

## Lesson 2: Exploring Soil Textures

**Grade Level:** 1<sup>st</sup> grade

**Time:** 1 hour

**Subjects:** ELA, Science

**Overview:** This lesson is Lesson 2 of 5 in *The Soil Neighborhood* unit within the *Growing Readers* micro-curriculum, based on a series of books by Kansas author Dan Yunk. It is a hands-on science and literacy lesson focused on exploring the textures and components of soil through direct observation and investigation. Students build understanding by examining sand, clay, rocks, and topsoil, engaging in structured discussions, and drawing on their experiences with soil, land, and agriculture in Kansas. This lesson reinforces phonological awareness and first-grade writing skills through explicit instruction in phoneme isolation, blending, and segmenting, as well as sentence writing that emphasizes capitalization, spacing, punctuation, and the use of nouns and verbs to clearly communicate meaning, supporting deeper learning and cross-curricular connections in subsequent lessons.

**Skillset:** Soil types, texture exploration, observation, vocabulary, descriptive language, phonological awareness, phonics, oral language, sentence structure, grammar and conventions, and informative drawing and writing.

### **Kansas Academic Standards:**

#### *Kansas ELA Standards*

**RF.1.1** Demonstrate understanding of the organization and basic features of print.

**RF.1.1.a** Demonstrate book orientation knowledge.

**RF.1.1.b** Have an understanding of important reading terminology (e.g., word(s), letter(s), beginning of sentence, top of the page, bottom of the page).

**RF.1.1.c** Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).

**RF.1.2** Demonstrate understanding of phonemes (sounds), syllables, and spoken words.

**RF.1.2.a** Distinguish long from short vowel sounds in spoken single-syllable words

**RF.1.2.b** Orally produce single-syllable words by blending phonemes, including consonant blends in the initial and final position.

**RF.1.2.c** Isolate and produce initial, medial vowel and final phonemes in spoken single-syllable words.

**RF.1.2.d** Orally segment single-syllable words into their complete sequence of individual phonemes.

**W.1.10** Demonstrate command of the conventions of standard English grammar and usage when writing.

**W.1.10.a** Correctly produce upper- and lowercase letters.

**W.1.10.b** Use common, proper and possessive nouns when writing.

**W.1.10.c** Use singular and plural nouns with matching verbs in basic sentences.

**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.

### *Science Standards*

**1-LS1-1** Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

### **National Agriculture Literacy Outcomes:**

*Plants and Animals for Food, Fiber, and Energy*

**T2.K-2.e** Identify the importance of natural resources (e.g., sun, soil, water, minerals) in farming.

### **Objectives**

#### *Science Objectives*

Students will be able to:

- observe and describe the texture of different soil types (sand, clay, rocks, topsoil).
- compare how different soils feel and explain how those differences help plants grow.
- explain that soil is made of different parts that support plant needs.

#### *English Language Arts Objectives*

Students will be able to:

- isolate, blend, and segment phonemes in soil-related words.
- distinguish long and short vowel sounds in single-syllable words.
- produce words orally by blending phonemes.
- write 2–3 informative sentences about soil.
- utilize capital letters, spacing, and ending punctuation correctly.
- use common nouns (soil, sand, rocks), singular and plural nouns, and matching verbs in simple sentences.

### **Materials Needed**

- Soil samples in labeled containers:
  - Sand
  - Clay
  - Rocks
  - Topsoil
- Small trays or paper plates (one per soil type)
- Magnifying glasses (optional)
- Chart paper and markers
- Student writing/drawing paper
- Crayons or pencils
- Hand wipes or paper towels

### **Lesson Procedures**

1. Activating Prior Knowledge (Connecting to *The Soil Neighborhood*)
  - a. Explain to students: “*In The Soil Neighborhood*, we learned that soil is made up of different neighbors like sand, clay, and rocks. Even though we are not reading the book today, we are going to explore those soil neighbors with our hands and eyes, just like scientists.”
  - b. Show pictures from the book or briefly reference familiar characters (Clay, Rocky, Sandy) without rereading.
  - c. Ask students:



