

Kit's Code-Cracking Challenge

Learning objective: To understand programming concepts, including debugging, variables, and sequence, and to apply logical thinking to computational problems.

Join Kit the fox on a digital adventure! Read each question carefully and select the best answer. For the true/false questions, write the full word. Good luck, young programmers!

Answer Key: 1.C, 2.True, 3.Variable, 4.A, 5.False, 6.Debug, 7.B, 8.Sequence, 9.True, 10.D. Note: A variable stores data that can change during a program's execution, such as a player's score. Debugging is the essential process of finding and removing errors to ensure the code functions as intended.

Word bank: Algorithm · Debug · Variable · Loop · Sequence · Syntax · Input · Output

1. 1. What is the correct term for a set of step-by-step instructions designed to complete a task? A) Bug B) Variable C) Algorithm* D) Interface (1 mark)

2. 2. True or False: A 'loop' allows a sequence of instructions to be repeated multiple times. Answer: (1 mark)

3. 3. What do we call a placeholder in a program that stores information, like a character's score or health level, which can change while the program runs? (1 mark)

4. 4. If a programme fails to run as expected, what is the process of fixing the errors? A) Debugging* B) Compiling C) Sequencing D) Inputting (1 mark)

5. 5. True or False: The order of instructions does not matter in a computer program. Answer: (1 mark)

6. 6. Fill in the blank: The specific order in which instructions are carried out is known as a _____. (1 mark)

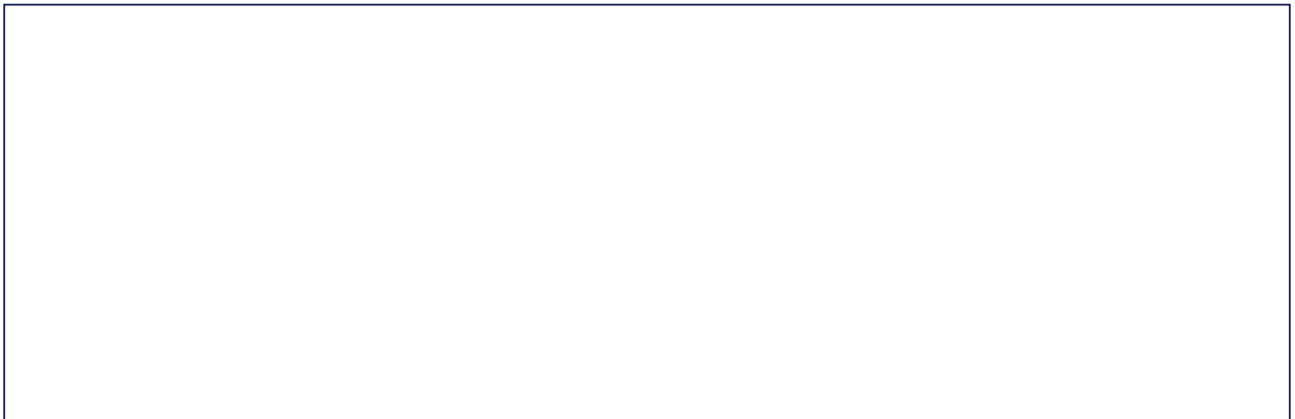
7. 7. Which of these is an example of an 'input' for a computer game? A) The music playing B) Clicking a mouse button* C) The score on screen D) The background colour (1 mark)

8. 8. What is the specific term for the rules that define how code must be written so the computer can understand it? (1 mark)

9. 9. True or False: 'Selection' (using IF/THEN statements) allows a program to make decisions based on specific conditions. Answer: (1 mark)

10. 10. Why is documentation (writing notes about your code) important? A) It makes the code faster B) It stops the computer from overheating C) It makes the code look pretty D) It helps others understand your logic* (1 mark)

Draw: Draw a flowchart that shows the logic for a simple task, such as 'Making a piece of toast'. Use standard symbols: rectangles for processes, diamonds for decisions, and arrows to show the sequence.



Extension challenge: 1. Explain why 'Selection' is essential for creating an interactive game. 2. Compare and contrast an 'Algorithm' and a 'Recipe'—what features do they share? 3. Justify your answer: Why is it often more difficult to debug someone else's code than your own? 4. What might happen if a loop within a program had no 'exit condition' (an infinite loop)? 5. Design a variable for a digital pet simulator and explain how it would change during gameplay. 6. Propose a solution for a program that isn't working: what steps would you take to find the error?