How Computers Find Websites Using Web Addresses

KS3 Ages 11-14 ⏰ 3 min read

What's a Web Address?

When you type something like **www.google.com** into your browser, you're using a **domain name**—a human-friendly way to identify a website. But here's the thing: computers don't actually understand words like "google" or "com". They only speak numbers. So behind every web address is a unique number called an **IP address**, which looks like this: **142.251.41.14**.

Think of it like a post office. The domain name is like writing a person's name on a letter, but the post office actually needs the street address and postcode (the IP address) to deliver it.

Meet the DNS

So how does your computer translate words into numbers? That's where the **Domain Name System (DNS)** comes in. When you type a web address, your computer sends a question to a **DNS server**—a special computer that holds a giant directory of domain names and their matching IP addresses.

The DNS server is like a receptionist. It looks up your request, finds the right IP address, and sends it back to your computer. This all happens incredibly fast—usually in less than a second!

Think of it like asking a friend for someone's phone number. You ask by name, and they give you the actual phone number you need to call.

Following the Path

Once your computer has the IP address, it can finally connect to the right web server—the computer that stores the actual website. Your computer sends a request saying "I want to see the website at this IP address", and the web server sends back all the pictures, text, and code that make up the page you see on your screen.

Why Does This System Exist?

Why not just use IP addresses directly? Because **142.251.41.14** is impossible to remember, but **www.google.com** is easy! The DNS system makes the internet user-friendly by letting us use memorable names instead of confusing numbers.

Every website on the internet relies on this system. Without DNS, you'd need to memorize thousands of IP addresses—which would be a nightmare!

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