6.E.2.3-6.E.2.4

Key

Study Guide – Rocks, Soil, Conservation

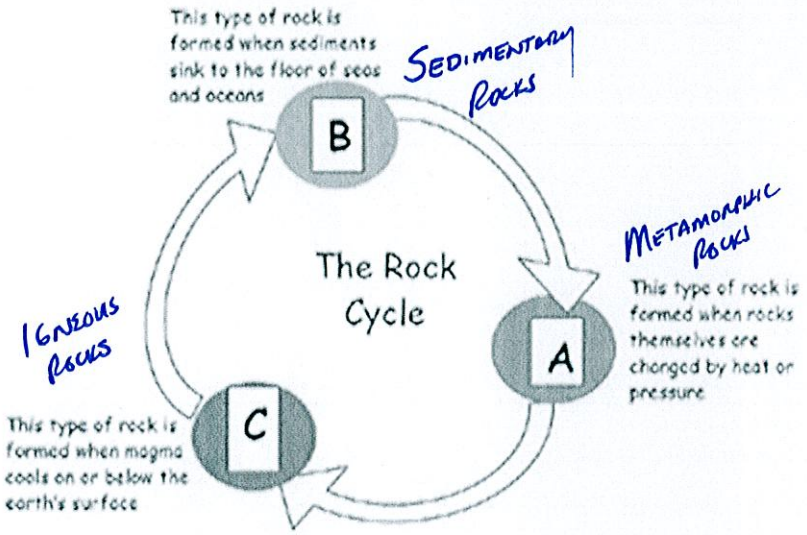
Rocks and Minerals

1) Sedimentary **rocks** - formed when sand, dirt, and other materials are squeezed together until they harden. Fossils are sometimes present.

2) Igneous **rocks** - were once melted and then cooled. They are formed form magma (lava).

3) Metamorphic **rocks** - formed by heat and pressure.

4) **Rock Cycle –** Label A, B and C and then explain what each type of rock can become.



5) Rocks & Minerals can be classified using physical attributes such as color, shape, texture, & hardness. Minerals are non-living solid, non-living objects formed in nature. Rocks are naturally formed solid made of one or more minerals.

Weathering/Erosion/Deposition

6) Chemical or Mechanical – Weathering of rock caused by freezing and thawing, animal actions, growth of plant roots and erosion.

7) Chemical or Mechanical – Weathering caused by water, oxygen (oxidation), carbon dioxide (carbonic acid), living organisms (make weak acids) and acid rain.

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Study Guide – Rocks, Soil, Conservation

Weathering/Erosion/Deposition

8) WEATHERING breaks down rock. EROSION moves rock that has been broken down. DEPOSITION is the resting place for rock that has been weathered and moved.

9) EROSION is the process where wind and rain wash TOPSOIL away, making it difficult for plants to grow and survive.

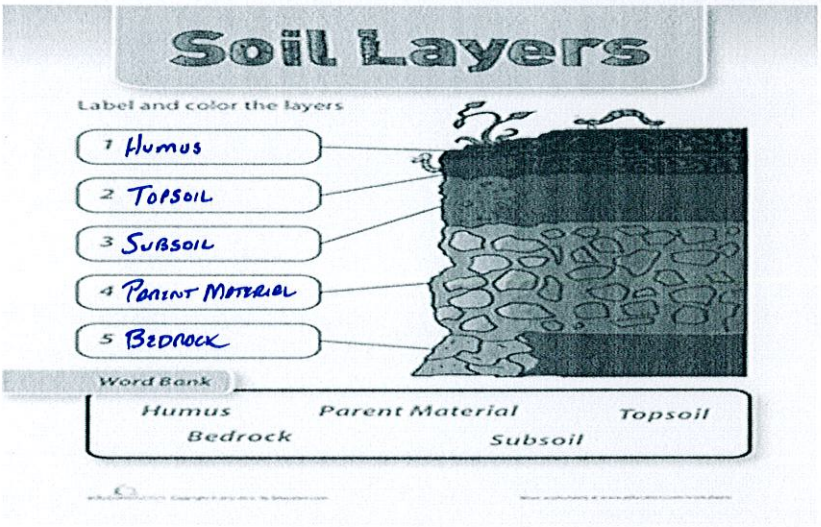
10) EROSION is the movement of weathered rock and soil. Moving WATER is the cause of most weathering.

Soil Horizons = Soil Layers = Soil Profile

11) Soil is the loose material in which plants can grow in the CRUST of the Earth. Soil is a mixture of four different materials: tiny pieces of ROCK, HUMUS, AIR and WATER.

12) Soil is considered a(n) NON-RENEWABLE resource and very important to humans because it takes close to 500 – 1,000 years to make 1 inch of soil.

13) Use the word bank to label each part



14) HUMUS is the part of soil made up of decayed living things. Plants absorb minerals from the soil. We then EAT the plants, which gives us the minerals that are found in soil.

