



Oide

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Ghairmiúil i measc Ceannairí
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Supporting the Professional
Learning of School Leaders
and Teachers

Leaving Certificate Computer Science

Introduction to Micro:bit



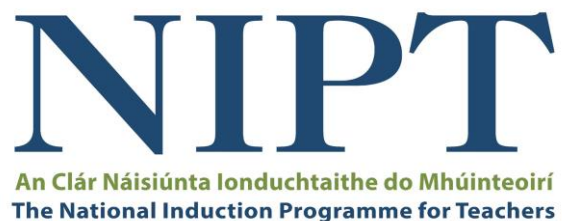
Introducing Oide



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Workshop Overview

Session 1 10:00 - 11:30	Getting started GAA scoreboard activity
Tea/Coffee 11:30 – 12:00	
Session 2 12:00 - 13:30	Branching out – Sensors, PRIMM, Conditionals Temperature Sensor Activity
Lunch 13:30 - 14:30	
Session 3 14:30 - 16:30	Working with LEDs Traffic Light Activity



Purpose for the Day



To upskill Phase 5 teachers of LCCS in the use of the micro:bit.



To explore Computer Science as a discipline and the implications of its introduction to teaching and the classroom dynamic, including the importance of group work in LCCS.



Key Messages



There are many ways to use the LCCS specification.



Group work and group dynamics are a key feature in the teaching, learning and assessment of LCCS.



Effective pedagogies can enhance teaching and learning, however, the emphasis for this workshop is on skills development.



There are multiple ways to solve problems (some are more efficient than others).



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Session 1

Getting started with the
micro:bit





What is a micro:bit?

