

A Soil Profile

Background

If you look in a soil pit or on a roadside cut, you will see various layers in the soil. These layers are called soil horizons. The arrangement of these horizons in a soil is known as a soil profile. Soil scientists, who are also called pedologists, observe and describe soil profiles and soil horizons to classify and interpret the soil for various uses.

Soil horizons differ in a number of easily seen soil properties such as color, texture, structure, and thickness. Other properties are less visible. Properties, such as chemical and mineral content, consistence, and reaction require special laboratory tests. All these properties are used to define types of soil horizons.

Soil scientists use the capital letters O, A, B, C, and E to identify the master horizons, and lowercase letters for distinctions of these horizons. Most soils have three major horizons -- the surface horizon (A), the subsoil (B), and the substratum (C). Some soils have an organic horizon (O) on the surface, but this horizon can also be buried. The master horizon, E, is used for sub-surface horizons that have a significant loss of minerals (eluviation). Hard bedrock, which is not soil, uses the letter R.

Project

1. Print the soil profile cards onto cardstock paper or draw your own design on a 3" x 5" note card. (The following page will print 6 cards per page).
2. Cut the cards apart.
3. Attach a short strip of $\frac{3}{4}$ " double sided tape to the card. Rolls of double-sided tape come in various widths.
4. Sprinkle the soil onto the tape starting with the top and working down. Do not remove the excess soil until all the tape is covered.
5. Gently press the soil down onto the tape.
6. Tilt the card and tap off the excess soil.
7. The card can now be placed in an envelope to protect it.
8. You might also collect a little surface vegetation to keep with your soil type for learning about plant-soil relations.

You can demonstrate erosion severity by altering the depth of the A horizon or display various types for soils found in different locations.

Displays can be made of several soils on a drawing of a hill slope or other landscape by using the tape on a larger card or poster.

This lesson is adapted from USDA NRCS Soil Education Lesson Plans.



Soil Science Society of America
www.soils4teachers.org



Soil Name _____

Horizon

A

0"

12"

24"

B

36"

48"

C

60"

72"

<http://soils.usda.gov>

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