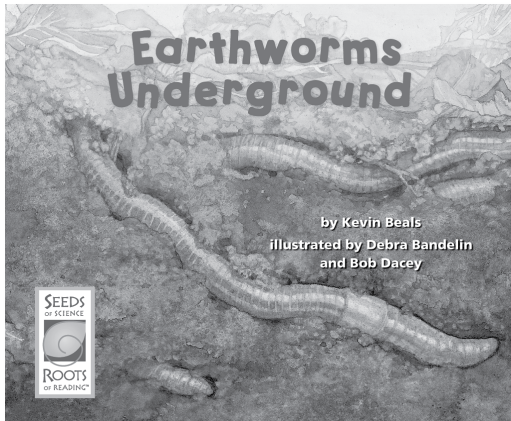


Using Text Features

with *Earthworms Underground*
from *Seeds of Science/Roots of Reading*[™]



Introduction

This strategy guide introduces an approach for teaching students about text features that authors use to present and organize information. Understanding text features such as headings, indexes, and bold print can enhance reading comprehension, particularly comprehension of expository text. This guide includes an introductory section about the strategy of using text features, a general overview of how to teach this strategy with many science texts, and a plan for introducing text features with the *Seeds of Science/Roots of Reading*[™] book, *Earthworms Underground*.

Book Summary

Earthworms Underground invites readers to imagine what it would be like to live in an underground soil habitat where earthworms dwell. The book introduces the fascinating body structure and behaviors of earthworms, focusing on the adaptations that enable earthworms to survive in their underground habitat. Readers learn how specific adaptations help earthworms breathe, move, eat, protect themselves from predators, and reproduce. Readers also learn how earthworms make the soil richer for all plants and animals by adding air and nutrients to the soil. The book includes detailed illustrations of earthworms in their underground habitat, depicting structures and behaviors that are not easy to observe in nature.

About This Book

Reading Level

Guided Reading Level*: N

Text Features

book description, table of contents, glossary, headings, bulleted lists, about the author, bold print, diagrams, illustrations, captions

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

Science Background

Earthworms belong to the group of invertebrates (animals without backbones) called annelids, which means “ringed or segmented.” The segments on an earthworm’s body are covered with tiny bristles called setae. Earthworms use their setae to move through the soil. Although earthworms have no eyes or ears, they are sensitive to vibrations. Five pairs of “hearts” (which are actually thick blood vessels) pump their blood. The digestive tract of an earthworm runs the length of its body. Earthworms prefer to eat dried leaves and other organic matter. Sometimes they eat soil and extract the decomposing nutrients. Earthworms are important to the health of soil—their castings (waste) contain nutrients that enrich the soil, and they mix and aerate the soil as they move underground. Some people mistakenly think earthworms come out of their burrows when it rains to avoid drowning. However, earthworms can actually survive for four to six weeks in water. They take in oxygen through their skin, so they can “breathe” by absorbing the oxygen that is dissolved in water. Earthworms actually come out during warm rains because they can find mates without danger of drying out. Even though individual earthworms produce both eggs and sperm, they must be fertilized by another worm to reproduce.

Using Text Features

Meaning in books is not communicated by the body of the text alone. Books also include features such as indexes, illustrations and captions, headings and subheadings, bold print, and italic print that provide access points into and information about the text. Text features can help readers:

- identify the most important ideas in a text,
- anticipate what's to come,
- understand challenging ideas, and
- find the information they are looking for.

Understanding text features can enhance reading comprehension, particularly comprehension of expository text. The use of text features is especially useful in science, since science texts use many text features to explain, organize, emphasize, reinforce, and extend important information.

Teaching Text Features

The following activities can be used to teach text features with any content-rich book.

