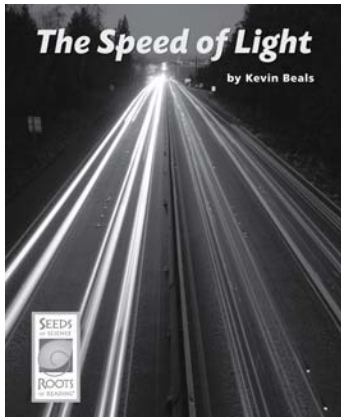


Teaching Summary Writing with *The Speed of Light* from *Seeds of Science/Roots of Reading*®



Introduction

This strategy guide introduces an approach for teaching students to distinguish main ideas from supporting details in order to write a summary of a text. Summary writing is often used in science to distill important ideas and represent them in a shortened form. This guide includes an introductory section about summary writing, an overview of one approach for teaching students to write a summary using information found in many science texts, and a plan for teaching summary writing with the *Seeds of Science/Roots of Reading*® book *The Speed of Light*.

Book Summary

Having an awareness that light travels is fundamental to understanding the incredibly fast speed at which it moves. *The Speed of Light* demonstrates for students that light is the fastest thing in the Universe. This information is conveyed in many different ways. The book presents data tables as well as descriptive examples that compare the speed of light to other fast things, such as a jet, a spaceship, and sound. Readers discover interesting information about the speed of light, such as whether light or sound is faster and the length of time it takes light to travel from the Sun to Earth and back again. This book presents a difficult concept in an accessible, engaging way that enables readers to understand more about the nature of light.

About This Book

Reading Level

Guided Reading Level*: P

Key Vocabulary

compare, distance, emit, source, travel

Text Features

bold print, captions, diagrams, glossary, headings/subheadings, labels, maps, photographs, tables, table of contents

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

Science Background

Light is a familiar part of our everyday lives, and yet light is a complex phenomenon that has fascinated and puzzled scientists for centuries. Hundreds of years ago, people wondered if light moved from one place to another instantaneously. Experiments completed back then could only show that the speed of light was faster than anyone could measure. The first rough measurements of light's speed were made in the 17th century. As technology advanced, measurements became more exact. Now, light's speed is measured at 299,792,458 meters per second. This number is often rounded to 300 million meters per second, or close to 186,000 miles per second. Current evidence suggests that nothing else can move as fast as light moves through empty space. The difference between the speed of light and the speed of sound (which travels at only about .21 miles per second) is what causes the time delay between seeing a distant flash of lightning and hearing the associated clap of thunder. It is important to note that this is the speed that light travels when unobstructed. When it travels through matter, it goes more slowly than it does through empty space. For example, light's speed is reduced by one-fourth when going through water.

About Summary Writing

Summarizing is a process used to condense text into its most important ideas. It involves analyzing information and distinguishing central ideas from those that are less essential. When students summarize, they are required to think actively about the important ideas in the text. Teaching students to think about the most important ideas can help them distill key information from reading. It also helps them learn to distinguish main ideas from supporting details. Summarizing supports students' reading comprehension and is especially important for understanding science text, which often contains a few key ideas and several examples or further elaboration. Writing a summary is a good way to help ensure that students understand and remember the key points in the text.

Teaching Summary Writing

The following guidelines can be used to teach summary writing with many content-rich texts.

- Select a short text (or a few paragraphs of a longer text) with content related to your curriculum. Good texts for introducing summary writing have one central idea and several supporting examples.
 - On the board, create a graphic organizer using the model on the following page.
 - Explain to students that readers often summarize texts in order to understand and remember what they have read. The first step in summarizing is to read the text carefully and think about the most important ideas.
 - Have students read the text that you selected and think about its central ideas. Prompt students to ask themselves “What is this text mostly about?” You might also ask students to look for key words that are repeated many times in the text; this is usually an indicator that these terms relate to the main idea.
 - After reading, ask students to discuss the main idea of the text. Guide the class toward agreeing on a statement of the main idea. Write the main idea in the top box of the graphic organizer.
- Next, explain that a written summary includes both the overall main idea as well as the most important details that support the main idea. Ask students to reread the text and select those examples that are the most important and most related to the main idea.
 - Discuss the examples that students find. Have the class agree on the most central and supportive details that should be included in the summary. These ideas should give more information about the main idea and/or tell why it is important.
 - Have the class agree on four supporting details that relate most to the main idea. Write these in note form on the graphic organizer.
 - Ask students to write the summary of the text by transforming the notes from the graphic organizer into a paragraph. You can distribute copies of the Writing a Summary copymaster included with this guide for students to write their summaries.
 - As students read additional content-area texts, have them use a similar process to summarize. Ask students to read the passage, decide on the main idea, and then select the most important and relevant supporting details to include in their summaries.
 - Encourage greater and greater independence as students gain practice writing summaries. Emphasize that summary writing is especially useful when reading for the purpose of understanding the information presented.

