

A close-up photograph of a pair of weathered, brown hands cupping a small, vibrant green seedling with four leaves. The seedling is growing out of a mound of dark, rich soil. The background is a dark, textured surface of soil. The word "Soil" is written in a large, white, sans-serif font across the bottom center of the image.

**Soil**

# Soil


- Soil is one of the most **valuable abiotic factors** in an ecosystem because everything that lives on land **depends on soil**.
- If the **soil changes**, the **ecosystem will also change**.

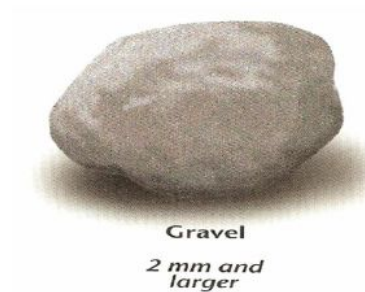
# Soil Composition

- Soil is a mixture of rock particles, minerals, humus, air, and water.
- Humus - decayed organic matter
- Factors that can affect soil composition are: the types of plants, climate, time, and slope of the land.

# Particle Size

- Sand (largest)
- Silt (middle)
- Clay (smallest)
- Soil particles that are larger than sand are called gravel (>2mm)

		
Sand	Silt	Clay
<i>less than 2 mm</i>	<i>less than <math>\frac{1}{16}</math> mm</i>	<i>less than <math>\frac{1}{256}</math> mm</i>



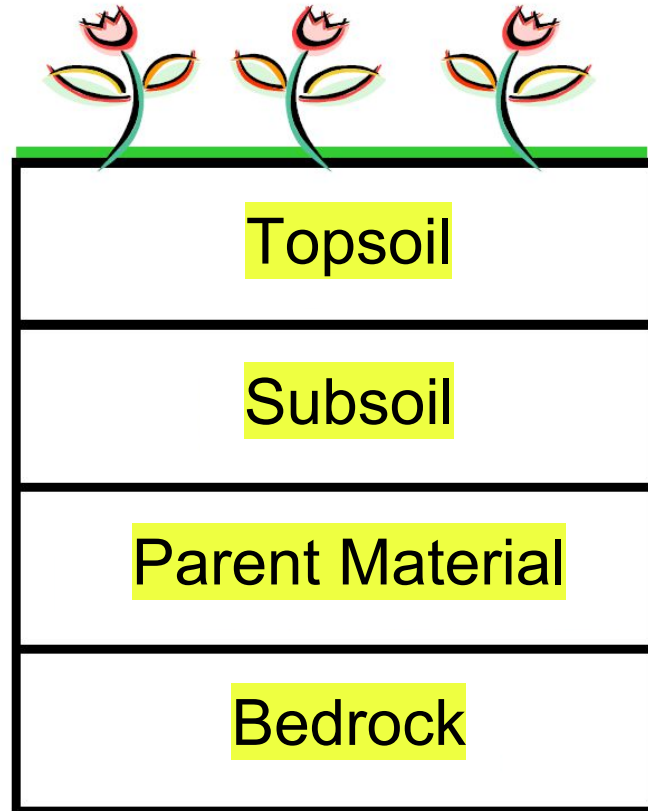
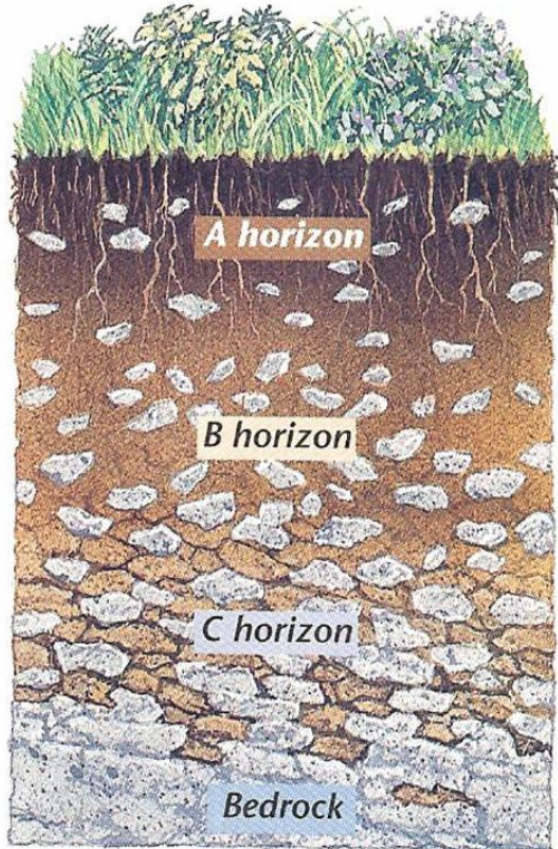
# Texture

- Soil texture depends on the size of the particles
  - Sand - gritty
  - Silt – silky, smooth, or lumpy
  - Clay – sticky, or hard & clumpy
  - Loam – mixture of sand, silt and clay

# Soil Profile

- Soils form in **layers**, or **horizons**.
- **Topsoil** that is **nutrient rich**, containing a mixture of **humus**, **clay**, and **minerals**, is best for plants.
- Most animals live in the **topsoil horizon**.

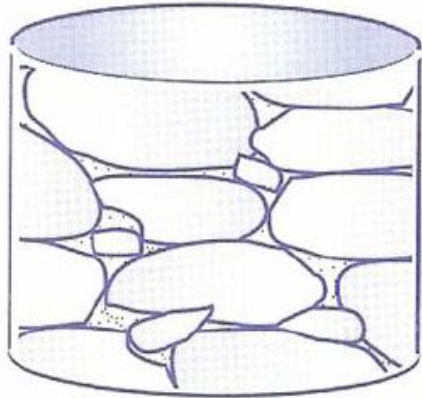
# Soil Profile



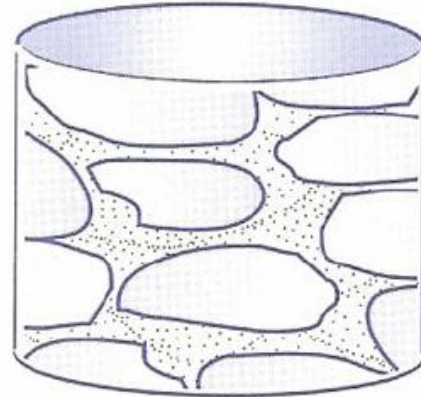
# Permeability

- **Permeability** - How freely that **water flows** through the soil
- The **closer the particles** pack together, the **less permeable** the soil is.

**Less**



**More**





# pH

- pH is a measure of how acidic or basic soil is.
- Soils can be acidic (pH: 1.0 - 6.5) or basic (pH: 7.4 - 14.0)
- Most plants grow best in neutral soils with a pH between 5 and 7.
- Fertilizer adjusts soil pH and makes the soil better for plants.