

Kit's Clever Coding Planner

Learning objective: To design an algorithm for a computer program and identify potential bugs or errors.

Help Kit the fox plan a new computer program! Think about the sequence of instructions (the algorithm) your program needs to follow to complete a task. If something goes wrong, remember to explain how you would 'debug' the code to fix it.

Word bank: Algorithm · Sequence · Input · Output · Debug · Loop · Variable · Bug

1. Program Goal: What is the specific task or game you want your code to perform? (2 marks)

2. The Algorithm: Write a step-by-step list of instructions (a sequence) for your program to follow. (4 marks)

3. Input and Output: What information will the user give the program (Input) and what will the program show or do in response (Output)? (3 marks)

4. Spot the Bug: Imagine your program stops working. What kind of error might have happened and how would you fix (debug) it? (3 marks)

5. Efficiency: Can you identify a part of your code that could be replaced by a 'loop' to make the program run more quickly? (2 marks)

Extension challenge: If you had a budget of £50 to buy sensors or components for a physical computing project, what would you choose and why?