Teaching Summary Writing with *The Speed of Light*

The Speed of Light is an ideal book for teaching summary writing as it presents just one central idea: Light travels extremely fast. All the examples and details in the book support this main idea.

Getting Ready

1. Make a copy of the Writing a Summary copymaster for each student.
2. Draw a graphic organizer on the board, using the model on the next page as a guide. Leave the boxes blank; you will fill in the green text with students during class.

Main Idea: Light travels extremely fast.	
Supporting Detail: lightning—see light before sound	Supporting Detail: 670 miles per hour
Supporting Detail: around the world 7½ times in 1 second	Supporting Detail: spaceship to Moon = 4 days light from Moon = 1½ seconds

During Class

1. Introduce *The Speed of Light* and say that this is a book that has one main idea and many examples and details to support the main idea. Explain that you would like students to ask themselves the following question as they read: “What is this book mostly about?”
2. Read *The Speed of Light* in a way that is consistent with your classroom routines, giving students as much independence as possible.
3. After students have read the text once through, explain that readers sometimes write summaries of texts in order to better understand and remember them. Explain that a summary is a short piece of writing that states the main idea of a text, along with key details that tell why the main idea is important.
4. Lead a discussion about the main idea. Have students share what they think the main point of the book is, and guide the class toward agreeing on a statement of the main idea. Write this statement in the top box of the graphic organizer on the board.
5. After discussing the main idea, discuss which supporting details to include in the summary. Point out that there are many, many details presented in the book. However, some of these details are more relevant to the main idea than others.
6. Ask students to turn to page 7. Read the sentence “Light travels from a lamp to the wall.” Ask, “Does this detail support the main

idea that light travels extremely fast?” [No.] “Why not?” [It is about light traveling, not about it traveling very fast.]

7. Have students turn to page 9 and examine the table. Point out that the table explains that light can travel across the United States in less than one second. Ask, “Does this detail support the main idea? Why?” [Yes, because it provides specific information about how fast light travels.]
8. Next, have students reread the text and select one or two details that they think are good support for the main idea. You may want to distribute one or two sticky notes to students so they can mark the place in the text where they found these details. Remind students to think about which information is the most supportive as it relates to the main idea.
9. Lead a discussion in which students share the details they chose. Discuss which details provide the best support for the main idea. Write these in note form on the graphic organizer.
10. Distribute the Writing a Summary student sheets and have students transform the notes from the graphic organizer on the board into a summary paragraph on their student sheets.
11. Have students reflect on how thinking about the main idea, locating key details, and writing a summary helped them understand the text. Point out that summarizing is a strategy that students can use as they read other science books as well.

Independent Extension

Ask students to come up with a title for their summaries. Have them create an illustration to visually convey the information they summarized.

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* Web site (www.seedsofscience.org/strategyguides.html).

Available Student Books for Grades 3–4

Eighteen 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. Nine *Weather and Water* student books and strategy guides will be available in late 2009.

<i>Digestion and Body Systems</i>	
Strategy	Student Book
Analyzing Part-to-Whole Relationships	<i>Systems</i>
Teaching About the Nature and Practices of Science	<i>Secrets of the Stomach</i>
Teaching Process Description Writing	<i>Voyage of a Cracker</i>
Searching for Information in Science Texts	<i>Handbook of Body Systems</i>
Making Sense of Data in Science Texts	<i>What's the Diagnosis?</i>
<i>Variation and Adaptation</i>	
Strategy	Student Book
Teaching Scientific Comparison Writing	<i>Blue Whales and Buttercups</i>
Using Discourse Circles	<i>The Code</i>
Using Visual Evidence to Make Inferences	<i>Mystery Mouths</i>
Teaching About the Nature and Practices of Science	<i>Evidence from the Past</i>
<i>Light Energy</i>	
Strategy	Student Book
Teaching About Idioms	<i>Can You See in the Dark?</i>
Teaching Summary Writing	<i>The Speed of Light</i>
Teaching About the Nature and Practices of Science	<i>Why Do Scientists Disagree?</i>
Using Discourse Routines with Science Texts	<i>I See What You Mean</i>
Searching for Information in Science Texts	<i>Handbook of Light Interactions</i>
Teaching Scientific Explanation Writing	<i>Light Strikes!</i>
Teaching Vocabulary with Science Texts	<i>Cameras, Eyes, and Glasses</i>
Teaching Concept Mapping	<i>It's All Energy</i>
Interpreting Visual Representations	<i>Sunlight and Showers</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.deltaeducation.com



Light Energy 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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