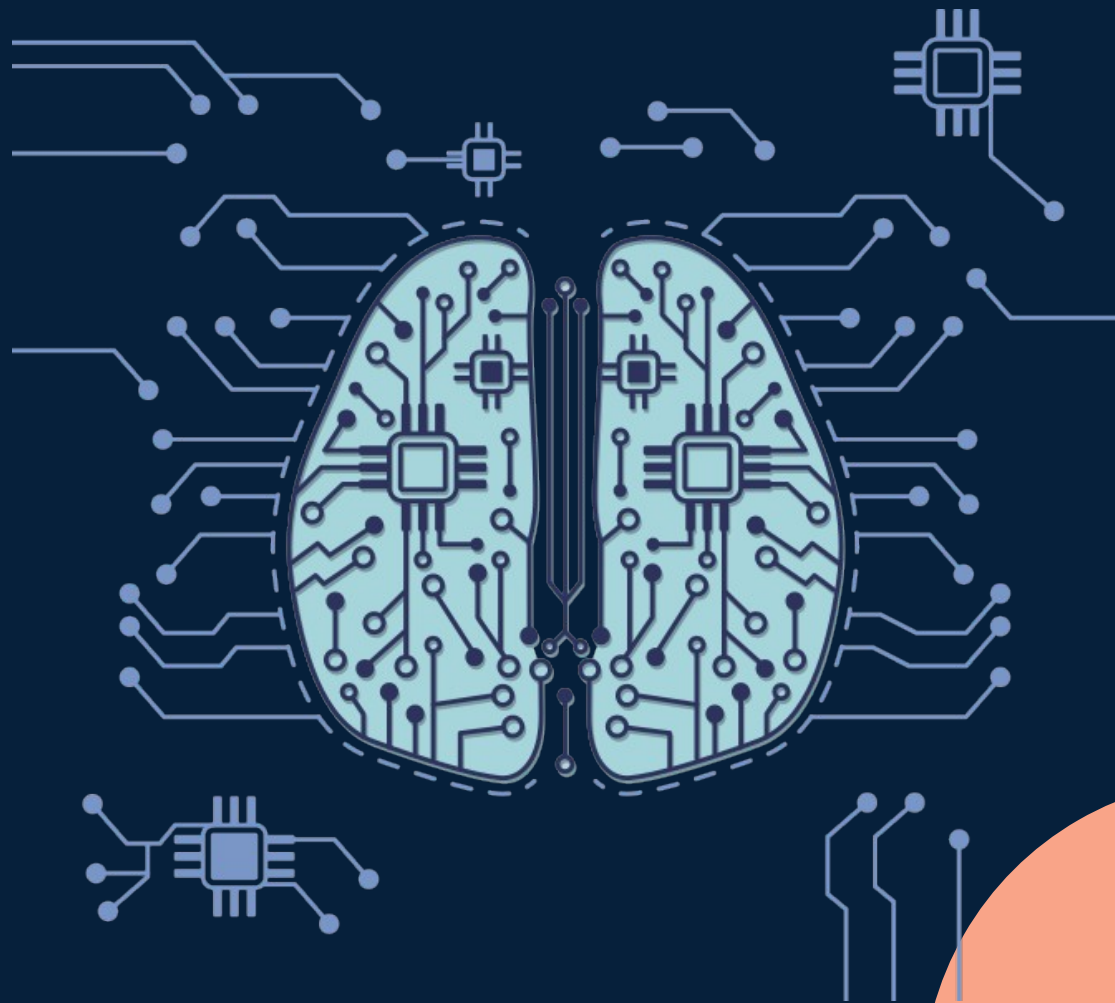


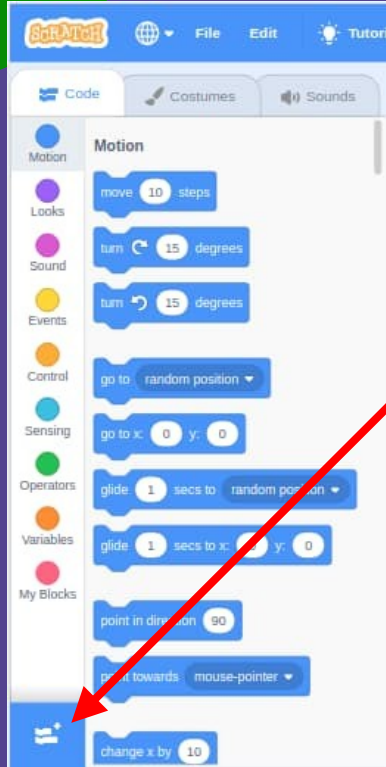
Microbit More



Microbit More

- Extension that runs on a special version of Scratch
<https://stretch3.github.io>
- Can connect to the micro:bit via bluetooth (wireless)
- Can send commands (eg. Change display, control servo) to micro:bit
- Can read sensors (eg. Buttons, light, tilt) connected to micro:bit

