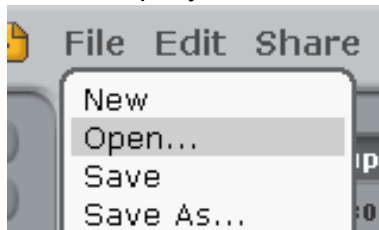
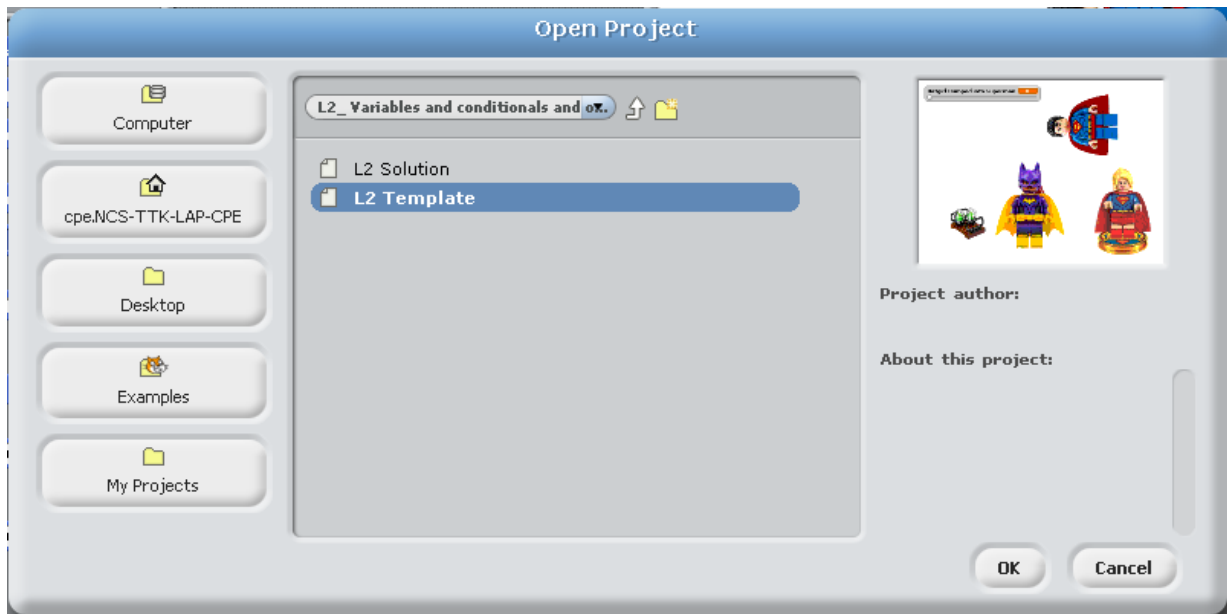


Scratch step by step: Variables and conditionals and operators

1. Open Scratch 1.4.
2. Next up if you click on 'File' then 'Open'



3. From the shared area find the Lesson two Scratch 'L2 Template' file.
4. Click 'OK'



5. You will now see 4 Sprites. 'Super girl', 'Superman', 'Batgirl' and 'Kyprotonite' (See below)



5 continued.. you will be creating small blocks of code for the three characters starting with Superman.

6. By creating these instructions we will learn a bit more about variables, conditionals and operators.
7. First up using the 'Control' commands we can chose the 'when key pressed' block and 'forever' loop block.



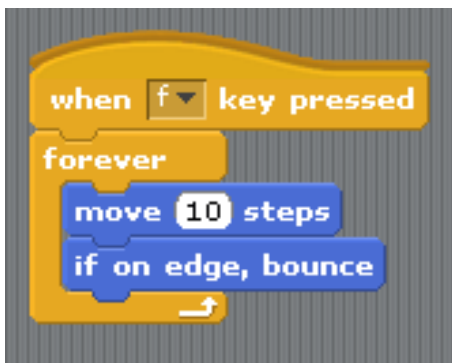
8. Select the 'f' key as below. When this **condition(f being pressed)** is met, then an event in the forever loop is triggered.



9. Next up we need to use the 'Motion' commands.



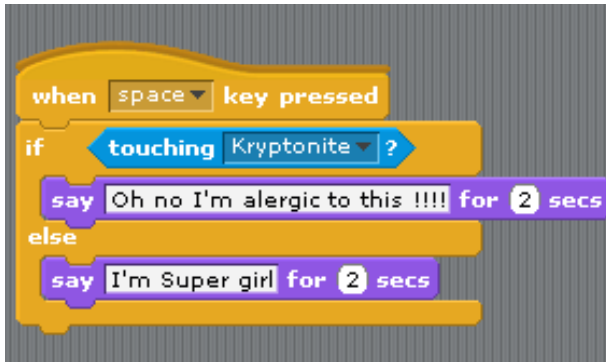
10. Drag in the two that you see below to help Superman move and bounce when he hits the edge of the screen.



11. The second block for Superman uses the same **condition** except the button pressed this time will be 's' to get him to speak. Another type of **loop** is used. This loop has set number of **Iterations** (number of times it loops around).
12. Finally using the 'Looks' commands get Superman to say something....



