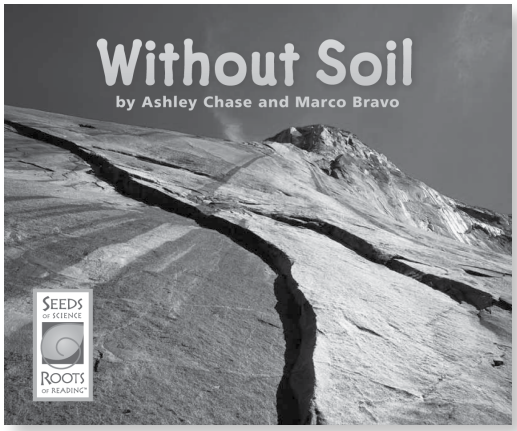
Strategy Guide

Using Discourse Circles

with *Without Soil* from *Seeds of Science/Roots of Reading*™



Introduction

This strategy guide introduces an approach for teaching students to discuss science ideas using discourse circles. Discourse circles involve students in structured, evidence-based conversations around challenging statements. This guide includes an introductory section about discourse circles, a description of how to conduct a discourse circle in conjunction with many science texts, and a plan for conducting a discourse circle with the *Seeds of Science / Roots of Reading*™ book, *Without Soil*.

Book Summary

Without Soil asks readers to imagine a world without soil—to communicate soil's absolutely essential role in the survival of plants and animals, including humans. Readers learn that soil helps all living things survive by providing the nutrients necessary for plants to grow. Animals, including people, depend on plants for food and other needs. The book describes how roots hold soil in place and how some organisms act as decomposers to generate nutrient-rich soil. *Without Soil* also discusses the environmental issue of soil degradation caused by, for example, cutting down trees, paving over soil, some types of farming, and pesticide use. The book encourages readers to think about and protect the soil so there is never a land "without soil."

About This Book

Reading Level

Guided Reading Level*: L

Text Features

book description, table of contents, glossary, headings, about the author, bold print, illustrations

*Guided Reading Levels based on the text characteristics from Fountas and Pinnell, *Matching Books to Readers.*

Science Background

Life on Earth depends on soil. Soil plays a vital role in supporting human life and assuring agricultural and environmental stability. Humans directly depend on soil for plants that provide food, fibers to make clothing, and other products. Humans indirectly depend on soil through reliance on goods and products that come from animals that eat plants, which are, in turn, nourished by the soil. Much of our drinking water is pumped from sources in the soil too. Also, rich soil—soil that can nourish plants—depends on the many kinds of small organisms that play a role in decomposition. Soil is home to a great complexity of life—earthworms, fungi, bacteria, protozoa, arthropods, algae, and even small mammals. These organisms help to purify air and water as well as decompose matter into nutrients that nourish the soil. They cycle nutrients so crops and other plants can grow. All of these organisms, including humans, are interdependent and rely on the soil to nourish and sustain the interconnected web of life. Because of the crucial role of nutrient-rich soil, its loss and depletion due to human impact on the environment is a very serious worldwide problem. Much stricter control of deforestation and overgrazing—and much more widespread use of sustainable agricultural practices—are among proposed solutions.

About Discourse Circles

A discourse circle is a structured conversation designed to promote discussion based on evidence. Students are guided to gather evidence from a text to both support and refute a statement provided by the teacher. In preparing for a discourse circle, students gain valuable practice in reading for a purpose and locating information in a text. During the discourse circle, students practice using the language of scientific argumentation as well as actively listening to evidence provided by others. A discourse circle is a valuable way to teach students that scientific explanations are based on evidence, and that scientists often meet to present evidence they have gathered and discuss scientific ideas.

Teaching with Discourse Circles

The following guidelines can be used to conduct discourse circles with many content-rich texts.

- Select a text that provides evidence both for and against a statement. In science, good choices include books about human impact on the environment, books that mention scientific debates, and books about the history of science.
- Craft a statement for which students can find evidence to both support and contradict it. Write the statement on the Preparing for a Discourse Circle copymaster and make a copy for each student. The following are some guidelines to use when writing discourse-circle statements:

  a. The text must provide evidence both for and against the statement.
  b. The statement should not be obviously true or obviously false.
  c. Students should be able to choose either position without developing misconceptions about the topic.
  d. The statement should relate to important concepts in the text.