Load Extension

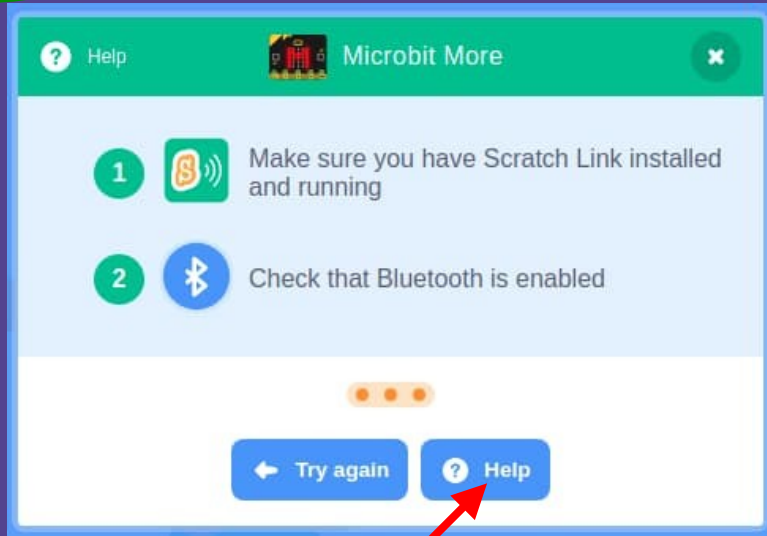


Add Extension

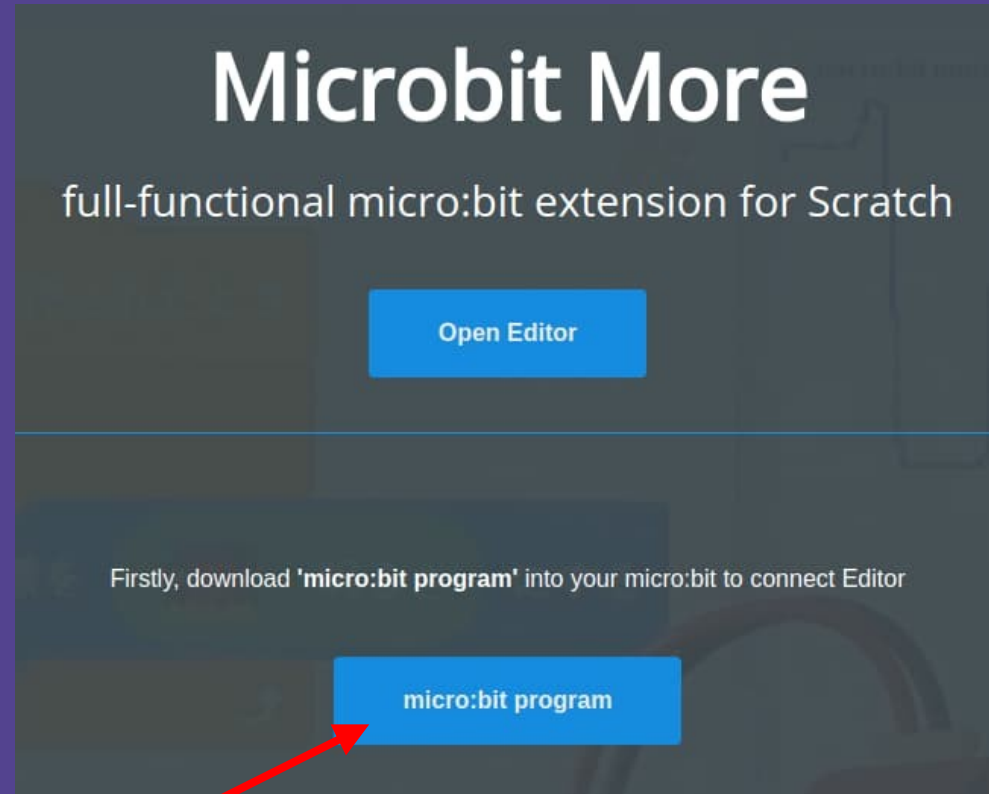
Microbit More



Prepare micro:bit

