DIG IT!

The Scoop on Soil. Soil is a complex mix of ingredients: minerals, air, water, and organic matter—decaying remains of once-living things and countless organisms.

Why is soil important? You need it for...

How does soil become soil?
There are many different soils in the world. All soils are different because of where and how they formed. And, soils are always changing!

Climate is weather over a long period of time. Soil develops faster in warm, moist climates and slows down in cold or arid (dry) ones.

Organisms help break down soil particles. Plant roots spread, animals burrow, and bacteria eat, changing how soil forms. These and other organisms help break down soil particles.

Relief shows the shape of the land. The direction a hill faces makes a difference in how much sunlight the soil gets and how much water it holds. Deeper soils form at the bottom of a hill because gravity and water move soil particles downhill.

Parent material describes the properties in which soil forms. Soils from weathering rock are different than soils formed in a dry lake bed.

Older soils differ from younger soils because they have had longer to develop.

Dig Deeper!
Soils come in many colors—from blue-gray to brown to red. All soils have layers called horizons. These horizons may look different and they tell the story of how a soil formed over time. Together the horizons are called a soil profile (photo left).

Soil is composed of different-sized particles: sand, silt, and clay.

Dirt is not soil. Dirt is soil particles that are out of place—no longer part of the soil on the ground. It doesn’t have the properties that provide nutrients to grow food and filter our water.

CHANGE | 4 processes


Losses. Water in soil evaporates. Nutrients are taken up by plants. Soil particles wash away in a storm. Organic matter may decompose into carbon dioxide.

Transformation (when things change into other things). Dead leaves decompose into smaller pieces. Rock weather into soil clay. Oxygen reacts with iron, “rusting” the soil into a reddish color.

This is just the beginning of the exciting world of soil!
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Soil Science Society of America


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