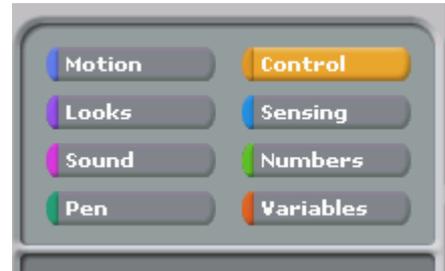


Scratch Cat Walk Project

Simple movement

In Scratch the figure is called a Sprite. One of the easiest programs to make is one that moves a sprite on the screen.

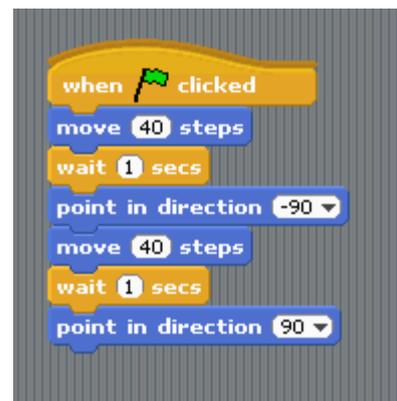
1. Click on the yellow **Control** button in the topic box
2. A series of control instructions will appear
3. Select the first one **when flag is clicked** and drag it to the Scripts area of the screen.
4. Next click the blue **Motion** button to the left of the Control button to evoke the motions instruction set
5. Drag the **move 10 steps** button across and lock it underneath the earlier command. Your program should look like the one on the right.



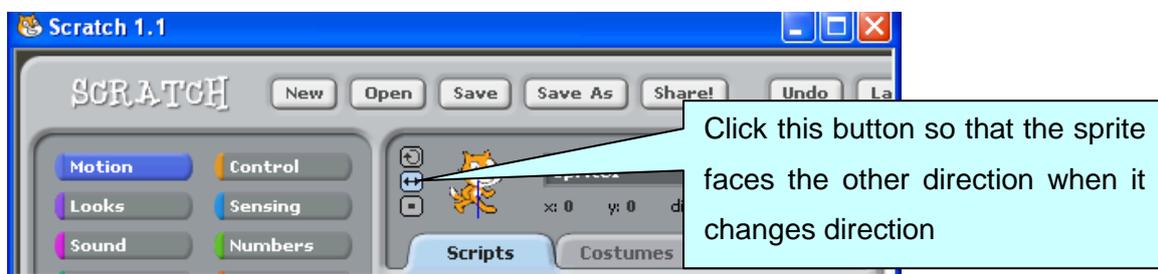
6. Click the **green flag** near the top right of the Scratch screen to run your program.

Amending the program

1. You can change the amount of movement by altering the value in the movement command. Change the movement value from 10 to 40.
2. Click the Control topic button again and select the **wait 1 secs** command
3. Click the Motion topic button and add the **point in direction 90** command below it.
4. Click on the arrow beside the 90 and select -90 from the list.
5. Add another movement command and change the value to match the first
6. Add another wait command, and then another 'point' command.



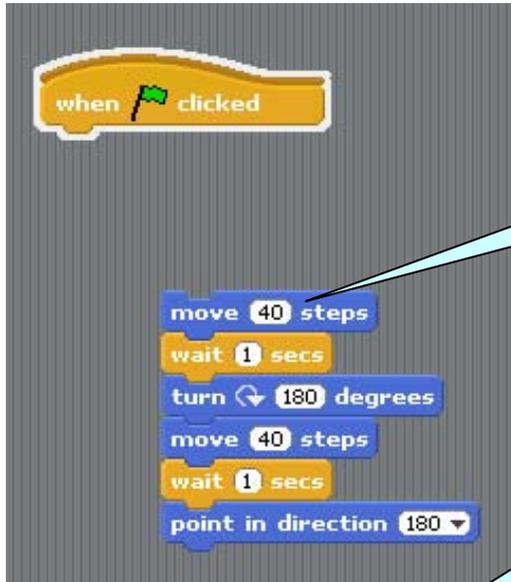
Finally, at the top of the screen where there is a small image of the sprite, click the middle button. This makes the sprite change direction to match his movement.



