

Scratch Programming: 5. Animation

Task: Create two moving sprites, one will react to a user event (moving the mouse pointer), and both will react to another event (when they touch).

Lesson Objectives:

To learn how

- Event programming
- If and then
- Loops
- Backgrounds and sound effects

What do you need to do?

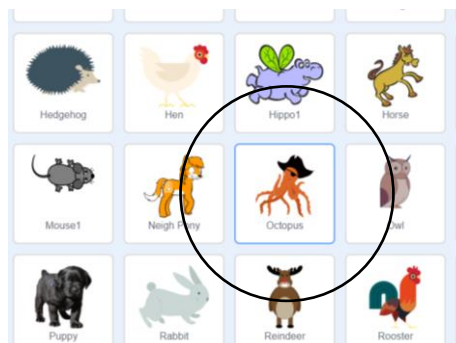
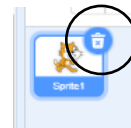
Follow the instructions below.

Important. Always save your work regularly. Use the 'Save as' option so you know where the file is saved.

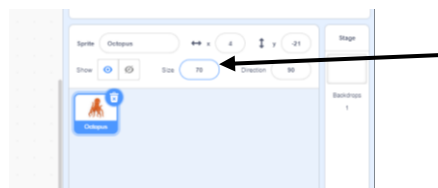
We are going to use two new sprites, so start by deleting the cat sprite

Add a new octopus sprite

By the 'new sprite' writing there is the option to choose a new sprite from the library



You can change the size of the sprite
lower the size to 40

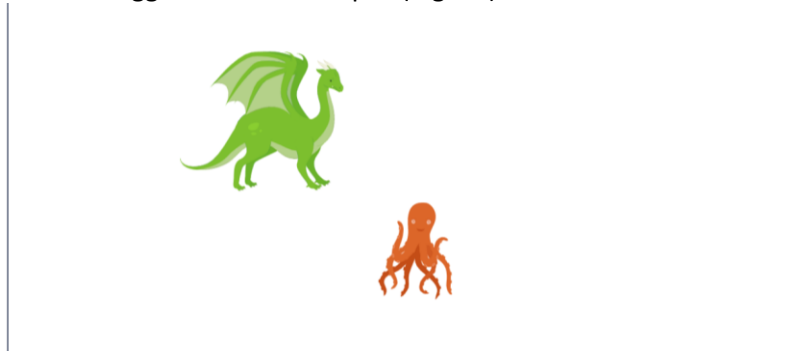


Now add some motion

- Add the 'glide _ secs to x __ y __' block #blue motion
- confirm 1 second
- Add 2 glide randomly blocks #green operators
- Change the values to -240,240 (x) and -180,180 (y)
- Now add these to the glide block
- Add a forever block around the glide block #control

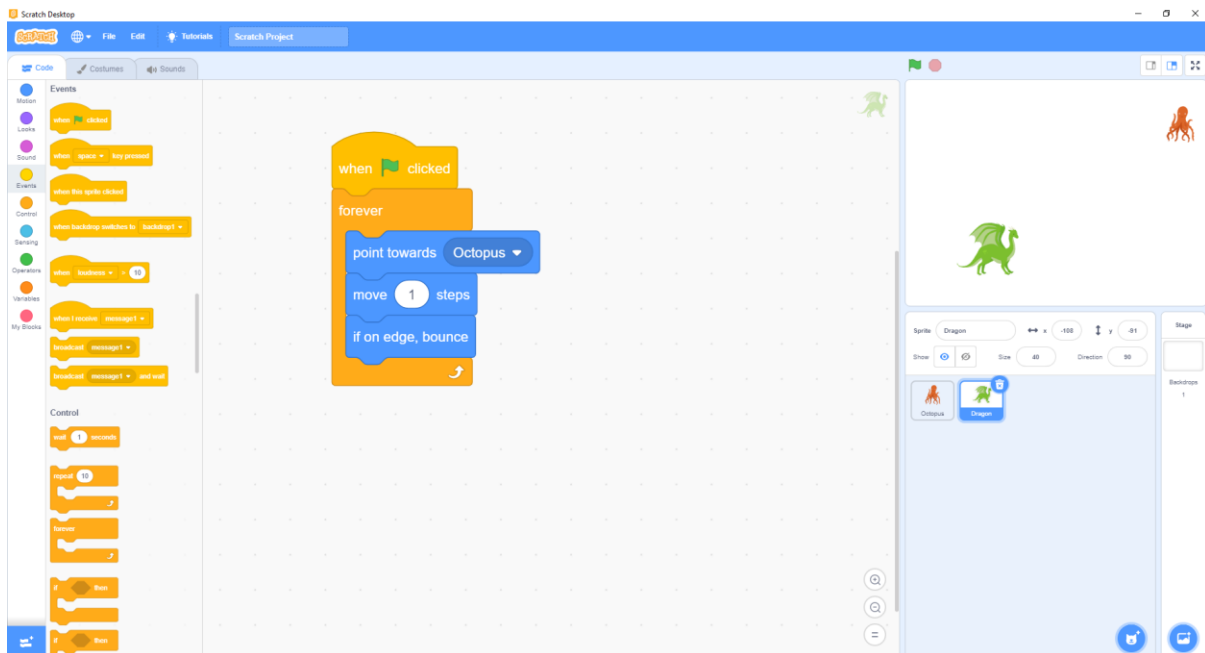


Add a 'fantasy' sprite – the dragon
Size it as you wish – a bit bigger than the octopus (e.g. 40)



