Scratch – Simple Programming

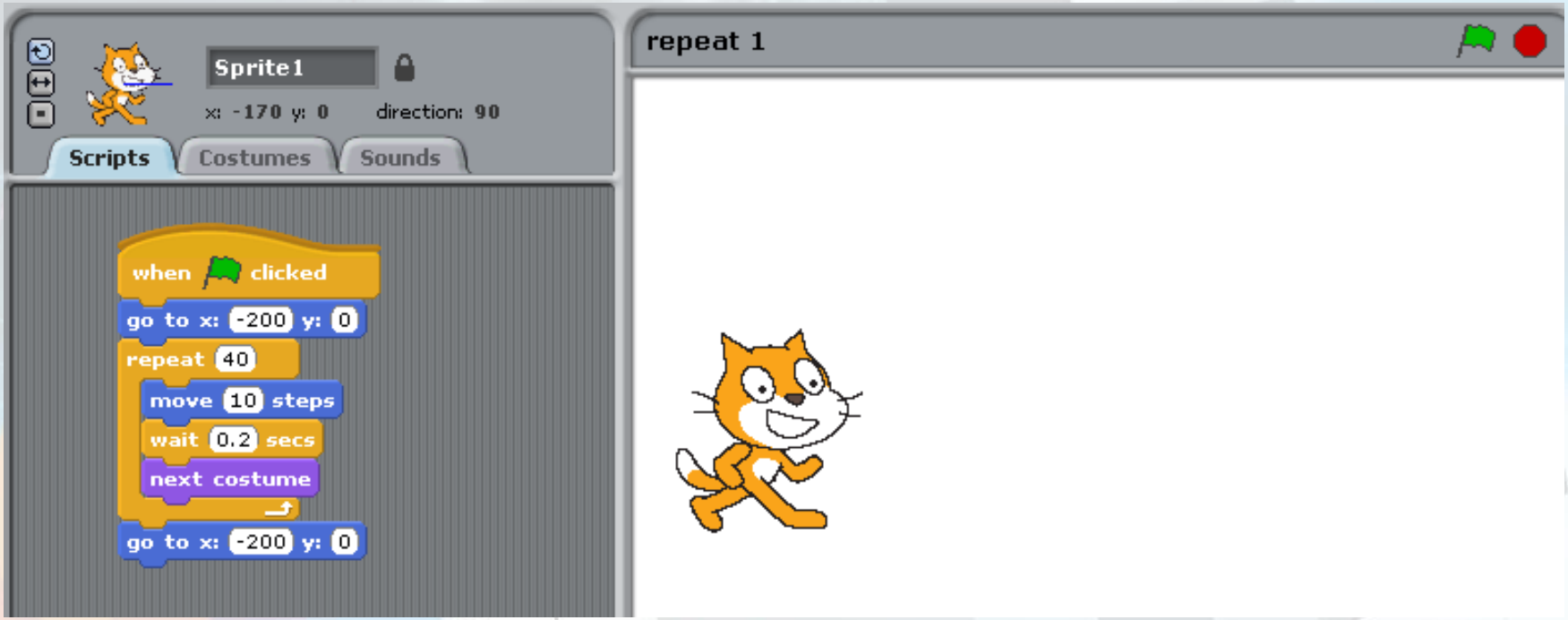
Simple Game

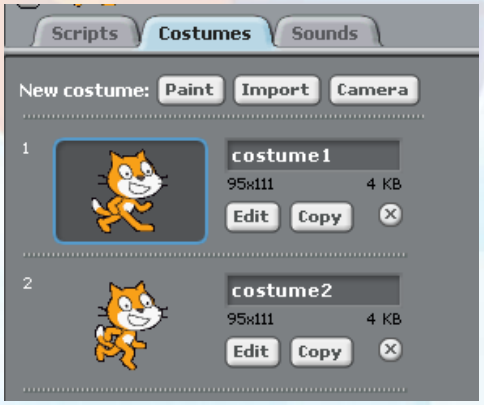
Unit Overview

Objectives
Understand why computer programming scripts are used.
Understand the use of Variables as place holders for information.
Understand the script required to build simple games.

