

Lesson 2: Introduction to Cutebots

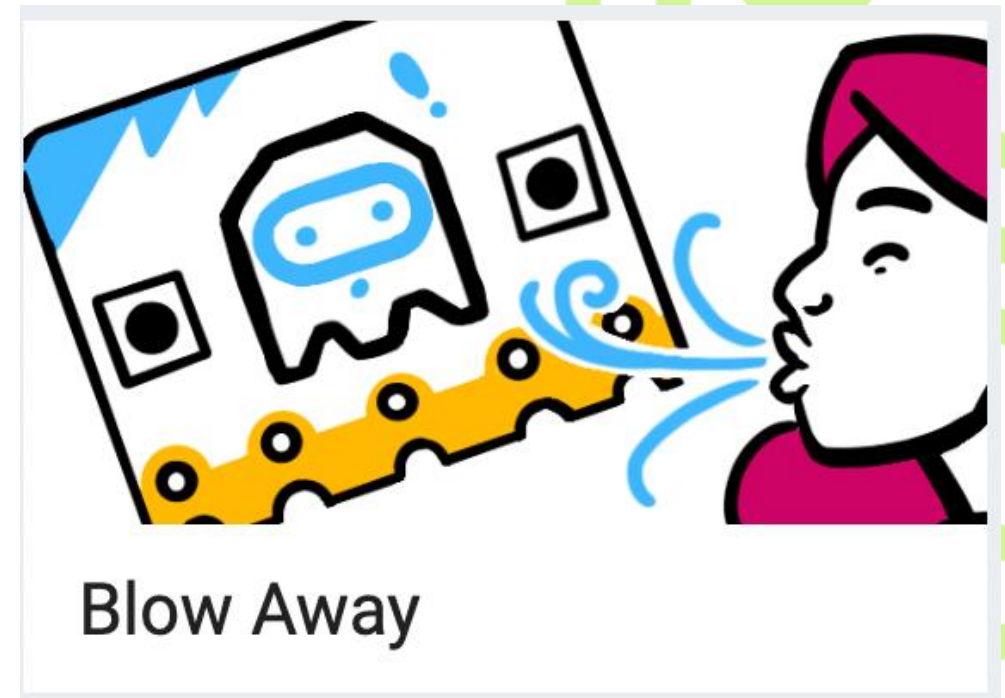
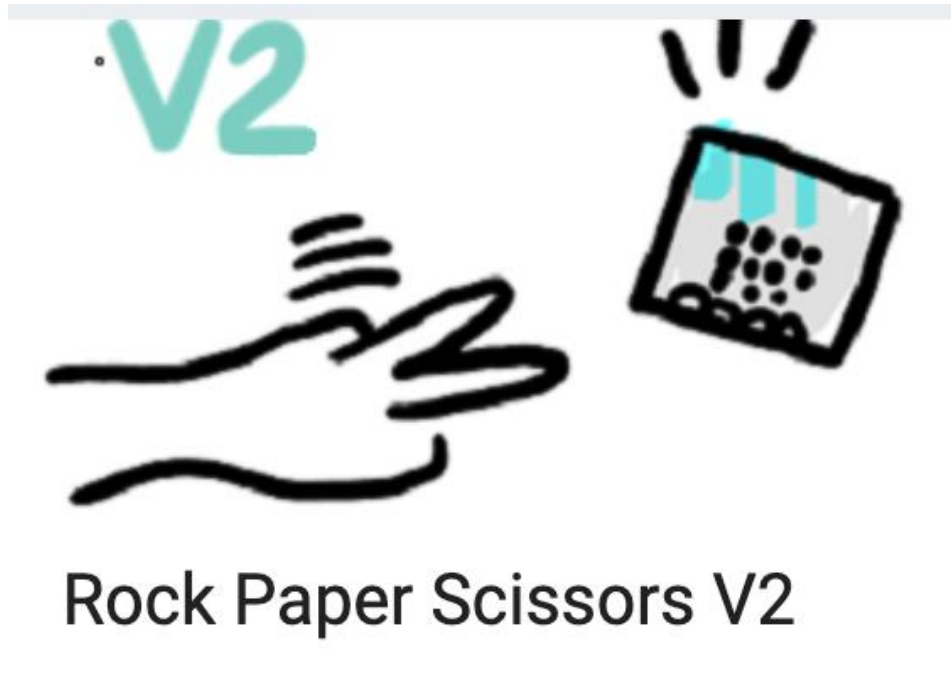
What Did We Learn Last Class?

