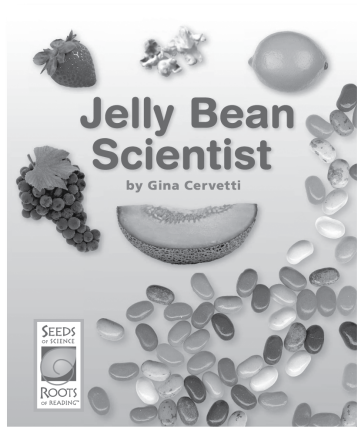


## Teaching Text Structure

with *Jelly Bean Scientist*

from *Seeds of Science/Roots of Reading*<sup>™</sup>



### Introduction

This strategy guide introduces an approach for teaching students how to identify a book's text structure. Text structure refers to how a text is organized; understanding this organization can support reading comprehension. Science texts are often organized around conventional structures such as cause-effect or compare-contrast. This guide includes an introductory section about the strategy of identifying a text's structure, a description of how to teach this strategy with many science texts, and a plan for teaching text structure with the *Seeds of Science / Roots of Reading*<sup>™</sup> book, *Jelly Bean Scientist*.

### Book Summary

In *Jelly Bean Scientist*, readers meet Ambrose Lee, a food scientist who invents new jelly bean flavors. Ambrose and his team of scientists conduct tests with lab equipment, machines, and their own taste buds so the jelly bean flavors they design taste as realistic as possible. Through reading about Ambrose's work, readers learn how scientists design mixtures that have certain properties and find out the effects various ingredients have in creating the texture and taste of jelly beans. Readers learn that properties of mixtures include how materials smell, look, taste, and feel. At the end of the book, readers learn background information on the history of jelly beans. This book gives readers a glimpse into both the hard work and the serendipity of invention.

### About This Book

#### Reading Level

Guided Reading Level\*: K

#### Text Features

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

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

### Science Background

Food science is interdisciplinary—it includes elements of biology, the physical sciences, and engineering. Within the field of food science, there are also numerous subdisciplines, such as flavor chemistry, the design of food packaging, and food safety. Some food scientists work on ways to preserve food so it can stay fresh for longer periods of time. Other food scientists figure out the best ways to prevent outbreaks of food-borne illnesses. Ambrose Lee, the scientist featured in *Jelly Bean Scientist*, works in product development. Food scientists who work in product development try to create new food products or interesting new flavors for food. When food scientists develop new flavors for commercial food products, they conduct numerous tests with lab equipment as well as with their own taste buds. Sometimes flavor chemists cannot use natural flavors from the food they are trying to copy, so they need to work with different chemicals to create the desired flavor. Regardless of what flavor food chemists are trying to develop, it is important to know the properties of the substances they are working with and how they will react with each other. Food production can be a surprisingly complicated process consisting of many steps, so scientists such as Ambrose work hard to make sure all the elements of their product measure up to industry standards.

## About Text Structure

Text structure refers to the ways that authors organize information in text. For example, some texts are organized as a chronological sequence of events, while others compare two or more things. Teaching students to recognize the underlying structure of content-area texts can help students focus attention on key concepts and relationships, anticipate what's to come, and monitor their comprehension as they read.

Students can learn to identify a text's structure by paying attention to signal words. Signal words link ideas together, show relationships, and indicate transitions from one idea to the next. Each text structure is associated with different signal words (shown in the box on this page). Text structure can also be taught using graphic organizers, which visually represent the relationships among key ideas. Graphic organizers can be particularly helpful for English language learners and struggling readers who can use these visual tools to help understand and organize information.

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## Teaching Text Structure

The following guidelines can be used to teach students about text structures that are common to content-area texts:

- Select an appropriate text. Note that some texts may utilize more than one text structure. When introducing text structure, select a text (or portion of a text) that has one easily identifiable text structure.
- Create a graphic organizer that represents the text's structure. Draw the blank graphic organizer on the board. You can also make individual copies for students if desired. (For graphic organizers that can be used to teach various text structures, see <http://www.seedsofscience.org/strategyguides.html>)
- Introduce text structure. Before reading the selected text, explain that texts are organized in different ways. The way that authors organize the text is called the text's structure. Knowing how a text is structured can help students understand what they are reading.

