

# Kit's Computing Masterclass: Debugging Detective

*Learning objective: To understand the process of debugging, identify common types of errors in code, and learn how to fix them to ensure a program runs correctly.*

Use these flashcards to test your knowledge of debugging. Read the front of the card, try to remember the answer, then check the back to see if you are correct!

**What is a 'bug' in computer programming?**

A bug is an error, flaw, or fault in a computer program that causes it to produce an incorrect or unexpected result.

**Define 'debugging'.**

Debugging is the process of finding, identifying, and removing errors or 'bugs' from computer code.

**What is a 'syntax error'?**

A syntax error happens when the rules of the programming language are broken, such as a missing bracket, a typo, or a misspelled command.

**What is a 'logic error'?**

A logic error occurs when the code runs without crashing, but it does not produce the result the program intended because the steps are in the wrong order or contain incorrect instructions.

**Why is it important to test your code frequently?**

Testing code frequently helps you find bugs early, making them much easier to fix before the program becomes too complex.

**Kit the fox suggests 'tracing' your code. What does this mean?**

Tracing means reading through your code line by line to see exactly what the computer is doing at each step.

**True or False: A computer will always tell you exactly where a logic error is.**

False. Logic errors are often 'silent' because the computer follows the instructions perfectly, even if those instructions are wrong.

**What is a 'breakpoint' in programming?**

A breakpoint is a specific place in the code where you tell the program to pause so you can check the values of variables and find errors.

**If a program crashes immediately, is it more likely to be a syntax error or a logic error?**

It is more likely to be a syntax error, as the computer cannot understand the command to start running the program.

**Why should you keep a 'debugging log'?**

A debugging log helps you track which bugs you have already fixed and what changes you made, so you don't repeat the same mistakes.