



We are bug fixers

Finding and correcting bugs in programs

In this unit you will:

- 1 Find and correct the bugs in the multiplication program.
- 2 Improve the circle drawing program.
- 3 Find and correct the bugs in the penguin program.
- 4 Find the bug in the 'Pong' game and try to correct it.
- 5 Find and correct the bugs in the division program.
- 6 Think of ways to improve a car driving program.

Word bank

algorithm

bugs

debug

instruction

program

script

Different types of bugs

Off-by-one bug

Here, an instruction in a program repeats one too many, or one too few, times.

Conceptual bug

This happens when the programmer hasn't fully understood the idea of what is supposed to happen in the program. The bug lies in the idea for the program rather than the code. These sorts of bugs are tricky to find and fix!

Performance bug

This is where a program doesn't perform as well as it could. It could work more quickly or efficiently.

Arithmetical bug

These bugs occur when the computer cannot 'do' the maths required, such as divide by zero.

Multi-thread bug

These bugs occur when several things need to happen at the same time. For example, there might be two processes where each is waiting for the other to complete, or one process that races ahead of the other.

Resource bug

These bugs happen when the programmer hasn't fully understood how the language or the operating system actually works, so the programming they want to do can't be done.