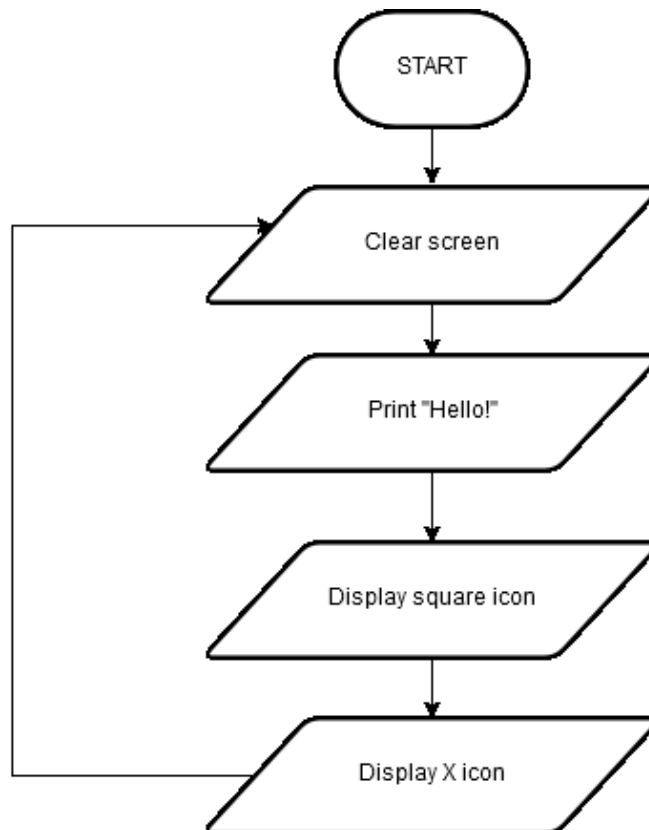# Introduction to the micro:bit

**Program #1 – Hello World**

Program description: This program will clear the display, output the text "Hello!", display a square, and then display an X. After each item is output, the program will pause momentarily. This program runs forever displaying the message and icons over and over again.

Flowchart:

Code:

1.  Start the micro:bit coding tool by using a web browser to connect to microbit.org/code. You must be connected to the Internet and you may use any modern browser such as Edge, Firefox, Chrome, or Safari. The coding tool we are using is called the **Javascript Blocks Editor**. It will take a moment to load and start. Here is what it looks like when it is ready.
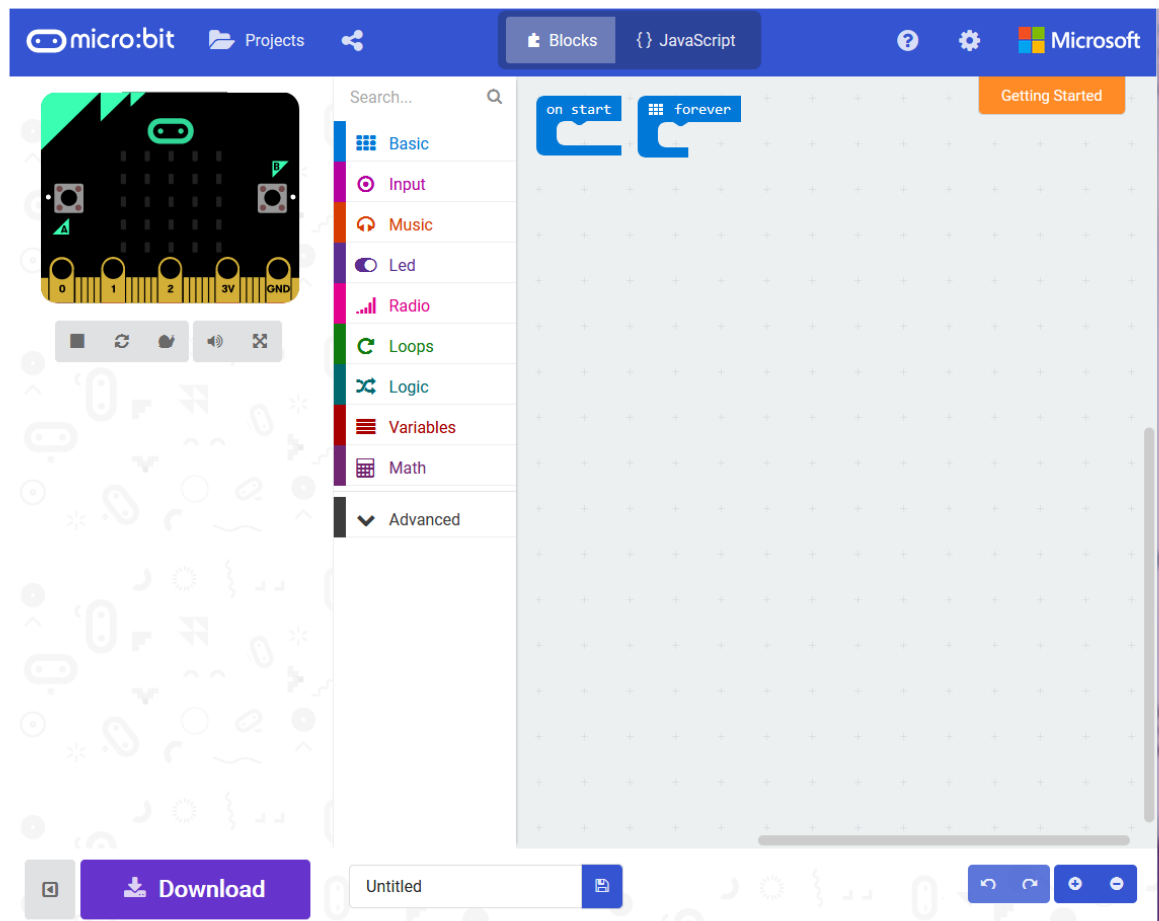


