

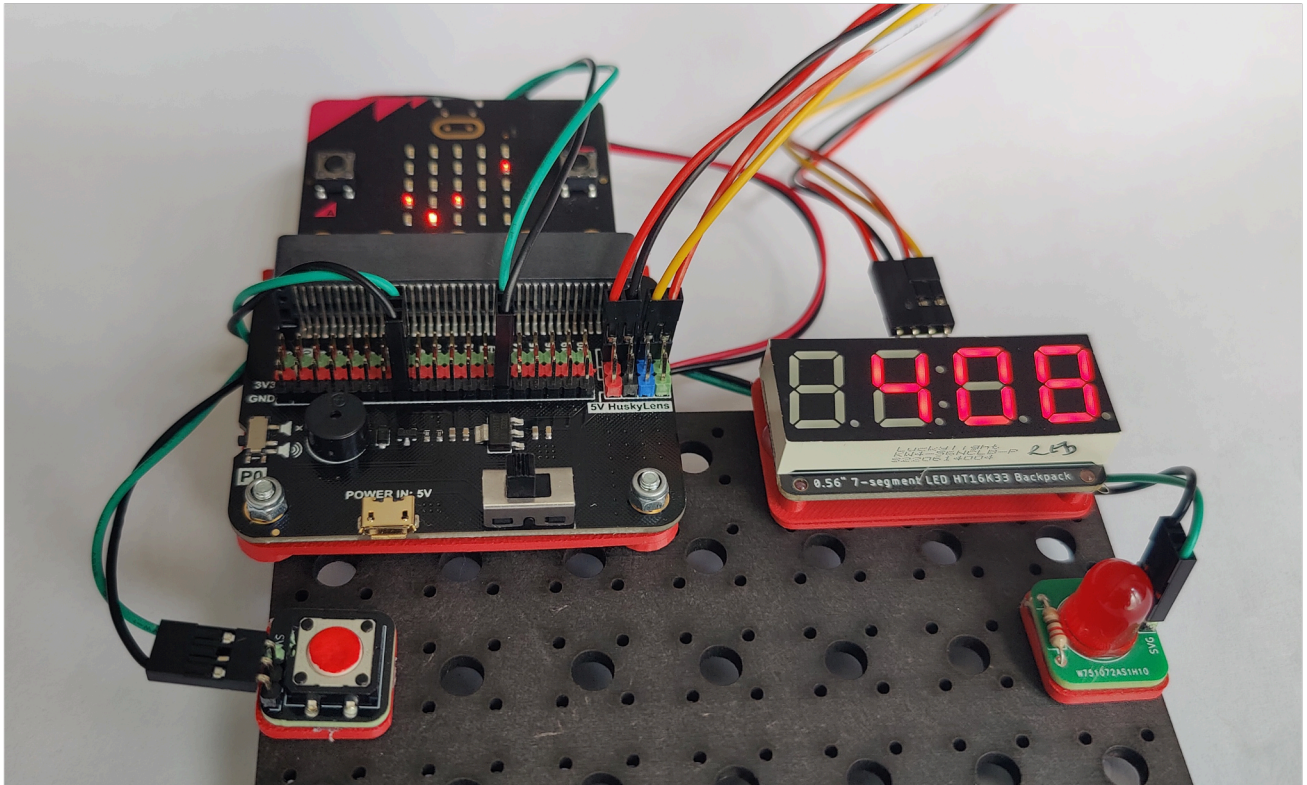
Build a Reaction Game

Project 4.01

In this workshop you will build a simple electronic game. But it won't be screen-based! You will construct it from various components and use a Microbit to code how the game behaves.

How it works

To play the game, you have to wait until the light turns on. Then, as quickly as you can, press the button. The display will show your reaction time.



What to do

- Follow the instructions to build the physical game.
- Follow the instructions to code the game.
- Play the game
- Make modifications and improvements to the game.

