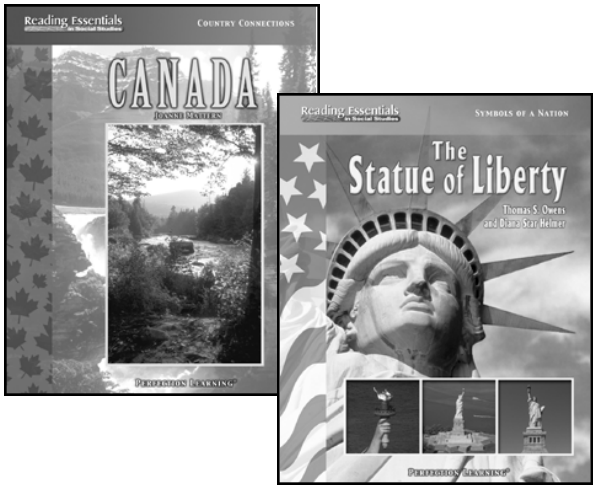
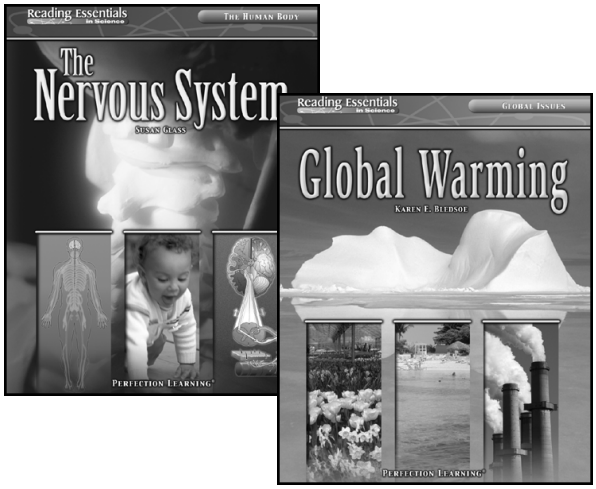
Research-Based Content-Area Reading Instruction

Reading Essentials® in Social Studies
Reading Essentials® in Science





Overview

"At its most basic, teaching reading in the content areas is helping learners to make connections between what they already know and 'new' information presented in the text…Teaching reading in the content areas, therefore, is not so much about teaching students basic reading skills as it is about teaching students how to use reading as a tool for thinking and learning."
—Billmeyer & Barton, 1998

In third or fourth grade, students begin to make the transition from reading mostly fictional and narrative books to reading more nonfiction and content-area textbooks. As students "read to learn" in the content areas, research suggests that strategic reading instruction should be integrated with the acquisition of new information and ideas. Content-area reading strategies take students beyond rote learning to higher levels of understanding. When students develop strong content literacy strategies, they have more interest and motivation, are better prepared for class, participate more, and perform better on tests.

The *Reading Essentials* program from Perfection Learning develops social studies and science literacy strategies for students in grades three through eight. The 70 interesting and informative nonfiction titles help students learn more about essential concepts as they become active, motivated, and strategic readers.

Reading Essentials covers 7 social studies and 7 science curriculum topics and includes:

- 70 Student Books
- 14 Teaching and Assessment Resources, one for each curriculum topic area
- a Teaching Content-Area Literacy Strategies resource

Few students ever develop a love for reading from their social studies or science textbooks. The sheer size alone makes them uninviting and overwhelming. The interesting, visually appealing, reader-friendly student books in *Reading Essentials* pique students' interest while providing essential content and content-area reading practice. In addition, the research-based literacy strategies taught in the program prepare students for successful and enjoyable reading experiences.

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Instructional Design

"Teachers make content-area reading invisible through the design of well-planned content literacy lessons. Often these lessons are referred to as the teacher's instructional framework."
—Vacca & Vacca, 1999

There are three points at which reading strategies can be taught during a reading assignment: (1) before reading, (2) during reading, and (3) after reading. *Reading Essentials* provides instruction at each of these junctures.

Before Reading—Preparation and Planning

Teaching that goes on before students read is essential. Students need to be guided in activating prior knowledge, making predictions, determining the purpose for reading, previewing content-area vocabulary, and analyzing text structure.

