"Nature of the Soil" *Name: _____*

Lesson Objectives	
• Explain how the resources soil provides help in supporting life.	• Explain the contents of soil.
• Describe the biological nature of soil.	• Describe the four ways plants use soil.
• Describe some agricultural uses of soil.	• Describe some nonagricultural uses of soil.

Soil provides a combination of resources on the earth's _____. The resources allow for _____.

What resources are provided?

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How do we benefit from these resources?

Why are soils important?

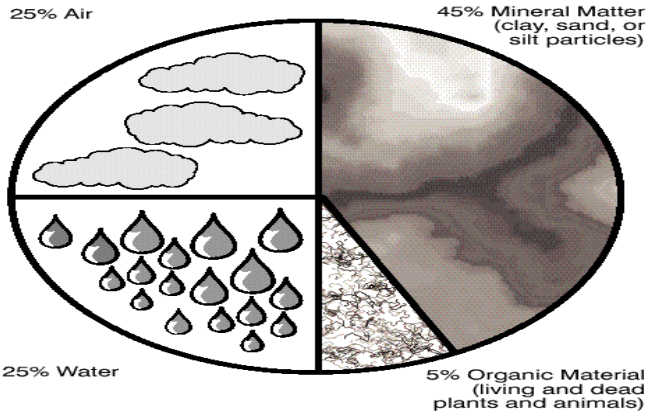
Plants _____ __ _____

_____ _____ _____

_____

_____ and _____ support human life.

Composition of Average Soil



4 Primary Components of Soil	
M_____ M _____	Accounts for about _____ of the soil, is partially decomposed rock material. – It is the sand, silt, and clay that is found in the soil. – These vary in amount depending on the type of soil. – The amounts of sand, silt, and clay also determine the soils ability to hold water and provide nutrients.
O _____ M_____	Accounts for about 5% of the soil, is partially decomposed plant and animal matter. – Most organic matter is from plant leaves, roots, and stems. – Organic matter gives soil its _____ _____. – Organic matter contributes to the soils _____ as well as improved _____and water holding capacity.
A____	(25% of soil volume) represents the space occupied by air. – When soils are wet the amount of air will be _____. – When soils are dry the amount of air will be _____. – There is a constant fluctuation in the amount of air and water found in the soil.
W____	Accounts for about _____of the soil, also part of the pore space in the soil. – When it rains water will enter the soil or flow off of the soils surface. – The process of water soaking into the soil is known as _____. – Once water is in the soil, movement downward is known as percolation. – A quality soil allows both kinds of water movement and is said to be _____.

3 Types of Water in the Soil	
1. _____	Water that drains through the pore spaces in the soil as a result of gravity. – Large Pores flow fast – Small Pores flow slow – Movement of water is referred to as leaching. – As water moves through the soil, it carries dissolved minerals, chemicals, and salts.
2. _____	_____ water - water that is held between the particles of soil against the forces of gravity. – It may move upward or sideways by capillary action. – Clay soils hold more capillary water since they have more pore spaces.
3.	– Water that forms a thin film around individual soil particles. – This water is unavailable to plants.

Living Organisms in the Soil	
_____ & _____	– Break down organic matter and release nutrients.
_____,_____, _____,_____ and _____	– Improve the soil **tilth**, the ease at which soil can be worked. – These organisms create openings in the soil as they tunnel. – This enhances drainage and improves air exchange.

How do plants use soil?	
	Provides firm support as roots grow.
Water	- -
Oxygen	– Nearly all living organisms need oxygen – Roots need oxygen too – This increases the need for good **soil aeratio**n, the exchange of soil and atmospheric air in order to maintain adequate oxygen for plant roots.
	13 of the 16 essential nutrients are obtained from soil.

What are some soil uses?	
Agriculture	**Non-Agriculture**

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