Now add some motion to the dragon

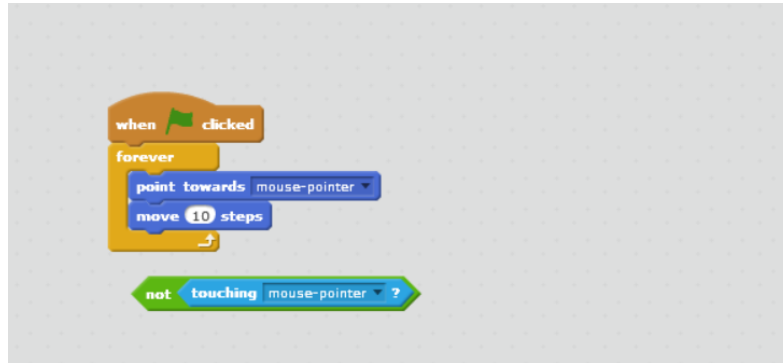
- Add a point towards block
- change the drop-down menu option to octopus
- Add a 'move __ steps' block
- Change the value to 1 step
- Add an if edge bounce block
- Put these inside a forever block
- Add the when 'green flag' clicked block on both sprites' code



Test: start the dragon code by clicking on the blocks
Move the octopus with your mouse
Does the dragon chase the octopus?

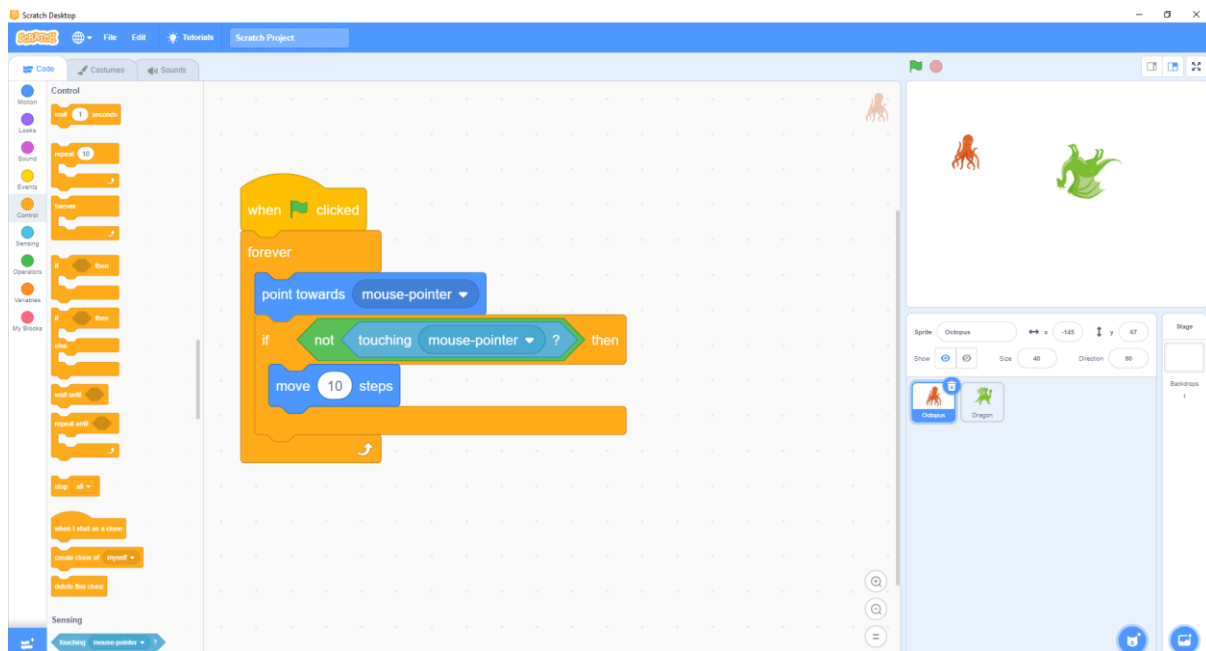
Now we will change the octopus

- Add a point towards block – leave it to point to the mouse pointer
- Add a move 10 steps block
- Put these inside a forever block
- Add the when green flag clicked block



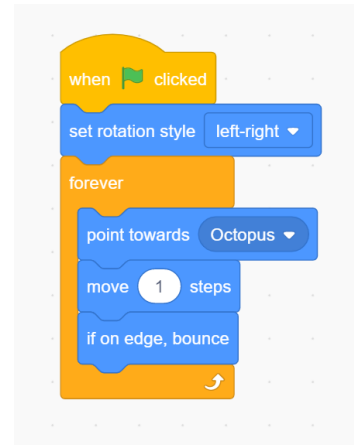
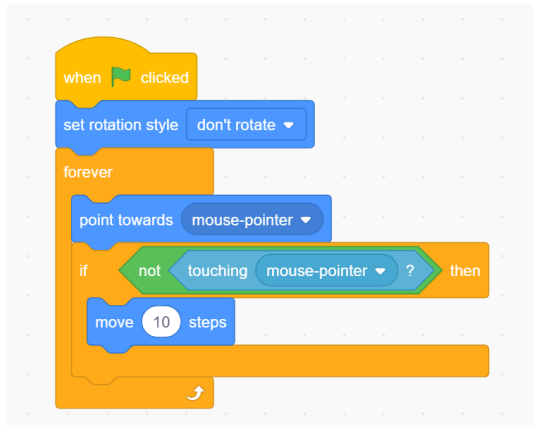
- Now add a touching mouse pointer block #sensing
- Add a not block #operators
- Put the touching block inside the not block
- Add an if block #control
- Put the not touching blocks inside the if block as the if condition
- Now move this under the point towards with the move 10 steps inside the if blocks

