Programming: Giving Instructions Computers Actually Follow

KS2 DESIGN & TECHNOLOGY KS3 COMPUTING Ages 9-14 ⏰ 3 min read

What Is Programming?

Programming is like writing a recipe for a computer. Just as a recipe tells a chef exactly how to make a cake — mix flour, add eggs, bake at **180°C** — a program tells a computer exactly what to do, step by step. The difference is that computers follow instructions perfectly every single time, with no shortcuts or mistakes, but they need to understand your language first.

When you write a program, you're writing **code** — instructions in a special language that computers can read. There are many different **programming languages**, like **Python**, **JavaScript**, and **Scratch**. Each language has its own rules, just like English and French have different grammar.

Think of it like talking to a robot who only understands one language perfectly. You have to use exactly the right words in exactly the right order, or the robot gets confused.

How Do You Give A Computer Instructions?

Computers are extremely literal. If you tell a human to 'make a sandwich,' they know to get bread, butter, and fillings. But if you tell a computer to 'make a sandwich' without explaining every tiny step, it won't know where to start. You need to break everything down: **open the cupboard**, **find the bread**, **place it on a plate**, and so on.

This is called **breaking down a problem**, and it's one of the most important skills in programming. You identify what you want to achieve, then write the smallest, clearest instructions to get there. A program might have **thousands** of instructions, each telling the computer something simple to do.

Think of it like giving directions to someone who's never been to your house. You can't just say 'turn left at the big tree' — you need to say 'turn left at the oak tree on Maple Street, then drive for 500 metres.'

Why Does This Matter?

Everything you use involves programming — your **phone apps**, **video games**, **social media**, even traffic lights. All of these started as instructions written by humans in a programming language. The programmers had to think: what should this app do? What happens when you tap a button? What if something goes wrong?

Learning to program teaches you how to **think logically** and **solve problems step by step** — skills useful far beyond computers. When you program, you're training your brain to be organized, creative, and precise.

Free for educational use