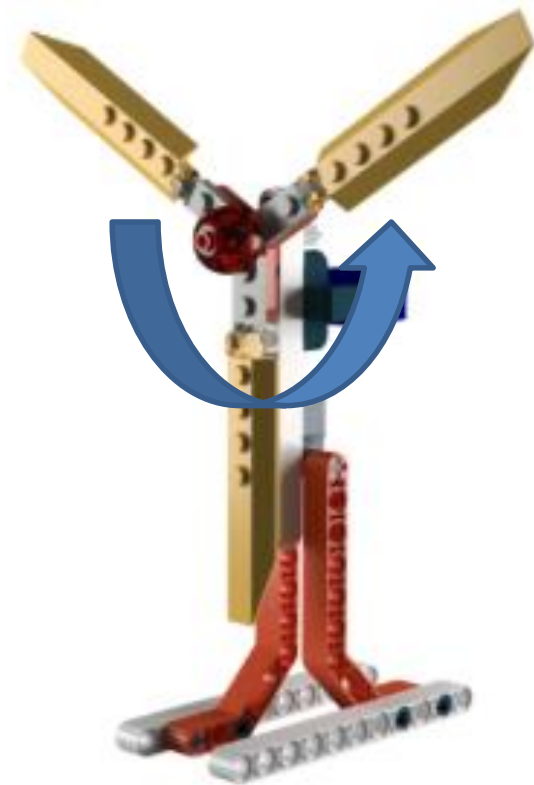
# Turn the servo clockwise, max speed

```
on start  
  servo write pin P0 to 180
```

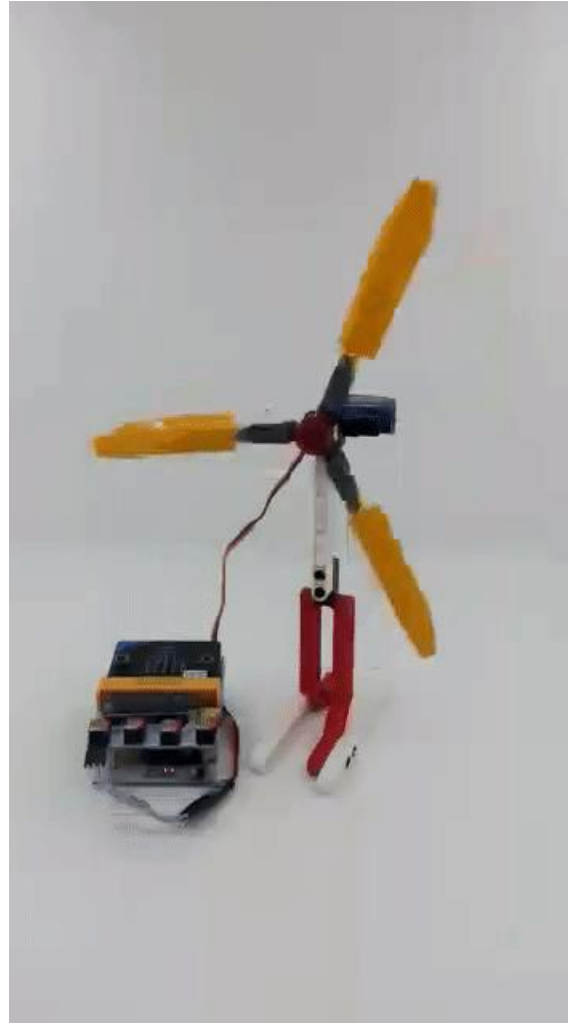


# Turn the servo anti-clockwise, max speed

```
on start  
  servo write pin P0 to 0
```



**Can you do this?**



# Challenges

- Can you turn the fan off after 10 seconds?
- Can the fan automatically turn on when it is dark?
- Can the fan run in 3 level of speed?
- Can you fan run in random speed?



Thank you