- Create a chart where your class can track the text features they find in different books. (See the Text Features Chart copymaster included with this guide.) Introduce the text features as they appear in books your students read, or have students browse through a variety of books to identify different text features they can use to construct a class chart. Ask students to record the text features they find before, during, or after reading.
 - Provide each student with a copy of the Text Features Chart copymaster so they can independently track the features they find in the books they read.
 - When introducing a content-rich book, select one or two text features to highlight. Choose features that are helpful for determining the important ideas in the text or understanding its organization. Pose questions that help students recognize the functions of these features such as the following:
 - a. What does our preview of this feature tell us about the kind of information we will encounter?
 - b. What does this feature tell us about how the book is organized?
 - c. What does this feature tell us about the author's intentions?
 - d. How does this feature help us find the information we are looking for?
 - e. How does this feature help us understand the information in the book?
- Challenge students to use text features such as illustrations, tables of contents, headings, or indexes to find specific pieces of information to answer questions you pose.
 - After reading a text, reflect as a class on how the feature(s) helped explain or reinforce the text, or how the feature helped you find the information you were seeking.
 - Once students are familiar with several text features, you can provide opportunities for them to practice adding these features to text.
 - a. **Captions.** Provide students with photocopies of pages from content-area books that contain illustrations with the captions removed. Guide students in writing captions that are brief and specific and that help the reader link the illustrations to the text.
 - b. **Headings.** Provide students with photocopies of pages from content-area books that contain sections with the headings removed. Guide students in writing clear, brief headings that help the reader predict the content of the sections.
 - c. **Diagrams and labels.** Provide students with a diagram of a familiar process, cycle, or object and ask them to add labels that provide a short description of the diagram.
 - Point out variation among text features. Have students examine different examples of the same text feature and identify how they can vary.
 - a. **Tables of contents** can have different names (e.g., Table of Contents, Contents, In This Issue) and different levels of specificity—some include just chapter titles and others also include the headings of sections and subsections.
 - b. **Indexes** can have different formats and levels of complexity. They may consist of one or more pages, contain one or more columns, include some words in bold print, etc.

c. **Illustrations** can serve a variety of purposes. Some add information that goes beyond the text, while others clarify or provide a visual representation of a concept presented in the text. Students may recognize how some illustrations are more helpful than others.

- Encourage students to include text features in their own expository writing. For example, students can add an index and a glossary of important words to a class book, or they can organize a report with headings and a table of contents.

Using Text Features in *Earthworms Underground*

Earthworms Underground contains a number of text features: book description, table of contents, glossary, headings, bulleted lists, about the author, bold print, diagrams, illustrations, and captions. Use the following procedure to teach students about text features using *Earthworms Underground*.

Getting Ready

1. Make a copy of the Text Features Chart copypaster for each student.
2. On chart paper, make a large version of the Text Features Chart and post it in a visible spot.

During Class

1. Read *Earthworms Underground* in a way that is consistent with your classroom routines, giving students as much independence as possible.
2. After reading, distribute a copy of the Text Features Chart student sheet to each student. Ask them to look over the chart and point out features with which they are familiar. Explain that text features can help make information in a book easier to find and understand.
3. Ask students to look back through *Earthworms Underground* and record all the features they can find on their Text Features Charts.
4. Choose a few text features from the book for further discussion.
 - **Headings.** Ask students to turn to page 6. Point out that “How Earthworms Breathe” is a heading. Explain that headings are titles that

appear within the text, and they suggest what will come in the paragraphs that follow. “How Earthworms Breathe” is a heading because it stands out from the rest of the text—it is larger, in bold print, and not a complete sentence. Headings are usually hints about the main ideas in the book. Point out that students can also see the headings listed in the table of contents in the front of the book.

- **Bold print.** Ask students to turn to page 8. Point out that some words are in darker type than other words—they are in bold print. Bold words are darkened so they stand out from the rest of the words. Bold print is often used for headings. Sometimes bold print means that the words are important. In this book, bold also means that the word appears in the glossary. Ask students to read the paragraph and find the bold words in the glossary.
 - **Illustrations.** Ask students to turn to pages 10–11 and look carefully at the illustration. Invite them to report what they notice. Explain that illustrations such as pictures and drawings can help readers see what is being described with words and better understand the ideas in a text. These images also help readers know which ideas are most important. Lead a discussion about how the illustration extends beyond the information in the text and helps the reader learn more about earthworms. (For example, the illustration shows how earthworms use their mouths to pull a leaf from the surface of the soil.)
5. Ask students how the text features they have learned about (table of contents, headings, etc.) can help them find information in and understand the books they read in the future.

Independent Extension

Have students reread page 9 of *Earthworms Underground* and examine the illustrations carefully. The illustrations on this page help readers see how earthworms move underground—something that would otherwise be hard to visualize. Ask students to write a response to the question “How do the illustrations help you understand how earthworms move underground?”

Name _____

Date _____

Text Features Chart

Write the name of the book in the first column. Look through the book to find the different text features. Write at least one page number in the columns to show where you found that feature in the book.

Title	Book Description	Table of Contents	Index	Glossary	Headings/Subheadings	Bulleted Lists	About the Author	Bold Print	Italic Print	Diagrams	Photographs/Illustrations	Captions	Tables

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

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



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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