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SCIENCE PARENT GUIDE – UNIT 4

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| ***IMPORTANT CONCEPTS YOUR STUDENT SHOULD KNOW AND ACTIVITIES TO DO AT HOME*** | |
| **ROCKS AND SOILS** | |
| **DESCRIPTION** | |
| Third grade Georgia Standards of Excellence in Science will engage in students obtaining, evaluating, and communicating information about the physical attributes of rocks, soils, and fossils. Students will generate questions and analyze data to classify rocks by their physical attributes (color, texture, luster, and hardness). They will conduct simple tests to determine the hardness of various rocks using the Mohs Scale of Hardness. Students will examine how weathering of rocks and minerals help to create soils. They will explore the various types of soils as well as their characteristics (texture, particle size, and color). | |
| **KEY WORDS TO KNOW** | |
| **Rock**- a hard, solid material that made of minerals and is found in nature.  **Property**- is character or quality that something has, such as color, height, weight, etc.  **Dull**-not bright or shiny; not able to reflect light  **Luster**-a way that the surface of a mineral reflects light  **Texture**- a property of matter that tells how smooth or rough its surface is  **Hardness**- a property of a mineral or a rock; it is tested by conducting a Moh’s Hardness test  **Friedrich Mohs**- a German mineralogist during the 1800 who invented a scale to measure mineral hardness.  **Mohs’ Scale of Hardness**-a scale used to measure the relative hardness of a mineral by its resistance to scratching. From softest to hardest, the ten minerals of the Mohs’ scale are talc (measuring 1 on the scale), gypsum, calcite, fluorite, apatite, orthoclase, quartz, topaz, corundum, and diamond (measuring 10 on the scale).  **Topsoil**-is the loose upper layer of the Earth’s surface where plants grow  **Subsoil-** a layer of soil just beneath topsoil and contains small rocks  **Bedrock-** is solid rock underneath the subsoil | **Clay**- Red soil with very tiny grains or particles of rock  **Loam**-Soil that is a mixture of humus, sand, silt, and clay  **Fossils:** preserved parts or traces of animals and plants that lived in the past  **Soil**- loose upper layer of the Earth’s surface where plants grow  **Humus-** The part of soil made up of broken-down pieces of dead plants and animals  **Sand-** soil with grains of rock that you can see with your eyes  **Weathering**- the process of wearing away or otherwise changing Earth’s surface caused by natural causes like water, ice, or wind.  **Erosion**- is the picking up and carrying of Earth’s materials to different places.  **Soil-** the top layer of the ground, in which plants grow; a mixture of sand, silt, clay, rock, and humus (plant and animal remains)  **Particle-** a relatively small or the smallest discrete portion or amount of something  **Environment**: the space and all the living and nonliving things around an organism  **Wind**: moving air  **Water:** a liquid that all living things need to survive  **Rocks**: relatively hard, naturally formed matter; stone  **AT HOME VOCABULRY STRATEGIES**  1. Read aloud with your child.  2. Use vocabulary words in daily conversations.  3. Build a word wall or window.  4. Play simple vocabulary games.  5. Relate words to real life experiences.  http://1.bp.blogspot.com/-QOn2S_p5PU8/Vg5eWgC54BI/AAAAAAAAPuU/lQnA-gp1UkM/s640/vocabulary.png |

SCIENCE PARENT GUIDE – UNIT 1

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| **Recommended Children’s Literature (Available at your local public library or Amazon.)** | | | |
| *If You Find a Rock* by Peggy Christian  *Rocks: Hard, Soft, Smooth, and Rough* by Natalie M. Rosinky *Dirt: The Scoop on Soil* by Natalie Rosinsky *The Amazing Dirt Book* by Paulette Bourgeois  *A Handful of Dirt* by Raymond Bial  *A Handful of Soil* by Seymour Simon | | *Rocks and Minerals* by Steve Parker *The Big Rock* by Bruce Hiscock *Rocks and Soil: Real Size Science* by Rebecca Rissman *Soil* by Christin Ditchfield *Soil* Geology Rocks! by Rebecca Faulkner*The Magic School Bus: Inside the Earth* by Joanna Cole | |
| **ROCKS AND SOIL** | | | |
| **Important Concepts**  **Addressed in this Unit** | **Sample Questions** | | **How You Can Help Your Child** |
| S3E1. Obtain, evaluate, and communicate information about the physical attributes of rocks and soils.  a. Ask questions and analyze data to classify rocks by their physical attributes (color, texture, luster, and hardness) using simple tests. (Clarification statement: Mohs scale should be studied at this level. Cleavage, streak and the classification of rocks as sedimentary, igneous, and metamorphic are studied in sixth grade.)  b. Plan and carry out investigations to describe properties (color, texture, capacity to retain water, and ability to support growth of plants) of soils and soil types (sand, clay, loam).  c. Make observations of the local environment to construct an explanation of how water and/or wind have made changes to soil and/or rocks over time. | Sasha went to Lowes and saw a bag of soil that read “great for growing flowers”. Which type of soil is most likely inside the bag?ClaySandLoamPebblesSoil is composed of the following materials:Rocks, minerals, humusMinerals, humus, waxGarbage, humus, rocksPlastic, humus, rocks Image result for rock   1. **LUSTER** describes how a rock reflects light. How would you describe this rock’s **LUSTER**? 2. Rough 3. Dull 4. Shiny 5. Hard 6. A solid made of two or more minerals is called… 7. Wood 8. Plastic 9. A rock 10. Concrete 11. Which of these is a tool that we can use to classify rocks by how hard they are? 12. Balance 13. Mohs Scale 14. Magnet 15. Hands lens | | **Digital Resources**  Science Curriculum STEMscopes or HMH via My Backpack Rock Cycle<http://studyjams.scholastic.com/studyjams/jams/science/rocks-minerals-landforms/rock-cycle.htm>Soils<http://studyjams.scholastic.com/studyjams/jams/science/rocks-minerals-landforms/soil.htm>Weathering and Erosion <http://studyjams.scholastic.com/studyjams/jams/science/rocks-minerals-landforms/weathering-and-erosion.htm>Fossils<http://studyjams.scholastic.com/studyjams/jams/science/rocks-minerals-landforms/fossils.htm>Brain Pop/Brain Pop Jr. via My Backpack[www.brainpop.com](http://www.brainpop.com)Rocks and mineralsSoil |
| **CHANGES TO SCIENCE STANDARDS: Students are expected to perform the practices while learning the content and understanding the crosscutting concepts.** | | | |
| **Science and Engineering Practices**  Students can use their understanding to investigate the natural world through the practices of science inquiry, or solve meaningful problems through the practices of engineering design.  **Crosscutting Concepts**  Provide students with connections and intellectual tools that are related across the differing areas of disciplinary content and can enrich their application of practices and their understanding of core ideas.  **Core Ideas**  Core ideas cover the four domains: physical sciences, earth and space sciences, life science, and engineering and technology. | |  | |