Kit’s Clever Computing Fixes

Learning objective: I can identify and correct bugs in a set of instructions.

About 15 minutes. Grown-up tip: Encourage your child to talk through their steps out loud; hearing the instructions helps them spot mistakes more easily.

In computing, a 'bug' is a mistake in an algorithm. 'Debugging' is finding and fixing that mistake. Example: If the instructions say 'walk forward, turn left, walk forward' to reach a tree, but you hit a wall, the 'turn left' is the bug. You must replace it with 'turn right'.

Word bank: Algorithm · Bug · Debug · Sequence · Error

1. Kit the fox wants to reach the oak tree. The current algorithm is: 1. Walk forward 3 steps. 2. Turn left. 3. Walk forward 5 steps. Looking at the map, Kit hits a fence after step 2. What is the bug and how do you fix it? (2 marks)

2. Mo is baking a cake. His list is: 1. Put cake in oven. 2. Mix flour and eggs. 3. Eat cake. Why will this algorithm fail? Write the correct sequence using numbers 1, 2, and 3. (3 marks)

3. Zainab wrote a code for a robot to draw a square. She wrote: 1. Move forward 10cm. 2. Turn right 90 degrees. 3. Move forward 10cm. 4. Turn right 90 degrees. 5. Move forward 10cm. She stops there. How many sides of the square are missing? What is the next step needed? (2 marks)

4. True or False: Debugging means you have to start the whole programme again from the very beginning. Give a reason for your answer. (2 marks)

5. Sophie is programming a toy hedgehog to go to its house. The instructions are: 1. Move forward 2m. 2. Turn right. 3. Move forward 1m. If the hedgehog is facing away from the house, which instruction is the bug? (2 marks)

Draw: A friendly cartoon fox named Kit wearing glasses, looking at a glowing computer screen showing a simple grid map with a path and an oak tree.

Extension challenge: Imagine you are teaching a robot to make a jam sandwich. Write a 5-step algorithm, then add one 'bug' to your list for a friend to find and fix!

I did it! Name: _____ Date: _____

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