Outcomes		Time
Task 1	Using Repeat Command for Movement	
Task 2	Variables and Forever If	
Task 3	Keyboard Controls	
Task 4	Maze (Keyboard)	
Task 5	Maze (Keyboard) Extension	
Task 6	Maze (Mouse)	

Starter 1 - Discuss this piece of code



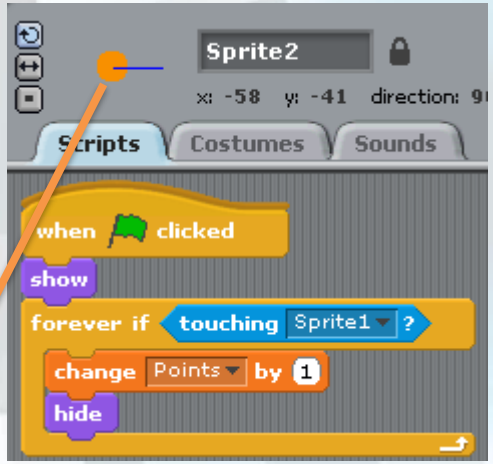


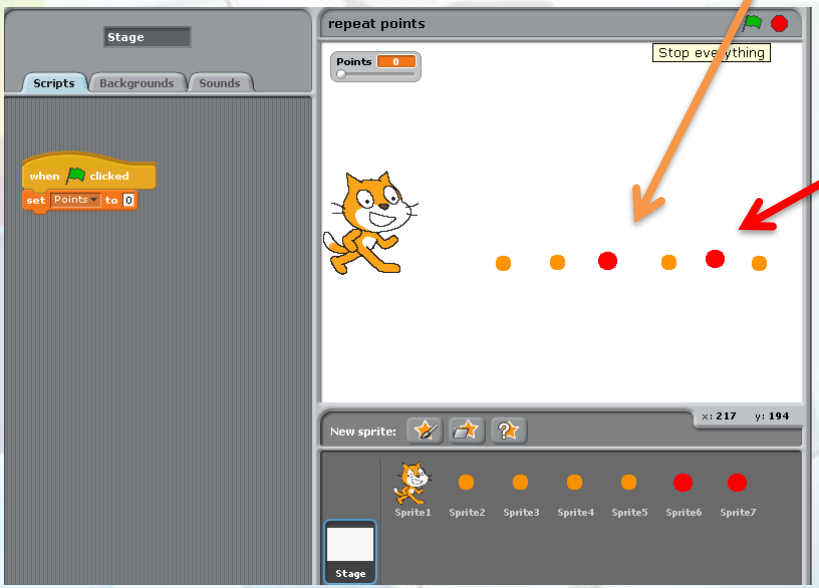
1) What will happen to the cat (sprite) when the script is run?
2) What does **next costume** mean?
3) What does **go to x:-200 y:0** mean?

Starter 2 - Discuss this piece of code

1) What will happen to points variable if the cat touches the orange ball.

2) What will happen to points variable if the cat touches the red ball.