- What are Micro:Bits? What can they do?
- Let's try a tutorial using the **accelerometer**:



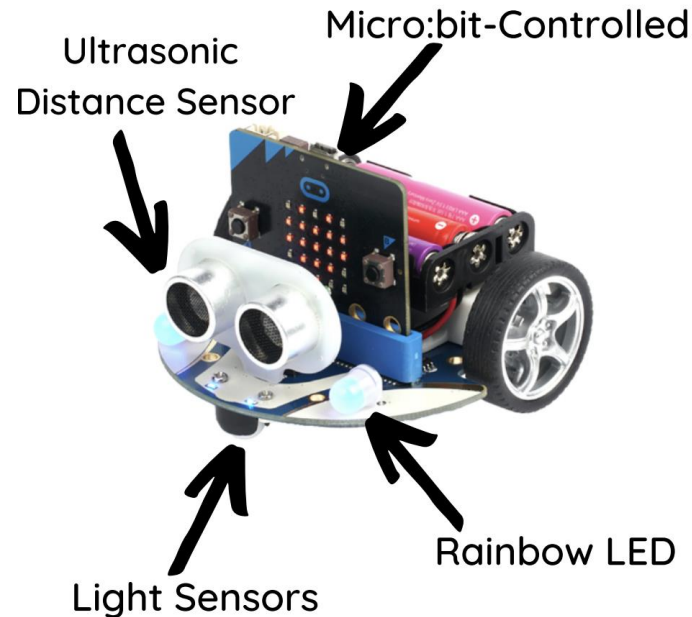
Warmup Tutorials

- Some more tutorials to get warmed up



Intro to Cutebots

- We can give our Micro:Bits a body to let it do more things
- These are called **Cutebots**
- **Cutebots** have some extra sensors, lights and wheels!
- We'll talk more about the sensors and lights another day



CuteBot - Rules

- Cutebots are very fragile so we need to be careful with them
- We will not have any food or drinks near them
- We will first code our Micro:Bits outside of the Cutebot, then plug it into the Cutebot gently
- While they are moving, we will not block their movement for a long time
- Do not bend any of the pins for the servo or the ultrasonic sensor (the eyes)



CuteBot Rules:

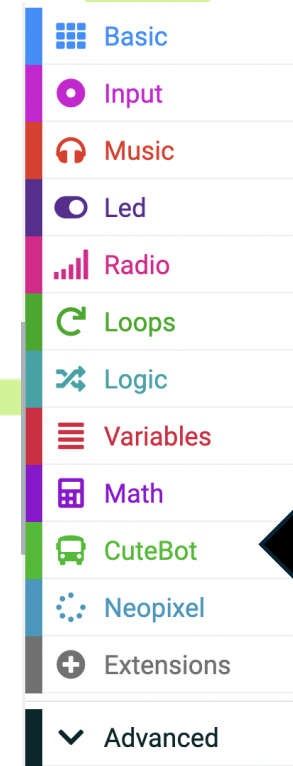
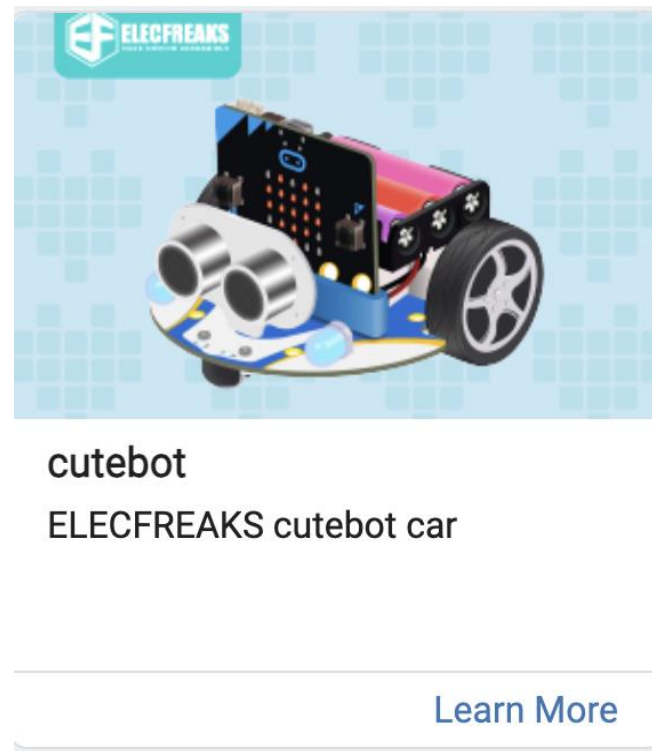
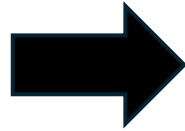
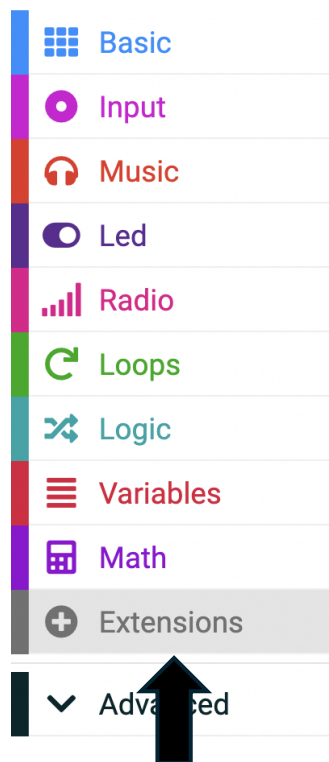
1. Only run bots on designated mats
2. Limit speed to $< 75\%$ (unless otherwise specified)
3. Unplug batteries when not in use
4. Do not drop the CuteBots

