

Kit's Clever Coding Planner

Learning objective: To design an original algorithm and identify potential errors within a programme using logical reasoning.

Help Kit the fox plan a new computer programme! Use this planner to define your goal, write your sequence of instructions (the algorithm), and predict any 'bugs' that might need fixing. Remember to use precise language for your steps.

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

1. Programme Goal: Describe exactly what you want your programme to do and who the target user is. (2 marks)

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

3. Identifying Bugs: What might go wrong if one of your instructions is out of order? Explain the consequence. (3 marks)

4. Debugging Strategy: If the programme produces an unexpected output, what is your systematic process for finding and fixing the error? (3 marks)

5. Justification: Why is it important for an algorithm to be precise and follow a specific sequence? Justify your answer. (3 marks)

6. Comparison: Compare the way a computer follows instructions to how a human follows a recipe. What are the similarities and differences? (4 marks)

Extension challenge: Challenge: If you were to add a 'loop' into your programme to make it more efficient, where would you place it and what action would it repeat? Describe the effect this would have on the total number of lines of code required.