

# Sensory Toy

micro:bit



Co-funded by  
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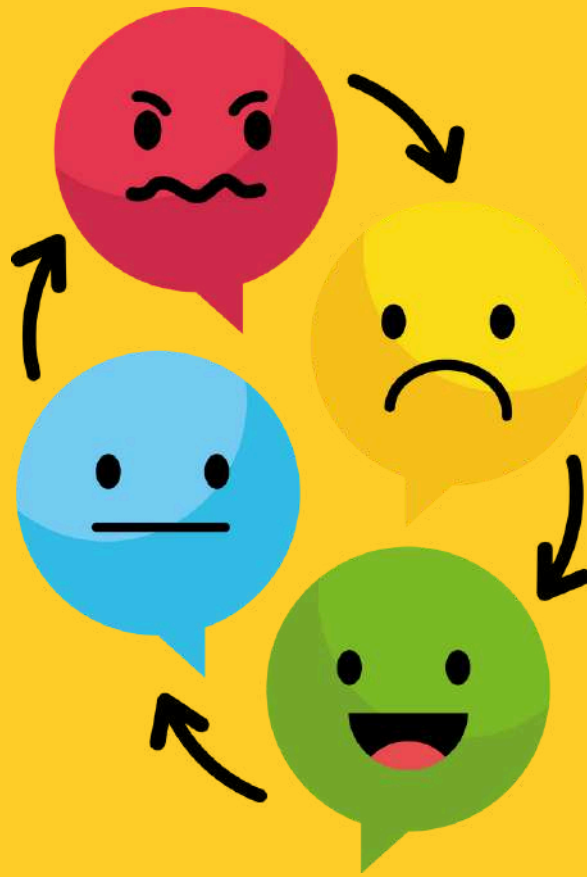
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# GOAL

In this workshop  
you will use the  
**BBC micro:bit**  
to create a toy that  
displays icons

## What will you learn

Using the micro:bit  
Basic programming principles  
Using the MakeCode interface



# Getting started

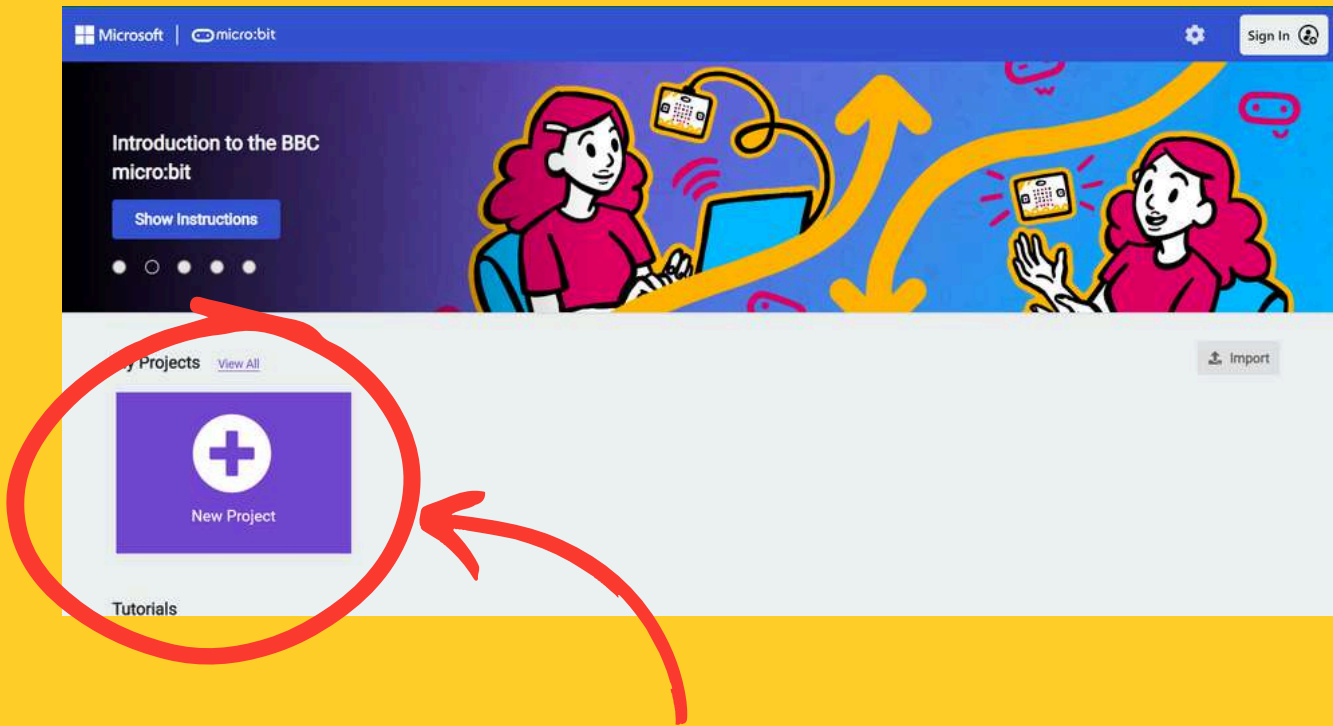
## What will you need

- A computer
- Access to the internet
- BBC micro:bit
- USB to micro-USB cable

Time to go on your  
browser and visit  
[makecode.microbit.org](https://makecode.microbit.org)