13. Next we move onto the code for Super girl. We all know that she is allergic to Kryptonite. We are going to set it so that if we press the 'space bar' and she is touching Kryptonite then she will say something. Here is the code below:



Notes: The **conditions** here are if the space bar is pressed then it will ask the question.....

If Super girl is touching kryptonite then say 'I'm allergic to this'

Else if space bar is being pressed and Super girl isn't touching kryptonite then she will say 'I'm Super girl'

14. Finally we need to sort out Batgirl and her code:

Her code is a bit more complex and requires a bit more explanation. So here is the pseudocode:

If Green flag Clicked Then

Set variable 'Bumped into Superman' to 0

As long as BatGirl is touching Superman then trigger a loop

 Add 1 to 'Bumped into Superman' count

 Wait 2 seconds

 If 'Bumped into Superman' variable is smaller than 2

 Say "*less than 2 collisions today*"

 If 'Bumped into Superman' variable is bigger than 10

 Say "*Lots of collisions today*"

 If 'Bumped into Superman variable' is equal to 3

 Say "*Only three collisions today*"

14 a) To start off First up using the 'Control' commands we can chose the 'when green flag clicked' block and 'forever if' loop block.



14 b) Next using the variable commands

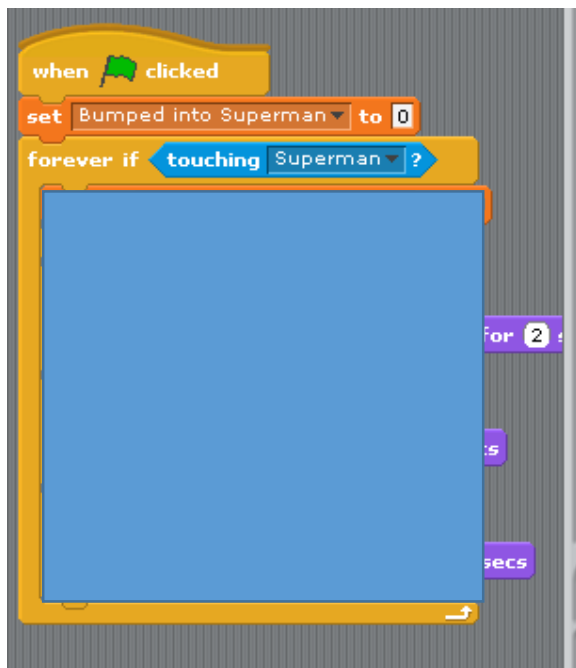


Batgirl already has a **variable** called **Bumped into Superman**. A variable is bit of computer memory that stores a value e.g. score.

First thing we need to do is set the variable to 0 so it starts fresh each time the green flag is clicked.



15. Next using the 'control' commands select the 'forever if' block.



15a.) Using the 'Sensing' commands select the 'touching' block as above. You will need to select Superman.

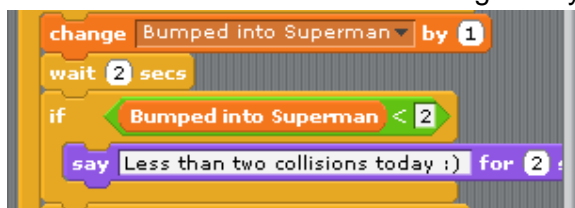
16. Next up using the 'Variables' command for Batgirl select the 'Change.. by ...' command, set it to 1.

17. Select from the 'Control' commands choose 'wait' and set it to 2.

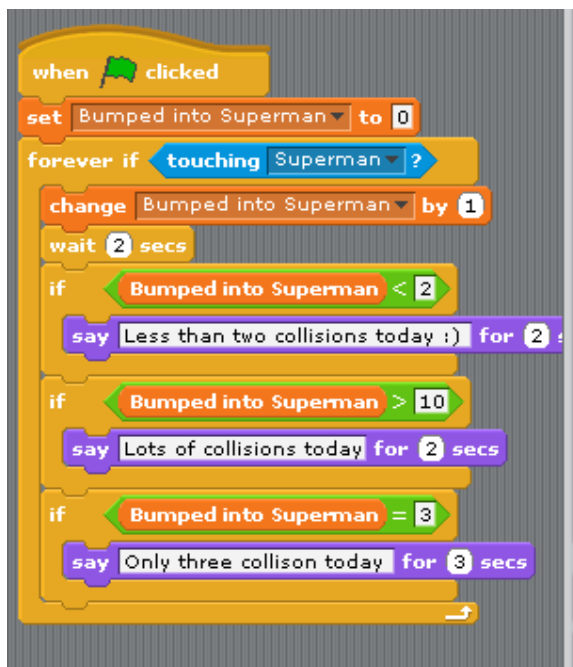
18. Using the 'Control' commands choose the 'if' block. From the 'Operators' commands drag in the smaller than block.

19. From the 'Variables' commands drag in the 'Bumped into Superman' into the green 'smaller than' block.

20. From the 'Looks' commands drag in 'says' and add the "less than two collisions today".



21. Complete the remaining two blocks in a similar way



Congratulations you have made it.