

**Big Idea: Earth/Rock Cycle/ Fossils – Grading Period 1**

**Inquiry Questions**

Science:

- What are the properties of soil?
- Is soil living or non-living?
- How do the sun, moon, and stars make predictable patterns?

Technology:

- How has technology hurt or improved soil

Engineering:

- How do you make compost?

Mathematics:

- What are the attributes of soil?
- Which soil is the best for grass, flowers,...etc?

Social Studies:

- What kind of soil do you observe at home, school, playground...etc?
- How does soil react in different seasons?
- Where do we find each kind of soil (sand, silt, clay)?

**Content Area    Grade Level Standards**

<b>Science</b>	<p>1.ESS.1 Use observations of the sun, moon, and stars to describe patterns that can be predicted.</p> <p>1.ESS.2 Observe and compare properties of sand, clay, silt, and organic matter. Look for evidence of sand, clay, silt and organic matter as components of soil samples.</p> <p>1.ESS.3 Observe a variety of soil samples and describe in words and pictures the soil properties in terms of color, particle size and shape, texture, and recognizable living and nonliving items.</p>
<b>Technology</b>	<p>STL 2.C Tools are simple objects that help humans complete tasks.</p> <p>STL 1.A The natural world and human-made world are different.</p> <p>STL5.A Some materials can be reused and/or recycled.</p>
<b>Engineering</b>	<p>STL 9.B Expressing ideas to others verbally and through sketches and models is an important part of the design process.</p> <p>STL 10.A Asking questions and making observations helps a person to figure out how things work.</p>
<b>Mathematics</b>	<p>1.G.2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Students do not need to learn formal names such as “right rectangular prism.”)</p> <p>1.OA.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p>

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1.MD.2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

1.MD.1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.

1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. (See Table 1.)

1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

1.NBT.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

1.NBT.6. Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

**Social Studies**

1.3.2 Identify and describe continents, oceans, cities and roads on maps and globes.

1.3.4 Identify and describe physical features\* and human features\* of the local community including home, school and neighborhood.

1.3.6 Explain the effect of seasonal change on plants, animals, and people.

1.2.4 Describe ways that individual actions can contribute to the common good of the community. (Individuals, Society and Culture)

**ELA**

**Reading- Informational text-**

CCSS.ELA-Literacy.RI.1.1 Ask and answer questions about key details in a text.

CCSS.ELA-Literacy.RI.1.2 Identify the main topic and retell key details of a text.

CCSS.ELA-Literacy.RI.1.3 Describe the connection between two individuals, events, ideas, or pieces of information in a text.

CCSS.ELA-Literacy.RI.1.4 Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.

CCSS.ELA-Literacy.RI.1.5 Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.

CCSS.ELA-Literacy.RI.1.6 Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

CCSS.ELA-Literacy.RI.1.7 Use the illustrations and details in a text to describe its key ideas.

CCSS.ELA-Literacy.RI.1.8 Identify the reasons an author gives to support points in a text.

CCSS.ELA-Literacy.RI.1.9 Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).

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CCSS.ELA-Literacy.RI.1.10 With prompting and support, read informational texts appropriately complex for grade 1.

### Writing

CCSS.ELA-Literacy.W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

CCSS.ELA-Literacy.W.1.5 With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.

CCSS.ELA-Literacy.W.1.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

CCSS.ELA-Literacy.W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions).

CCSS.ELA-Literacy.W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

### Speaking and Listening

CCSS.ELA-Literacy.SL.1.1 Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and larger groups.

CCSS.ELA-Literacy.SL.1.1a Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

CCSS.ELA-Literacy.SL.1.1b Build on others’ talk in conversations by responding to the comments of others through multiple exchanges.

CCSS.ELA-Literacy.SL.1.1c Ask questions to clear up any confusion about the topics and texts under discussion.

CCSS.ELA-Literacy.SL.1.2 Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

CCSS.ELA-Literacy.SL.1.3 Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

CCSS.ELA-Literacy.SL.1.4 Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.

CCSS.ELA-Literacy.SL.1.5 Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

CCSS.ELA-Literacy.SL.1.6 Produce complete sentences when appropriate to task and situation. (See grade 1 Language standards 1 and 3 [here](#) for specific expectations.)

## Science Process Standards

### Science Process Standards

#### **The Nature of Science**

- Use a scientific notebook to record predictions, questions and observations about data with pictures, numbers or in words.
- Conduct investigations that may happen over time as a class, in small groups, or independently.
- Generate questions and make observations about natural processes.
- Make predictions based on observations.
- Discuss observations with peers and be able to support your conclusion with evidence.
- Make and use simple equipment and tools to gather data and extend the senses.
- Recognize a fair test.

#### **The Design Process**

- Identify a need or problem to be solved.
- Document the design throughout the entire design process.
- Brainstorm potential solutions.
- Select a solution to the need or problem.
- Select the materials to develop a solution.
- Create the solution.
- Evaluate and test how well the solution meets the goal.
- Communicate the solution with drawings or prototypes.
- Communicate how to improve the solution.

## Standards for Mathematical Practice

### Mathematical Practices

- MP.1. Make sense of problems and persevere in solving them.
- MP.2. Reason abstractly and quantitatively.
- MP. 3 Construct viable arguments and critique the reasoning of others.
- MP.4. Model with mathematics.
- MP.5. Use appropriate tools strategically.
- MP.6. Attend to precision.
- MP.7 Look for and make use of structure.
- MP. 8 Look for and express regularity in repeated reasoning.

**Plan of Work**

**Common Misconceptions**

What misconceptions might students have with these ideas?

- All soil is made the same way.
- Soil only has one use (planting).
- Soil only contains nonliving objects.

**Suggested Activities**

Create a classroom compost where students would observe the effect of earthworms inside of the compost. Students will explore the soil individually and discuss and record in their journal the observations they notice.

**Suggested Vocabulary**

Sand, silt, clay, soil, dirt, observation, properties, humus, seasons, weathering, erosion, fossils, living, non-living

**Resources:**

- [http://www.bottlebiology.org/investigations/decomp\\_main.html](http://www.bottlebiology.org/investigations/decomp_main.html)
- [http://files.earthday.net/lesson%20plans/bobbybigfoot/ES-MS\\_Classroom\\_Composting.pdf](http://files.earthday.net/lesson%20plans/bobbybigfoot/ES-MS_Classroom_Composting.pdf)
- <http://www.friendlywormguy.com/worm-stories/composting-in-the-12-classroom/>

**Assessment**

Type of Assessment	Example
<input checked="" type="checkbox"/> Observation	Students will observe various types of soil and record observations.
<input checked="" type="checkbox"/> Oral Questioning	Ask students questions about the properties of soil.
<input checked="" type="checkbox"/> Exit Slip	Which soil will grow plants better than the others.
<input checked="" type="checkbox"/> Journal	Students will record, daily learning, thinking, and information learned throughout unit.
<input type="checkbox"/> Graphic Organizers	
<input type="checkbox"/> Self-Assessment	
<input type="checkbox"/> Writing Prompt	
<input type="checkbox"/> Presentation	
<input type="checkbox"/> Electronic media	
<input type="checkbox"/> Think Pair Share	
<input type="checkbox"/> Whiteboards	
<input checked="" type="checkbox"/> Experiment/projects	Creating a classroom compost

**Plan of Work**

<input checked="" type="checkbox"/> Quiz	
<input checked="" type="checkbox"/> 60 Second Write	Pre/post assessment: ask students what they know about soil.
<input type="checkbox"/>	
<input type="checkbox"/>	