

Computing Outcomes Portfolio



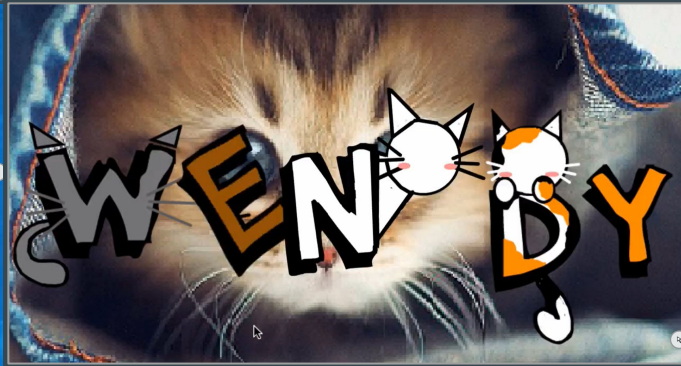
Year 4 - Autumn 2

Coding; Introduction to Scratch

Intent

This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design through this unit.

Lesson 1: L.Q. How could words be animated according?



Lesson 2: L.Q. What are important features of a chase game?

The image displays the Scratch code editor interface. On the left, the 'Motion' category is selected in the block palette. The main workspace contains a script for a shark character. The script begins with a 'when clicked' event block, followed by a 'say' block with the text 'I will eat you for lunch!!' for 2 seconds. This is followed by a 'go to x: -175 y: 145' block. A 'forever' loop contains a 'move 2 steps' block, a 'point towards Sprite1' block, and an 'if touching Sprite1?' block. The 'if' block has a 'then' branch containing a 'broadcast message1' block, a 'say Munch!!!!' block, and a 'stop this script' block. The right side of the editor shows a preview of the shark character in an underwater scene, with the 'Sprite' panel displaying 'Shark' and its current coordinates (x: -157, y: 18).

```
when clicked
  say I will eat you for lunch!! for 2 seconds
  go to x: -175 y: 145
  forever
    move 2 steps
    point towards Sprite1
    if touching Sprite1? then
      broadcast message1
      say Munch!!!!
      stop this script
```

Lesson 3: L.Q. In which way can musical rhythms be programmed in Scratch?

The screenshot displays the Scratch programming environment. The left sidebar shows the 'Code' tab with various block categories: Motion, Looks, Sound, Events, Control, Sensing, Operators, Variables, and My Blocks. The main workspace contains a script starting with a yellow 'when down arrow key pressed' block, followed by an orange 'repeat 4' loop. Inside the loop, there are two purple 'start sound' blocks (one for 'C2 guitar' and one for 'A guitar'), two purple 'next costume' blocks, and an orange 'wait 0.125 seconds' block. The right side of the interface shows a stage with a green forest backdrop and three musical instrument sprites: a guitar, a saxophone, and a drum set. The 'Sprite' panel below the stage shows the 'Guitar' sprite selected, with its position set to x: -109 and y: 3. The 'Stage' panel shows the 'Backdrops' list with '2' backdrops.

Lesson 4: L.Q. What are important features of a pong game?

The image displays the Scratch code editor for a pong game. The left sidebar shows the 'Code' tab with various block categories: Motion, Looks, Sound, Events, Control, Sensing, Operators, Variables, and My Blocks. The main workspace contains three scripts:

- Script 1 (Left):** A 'when clicked' event block followed by 'go to random position', 'point in direction 45', and a 'forever' loop containing 'move 15 steps' and 'if on edge, bounce'.
- Script 2 (Middle):** A 'when clicked' event block followed by a 'forever' loop. Inside the loop is an 'if touching Paddle?' block. If true, it executes 'change score by 1', 'turn pick random 170 to 190 degrees', 'move 15 steps', and 'wait 0.5 seconds'.
- Script 3 (Right):** A 'when clicked' event block followed by 'set score to 0', 'switch backdrop to Boardwalk', 'wait until score > 5', and 'next backdrop'.

On the right, the stage preview shows a ball (purple circle) on a wooden boardwalk backdrop. The score is 0. The sprite area shows the 'Ball' sprite selected, with properties: x: -69, y: 9, size: 100, direction: -135. The backdrop area shows 'Boardwalk' selected.

Lesson 5: L.Q. How many ways can characters be animated in Scratch?

The image shows the Scratch 3.0 interface. On the left is the 'Code' tab with a 'Motion' category selected. The main workspace contains two scripts:

- Script 1:** A yellow 'when clicked' block followed by a yellow 'repeat' block with a count of 10. Inside the repeat block is a yellow 'forever' loop containing a purple 'next costume' block and a yellow 'wait 0.2 seconds' block.
- Script 2:** A yellow 'when clicked' block followed by a yellow 'forever' loop containing a purple 'play sound Dance Around until done' block.

On the right is the 'Stage' area, which displays a beach scene with four dinosaur characters: a green dinosaur, a red dinosaur, a teal dinosaur, and a grey dinosaur. Below the stage is the 'Sprite' panel, showing a list of four dinosaur costumes: Dinosaur2, Dinosaur1, Dinosaur3, and Dinosaur4. The current sprite is Dinosaur4, with its position set to x: -173 and y: 46, and its direction set to 90 degrees.