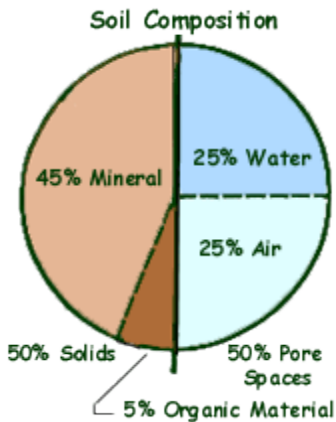


# Soil Formation Worksheet

Soil is a mixture of weathered rock & organic matter that usually covers bedrock (solid rock that underlies all soil). Both chemical & mechanical processes are involved in the development of soils.

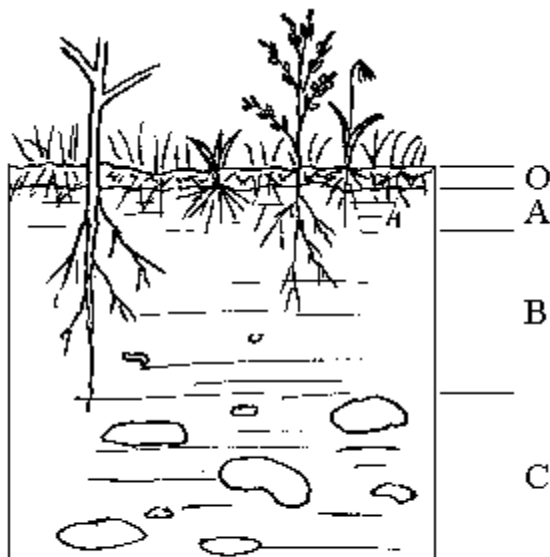
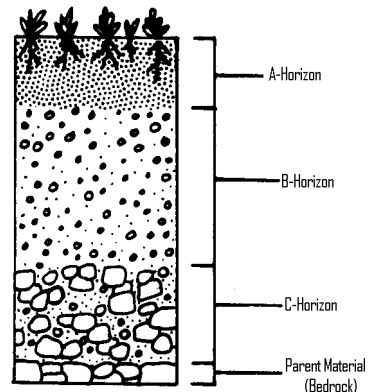


- Chemical weathering turns hard minerals into soft ones
- Mechanical weathering breaks solid rock into smaller pieces
- Plant & animals add organic materials in the form of waste products & dead organisms
- The decay of organic matter produces acids which accelerate chemical weathering
- Burrowing Animals, such as earthworms, insects, & rodents, help circulate air and water through the soil & mix mineral & organic remains

The material from which soil forms is called its parent material. Soil that has weathered directly from the bedrock beneath it and therefore matches its parent material is called residual soil.

Soil that does not match the bedrock it is over is called transported soil. It did not weather from the bedrock beneath it but was brought there by agents of erosion such as winds, rivers, or glaciers. Much of New England & the Midwest are covered by soil that was deposited by the movement of glaciers after the last Ice Age.

A cross section of soil exposed by digging is called the soil profile. The weathering of soil produces layers known as soil horizons. The topsoil or A horizon is usually rich in dark-colored organic remains called humus (labeled O horizon below). The subsoil or B horizon contains minerals that have been transported deeper by groundwater. Most of the clay in soil has also been washed down to this layer. The partially weathered bedrock or C horizon is composed of broken up bedrock on top of the solid bedrock (parent material).



horizon is composed of broken up bedrock on top of the solid bedrock (parent material).

Soil erosion is the removal of topsoil by the action of running water or wind. It takes between 100 & 400 years for one centimeter of topsoil to form.

Loss of topsoil can be caused when plants root are no longer present to hold down soil. Salting roads can raise the salinity of the soil and kill the plants. Over grazing can kill plants. Winds construction, & mining can all effect plant cover.

## **Questions:**

- 1) Outline soil composition. What is it made of?
  
- 2) What effects can soil erosion have on the environment?
  
- 3) Outline the processes involved in the development of soil.