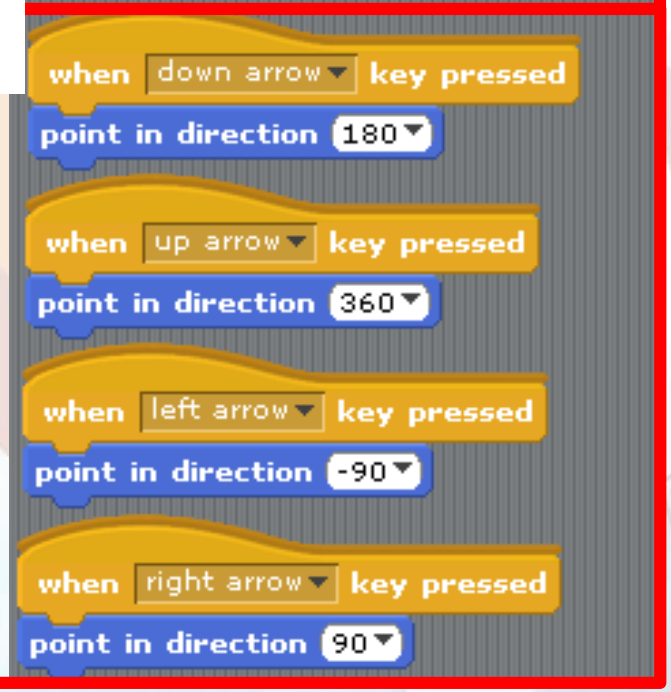


Unit 3 – Scratch

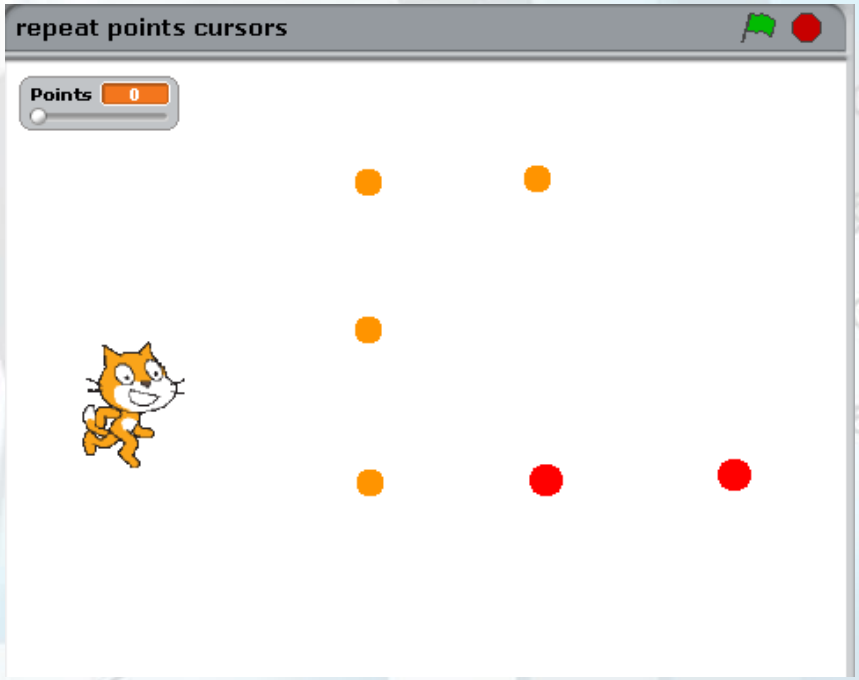
Starter 3 - Discuss this piece of code

1

2



What is the difference between the 1st and 2nd part of the code?



Unit 3 – Scratch

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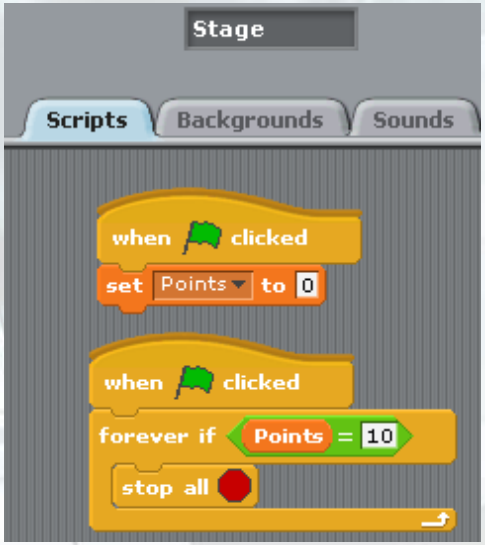
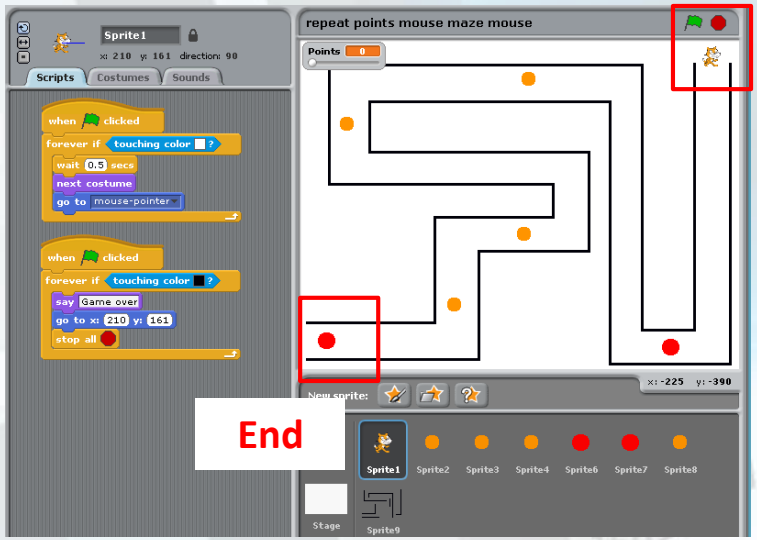
Starter 4 - Discuss this piece of code