15) WATER is an important part of soil. The plants take it in through the soil.

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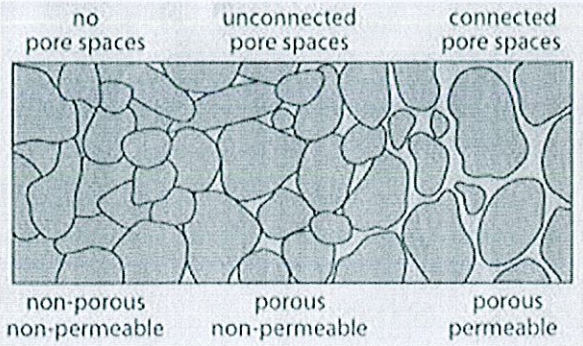
Study Guide – Rocks, Soil, Conservation

Soil Porosity and Permeability



16) Porosity is a property of soil too. We learned about sand, silt, and clay and their ability to retain water.

17) Types of Soil - Clay is made up of very small powdery grains and has small spaces between the grains which holds lots of water, making it sticky and difficult for plants to grow. Sand has large grains. This allows water to drain quickly, which keeps most plants from getting enough water.

18) Loam is a type of topsoil and used on farms. It is rich with humus and holds water and air well, making it ideal for plants to grow. This type of soil is usually dark brown or black.

Soil Type and What Determines the Rate of Soil Formation

19) Soil is Different from place to place because of the different materials found in the soil. The soil from your yard will look different from soil from your classmate's yard and contains different materials.

20) Soil comes in different colors. Soil is different colors because of the different minerals and materials found in soil. Example: Soil in North Carolina is a reddish-orange color because it is rich in Iron.

21) Soil has different Texture. You should be able to use different words to describe soil, such as; rough, sticky, rocky, sandy, gritty, smooth, etc.

22) Explain how climate (temperature/precipitation) and type of parent rock determine how slowly or quickly soil forms.

Temp / Precipitation

↑ Temp, ↑ Precipitation = ↑ Rate of Weathering

↓ Temp, ↓ Precipitation = ↓ Rate of Weathering

Parent Rock

↑ Hardness of Rock = ↓ Weathering Rate

↓ Hardness of Rock = ↑ Weathering Rate

Human Interactions –Consequences of Poor Soil Management

23) What was the Dust Bowl and how did it happen?

Long Period of Drought in Early 1900's where winds eroded much of the fertile topsoil. Caused by poor farming practices and long period of time without rain.

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Study Guide – Rocks, Soil, Conservation

Human Interactions - Soil Conservation

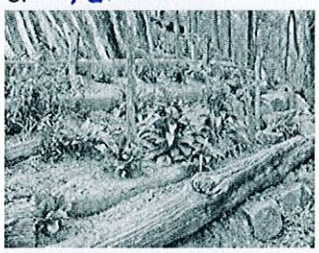
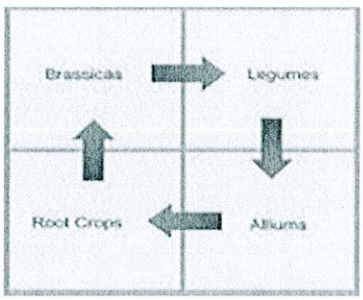
24) What is **soil conservation**? Why is it **important**?

SOIL MANAGEMENT TO PREVENT ITS DESTRUCTION. SOIL IS KEY FOR FOOD PRODUCTION AND WATER. WE NEED TO BE SMARTER AS OUR POPULATION SIZE INCREASES.

25) How can plants help prevent soil erosion?

PLANT ROOTS KEEP SOIL IN PLACE & PREVENT EROSION

26) Matching

A. CONTOUR PLOWING 	B. CONSERVATION PLOWING 	C. TERRACING 
*Plow along curve of a slope *Prevent rain water from washing away topsoil	*Disturb plants as little as possible *Dead plants are tilled into the ground so it can be used for nutrients by the soil.	* Graduated steps are commonly used to farm on hilly or mountainous terrain * Decrease erosion and surface runoff
D. CROP ROTATION 	E. COMPOSTING 	THE WORD BANK Use the words below to match the image, explanation and word
*Plant different crops from one year to the next *Prevent nutrient depletion *Prevents build-up of pests in soil	*Simple way to add nutrient-rich humus To depleted soil *Fuels plant growth and restores vitality to depleted soil.	✓ ***Composting*** ✓ ***Crop rotation*** ✓ ***Conservation plowing*** ✓ ***Contour plowing*** ✓ ***Terracing***

27) Explain **remote sensing** and why it is used for soil?

SATELLITE OR PLANE IMAGERY THAT HELP GATHER INFORMATION ON SOIL THAT COVERS MORE AREA QUICKLY & WITHOUT DISTURBING THE LAND.