Affordable pocket-sized coding device

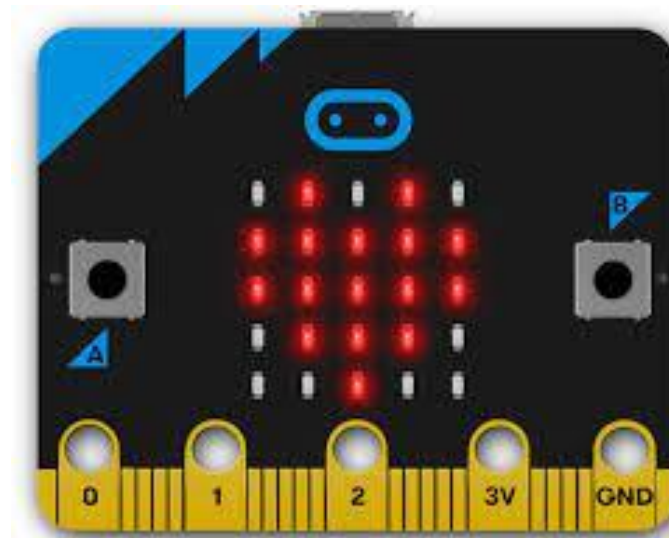
Developed by BBC & Microsoft

Microcontroller, LED display, sensors

Ideal for beginners

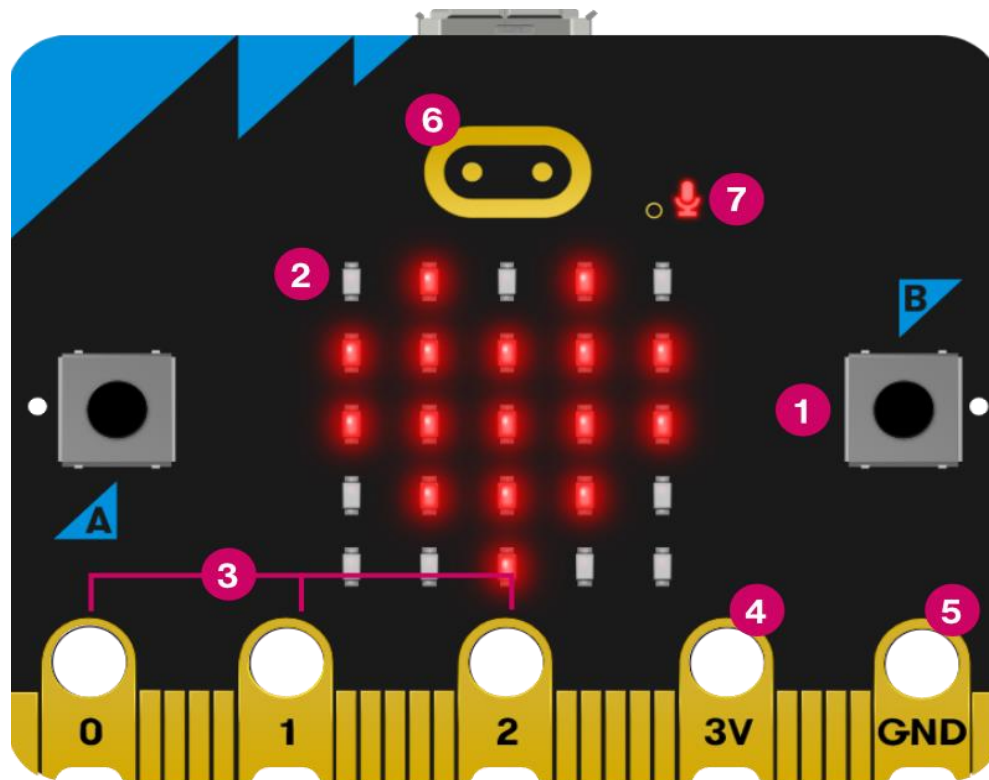
Learn to program and experiment with hardware

