

Why We Use Letters in Maths and What They Mean

KS3 Ages 11-14 ⌚ 3 min read

What Are Letters Doing in Maths?

When you first learn maths, you work with **numbers** like **5**, **10**, and **100**. But as you get older, you start seeing letters like **x**, **y**, and **a** mixed in with the numbers. This might seem strange! Why would mathematicians throw letters into perfectly good maths?

The answer is that letters in maths are **placeholders** or **variables**. They stand for **unknown numbers** that we're trying to find, or numbers that can change.

Letters as Mystery Numbers

Imagine you're playing a guessing game. Your friend says: '**I'm thinking of a number. If I add 5 to it, I get 12. What's my number?**' In maths, we can write this as $x + 5 = 12$. The letter **x** represents the **mystery number** we need to find. In this case, $x = 7$.

Think of it like a treasure hunt. The letter **x** is like an empty box on a treasure map. You don't know what's inside yet, but you follow the clues (the equation) to figure out what belongs in that box.

Letters That Can Change

Sometimes letters represent numbers that can vary or change. For example, if you're measuring how far you run, you might write $d = 5\text{km}$ one day and $d = 8\text{km}$ another day. The letter **d** stands for **distance**, but the actual distance changes. Using a letter means you can write one formula that works every time, even though the numbers change.

Why Use Letters at All?

You might wonder: why not just write '**unknown number**' instead of '**x**'? The reason is that letters make maths **shorter, clearer, and easier to work with**. When

scientists, engineers, and mathematicians share their work with each other around the world, using letters like **x**, **y**, and **z** is a **universal language** everyone understands instantly.

Think of it like using emojis instead of writing out long descriptions. A smiley face 😊 says everything without words, and everyone knows what it means no matter what language they speak.

The Power of Algebra

Using letters unlocks a whole area of maths called **algebra**. Instead of solving just one problem, you can solve whole families of similar problems using the same letter-based formula. This is incredibly powerful for science, technology, and engineering.