



### Lesson 3: Soil Helpers and Healthy Soil

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

**Time:** 1 hour

**Subjects:** ELA, Science

**Overview:** This lesson is Lesson 3 of 5 in *The Soil Neighborhood* unit within the Growing Readers micro-curriculum, based on a series of books written by Kansas author Dan Yunk. Lesson 3 serves as an integrated science and literacy lesson focused on a purposeful second read of *The Soil Neighborhood* to deepen student understanding of soil as a living system. Students build knowledge by identifying and discussing the roles of earthworms, bacteria, and minerals in maintaining healthy soil while engaging in structured discussions, multimedia exploration, and hands-on center-based activities. Through categorization, movement, observation, and oral language practice, students draw on their experiences with soil, land, and agriculture in Kansas. This lesson strengthens listening comprehension, vocabulary development, collaborative conversation, and early informational writing skills, supporting deeper learning and cross-curricular connections in subsequent lessons.

**Skillset:** Listening comprehension, rereading for understanding, collaborative discussion, vocabulary development, categorization, questioning and clarifying meaning, oral language, observation, modeling, informational writing, sentence construction, soil health concepts, and place-based connections.

#### **Kansas Academic Standards:**

##### *Kansas ELA Standards*

**RI.K.13** Actively engage in individual or group readings of informational text with purpose and understanding.

**SL.1.1** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and large groups.

**SL.1.1.a** 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).

**SL.1.1.b** Build on others' talk in conversations by responding to the comments of others through multiple exchanges.

**SL.1.1c** Ask questions to clear up any confusion about the topics and texts under discussion.

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

**RI.1.12** With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings.

**RI.1.12.a** Sort words into categories to gain a sense of the concepts the categories represent.

**RI.1.12.b** Define words by category and by one or more key attributes.

**RI.1.12.c** Identify real-life connections between words and their uses.

**RI.1.12.d** Distinguish shades of meaning among verbs differing in manner by defining or choosing them or by acting out the meanings.

**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.

**1-LS1-2** (*Supporting Standard*) Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

#### **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:

- identify that soil is made of both living and nonliving parts.
- describe how earthworms, bacteria, and minerals help keep soil healthy.
- explain that healthy soil supports plant growth.

##### *English Language Arts Objectives*

Students will be able to:

- actively participate in a second read-aloud with a clear listening purpose.
- ask and answer questions about key details presented through text and media.
- utilize new soil-related vocabulary during collaborative discussions.
- sort and categorize soil components to build conceptual understanding.
- write two or more related informative sentences about soil helpers that include a topic, facts, and a simple sense of closure.

#### **Materials Needed**

- *The Soil Neighborhood* by Dan Yunk
- Chart paper and markers
- Smartboard/projector for YouTubeKids Video: Soil Is Alive!  
<https://www.youtubekids.com/watch?v=Q-J2FErZHuA>
- Plastic or rubber earthworms
- Clear plastic container or jar
- Soil (or layered sand/soil)
- Water
- Sorting cards and mats (living vs. nonliving soil components) provided below
- Lined writing paper (with space for drawing)
- Sentence starters and vocabulary chart (posted or displayed)
- Crayons or pencils

#### **Lesson Procedures**

1. Activating Prior Knowledge
  - a. Gather students and explain: "In our last lesson, we explored how soil feels. Today, we are going to reread *The Soil Neighborhood*. This time, we are listening very carefully because we want to learn new information."



- b. Explain the purpose of a second read: “Good readers read books more than once. The first time we read to understand the story. The second time, we read to learn more details.”
        - c. Ask students:
          - “What do you remember about the soil neighbors?”
          - “What do you think might be living in the soil?”
      2. Purposeful Second Read-Aloud. Set a listening purpose: “While I read today, listen for who or what helps the soil stay healthy.”
        - a. Read *The Soil Neighborhood* aloud.  
Pause at key pages to:
          - highlight illustrations,
          - clarify vocabulary,
          - ask brief questions.
        - b. Ask students during reading:
          - “What is happening under the ground?”
          - “Who is helping the soil here?”
        - c. After reading, ask students:
          - “What did we learn today that we didn’t notice the first time?”
          - “Why is soil more than just dirt?”
    3. Video Exploration: Confirming Understanding Through Media. Introduce the video: “We learned more from our book *The Soil Neighborhood*, and now we are going to watch a short video that helps us see soil helpers we cannot see easily, like tiny living things.” Set a viewing purpose: “While you watch, listen, and look for who lives in the soil and what they do.”
      - a. Watch the video: SciShow Kids – Soil Is Alive! (YouTube Kids)  
<https://www.youtubekids.com/watch?v=Q-J2FErZHuA>
      - b. Ask students:
        - “What living things did you see in the soil?”
        - “What did the video show that the book could not show?”
        - “What jobs do soil helpers do?”
      - c. Invite questions:
        - “What does bacteria do?”
        - “Why do earthworms move through soil?”
      - d. Explain to students: “Books and videos can teach us the same idea in different ways.”
    4. Hands-On Learning Centers: Modeling Soil Health. Explain to students: “Scientists do not just read and watch videos; they observe, build models, and talk about what they notice. Today, we are going to work at different centers to help us understand how soil helpers keep soil healthy.”
      - a. Review expectations before beginning:
        - Use gentle hands with materials
        - Talk quietly with your group
        - Take turns and listen to others
        - Stay at your center until it is time to rotate
        - Keep your hands to yourself
      - b. Students rotate through centers in small groups. Each center lasts approximately 7-8 minutes.