Engaging and creative platform





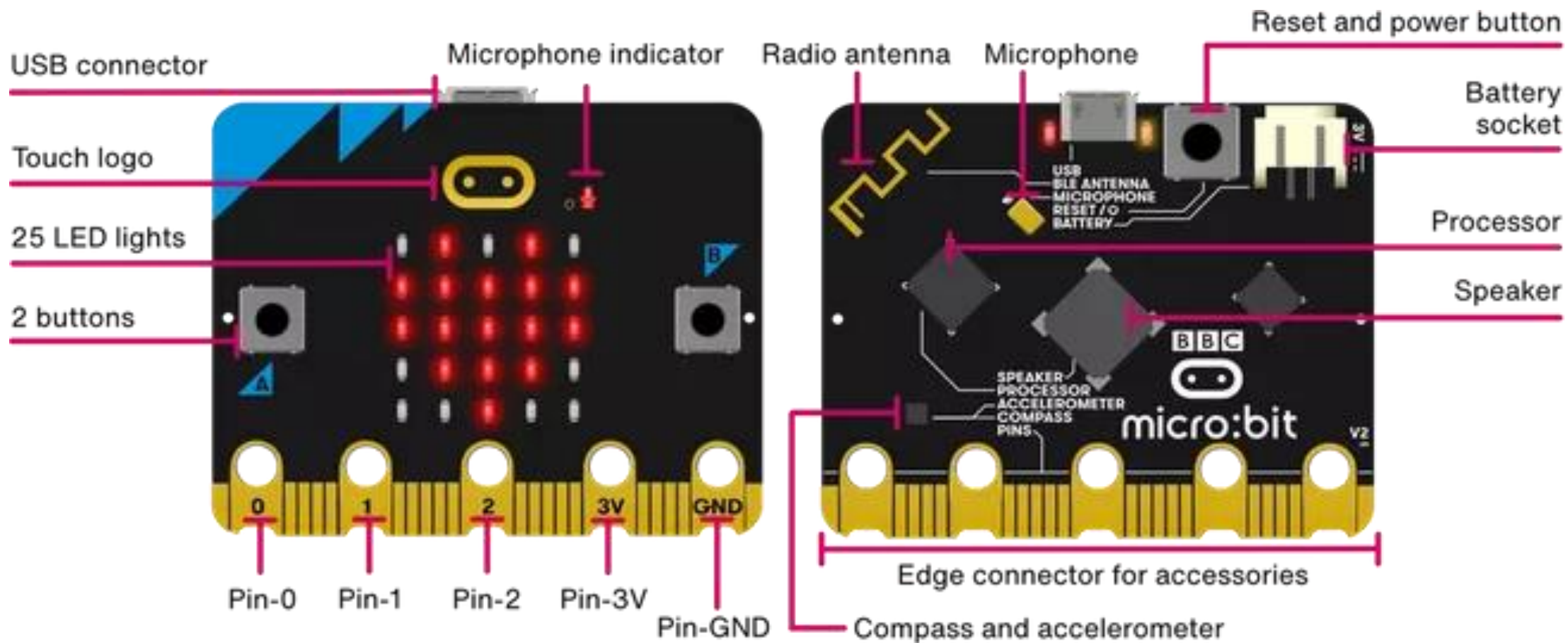
Overview of micro:bit



<https://microbit.org/get-started/user-guide/overview/>



Overview of micro:bit



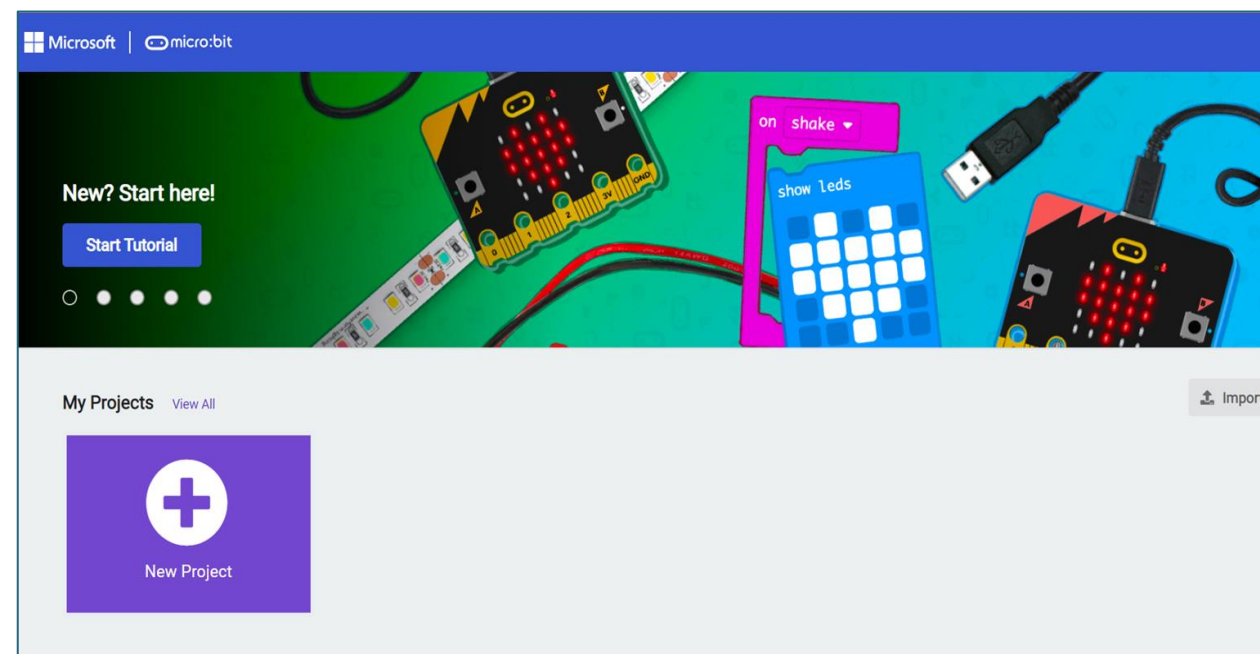
<https://microbit.org/get-started/user-guide/overview/>