If you break any of these rules, you can choose:

- A. Do 3 burpees
- B. Sing "I'm a Little Teapot" song
- C. Do 10 jumping jacks

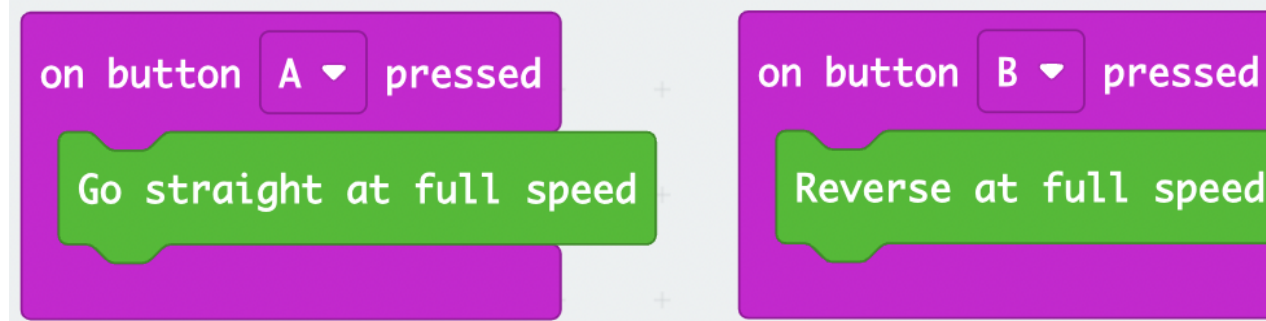
First Cutebot Program

- We are going to create our **first** program for our Cutebot
- First we need to add the extension in makecode.microbit.org

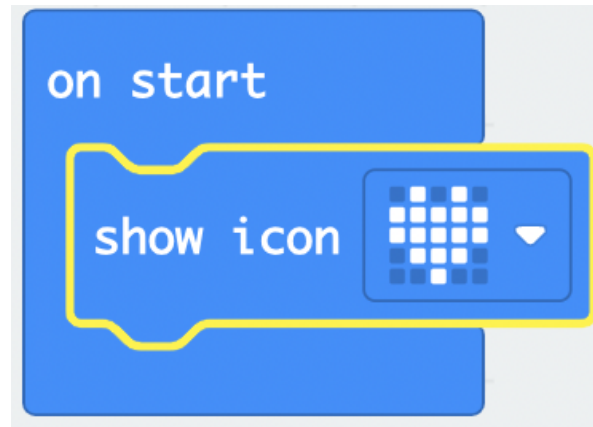


Making it Move

- Lets start by making our Cutebot move forward and backwards:

