

# Welcome to Code Club!



**CODE CLUB**

# Welcome back! And Week 1 Recap!



Anyone do any coding with Scratch or Python during the week? If so, what did you do?

Anyone have any questions from last week, or anything you've tried at home?

From last week's activity!

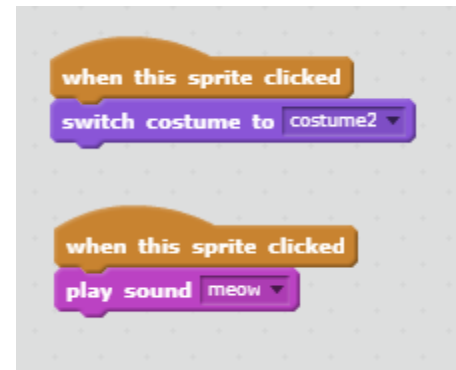


Sprites

Costumes



Sounds



Scripts

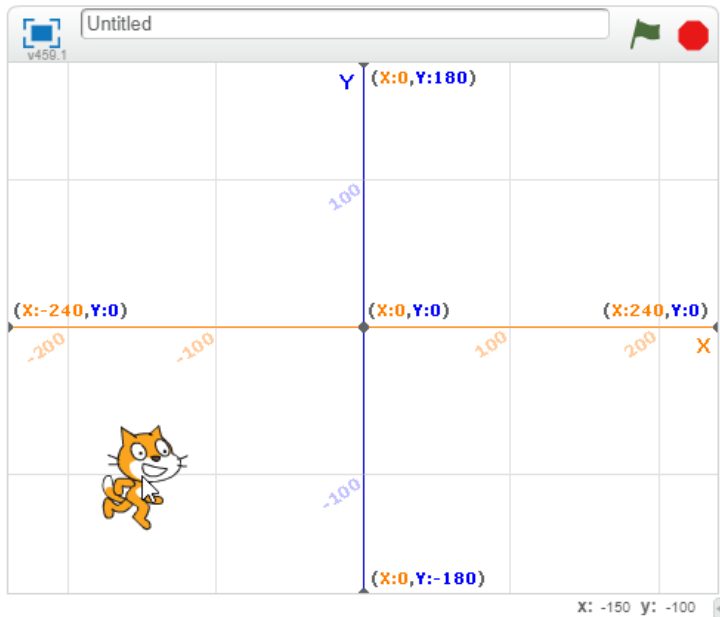
Remember that Costumes, Sounds and Scripts are all **attached** to sprites.

# Week 2



This week we're going to be looking at the 2<sup>nd</sup> Scratch Activity, and also introducing Python for those who want to move on from Scratch. Activity 2, "Lost in Space" focuses on:

