



# Tending Our Common Ground

## Introduction to Soil

### Standards:

- Reading – Non-fiction Texts for Main Idea and Details
- Writing – Comparative Text / Mechanics
- Science – Rocks and Soil
- Math – Data and Graphing

### Materials:

- Hand Trowels, Containers, Magnifying Glasses
- Small colored counters
- “Soil” by Sally M. Walker and other assorted books
- Science Journals, Art Supplies

### Engage

Whole Group  
(5 min)

#### *Silent Independent Breathing Time*

Read “The soil is the great connector of lives, the source and destination of all. It is the healer and restorer and resurrector by which disease passes into health, age into youth, death into life. Without proper care for it we can have no community, because without proper care for it we have no life.”

Discuss the importance of soil.

Introduce Objective: “Now that we’ve gained an understanding of why soil is important, let’s learn a little bit more about this natural resource. Today, we were learn what soil is made up of.”

### Explore & Extend

Small  
Independent  
Groups  
(20 min)

#### **Science Center / Explore Soil from the Garden**

Students will collect a soil sample from our garden and investigate it using a magnifying glass. In their journals, they will record what they find in the soil.

- Level 1: Draw.
- Level 2: Draw and label.
- Level 3: Draw and describe.

#### **Math Center / Create a Pie Graph Showing Soil Components**

Students will use counters placed in a circle to create a pie graph showing the four main components of the soil and the proportions in which they occur.

- 1 part (5% organic material – leaves, twigs)
- 9 parts (45% inorganic material – rocks)
- 5 parts (25% water)
- 5 parts (25% air)

(Teacher assistance provided as needed)

#### **Writing Center / Compare and Contrast Soil and Dirt**

Provide the quote: “What you see depends on how you view the world. To most people, this is just dirt. To a farmer, it’s potential.” Students will compare and contrast the words soil and dirt in their journals.

- Level 1: Write two sentences. One about the meaning of “soil”. One about the meaning of “dirt”.
- Level 2: Write one paragraph. Topic sentence. Meaning of “soil”. Example of “soil.” Meaning of “dirt.” Example of “dirt.” Conclusion sentence.
- Level 3: Write two paragraphs. One paragraph on “soil.” One paragraph on “dirt.” Each with an introduction sentence, three body sentences and a conclusion sentence.

#### **Reading Center / Identify Main Idea and Details in Non-Fiction Books on Soil**

Students will read a non-fiction book of their choice on soil and create a main idea and details graphic organizer to show what they’ve learned.

### Explain

Whole Group  
(10 min)

#### **Read “Chapter 2: How Soil Forms” in “Soil” by Sally M. Walker**

Focus on the four components of the soil

- Rock (introduced on page 10)
- Humus (introduced on page 16)
- Air (introduced on page 18)
- Water (introduced on page 20)

### Evaluate

Whole Group  
(5 min)

Share Time:

- Compare and Contrast Group – What did you decide about the difference between “soil” and “dirt”?
- Exploration Group – What did you find that our soil is made up of?
- Pie Graph Group – How much of each component is present in most soil?
- Main Idea and Details Group – What else did you learn that you would like to share?



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### Science Center *Explore Soil from the Garden*

Using a hand shovel, collect a soil sample from our garden and place it in the clear rubber container. Use a magnifying glass to closely examine what is in our soil.

In your journal, record what you have found in the soil.

- Level 1: Draw.
- Level 2: Draw and label.
- Level 3: Draw and describe.

If you finish in that area, place the soil back into the bed and find another area to examine.



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### Math Center *Create a Pie Graph Showing Soil Components*

Use different colored counters to show how many “parts” there are of each component of soil.

- 1 part (5% humus or organic material – leaves, twigs)
- 9 parts (45% rocks or inorganic material – particles)
- 5 parts (25% water)
- 5 parts (25% air)

Place the counters in a circle with each color lined up next to each other.

Draw a dot in the middle of your circle, an outline around your circle, and a line from the middle to outline between each change in color. Label your sections for the parts that they represent.

Remove the counters and complete your final copy of your pie graph.

(Teacher assistance provided as needed)



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### Writing Center

#### *Compare and Contrast "Soil" and "Dirt"*

"What you see depends on how you view the world. To most people, this is just dirt. To a farmer, it's potential."

Compare and contrast the words "soil" and "dirt" in your journal.

- Level 1: Write two sentences. One about the meaning of "soil". One about the meaning of "dirt".
- Level 2: Write one paragraph - Topic sentence. Meaning of "soil". Example of "soil." Meaning of "dirt." Example of "dirt." Conclusion Sentence.
- Level 3: Write two paragraphs. One paragraph on "soil." One paragraph on "dirt." Each with an introduction sentence, three body sentences and a conclusion sentence.

If you finish, illustrate your writing.



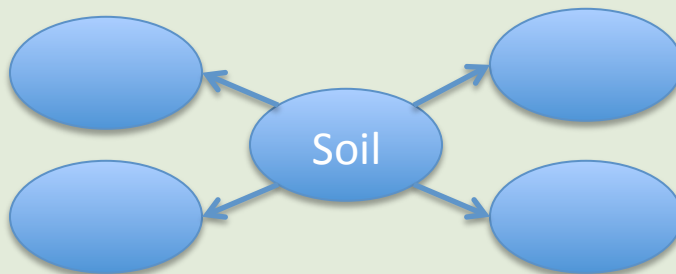
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### Reading Center

#### *Identifying Main Idea and Details in Non-Fiction Books about Soil*

Choose a book that looks interesting to you and that is not too easy and not too hard for you.

Create a main idea and details graphic organizer in your journal, with "soil" as your main idea.



As you read, add details that you have learned about soil.

If you finish, choose another book and add to your graphic organizer.