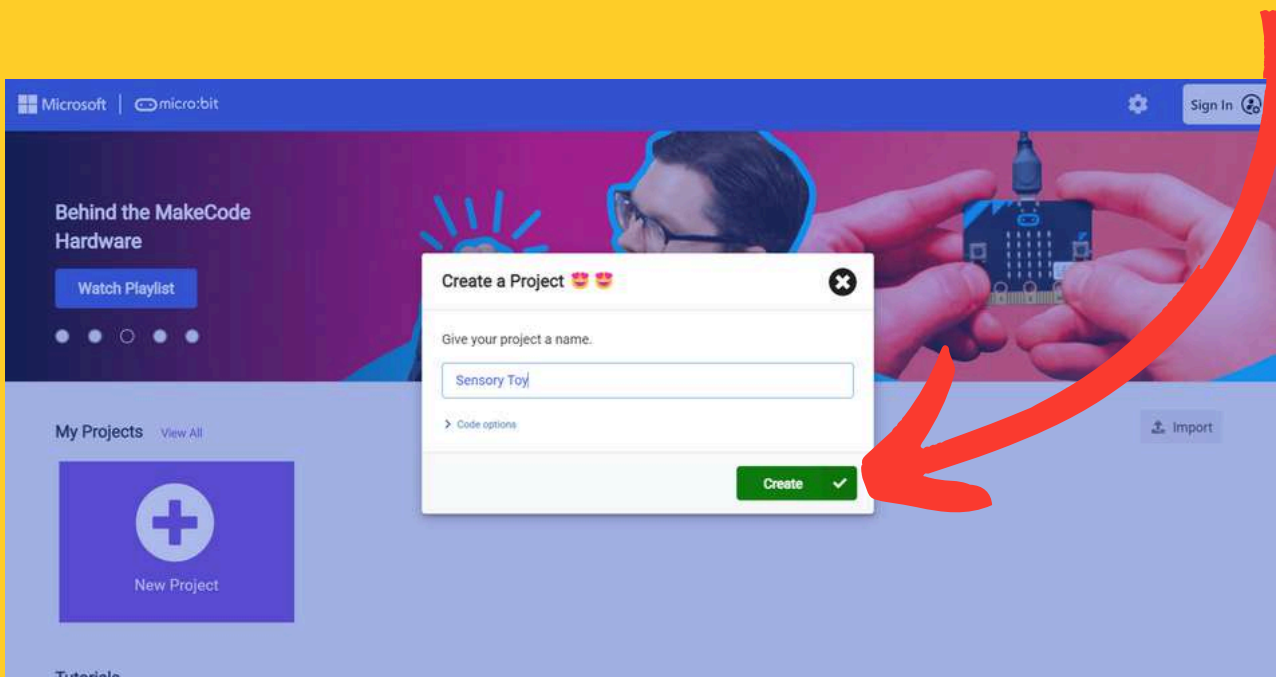


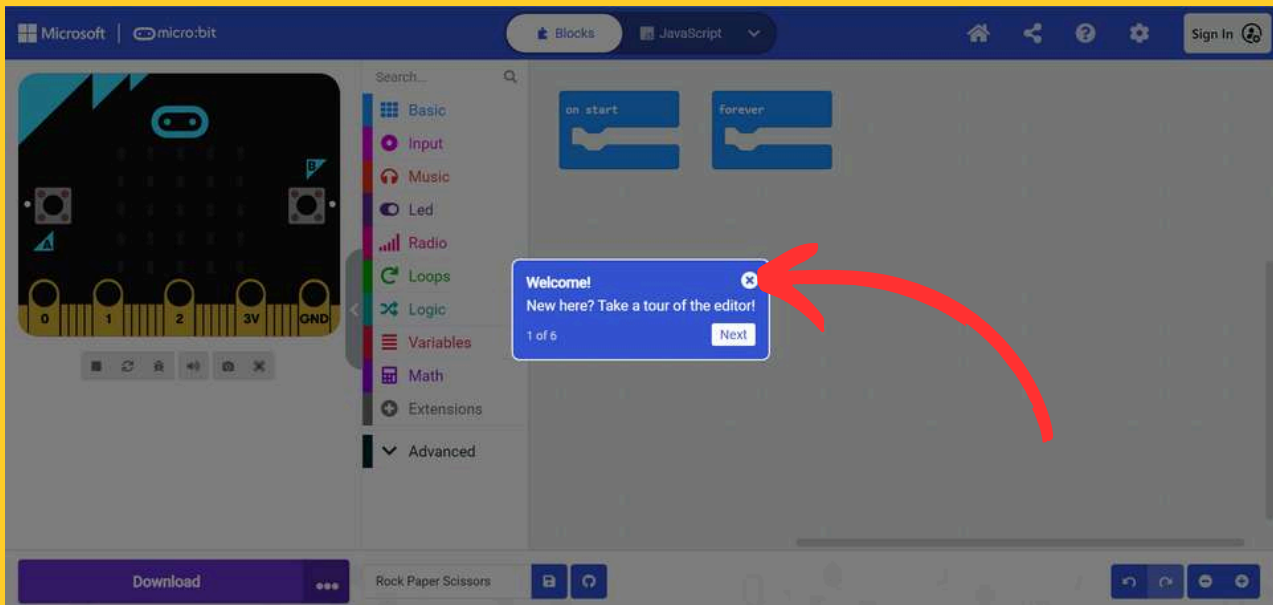
Now, your screen should look like the screenshot below



**step 1:** Press on the + icon to create a new project

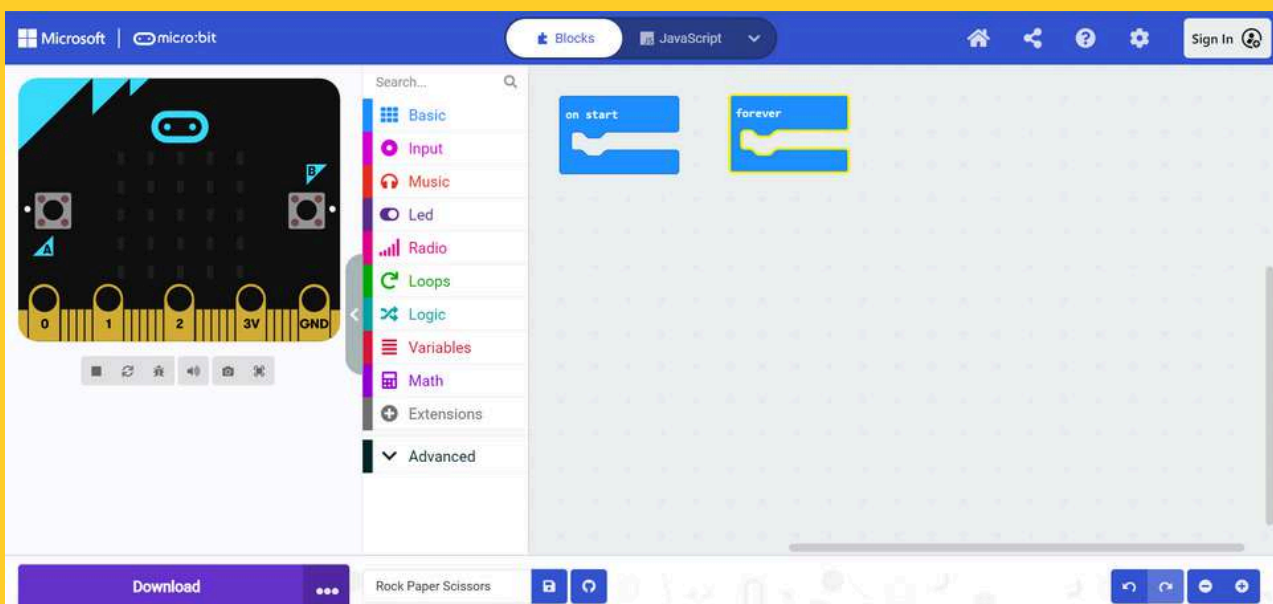
**step 2:** Name the project Sensory toy and press **create**