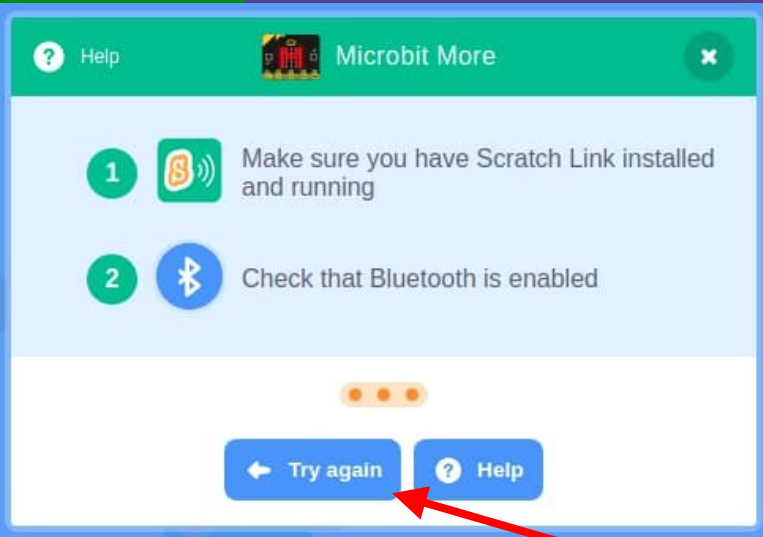


Open "Help"

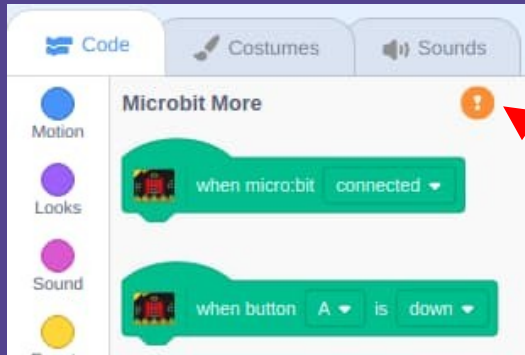
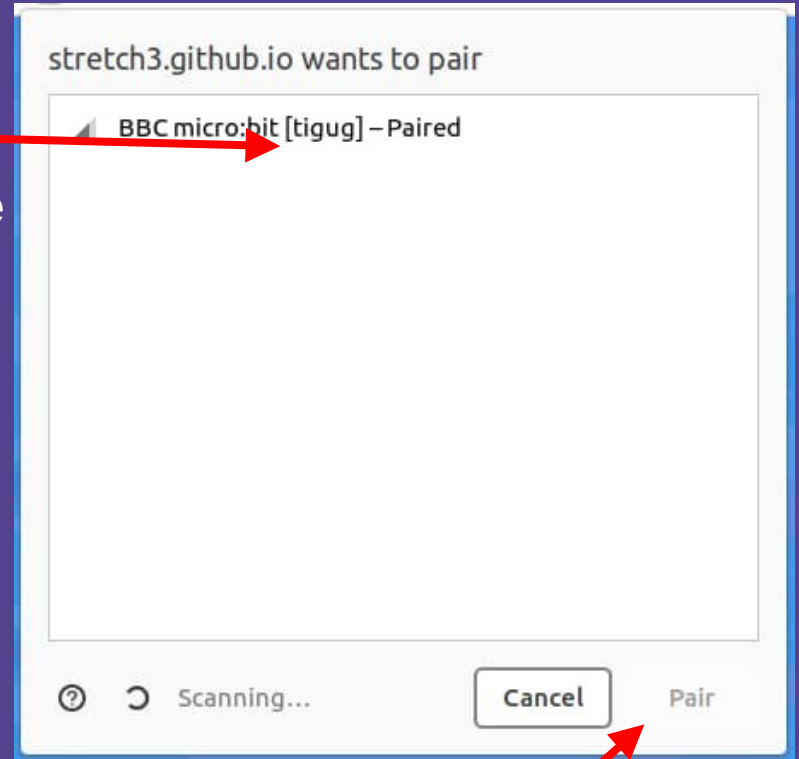