Now check the octopus stops when it reaches the mouse pointer



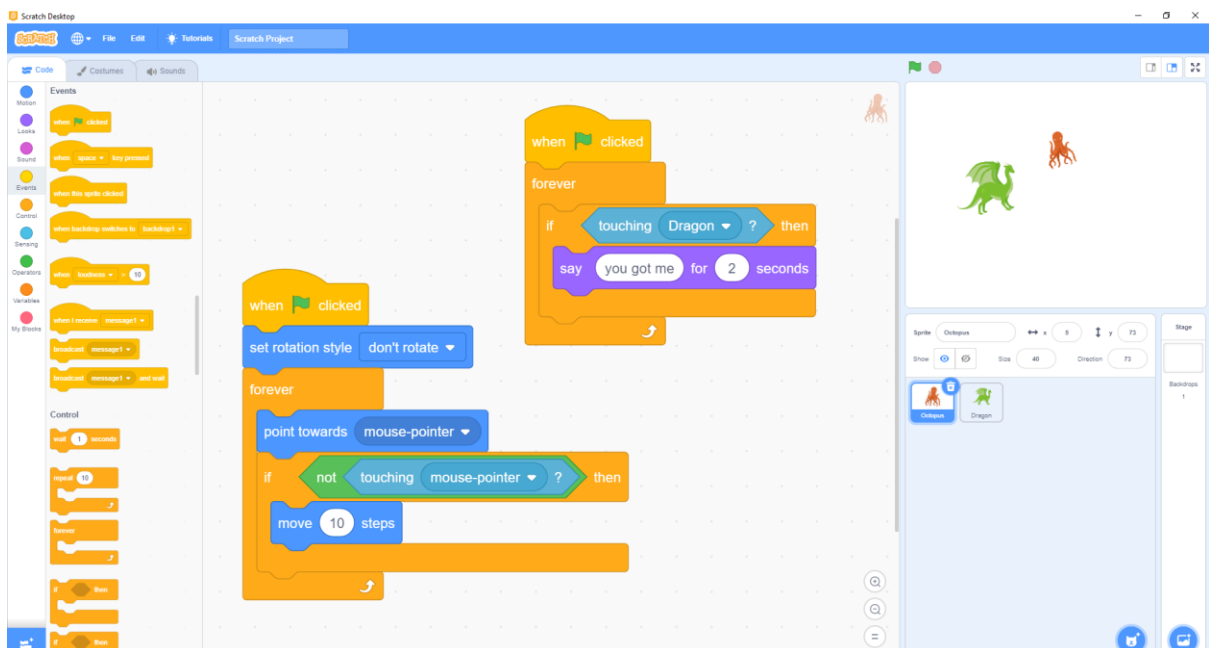
The sprites move around and rotate. Change the settings so the octopus does not rotate and the dragon changes direction from side to side but not facing up or down

- Use the set rotate style block



Now we are going to add some effects. For the octopus add the following blocks

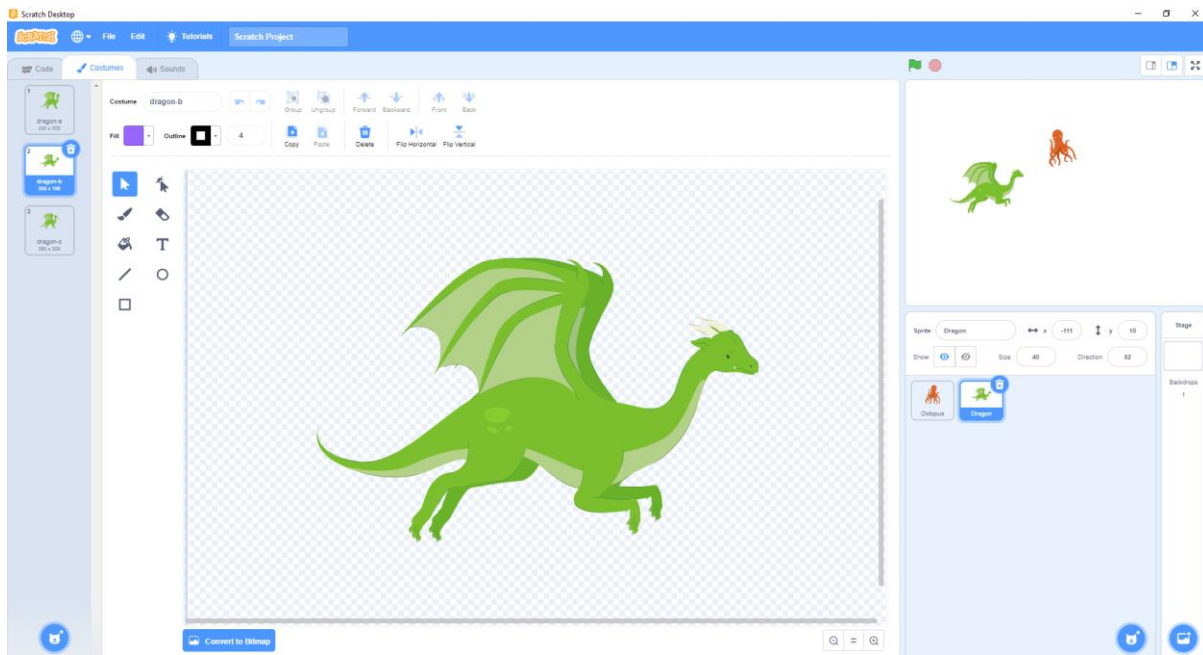
- Add an if block
- Add a touching block
- Change the option to touching dragon
- Now add a say ___ for 2 seconds block #looks
- Add 'you got me' text
- Put these inside a forever block
- Add the green flag block before the if block



Test it – does it work?