## Text Structure Signal Words

- **cause–effect:** therefore, as a result, leads to, so, because of, thus, in order to, if...then
  - **problem–solution:** fortunately, unfortunately, therefore, trouble, problem, issue, challenge, answer, solution, conclusion
  - **compare–contrast:** different from, the same as, similar to, as well as, but, compared to, in contrast, however, like, unlike, more, less
  - **time–order:** first, next, then, last, finally, meanwhile, following, before, after, on [date]
  - **description:** for example, for instance, in addition, also, too, some, most, all, other
  - **question–answer:** what, where, why, who, how, when, does
- 
- Introduce signal words. Explain that readers can tell how a text is organized by paying attention to signal words, which are words that show relationships among ideas. Preview the signal words that are found in the text. Model paying attention to these words by reading a portion of the text aloud and pointing out signal words that are used.
  - Read and practice using signal words. Have students finish reading the text and remind them to use signal words to help them pay attention to how the text is organized.
  - Introduce the graphic organizer. Explain that the graphic organizer is a way of showing how this text is structured. Make sure students understand which parts of the graphic organizer correspond to particular parts of the text.
  - Record information on the graphic organizer. Have students help you complete the graphic organizer on the board using ideas from the text. You can also have students complete their individual graphic organizers.
  - Review how focusing on text structure helps students understand what they read. Remind students to pay attention to text structure as they read other content-rich texts. Teach other specific text structures and associated signal words as needed.

## Question–Answer Text Structure Graphic Organizer

Question	Answer
What is a food scientist?	
How are new jelly bean flavors made?	
Why test jelly beans?	

### Teaching Text Structure with *Jelly Bean Scientist*

#### Getting Ready

1. Write the three question headings from Part One of *Jelly Bean Scientist* on the Question–Answer Text Structure copymaster. Make a copy for each student.
2. Create a class chart. Draw a large version of the graphic organizer on the board or on a piece of chart paper using the model above.

#### During Class

1. Hold up a copy of *Jelly Bean Scientist*. Tell students that this book is about Ambrose Lee, a food scientist who invents new jelly bean flavors. Read the book in a way that is consistent with your classroom routines, giving students as much independence as possible.
2. Explain that authors use different text structures, or ways of organizing information. *Jelly Bean Scientist* uses a question–answer text structure; discuss the characteristics of this text structure. For example, in a question–answer text structure, questions are often used as headings and answered in the text that immediately follows.
3. Introduce the graphic organizer for *Jelly Bean Scientist*. Point out that the book uses certain question words (*what, who, why, how*) that help the reader know this book uses a question–answer text structure.
4. Have students follow along in their books as you think aloud to model the processes involved in using text structure. In your think-aloud, be sure to point out the following:
  - The questions on the graphic organizer match the section headings listed in the table of contents.

- The table of contents indicates that the book has two parts and several sections. Each section provides answers to the questions posed in the section headings.

5. Have students turn to page 4. Read the heading “What is a food scientist?” and model finding answers to that question. [Someone who designs new flavors, page 4; designs healthier, better-tasting food; knows about substances in food; studies how food changes when it’s cooked, page 6.] As you model, make notes on the graphic organizer.
6. Distribute the Question–Answer Text Structure student sheets. Read the next heading (on page 7) aloud: “How are new jelly bean flavors made?” Remind students they should read to find an answer to this question.
7. After students reread page 7, guide them in completing the graphic organizer, recording notes next to the question under the heading “Answer.”
8. Have students read the remaining section in Part One of the book and complete the graphic organizer.
9. Discuss how knowing the structure of the text helped students organize the information and understand what they read.

#### Independent Extension

Have students review the table of contents on page 3 of *Jelly Bean Scientist*. Have students respond to the following questions: “Could the sections in Part Two: More about Jelly Beans be in a different order and still make sense? If so, how could you change the order of the sections? What other sections could be added to Part Two: More about Jelly Beans?”

Name \_\_\_\_\_ Date \_\_\_\_\_

## Question-Answer Text Structure

Title of Book \_\_\_\_\_

Question	Answer

## 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](http://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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