First steps with the micro:bit

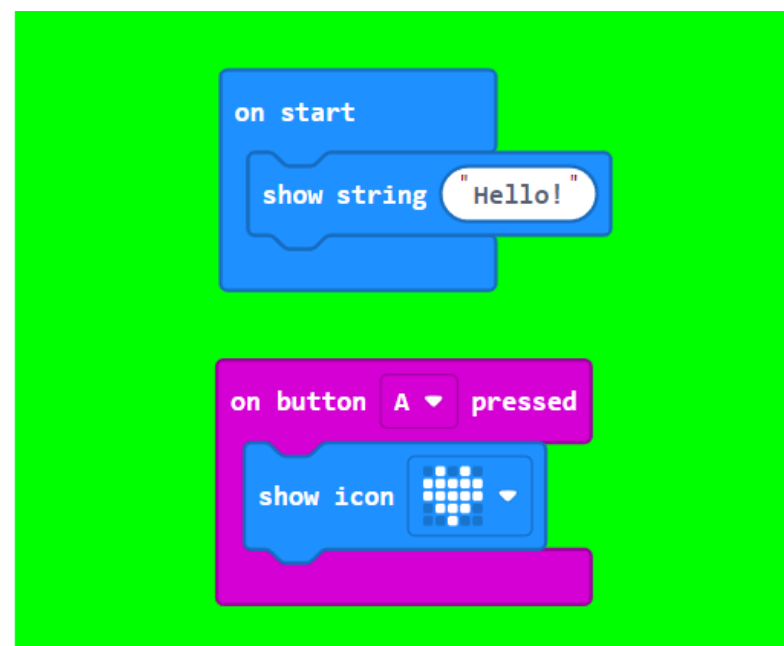
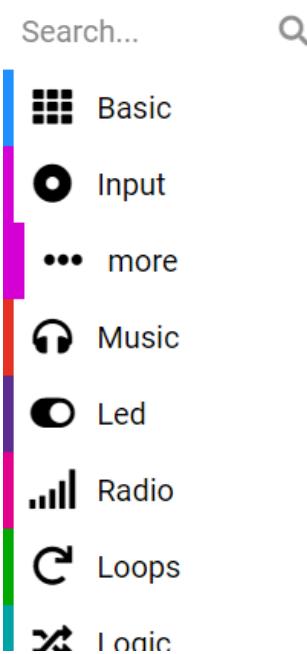
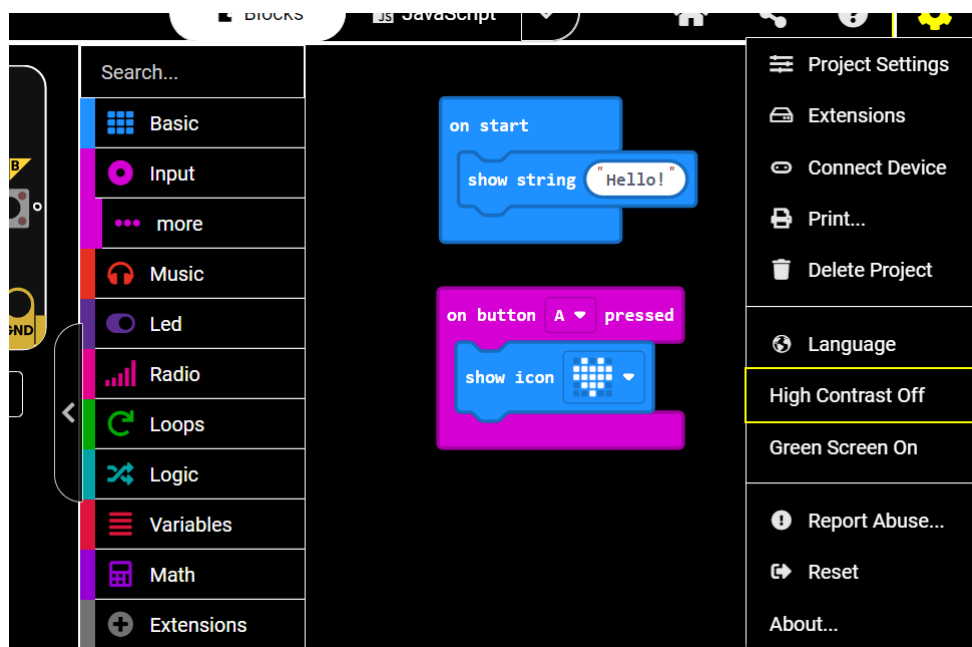
<https://makecode.microbit.org/>

