Debugging Your Code: How to Fix Program Problems

KS2 COMPUTING Ages 10-14 ⏰ 3 min read

What Is a Bug?

When a computer program doesn't work the way you wanted, there's usually a **bug** hiding in the code. A **bug** isn't an actual insect—it's a mistake or problem in your instructions to the computer. Maybe your game crashes, your calculation gives the wrong answer, or a button does nothing at all. The good news? You can find and fix it!

Think of it like following a recipe. If the cake doesn't turn out right, you look back at the steps to see where you went wrong—did you forget an ingredient, use the wrong temperature, or mix things in the wrong order?

Step 1: Read Your Error Message

When something goes wrong, your computer often gives you an **error message**. These messages are actually helpful! They tell you what went wrong and sometimes even where. Read it carefully—it's like a clue that points you toward the problem. Don't ignore it or feel scared by it. Error messages are your friends.

Step 2: Check Your Code Line by Line

Look back at what you wrote. Search for **common mistakes** like spelling errors, forgotten brackets, or missing punctuation. Computers are very picky—a single wrong letter can break everything. This is called **debugging**, and it's detective work.

Think of it like proofreading your homework. You read through slowly, checking every word and punctuation mark to make sure everything is correct.

Step 3: Test Small Pieces

Don't try to fix everything at once. Break your program into smaller chunks and test each one separately. This helps you find exactly which part isn't working. When you find the broken piece, fix it, then test again.

Step 4: Ask for Help

Talk to your teacher, a friend, or check online resources. Explain what you're trying to do and what went wrong. Sometimes another pair of eyes spots a mistake you missed. **Asking questions is a sign of being a good programmer**, not a weakness.

Remember: Bugs Are Normal!

Even the best programmers in the world have bugs in their code. **Debugging is a skill**, and the more you practise, the faster you get at finding and fixing problems. Be patient with yourself, stay calm, and remember that every bug you fix makes you a better coder.