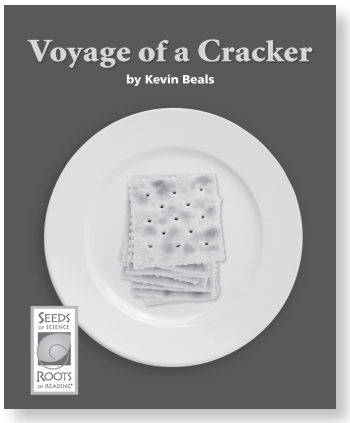
Teaching Process Description Writing

with *Voyage of a Cracker* from *Seeds of Science/Roots of Reading*®



Introduction

This strategy guide introduces an approach for teaching students to write a process description. This type of writing is often used in science to describe how a change takes place through a series of stages. This guide includes an introductory section about process description writing, an overview of one approach for teaching students to write a process description using information found in many science texts, and a plan for teaching process description writing with the *Seeds of Science/Roots of Reading*® book *Voyage of a Cracker*.

Book Summary

Voyage of a Cracker follows the path a cracker takes after it is eaten and travels through the digestive system. As readers follow the voyage of the cracker through the body, each organ it passes through is described in detail. Readers are encouraged to infer which organ (e.g., esophagus, stomach, large intestine) is being described. Real photographs taken inside the body provide visual information about what each organ is like. A diagram indicating the cracker's position in the digestive system is also included for each organ. The end of the book includes a section that describes how the pictures from inside the digestive system were taken.

About This Book

Reading Level
Guided Reading Level*: P

Key Vocabulary
absorb, acid, digest, nutrients, organ, structure

Text Features
bold print, captions, diagrams, glossary, illustrations, labels, photographs, tables, text boxes

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

Science Background

The digestive system is essentially one long tube that runs through the body. There are many specialized parts along the way; these are the organs of the digestive system. Major digestive system organs include the mouth, esophagus, stomach, small and large intestines, and anus. These organs are assisted in their function by the liver, pancreas, and gall bladder. The digestive system has four primary functions: taking food into the body, breaking down food into smaller pieces, absorbing nutrients from food, and eliminating any undigested food. Food enters the body through the mouth, where digestion begins. The food then moves through the esophagus into the stomach, where it is broken down by digestive enzymes. The small intestine breaks down the food even more and absorbs nutrients, while the large intestine primarily absorbs water. The remaining undigested food then moves to the rectum and exits the body through the anus. Smaller components of food, such as nitrogen-containing waste, are removed from the blood by the kidneys. The digestive system also aids in eliminating harmful substances. The digestive system is essential to human survival and growth because it provides all our other body systems with the nutrients needed to maintain their functions.

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About Process Description Writing

Process descriptions are used widely in science to explain phenomena and natural processes, such as photosynthesis, the formation of a star, or the life cycle of a butterfly. This genre of writing describes how a change takes place through a series of stages. It can also be used to examine the trajectory of one event over time (how a mother wolf raises her cubs) or to describe something that occurs cyclically (the phases of the Moon). A well-written process description allows the reader to both understand and visualize the process or event. However, unlike other descriptive writing genres, process descriptions are not specifically focused on descriptive adjectives or details. Although these features are included in process descriptions to illuminate the process and create a richer picture of what happens, the focus is on conveying scientific information about each step of the process as well as how the process as a whole functions.

Teaching Process Description Writing

The following guidelines can be used to teach process description writing using information found in many science texts.

- Select a text that includes an overview of a process. Good choices include books about natural processes (for instance, the water cycle, lunar phases, stages of plant growth).
- Explain to students that the text they will read tells how something works or happens. Say that the purpose of the text is to tell how a change takes place through a series of stages.
- As students read, ask them to notice how the process is described in the text. Have students pay attention to how the ideas are introduced, how the text is sequenced, and how the text is concluded.
- Draw a graphic organizer on the board that can be used to represent the particular process. Make sure the graphic organizer you choose has enough spaces to accommodate the number of steps in the process. (Sample graphic organizers can be found at www.seedsofscience.org/strategyguides.html)
- Explain that a graphic organizer is a tool for organizing and sequencing ideas before writing. Have students help you complete the graphic organizer. As you record students' ideas, use brief phrases to describe the process in the text.
- Use the process of shared writing to construct a process description. First, explain that process descriptions begin with a topic sentence that introduces the process by name. Write a topic sentence on the board with the class' help. "Water moves in a cycle around Earth and the atmosphere without stopping."
- Have students help you turn the notes from the graphic organizer into a few sentences that describe the process. Prompt students to provide specific details that help the reader visualize. [First, water falls to Earth from clouds. Next, some of this water moves across the land in rivers and streams to the ocean. After that, heat from the Sun evaporates some of this water, and it changes into water vapor. Eventually, the water vapor rises and cools down. Afterward, it condenses back into water and forms a cloud.]
- As you write the piece with the class' help, point out that transition words can be used to connect one idea with another. Refer to the box at the top of this page for some transition words that are useful when writing a process description.
- Explain that process descriptions end with a conclusion that wraps up the piece. Provide an example such as "Then the water cycle starts over again."
- Find opportunities to write process descriptions throughout a unit of study or in different science units. You may want to use the Process Description Writing copymaster included with this guide to support students' writing as you give them more independence.