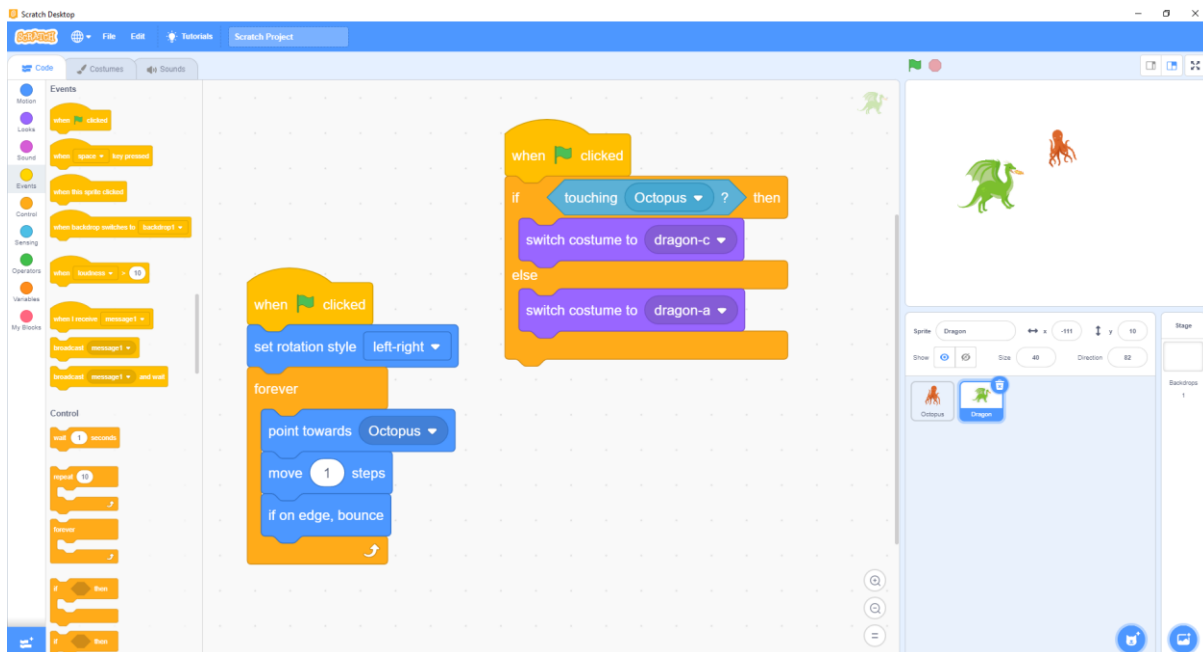
Now we going to add some animation

Go to the costumes tab and delete the dragon b costume



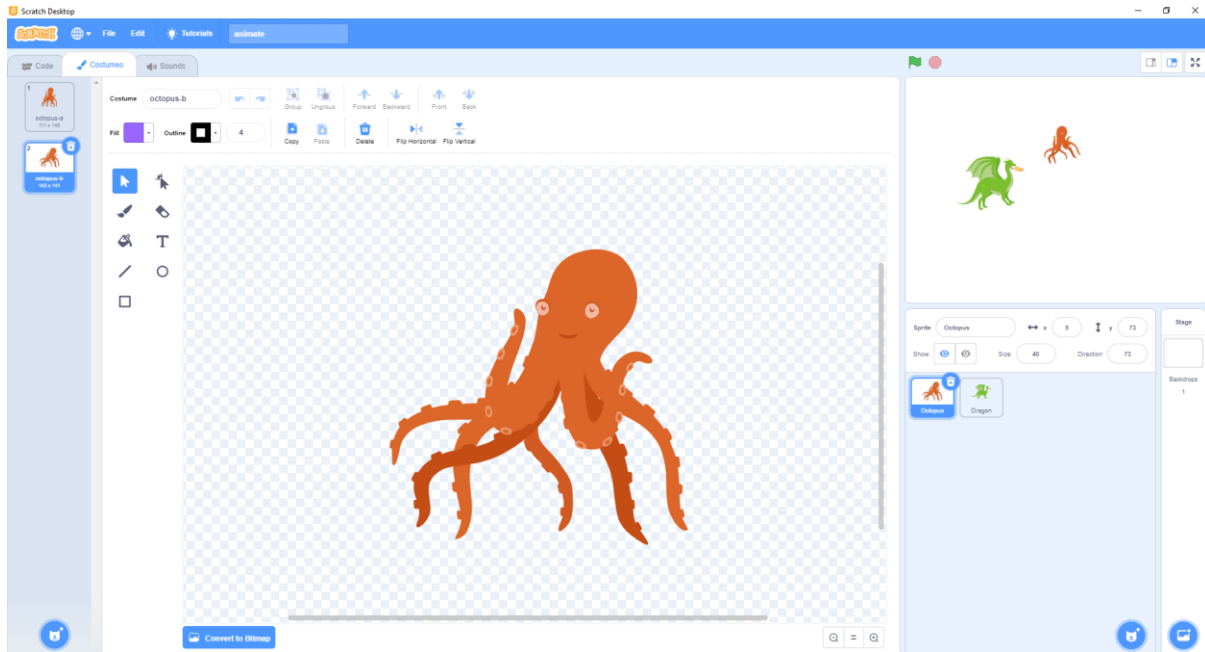
Back to the code. Add these instructions:

- Add two switch costume blocks
- Add an if ___ else ___ block
- Inside the if condition add the touching octopus sensing block
- Add the switch costume to 1b block in the if statement
- Add the switch costume to 1a block in the else part
- add the when green flag clicked block