Scratch Cat Walk Project

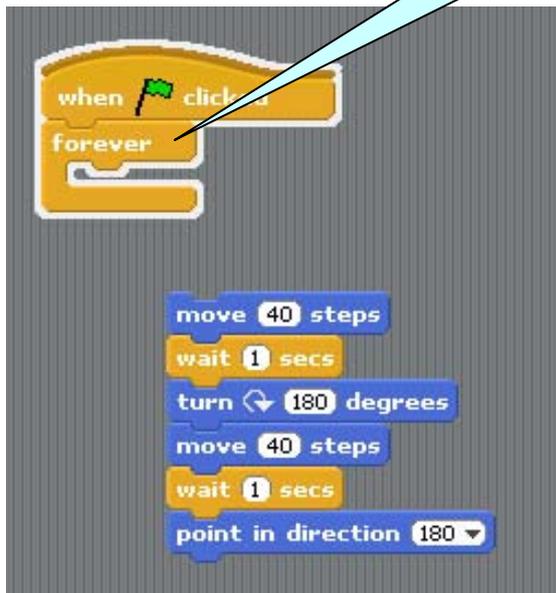
Repeated movement (using forever)

Often we want the sprite to be animated for a period of time. In order to get the script that we have written to loop use the **Forever** instruction.

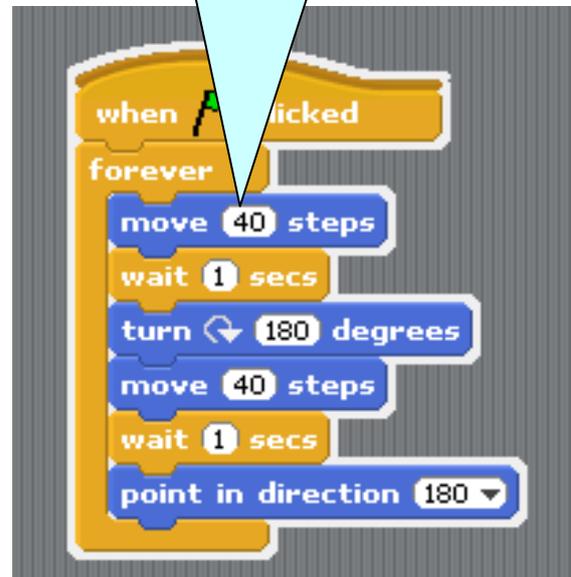


Step 1 - click the **move 40 steps** command and drag the script apart

Step 2 - Select the **Forever** instruction from the Control topics



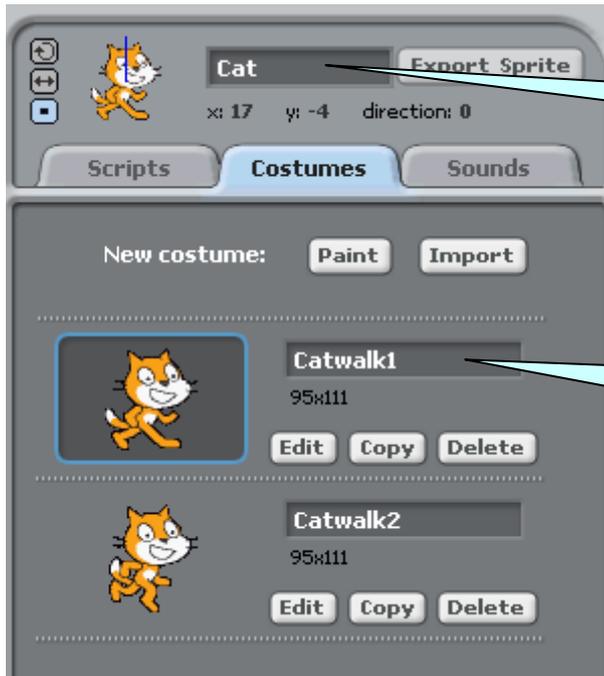
Step 3 - Drag the set of instructions that you made previously back inside the **forever** instruction



