

# Soil and Soil Formation

Soil is the upper layer of the Earth's surface. This layer is loose which means we can break it apart, and move it around with our hands. Soil is where plants grow. When we plant a seed, we dig a hole in the soil and place the seed at the bottom of the hole. We cover up the seed with soil.

## What Makes up Soil?

Soil is a **mixture** which means it is made up of small particles or pieces of material. Soil is made up of organic material such as decayed (or dead) plants and animals that have broken down and broken bits of rocks and minerals.

Soil is made up of minerals, water, oxygen (or air), organic matter and organisms that are decaying remains of once-living things. **Decaying** means that the natural processes have broken down the living things such as animals or plants.

A **mineral** is a naturally occurring, or not human made, solid made of chemicals. A mineral is not a living thing. **Organic matter** includes living things as well as dead plants and animals that have been decomposed or broken down into different parts.

Soil can be described in different ways. Some people describe soil by its weight or its quality. Others describe soil by its texture or type. There are four types of soil: sand, silt, clay and loam.

## Sand Soil

Sand soil is the largest type of soil. It is light gray to white in colour. It is made up of tiny pieces of rock that have been weathered away over time. **Weathering** means when something is worn away due to water, air, or changes in temperature. We can tell that soil is sandy because it will feel gritty when it is

rubbed between our fingers. This type of soil is not suitable for plants because it has a lack of nutrients, and it does not hold water very well. On hot days, the water in the sandy soil will dry out and evaporate.

## Silt Soil

Silt soil is smaller in size than sandy soil. This type of soil can be beige to black in colour. Silt soil feels smooth and powdery when dry. When wet, it feels smooth and slippery but not sticky. Silt soil is known to hold a lot of water, which is helpful for plants. Silt soil has more nutrients than sandy soil and is made up of mainly minerals.

## Clay Soil

Clay soil is the smallest of all the types of soil. This type of soil comes in various colours from white to gray to brown and even an orange-red colour. When clay is dry, it is smooth in texture and it will hold its shape and it will not crumble. When wet, clay soil is sticky and holds its shape. Clay soil is high in nutrients. Although clay soil can hold a lot of water, the water does not travel through clay soil very easily making it not suitable for plant growth.

## Loam Soil

Loam soil is a mixture of sand, silt and clay soils. This soil is rich to dark brown in colour. Loam soil is smooth to touch when dry and will crumble when touched. When wet, loam soil is sticky. Loam soil has a high level of nutrients and holds water well and water travels through this type of soil easily.