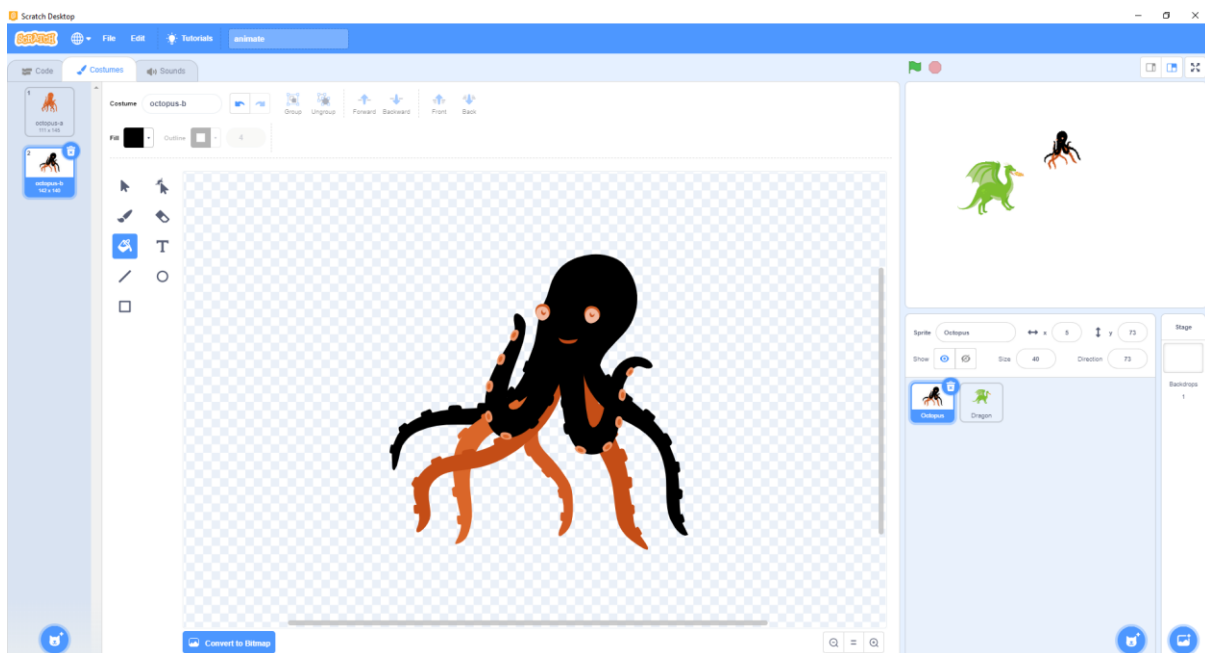


Now we are going to change the octopus

- Remove all the octopus costumes except the first two a and b



- We select the fill option (right side of the palette)
- select black
- Now select the front legs and head of the octopus



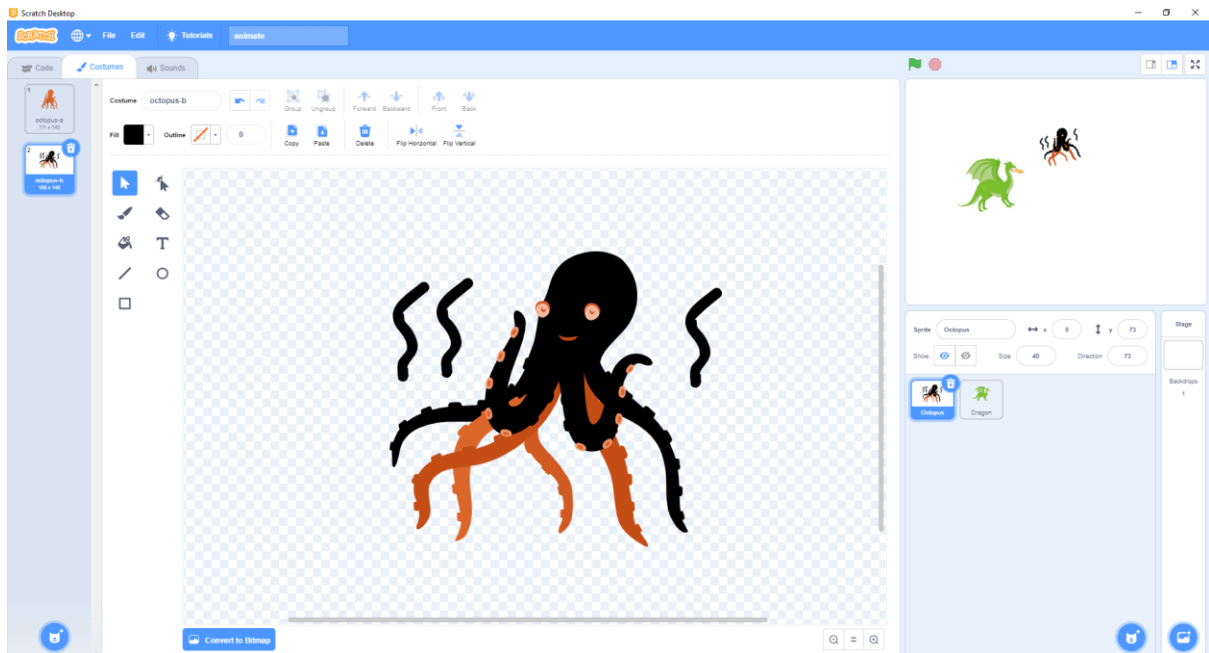
Below there are some effects of smoke with three lines – these were drawn using the following options

- use the brush to draw a line
- the arrow option is used for select
- there is also a copy/paste options

Use these to

- draw one line,
- select this line,
- duplicate this line (twice)