Start



1. What is the purpose of this game.
2. Describe two ways in which the game could end.

The red and orange balls equal 10 points

Task 1 – Using Repeat Command for Movement

1. Create a simple script to move the sprite **across the stage** using a repeat command.
2. The sprite needs to **change costume every 10 steps**.

The sprite will repeat the following steps 40 times
Move 40
Next costume

The sprite will move across the stage changing costume every ten steps

Go to x: -200 y: 0 – this will move the sprite back to the start point.

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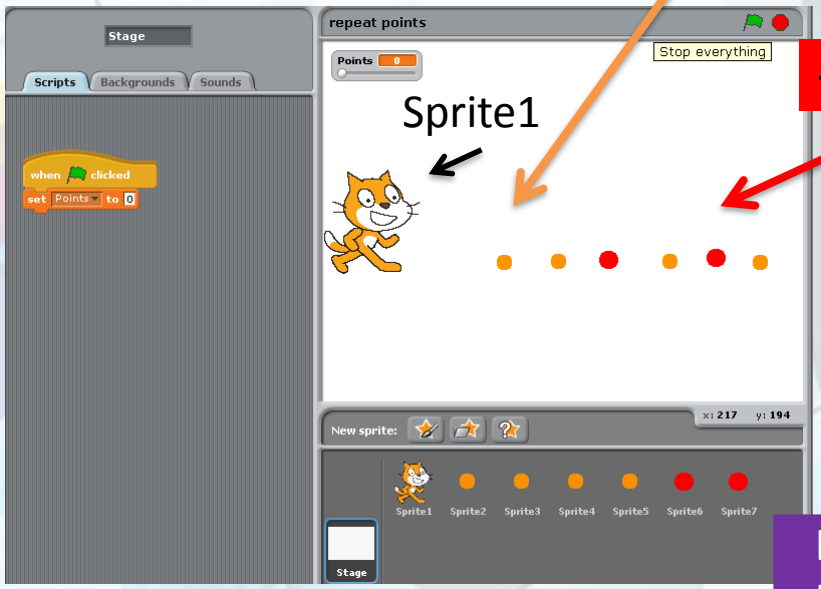
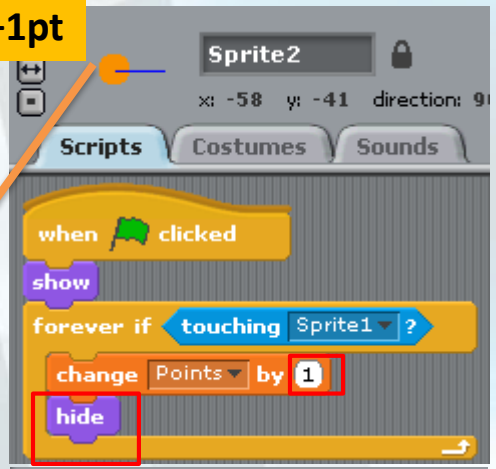
Task 2 – Variables and Forever If

1. Create a **points variable**. Click on the stage and set the points to **0 every time the start flag is clicked**.
2. Create **two** new sprites (**orange** and **red** balls)
3. When Sprite 1 (cat) **touches** the balls the **points counter** will go up. (**Orange – 1 points**, **Red – 3 points**)
4. The sprite will stop moving once the repeat command has finished.



+1pt



+3pt

Balls will hide once they have made contact with sprite 1 (Cat).