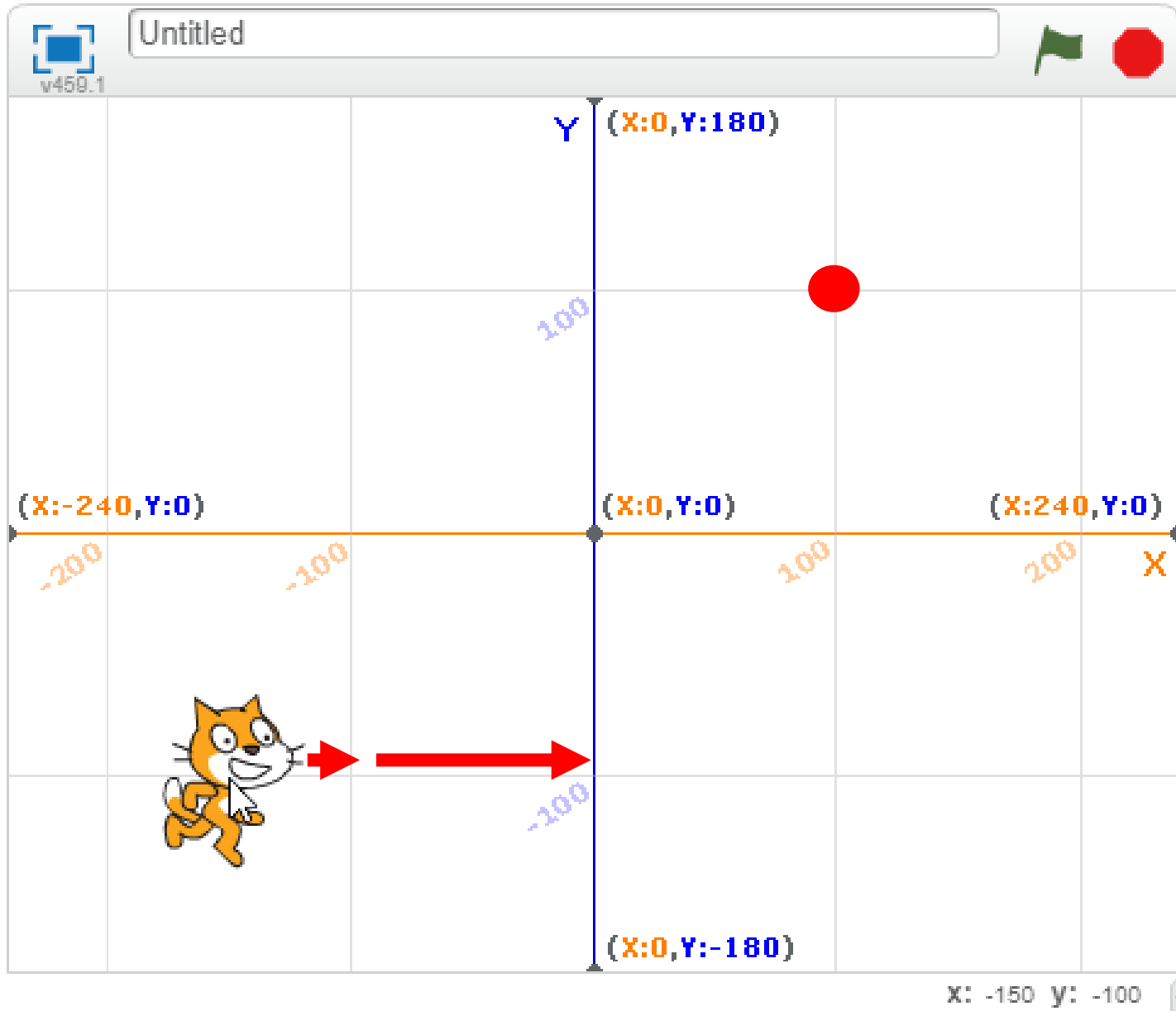
## Movement



## The "Repeat" block



# More about Movement – “coordinates”



```
move 10 steps
```

```
move 100 steps
```

```
go to x: 100 y: 100
```

```
glide 1 secs to x: 0 y: 0
```

# Repeating actions (Loops)

The Repeat block lets you do actions over and over again, for a number of times, forever, or until something else happens



Actions, commands  
go in here



# Python



Python is a text based programming language – no coloured blocks, you need to type it in by hand!

Python is more difficult to learn than Scratch, but much more powerful

Python makes use of “Libraries” – these are pre-programmed pieces of code you can use in your own programs – but you have to tell Python to use them first.

We’re going to use a web browser based version of Python – called Trinket.io - to start with, and we’ll move to the full “Integrated Development Environment” (IDE), which is a text editor called “Idle”

The first Python activity focuses on “Output” – using `print()` to write out to the screen.

# Python



Our first Python program

Press "Play" to run your program

A screenshot of the Trinket Python IDE interface. The browser address bar shows the URL: https://trinket.io/embed/python/33e5c3b81b#.WmUi\_a... The interface includes a toolbar with a play button and a stop button. The code editor on the left contains the following Python code:

```
1 #!/bin/python3
2
3 print('Hello!')
4
5 print('Here\'s is a picture of a dog: ')
6 print('o____')
7 print(' ||||')
8
9 born = input('What year were you born?')
10 print(2018 - born)
11
```

The output area on the right is currently empty. Blue arrows point from external text labels to the play button, the code editor, the stop button, and the output area.

Type code in here

Output appears here

Or "ERROR" if you get something wrong!

Press "Stop" when finished

# Variables

“Variables” are places in your program where you can store information such as:

