



Kim has played the 'Rock Paper Scissors' game on the micro:bit website, and wondered if it would be possible to play a similar game on the MiniMU glove. But she is not sure how to do this and would like your help.

The problem she has is that the display on the micro:bit is hidden in the glove pocket. Now, she could get a pair of scissors and cut a hole so she can see the screen; but having seen the excellent projects you have already built with your glove, Kim wonders if it would be possible to make a similar game entirely driven by sounds and gestures.

In today's lesson you will help Kim to design a program for the 'Guessing Glove' game.

**By doing this you will learn about:**

- events;
- if statements;
- variables;
- defining a function;
- calling a function;
- random number generation.

You will also learn about the difference between source code and binary files.

**You will need:**

- your assembled MiniMU glove;
- the MakeCode web coding editor.

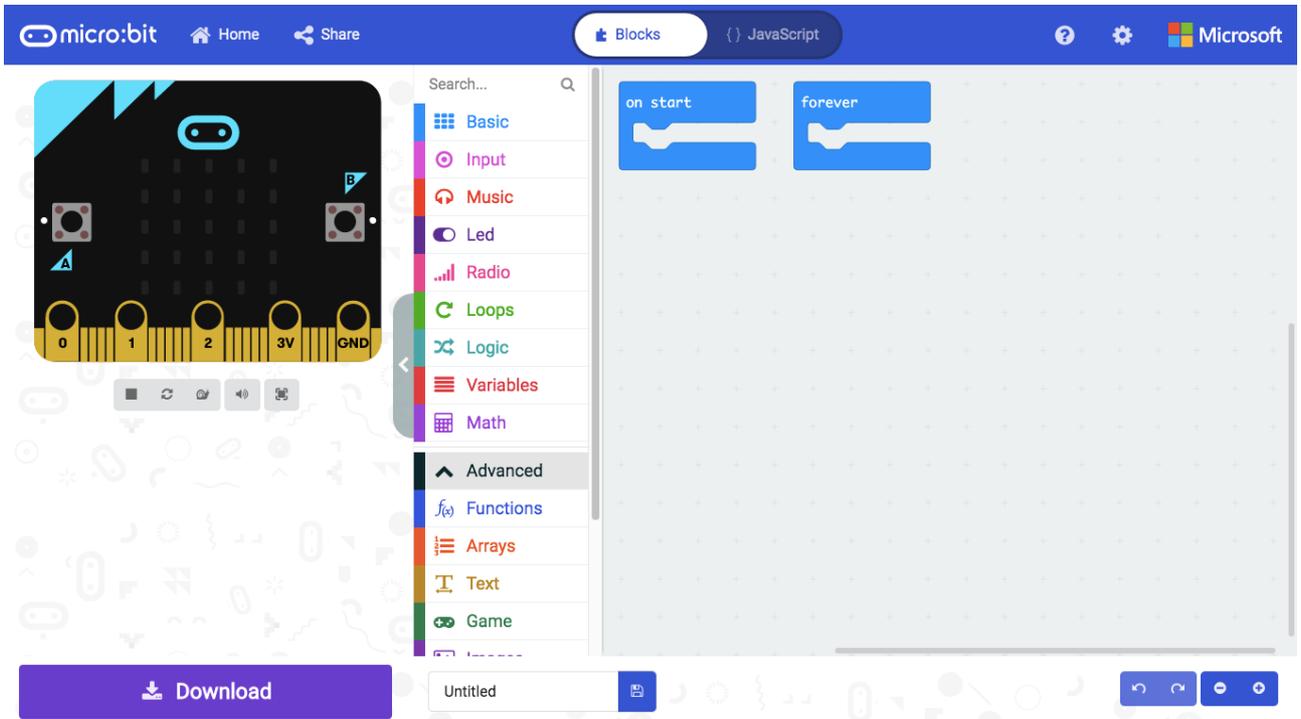


Figure 1: The MakeCode web coding editor.