Transition Words

first	in order to
next	as a result
then	most importantly
finally	afterward
after that	eventually
in the meantime	another

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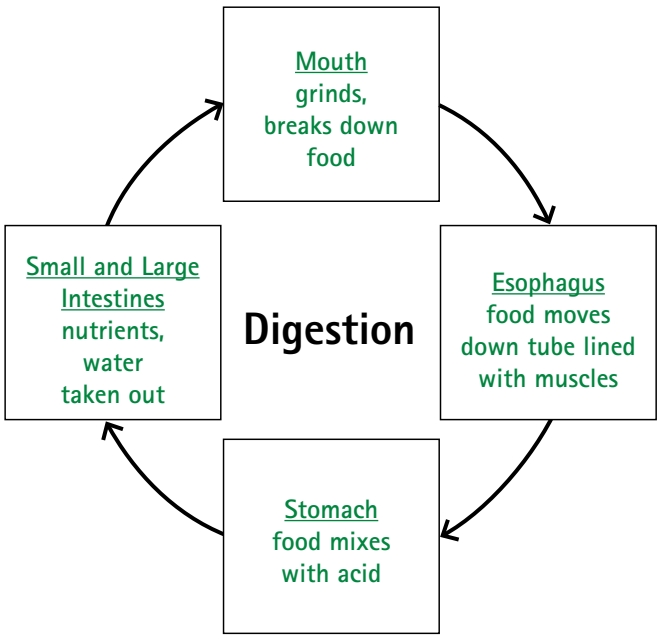

Teaching Process Description Writing with *Voyage of a Cracker*

Getting Ready

1. Make a copy of the Process Description Writing copymaster for each student.
2. Make a class chart that lists transition words, using the box on page 2 as a resource.
3. Using the graphic organizer above as a guide, draw a graphic organizer on the board. Label the center "Digestion." Leave the boxes on the graphic organizer blank; you will fill them in with students during class.

During Class

1. Read *Voyage of a Cracker* in a way that is consistent with your classroom routines, giving students as much independence as possible.
2. After reading, have students turn to page 20. Using the table and the diagram, ask students to work in pairs to retell the process the cracker went through as it moved through the digestive system. Have a few volunteers share their retelling with the class.
3. As students describe the process, record each stage in the boxes of the graphic organizer you created on the board. Depending on the needs of your class, you may choose to highlight all eight stages reflected in the table on page 20, or you may choose to emphasize fewer stages. (The graphic organizer at the top of this page represents only four stages of the digestion process.)
4. Distribute a Process Description Writing student sheet to each student. As a class, construct a topic sentence that introduces the process being described. Have students record this on their student sheets. [Digestion is the process your body uses to break down food.]
5. Next, ask students to write down each stage of the digestion process. On the graphic organizer on the board, indicate where students should begin. Encourage students to turn the notes from the graphic organizer into sentences about each stage in the process. Students can also refer back to the book. [First, food enters the mouth, where the teeth grind it into smaller pieces. After the food is swallowed, it moves down a long tube lined with muscles, called an esophagus. Next, the food moves into the stomach, where it mixes with acid. Finally, it moves through two different tubes, called the small and large intestines, that absorb nutrients and water for our bodies to use.]
6. Point out the list of transition words on the class chart. Encourage students to use these or other transition words to connect one idea with another. Have students look over what they have just written to make sure they have included appropriate transition words.
7. Finally, have students write a conclusion that wraps up their written pieces. The conclusion may suggest that the process repeats. [The whole process starts again when we eat more food.]
8. Ask students to reread their paragraphs to themselves or to a partner. Have students think about how their writing helps them visualize the process being described. Encourage partners to suggest to each other ways that organization, clarity, or word choice can be improved.

Independent Extension

Ask students to create a diagram to accompany their process description pieces. Encourage students to label their diagrams and provide a title or caption.

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Name _____ **Date** _____

Process Description Writing

Title of book: _____

_____

(Topic sentence)

_____

_____

_____

(Description of the steps in the process)

_____

_____

_____

_____

_____

_____

_____

(Conclusion)

_____

_____

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

Available Student Books for Grades 3–4

Nine engaging student books are now available from *Digestion and Body Systems* and *Variation and Adaptation*, each with a corresponding strategy guide. The books are part of the *Seeds of Science/Roots of Reading*® curriculum program described on page 6. Eighteen student books from the remaining grade 3–4 units (*Weather and Water* and *Light Energy*) are currently in development and will be available in late 2009.

Digestion and Body Systems	
Strategy	**Student Book**
Analyzing Part-to-Whole Relationships	*Systems*
Teaching About the Nature and Practices of Science	*Secrets of the Stomach*
Teaching Process Description Writing	*Voyage of a Cracker*
Searching for Information in Science Texts	*Handbook of Body Systems*
Making Sense of Data in Science Texts	*What's the Diagnosis?*
Variation and Adaptation	
Strategy	**Student Book**
Teaching Scientific Comparison Writing	*Blue Whales and Buttercups*
Using Discourse Circles	*The Code*
Using Visual Evidence to Make Inferences	*Mystery Mouths*
Teaching About the Nature and Practices of Science	*Evidence from the Past*

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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**

***Variation and Adaptation* 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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