

### Soil Formation Worksheet

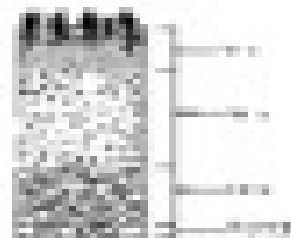
Read p.204-207 in the textbook.

**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 or silt 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 equal amounts.