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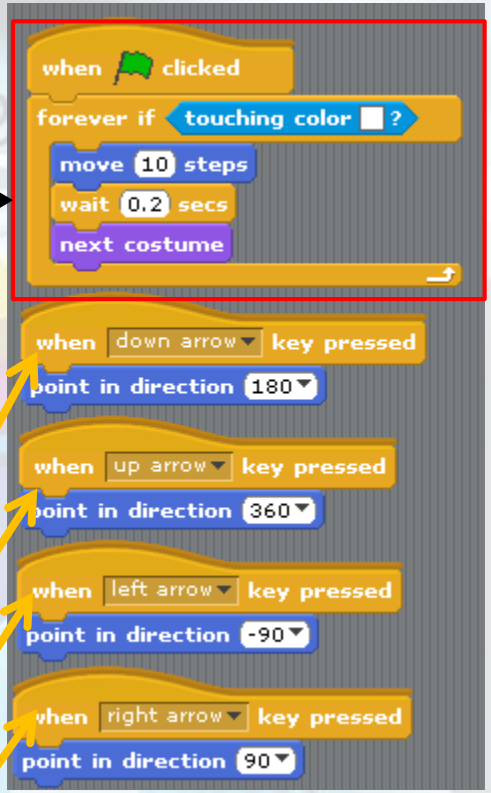
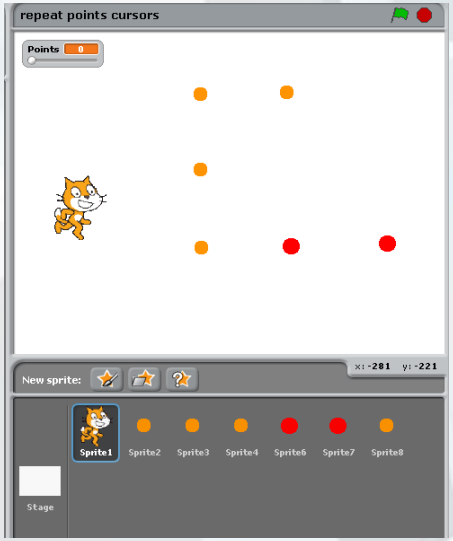
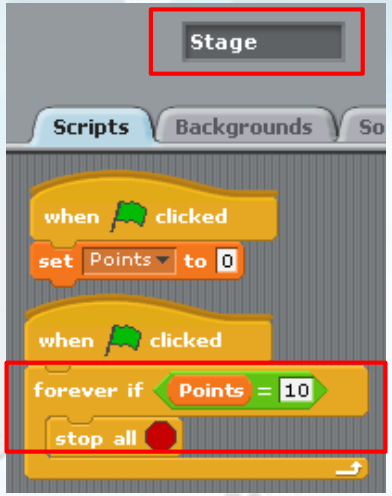
Task 3 – Keyboard Controls

1. Create a game where the sprite will collect all the balls using **simple keyboard commands**. The sprite can be made **smaller**.
2. The sprite will keep moving until it has collected each ball and has scored the **maximum score of 10**.

The sprite will keep moving and changing costume if it is touching the white stage. The sprite will change direction when the cursor keys are pressed.







180 degrees

360 degrees

-90 degrees

90 degrees

Stage: Script will end once the sprite has touched all the balls and collected the maximum score of 10.

