Lesson 3 – Uploading your very own Sketch

Sketch - A program written for an Engduino is called a Sketch. You can create a sketch in either Arduino or BlockCode. It is a more basic version of the "C" programming language

A sketch in Arduino must always contain these two main functions:

- **void setup(){…}** ○ In the setup() function, you would put code that needs to be run only once in order to prepare for your main section of code
- **void loop(){…}** ○ In the loop() function, you would put code that will be running in a loop, until there is an error or the Engduino is turned off.

In BlockCode, when writing a sketch, you are not required to write code for the setup function. The setup function is automatically generated in the output file.

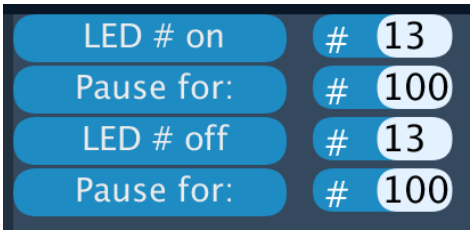
Example of the blink sketch in Arduino and BlockCode:

Arduino

Blink

```
void setup ( ) {
// initialize digital pin 13 as an output.
  pinMode(13, OUTPUT);
}
// the loop function runs over and over again forever
void loop ( ) {
  digitalWrite(13, HIGH);   // turn the LED on (HIGH is the voltage level)
  delay(100 );              // wait for a second
  digitalWrite(13, LOW);    // turn the LED off by making the voltage LOW
  delay(100 );              // wait for a second
```

BlockCode



The BlockCode sketch does the same thing, without the use of **setup()**

In **setup()**, it defines the user LED pin (green light) as an output

In **loop()**, it turns on the LED, waits for 0.1 seconds (100 Microseconds), turn it off, wait for 0.1 seconds and repeat continuously

Now try and creating your own sketch by playing around with the buttons on BlockCode

Summary

Lesson 3 teaches you to create your own sketches on BlockCode and Arduino. We will show you the main components and functions that make up a sketch. We will also show you how much easier it is, to write code in BlockCode, rather than Arduino.