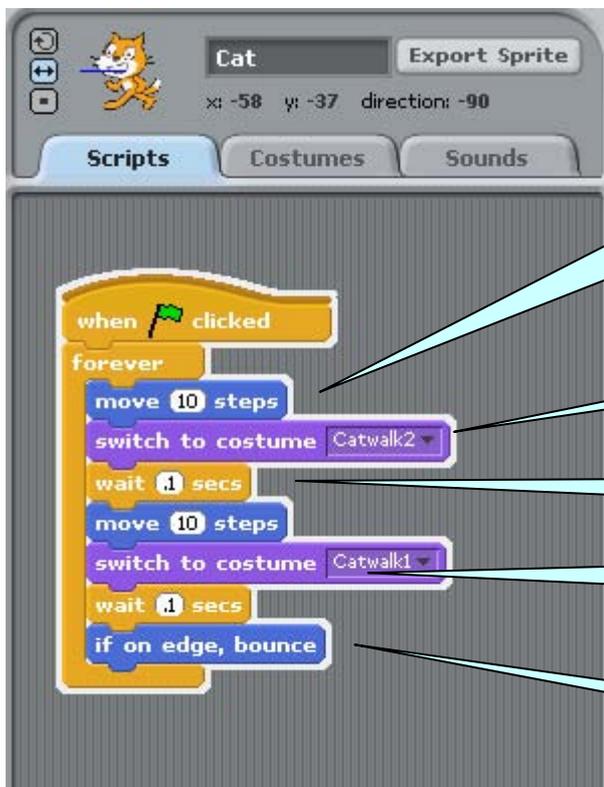
Scratch Cat Walk Project

Getting the sprite to walk (using costumes)

Click on the costumes tab – note that the cat sprite comes with two costumes



Before completing this exercise dump your existing script into the left hand side of the screen (this will delete it)



Scratch Cat Walk Project

Using the keyboard to control your sprite (using **if condition** instruction)

It is possible to control your sprite using the mouse keys. There is a small pointer next to the Sprite symbol at the top of the screen which can be set to any angle thereby determining the natural direction of movement of the sprite. In this exercise we want the Sprite to move exactly up and down vertically or side to side horizontally so we will use the **change x by** and **change y by** instructions to order to ensure the correct movement of the Sprite

Before completing this exercise dump your existing script into the left had side of the screen (this will delete it)

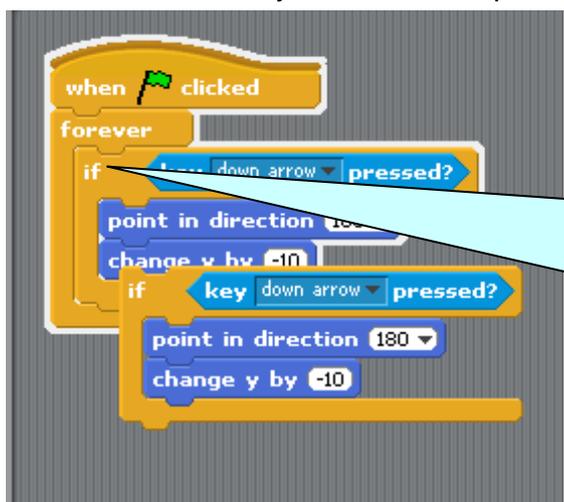


Start a new script with the **when green flag** pressed and **forever** instructions

Choose the **if condition** instruction and drag in the **key pressed** instruction from the **sensing** topics. Set the **key pressed** to **down arrow**

Add the **point in direction** and **change y by** set instructions **Set point in direction** to **180** and **change y by** to **-10**

