



What is artificial intelligence?

KS2

KS3

Ages 7-14 ⌚ 5 min read

Artificial intelligence — AI — is software that can do things that normally require human-level intelligence. Things like understanding language, recognising faces, writing text, translating between languages, or figuring out what music you might like.

For most of computing history, software followed strict rules: "if this happens, do that." Computers were powerful calculators but couldn't handle things that were fuzzy or ambiguous. Modern AI works completely differently.

The big shift: learning from examples

Instead of programming a computer with rules, modern AI is **trained**. You feed it an enormous amount of data — millions of photos, billions of sentences, years of game play — and it finds patterns. It doesn't follow instructions; it builds a mathematical model of how the world works by looking at enough examples.

Imagine you want to teach a child to recognise cats. You could try writing rules: "four legs, pointy ears, whiskers." But that description also fits lots of things. Instead, you show them 10,000 photos — "this is a cat, this isn't, this is, this isn't" — and eventually they just know. They've built an internal sense for "cat-ness" without being able to explain exactly why. That's how neural networks work. They don't know the rules — they've seen so many examples that the answer just feels obvious.

What's a neural network?

Neural networks are the main technology behind modern AI. They're loosely inspired by the human brain — layers of connected nodes (like simplified neurons) that pass information between them. When you train a network, you're adjusting the strength of thousands or millions of these connections until the network reliably produces the right outputs from the right inputs.

What are large language models?

ChatGPT, Claude, and similar AI assistants are examples of **large language models** (LLMs). They were trained on an enormous amount of text from the internet, books, and other sources. By predicting what word should come next billions of times during training, they developed an incredibly rich model of language, facts, and reasoning. They don't "think" the way humans do — but they can produce responses that are often indistinguishable from human writing.

Is AI actually intelligent?

That depends on what you mean by intelligent. Current AI is extraordinarily good at specific tasks it's been trained for. But it doesn't truly understand, feel curious, get bored, or have common sense the way you do. It's a very powerful pattern matcher. Whether that counts as "real" intelligence is one of the most genuinely contested questions in both philosophy and computer science right now.