- Numbers
- Words, letters, sentences
- If something is true or false

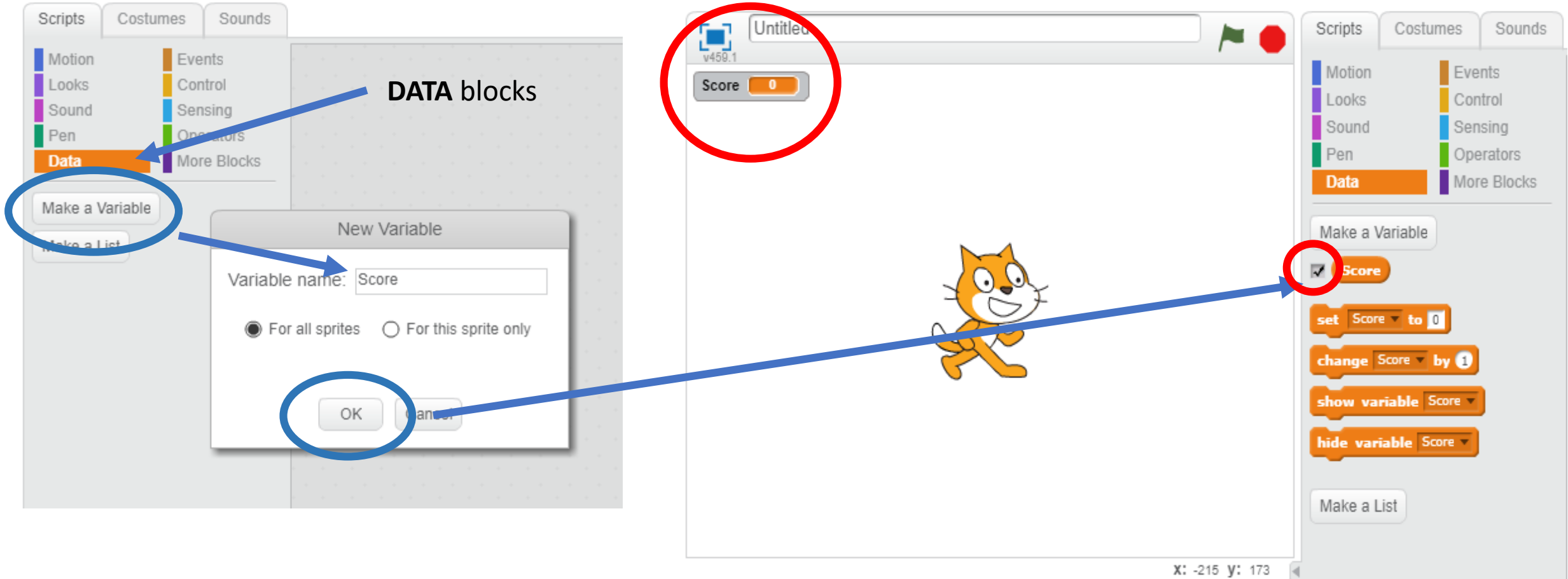
For example, your **Score** in a game





# Variables

Making a new Variable in Scratch:



The image shows the Scratch interface with several annotations. A blue arrow points from the 'Data' block in the left sidebar to the 'New Variable' dialog box. The 'Make a Variable' button in the sidebar is circled in blue. The 'New Variable' dialog box has 'Score' entered in the 'Variable name' field, and the 'OK' button is circled in blue. A red circle highlights the 'Score' variable in the top-right corner of the stage. Another red circle highlights the 'Score' variable in the 'Data' section of the right sidebar. A blue arrow points from the 'OK' button in the dialog box to the 'Score' variable in the sidebar.

Making a new Variable in Python:

```
Score = 0
```

**NB – everything in Python is CASE SENSITIVE**

Score **score** SCORE

# Variables

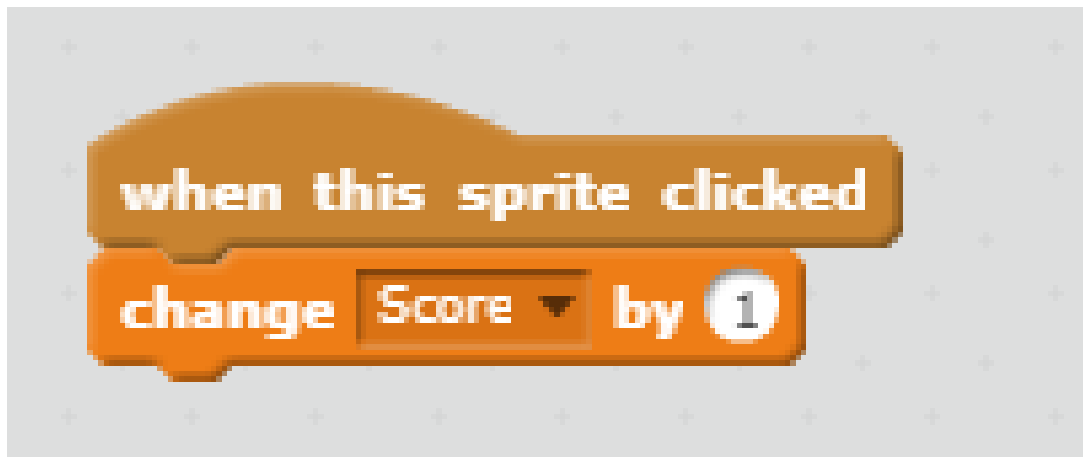
We can use the variable in our program (and in blocks), rather than the number