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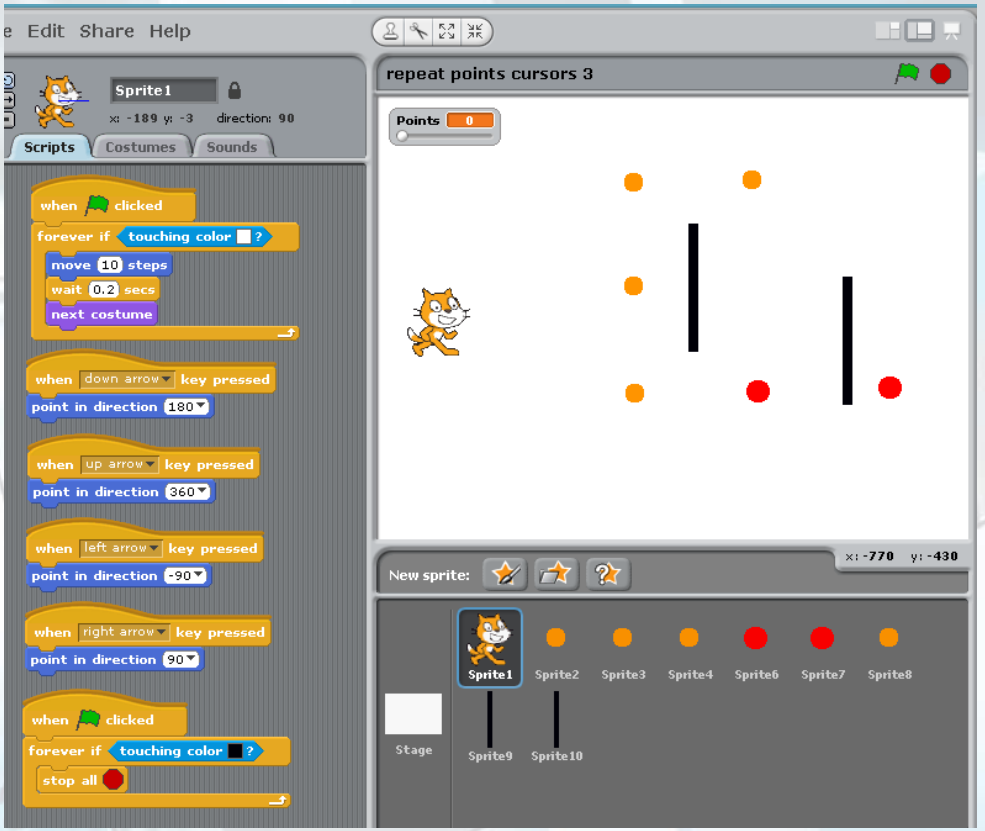
Task 4 – Maze (Keyboard)

You need to create two black barriers if touched by the sprite would end the game.

The code below will stop the game if the sprite 1 (cat) touches any of the black barriers.



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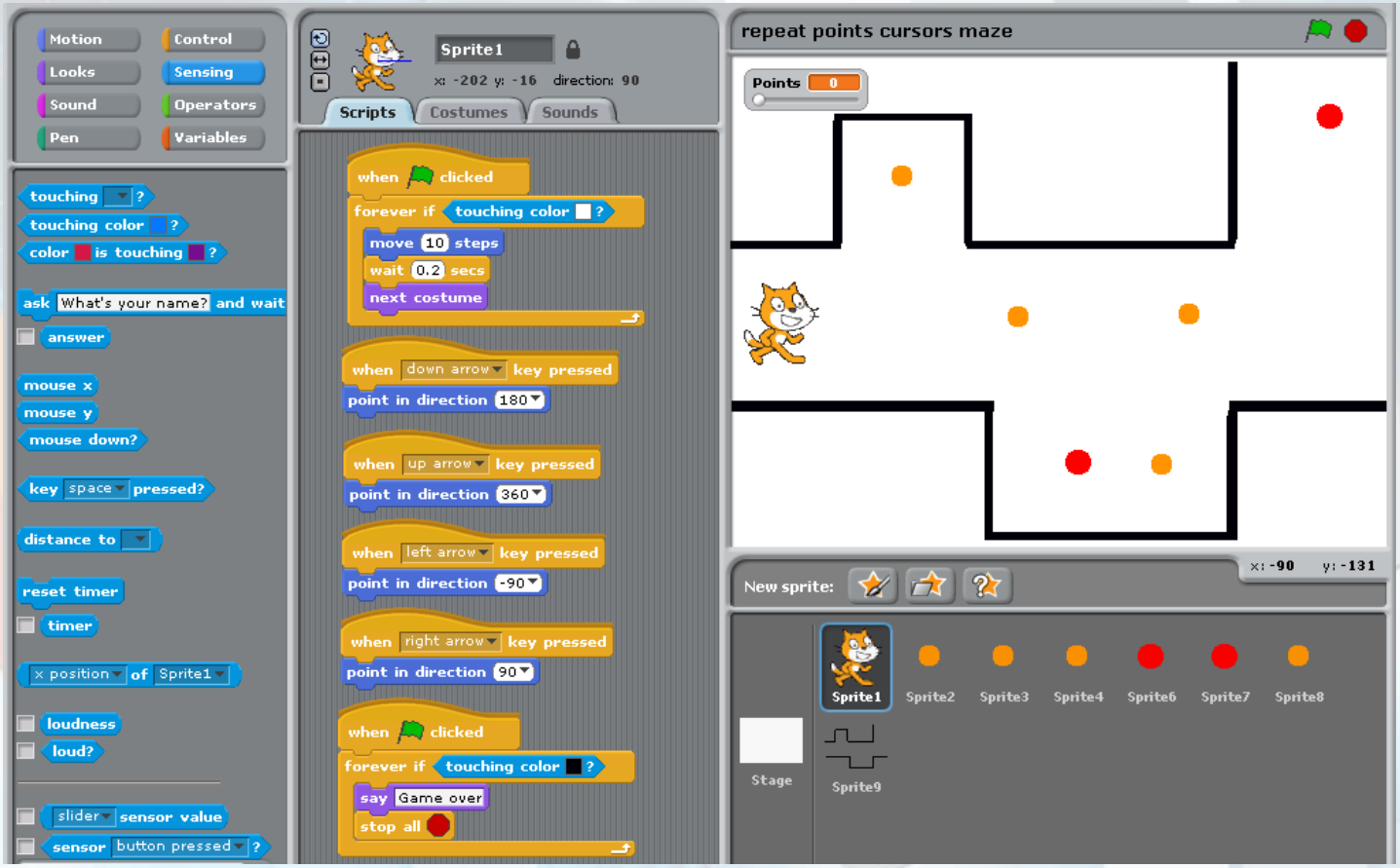
Task 5 – Maze (Keyboard) Extension

