## MICROBIT PROGRAMMING (BLOCK-BASED)
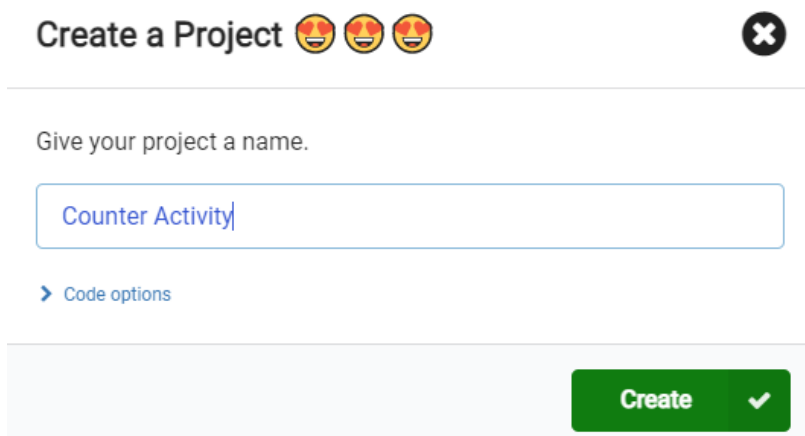### (Time required 30-minutes session)

"Hello World" is the term we use to define that first program you write in a programming language or on a new piece of hardware. Essentially it is a simple piece of code that gives you a quick win (fingers crossed) and a first step in learning. For your first "Hello World" we are going to create a simple animation on the LED array that repeats forever.

Building the "Counter Activity"

**Step 1:** Go to https://makecode.microbit.org/# and create a New Project
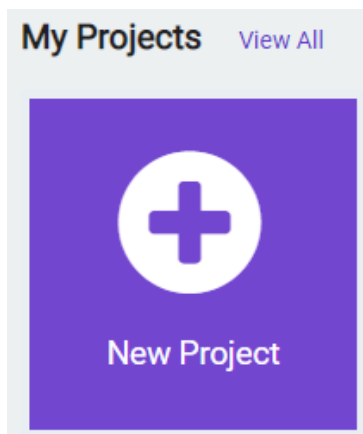
**Step 2:** Click on New Project and give it a project name – **Hello World Activity** and click Create

