Bits and Bytes: How Computers Store Information

KS3 Ages 11-14 ⏰ 3 min read

What Is a Bit?

Computers are like super-smart machines that use electricity to work. But they don't think in words or numbers the way we do. Instead, they use something called **bits** to understand information. A **bit** is the smallest unit of information a computer can process, and it can only be one of two things: **0** or **1**. That's it!

Think of it like a light switch. It's either **ON** (which is **1**) or **OFF** (which is **0**). Your computer uses millions of these tiny switches working together.

The **0** and **1** are called **binary** numbers, and they're the language computers speak. Everything your computer does—from playing a video to saving a photo—is made up of billions of these tiny 0s and 1s.

What Is a Byte?

Now, **8 bits** put together make something called a **byte**. So a **byte** is a group of **8 bits**. This is important because computers use bytes to measure how much information they can store and send.

Think of bits like individual letters in the alphabet. A byte is like a whole word made of 8 letters. Just as words carry more meaning than single letters, bytes can represent much more information than individual bits.

How Are They Related?

Bits and bytes are connected like bricks and buildings. One **byte** always equals **8 bits**. This relationship is used to measure computer storage and speed everywhere. When you see a file that is **100 KB** (kilobytes), that's **100,000 bytes**, which is really **800,000 bits**!

Understanding bits and bytes helps explain why bigger files take longer to download and why computers with more storage can hold more photos, videos, and games. The

next time you hear someone talk about **gigabytes** or **megabytes**, remember: they're all built from these tiny bits and bytes working together in the background.