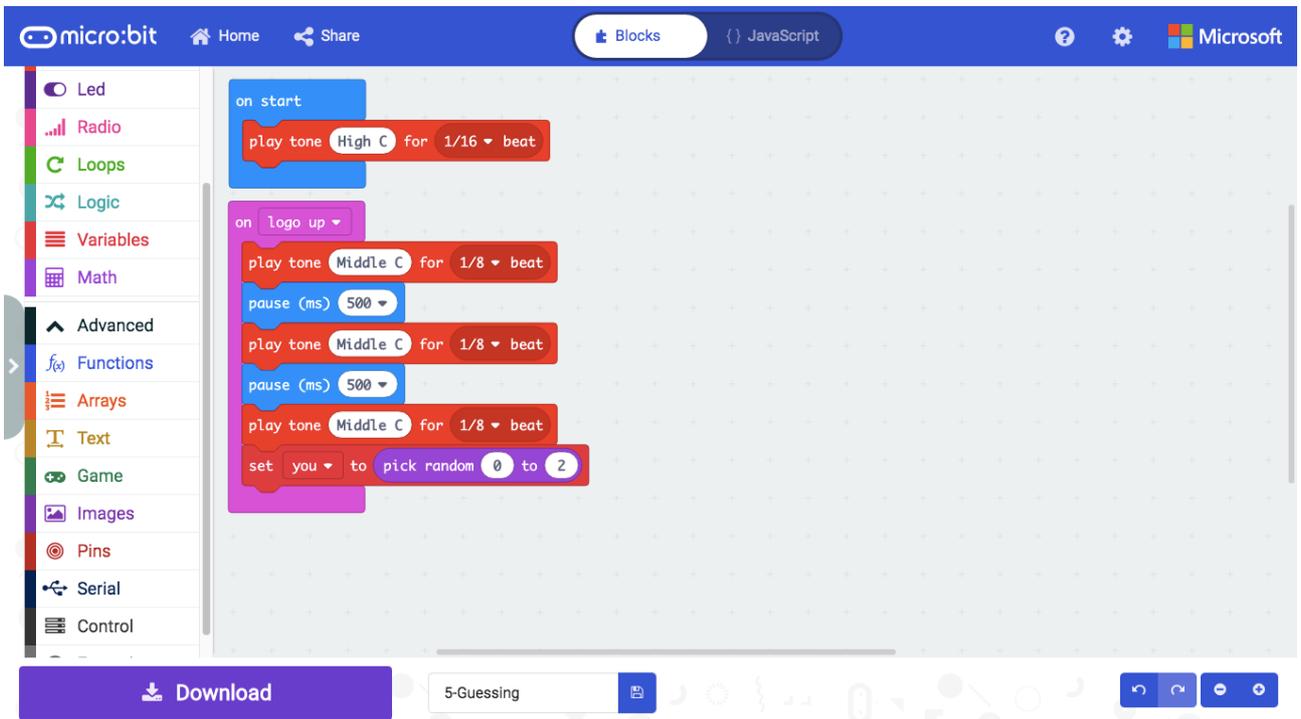


Figure 2: OnStart and OnLogoUp event handlers; start the game.