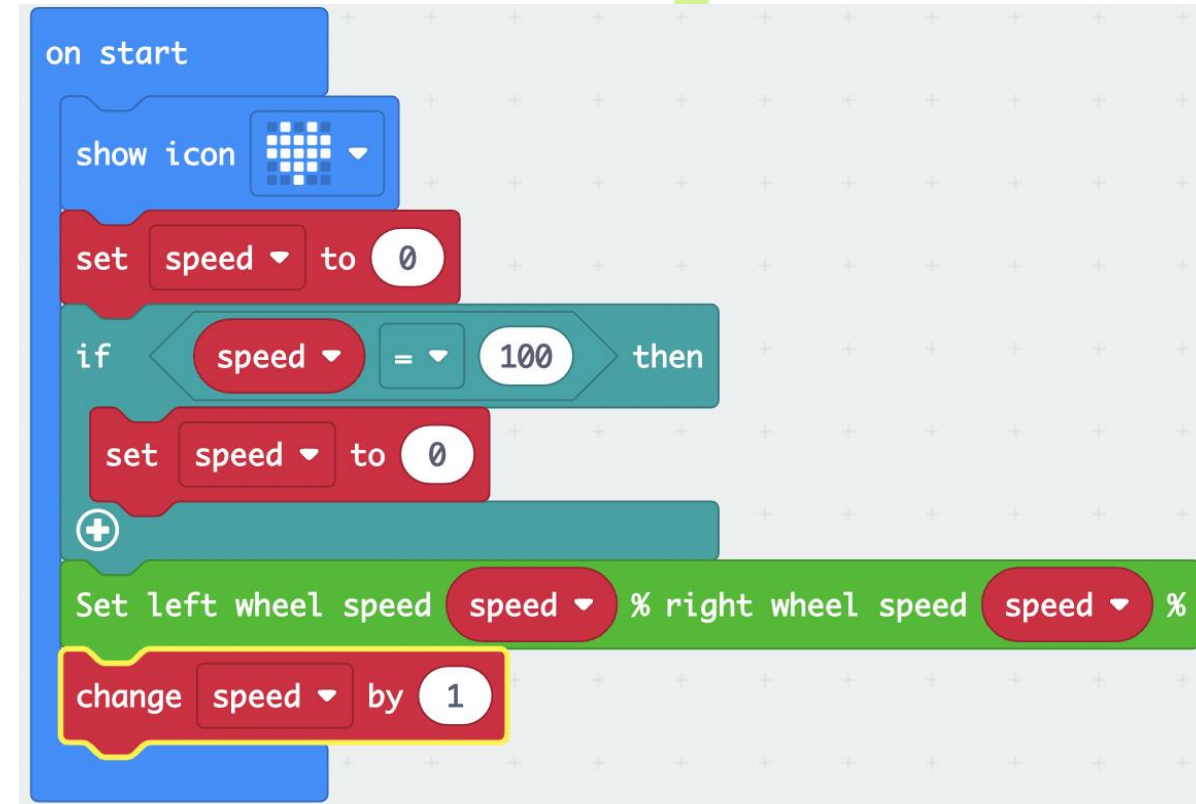


- Download and test our code!
- All of our old code for the regular Micro:Bit can be used to make it more exciting!



