

Engaging Students with Scratch

Combining Computer Studies with Story Writing in an Elementary Classroom

Lesson 3 – Repeat Until and Wait Until

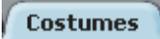
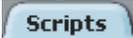
Repetition structures allow us to control code using sensing control blocks. We can have a sprite wait until something happens before moving on or we can repeat code until something happens. A real world example would be: You wait until dinner is ready before going to the dinner table. At the dinner table you keep eating until you are full.

Sensing control blocks are used to sense what is happening to a sprite. A simple sensing function is checking to see if a sprite is touching another sprite.

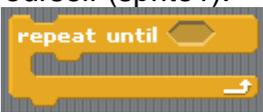
Code block types being used for story:

	Contains code blocks to move sprites around the screen.
	Contains code blocks to start scripts and respond to events
	Contains code blocks to animate sprites and make them talk
	Contains code blocks to detect events or other situations

Today we will be animating sprites by learning new  and  code blocks.

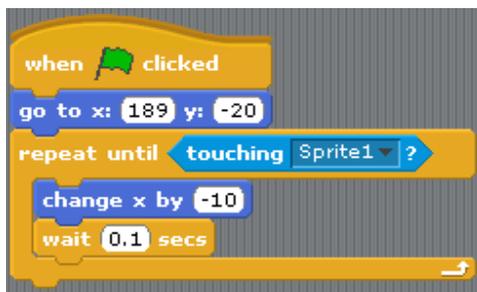
1. Open up a new Scratch program and right-click on the cat and delete it.
2. Click on  to new sprite.
3. Draw a happy stick figure of yourself. Click **OK** when done.
4. Select the  tab of your sprite. Copy the first costume and edit the copy so that it is not happy. Click **OK** when done.
5. Click on  to new sprite.
6. Draw a picture of food that you don't like. Click **OK** when done.
7. Drag the sprite of you to the left side of the screen and the sprite of the food to the right hand side of the screen.
8. Select the  tab of the **food sprite**.
9. From  drag  into the script box.
10. From  attach  to the script.
11. From  attach  to the script.
12. From  insert  into the  block.

13. In the  block, select the sprite of yourself (sprite1).

14. From  insert  into the  block. Make sure that it is changing x by **-10**.

15. From  insert  into the  block.

The code for the food sprite should now look like below:

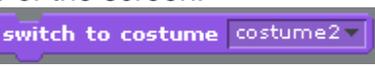


Now let's code the sprite of you.

16. Select the  tab of the **sprite of you**

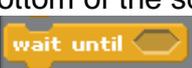
17. From  drag  into the script box.

18. From  attach . Your sprite should always go back to the left hand side of the screen.

19. From  attach  to the script. Switch costume2 to **costume1**.

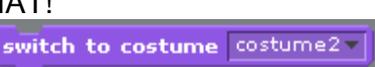
20. From  attach  and change "Hello!" to "I'm so hungry!"

21. From  attach  to the bottom of the script

22. From  insert  into the  block.

23. In the  block, select the food sprite (sprite2).

24. From  attach  and change "Eww! I'm not hungry enough to eat THAT!"

25. From  attach  to the script.

26. From  attach  to the script.

Your code for the sprite of you should now look like below:



When we press , the food moves to the left until it reaches you and then stops. The sprite of you waits until the food gets to it and then switches costumes and moves away!

We could make our animations better by gradually moving sprites and switching costumes as taught in previous lessons.

Task 3 – Create a program where there is a person and an object. This time, the person is going to react in a positive way when the object reaches them.

Enhancement 3 – Improve the animations so that the object animates as it approaches the person and the person animates with a dance when the object reaches them.