

Kit's Algorithm Architect Design Sheet

Learning objective: To design, write, and debug a clear, logical algorithm for a specific task.

Kit the fox needs your help! An algorithm is a precise set of instructions to complete a task. Choose a simple activity (like making a jam sandwich or brushing your teeth) and break it down into a step-by-step sequence. Remember to keep your steps in the correct order so the process is successful.

Word bank: algorithm · sequence · debug · input · output · step · logical · error · process

1. Task Definition: What is the goal of your algorithm? Describe the activity you are going to break down into steps. (2 marks)

2. The Algorithm: Write your numbered sequence of steps here. Be as specific as possible so someone else could follow them perfectly. (5 marks)

3. Predicting Errors: Imagine your algorithm goes wrong. What is one 'bug' or error that might happen if a step is missed or in the wrong order? (3 marks)

4. Debugging: How would you fix the error you described above? What change would you make to your original steps? (3 marks)

5. Reflection: Why is the order of instructions so important when writing an algorithm? (2 marks)

Extension challenge: Challenge: Swap your algorithm with a partner. Can they follow your steps exactly to complete the task? If they get stuck, help them 'debug' your instructions by adding more detail.