What is biodiversity?

KS2 KS3 Ages 7-14 ⏰ 2 min read

Imagine walking into the world's most incredible library. Instead of books on shelves, you find millions of different living things — from microscopic bacteria smaller than a full stop to towering redwood trees that scrape the clouds. This amazing variety of life on Earth is called **biodiversity**.

The word itself gives us a clue: 'bio' means life, and 'diversity' means variety. Scientists estimate there are somewhere between 8 and 100 million different species on our planet, though we've only discovered and named about 1.5 million of them so far. That's like having read less than 2% of that enormous library!

Three Levels of Life's Variety

Biodiversity works on three different levels. First, there's **species diversity** — that's the variety of different types of living things, from polar bears to pine trees to pond algae. Then there's **genetic diversity** — even within the same species, individuals have slightly different genes, which is why you don't look exactly like your siblings. Finally, there's **ecosystem diversity** — different habitats like rainforests, coral reefs, and grasslands, each supporting their own unique communities of life.

Think of biodiversity like a massive jigsaw puzzle with billions of pieces. Each species is one piece, and they all fit together in complex ways. Remove too many pieces, and the whole picture starts falling apart.

Why Does Variety Matter?

You might wonder why having so many different types of life matters. It turns out that all these species depend on each other in fascinating ways. Bees pollinate the plants that produce our food. Bacteria in soil help plants grow. Predators keep other animal populations from getting too large. When species disappear, these connections break down.

Biodiversity also helps ecosystems stay stable when things change. If a disease wipes out one type of plant, having other similar plants around means the ecosystem can keep functioning. It's nature's insurance policy.

Under Threat

Unfortunately, human activities are causing species to disappear much faster than new ones can evolve. Scientists call this the sixth mass extinction. Climate change, habitat destruction, and pollution are the main culprits. But the good news is that people around the world are working hard to protect biodiversity through conservation efforts, national parks, and changes to how we live.

Understanding biodiversity helps us appreciate just how wonderfully complex and interconnected life on Earth really is — and why it's worth protecting.

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