Kit’s Computing Challenge: Master the Code

Learning objective: I can identify, debug, and explain key programming concepts used in coding.

About 15 minutes. Grown-up tip: Ask your child to explain what their favourite game or app might be doing 'behind the scenes' using these terms.

Read each question carefully. For multiple-choice questions, select the best answer. For true/false and short-answer questions, provide the requested information. Example: 'What is a sequence?' Answer: 'A set of instructions followed in a specific order.'

Answer Key: 1.C, 2.B, 3.A, 4.True, 5.False, 6.Variable, 7.Debugging, 8.B, 9.Sequence, 10.A. Explanation for Q6: A variable stores data that can change while the program is running. Explanation for Q7: Debugging is the process of finding and fixing errors in code.

Word bank: Algorithm · Bug · Variable · Loop · Sequence · Input · Output

1. 1. What is an algorithm? A) A type of computer hardware B) A mistake in the code C) A step-by-step set of instructions to solve a problem* D) A web browser (1 mark)

2. 2. Which of these is the best example of a 'loop' in a program? A) Asking the user for their name B) Repeating a 'move forward' command ten times* C) Stopping the program if a button is pressed D) Adding two numbers together (1 mark)

3. 3. What do we call a small error in a computer programme that prevents it from running correctly? A) A bug* B) A feature C) A glitch-ware D) A virus (1 mark)

4. 4. True or False: A sequence is when instructions are executed one after the other in order. (True/False) (1 mark)

5. 5. True or False: Computers can understand human speech exactly the same way they understand lines of code. (True/False) (1 mark)

6. 6. What term describes a 'container' used in coding to store information, such as a player's score, that can change during the game? (1 mark)

7. 7. What is the specific word for the process of identifying and removing errors from a programme? (1 mark)

8. 8. If you want a program to make a decision based on a condition (like 'if the score is 10, show a trophy'), what are you using? A) A loop B) A selection statement* C) A sequence D) A variable (1 mark)

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9. 9. In coding, what is the 'Output' of a programme? A) The buttons you press B) The power used by the computer C) The result shown on the screen or action taken* D) The written script (1 mark)

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10. 10. Which of these is an example of an 'Input'? A) A user typing their password on a keyboard* B) A sound playing from the speakers C) An image appearing on the monitor D) A printer printing a document (1 mark)

Draw: A friendly, clever-looking fox named Kit sitting in front of a futuristic computer screen with colourful lines of code reflecting in his glasses.

Extension challenge: Imagine you are designing a game where a character collects acorns. Write down a simple algorithm (a list of 3-4 steps) for how the character should move and what happens when they touch an acorn.

I did it! Name: _____ Date: _____

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