For example, lets set our Score to nothing (0) at the start of our program



```
Score = 0
```

Then we can add 1 to our score every time we get a point

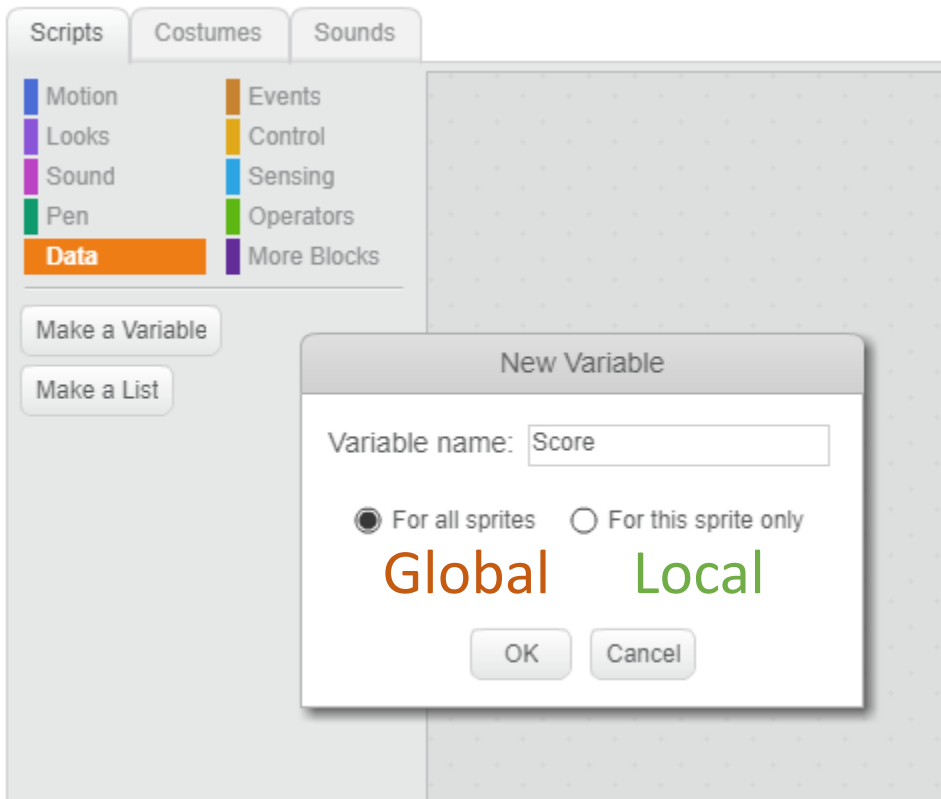


```
Score = Score + 1
```

# Variables

Where we can use variables - “Scope”

Global (or public)      Local (or private)



```
Score = 0      Global
```

```
print(Score)
```

```
def myFunction():  
    footballs = 10  
    print(footballs)      Local  
    print(Score)
```

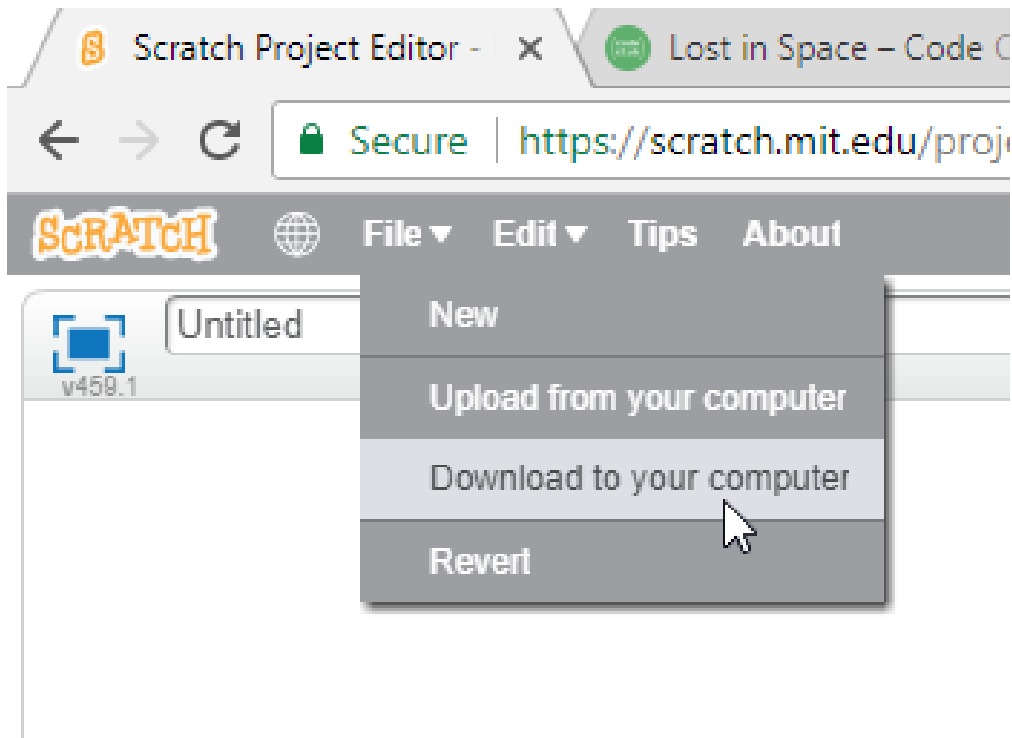
```
myFunction()
```

```
print(footballs)      ERROR!!!!
```