Download this program and copy into your micro:bit

Connect micro:bit



Select your micro:bit
(Check the name displayed on your micro:bit)

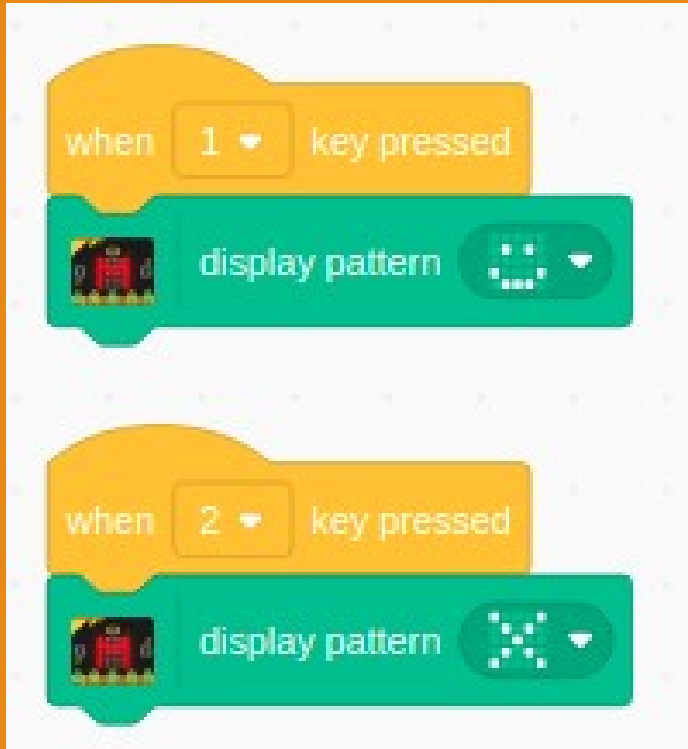


Click this...

...or this first if you have closed the above window

...the click "Pair"

Test Connection



- Place these blocks on your script area
- Press “1” and “2” on your keyboard
- The image should change accordingly

Challenge



Catch the Fruit

- micro:bit controls basket
 - Version 1: Use buttons (A, B)
 - Version 2: Use tilt
- Catch the fruit before it hits the ground
- Score increase by 1 for every fruit caught
- Score decrease by 1 for every fruit missed
- Game over when score drops below zero

AI Game

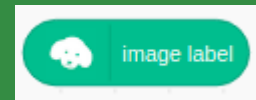
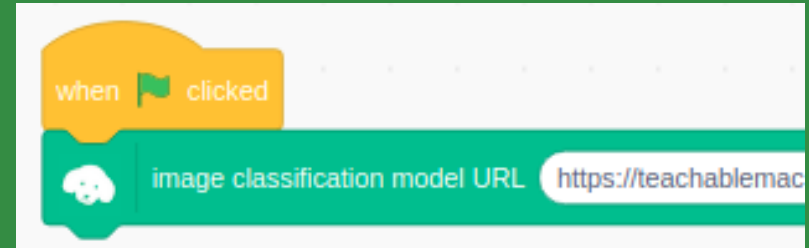
- Combines:
 - Teachable Machine
 - Micro:bit
- Added hardware:
 - Buzzer

Copy-Me Game

- Game randomly displays Rock, Paper, or Scissors
- Player has 1 second to display the handsign in front of camera
- If the sign is wrong, player loses immediately. Show game over.
- If the sign is correct, show a tick and repeat again
- If player gets all 5 signs correct, player wins. Show a “Win” message.

How?