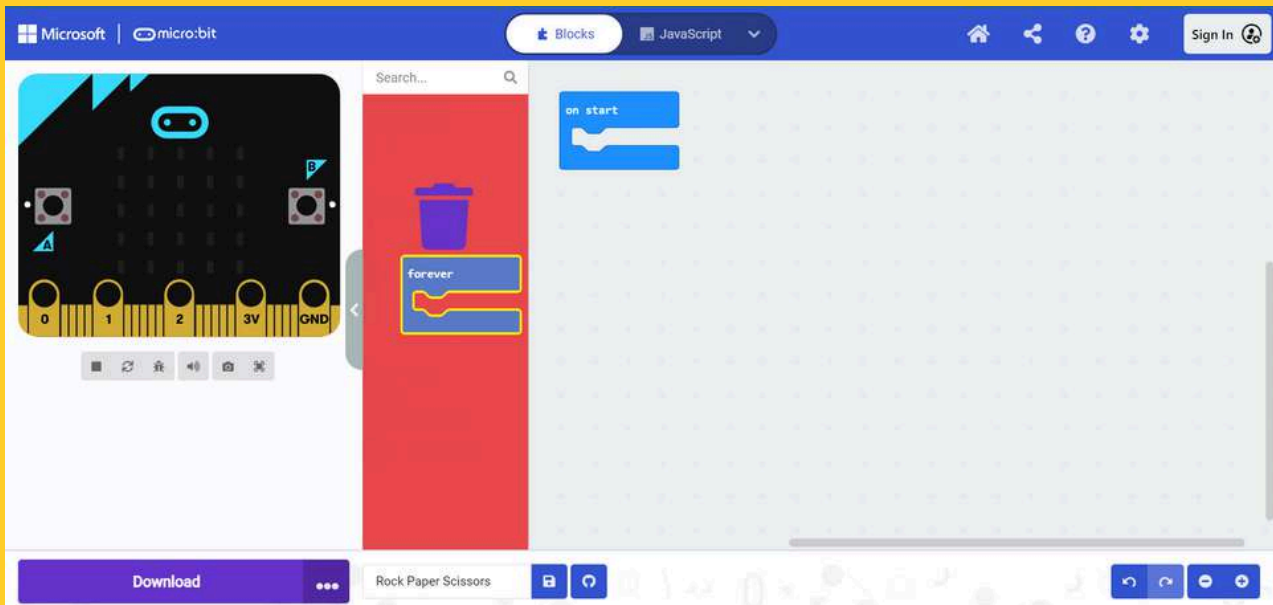




**step 3:** Your screen should look like this. Now, lose the **Welcome message**. by pressing on the  icon.

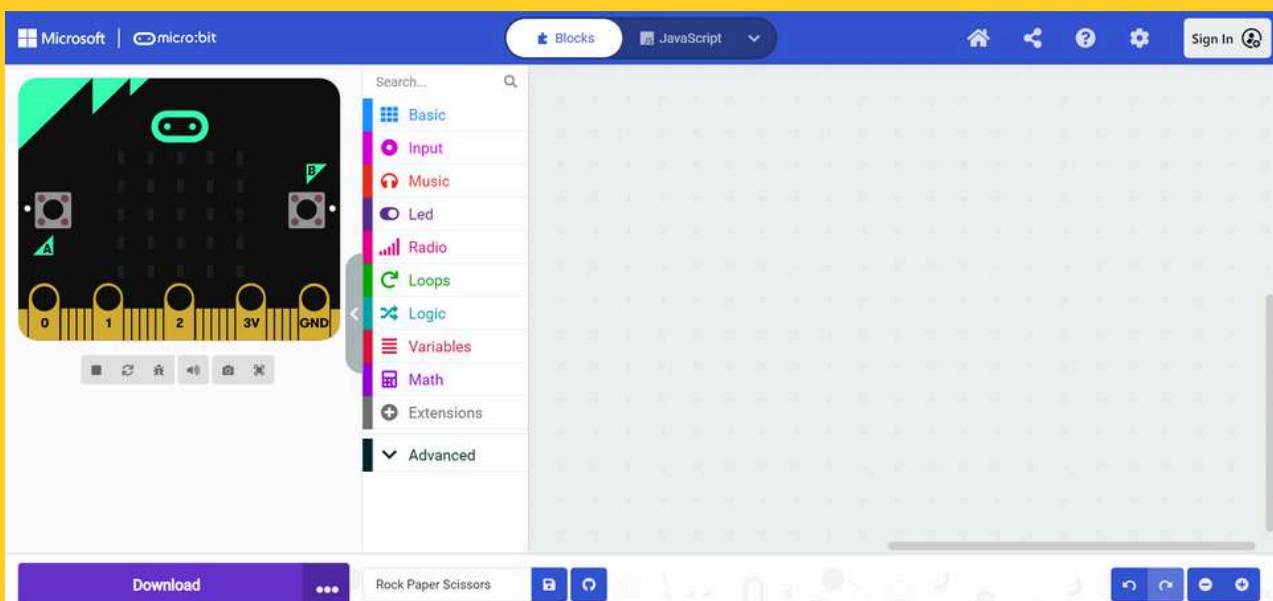
**Now, your screen should look like the screenshot below**



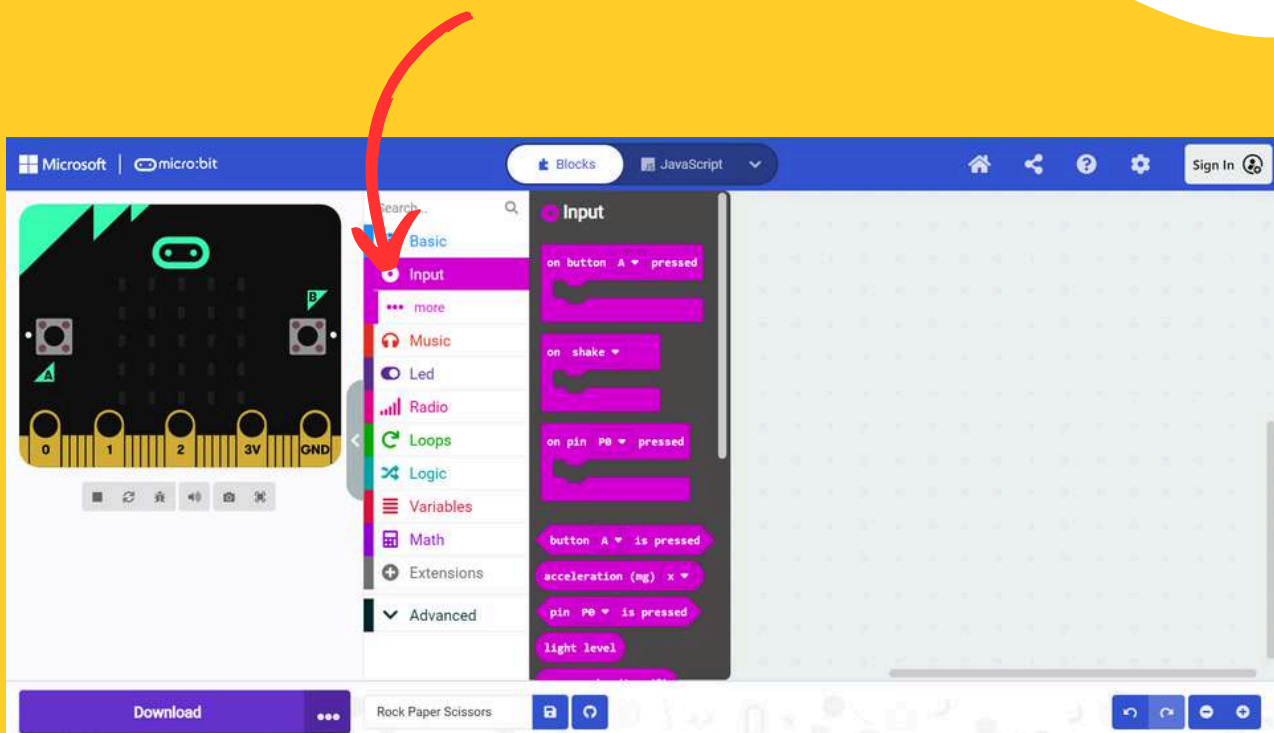


**step 4:** Delete the “**on start**” and “**forever**” blocks by dragging and dropping them over the menu as seen in the picture above.