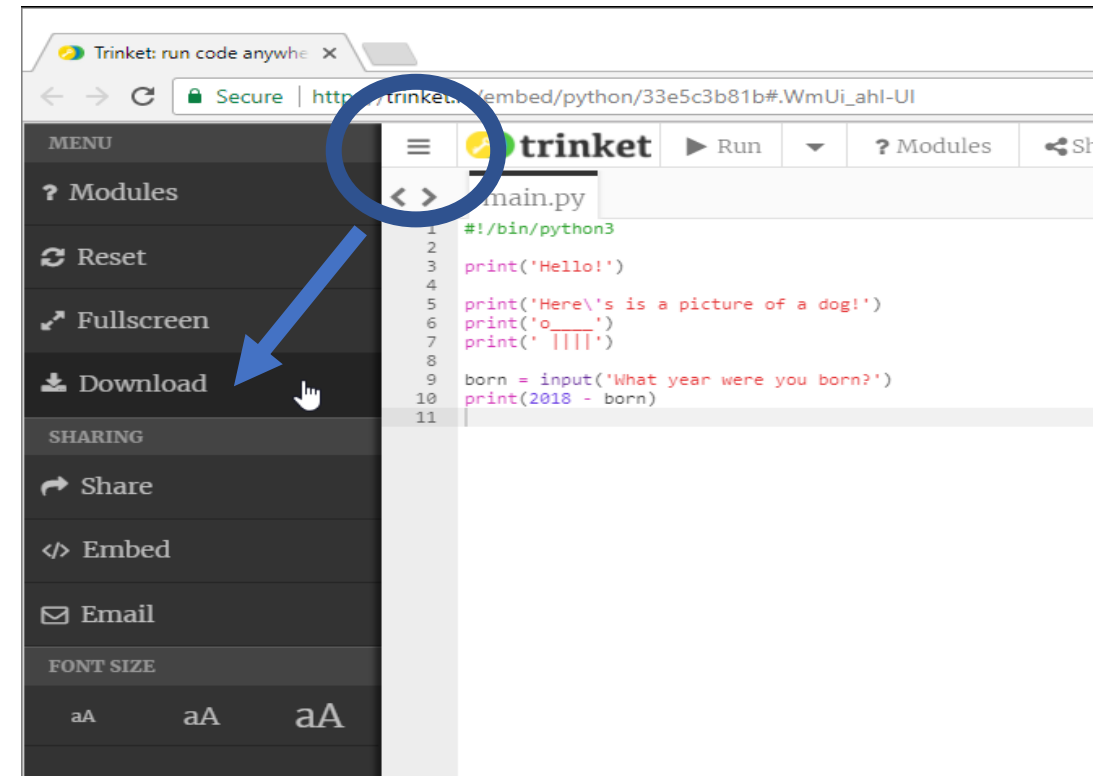
# Saving your work!

Who forgot their USB stick?

Scratch



Python



**NB: saves to "Downloads" by default!! Copy to USB!!!!**



## Today's Activity

Open up a new browser, and go to:

**<http://airyhallcode.club>**

Click on the link for the activity you want – Scratch or Python

Have a little read through, then use the code club website again to open up the Scratch program, or the Python Trinket IDE

**Let's go!!!!!!**



**For Next Week**

**<http://airyhallcode.club>**

Try next week's activity in advance – any problems or questions bring them along to code club!

Save your work, and bring it in to show other members!!!

Check the code club website for the links!!!!