- “What kinds of soil neighbors do you remember?”
  - “Do you think all soil feels the same?”
2. Soil Texture Exploration (Hands-On Investigation)
- Set up four soil sample stations with trays. Each station should have one soil sample.
- a. Teacher models expectations:
    - “We look carefully, touch gently, and describe what we notice using words.”
    - “We do not throw soil.”
    - “We do not put soil in our mouths.”
  - b. At each soil sample station, prompt students to use descriptive language:
    - How does it feel? (smooth, rough, sticky, gritty)
    - Does it stick together or fall apart?
    - Is it made of big pieces or tiny pieces?
  - c. Explain to students: “Scientists use their senses and words to describe what they observe. Today, you are soil scientists.” Record student responses on chart paper using complete sentences under the headings: sand, clay, rocks, and topsoil.
3. Vocabulary & Oral Language Development
- a. Introduce and reinforce vocabulary using real samples:
    - Soil – all layers of dirt
    - Sand – tiny, gritty pieces
    - Clay – smooth and sticky soil
    - Rocks – hard pieces in soil
    - Topsoil – the top layer of soil where plants grow best
  - b. Encourage students to respond using complete sentences and ask:
    - “Which soil feels smooth?”
    - “Which soil is rough?”
    - “Which soil would plants like best?”
4. Phonological Awareness
- a. Explain to students: “We used words to talk about soil. In first grade, we listen closely to the sounds in words. Words are made of sounds called phonemes. Today, we are going to listen for sounds in our soil words.” Say each word clearly:
    - Sand
    - Rock
    - Clay
    - Soil
  - b. Prompt students:
    - “What sound do you hear at the beginning of sand?”
    - “Listen to ‘clay.’ Is the vowel sound long or short?”
    - “What sound do you hear in the middle of rock? Is that a short vowel or a long vowel?”
    - “What sound do you hear at the end of soil?”
  - c. Explain to students: “Now I am going to say some sounds slowly, and I want you to blend them to tell me what word they make.” Say each sound separately and have students respond orally:
    - “/s/ /a/ /n/ /d/ - what word?”
    - “/r/ /o/ /k/ - what word?”
    - “/k/ /l/ /ā/ - what word?”
  - d. Explain to students: “Now we are going to break a word apart, or segment it, into sounds.”

- e. Model to students: “The word sand has four sounds: /s/ /a/ /n/ /d/.”  
Students segment:
- Rock
  - Clay
  - Soil
5. Shared Writing & Print Concepts
- a. Explain to students: *“When soil scientists are at work, it is very important that they write down their observations, or what they see. Since we are soil scientists today, we are going to write ours down also. It’s important to use clear sentences so others understand your ideas. Watch me first.”*
  - b. On chart paper, write:  
“Soil is important. Soil is made of sand, clay, and rocks. Rocks are hard.”  
Teacher explicitly models:
    - Uppercase letter at the beginning of each sentence.
    - Lowercase letters within words.
    - Spacing between words.
    - Punctuation at the end of the sentence.
  - c. Reread the sentences aloud while pointing to each word.
  - d. Ask students:
    - *“How many sentences did I write?”*
    - *“Where does my first sentence start?”*
    - *“How do we know where my first sentence ends?”*
    - *“What do you notice about the spaces between my words?”*
  - e. Point to the word ‘soil’ in the first sentence and explain to students: *“The word soil is a singular noun, and it means one thing.”*
  - f. Point to the word ‘is’ in the first sentence and explain to students: *“When we talk about one thing, we use the word is.”*
  - g. Point to the word rocks in the third sentence and explain to students: *“The word rocks is a plural noun, which means more than one thing.”*
  - h. Point to the word are in the third sentence and explain to students: *“When we talk about more than one thing, we use the word are.”*
  - i. Say a contrast aloud:
    - *“Soil is important.”*
    - *“Rocks are hard.”*
  - j. Ask students:
    - *“Is soil one thing or more than one?”*
    - *“Do we say soil is or soil are?”*
    - *“Are rocks one thing or more than one?”*
  - k. Explain to students: *“Writers choose words that sound right and tell the reader clearly what they mean. Now it is your turn to write like a soil scientist, and you will write your own sentences about soil. Just like I did, you will:*
    - *Start with an uppercase letter,*
    - *Use nouns, or words that name things,*
    - *Choose words like is or are that sound right, and*
    - *End your sentence with a punctuation mark.”*
6. Student Writing Component
- a. Provide sentence starters on the chart paper:
    - “Soil feels...”

- “I touched...soil.”
  - “Soil helps plants...”
  - “The soil is...”
- b. Provide a word bank for students. Label each bank as follows:
- Nouns (things)
    - Soil
    - Sand
    - Clay
    - Rock
    - Topsoil
    - Plants
    - Roots
    - Water
  - Adjectives (words that describe things)
    - Smooth
    - Rough
    - Sticky
    - Gritty
    - Hard
    - Soft
  - Verbs (action words)
    - Feels
    - Is
    - Are
    - Helps
    - Grow
- c. Have students:
- Write 2-3 sentences about soil.
  - Draw a picture that matches what they wrote.
- d. When students are writing, the teacher should support:
- Sound-by-sound prompting
  - Uppercase letters and punctuation
  - Noun and verb choices that sound right
  - Rereading for meaning
- e. Once finished, invite students to:
- Read one sentence they wrote
  - Share what they want their readers to learn about soil.
- f. Prompt: *“You named your topic, shared facts, and finished your writing. That is informational writing.”*
7. Discussion & Reflection
- a. Gather students together in a group.
  - b. Ask students:
    - *“Which soil was your favorite to touch?”*
    - *“Why do you think soil needs different parts?”*
8. Kansas Connection
- a. Explain to students: *“We live in Kansas, and Kansas is a farming state. That means a lot of our food comes from plants and animals grown right here. For farmers to grow crops and raise animals, they need healthy soil.”*
  - b. Show a simple map of Kansas and point to where the school is located