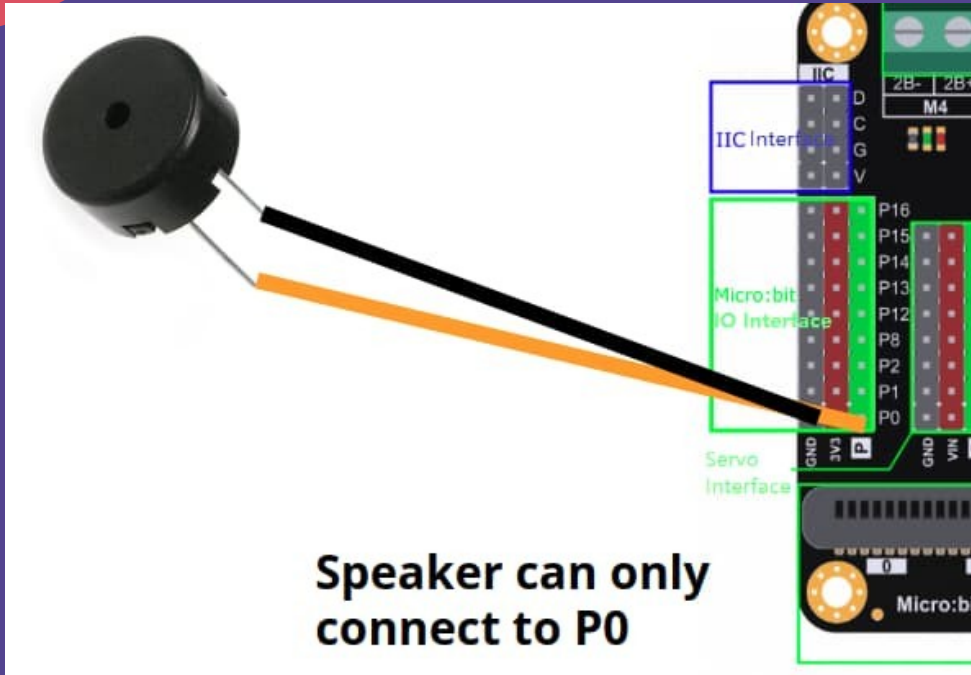
- Teachable Machine
 - Train and test model
 - Export model
- Stretch3
 - Add TM2Scratch and micro:bit more extension
 - Load model
 - Read the “image label” variable



Tips

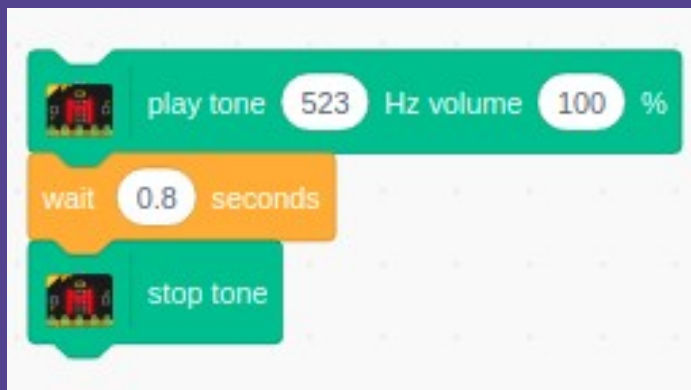
- Teachable Machine
 - Use the techniques for improving the classification training
 - Save your project, so that you can make changes and improvements later
- TM2Scratch
 - You don't need to classify constantly
 - Turn classification off, and using the “classify image” command when needed
 - Classification can still work with video off

Adding Speakers



- Connect speaker to Gnd and P0
- Speakers on the micro:bit will only work on pin 0
- It's not very loud, you may not hear it if the environment is noisy

Playing Sound



- Use a “play tone” block to start playing
- Tone won’t stop unless given a “stop tone” command
- Add a wait in between to control the tone duration

Challenges

- Instead of copying the displayed image, change the game so that the player has to show a sign that beats the micro:bit
- Don't end the game if the player gets it wrong; award the player 1 pt for a win, and -1 pt for a lose. Display the score at the end of 5 rounds.
- Gradually increase the speed
- Play a countdown indicator (eg. Beep-beep-beeeeeep) to indicate that the time is up



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