**Soil**

**What is soil?**

Soil is the loose upper layer of the Earth's surface where [plants](https://www.ducksters.com/science/biology/plants.php) grow. Soil consists of a mix of organic material (decayed plants and animals) and broken bits of rocks and minerals.

**How is soil formed?**

Soil is formed over a long period of time by a number of factors. It can take up to 1000 years for just an inch of soil to form. Besides time, other factors that help soil to form include:

* Living organisms - This includes organisms such as plants, [fungi](https://www.ducksters.com/science/biology/fungi.php), [animals](https://www.ducksters.com/animals.php), and [bacteria](https://www.ducksters.com/science/bacteria.php).
* Topography - This is the relief or slope of the surface of land where the soil is forming.
* Climate - The overall climate and weather where the soil is forming.
* Parent material - The parent material is the minerals and rocks that are slowly broken up to form the soil.

**Why is soil important?**

At first you may think of soil as just dirt. Something you want to get rid of. However, soil plays a very important role in supporting life on Earth.

* Plants - Many plants need soil to grow. Plants use soil not only for nutrients, but also as a way to anchor themselves into the ground using their roots.
* Atmosphere - Soil impacts our atmosphere releasing gasses such as carbon dioxide into the air.
* Living organisms - Many animals, fungi, and bacteria rely on soil as a place to live.
* Nutrient cycles - Soil plays an important role in cycling nutrients including the carbon and nitrogen cycles.
* Water - The soil helps to filter and clean our water.

**Properties of Soil**

Soil is often described using several characteristics including texture, structure, density, temperature, color, consistency, and porosity. One of the most important properties of soil is the texture. Texture is a measure of whether the soil is more like sand, silt, or clay. The more like sand a soil is the less water it can hold. On the other hand, the more like clay a soil is, the more water it can hold.

**Interesting Facts about Soil Science**

* The process by which minerals move down through soil is called leaching.
* In a teaspoon of good soil there will typically be several hundred million bacteria.
* The average acre of good cropland will be home to over 1 million earthworms.
* Soil is mostly made of the elements oxygen, silicon, aluminum, iron, and carbon.
* It is possible to over-farm soil and remove so much of its nutrients and organic matter that plants will no longer be able to grow in it.