- c. Explain to students: *“Kansas has many different landscapes. Some places have sandy soil, some places have clay soil, and many places have topsoil mixed with rocks. Some soil is even different colors. The kind of soil in the ground helps farmers decide what they can grow.”*
  - d. Connect to students’ experiences:
    - Gardens at home
    - Fields they pass while riding the bus
    - Ranches, pastures, or wheat fields nearby
  - e. Ask students
    - *“Have you seen fields like this near your house?”*
    - *“What do you think farmers grow in those fields?”*
9. Vocabulary Review
- a. Review vocabulary words
    - Soil – all layers of dirt
    - Sand – tiny, gritty pieces of rock
    - Clay – smooth, sticky soil
    - Rocks – hard pieces in soil
    - Topsoil – the top layer of soil where plants grow best
  - b. Students use words orally in sentences

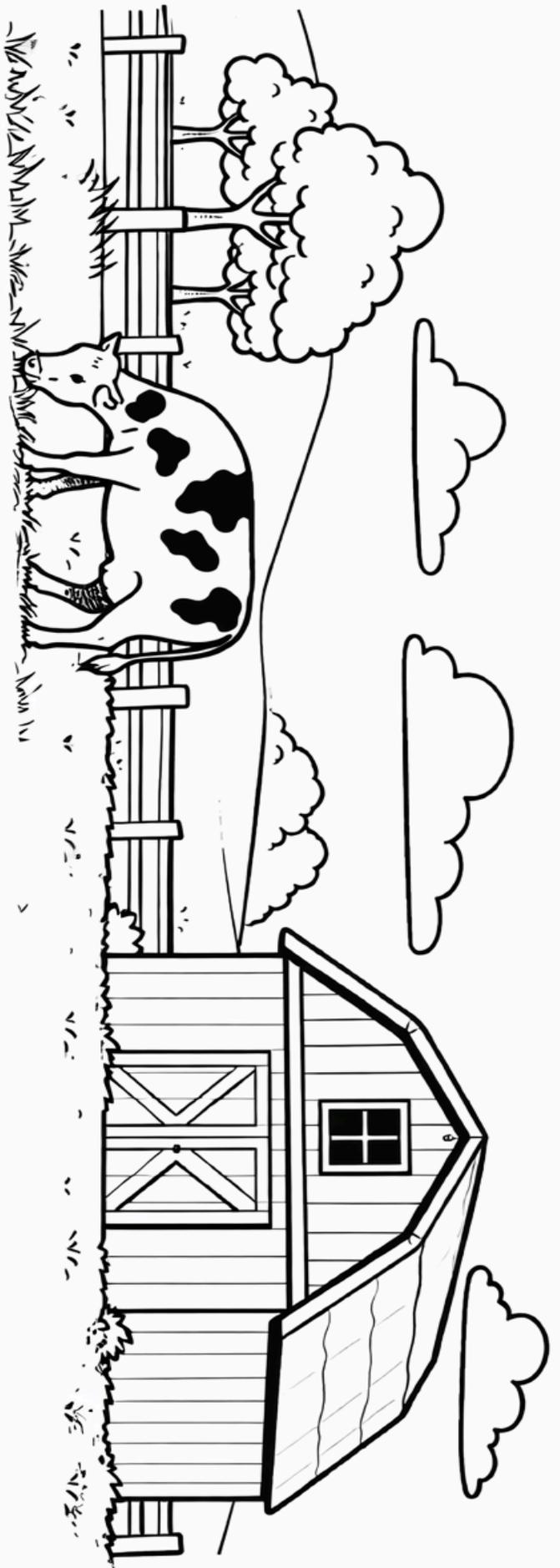
**Assessment:**

Student understanding is assessed through ongoing formative and observational measures embedded throughout the lesson, including teacher observation, student discussion, hands-on investigation, and application of phonological awareness and writing skills during shared and independent writing tasks. Student writing samples, drawings, and oral responses provide evidence of understanding of soil concepts, accurate use of vocabulary, and appropriate application of first-grade writing conventions.

**Supplemental Activities:**

Have students color the soil layers coloring sheet provided below.

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**TOPSOIL**



**SAND**



**CLAY**



**ROCK**