



Lesson 2: Exploring Soil Textures

Grade Level: 2nd 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 an integrated science and literacy lesson in which students investigate the observable properties of soil materials through hands-on exploration. Students examine sand, clay, rocks, and topsoil to describe and compare their textures and physical characteristics, engaging in structured discussion. Using their observations, students participate in shared writing, then independently write a 3–5-sentence informative text that introduces the topic of soil, develops ideas using facts and definitions, and includes a concluding sentence. The lesson emphasizes second-grade informational writing skills, including organization, revision, and the application of writing conventions and reference tools, while reinforcing connections to agriculture and farming in Kansas, supporting deeper learning and cross-curricular connections in subsequent lessons.

Skillset: Soil material investigation, observation, and classification of physical properties, comparison of materials, science vocabulary development, descriptive and academic language, oral discussion, informational writing, paragraph organization, sentence expansion, use of facts and definitions, revising and editing with guidance, writing conventions, and use of reference materials.

Kansas Academic Standards:

Kansas ELA Standards

W.2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section

W.2.5 With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.

W.2.11 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

W.2.11.e Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.

Science Standards

2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

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, describe, and compare different soil materials (sand, clay, rocks, topsoil) based on their observable properties, including texture, size, and how the materials behave when handled.
- Classify soil materials by describing similarities and differences in their physical characteristics.

English Language Arts Objectives

Students will be able to:

- Write a 3–5 sentence informative text about soil that introduces the topic, includes facts and definitions, and ends with a concluding sentence.
- Revise and edit writing with guidance to improve clarity and focus.
- Use correct capitalization, spacing, punctuation, and spelling in writing.
- Use reference materials to check and correct spelling.

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 rereading the book today, we are going to explore those soil neighbors just like scientists do, by observing, touching, and describing what we notice.”*
 - b. Show pictures from the book or briefly reference familiar characters (Clay, Rocky, Sandy) without rereading.
 - c. Ask students:
 - *“What soil neighbors do you remember from the story?”*
 - *“Do you think all soil feels the same or different?”*
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 study materials by observing their properties. Today, you are investigating soil. 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. Shared Writing & Print Concepts
- a. Explain to students: “When scientists write, they don’t just write one sentence. They write several sentences that work together to teach the reader. Today, I am going to show you how to write an informational paragraph about soil that introduces the topic, adds facts, and ends with a conclusion.”
 - b. On chart paper, write one sentence at a time, thinking aloud: “Soil is important.” Explain to students: “This sentence is my topic sentence. It tells the reader what the writing is about.”
 - c. Write the second sentence: “Soil is made of sand, clay, and rocks.” Explain to students: “This sentence adds a fact that explains more about soil.”
 - d. Write the third sentence: “Sand feels gritty, and clay feels sticky.” Explain to students: “This sentence gives details from our observations.”
 - e. Write the fourth sentence: “Topsoil helps plants grow strong roots.” Explain to students: “This sentence tells why soil is important for plants.”
 - f. Write the concluding sentence: “Soil helps plants grow.” Explain to students: “This sentence wraps up the ideas and reminds the reader what is important.”
 - g. Reread all sentences aloud, pointing to each one, then ask students:
 - “Which sentence introduces the topic?”
 - “Which sentences add facts and details?”
 - “Which sentence sounds like an ending?”
 - h. Remind students: “In informational writing, each sentence has a job.”
 - i. Briefly remind students of writing conventions:
 - Each sentence starts with an uppercase letter
 - Spaces between words
 - End sentences with a punctuation mark
 - j. Explain to students: “Writers use conventions to help readers understand their writing.”

- k. Model revising while thinking aloud: “I’m going to reread to see if my writing makes sense.” Model a small revision (e.g., adding an adjective or clarifying phrase).
 - l. Explain to students: “Writers reread and revise to make their ideas clearer. Now you will write your own informational writing about soil. Remember, your sentences should work together to teach the reader.”
5. Student Writing Component
- a. Provide sentence starters on the chart paper:
 - “Soil is important because...”
 - “Soil is made of...”
 - “Soil feels...”
 - “Soil helps plants by...”
 - “Soil is important to plants because...”
 - b. Explain: *“Each sentence should tell your reader something new about soil.”*
 - c. Post and model use of word banks as reference tools. 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
 - d. Explain to students: *“Writers use reference tools to help them spell words correctly. You can use the word bank or a classroom dictionary to check your spelling.”*
 - e. Students will:
 - Write 3-5 informative sentences about soil
 - Introduce the topic in the first sentence
 - Include facts or definitions from their soil observations
 - End with a concluding sentence
 - Use correct capitalization, spacing, and punctuation.
 - f. When students are writing teacher should support:

