

Soil Formation Worksheet

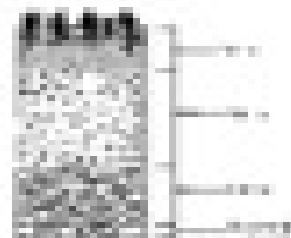
Read p.204-207 in the textbook.

Soil is a mixture of weathered rock & organic matter that usually covers **bedrock** (solid rock) that indicates all soil's (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.
- Plants & animals add organic materials in the form of waste products & dead organisms.
- The decay of organic matter produces acids which accelerate chemical weathering.
- Humming, animals, earthworms, insects, & rodents help circulate air and water through the soil & mix mineral & organic matter.

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 wind, rivers, or glaciers. Much of New England & the Midwest are covered by soil that was deposited by the movement of glaciers since 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 uppermost horizon is usually rich in dark-colored organic remains called **humus** (labeled **O-horizon** below). The horizon or **B horizon**



contains minerals that have been transported deeper by groundwater. Mineral-rich clay in soil has also been washed down to this layer. The partially weathered bedrock or **C horizon** is composed of fragments of 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 & 1000 years for the replacement of topsoil in farms.