

About the Book

Text Type: Nonfiction/Informational Page Count: 24 Word Count: 1,831

Book Summary

Threats to Our Atmosphere is an informational book that focuses on the structure and function of Earth's protective atmosphere. The text explains the ozone layer and the possible causes and consequences of global warming. The book also explores what effects these issues have on our planet, what scientists and world leaders are doing to protect our environment, and what individuals can do to protect our sky. Photographs, diagrams, and charts support the text.

About the Lesson

Targeted Reading Strategy

- Ask and answer questions

Objectives

- Use the reading strategy of asking and answering questions to understand informational text
- Identify author's purpose
- Identify and understand compound predicates
- Recognize and use content vocabulary

Materials

Green text indicates resources available on the website

- Book—*Threats to Our Atmosphere* (copy for each student)
- Chalkboard or dry erase board
- [KWL/ask and answer questions worksheet](#), [compound predicates](#), [content vocabulary worksheets](#)
- [Discussion cards](#)



Indicates an opportunity for students to mark in the book. (All activities may be demonstrated by projecting the book on interactive whiteboard or completed with paper and pencil if books are reused.)

Vocabulary

*Bold vocabulary words also appear in a pre-made lesson for this title on [VocabularyA-Z.com](#).

Content words:

Story critical: *atmosphere* (n.), *chemicals* (n.), *fossil fuels* (n.), *global warming* (n.), *greenhouse effect* (n.), *pollutants* (n.)

Enrichment: *atoms* (n.), *constant* (adj.), *contributor* (n.), *decomposes* (v.), *molecules* (n.), *precipitation* (n.), *ultraviolet* (adj.)

Before Reading

Build Background

- Have students tell what they know about ozone and the ozone layer. Create a KWL chart on the board and distribute the [KWL/ask-and-answer-questions worksheet](#). As you discuss global warming, fill in the first column (K) with what students know about ozone and global warming. Have students complete the same section of their KWL/ask-and-answer-questions worksheet.
- As a group, brainstorm things students would like to know about the ozone layer and have them fill in the second column (W) of their worksheet. Write some shared questions on the class chart as an example.

Preview the Book

Introduce the Book

- Give students a copy of the book. Have them preview the front and back covers and read the title. Have students discuss what they see on the covers and offer ideas as to what kind of book this is and what it might be about. Model how to ask questions as you preview the book.
- Have students preview the rest of the book. Point out the title page, photos, diagrams, charts, and glossary.
- Show students the index. Review or explain that an index is an alphabetized list of topics and page numbers that tell where readers can find information about topics in the book.

Introduce the Reading Strategy: **Ask and answer questions**

- Direct students to the table of contents. Remind them that the table of contents provides an overview of the information in a book and how it is organized. After reviewing the section titles, model using the table of contents as a way to think of questions.
Think-aloud: I can use the section titles to think of questions I'd like to have answered about the topics of the book. For example, the fourth section is titled "Discovery of the Ozone Hole." This makes me wonder how and when the ozone hole was discovered. I think this is a good question. I'll write it on my chart. I'd also like to know where the hole is located. I'll write this question on my chart, too.
- Ask students to share questions they have about the book, based on the covers and table of contents. Encourage students to use the photos, glossary, and other references to help them think of questions to add to their KWL/ask-and-answer-questions worksheet. Have students record their questions on their worksheet.
- Encourage them to consult the index to find the entries related to ozone and the ozone layer and to note pages where information on these topics is most likely to be found.
- As students read, they should use other reading strategies in addition to the targeted strategy presented in this section.

Introduce Vocabulary

- Remind students of the strategies they can use to work out words they don't know. For example, they can use what they know about letter and sound correspondence to figure out the word. They can look for base words, prefixes, and suffixes. They can use the context to work out meanings of unfamiliar words.
- Model how to apply word-attack strategies. Have students find the bold word *atmosphere* on page 4. Tell students that they can look at the letter the word begins with and then use what they know about syllables and vowels (one vowel sound per syllable) to sound out the rest of the word. Tell students to look for a clue to the word's meaning in the sentence that contains the unfamiliar word (*protective blanket around Earth*). Point out that students often can find clues in nearby sentences. (*The atmosphere is a mixture of many gases.*)
- Model how students can use the glossary or a dictionary to verify the word's meaning. Have a volunteer read the definition of *atmosphere* in the glossary. Have students follow along on page 4 as you read the sentence in which the word *atmosphere* is found to confirm the meaning of the word.
- Preview other vocabulary words, such as *fossil fuels*, *global warming*, *greenhouse effect*, and *pollutants*, in a similar fashion before students begin reading.

