

Kit's Code-Cracking Challenge: Debugging Detectives

Learning objective: To understand that algorithms can contain errors (bugs) and to demonstrate the ability to identify and correct them.

Kit the fox has written a simple set of instructions (an algorithm) to help his robot friend make a cup of tea. However, there are some 'bugs' in his code! Read the steps below. If the step is correct, write 'OK'. If the step is incorrect or in the wrong order, explain why and rewrite it correctly in the space provided.

Word bank: algorithm · debug · sequence · error · logical · program

1. Step 1: Put the tea bag in the mug. (Current status: OK) (1 mark)

2. Step 2: Pour the milk into the mug before adding the water. (Current status: Needs Debugging) (2 marks)

3. Step 3: Pour boiling water into the mug. (Current status: OK) (1 mark)

4. Step 4: Drink the tea immediately without removing the tea bag. (Current status: Needs Debugging) (2 marks)

5. Step 5: Add a spoonful of sugar and stir. (Current status: OK) (1 mark)

Draw: Draw a picture of Kit the fox using a magnifying glass to look at a computer screen, helping him find a hidden 'bug' that looks like a tiny mechanical beetle.



Extension challenge: Imagine you are writing an algorithm for a robot to pack a school bag. Write down three steps, but intentionally include one 'bug' in the sequence. Ask a partner to see if they can spot and debug your work!