"Proficient learners build on and activate their background knowledge before reading… poor learners begin without thinking."
—Irvin et. al., 1995

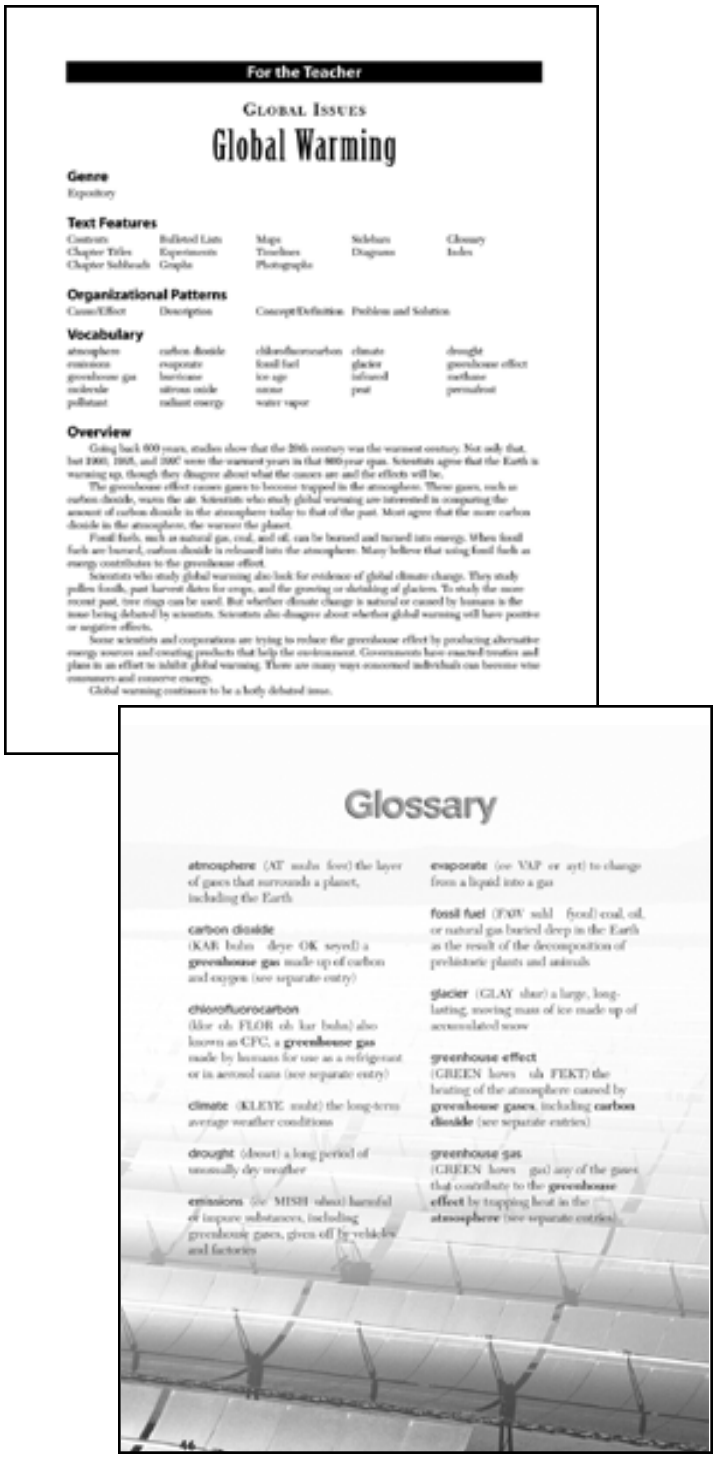
Students who activate prior knowledge (schema) to construct meaning "are in a better position to comprehend what they are reading" (Neisser, 1976 & Rumelhart, 1982). The teacher materials that accompany the *Reading Essentials* social studies and science books have activities to activate students' prior knowledge for each Student Book. These include visual strategies such as KWL charts, webs, graphic organizers, and maps, as well as discussion prompts. Students review the book title and table of contents to make predictions about the content.

"Text structure, like schema, is an important variable in reading comprehension. Cognitive researchers have shown that text structure is crucial to learning and memory."
—Kintsch, 1977; Meyer & Rice, 1984

When students understand text patterns, they understand the connections among ideas in the informational text. The organizational pattern and text features of each *Reading Essentials* Student Book are given on the inside front cover. A strategy mini-lesson in the teacher materials explains different types of text structures, how to recognize them, and how to read them.