Create a **new maze sprite**. Using the **cursors** you have to move the sprite 1 (cat) around the stage collecting all the balls **without hitting the black walls**.



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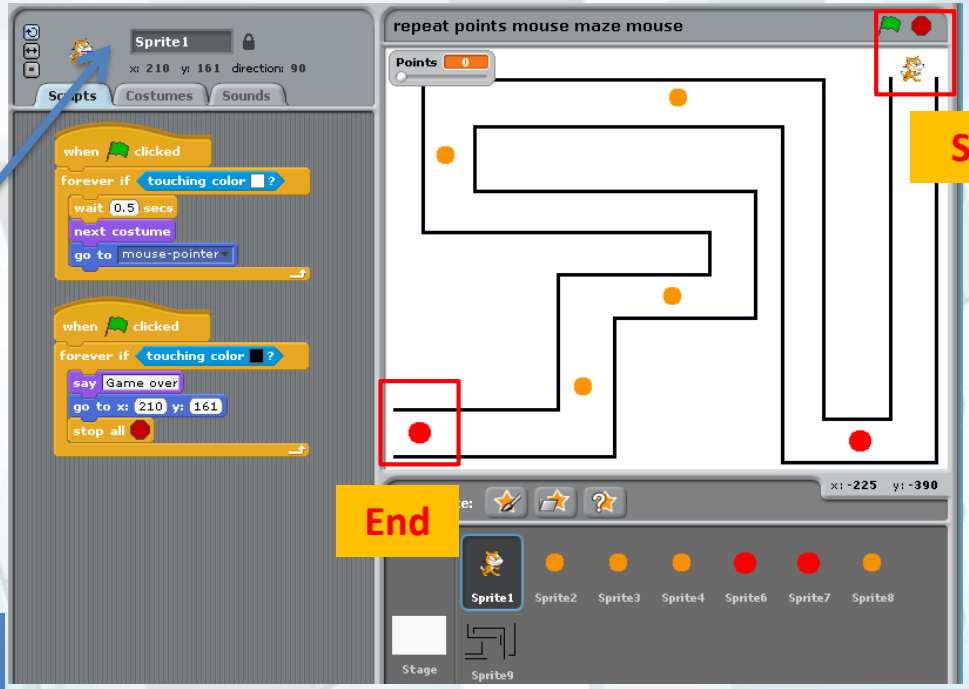
Task 6 – Maze (Mouse)

This code will move the sprite 1 (cat) back to the starting point.

Create a new maze sprite. Using the **mouse** you have to move the sprite 1 (cat) around the stage collecting all the balls **without hitting the black walls.**

After the game is complete or finished the sprite 1 (cat) will have to move back the start point.



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Plenary – Refer to the Lesson Objectives

Objectives

Understand why computer programming scripts are used.

Understand the use of Variables as place holders for information.

Understand the script required to build simple games.

Plenary Task (Q&A)

Peer assess each other scripts.
Based on the skills you have learnt think about creating your own game. What type of scripts would you use.