Step 3: Once the MakeCode is launched you are greeted with two blocks: the On Start and forever. The On Start block is needed to execute all the code at the very beginning of your program and it only executes (run) once. The forever block is code that will loop over and over…it will run forever.
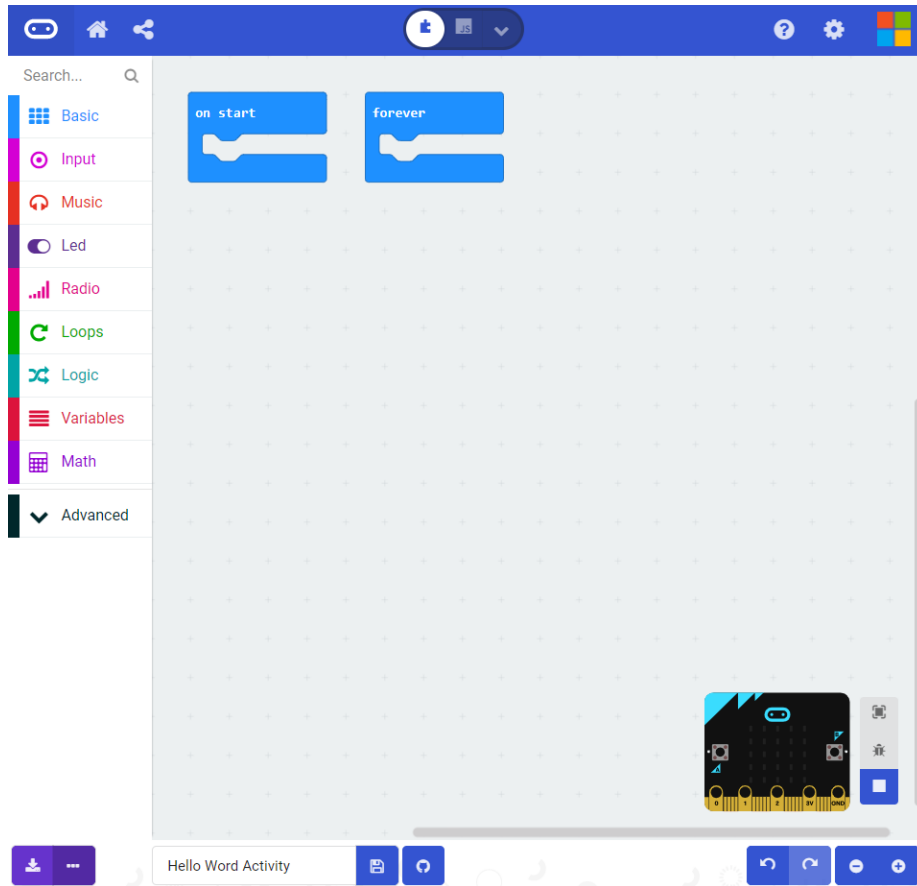
Step 4: Click on the **Loops** category then click and drag the **while <true> do** block into the **forever** block.
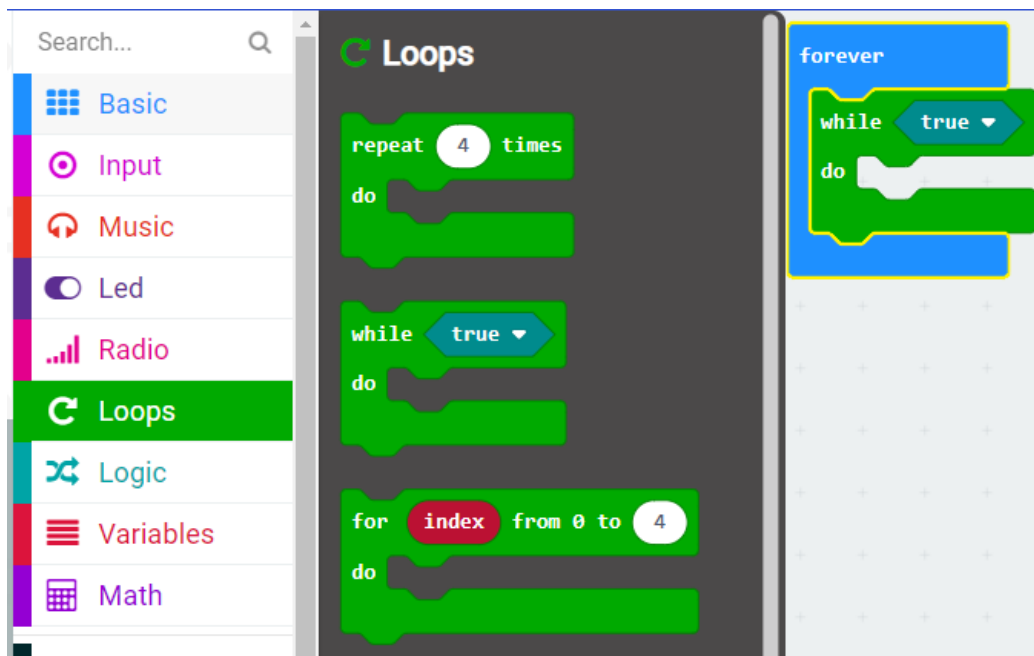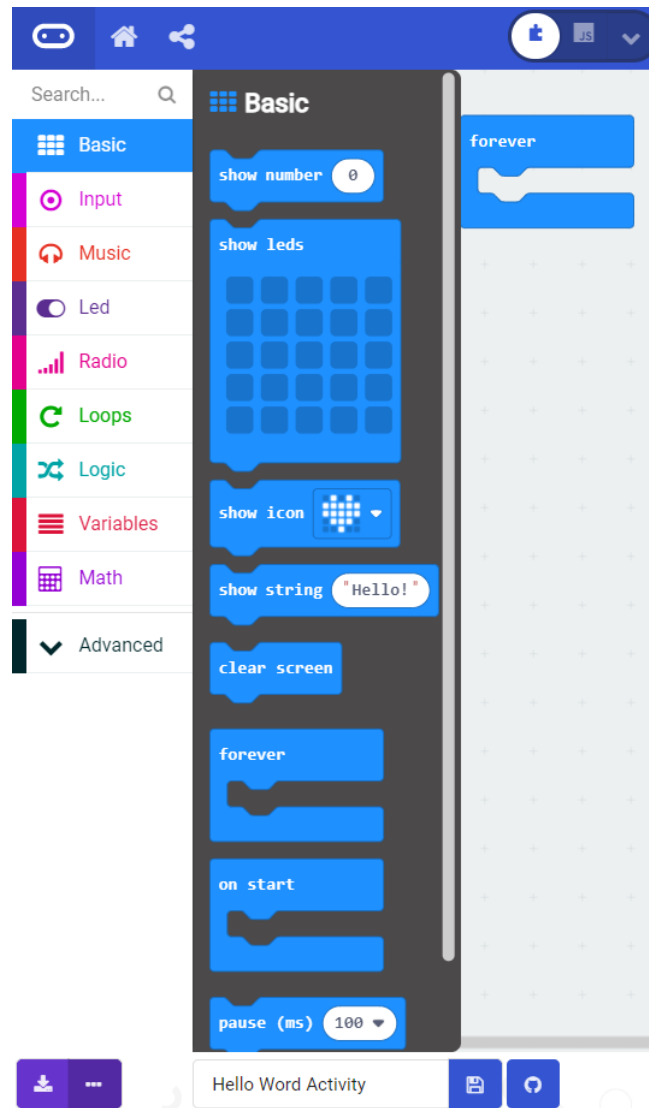
Step 5: Click on the **Variables** category and create a variable by selecting Make a Variable. In the New variable name type **counter** as the name then click **ok**
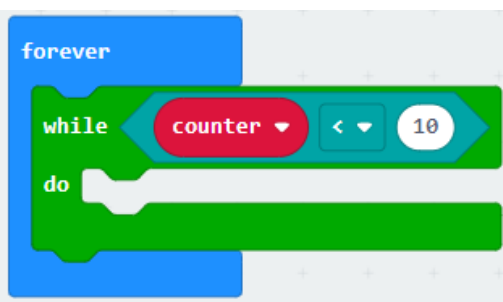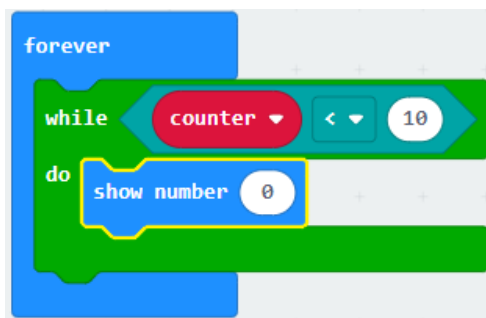
Step 6: Click on the **Logic | Comparison** category then select and drag the **<0> = <0> block** into the **while <true>** block
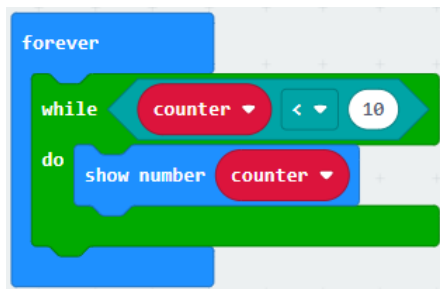

