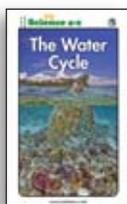


The Water Cycle

INTRODUCTION



This book is available in three reading levels, as indicated by the one, two, or three dots beside the Science A–Z logo on the front cover.

This guide offers general instructions that can be used with any or all of the leveled books. When appropriate, tips are provided for modifying the instruction for a specific level. The dots in this guide indicate elements of the instruction that are only applicable to certain book levels.

- can only be used with low level
- can only be used with middle level
- can only be used with high level
- | can be used with low and middle levels
- | can be used with middle and high levels
- | can be used with all three levels

Throughout the unit, places to refer back to the unit spark (see *Unit Guide*) are identified with this symbol: ☀

BOOK SUMMARY

The book *The Water Cycle* traces the movement of water through the water cycle and covers the changes water undergoes. It also discusses the effects of water movement, changes it causes on land, and the effects of weather. Labeled photographs and diagrams support the text.



Preview the book title, cover, and table of contents with students. Ask them to predict what the book will be about. Invite students to preview the remainder of the book, looking at pictures and captions, as well as special features, section heads, and the glossary. Encourage them to use this information to continually make and revise their predictions while reading.

Vocabulary

Instruction for the unit's vocabulary terms can be found in the *Unit Guide*. It defines core and other science terms, and offers links to puzzles and worksheets you can use to teach vocabulary before, during, or after the reading.

These terms are found in the glossary. Certain terms are only found in certain book levels, as noted.

- | | | |
|-------------|-----------------------|-------------|
| aquifer ••• | condense/condensation | delta |
| deposition | erosion | evaporation |



groundwater
sandbar
water cycle
water vapor

precipitation
sediment
water molecule :|:

runoff
surface water
watershed :|:

Reading Strategy

Summarize

Explain to students that one way to understand and remember information in a book is to write a summary, or a brief overview of the most important information in the text. Point out that a summary includes the main idea and one or two supporting details.

- |: Model writing a summary of page 5 on the board.

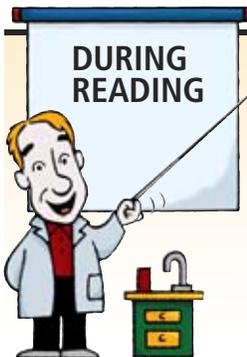
Think-aloud: *To summarize, I decide which information is most important to the meaning of each section. To do this, I can identify the main idea and important details, and then organize that information into a few sentences. When I look at the main idea and details on the board, a summary of this section might be: Most of Earth’s water is salt water that is found in oceans. The rest is fresh water that is found on or below the ground, as groundwater, liquid water, or ice.*

Write the summary of page 5 on the board. Have students identify the main idea and details within the summary. Discuss how you used your own words to create the summary.

As the book is read, instruct students to pause at the end of sections to summarize in their own words what they have read. This may be performed orally or in a science journal. Encourage them to focus on the important points, and then support these with details. Checking back with the text helps with retention and clears up confusion.

Download and print the *Summarize* graphic organizer.

 The graphic organizer can also be used with each of the *Quick Reads*.



The book begins with an introduction to Earth’s water, and previews the topics to be addressed later in the book. After reading this section, you may want to have students rephrase the explanation to check for understanding. (Retelling)

The most important concepts in this book are that water goes through different stages in its cycle, and that humans can affect all stages of the cycle. Reinforce this for students as they read.

You may want to review the key science terms in each section before students read it. Encourage students to read one section at a time, and then discuss in pairs, groups, or as a class what was read. (See *Discussion Questions*.)

Using tangible models can help explain abstract concepts. Refer to the *Process Activities* for ideas on how to illustrate some of the stages of the water cycle.

You may wish to have students read the special features of the book to build on the concepts within each section. Some vocabulary terms can be reinforced in these features.

Comprehension Skill Focus

Cause and Effect

Describe a cause and effect relationship, such as when water gets cold enough, it turns to ice, and when ice gets warm, it melts and changes to a liquid. Invite students to share examples of familiar cause and effect relationships. Then have small groups of students list examples of cause and effect relationships from the book.