Set the Purpose

- Have students read the book to find answers to their questions about ozone and the ozone layer.

During Reading


Student Reading

- **Guide the reading:** Have students read to the end of page 13. Tell them to read for facts about the ozone layer that will answer their questions. Encourage students who finish early to go back and reread.

Lesson Plan *(continued)*

Threats to Our Atmosphere

- When they have finished reading, have students tell what each section was about and what they learned from their reading. Have students circle any questions on the KWL/ask-and-answer-questions worksheet that were answered and add any new questions that were generated. Model answering a question on the KWL chart.
- **Think-aloud:** *I wanted to know when and where the hole in the ozone was discovered. I found out that in the 1970s, scientists in Antarctica measured an increase in the UV light reaching Earth. I also found out that later scientists learned that the hole in the ozone was getting bigger and becoming a possible threat to humans. I'd like to learn more about how the ozone hole grows and what is being done to stop its growth. I'll add these questions to my KWL chart.*
- Have students share questions that were answered in the reading. Record their responses on the KWL chart on the board and have them do the same on their KWL/ask-and-answer-questions worksheet. Encourage them to add new questions they might have to their worksheet.
- Tell students to read the remainder of the book. Remind them to look for answers to their KWL worksheet questions or to think of new questions to add to it as they read.

 Have students make a question mark in their book beside any word they do not understand or cannot pronounce. Encourage them to use the strategies they have learned to read each word and figure out its meaning.

After Reading

- Ask students what words, if any, they marked in their book. Use this opportunity to model how they can read these words using decoding strategies and context clues.

Reflect on the Reading Strategy

- Ask students to share questions they added to their KWL/ask-and-answer-questions worksheet while reading and ask them what questions were answered in the text. Discuss how keeping their questions in mind while reading helped them to stay involved in the book and understand the information they were reading.
- **Think-aloud:** *I wanted to know more about how the ozone layer grows. I learned that some factories produce chemicals, such as CFCs and ODCs, which destroy the ozone. I also wanted to know what was being done to control the hole in the ozone layer. I learned that many nations joined together in 1987 to try to reduce and ban the production of CFCs and ODCs. I'll write these answers on my chart.*

Teach the Comprehension Skill: **Author's purpose**

- **Discussion:** Ask students to think about the author's purpose for writing *Threats to Our Atmosphere*.
- **Introduce and model:** Explain that writers have reasons for what they write. On the board, write: *inform or teach, entertain, persuade or convince*. Tell students that a writer usually has at least one of these three reasons for writing. Explain that readers can look for clues in the book to decide the author's purpose for writing.
- Explain that this is a nonfiction book and that nonfiction books are usually written to inform. Explain that along with the text, the photographs, charts, and diagrams all help inform the reader about the topic. Ask students to find clues in the book that show the book was written to inform (charts, diagrams, written descriptions of processes, and so on).
- Show students a textbook or encyclopedia and tell them that the author's purpose for writing this type of book is to inform or teach something. To illustrate the point, open the book and read a piece of information from the text. Show students a fiction book and explain that books like this are often meant to entertain. Read a funny, scary, or mysterious passage from the book and explain that these words are clues that the author is trying to entertain his or her readers. Explain that other books that are generally written to entertain include mysteries, science fiction books, and so on. Show students an advertisement or editorial from a newspaper. Explain that this type of writing is meant to persuade or convince the reader to agree with the writer. Point out a convincing statement and explain that these words are clues that the author wants the reader

Lesson Plan *(continued)*

Threats to Our Atmosphere

to think the way he or she does. Now ask students what the author's purpose was for writing *Threats to our Atmosphere* (to inform) and to give evidence from the book that shows this.

