What Soils Are Made Of and Why They Matter

KS3 Ages 11-14 ⏰ 3 min read

What Is Soil?

Soil is much more than just dirt under your feet. It's a living mixture made of four main things: broken-down **rock**, dead plants and animals (called **organic matter**), **water**, and **air**. These ingredients all work together to create something incredibly important for life on Earth.

The rock part comes from weathering—when wind, rain, frost and chemicals slowly break down big stones into smaller and smaller pieces over thousands of years. The organic matter is what's left when leaves, dead insects, and plant roots decay. Water fills the tiny spaces between soil particles, and air fills the rest, allowing plant roots to breathe.

Think of it like a chocolate cake: the sponge is the rock, the chocolate chips are organic matter, and the moisture is the egg and milk mixed in. You need all the ingredients together to make it work.

Different Types of Soil

Not all soil is the same. **Sandy soil** has large particles and drains quickly—great for deserts but not for holding water plants need. **Clay soil** has tiny particles that stick together, holding water well but sometimes too much. The best soil is **loam**, which balances sand and clay with lots of organic matter, giving plants the perfect home.

Why Soil Is Incredibly Important

Soil is the foundation of almost all life on land. **Plants** grow in soil and get water, nutrients, and minerals they need to survive. Without soil, we couldn't grow food—no wheat for bread, no potatoes, no fruit. We'd have no forests either, which means no homes for animals or oxygen for us to breathe.

Soil also cleans water. When rain soaks into the ground, soil filters it, removing harmful substances before the water reaches underground **aquifers** we drink from. It

also stores **carbon**, helping fight climate change.

Think of soil like the lungs of Earth—it breathes, it filters things, and it keeps everything alive.

Protecting Our Soils

Sadly, **soil erosion** is a huge problem. When we remove forests or overuse farmland, soil washes away in rain and blows away in wind. It takes **100 years** to create just **2.5 centimetres** of new soil, so we must protect what we have. Planting trees, rotating crops, and reducing pollution help keep soil healthy for future generations.

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