  Here are two examples of discourse-circle statements:

  a. Students like us can help prevent oil from spilling in the ocean.
  b. The stomach is the most important organ in the digestive system.

Discourse-Circle Directions

A discourse circle is a group of four people. It works like this:

1. One person presents her position and her evidence.
2. Other students who agree add their evidence.
3. Then a student who disagrees says why and presents his evidence.
4. The group discusses the statements and evidence to see if they can come to an agreement.
5. If the group cannot agree, the group can talk about all the reasons why they are convinced of their own positions.

- Make a class chart titled "Discourse-Circle Directions" that lists the directions for a discourse circle. (See the box on this page.)
- Have students read the book you have selected, focusing on the content of the book.
- Tell students they will be having a special discussion called a discourse circle that will focus on evidence they gather from the text they just read. Explain that the evidence will be both for and against the statement. Present the discourse-circle statement to the class.
- Have students reread the text, noting evidence to support and contradict the statement on their Preparing for a Discourse Circle student sheets.
- Ask students to now consider the evidence they have gathered and decide whether they are for or against the statement. Form small groups comprised of students who agree and students who disagree with the statement.
- Go over the Discourse-Circle Directions class chart, making sure that students understand what to do. Explain that scientists often change their ideas when they learn about new evidence, and that students may want to do the same. Also point out that scientists may disagree with each other, but they do so respectfully. (You may wish to model this for students.) The purpose of the discourse circle is not to decide whether the statement is right or wrong; the purpose is to consider as much available evidence as possible about an important idea.
- Students conduct discourse-circle discussions as described on the Discourse-Circle Directions class chart.

- As a class, debrief the discussion. Talk about how the discourse circle went, emphasizing how students used evidence from the text to support their ideas. Discuss the statement and generate a consensus statement on which all students agree.
- Continue using discourse circles as a way for students to discuss their ideas. Over time, they will become better at conducting discourse circles and will gain proficiency using evidence to support their ideas.

Using a Discourse Circle with *Without Soil*

Without Soil provides evidence about the importance of soil to life on Earth. Students can use this evidence during a discourse circle about ways to protect the soil.

Getting Ready

1. Write the discourse-circle prompt "Protecting plants is the most important way that we can protect the soil." on the Preparing for a Discourse Circle copymaster and make a copy for each student.
2. Make a class chart titled "Discourse-Circle Directions" (see box on the previous page) on a piece of chart paper and post it in a visible spot.

During Class

1. Read *Without Soil* in a way that is consistent with your classroom routines, giving students as much independence as possible. Conduct a brief class discussion to ensure that students understand the ideas presented in the text.
2. Tell students they will be having a special kind of conversation called a discourse circle that will help them find evidence and discuss ideas like scientists do. Distribute the Preparing for a Discourse Circle student sheets and read the statement aloud. Emphasize that students will need to find evidence that protecting plants IS and IS NOT the most important way to protect the soil.
3. Have students reread pages 12–18, searching for evidence and making notes on their student sheets. Students should be able to find at least one piece of evidence that supports the idea that protecting plants is the most important way we can protect the soil and at least one piece of evidence against it. [FOR: Roots hold soil in place, page 14. Soil is lost when too many trees are cut down, page 15. AGAINST: Animals called decomposers help make soil, page 13. Roads and poison for crops can harm soil, page 17.]
4. After students have gathered evidence, ask them to think about whether they agree or disagree with the statement. Tell them that in the discourse-circle discussion they should refer to their evidence and listen carefully to other students' evidence. Explain that scientists often change their minds when they hear new evidence, and this may happen to students as well.
5. Form small groups, ideally with a mix of students who agree and students who disagree with the statement. Go over the Discourse-Circle Directions class chart, making sure that all students understand the guidelines.
6. Give students a few minutes to conduct their discourse circles in small groups.
7. Begin a whole-class debrief by asking a student to present her position and evidence to the class. Invite other students to agree or disagree and cite their evidence. If the class can come to a consensus, write a new statement that takes into account all the evidence from the text. For example: Protecting plants is an important way to protect the soil, but protecting decomposers and not covering too much soil are also important.
8. Discuss how the discourse circle went, focusing on the way students used evidence from the text to support their ideas.