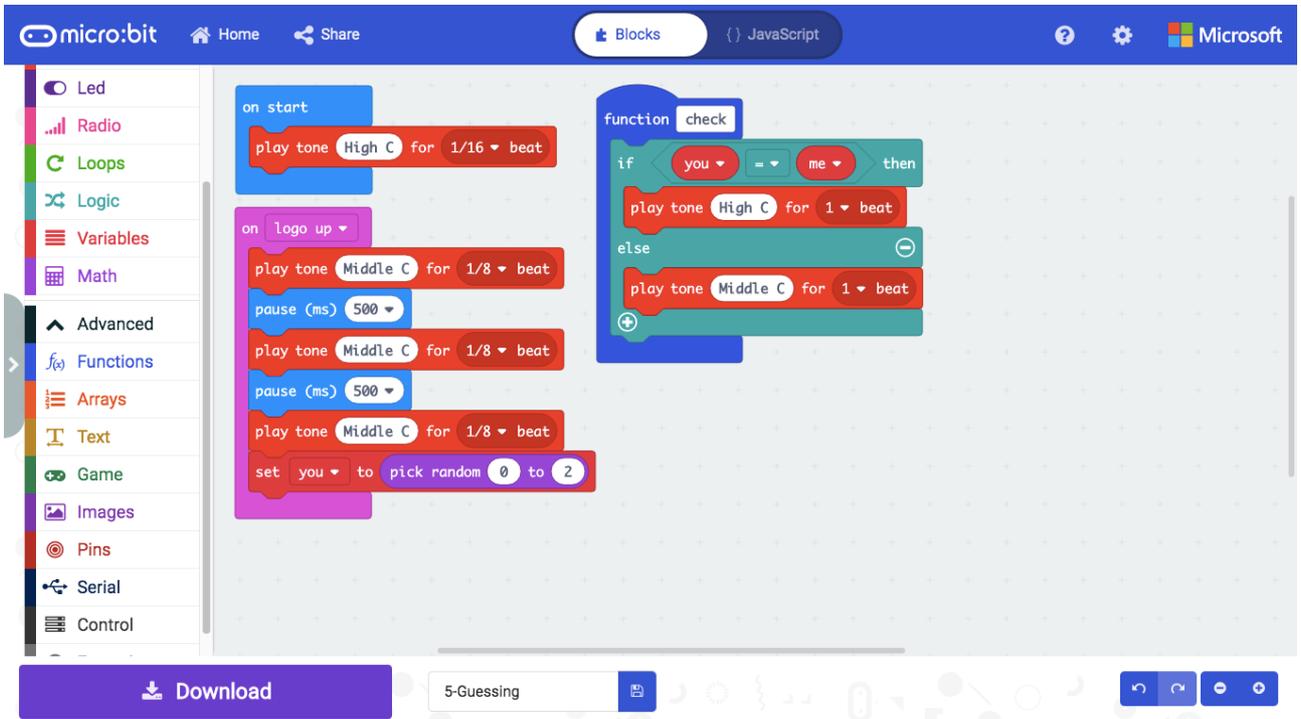


Figure 3: The 'check' function is defined.