Build the Game

Connect all the Components

1 Start with the **small project board** and add the **edge connector**.

2 Add a **numeric LED** and connect to the I2C pins on the edge connector using the **I2C cable** as follows:

I2C Cable	Microbit Connection
Red	3V3
Black	GND
Yellow	SCL
Orange	SDA

3 Add an **LED** and connect to pin **P9** on the edge connector.

4 Add a **button** and connect to pin **P13** on the edge connector.

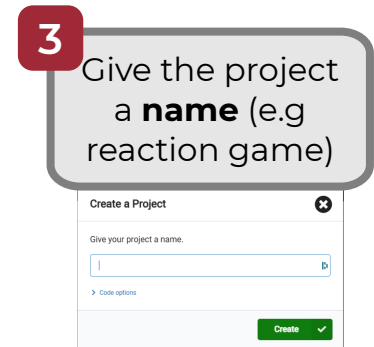
5 Slot a **microbit** into the edge connector and plug in the **battery**.

The battery can be stuck onto the back of the edge connector.

Code the Game

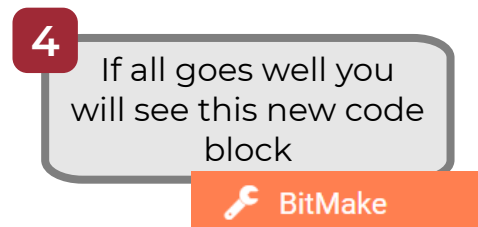
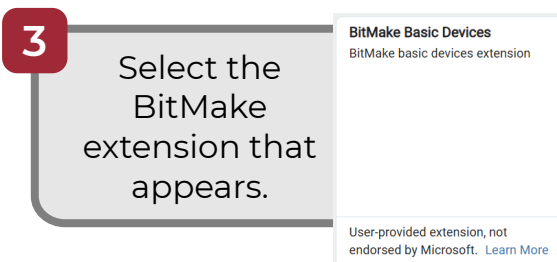
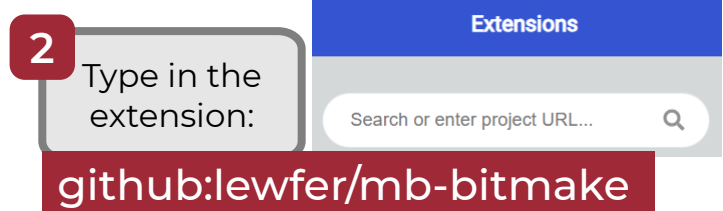
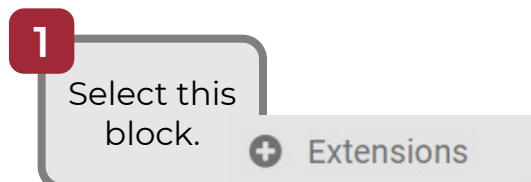
Create a Project

Create a new Makecode project.



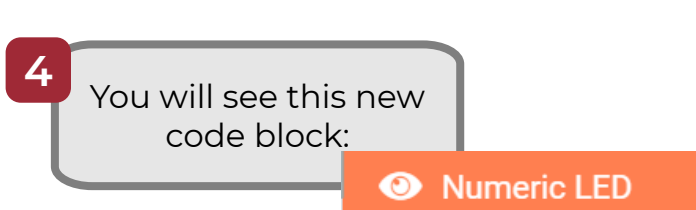
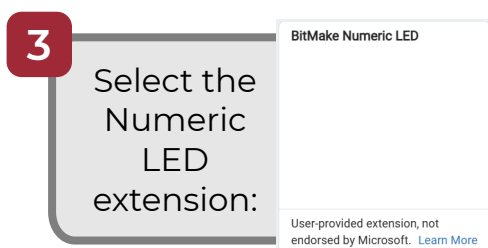
Add the BitMake Extension

Create a new Makecode project.



Add the Numeric LED Extension

Add the Numeric LED extension to control the numeric display:



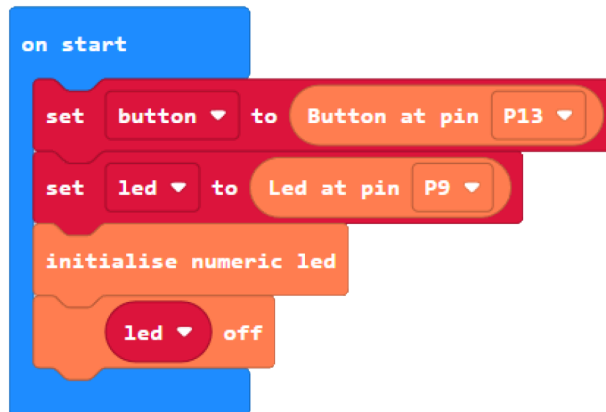
Add Code for the Game

Now enter the code to create the game.