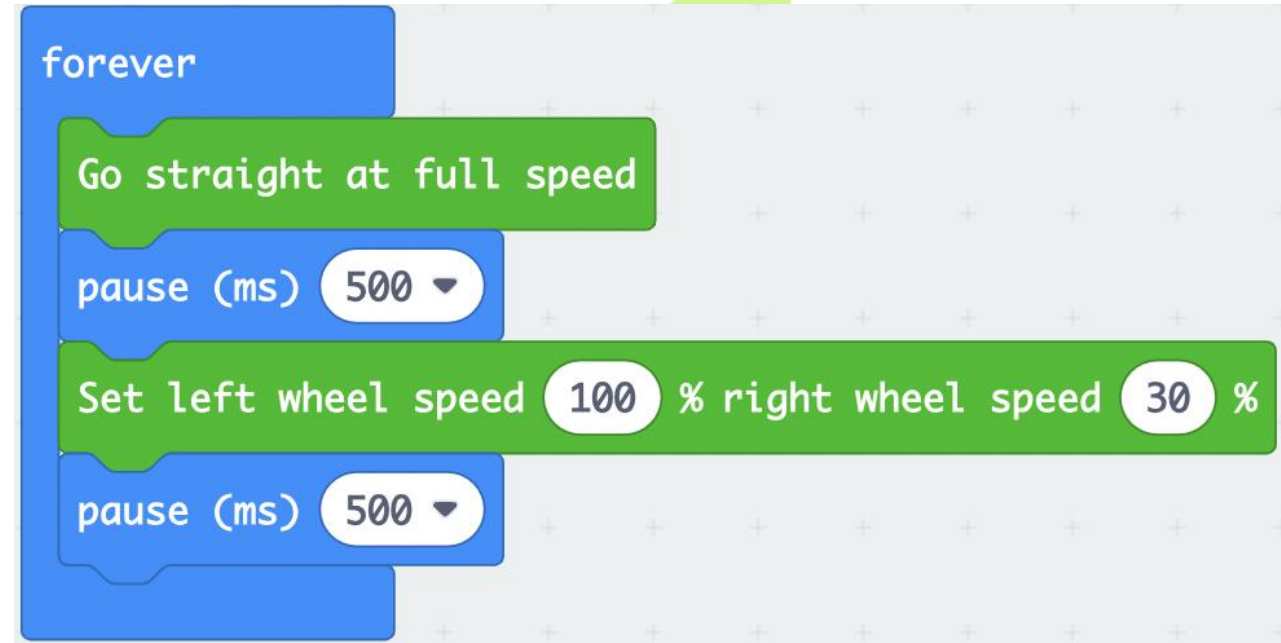
More Practice

- What do you think the program will do?
- Try re-creating it
- What happens if I change the 100 to a 50?
- How can I make it start really fast and gradually get slower?



Turning

- What do you think the program will do?
- Try re-creating it
- How would we make it turn the other way?



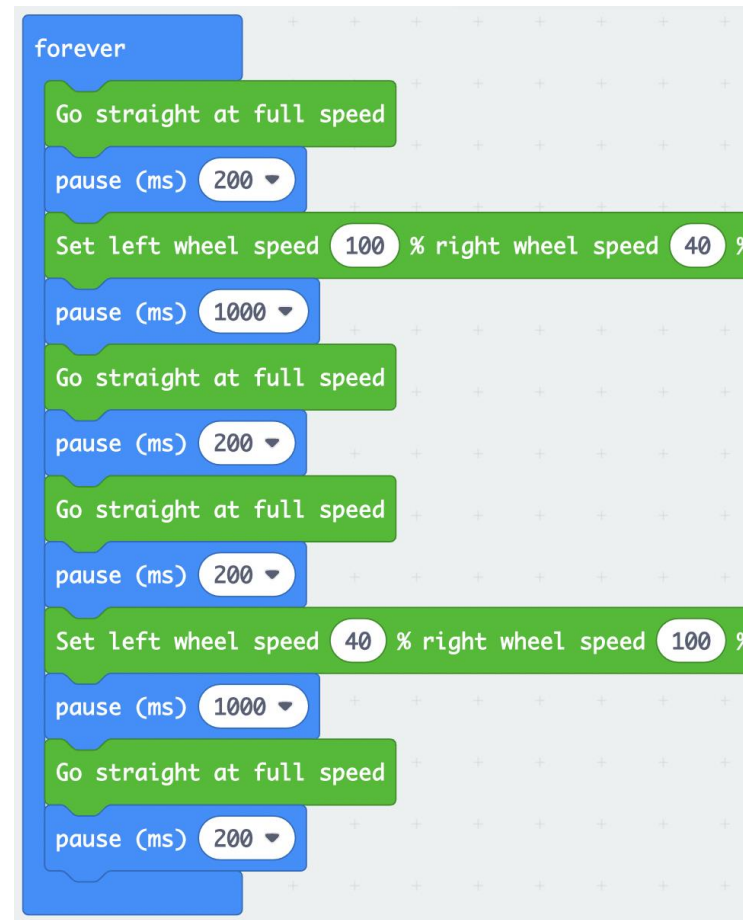
Make it Dance!

- Let's try making our Cutebot car move in a figure-eight pattern
- Try making it on your own first or while working with a friend
- How fast should your Cutebot go? How long should it be turning for? How much should it be turning?



One Solution

- Here's one way to make our Cutebot go in a figure-eight pattern:



Your Turn

- Use what we've learned so far to make your Cutebot do a unique dance
- Make it more exciting!
 - Add an animation to the LED screen while it dances
 - Make it play music
 - Try having it react to sound



discover
coding