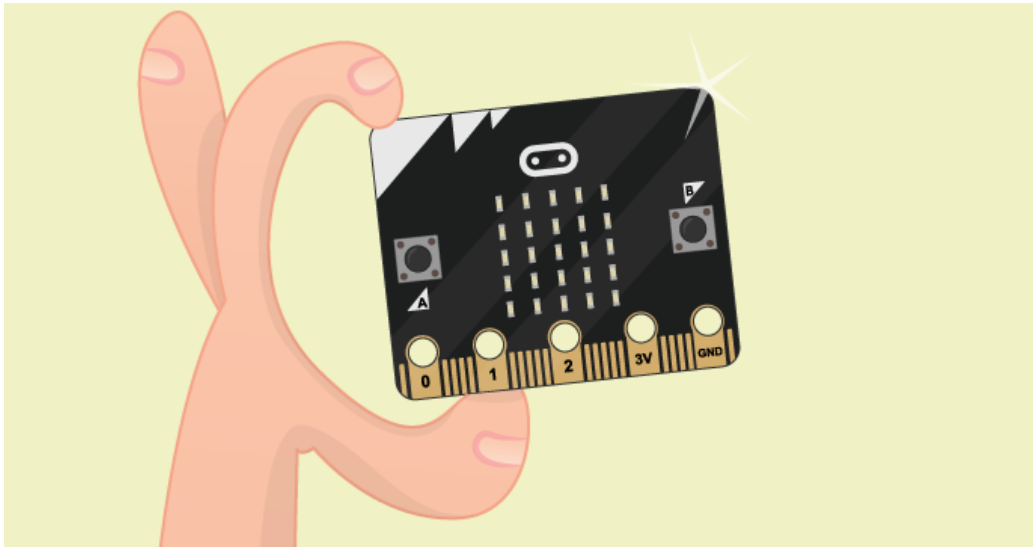# Introduction

What you will do

Figure 1:

In this 60 minute workshop you will use the **mu** editor on a Raspberry Pi to write MicroPython programs and run them on the micro:bit.

MicroPython is a small but very fast version of Python 3 that has been specially designed to work on microcontrollers such as those found on the micro:bit.

The experiments will show you some of the things the micro:bit can do. You can use them as a base to build your own projects.

At the end of this workbook you will find some links to help you explore once the workshop is over

Don't feel you have to finish everything today

I hope you'll have plenty of fun things to do over the next 60 minutes, but don't feel you have to do all of the experiments today. You will be able to

keep this workbook and use it once the workshop is over.

Setting Up

What you will do

Here's why!

What you will need

Let's go!

Hello World!

Open a browser on http://bit.ly/pibit

What you will do

Typing in a program

In the **mu** editor, click the + (new) icon. You should see a new tab open in the editor.

That's where you will type your code.

The first program you'll run is the micro:bit version of *Hello World*.

Here's the short program

Import statements

from microbit import *

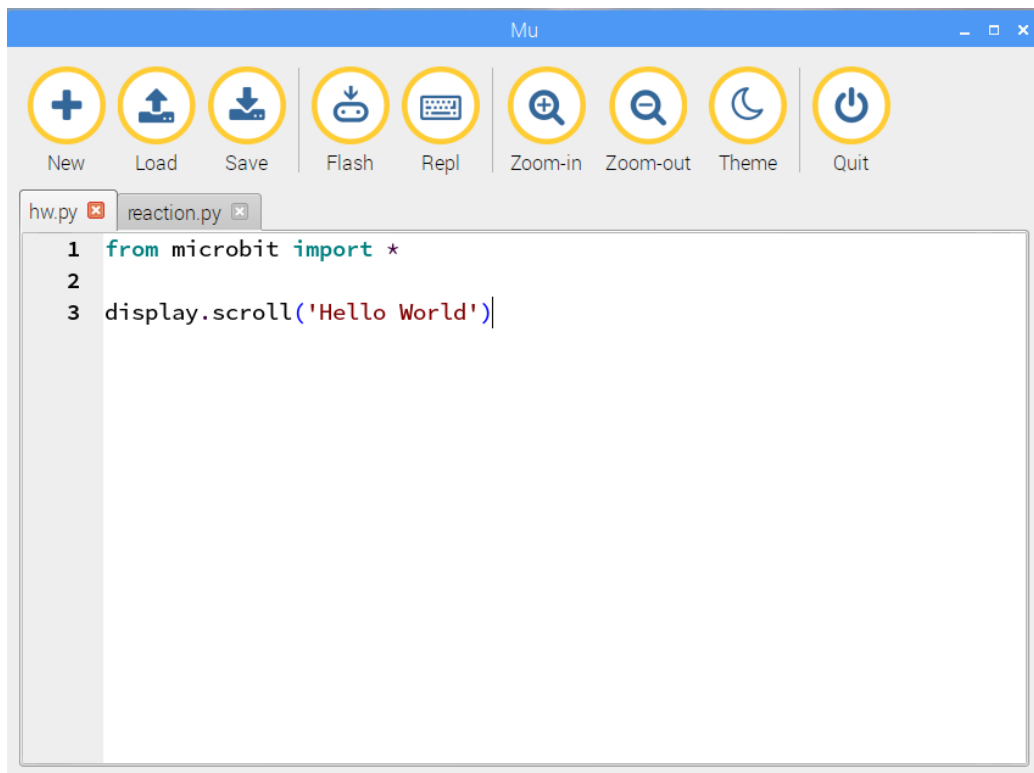Tells MicroPython that you want to use the

Figure 2:

display.scroll

display.scroll('Hello World') will scroll the string 'Hello World!' across the LEDs on the micro:bit.

Saving the program

Running a program

Flashing the program

Watch it run!

Troubleshooting

Images

What you will do

Here's why!

Let's go!

Displaying a Smiley

Changing to a Sad face

Making your own images

Animation - images that change

Buttons

What you will do

Here's why!

Let's go!

Checking a button

While loops

Moving and shaking

Fortunes on the micro:bit

Talking to Chips

Robotics

C2Pi

Where to find out more

micro:bit foundation

Raspberry Pi foundation

microbit news

RAREblog

Moving and shaking

What's next

If you want to explore the workbook later you will need a micro:bit and another computer to program it. The *mu* editor runs on the Pi, but it is also available for Microsoft Windows, MacOS and other verions of Linux.

More stuff the micro:bit can do

Where to find out more

Licence

Unless otherwise specified, everything in this repository is covered by the following licence: