

# Kit's Computing Challenge: Debugging Detectives

*Learning objective: To understand what a bug is in a computer program and to practise identifying and correcting errors (debugging).*

Read each computing scenario carefully. Help Kit the fox fix the mistakes in the code sequences so the programs run correctly.

In computing, an algorithm is a set of instructions. Sometimes, these instructions have an error, which we call a 'bug'. To fix the problem and make the program work as intended, we must 'debug' the code.

*Word bank: bug · debug · algorithm · sequence · error · code · logic*

**1. Kit wrote an algorithm to make a robot move forward 3 steps and turn left. The current code is: 1. Turn left, 2. Move forward 3 steps. Explain why this is a bug. (2 marks)**

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**2. If a computer program stops working suddenly, why is it important to check the order of the instructions (the sequence)? (2 marks)**

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**3. Max the monkey is trying to write code to add £5.00 and £3.50. He wrote: '1. Subtract £3.50, 2. Add £5.00'. Write the correct sequence of instructions to solve the maths problem. (2 marks)**

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**4. Define the term 'debug' in your own words. (1 mark)**

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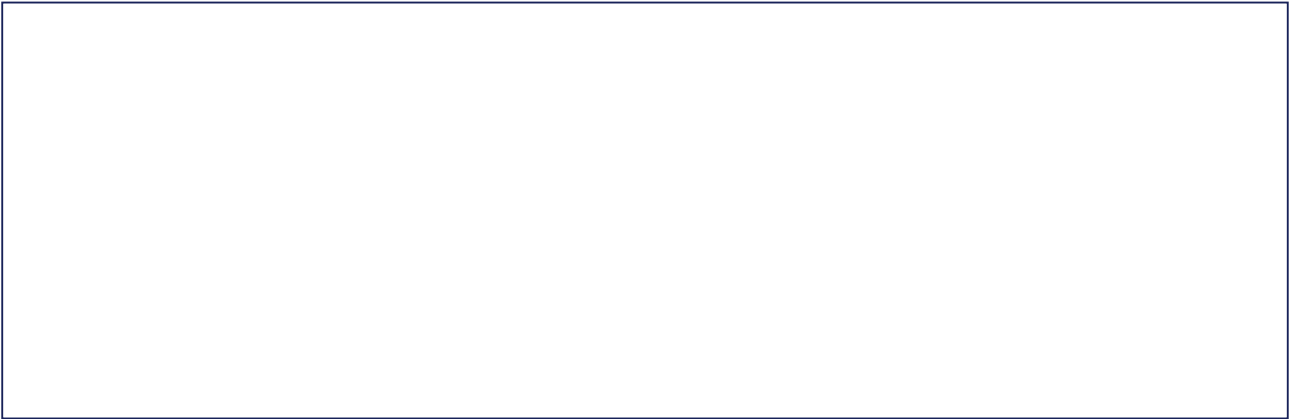
**5. You are writing a program for a digital character to draw a square. You notice the character draws a triangle instead. What is the first thing you should do to fix this error? (2 marks)**

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**Draw:** Draw a picture of Kit the fox using a magnifying glass to find a tiny, colourful 'bug' hiding inside a computer monitor.



*Extension challenge: Write your own simple 4-step algorithm for making a cup of tea or brushing your teeth. Then, swap an instruction with a silly one to 'create' a bug for a partner to debug.*