- **Check for understanding:** Ask students to think of a book they've read recently that taught them something (science book, biography, and so on). Ask them to think of something they've read that was funny, scary, silly, or mysterious (comics, fiction books). Ask students for an example of something they've read that attempted to get them to do or to believe something (an advertisement or poster).
- **Extend the discussion:** Ask students if they think the information in *Threats to Our Atmosphere* was easy to understand. Ask whether they still have questions about Earth's atmosphere, the ozone layer, global warming, greenhouse gases, or what is being done to protect Earth's atmosphere. If so, discuss resources students can use to learn more (books, encyclopedias, Internet, scientists, and so on).

Build Skills

Grammar and Mechanics: **Compound predicates**

- Review or explain that two short sentences can be combined to form a new sentence if the subject in each sentence is the same. Tell students that writers often combine sentences in order to make their writing easier to read and understand.
- Write the following sentence from page 4 on the board: *Earth's atmosphere filters out the Sun's harmful rays and prevents heat from escaping too rapidly into space.* Tell students that this is an example of a sentence formed from two shorter sentences that share the same subject. Have students identify the subject of the sentence (*Earth's atmosphere*). Ask volunteers to write each sentence separately on the board. (*Earth's atmosphere filters out the sun's harmful rays. Earth's atmosphere prevents heat from escaping too rapidly.*) Point out that each predicate begins with a different verb (*filters, prevents*).
- **Check for understanding:** Have students turn to page 9. Read the following sentence aloud: *This ozone is harmful to plants and animals, and is called "bad ozone."* Explain that this is an example of a sentence with a compound predicate. Ask volunteers to write each sentence separately on the board. (*This ozone is harmful to plants and animals. This ozone is called "bad ozone."*) Have students name the subject (*ozone*) and the predicates (*is harmful, is called*) Point out that in this example, the predicates begin with the same verb (*is*).
- **Independent practice:** Introduce, explain, and have students complete the **compound predicates worksheet**. If time allows, discuss their answers.

Word Work: **Content vocabulary**

- Talk about difficult scientific terms used in the text, such as *chlorofluorocarbons*. Ask students to share any other words from the text that they found difficult to understand or pronounce. List words on the board.
- **Check for understanding:** Provide opportunities for students to say the new vocabulary words from the book and to use the words in sentences. Refer them to the glossary or dictionary if necessary.
- **Independent practice:** Introduce, explain, and have students complete the **vocabulary worksheet**. If time allows, discuss their answers.

Build Fluency

Independent Reading

- Allow students to read their book independently. Additionally, allow partners to take turns reading parts of the book to each other.

Home Connection

- Give students their book to take home to read with parents, caregivers, siblings, or friends. Have them discuss the author's purpose for writing the book.

Extend the Reading

Writing Connection

Have students refer to the section titled “What You Can Do to Help.” As suggested, have them write a letter to an industry that still uses CFCs and ODCs. You might check electronics manufacturers. Suggest that students refer to the facts presented in this book and ask what the company is doing to reduce their production of these harmful chemicals. Have students obtain parental permission before mailing their letters.

Visit WritingA-Z.com for a lesson and leveled materials on transactional writing.

Science Connection

Provide print and Internet resources for students to learn more about the Earth’s atmosphere, its protective ozone layer, and the increase in “bad ozone.” Have students work in groups to find out what is being done in their city to alleviate pollution. Inform families and parents and invite them to be part of the activity. Provide contact numbers and email addresses for institutions, such as fire halls, the mayor’s office, transportation department, and the airport.

Skill Review

Discussion cards covering comprehension skills and strategies not explicitly taught with the book are provided as an extension activity. The following is a list of some ways these cards can be used with students:

- Use as discussion starters for literature circles.
- Have students choose one or more cards and write a response, either as an essay or as a journal entry.
- Distribute before reading the book and have students use one of the questions as a purpose for reading.
- Cut apart and use the cards as game cards with a board game.
- Conduct a class discussion as a review before the book quiz.

Assessment

Monitor students to determine if they can:

- consistently ask relevant questions about the topic prior to and during reading; locate answers to their questions in the text and understand that not all questions are found in one source
- thoughtfully analyze the author’s purpose; discuss different writing purposes
- recognize and write compound sentences in which predicates have been combined
- correctly use and understand content vocabulary

Comprehension Checks

- **Book Quiz**
- **Retelling Rubric**