Click on “New Project”



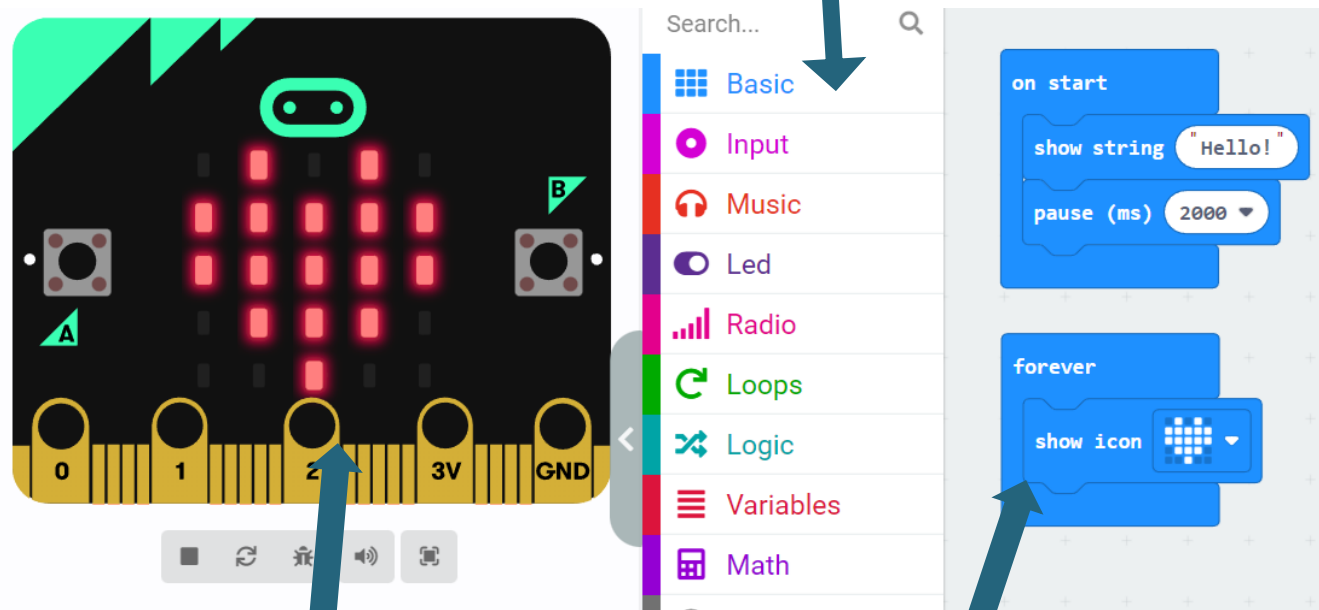


Background





To create your program, click on the menu in the middle and drag the blocks to the right-hand side



Change the message on the micro:bit to something else...

Show a different image on the micro:bit...

Click on the “virtual” micro:bit to see if your program works!