2.  In the upper left hand corner is the micro:bit emulator. You can test your program here before you download it to the micro:bit. In the middle of the screen is the blocks chooser. The blocks are grouped into categories like Basic, Input, and Variables. The right side of the screen is where you'll create your program by arranging blocks. Notice that two blocks are automatically inserted. The "on start" block contains any code that needs to happen one time only when the micro:bit is turned on. The "forever" block contains the remainder of your program. Other controls in the editor are for downloading your program, switching between blocks and Javascript, help, settings, and saving your projects. Let's code!

3. Click on "Basic" and insert the following blocks into the "forever" block. Blocks are added by dragging them into place. Notice the blocks resemble puzzle pieces and they must "fit" together. Some of the blocks you'll need are shown under "… More" after you click "Basic".
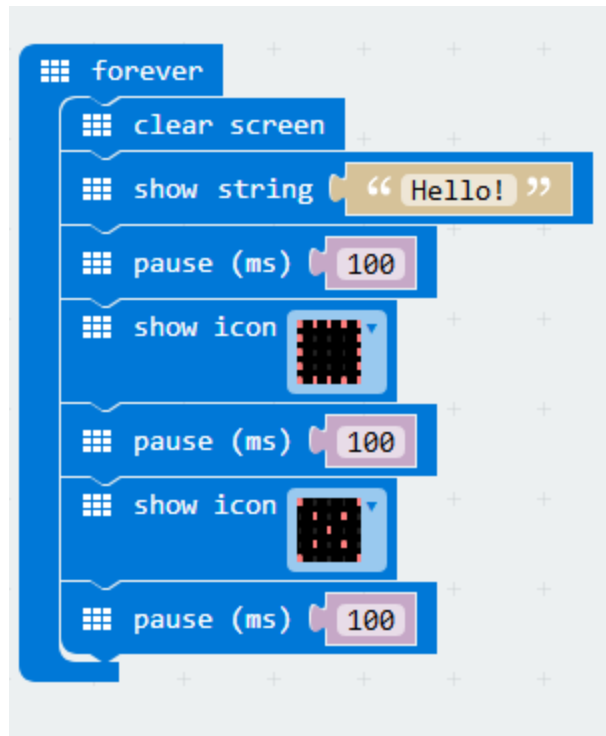


4. The pause times can be changed by clicking on the number 100 in the **pause** blocks and entering a new value. Note the pause time is in milliseconds (ms). The message "Hello!" can be changed by clicking on the messagein the **show string** block and typing a new string. Programmers call messages of text "strings", so the **show string** block displays a message. The icons in the **show icon** block can be changed by clicking on the down arrow and selecting a new icon.
5. Once you've completed assembling your blocks, the emulator will start running the program. If your program is working correctly , then it is time to download it to the micro:bit. Before we download it, let's give our program a name. Click on the word "Untitled" in the text box on the
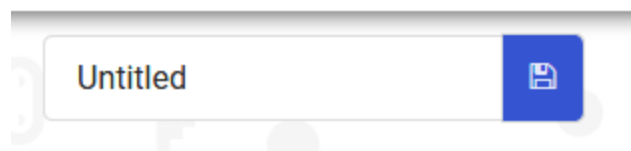


bottom left side of the editor.  Name your program "Hello World". You do not need to click the disk icon to change the name (the disk icon will save your program by downloading it to your computer).

6. Now we need to download the completed program. Click the "Download" button and save the program on your computer. Be sure to note where you've saved the program.
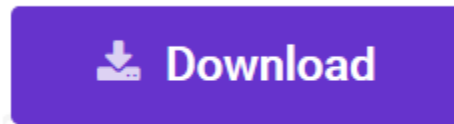


7. Next, connect your micro:bit to your computer with the USB cable.
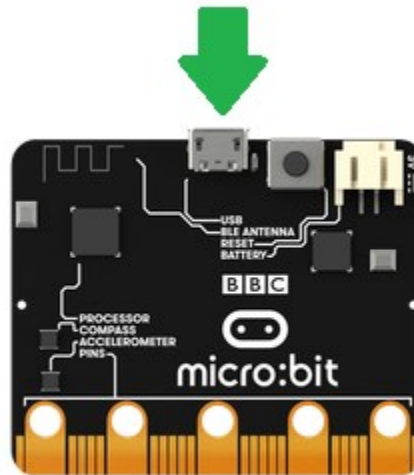


8. If you are using Windows, open the File Explorer and find your downloaded program. Right click on the program and select "Send To" and then choose "Microbit". If you are using a Mac, drag and drop the program onto the MICROBIT device from the Finder. This will install your program on the micro:bit. The yellow LED on the back of the micro:bit will blink while your program is being installed. Your program will automatically run after the installtion is complete.

# Congratulations! You've created your first micro:bit program.

References:

Online quick start tutorial:    http://microbit.org/guide/quick/

Flowchart tool:    https://www.draw.io/