How Carbon Travels Through Air Plants and Soil

KS3 Ages 11-14 ⏰ 3 min read

What is the Carbon Cycle?

Everything around you contains **carbon** – it's in the air you breathe, the plants you see, and the soil beneath your feet. Carbon is constantly moving between these three places in what scientists call the **carbon cycle**. Understanding this cycle helps us see how nature recycles one of its most important building blocks.

The carbon cycle is powered by the Sun and keeps our planet balanced. Without it, life on Earth wouldn't exist as we know it.

Carbon in the Air

Carbon dioxide (CO_2) is a gas that floats around in our atmosphere. Plants need this gas to survive. When you look at the sky, you can't see CO_2, but it's there – about **0.04%** of the air we breathe. Some comes from nature (like volcanoes), and some comes from burning fuel.

Think of it like an invisible ingredient in the air recipe – you can't see it, but plants need it to grow, just like a cake needs yeast even though you can't see it when you bake.

Plants Capture Carbon

Here's where plants become superstars. During a process called **photosynthesis**, plants pull CO_2 from the air through tiny holes in their leaves. They use sunlight to turn this carbon and water into sugar, which they use to grow. The plant keeps the carbon in its leaves, stems, and roots.

Every green plant on Earth – from grass to trees to crops – is constantly doing this job, removing carbon from the air and storing it.

Soil Stores Carbon

When plants die and fall to the ground, bacteria and fungi break them down. This dead plant material becomes **organic matter** in the soil, storing carbon deep underground. Animals that eat plants also release carbon back into the air when they breathe (a process called **respiration**).

Think of soil like a giant storage container – when plants die, they get buried and stored there, keeping carbon locked away safely for years.

Carbon Returns to the Air

The cycle closes when **decomposition** happens. Tiny creatures in the soil break down dead plants and release CO_2 back into the air. Humans also add carbon by burning fossil fuels like coal and oil. This completes the endless journey of carbon through our world.