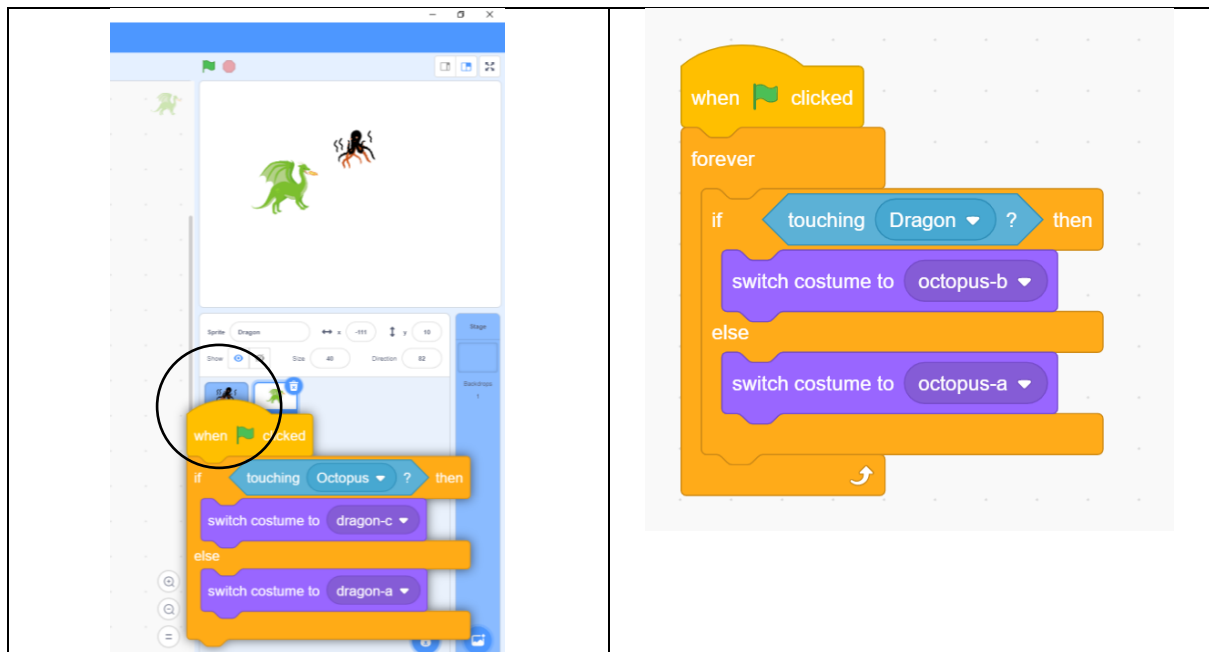
- move both copies (as per picture)



We are going to build a costume change for the octopus

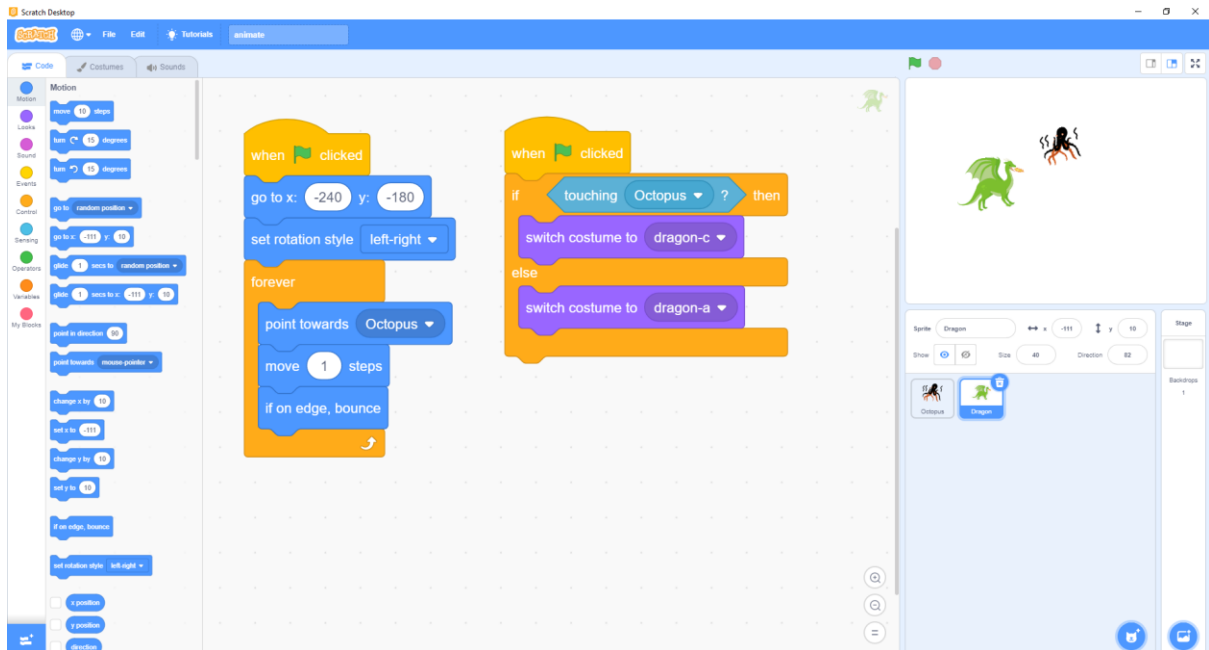
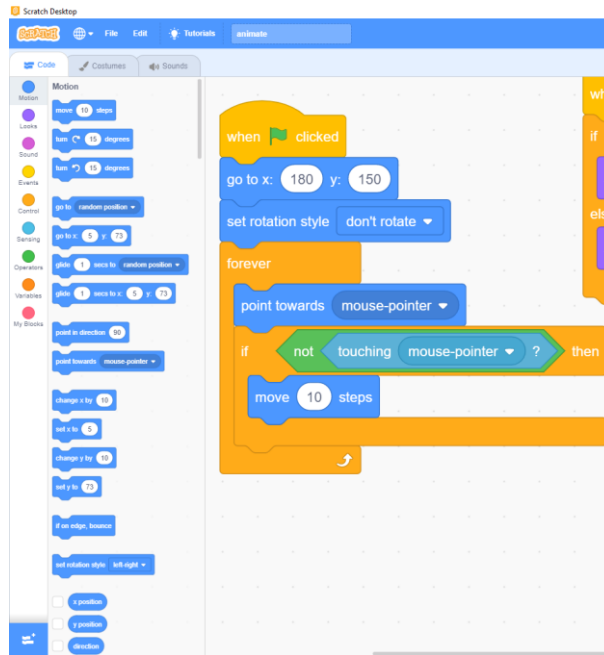
To save time you can drag the appropriate blocks from the dragon to the octopus sprite

