Kit’s Clever Coding Quest

Learning objective: I can create and debug simple programs using logical sequences.

About 15 minutes. Grown-up tip: Ask your child to explain the steps of making a sandwich as if you were a robot that only follows exact instructions.

In computing, a program is a list of instructions for a computer. An algorithm is the plan you make first. If your program doesn't work, we call it 'debugging'.

Worked Example: To move a robot forward 2 squares, the algorithm is: 1. Move Forward, 2. Move Forward.

Word bank: algorithm · sequence · debug · input · command

1. Kit needs to get from the oak tree to the garden gate. Write a sequence of three commands using 'Move Forward', 'Turn Left', or 'Turn Right' to help him reach the gate. (2 marks)

2. A computer program is written to bake a cake: 1. Decorate, 2. Mix ingredients, 3. Put in the oven. Why is this program broken? Explain your answer using the word 'sequence'. (2 marks)

3. If you want a robot to walk in a square shape, how many times must you repeat the command 'Move Forward' and 'Turn Right'? (1 mark)

4. Kit wrote a program: 'Pick up apple', 'Walk to basket', 'Drop apple'. If he drops the apple on the floor before reaching the basket, what is this error called and what does he need to do? (2 marks)

5. Look at this sequence: 1. Open umbrella, 2. Walk into the rain. Does the order of these instructions matter? Give a reason for your answer. (2 marks)

Draw: Kit the fox sitting at a desk with a glowing computer screen, holding a pencil, looking happy and focused in a cosy woodland study.

Extension challenge: Write a 5-step algorithm for brushing your teeth. Can you spot any steps that might cause a 'bug' if they were in the wrong place?

I did it! **Name: _____** **Date: _____**

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