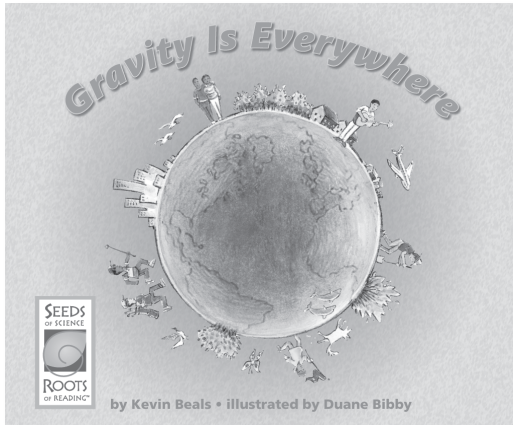


Using Anticipation Guides

with *Gravity Is Everywhere*
from *Seeds of Science/Roots of Reading*®



Introduction

This strategy guide describes an approach for using an anticipation guide (statements with which students agree or disagree before reading) to support discussions of ideas in science books. This strategy helps students activate background knowledge, read with a purpose, think about important concepts before reading, and discuss science texts. This guide includes an introductory section about anticipation guides, a general overview of how to teach this strategy with many science texts, and a plan for using an anticipation guide with the *Seeds of Science/Roots of Reading*® book, *Gravity Is Everywhere*.

Book Summary

In *Gravity Is Everywhere* readers learn that gravity is a pulling force and that the gravity exerted by Earth pulls us and objects around us down toward the surface of Earth. Playful illustrations in the book help explain that gravity is strong enough to keep us from floating away, but it is not so strong that we can't stand up. Readers also learn that Earth isn't the only object that exerts gravity. Gravity acts between all objects, though we only notice the force of gravity on us from large objects like Earth. The book also uses informational tables to help explain the relationship between weight and gravity. Readers learn that objects would have different weights on the Sun, Moon, and various planets in our Solar System.

About This Book

Reading Level

Guided Reading Level*: M

Text Features

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

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

Science Background

Gravity is a pulling force that acts between all objects. Objects with more mass exert more gravitational force. Even though *all* objects pull on us with the force of gravity, the only object we notice pulling on us is Earth, because Earth is so massive that its gravitational pull is much greater than any other nearby objects. The *weight* of an object is another term for the force of gravity exerted on the object. The strength of a planet's gravity depends on the planet's mass and the distance from its center to an object on its surface. Generally, a person would weigh less on a smaller, less massive planet and more on a larger, more massive planet. On a planet that is much more massive than Earth, such as Jupiter, a person would weigh significantly more than on Earth. However, there are some exceptions. Uranus has over 14 times the mass of Earth, but since it is so large, a person on the surface would be very far from the center of the planet and would actually weigh less than on Earth. The farther the distance between two objects, the weaker the force of gravity. A common misconception is that there is no gravity in space. Although the pull of Earth's gravity gets weaker as you get farther away, there is still gravity in space.

About Anticipation Guides

An anticipation guide is a list of statements—some true and some false—related to the topic of a book students will be reading. Anticipation guides help readers anticipate the big ideas that will be revealed. Anticipation guides set a purpose for reading, activate students' background knowledge (to confirm or refute the statements), and promote discussions about important concepts. Anticipation guides can also create interest by providing an initial “hook” to draw readers in. Discussing anticipation guides encourages students to focus on important information found in the text. This strategy is most effective when used with content-rich texts such as science books, especially those that present new or surprising ideas.

Teaching with Anticipation Guides

The following guidelines can be used to introduce anticipation guides with any content-rich text.

- Select a book that is connected to your curriculum. Ideal texts for use with this strategy provide additional information about a familiar topic.
- Read and analyze the text to identify important concepts with which you would like students to discuss and become familiar.
- Keep in mind the guidelines for writing effective anticipation guide statements. (See the box on this page.) The Anticipation Guide copypaster included with this guide can be used to list the statements.
- Prepare an anticipation guide. The length of anticipation guides can vary based on content and text but should be no longer than 10 items.
- Briefly introduce the class to the book you have selected. Tell students that before reading, the class will do an activity to help them consider what they already know about some of the information found in the book.
- Explain what students will do. Tell them that they will be asked to agree or disagree with each of the statements listed on the anticipation guide and to discuss their

Guidelines for Writing Effective Anticipation Guide Statements

- Focus on the information in the text that you want students to better understand.
- Write statements that students can discuss without having read the text.
- Include some statements that are true and some that are false. (Note: Students should be able to find evidence within the text they will read that supports or opposes each statement.)
- Include true statements that may be surprising to students.

responses with their groups. During reading, they will look for information to support or refute the statements. After reading, students will revisit the statements in light of new information found in the text.