Independent Extension

Give students more practice searching for evidence to support a statement. Write the following sentence on the board: "All living things depend on soil." Have students search through the text and record at least three pieces of evidence supporting the statement.

Name _____ **Date** _____

Preparing for a Discourse Circle

Statement: _____

_____

_____

Evidence FOR: _____

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Evidence AGAINST: _____

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About Strategy Guides

A six-page strategy guide is available for each *Seeds of Science / Roots of Reading*™ student book. These strategies support students in becoming better readers and writers; they help students read science texts with greater understanding, learn and use new vocabulary, and discuss important ideas about the natural world and the nature of science. Many of these strategies can be used with multiple titles in the *Seeds / Roots* series. For more information, as well as for additional instructional resources, visit the *Seeds / Roots* website (**http://www.seedsofscience.org/strategyguides.html**).

Available Student Books for Grades 2–3

Twenty-three engaging student books are now available, each with a corresponding strategy guide. The books are part of the *Seeds of Science / Roots of Reading*™ curriculum program described on page 6. Four *Gravity and Magnetism* student books and strategy guides will be available in 2009.

Soil Habitats	
Strategy	**Student Book**
Using Discourse Routines with Science Texts	*Into the Soil*
Using the Cognates Strategy	*Walk in the Woods*
Connecting Science Words and Everyday Words	*What Are Roots?*
Teaching About the Nature of Science	*Talking with a Habitat Scientist*
Teaching Text Structure	*Handbook of Forest Floor Animals*
Using Text Features	*Earthworms Underground*
Taking Notes Based on Observations	*My Nature Notebook*
Making Sense of Data in Science Texts	*Snail Investigations*
Using Discourse Circles	*Without Soil*
Shoreline Science	
Strategy	**Student Book**
Teaching Vocabulary with Science Texts	*Beach Postcards*
Teaching Concept Mapping	*What Belongs on a Beach?*
Teaching Scientific Explanations	*Gary's Sand Journal*
Interpreting Visual Representations	*What's Stronger? The Forces That Cause Erosion*
Using Text Features	*What Lives on a Sandy Beach?*
Teaching About Multiple Meaning Words	*My Sea Otter Report*
Searching for Information in Science Texts	*Handbook of Sandy Beach Organisms*
Teaching Text Structure	*The Black Tide*
Teaching About the Nature of Science	*Shoreline Scientist*
Designing Mixtures	
Strategy	**Student Book**
Using Discourse Circles	*What If Rain Boots Were Made of Paper?*
Using Anticipation Guides	*Solving Dissolving*
Teaching Scientific Explanations	*Handbook of Interesting Ingredients*
Teaching Text Structure	*Jelly Bean Scientist*
Teaching About the Nature of Science	*Jess Makes Hair Gel*

Extend Learning with *Seeds of Science/Roots of Reading*™

The strategy featured in this guide is drawn from the *Seeds of Science / Roots of Reading*™ curriculum program. *Seeds / Roots* is an innovative, fully integrated science and literacy program.

The program employs a multimodal instructional model called "Do-it, Talk-it, Read-it, Write-it." This approach provides rich and varied opportunities for students to learn science as they ***investigate*** through firsthand inquiry, ***talk*** with others about their investigations, ***read*** content-rich books, and ***write*** to record and reflect on their learning.

Take advantage of the natural synergies between science and literacy instruction.

- Improve students' abilities to read and write in the context of science.
- Excite students with active hands-on investigation.
- Optimize instructional time by addressing goals in two subject areas at the same time.

To learn more about *Seeds of Science / Roots of Reading*™ products, pricing, and purchasing information, visit **www.seedsofscience.org**

***Soil Habitats* Science and Literacy Kit**

SEEDS OF SCIENCE / ROOTS OF READING™

Developed at Lawrence Hall of Science and the Graduate School of Education at the University of California at Berkeley.

Seeds of Science/Roots of Reading™ is a collaboration of a science team led by Jacqueline Barber and a literacy team led by P. David Pearson and Gina Cervetti.

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