

Kit's Coding Carousel: Sequencing Logic

Learning objective: To understand how to design and debug simple programs by sequencing instructions correctly.

Kit the fox is writing a program to help a robot navigate a path through a garden. Look at the grid below. The robot starts at (A,1) and needs to reach the 'Flower Bed' at (C,3). You must sequence the commands in the correct order to reach the destination. Use the word bank to fill in the missing steps in the sequence.

Word bank: Move Forward · Turn Left 90 degrees · Turn Right 90 degrees · Move Forward · Move Forward · Stop

1. The robot is at (A,1) facing North. Write the first instruction to get it to (A,2). (1 mark)

2. The robot is now at (A,2) facing North. It needs to reach (C,2). What command should it use to change direction? (1 mark)

3. If the robot accidentally moved forward twice instead of turning, explain why this is a 'bug' in the program. (2 marks)

4. List the final two instructions to move the robot from (B,2) to the Flower Bed at (C,3). (2 marks)

5. If the robot costs £15 to build and you need to buy 3 robots for the classroom, how much would that cost in total? (1 mark)

Draw: Draw a 3x3 grid. Label the columns A, B, C and rows 1, 2, 3. Draw a robot at (A,1) and a colorful flower bed at (C,3). Draw an arrow showing the path the robot takes to get there.



Extension challenge: Imagine the robot encounters an obstacle at (B,2). Write a new sequence of instructions to help the robot navigate around the obstacle to reach the flower bed without touching (B,2).