**Now, your screen should look like the screenshot below. We are ready to work on the project**



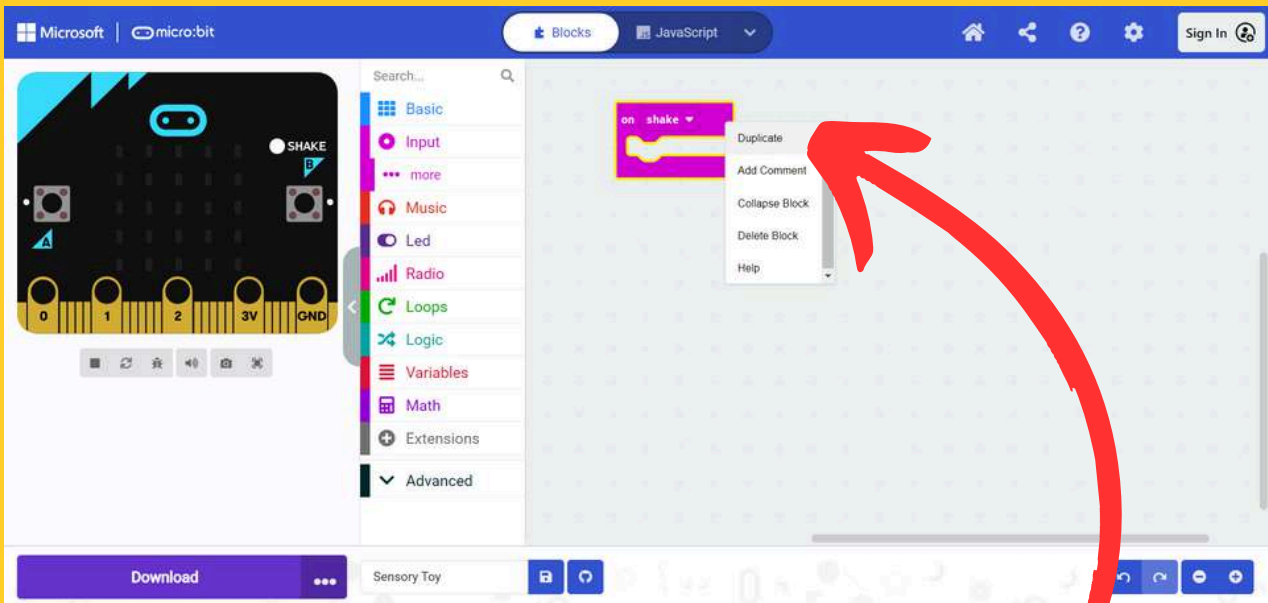
# Creating the game



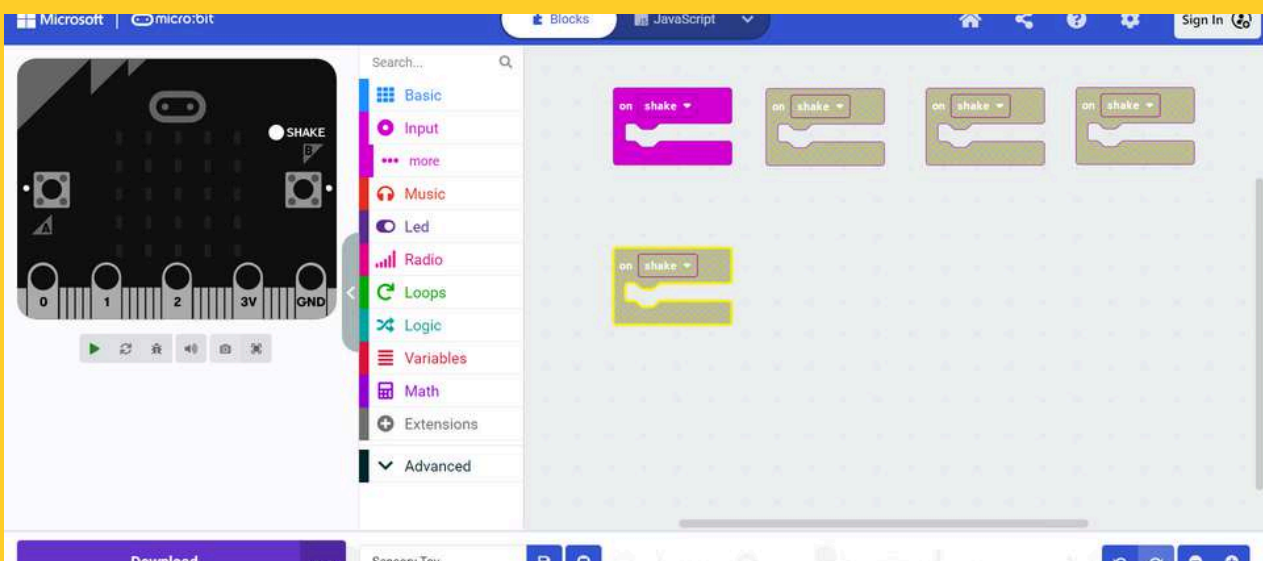
**step 5:** Navigate to the “Input” tab on the menu and select the “on [shake]” block.

Drag and drop it in the canvas on the right side of the screen

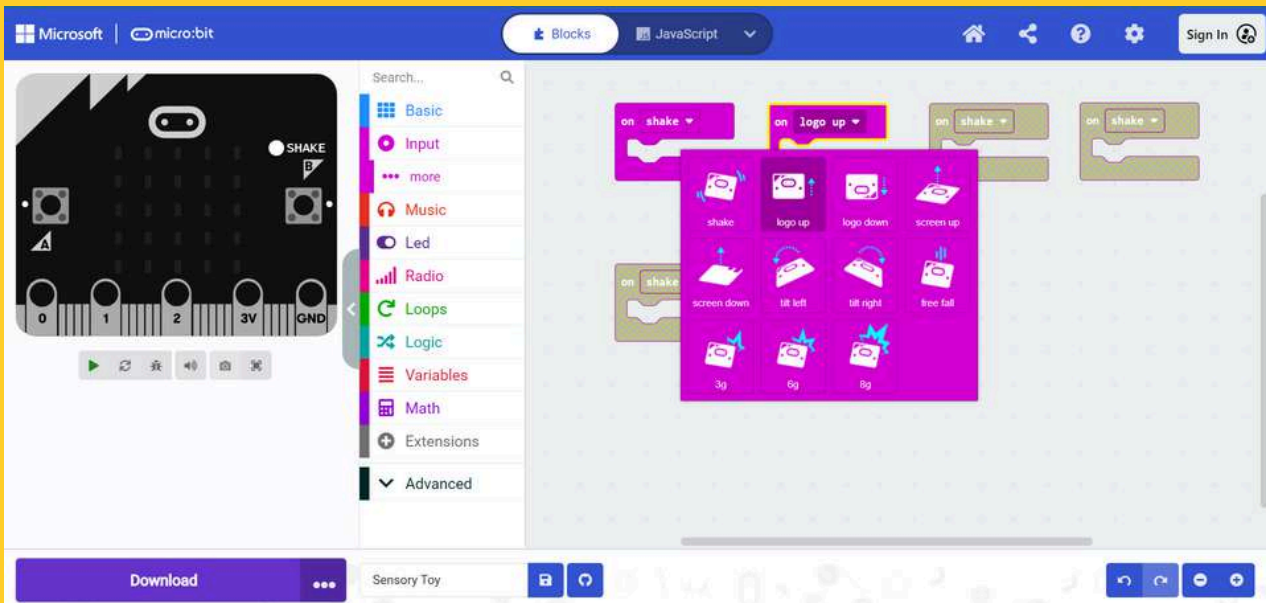




**step 6:** We will simulate 5 different movements. In order to do so, we need to duplicate the **“on [shake]”** block 4 more times. Simply right click on the block and select the **“duplicate”** option. Do this 4 times.