Step 7: Click on the **Variables** category then select and drag the **counter** block into the **while <true>** block. Change the equals to (=) to less than (<) and 0 to 10
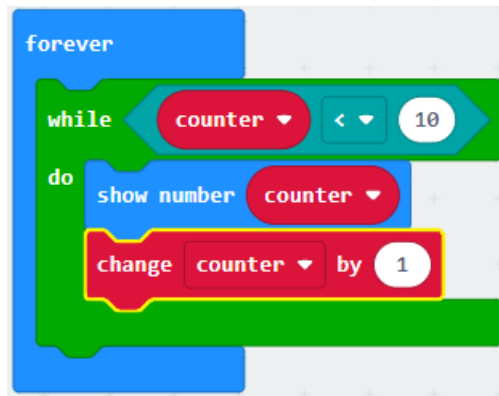

Step 8: Click on the **Basic** category then select and drag the **show number** block into the **while <true> do** block. Change the equals to (=) to less than (<) and 0 to 10
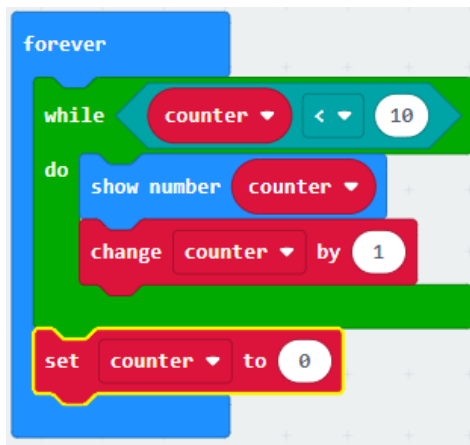