1

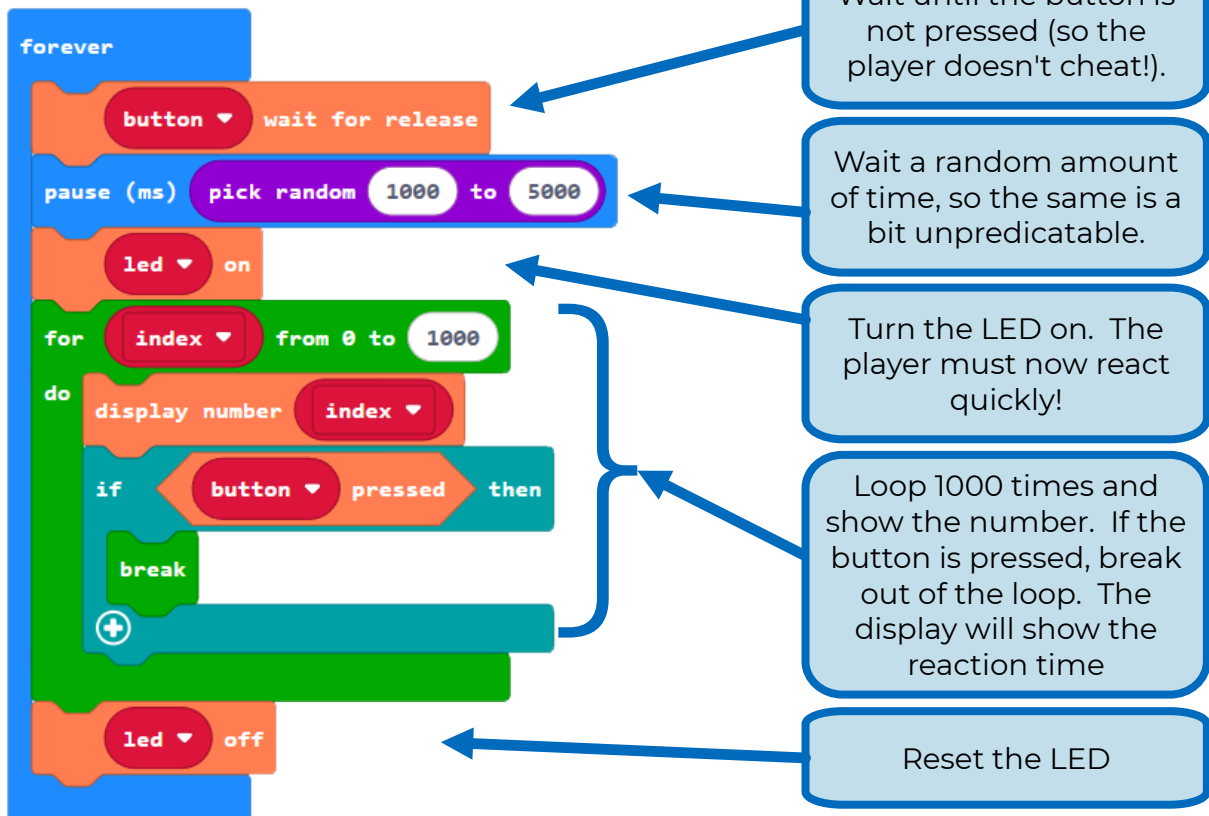
Code the **on start** block, which is run when the program

This code sets up the button, led and numeric display and turns the led off



2

Code the **forever** block, which is run repeatedly once on start is finished.



3

Download the code to the Microbit.



4

Play the game!

Your challenge!

Modify the game:

- Play a sound when the light comes on.
- Play a melody if the player fails to react before the count reaches 1000.
- Make some other improvements you think the game needs.

Challenge Solution

Here is one way you could change your code to complete the challenges. There are other approaches too!