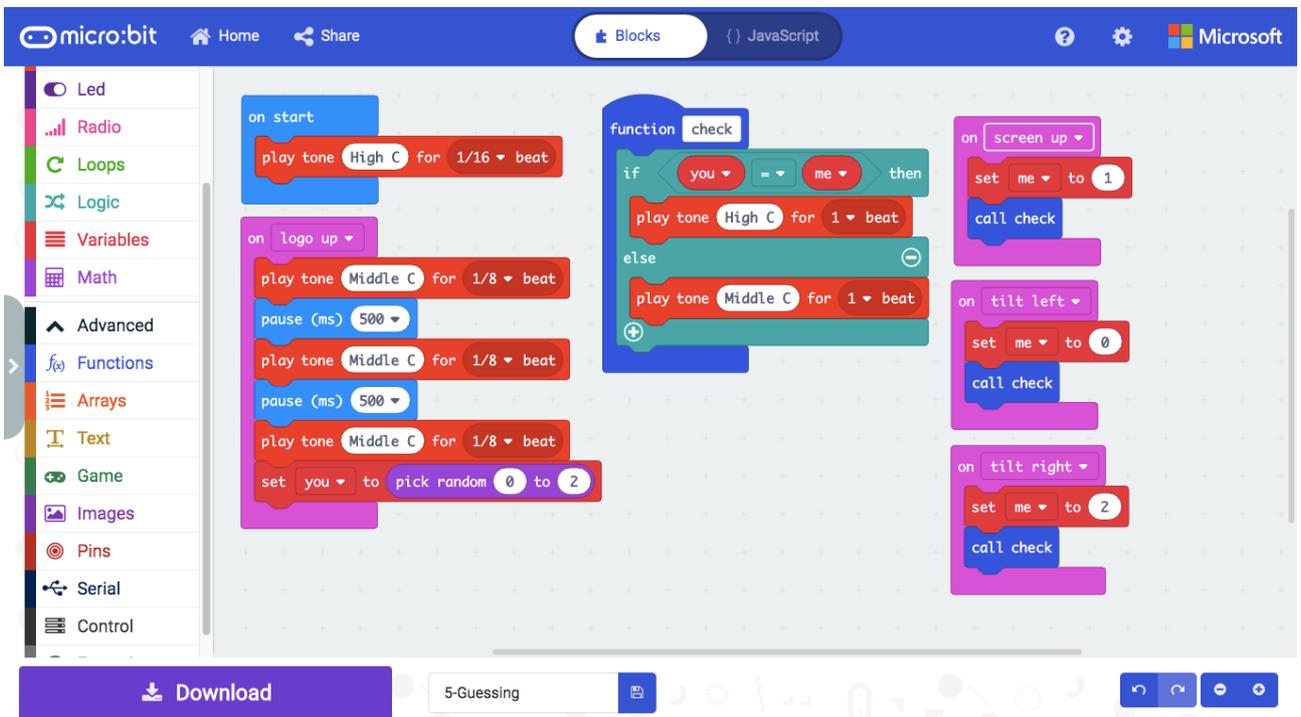


Figure 4: Three gesture event handlers, calling function 'check'.

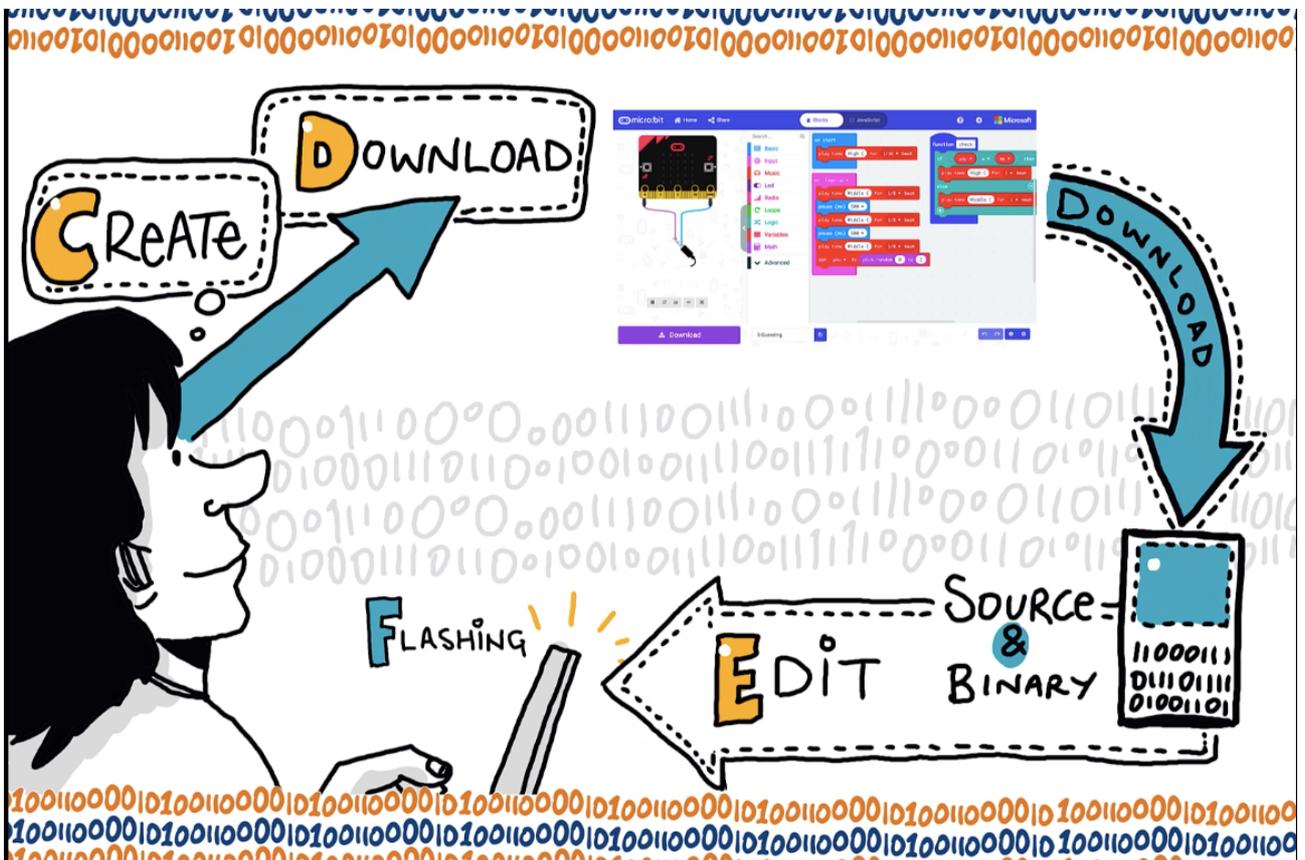


Figure 5: Source files store the human readable code, binary files (binaries) store the computer readable code.