Now just change the appropriate touching dragon and changing costume options



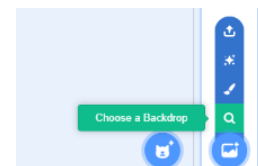
We can get them to start at different corners by adding the following

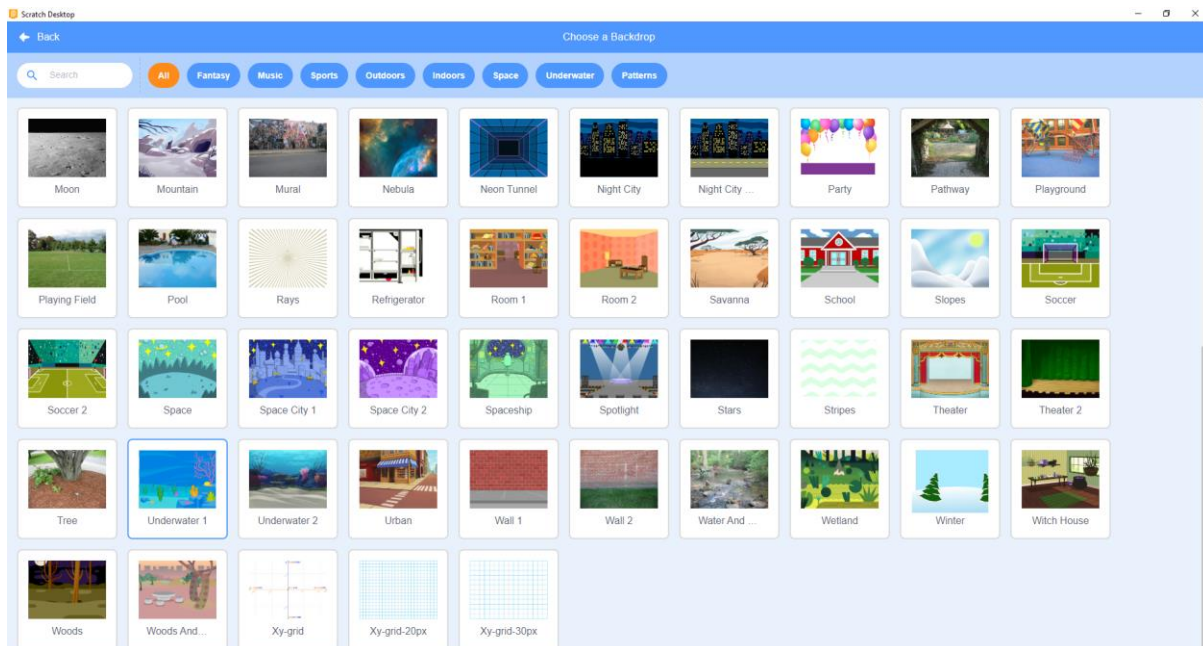
- Go to -240,-180 for the dragon
- Do the same for the octopus at 180,150



Now we change the background to underwater

- Select the stage
- Then new background – choose background from library option
- Scroll down for the underwater 1 background (OK)

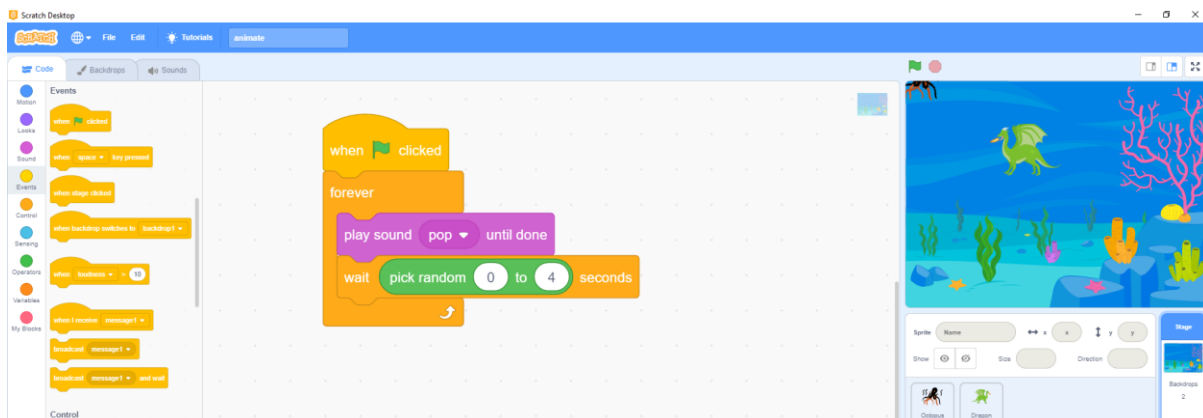




Now to add some sound. Still on the scene:

- add a play sound (pop) block
- Put this inside a forever block
- Add the green flag block to start

