

Soil and Plant Study Guide

Soil Test on _____

Soil is important because many **plants grow** in soil.

Soil provides **support and nutrients (food)** for the plants.

Weathering is when water and living things help break down rocks and create soil.

Weathering can be caused by:

- Extreme heat, such as the heat from a volcano
- Pressure from ice
- Reactions between water and certain minerals
- Freezing and thawing of ice

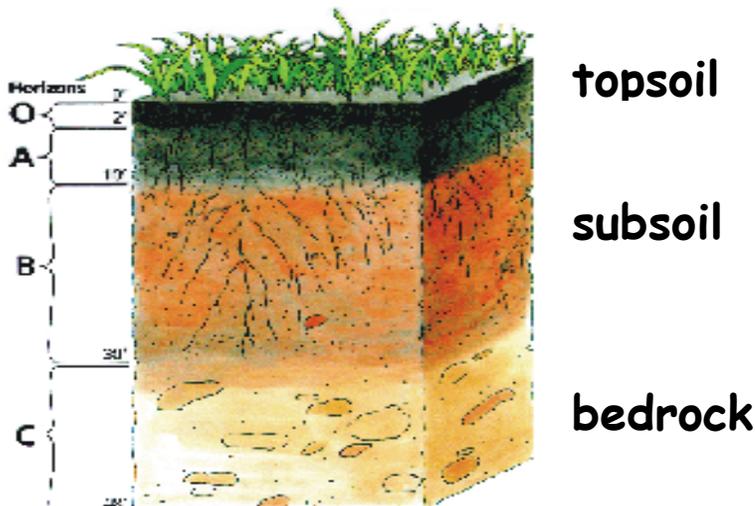
Erosion is the movement of the broken down rock over time.

Soil is broken down **rock**.

There are 3 layers of soil: top soil, subsoil, and bedrock.

Topsoil is **best** for **plant growth**. Most of the humus is found in the topsoil.

Subsoil and **bedrock** are **not good** for **plant growth**.



Soil is made of many things including organic and inorganic materials, water, and air.

The organic materials include dead plants and animals, which decay and make humus. Animals that live in the soil like worms are organic materials.

Inorganic materials in soil include rocks, clay, sand, and silt. Inorganic materials have never been alive.

Clay, sand, and silt are the basic textures of soil. Most soils are made up of a combination of the three. The texture of the soil varies from place to place and can even vary from one place to another in your own backyard.

Clay contains tiny particles of soil that hold water. Clay does not allow the roots to penetrate.



Sand is made up of small grains of worn-down rock. Sandy soil is made mostly of sand, which are small pieces of quartz. This type of soil does not hold water very well.



Silt is made up of very small broken pieces of rock. Its particles are larger than clay and smaller than sand.



Humus is decayed matter (dead plants and animals) in soil. It adds nutrients (food) to soil. It is located in the topsoil.



Loam is soil with nearly equal parts of sand and silt, and somewhat less clay.

Since soil takes **thousands of years** to form, it should be **conserved** (not wasted).

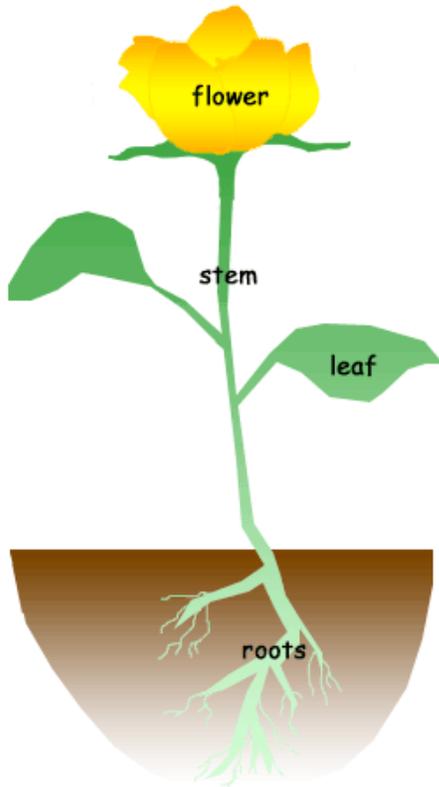
What harms the soil?

- Planting the same crop over and over
- Flooding
- Removing plants and trees from the soil without replanting
- Polluting the soil by spilling gas or pouring oil in the soil
- Adding harmful pesticides to the soil

What conserves (saves) soil?