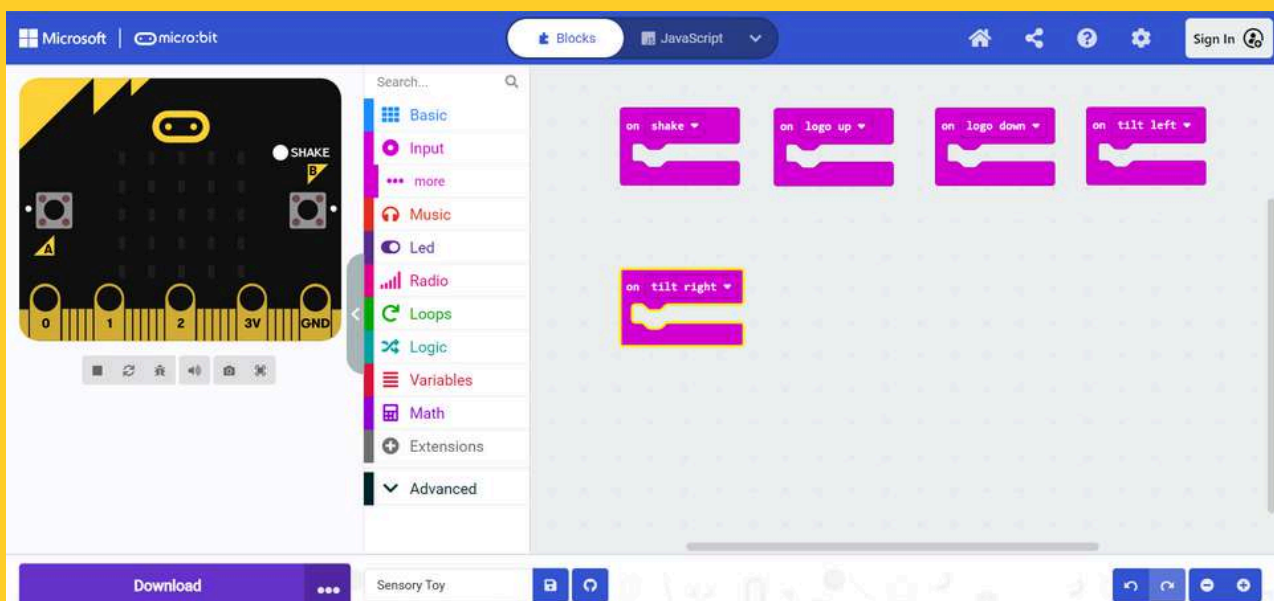


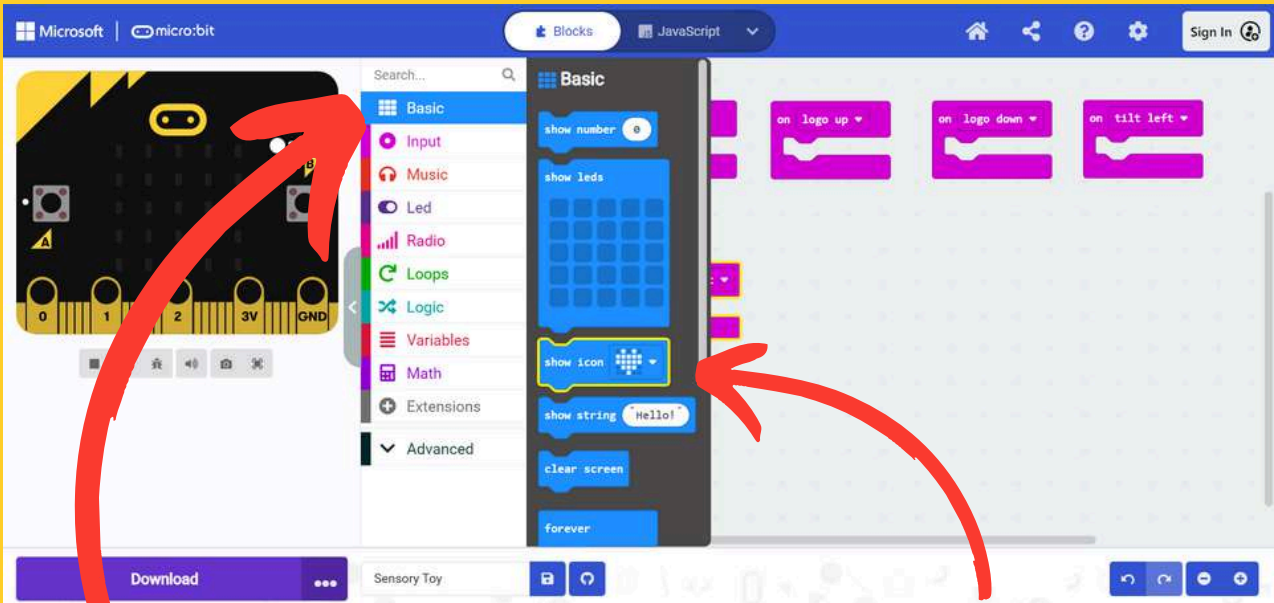




**step 7:** To add different movements, simply press on the small arrow on the block and select a different movement for each block.

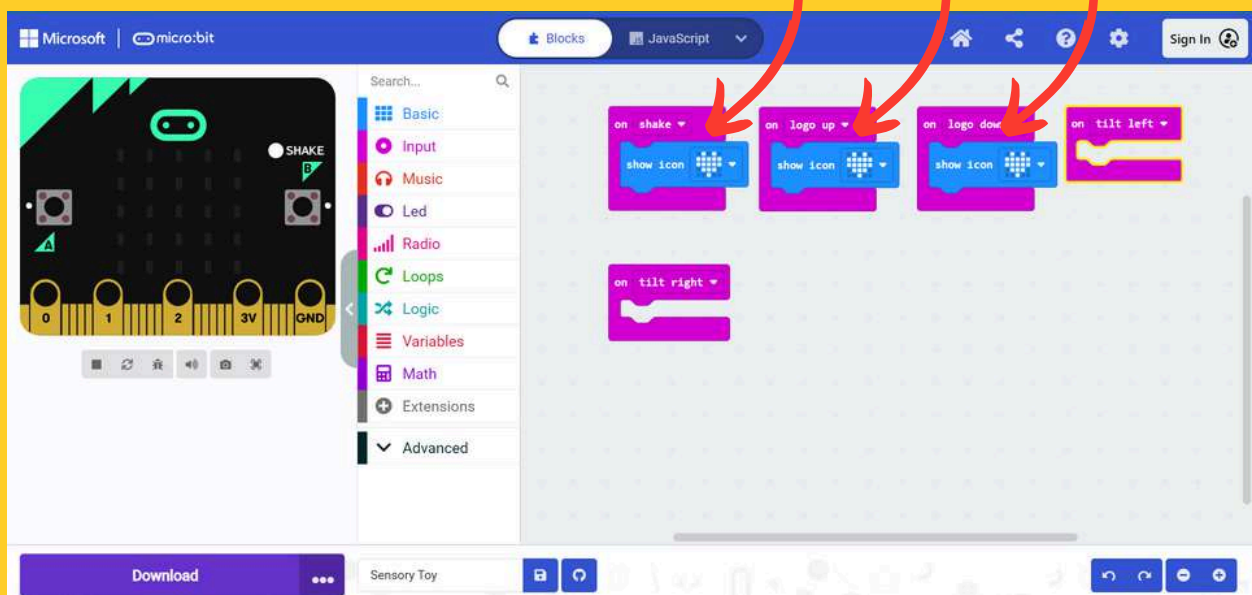
**Now, your screen should look like the screenshot below.**

