

### Soil Formation Worksheet

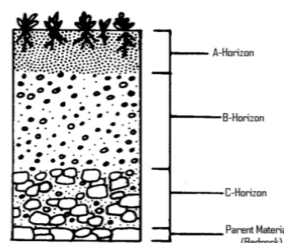
Read p 264-267 & the material below.

**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.

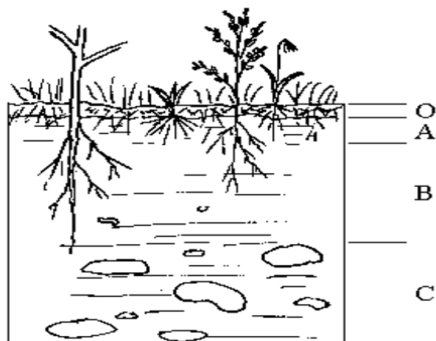
- Chemical weathering turns hard minerals into soft ones
- Mechanical weathering breaks solid rock into smaller pieces
- Plant & animals add organic materials in the form of waste products & dead organisms
- The decay of organic matter produces acids which accelerate chemical weathering
- Burrowing Animals, 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).



**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.