"Research conducted in the past ten years reveals that vocabulary knowledge is the single most important factor contributing to reading comprehension."
—Laflamme, 1997; Billmeyer & Barton, 1998

The content-area vocabulary words that students need to learn in order to comprehend each *Reading Essentials* book are printed on the inside front cover of each Student Book. In addition, each vocabulary word is presented in boldfaced type in the context and defined in the glossary. The teacher materials help teachers present and introduce these words as a prereading activity.


For the Teacher

GLOBAL ISSUES

Global Warming

Genre
Expository

Text Features

Contents	Bulleted Lists	Maps	Sidebars	Glossary
Chapter Titles	Experiments	Timelines	Diagrams	Index
Chapter Subheads	Graphs	Photographs		

Organizational Patterns

Cause/Effect	Description	Concept/Definition	Problem and Solution

Vocabulary

atmosphere	carbon dioxide	chlorofluorocarbon	climate	drought
emissions	evaporate	fossil fuel	glacier	greenhouse effect
greenhouse gas	hurricane	ice age	infrared	methane
molecule	nitrous oxide	ozone	peat	permafrost
pollutant	radiant energy	water vapor		

Overview

Going back 600 years, studies show that the 20th century was the warmest century. Not only that, but 1900, 1905, and 1907 were the warmest years in that 900-year span. Scientists agree that the Earth is warming up, though they disagree about what the causes are and the effects will be.

The greenhouse effect causes gases to become trapped in the atmosphere. These gases, such as carbon dioxide, warm the air. Scientists who study global warming are interested in comparing the amount of carbon dioxide in the atmosphere today to that of the past. Most agree that the more carbon dioxide in the atmosphere, the warmer the planet.

Fossil fuels, such as natural gas, coal, and oil, can be burned and turned into energy. When fossil fuels are burned, carbon dioxide is released into the atmosphere. Many believe that using fossil fuels as energy contributes to the greenhouse effect.

Scientists who study global warming also look for evidence of global climate change. They study pollen fossils, past harvest dates for crops, and the growing or shrinking of glaciers. To study the more recent past, tree rings can be used. But whether climate change is natural or caused by humans is the issue being debated by scientists. Scientists also disagree about whether global warming will have positive or negative effects.

Some scientists and corporations are trying to reduce the greenhouse effect by producing alternative energy sources and creating products that help the environment. Governments have enacted treaties and plans in an effort to inhibit global warming. There are many ways concerned individuals can become wise consumers and conserve energy.

Global warming continues to be a hotly debated issue.

Glossary

atmosphere (AT' muhs feer) the layer of gases that surrounds a planet, including the Earth

carbon dioxide (KAR buhn dīeye OK seyed) a **greenhouse gas** made up of carbon and oxygen (see separate entry)

chlorofluorocarbon (klor eh FLOR eh kar buhn) also known as CFC, a **greenhouse gas** made by humans for use as a refrigerant or in aerosol cans (see separate entry)

climate (KLEYE muht) the long-term average weather conditions

drought (drout) a long period of unusually dry weather

emissions (ee MISH uhnz) harmful or impure substances, including greenhouse gases, given off by vehicles and factories

evaporate (ee VAP er ayt) to change from a liquid into a gas

fossil fuel (FAW suhl fyoo'el) coal, oil, or natural gas buried deep in the Earth as the result of the decomposition of prehistoric plants and animals

glacier (GLAY shur) a large, long-lasting, moving mass of ice made up of accumulated snow

greenhouse effect (GREEN hows eh FEKT) the heating of the atmosphere caused by **greenhouse gases**, including **carbon dioxide** (see separate entries)

greenhouse gas (GREEN hows gas) any of the gases that contribute to the **greenhouse effect** by trapping heat in the **atmosphere** (see separate entries)

Sample pages from *Global Warming* Student Book

During Reading—Using Metacognitive Strategies

"When a reader is strategic and reflective about her thinking and learning, cognitive psychologists would say she is utilizing metacognition skills…Various reading researchers (Gavelek & Raphael, 1985; Osman & Hannafin, 1992; Caverly, Mandevill & Nicholson, 1995) have used the term metacomprehension to refer to being strategic and reflective about reading comprehension."
—Billmeyer & Barton, 1998

Metacognition during reading is awareness by the reader that the text is being understood. At this point, students should be actively monitoring their comprehension by asking themselves questions such as, "Do I understand what the author means here?" "Have I ever had an experience like this?" "Why is this information important?" "What might happen next?" "What does this word mean?" Successful readers strategically interact with the author's message as they read.