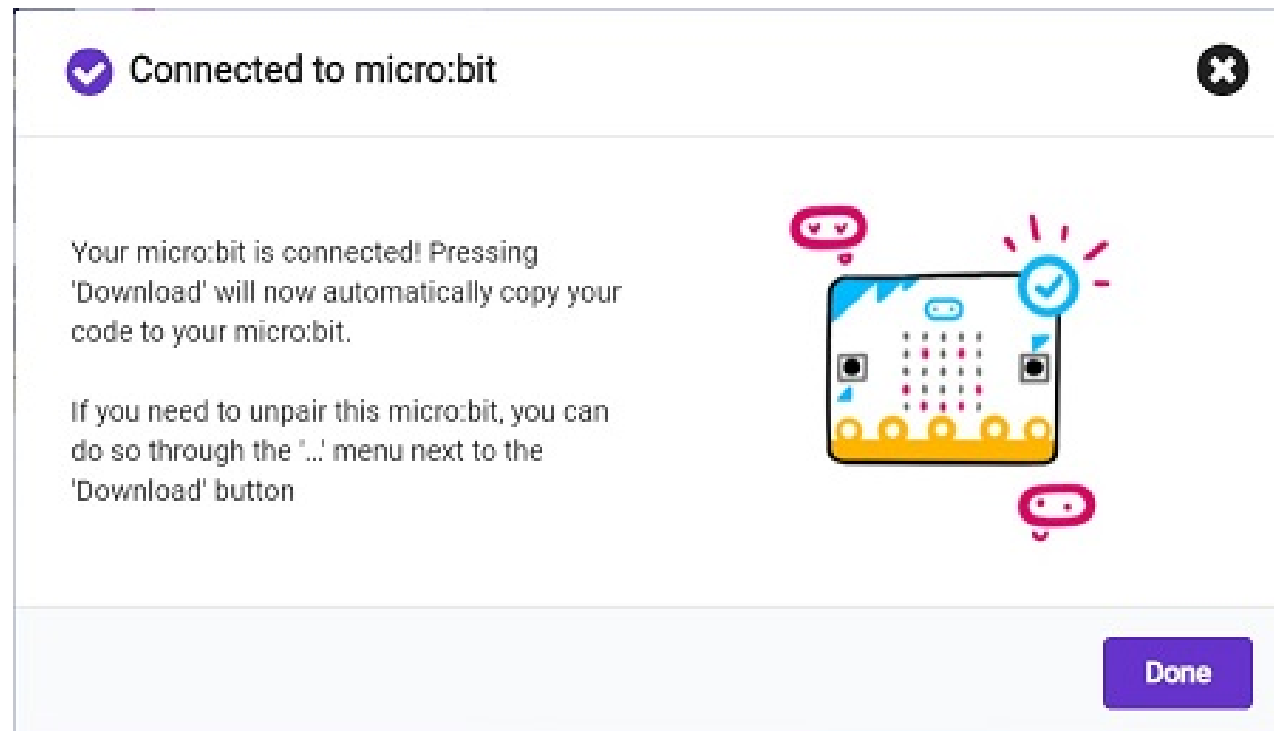
Drag the blocks in here, stick them together, and create your program!



Transfer your code onto the micro:bit

When your micro:bit is connected, you'll see the Connected to micro:bit message window. Click on Done and you're ready to go!

Can you download your program onto your micro:bit?

