Kit’s Code-Cracking Challenge: Master the Debug

Learning objective: I can identify, explain, and correct errors in computer programs.

About 15 minutes. Grown-up tip: Discuss how debugging in code is similar to proofreading a story for spelling mistakes.

Read each question carefully. Debugging is the process of finding and fixing errors (bugs) in code. Example: If a robot is told to 'Move forward 5 steps' but it moves 10, the bug is the incorrect number value.

Answer Key: 1.*B, 2.True, 3.*C, 4.Syntax error, 5.*A, 6.False, 7.*D, 8.Logic error, 9.*B, 10.Algorithm. For Q4 and Q8: A good answer identifies the specific type of mistake and provides a brief reason why the current code fails to meet the objective.

Word bank: Syntax error · Logic error · Algorithm · Breakpoint · Variable

1. 1. Kit wrote code for a robot to turn right, but it turned left instead. What is this called? A) A feature B) A logic error* C) A syntax error D) A hardware update (1 mark)

2. 2. True or False: A 'syntax error' happens when the code breaks the rules of the programming language, such as a missing bracket. (1 mark)

3. 3. Which tool helps a programmer pause code execution to inspect values? A) The printer B) A magnifying glass C) A breakpoint* D) A delete key (1 mark)

4. 4. Mo wrote: 'Print 'Hello World' without a closing bracket. What specific error type is this? (1 mark)

5. 5. Why is it important to test code in small sections? A) To isolate bugs more easily* B) Because computers hate long code C) To save electricity D) It makes the screen brighter (1 mark)

6. 6. True or False: Once a program runs without crashing, it is guaranteed to be 100% bug-free. (1 mark)

7. 7. What is the final step in the debugging process? A) Deleting the code B) Asking a friend to write it C) Ignoring the error D) Testing the fix to ensure it works* (1 mark)

8. 8. Priya's program calculates the area of a rectangle as 'length plus width' instead of 'length times width'. What error is this? (1 mark)

9. 9. Which of these is a good strategy for finding a hidden bug? A) Guessing B) Checking the algorithm step-by-step* C) Turning the computer off D) Changing the font size (1 mark)

10. 10. What is a set of step-by-step instructions for a computer called? (1 mark)

Draw: Kit the fox sitting at a desk with a holographic computer screen showing lines of code with a small magnifying glass icon.

Extension challenge: Write a 'buggy' instruction set for making a cup of tea (e.g., 'Put tea bag in cup, pour milk, pour water'). Ask a partner to debug your steps to get them in the correct order.

I did it! Name: _____ Date: _____

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