



Revision Date	April 21, 2020
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Department of Curriculum & Instruction

First Grade Science

Unit	1 - 06 Investigating Rocks, Soils, and Water
Time Frame	2/15-3/4
Big Ideas	<ol style="list-style-type: none"> 1. Different types of soil are compared by their observable properties. 2. Soil can be sorted and described based on particle size, texture, and color. 3. Different sources of water have different characteristics such as size, types of water, and movement. 4. We can describe and identify different sources of water based on observable characteristics such as color and smell.
Essential Questions	<ol style="list-style-type: none"> 1. What physical properties can we use to observe, compare, describe, and sort soil? 2. In what ways can we observe, describe, compare, and sort soil? 3. In what ways can natural sources of water be identified and described?

TEKS / Student Expectations	Skills	Concepts
<p>TEKS 1.7A Earth and space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems. The student is expected to observe, compare, describe, and sort components of soil by size, texture, and color</p>	<p>Observe, Describe, Compare, Sort</p>	<p>COMPONENTS OF SOIL</p> <p>Size</p> <ul style="list-style-type: none"> • Tiny particles (clay) • Small particles (silt) • Large particles (sand) <p>Texture</p> <ul style="list-style-type: none"> • Rough • Smooth • Bumpy • Grainy • Sticky <p>Color</p> <ul style="list-style-type: none"> • Gray • Black • Brown • Rust • Tan <p>Beige</p>



<p>TEKS 1.2(D) The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to record and organize data and observations using pictures, numbers, and words.</p>	<p>Record Organize</p>	<p>Students should start learning how to record data, they can draw pictures, make tally marks, use picture graphs, use real world objects, numbers, and words.</p>
<p>TEKS 1.3(C) The student knows that information and critical thinking are used in scientific problem solving. The student is expected to describe what scientists do.</p>	<p>describe</p>	<p>They should be able to describe the actions of a good scientist that are similar to the tasks that they do in the classroom. These tasks include:</p> <ul style="list-style-type: none"> • Questioning • Observing • Measuring • Classifying • Investigating • Predicting <p>Communicating</p>
<p>TEKS 1.4(A) The student uses age-appropriate tools and models to investigate the natural world. The student is expected to collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; non-standard measuring items; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums.</p>	<p>Collect Record Compare</p>	<p>1st grade students should be able to collect data from sources such as a demonstration thermometer, wind sock, other weather instruments like a weather vane or anemometer. They will also be recording their finding into a scientific journal and comparing their data with other students.</p>

Tier I Instructional Strategies – Classroom Instruction for All Students

Prior Content Connections

Kindergarten

K.7A – Observe, describe, and sort rocks by size, shape, color, and texture

K.7B – Observe and describe physical properties of natural sources of water, including color and clarity

K.7C – Give examples of ways rocks, soil, and water are useful

Misconceptions:

Students may think rocks, soil, and water are living organisms.

Students may think rocks, soil, and water have little value.

A good start to this unit is to take some small rocks (sandstone, gravel, or pumice, whatever you find outside) and have the students sit in a circle and pass the rocks around. Have them describe the rocks, what color are they, how do they feel, how heavy are they, etc. Put the rocks into a container big enough to hold the rocks with a tight fitting lid. Pass the container around and have the kids vigorously shake the container. Open the container and see how what they did (weathering) to the rocks has created soil.

You can sort samples of gravel, sand and rocks using sieves and slotted spoons to sort by size.
 Place small samples on paper plates and stick them to a clear tape into their journals use hand lenses to describe how the different soils look.
 Make samples of “mud” using different types of soils to see which ones stick together
 Put samples of soil on paper plates and add a little water. Ask them what the soils feel like.

Use pictures of different types of soils / sands / etc. to help them build their vocabulary. Try growing plants in small samples of soils. Use topsoil in one container, sand in another, loam in a third, and gravel in a fourth. Plant radish seeds in the different soils and see which ones will grow. I suggest using plastic cups with small holes in the bottom to allow for drainage and place them in a tray for drain off



The students need to learn about the different types of water sources on the earth. The minerals in the water will change the waters potability. Use containers of water labeled from different sources (river, stream, lake, ocean, etc.) and have the students place them in order by clarity. Talk to them about how when water has more stuff in it, it may no longer be safe to drink. If you don't have different sources, add different things to the water samples you have to make them look different. Show them examples of different sources of water, such as these from stemsscopes.



Discuss how even though they are all water, they are not all fit to drink. The salt in the ocean will make them sick, the water flowing over the moss may have bacteria in it, etc.

Use books such as [“Follow the Water from Brook to Ocean”](#) or [“River”](#) from Amazon to read and discuss how the water flows around the earth.

Teach them about the value of soils, and what's in it. You could use this story from [Ted.com](#) about the Terracotta warriors and how they were made of earth and are prized for their value.

Critical Writing Prompts

1. You want to explain to your friend that dirt is crushed rocks. How can you make him understand this?
2. Explain where the water you drank this morning came from.

Vocabulary

Clay – tiny particle found in soil	Salt water – water that contains salt	Everyday use
Component – one part of a total (or complete) object or substance	Sand – large particle found in soil	Food
Fresh water – water that does not contain salt	Silt – small particle found in soil	Gravel
Humus – material in the soil formed from decayed plants and animals	Soil – a mixture made of tiny pieces of rock, mineral particles, decayed plant and animal matter, water, and air	Jewelry
Lake – a large body of water surrounded by land	Stream – a small body of moving water	Mineral
	Useful – having a practical or beneficial use	Product
		Property



Natural source (of water) – naturally occurring, non-manmade source	Air	Size
Ocean – a very large area of salt water	Brick	Stone
Particle – an extremely small part or piece of matter	Building materials	Texture
Pond – a small body of still (non-moving) water	Color	Water
River – a large stream of water that runs into a lake or ocean	Decoration	
Rock – a solid mixture of minerals that was formed in the Earth's crust		

Resources

**The suggested resources are one of many ways to address the TEKS student expectation.*

[ThinkCentral textbook](#)

[Texas gateways](#)

[Lead4ward Instructional Strategies Playlist](#)

STEMscopes – if your campus purchased it.