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## Further Information about binary files and .hex files

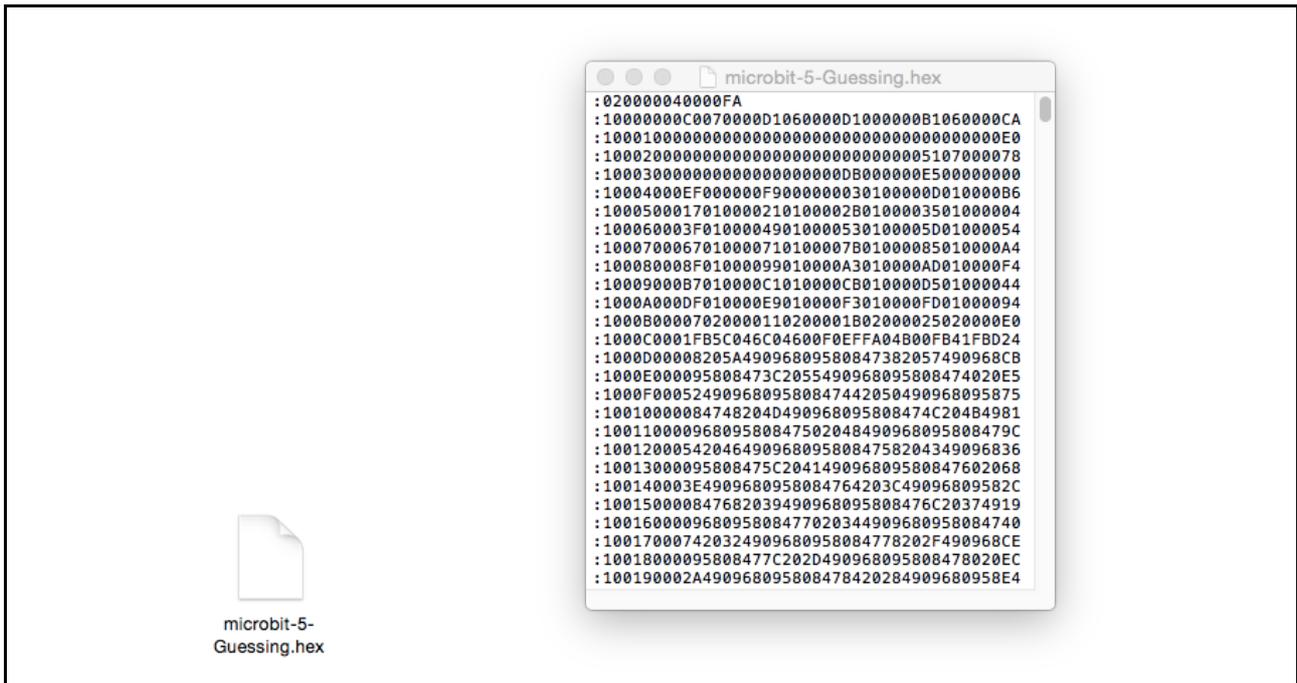


Figure 6: The micro:bit .hex file contains hexadecimal numbers. It contains an encoded copy of *both* the source code that humans can read inside MakeCode, and the binary code that the BBC micro:bit device can run.

[1] <https://www.mathsisfun.com/binary-number-system.html>

[2] <https://www.mathsisfun.com/hexadecimals.html>

Because the BBC micro:bit and Microsoft MakeCode are Open Source, all of the information about how they work can be found on the internet.

[3] <https://support.microbit.org/support/solutions/articles/19000053218-locking-and-unlocking-makecode-editor-hex-files>

[4] <https://tech.microbit.org/software/hex-format/>

[5] <https://github.com/microsoft/pxt/blob/master/docs/source-embedding.md>