Step 8: Click on the **Variables** category then select and drag the **counter** block into the **show number <0>** block.
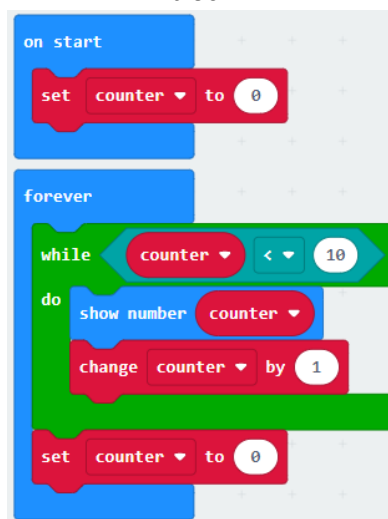
Step 9: Click on the **Variables** category then select and drag the **change counter by 1** block into the **while <true> do** block.

Step 10: Click on the **Variables** category then select and drag the **set counter to 0** block into **forever** block. Make sure is outside the **while <true> do** block.


Step 11: Click on the **Variables** category then select and drag the **set counter to 0** block into **on start** block.

Step 12: Click the download button in the lower lefthand corner of the code window. It will downloaded most probably in the Downloads folder

Step 13: Simply click and drag your program file from its download location to your micro:bit drive, which shows up as an external device.
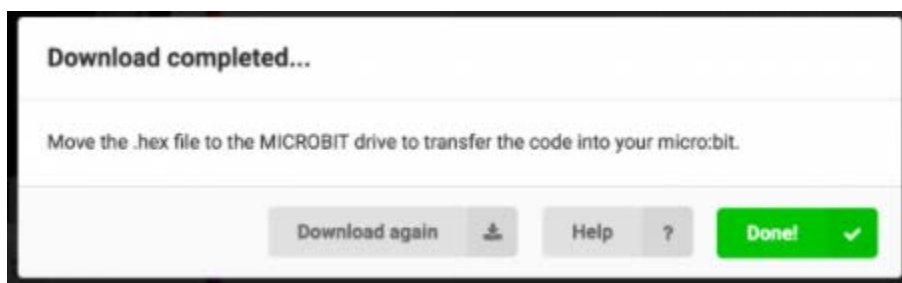
Step 14: Your micro:bit will flash for a few seconds, and then your program will start automatically.
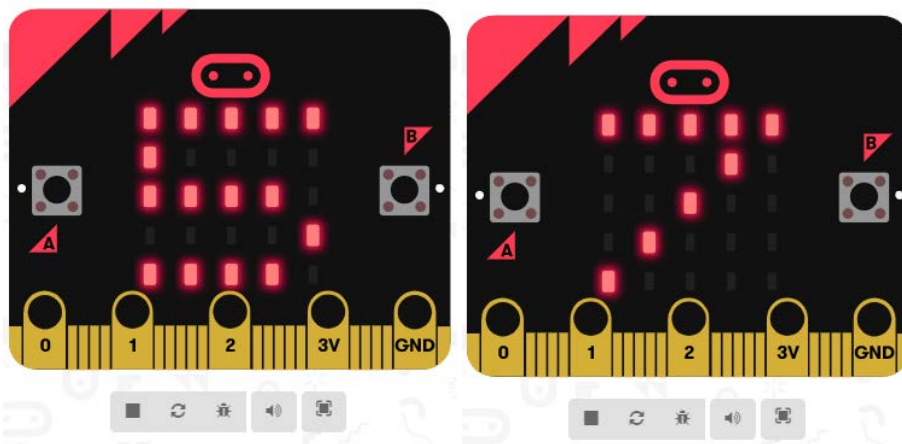
Step 15: We create an ascending counter; it is your turn to create a descending counter.

Congratulations! You have successfully completed this activity.

Reference: Sparkfun Inventor's Kit for micro:bit Experiment Guide
https://learn.sparkfun.com/tutorials/sparkfun-inventors-kit-for-microbit-experiment-guide