### **Center 1: Earthworm Tunnel Model**

#### **Materials:**

- Clear plastic container or jar
- Soil (or layered sand/soil if available)
- Plastic or rubber earthworms
- Small spray bottle with water (teacher-controlled)

Teacher Directions: Explain to students: “This container helps us see what usually happens underground where we cannot see.”

- a. Model first:
  - Place the worm on top of the soil.
  - Slowly move it through the soil to create tunnels.
- b. Student Task:
  - Students take turns gently moving the worm through the soil.
  - Observe how the soil changes when tunnels are made.
- c. Guiding Questions:
  - “What happens to the soil when the worm moves?”
  - “What do the tunnels help water and air do?”
  - “Why would this be helpful in a garden or field?”
- d. Explain: “Earthworms do this work every day in farm fields, pastures, gardens, and grassy land.”

### **Center 2: Living vs. Nonliving Soil Helpers Sorting**

#### **Materials:**

- Picture cards:
  - earthworms
  - bacteria
  - plant roots
  - rocks
  - minerals
  - fungi
  - sticks
  - dead plants
  - bones
- Two labeled mats:
  - Living Soil Helpers
  - Nonliving Soil Parts

Teacher Directions: Explain to students: “This center helps us look closely at what is in the soil. Some things in soil are living, and some things are nonliving. Both are important.”

- a. Model expectations:
  - Place the two mats on the table or floor.
  - Spread the picture cards face up.
  - Demonstrate sorting one living item (e.g., earthworm) and one nonliving item (e.g., rock).
- b. Think aloud while modeling:
  - “This earthworm is living because it moves and grows.”



- “This rock is nonliving because it does not grow or need food.”
- c. Student Task:
  - Sort cards into the correct category.
  - Talk with partners about why each card belongs where it does.
- d. Prompt students to explain their thinking:
  - “Why is this living?”
  - “How does this help soil?”
- e. Guiding Questions:
  - “Do living and nonliving things both help soil?”
  - “What would happen if soil was missing one of these?”

### Center 3: How Soil Helpers Move

#### Materials:

- Open space on the floor
- Verbs written on the chart:
  - move
  - wiggle
  - dig
  - burrow

Teacher Directions: Explain: “Words help us understand how things work. Today, we are going to use our bodies to show what soil helpers do. We will move safely, take turns, and watch each other.”

- a. Review expectations:
  - Keep your body in your own space
  - Move slowly and safely
  - Take turns acting and watching
  - Use quiet voices when talking
- b. Think Aloud While Modeling:
  - Hold up the verb card ‘move’ and say: “I see the word move. That tells me something is changing its place. I am going to move my body a little.” Demonstrate a small movement.
  - Hold up ‘wiggle’ and say: “The word wiggle tells me the movement is small and twisty. Watch how my body wiggles.” Demonstrate wiggling.
  - Hold up ‘dig’ and say: “The word dig means to move soil out of the way. I am going to pretend I am digging in the dirt.” Demonstrate digging motions.
  - Hold up ‘burrow’ and say: “The word burrow tells me something is moving through the soil. This movement is slow and deep. Watch how my body moves low and close to the ground.” Demonstrate burrowing motion.
  - Explain to students: “I noticed that these words all mean movement, but they are not the same. Some words tell us more about how something moves.”
- c. Student Task:
  - Act out each verb as it relates to earthworms.
  - Compare movements.
- d. Guiding Questions:
  - “Which word shows the biggest movement?”

- “Which word best describes how worms move underground?”
- “Why does the word burrow tell us more than move?”

#### **Center 4: Writing Center – Soil Helpers Informational Writing**

##### **Materials:**

- Writing paper (lined with space for drawing)
- Pencils or crayons
- Vocabulary anchor chart with visuals (soil, earthworms, bacteria, minerals, healthy)
- Sentence starters are posted at the center

Teacher Directions: Explain to students: “At this center, you are going to be writers. Writers use words and pictures to teach others what they know. Today, you will write about soil helpers. First graders write more than one sentence when they write to teach.”