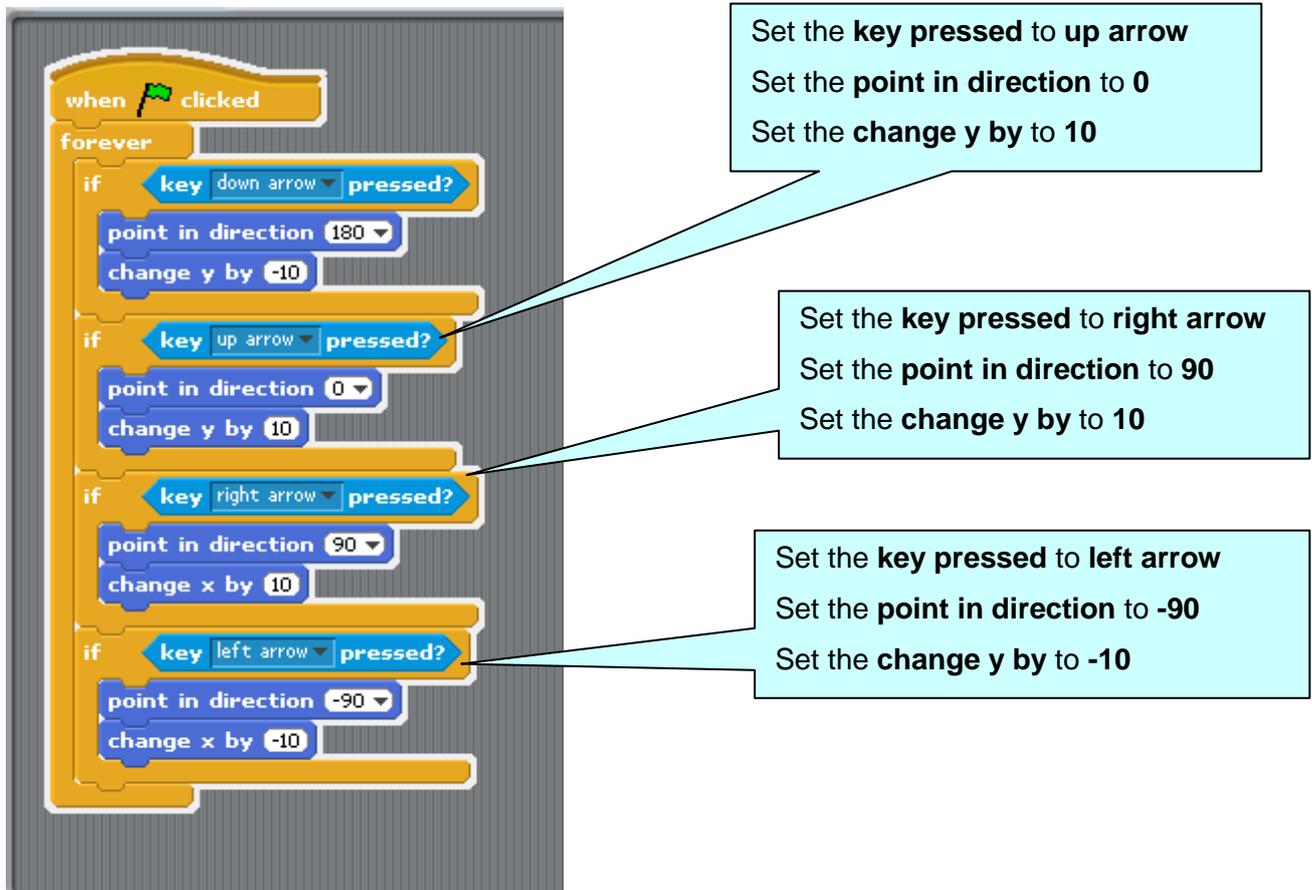
We will now copy the main part of the script then edit the sub script for each movement of the mouse determined by each of the respective four arrow keys



Click on the **copy (stamp symbol)** tool then click on the word **if** in the script. This will create a copy of that part of the script. Repeat this process twice more in order to create the scripts for each different movement of the sprite

Scratch Cat Walk Project

Drop the three new copied sets of instructions inside the **forever** instruction (not inside the existing **If condition** instruction)



The image shows a Scratch script starting with a 'when clicked' event. A 'forever' loop contains four 'if' blocks for arrow keys. Callout boxes provide instructions for the 'up arrow' and 'right arrow' blocks.

when clicked

forever

- if key down arrow pressed?**
 - point in direction 180
 - change y by -10
- if key up arrow pressed?**
 - point in direction 0
 - change y by 10
- if key right arrow pressed?**
 - point in direction 90
 - change x by 10
- if key left arrow pressed?**
 - point in direction -90
 - change x by -10

Callout 1 (for up arrow):

- Set the **key pressed** to **up arrow**
- Set the **point in direction** to **0**
- Set the **change y by** to **10**

Callout 2 (for right arrow):

- Set the **key pressed** to **right arrow**
- Set the **point in direction** to **90**
- Set the **change y by** to **10**

Callout 3 (for left arrow):

- Set the **key pressed** to **left arrow**
- Set the **point in direction** to **-90**
- Set the **change y by** to **-10**

Click the green flag button.

It should now be possible to drive your cat sprite around the screen using the arrow keys

Scratch Cat Walk Project

cat walking with keyboard control

Looking back over exercise 4 and 5 it should be possible to make a script combining what you have already learned that allows the Cat sprite to walk around the screen.



Note that two scripts have been created here as an expedience for display purposes and it is possible to combine all of this into one script