- Form groups of about four students. Have students read each statement, write down whether they agree or disagree, and discuss their reasons in their small groups.
- Begin a class discussion of each of the statements. Encourage students who have differing viewpoints to discuss their positions. Be sure students understand that discussing their reactions to the statements is more important than getting the correct answers.
- Have students read the text and locate specific places where the ideas in the anticipation guide are discussed. Have students use sticky notes to flag ideas from the text that either support their initial responses or cause them to rethink those responses.
- Invite class discussion. After reading, lead a class discussion about the statements on the anticipation guide. Encourage students to cite evidence from the text to support their positions. Ask students to explain how their ideas changed as a result of reading.
- Utilize anticipation guides throughout your curriculum. Students will become more familiar with the process of using anticipation guides over time and will benefit from the discussion of important concepts that anticipation guides prompt.

Using an Anticipation Guide with *Gravity Is Everywhere*

Providing time for students to discuss conceptually challenging statements before and after reading the book *Gravity Is Everywhere* will aid in developing science understandings.

Getting Ready

1. Write a list of statements about ideas found in *Gravity Is Everywhere* on the Anticipation Guide copymaster. Then, make a copy for each student. Statements might include:
 - When you sit still without moving, there are no forces pushing or pulling on you. [False.]
 - The pull of gravity is everywhere in the Universe, not just on Earth. [True.]
 - The force of gravity between Earth and a car is stronger than between Earth and a pencil. [True.]
 - Objects weigh the same on Earth as they do on other planets. [False.]
 - When two objects are very far apart, the pull of gravity between them is strong. [False.]
2. Prepare a stack of sticky notes that students may use to flag information in the book as they read.

During Class

1. Introduce *Gravity Is Everywhere*. Tell students that the book is about the force of gravity on Earth and in space and how gravity affects weight.
2. Form small groups of about four students. If you've previously introduced guidelines for participating in discussions, review these guidelines before the activity.
3. Introduce the anticipation guide activity. Tell students they will react to statements listed on an anticipation guide before and after reading. Explain that the goal of the anticipation guide activity is to promote discussion of science ideas.
4. Distribute copies of the Anticipation Guide student sheet. By following the directions, ask students to indicate whether they agree or disagree with each statement.
5. Begin a class discussion of one of the statements. Encourage students who have differing viewpoints to discuss their positions.

Be sure students understand that discussing their reactions to the statement is more important than getting the correct answer. Invite students to discuss the remainder of the statements in their small groups.

6. Read *Gravity Is Everywhere* in a way that is consistent with your classroom routines, giving students as much independence as possible. As they read, ask students to use sticky notes to flag sections of the book that provide more information about each statement.
7. After reading, revisit the anticipation guide statements. Have students compare their initial responses with any new ideas they may now have based on evidence found in the text. Invite students to change their responses. As a class, discuss how students' ideas changed as a result of reading. Remind students that anticipation guides are intended to promote careful reading and are meant to help them think deeply about a new subject as they read.
8. Summarize the key concepts learned from completing the anticipation guide. [The force of gravity between us and Earth pulls us toward the center of Earth. Weight is a measurement of the force of gravity exerted on an object.] Ask students to restate the false statements from the anticipation guide as true statements. [False Statement: Objects weigh the same on Earth as they do on other planets. Restated: Objects have different weights on different planets depending on how strong the pull of gravity is on that planet. A person would weigh less on some planets and more on other planets.]
9. Invite students to reflect on how reacting to the statements on the anticipation guide and discussing ideas in their groups helped them better understand the important concepts found in the book.

Independent Extension

Have students choose a statement from the anticipation guide. Invite them to write about what they learned about the statement, drawing on what they learned in *Gravity Is Everywhere*. Encourage students to provide evidence about the statement they chose based on concepts introduced in the text. Have students share their writing in pairs or small groups.

Name _____ Date _____

Anticipation Guide

Title of book: _____

Read each statement. If you Agree with the sentence, write “**A**” in front of it. If you Disagree with the sentence, write “**D**” in front of it. Then read the book. After you read, come back to this page and see if your ideas have changed. Be ready to explain your thinking.

_____ 1. _____

_____ 2. _____

_____ 3. _____

_____ 4. _____

_____ 5. _____

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).

Student Books for Grades 2–3

Twenty-seven 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.

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>
Gravity and Magnetism	
Strategy	Student Book
Interpreting Visual Representations	<i>Forces</i>
Making Sense of Data in Science Texts	<i>What My Sister Taught Me About Magnets</i>
Using Anticipation Guides	<i>Gravity Is Everywhere</i>
Teaching Concept Mapping	<i>Mystery Forces</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.

Published and Distributed by