- Review expectations:
  - Stay in your own space
  - Write at least 2 sentences.
  - Sentences should be about the same topic.
  - Use words we learned today.
  - Use crayons or pencils carefully
  - Write sentences first, then draw a picture to match the writing.
  - Be ready to read your sentences to a partner or teacher.
- Think Aloud While Modeling:
  - Show a blank piece of paper and say: “I am thinking about what I learned from our book and video. Before I write, I think about my topic. My topic today is soil helpers.”
  - Write the first sentence while thinking aloud: “Writers name their topic so the reader knows what the writing is about.”
  - Write: “Soil has helpers.”
  - Point to the sentence and say: “This sentence tells my reader what I am going to teach them about.”
  - Explain to students: “Now I need to add facts. I learned that earthworms help soil, so I am going to write about that.”
  - Write: “Earthworms help soil by making tunnels.”
  - Explain to students: “This sentence gives my reader a fact. It tells how earthworms help soil.”
  - Model a closing sentence while thinking aloud: “Good writers try to end their writing so it feels finished.”
  - Write: “Healthy soil helps plants grow.”
  - Explain to students: “I wrote three sentences. All of my sentences are about soil helpers. That helps my writing make sense and teaches the reader.”
  - Read the sentences aloud and say: “I am rereading my writing to make sure it sounds right.”
  - Ask aloud:
    - “Did I write more than one sentence?”
    - “Do my sentences match my topic?”
    - “Did I teach the reader something new?”

- Explain to students: “Now it is your turn. You will write two or three sentences about soil helpers.”
  - Remind students:
    - “You can use our word chart.”
    - “You can use sentence starters if you need help.”
    - “You should try your best spelling.”
    - “Your pictures should match your words.”
  - Post sentence starters:
    - “Soil helpers are...”
    - “Earthworms help soil by...”
    - “Healthy soil helps...”
- c. Student Task:
- Write 2-3 related sentences about soil helpers.
  - Include:
    - A topic sentence
    - At least one fact
    - A simple closing sentence
  - Draw a picture that supports their writing
  - Students may:
    - Sound out words
    - Use vocabulary from the anchor chart
    - Use sentence starters
    - Ask for help rereading their work
    - Dictate only if necessary, with the adult pointing to each word as it is written.
- d. Guiding Questions:
- “What is your topic?”
  - “Tell me one fact you are writing.”
  - “Do all of your sentences go together?”
  - “Can you read your writing to me?”
5. Collaborative Discussion & Reflection. Gather students back together and explain: “Now that you have explored soil helpers at your centers, we are going to come back together to talk about what we learned.”
- a. Review discussion rules:
- listening
  - taking turns
  - staying on topic
- b. Explain to students: “When we talk together, we listen to each other and build on ideas.” Ask students:
- “How do earthworms help soil?”
  - “What other helpers did you learn about today?”
  - “Why do farmers, gardeners, and people who take care of parks care about healthy soil?”
- c. Model and prompt students to respond to classmates:
- “I agree because...”
  - “I want to add...”
- If needed, scaffold by saying:
- “Who can add to what \_\_\_\_ said?”

- “Does anyone have a different idea?”
  - d. Ask students:
    - “Which center helped you understand soil the most?”
    - “What is one new thing you learned about soil today?”
6. Kansas & Place-Based Connection
- a. Explain: “Kansas has many farms and ranches, but everyone depends on healthy soil. Soil helps farmers grow crops, helps grass grow for animals, and helps plants grow in gardens, parks, and schoolyards.”
  - b. Show a simple map of Kansas and explain:
    - fields grow food,
    - pasture grows grass,
    - towns and schools use soil, too.
  - c. Ask students:
    - “Where have you seen soil near your home?”
    - “Why is it important to take care of soil?”
7. Vocabulary Review:
- a. Prompt students: “Let’s review our vocabulary to help us remember what we learned.”
  - b. Review:
    - Soil: loose material on the ground made of tiny pieces of rock and living things where plants grow.
    - Bacteria: very tiny living things in soil that help break down old plants.
    - Minerals: tiny pieces of rock in soil that help plants grow strong.
    - Earthworms: living helpers that move through soil and help keep it healthy.
  - c. Have students use each word in an oral sentence.

**Assessment:**

Student understanding is assessed through formative and observational measures embedded throughout the lesson, including participation in rereading and multimedia discussion, use of soil-related vocabulary during collaborative conversations, engagement in center-based exploration and modeling tasks, and student explanations of learning. Additional evidence is gathered through students’ informational writing, in which students write two or more related sentences about soil helpers that name a topic, include factual information, and provide a simple sense of closure.

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**Minerals**



**Sticks**



**Earthworm**



**Rocks**



**Dead Plants**



**Bacteria**



**Fungi**



**Bones**



**Plant Roots**

# Living Soil Helpers



# Nonliving Soil Parts

