

Year 4 Computing: Understanding Scratch Programming

Learning objective: To assess understanding of sequence, repetition (loops), and variables within the Scratch environment.

Read each question carefully. Write your answers clearly in the spaces provided. You have 25 marks in total.

Kit the fox is learning to code a new game in Scratch. Kit wants his main character to move across the stage, change colour when it touches a wall, and keep a score of how many gold coins it collects. Kit is careful to put his blocks in the right order so the program runs exactly how he planned.

Word bank: Sequence · Algorithm · Loop · Sprite · Variable · Event · Debug

1. 1. In Scratch, what is the term for the character that Kit is moving around the screen? (1 mark)

2. 2. Explain what a 'sequence' is in programming and why it is important for Kit's game to work correctly. (2 marks)

3. 3. Kit wants his character to jump five times. Instead of dragging the 'jump' block out five times, which block would be the most efficient to use? Describe its function. (3 marks)

4. 4. What is a 'variable' used for in a Scratch project? Give an example of how Kit might use one in his game. (4 marks)

5. 5. Kit's character is stuck and will not move when the green flag is clicked. What is the process of finding and fixing this error called? (2 marks)

6. 6. If Kit wants his character to say 'Hello!' when the space bar is pressed, which category of blocks should he look in, and what is this type of trigger called? (3 marks)

7. 7. Imagine you are helping Kit design a simple maze game. Write a step-by-step 'algorithm' (a set of instructions) for how the character should move from the start to the end of the maze. Explain how you would use loops to make your code shorter. (10 marks)

Draw: Draw a Scratch block stack that includes a 'When green flag clicked' hat block, a 'Forever' loop, and a 'Move 10 steps' motion block.



Extension challenge: Total: /25. Challenge: If you were adding a shop to your game where items cost £2.50, £1.20, and £0.75, how could you use a variable to track how much money a player has spent?