

Computing Assessment: Mastering Scratch Programming

Learning objective: To assess understanding of algorithms, sequencing, variables, and debugging in Scratch.

Read each question carefully. Use the word bank to help you complete the sentences and explain your programming logic. Ensure your answers are clear and written in full sentences where requested.

Kit the fox is creating a game in Scratch where a character collects falling acorns. Kit needs to ensure the code runs in the correct order, that the score increases when an acorn is touched, and that the game stops if the character misses too many.

Word bank: algorithm · variable · debug · loop · sprite · sequence · broadcast

1. Define the term 'algorithm' in the context of programming your Scratch project. (2 marks)

2. Kit notices that the game stops working when the character moves too fast. What is the process of finding and fixing these errors in code called? (1 mark)

3. If Kit wants the character to move forward 10 steps, turn 15 degrees, and repeat this action 4 times, which block category should they use to make the code repeat? (1 mark)

4. Explain the purpose of a 'variable' in a game. How might Kit use one to track the player's score? (3 marks)

5. Look at the following sequence: 1. Start, 2. Move 10 steps, 3. If touching acorn, play sound. Why is the order of these instructions important? (3 marks)

6. Kit wants to send a message to a background to change the level after the score reaches 10. Which block type is used to trigger an action across different sprites? (2 marks)

7. Design a script for a simple game where a sprite says 'Hello!' when the green flag is clicked, waits for 2 seconds, and then moves to a random position. Write the steps clearly below. (5 marks)

8. Imagine your game costs £2.50 to unlock extra levels. If a user buys 3 levels, how much would they spend in total? Show your calculation. (3 marks)

9. Compare and contrast a 'forever' loop and a 'repeat' loop. When would you choose one over the other? (5 marks)

Draw: Draw a flow chart showing the logic for a sprite that moves left when the left arrow key is pressed, and right when the right arrow key is pressed.



Extension challenge: Total: /25