#sound



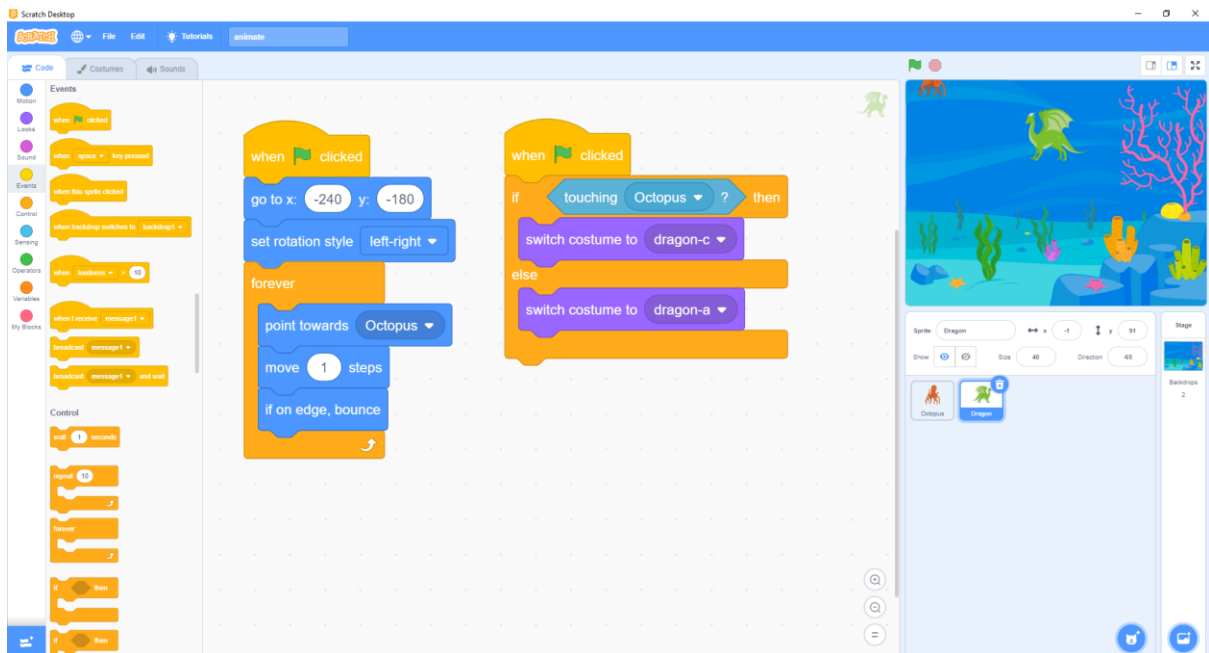
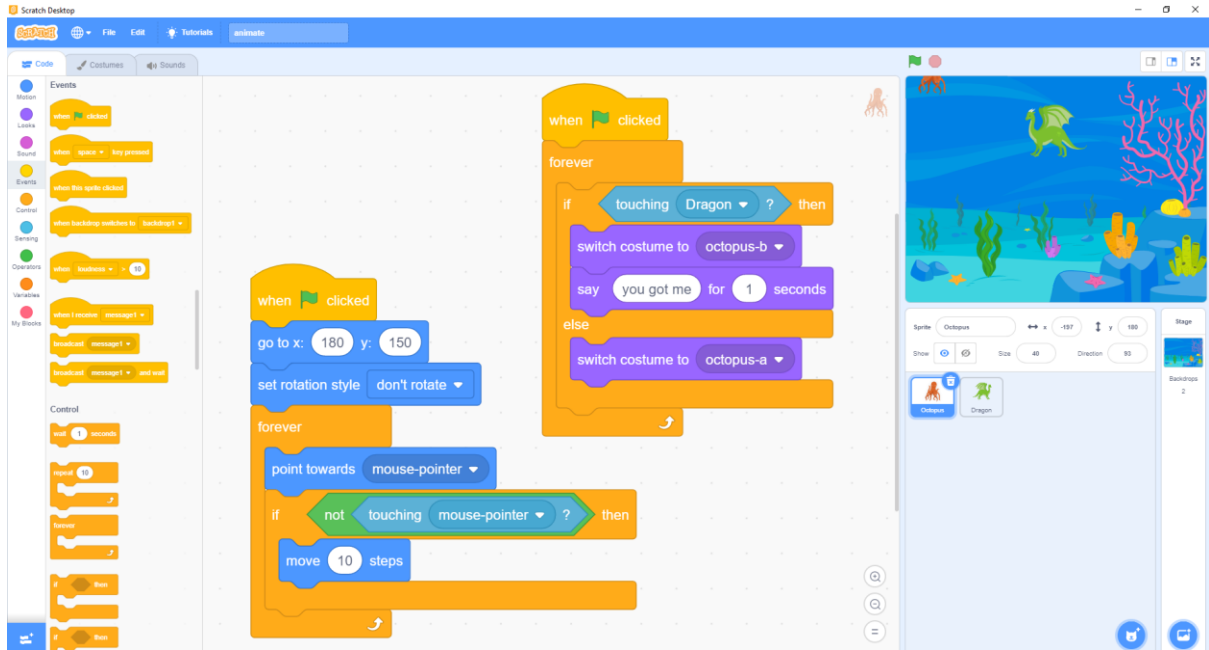
Now to make it play at a random time

- Add a wait ____ seconds block
- Add a pick random ____ to ____
- Add 0 and 4 options
- Add this block as the wait ____ seconds value
- Add the green flag block to start

If you want to change the blocks to make it better, then do so. We changed it so the “you got me” is for 1 seconds and put that inside an if-else block with the costume changes. Here is the final code below.

Well Done! Save your work and check it works correctly.

For fun you can add sound effect (e.g. chee-chee) when the sprites touch. Have fun!



Well done you have completed Task 5