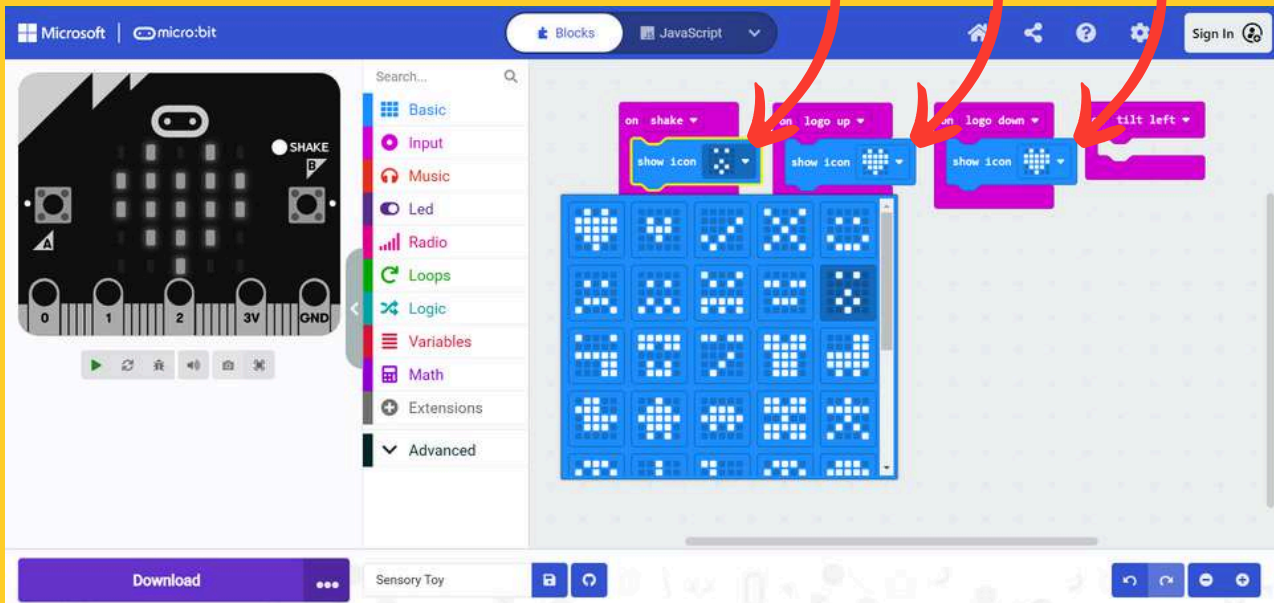




**step 8:** Now, in order to be able to display emotions, we have to navigate to the “Basic” tab and select the “set icon” block.

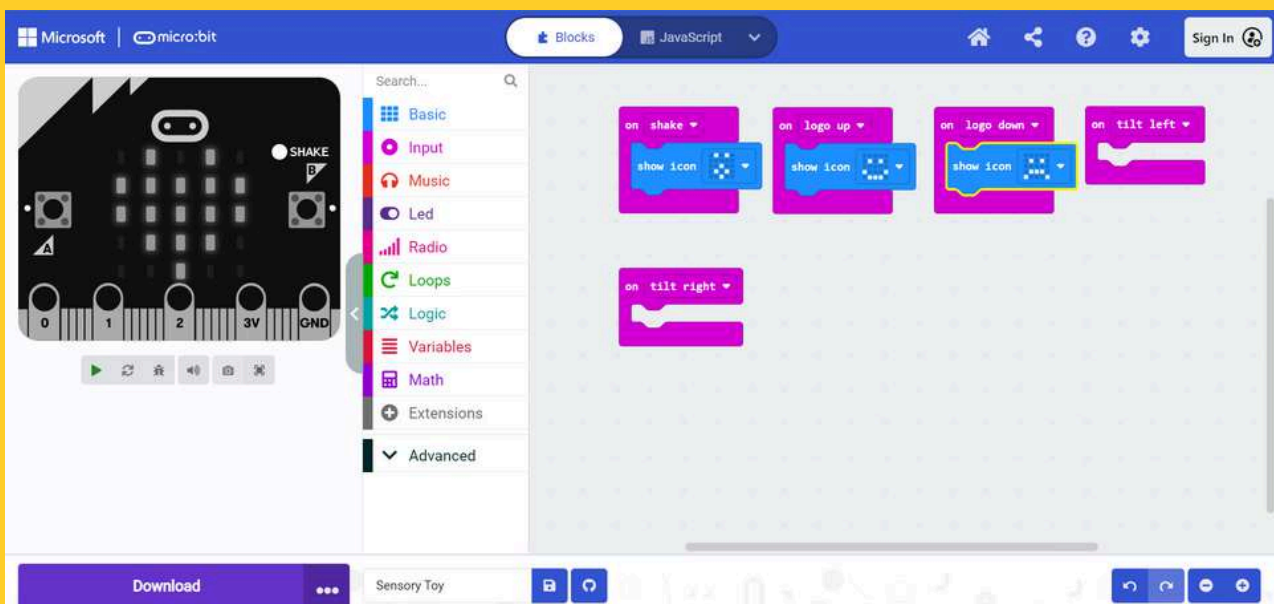
**step 9:** Drag and drop the “set icon” three times in the canvas, in the movement blocks. Leave the “tilt left” and “tilt right” blocks empty as shown in the picture below.

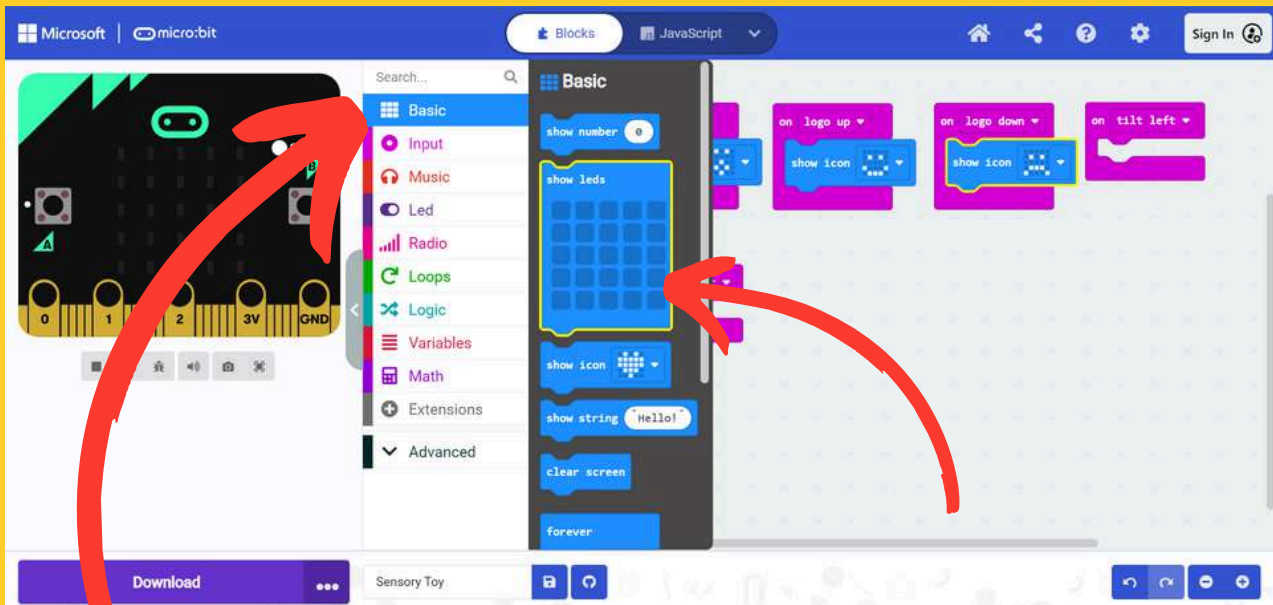




**step 10:** Press on the small arrow on the “**show icon**” blocks you added in the canvas and change the icons into faces that you want.