As students read a *Reading Essentials* social studies or science book, they learn how to use a think-along journal. Students make a two-column chart for listing questions or perceptions and the corresponding page numbers as they read. If their questions aren't answered in the text, they go to other resources for information. In this way, students are monitoring and correcting their comprehension as they read.

Activities in the *Reading Essentials* teacher materials show students how to use Post-It® Notes to mark passages that raise questions or present interesting information. Another strategy they learn for active reading is QAR—Question and Response.

Students also learn to use vocabulary strategies to understand new words as they interact with text. Mini-lessons in the *Reading Essentials* teacher materials help students use context clues for the meanings of new words as they read. Strategies include determining meaning from context clues, root words, parts of speech, and prefixes and suffixes.

"A classic study by Bereiter and Bird (1985) showed that students who were asked to think aloud while reading had better comprehension than students who were not taught to think aloud…"
—Billmeyer & Barton, 1998

Learning to use active reading strategies requires modeling and practice. Teachers need to demonstrate how good readers think and interact with text as they read. A lesson in the *Reading Essentials* teacher materials shows how the teacher can make her or his own thinking explicit by verbalizing thoughts while reading orally. This guided practice should be scaffolded so students are gradually released to read strategically on their own.

After Reading—Reflection and Application

"The data suggest that text comprehension is enhanced when readers actively relate the ideas to their own knowledge and experiences and construct mental representations in memory."
—National Reading Panel, 2000

Strategic readers reflect on what they have read and apply what they have learned. They go back to their questions from the text and see if these were answered in the content or, if not, go to other sources for answers. They discuss what they have learned and why it is important. They connect learning to their own lives. They reflect through writing. And they extend their learning by using the new information in another format or situation.

Reading Essentials incorporates all of these strategic comprehension activities. The teacher materials include prompts for group discussions that encourage students to share questions and new information. In these discussions, students focus on thinking strategies beyond the recall level.

"When students think on paper to express thoughts, feelings, and opinions, they are more likely to respond to and explore ideas encountered in text."
—Elbow, 1997

In *Reading Essentials,* a low-stakes writing activity follows reading. "Low-stakes writing tasks allow students to use writing to interact personally with ideas and information without the pressure of producing polished, finished products" (Vacca, 2002). Students are prompted to explore different writing formats as they express their ideas, including

- researching
- making an outline
- using the writing process
- writing a friendly letter
- writing to describe, persuade, summarize, entertain, and inform

Another activity in the *Reading Essentials* teacher material that follows reading is called "Content-Area Reading Essentials." This is a hands-on activity that requires students to apply what they have learned. There are science experiments in *Reading Essentials in Science* and creative activities in *Reading Essentials in Social Studies.* Many are suitable for small groups.

Ideas for extension projects are also included in the *Reading Essentials* teaching materials. Students can choose from oral, written, dramatic, graphic, and research formats to extend learning and demonstrate understanding.

Explicit Instruction

"The rationale for the explicit teaching of comprehension skills is that comprehension can be improved by teaching students to use specific cognitive strategies or to reason strategically when they encounter barriers to understanding what they are reading. Readers acquire these strategies informally to some extent, but explicit or formal instruction in the application of comprehension strategies has been shown to be highly effective in enhancing understanding."
—National Reading Panel, 2000

Incorporating mini-lessons provides direct instruction when students need to practice a skill or strategy explicitly. This approach allows teachers to intervene in the students' reading and learning at appropriate times.

Reading Essentials provides two skill or strategy lessons for each book. Students can complete these lessons before, during, or after reading. Lessons throughout the program cover a wide range of essential skills and strategies, some of which are listed below.

- analyzing
- comparing and contrasting
- determining cause and effect
- distinguishing fact and fiction or opinion
- drawing conclusions
- evaluating
- sequencing
- inferring
- recognizing main idea and details
- using prereading strategies
- identifying parts of speech
- using a glossary
- using context clues
- speaking to entertain, inform, and persuade

"Readers construct meaning as they read. Effective readers are strategic. They make predictions, organize information, and interact with text. They evaluate the ideas they are reading about in light of what they already know."
—Billmeyer & Barton, 1998

The *Reading Essentials in Science* and *Reading Essentials in Social Studies* programs from Perfection Learning teach students to become active, strategic readers, writers, and thinkers.

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Sample page from *The Weather Report* Teaching and Assessment Resource

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