- Planting grass to keep soil in place
- Planting a variety of crops
- Planting trees and other plants
- Making a compost pile
- Using a variety of methods to plant crops like contour plowing and strip cropping

Parts of the plant- leaves, roots, stems, flowers
Be able to label parts of a plant.



Leaves-make the food by photosynthesis. Leaves take in carbon dioxide from the air, water from the soil, and energy from the sunlight. During photosynthesis the leaves use light energy to change carbon dioxide and water into sugars and (food).

Roots- anchor the plants in the soil and take water and nutrients (like minerals) from the soil. Many plants such as carrots store food in their roots.

Stems-support the plant above the ground and helps water and nutrients travel to other parts of the plant.

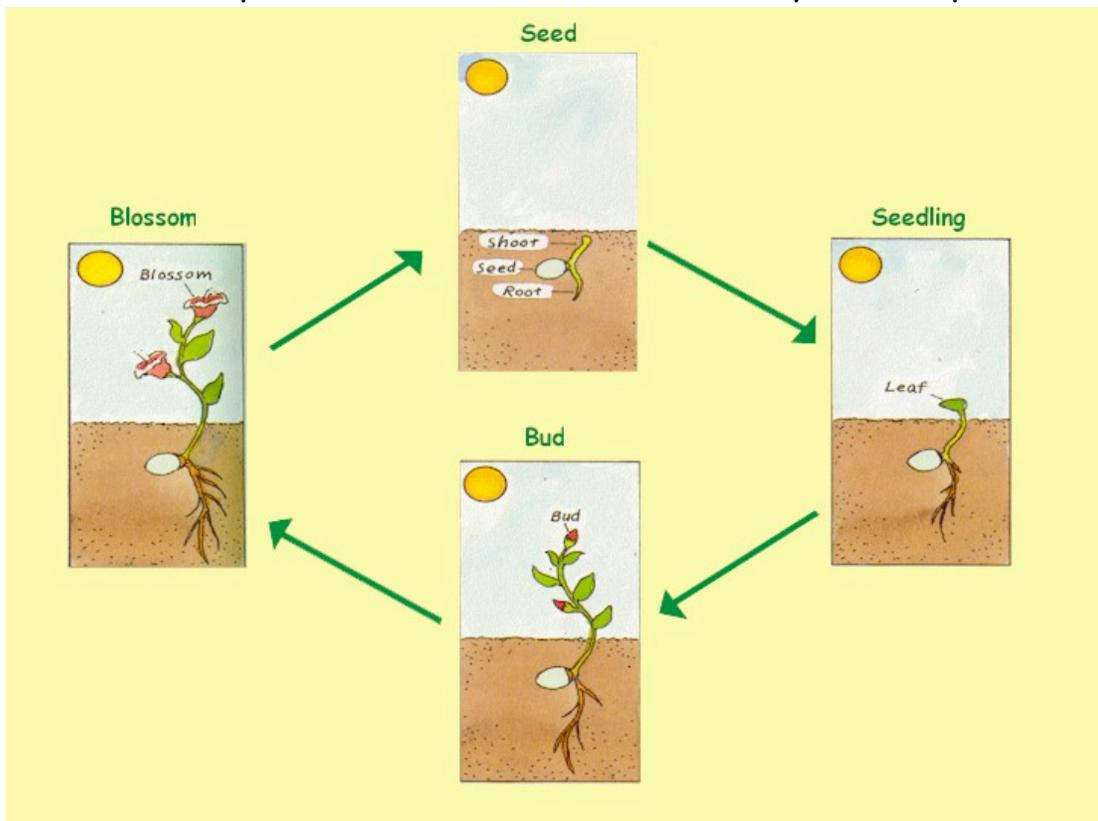
Flowers/blossoms- are the reproductive part of the plant. The flowers make the seeds. The ovary of a flower becomes the fruit.

Plants produce oxygen and food.

Seeds travel by gravity, wind, water, people, and animals.

Plants need water, air, soil, sunlight and a place to grow to survive.

Be able to place in correct order the life cycle of a plant.



Disaster	Positive Impact	Negative Impact
Fire	Soil can gain more nutrients because there are many minerals in ashes.	Animals have a difficult time finding food and shelter after fires.
Flood	Some species need floods to carry in wood and other materials needed for their shelters.	Other species could have their shelters destroyed by flooding. Some species can't survive in water.
Erosion	Erosion can carry fresh soil to new areas so that those areas will be fertile.	Erosion and run-off can carry pollution that is harmful to animals and plants.