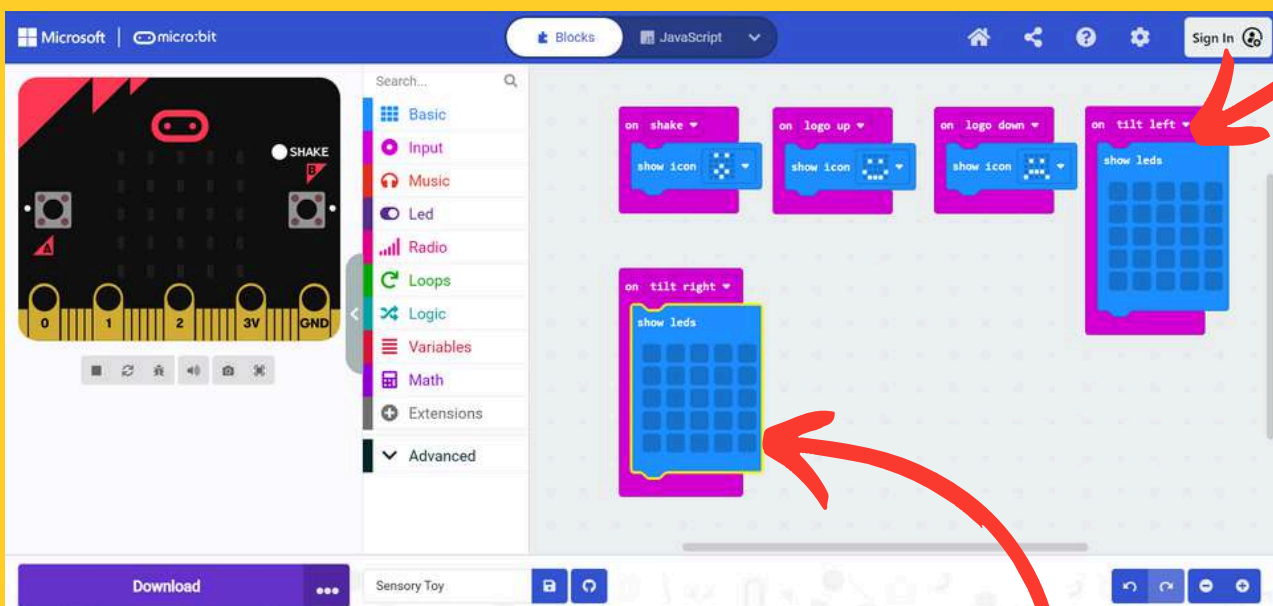
**Now, your screen should look like the screenshot below.**





**step 11:** For left and right, we navigate to the **“basic”** tab again and we select the **“show leds”** block.

**step 12:** Drag and drop the **“set leds”** two times in the canvas, in the **“tilt left”** and **“tilt right”** blocks as shown in the picture below.



# Knowledge time

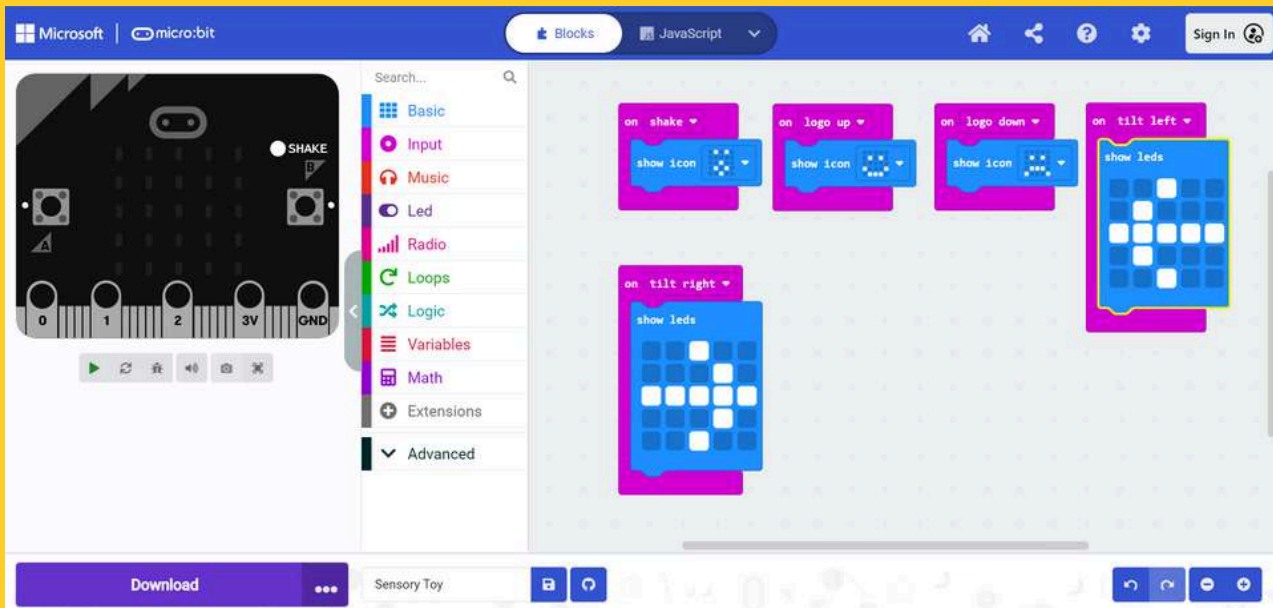
## LED

An LED is a tiny light that uses little energy and can shine in different colors. LEDs last much longer than regular light bulbs and can stay on for many years.

LEDs can produce many colors, and they can even change colors by mixing red, green, and blue light.

The last LED to be invented was the blue LED in the early 1990s. The invention of the blue LED was a big breakthrough because it made it possible to create white LED lights and advanced displays.

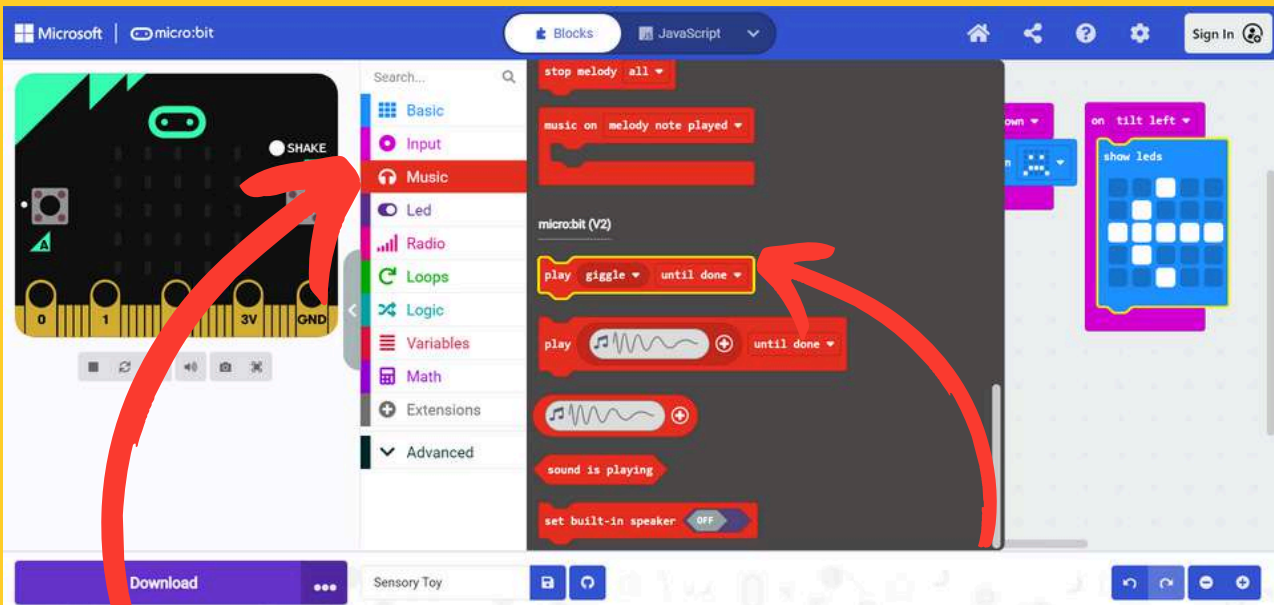




**step 13:** Click on the small squares in the “**show leds**” block to create the left and right icons, as shown in the picture above.