- Prompting students to add facts or details
 - Spelling using reference materials
 - Checking conventions during writing.
- g. After students finish their first draft explain: *“Good writers reread their work to make it better.”*
- h. Guide students to:
- Reread each sentence aloud
 - Check that each sentence makes sense and stays on top
 - Add a word or detail if a sentence is unclear
 - Fix capitalization, punctuation, or spelling with support.
- i. Prompt students:
- *“Can you add one more fact here?”*
 - *“Does this sentence tell the reader something new?”*
 - *“What can you fix to make this sentence clearer?”*
6. Discussion & Reflection
- a. Invite students to:
- Share one or two sentences from their writing
 - Explain what they want the reader to learn about soil
- b. Explain to students: *“You introduced your topic, shared facts, and wrote a conclusion. That is informational writing.”*
- c. Ask students:
- *“Which soil was your favorite to observe?”*
 - *“How are different soils the same or different?”*
 - *“Why do you think plants need good soil?”*
7. 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?”*
 - *“Why do you think soil matters to farmers?”*
8. 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 complete sentences

Assessment:

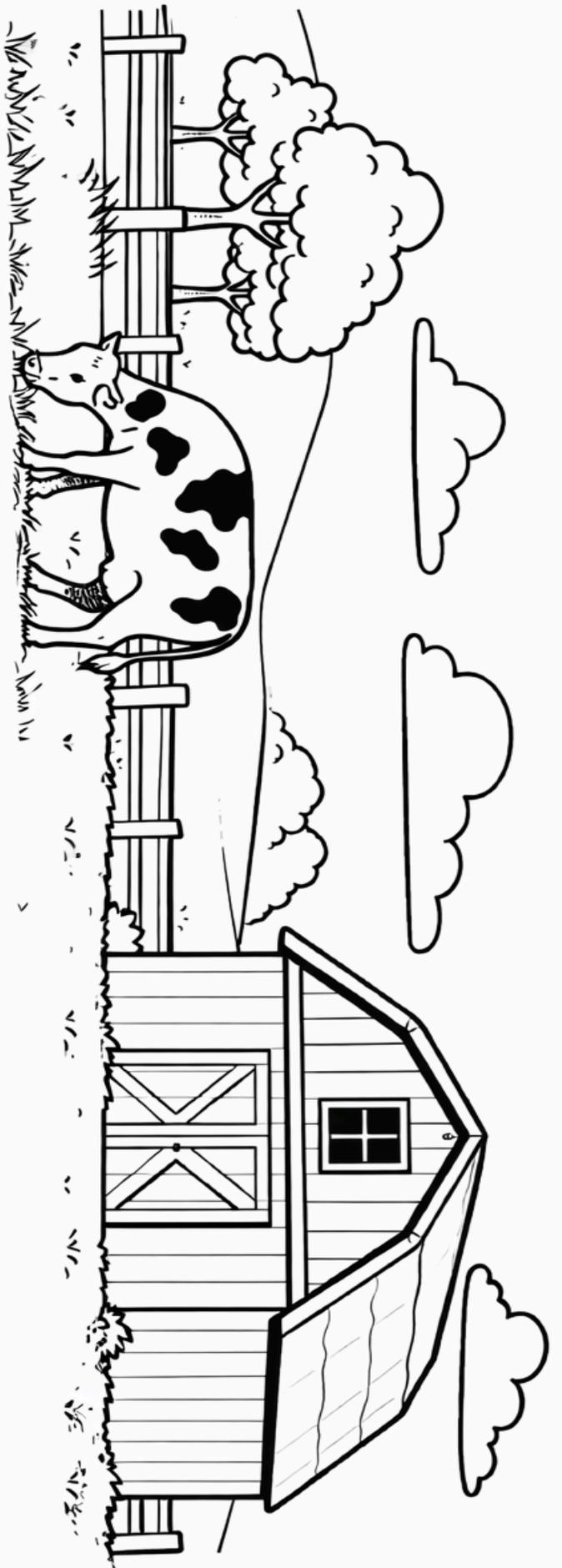
Student understanding is assessed through teacher observation during soil investigations, participation in discussion, and completion of a 3–5 sentence informative writing piece about soil. Student writing demonstrates the ability to introduce a topic, include facts and definitions from observations, provide a concluding sentence, apply grade-appropriate writing conventions, and revise and edit with guidance.

Supplemental Activities:

Have students color the soil layers coloring sheet provided below.

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TOPSOIL

SAND

CLAY

ROCK

