

Mastering Logic: Kit's Scratch Coding Guide

Learning objective: To design, write, and debug programs in Scratch, using sequence, selection, and repetition (loops) to achieve specific goals.

Use the prompts below to structure your reflection on your latest Scratch project. Ensure you use technical vocabulary to explain your logic and problem-solving process.

In my latest Scratch project, I aimed to create an interactive game that requires the user to navigate a sprite through a series of complex obstacles.

Word bank: algorithm · variable · conditional statement · iteration · debugging · sprite · broadcast · subsequently · consequently · furthermore · efficiency

1. The Algorithm: Describe the primary sequence of events in your code. What logic did you use to ensure the sprite behaves as intended? Start with: 'My algorithm begins by...' (3 marks)

2. Conditional Logic: Explain how you used selection (if/then/else blocks) to control the game. Why is this logic essential for user interaction? Start with: 'I implemented conditional statements to...' (4 marks)

3. Repetition and Efficiency: How did you use loops (iteration) to make your code more efficient? Justify why using a 'repeat' block is better than writing individual lines of code. Start with: 'To improve efficiency, I utilised loops to...' (4 marks)

4. The Debugging Process: Describe a specific 'bug' or error you encountered. How did you diagnose the issue and what steps did you take to rectify it? Start with: 'During the development phase, I identified a bug where...' (4 marks)

5. Compare and Contrast: If you were to add a 'Score' variable to your game, how would that change the way your code functions compared to your current version? Start with: 'Integrating a variable would alter the logic by...' (5 marks)

6. Evaluation: Explain why you chose the specific sprites and backdrops for your project. How do they contribute to the user's experience? Start with: 'I selected these assets because...' (3 marks)

Extension challenge: Imagine your game is being sold in a digital marketplace for £2.50. Write a persuasive 'blurb' explaining why a player should purchase your game, highlighting the complexity of your code and the fun of the mechanics. Then, theorise: what might happen to your game's performance if you added fifty more sprites simultaneously? Explain your reasoning using the concept of processing power.