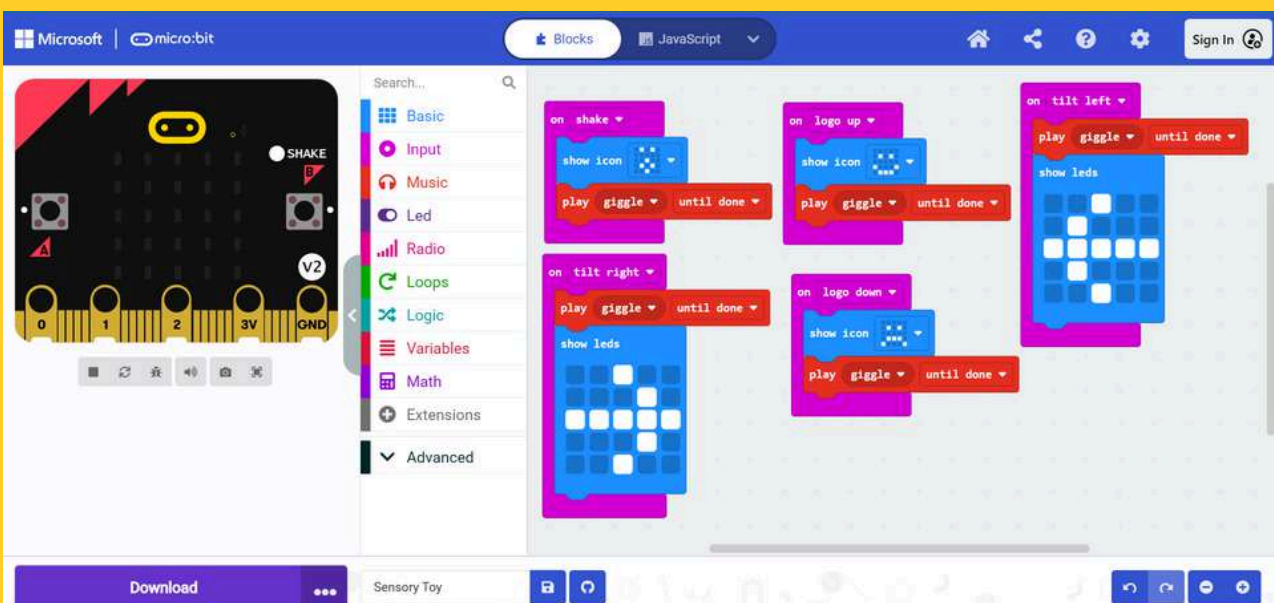
**At this point, our toy is ready. You can stop here or you can optionally add sounds to each movement.**

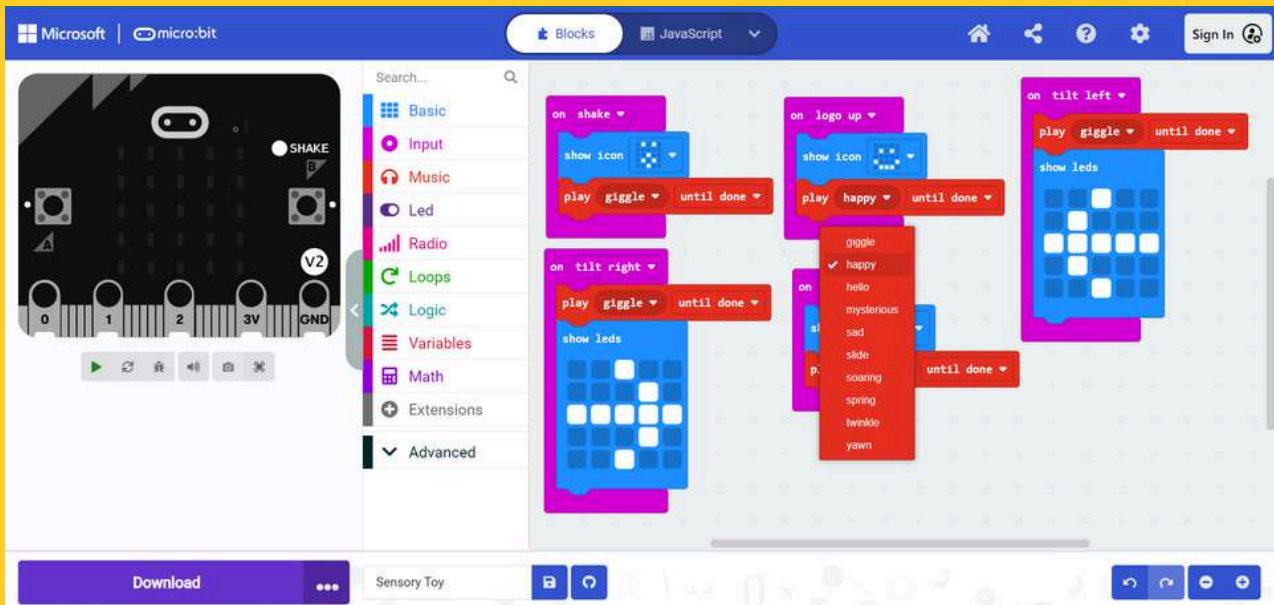




**step 14:** To add sounds, navigate to the “music” tab and select the “play giggle until done” block .

**step 15:** Drag and drop the block 5 times inside each movement, as shown in the picture below.

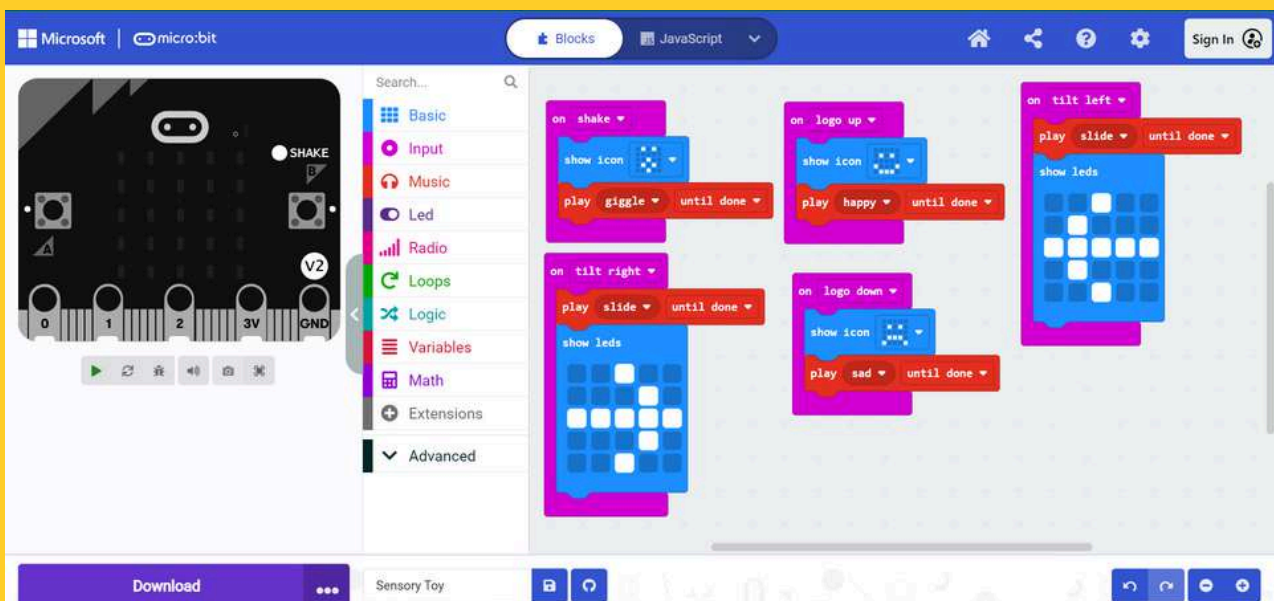




**step 16:** Click on the small arrow in the music block and a menu with different sounds will appear.

**step 17:** Select a different sound that you like for each block as shown in the picture below.

**Now, your screen should look like the screenshot below, we are ready to simulate.**





# Time to play

**step 16:** For the fun part!

Navigate to the micro:bit simulation that is located in the left side of your screen. To simulate the program. Move your mouse over the micro:bit and see what happens.

