GETTING STARTED

WITH

MICRO:BIT

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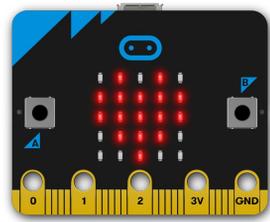
WHAT IS A MICRO:BIT?

The micro:bit is a pocket-sized computer that is fully programmable. It is designed to get children of all ages involved in writing code and developing software to build new things that will be controlled by the micro:bit for example robots.

WHAT'S ON BOARD?

```
1 x 5x5 LED matrix
2 x Pushbuttons
1 x Compass
1 x Accelerometer
1 x Bluetooth module
```

GETTING STARTED
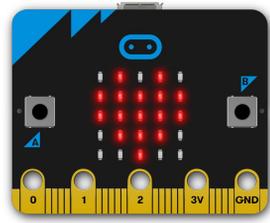
HOW TO WRITE CODE

There are a few different code editors that you can use to write code for the micro:bit.

1. JAVASCRIPT BLOCK EDITOR

https://makecode.microbit.org/

The JavaScript block editor makes it easy to program your micro:bit in JavaScript code and blocks.

2. PYTHON EDITOR

http://python.microbit.org/v/1

The Python editor is great for more advanced coders or someone that wants to push their coding boundaries.

3. MU (OFFLINE PYTHON EDITOR)

https://codewith.mu/

Mu is designed to be as simple as possible for beginner programmers to use. It is written in Python and can be downloaded and installed on Windows, OSX, Linux and Raspberry Pi.
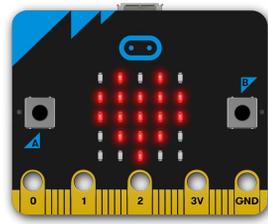
4. EDUBLOCKS

https://microbit.edublocks.org/

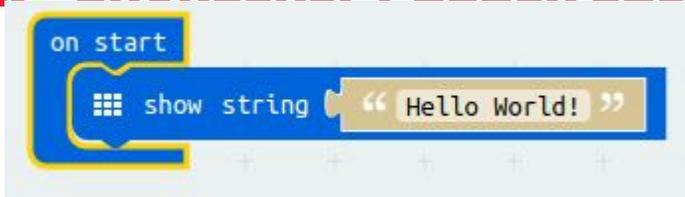EduBlocks is designed to make it easy for beginners programmers to write micro Python code using blocks with Python syntax.

OUR FIRST PROGRAM

In typical programming tradition, we are going to create the "hello world" program using each of the 4 editors (don't worry if you don't have access to them all)
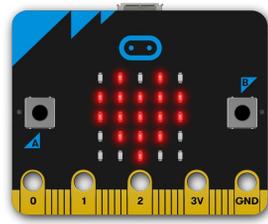
1. JAVASCRIPT BLOCK EDITOR

You can see your code running on the virtual micro:bit on the left of the coding area.

How to run the code on your micro:bit
1.   Connect your micro:bit to the computer using the USB cable
2.   Click on the **⬇ Download** button. This will download a .hex file to your computer.
3.   Open the folder where the .hex file was downloaded
4.   Copy the .hex file
5.   Open up the micro:bit folder and paste the .hex file in there.
6.   Once the orange light on the back of the micro:bit stops blinking you will see your code run on the micro:bit.

OUR FIRST PROGRAM

2. PYTHON EDITOR

Once the Python editor has opened, you will see a demo program that looks like this:

```python
from microbit import *

while True:
    display.scroll('Hello, World!')
    display.show(Image.HEART)
    sleep(2000)
```

Run this on your micro:bit by:

1. Connect your micro:bit to the computer using the USB cable

2. Click on the button. This will download a .hex file to your computer.

3. Open the folder where the .hex file was downloaded

4. Copy the .hex file

5. Open up the micro:bit folder and paste the .hex file in there.

6. Once the orange light on the back of the micro:bit stops blinking you will see your code run on the micro:bit.

GETTING STARTED

OUR FIRST PROGRAM

2.   PYTHON EDITOR

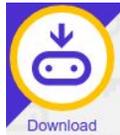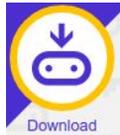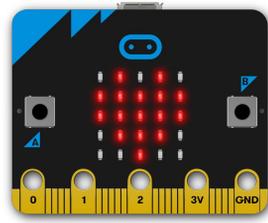Now edit the program to look like this:

```
from microbit import *

while True:
    display.scroll('Hello, World!')
    sleep(2000)
```

Now download the code as you did before. You should now see the texts scrolling without the heart at the end.
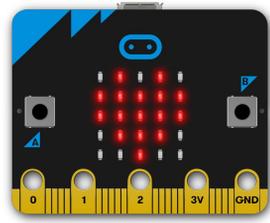
3.   MU (OPTIONAL)

This is exactly the same as writing Python code above. The only difference is Mu is installed on your computer.

Mu also downloads the code straight to your micro:bit when you click on the

Flash

OUR FIRST PROGRAM

4. EDUBLOCKS

Once EduBlocks has opened copy the following code:

```
from microbit import *
while True:
    display.scroll(" Hello World ")
    sleep( 2000 )
```
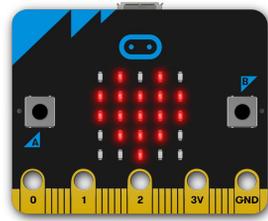
The red blocks can be found in the basics menu and the green block is found in the display menu.

Run this on your micro:bit by:
1. Connect your micro:bit to the computer using the USB cable

2. Click on the **⬇ Download Hex** button. This will download a .hex file to your computer.

3. Open the folder where the .hex file was downloaded

4. Copy the .hex file

5. Open up the micro:bit folder and paste the .hex file in there.

6. Once the orange light on the back of the micro:bit stops blinking you will see your code run on the micro:bit.

CHALLENGE

Now that you have had a try of all the editors, pick your favourite one and change the code to say **"Hello NAME"**.

NAME = Your name

Download your code as before and you should now see your micro:bit saying hello to you.