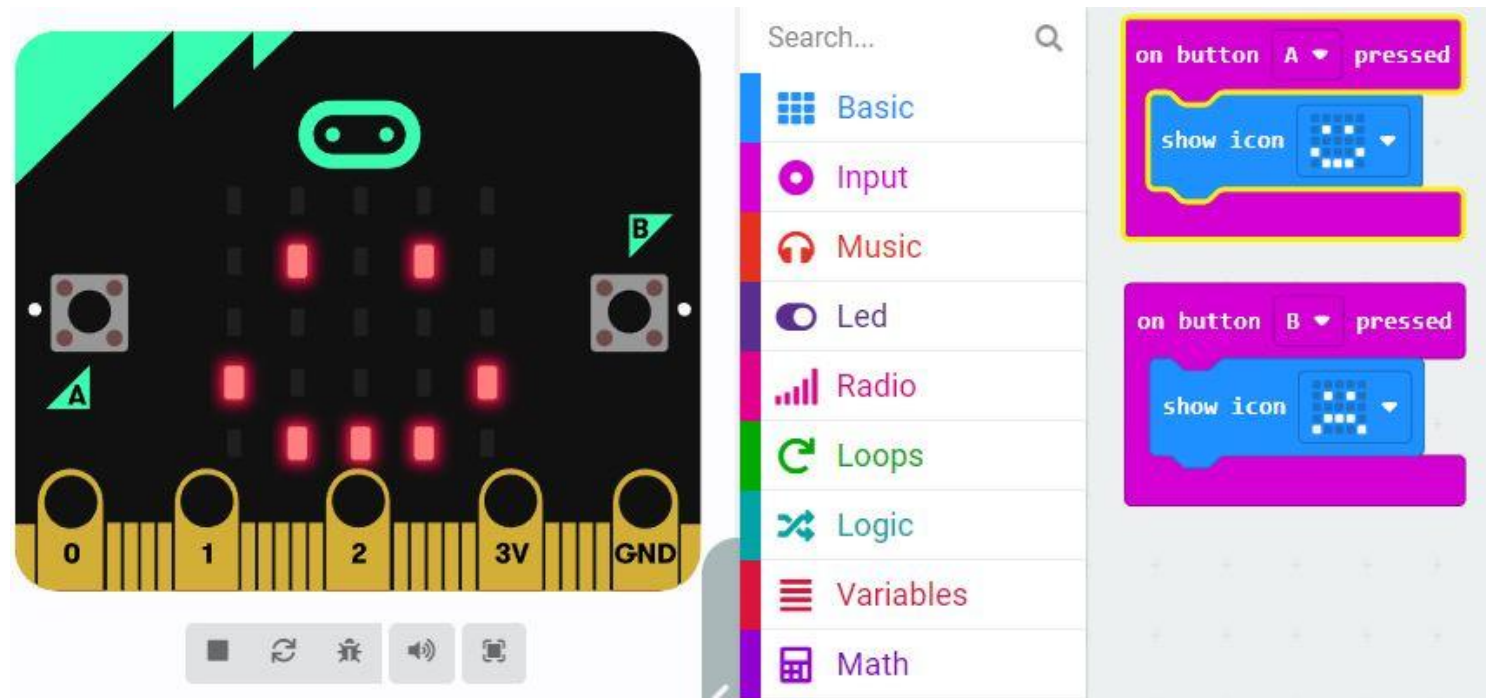




Events

When buttons A or B is pressed...

Modify your code so that when you press a button, a message will be displayed.





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Introduction to Variables

GAA scoreboard activity





What is a variable?

Variables are the names given to computer memory locations that are used to store values in a computer program.

Think of a variable as a container that can store information that is required for your program to run.





Creating a variable in makecode

Create two variables called “goalScore” and “pointScore”

The screenshot shows the MakeCode interface. On the left, a category list includes Basic, Input, Music, Led, Radio, Loops, Logic, Variables (highlighted), Math, and Extensions. On the right, the Variables panel is open, displaying a 'Make a Variable...' button, a 'set goalScore to 0' block, and a 'change goalScore by 1' block. Below these, the 'Your Variables' section shows a dropdown menu with 'goalScore' selected.



Exercise #1 – Predict & Discuss

```
forever
  show string "G"
  show number goalScore
  show string "P"
  show number pointScore
```



Exercise #2 – Recreate and Run

Create two Variables called **goalScore** and **pointScore**.

Recreate the code from exercise 1.

Run your code.

Does it run and does it do what you thought it would do?





Exercise #3 – Modify the code

Modify the code as follows:

when button A is pressed, **goalScore** is incremented by 1

when Button B is pressed, **pointScore** is incremented by 1

Exercise #4 – Extension

Add a feature which when button A + B is pressed, work out the **total number** of points (goals and points)



An Roinn Oideachais
Department of Education



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