



---

# Computational Thinking: How Computers Solve Problems

KS2 COMPUTING

Ages 10-14 ⌚ 3 min read

---

## What is Computational Thinking?

**Computational thinking** is a way of solving problems by thinking like a computer. It's not about using a computer—it's about using a computer's logic and methods to tackle challenges in everyday life. When you use computational thinking, you break big, confusing problems into smaller, manageable pieces that are easier to understand and fix.

This skill is incredibly useful because it helps you think clearly and logically about almost anything: organizing your homework, planning a school project, or even creating a game. The great news is that everyone can learn computational thinking—you don't need to be a programming genius!

## The Four Key Steps

**Computational thinking** has four main parts that work together:

**Decomposition** means breaking a big problem into smaller, simpler parts. For example, if you wanted to make a sandwich, you wouldn't think of it as one giant task. Instead, you'd break it into steps: gather ingredients, slice the bread, spread butter, add filling, and cut diagonally.

Think of it like taking a giant LEGO castle and breaking it down into individual bricks—much easier to understand!

**Pattern recognition** is spotting things that repeat or that you've seen before. If you notice that every time you press a button, something happens the same way, that's a pattern. Recognizing patterns saves time because you don't have to solve the same problem twice.

**Abstraction** means focusing on the important information and ignoring details that don't matter. When you're following a recipe, you only need to know the ingredients and steps—you don't need to understand the chemistry of why baking soda makes cakes rise.

Think of it like drawing a map: you show roads and landmarks but don't include every single tree or building.

**Algorithm design** is creating a step-by-step plan to solve your problem. An **algorithm** is just a list of instructions, like a recipe or directions to a friend's house.

## Why Does It Matter?

Learning computational thinking makes you a better problem-solver in any subject. It helps you write clear instructions, think logically, and organize your ideas. These skills are valuable whether you become a **coder**, a doctor, an artist, or anything else!