Examples:

- Water rises in the form of water vapor and cools to form clouds. (2 events in the cycle)
- Clouds cool and water droplets slow down and join together. (3 events in the cycle)
- Air cools in a cloud, and water droplets gather together and get heavier. They fall to the ground. (3 events in the cycle)

Download and print the *Cause and Effect* graphic organizer.

 The graphic organizer can also be used with each of the *Quick Reads*.

As students read, they should use other comprehension skills in addition to cause and effect.



Discussion Questions

Use the *Discussion Cards* during or after reading. The cards are structured so they can be used for whole-group discussion, or assigned to individuals, pairs, or groups. Choose the activity that best serves your purposes. It may be helpful to allow students to use their books, T-charts, and completed graphic organizers as they try to answer the questions. Here are some suggested activities:

- Divide the class into groups and have each group discuss the questions from a section of the book. Then have groups report their responses to the class.
- Place discussion cards at centers and have groups talk about or write their responses as they rotate through them.
- Have each student choose a card and write an answer on the back. Collect and review these with the whole class.



- Assign certain questions to groups or individuals for homework.

Each question can be answered with certain book levels, as noted with dots in the upper left corner. You may want all students to think about all the questions, even if their book level is not noted on certain cards. The book section or topic most closely related to the question appears on each card. Question types are noted in parentheses.

All questions can be answered with all three book levels, except where noted.

Introduction

- Where is most of Earth's water found? (knowledge)
- How is salt water different from fresh water? (comprehension)
- What are two ways in which Earth's water supply is being threatened? (knowledge)

The Movement of Water

- What are the different forms of water found on Earth? (knowledge)
- Explain what the water cycle is. (comprehension)
- What happens when water evaporates? (comprehension)
- Explain what has happened when water condenses on the inside of a house window. (application)
- Explain why clouds can look different. (comprehension)

Precipitation

- What has to happen before a cloud can produce rain? (comprehension)

- How do conditions differ between raining and snowing? (comprehension)
- Describe the conditions necessary to produce sleet. (knowledge)

Water on the Ground

- What can happen to water that falls to the ground as precipitation? (knowledge)
- Explain what a watershed is. (comprehension)
- Why is it dangerous to dump chemical pollutants on the ground or to bury them in the ground? (knowledge)

Erosion

- What is erosion? (knowledge)
- How can people prevent erosion that is caused by water? (comprehension)
- What are some examples of erosion in your area? (application)

Deposition

- What causes sediment to get deposited? (comprehension)
- Describe two landforms that can form when river sediment is deposited. (knowledge)

Controlling Water

- Name two reasons why humans build dams? (knowledge)
- What is one negative effect of building a dam? (evaluation)

Water Uses

- Cite at least five ways humans use water. (comprehension)

Water Conservation

- Why is it important to conserve water? (analysis)
- What are some ways that we can save water? (knowledge)



Encourage students to reread the book for reinforcement of the content and for reading fluency.

Reflect on the Reading Strategy: Summarize

Review the strategy of summarizing. Invite students to explain how this strategy helped them understand what they read.

Enduring Understanding

In this book, students have read about water, including how it moves through the water cycle. Discuss the following question with students:

- *Now that you know have learned about how water travels through the water cycle, how will this affect your habits regarding water, and why?*

Home Project

Have students take an inventory of every way water is used in and around their home, from the more obvious (e.g., showering, watering plants, washing cars) to the less obvious (e.g., making ice, evaporative coolers, pet water bowls). Have students share some responses with the class. Students may be surprised to discover the demand for water in their home.

You may also want to request water usage data from household water bills, to conduct a class-wide analysis. Then you might invite students to suggest ways they can reduce their water usage at home.

Assess

Download and print the *Unit Quiz*.

Use the *Nonfiction Retelling Rubric* to assess understanding.

Quick Check: For individual or group assessment, have students respond orally or in writing to the following prompt:

- *Describe the changes a drop of water goes through as it passes through the water cycle.*

