

About the Book

Text Type: Nonfiction/Informational Page Count: 24 Word Count: 1,589

Book Summary

Eclipses are amazing events that have caused wonder, fear, and excitement throughout history. This informative text explains the two different types of eclipses and how they occur. The reader will also learn what ancient people thought eclipses meant, the famous scientists who studied them, and how they learned to predict when eclipses will happen. Engaging photographs and diagrams enhance the text, and the book concludes with instructions on how to view eclipses safely.

About the Lesson

Targeted Reading Strategy

- Ask and answer questions

Objectives

- Use the reading strategy of asking and answering questions to understand text
- Identify main idea and details
- Identify the various uses of commas
- Identify and understand conjunctions

Materials

Green text indicates resources available on the website

- Book—*Eclipses* (copy for each student)
- Chalkboard or dry erase board
- Ask and answer questions, main idea and details, commas worksheets
- Discussion cards



Indicates an opportunity for students to mark in the book. (All activities may be demonstrated by projecting 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: *accuracy (n.), coincidence (n.), obscured (adj.), orbited (v.), partial (adj.), predict (v.)*

Enrichment: *astronomers (n.), cosmic (adj.), eclipses (n.), light filters (n.), omens (n.), theory (n.)*

Before Reading

Build Background

- Ask students what they know about eclipses and if they have ever seen one. Have them brainstorm a list of questions they would like to know about eclipses. Record these on the board for future use.
- Explain to students that people in ancient times used to be afraid of eclipses because they didn't know how to explain events in space, but we now know what causes eclipses.

Preview the Book

Introduce the Book

- Give students their copy of the book. Guide them to the front and back covers and read the title. Have students discuss what they see on the covers. Encourage them to offer ideas as to what type of book it is (genre, text type, fiction or nonfiction, and so on) and what it might be about.
- Show students the title page. Discuss the information on the page (title of book, author's name).
- Preview the table of contents on page 3. Remind students that the table of contents provides an overview of the book. Ask students what they expect to read about in the book, based on what they see in the table of contents. (Accept all answers that students can justify.).

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

- Discuss with students that asking and answering questions while reading can help readers understand and remember the information in a book.
- Direct students to the table of contents. Remind them that the table of contents provides an overview of the information in a book and the way in which it is organized. After previewing the table of contents, use it to model asking questions.
Think-aloud: I can use the table of contents to help me think of questions I'd like to have answered about this book. For example, I see a section titled "Darkness at Noon or Midnight." I know that it's dark at midnight, but I wonder how it could be dark at noon. I also wonder why the Moon turns red. That sounds kind of scary! As I read, I enjoy looking for answers to my questions, which often spark further curiosity and questions to answer as I continue to read.
- Have students look at the other section titles. Invite them to share questions they have on the topic of eclipses that spark their curiosity, based on the table of contents and the covers of the book. Invite them to share their questions aloud.
- Introduce and explain the **ask-and-answer-questions worksheet**. Project a copy of the worksheet on the board. Inform students that under each section title, you would like them to write at least one question they thought of before or while reading. Explain that they will share their questions after reading.
- Write student questions on the class chart, and allow time for them to write their questions on their worksheet.
- Have students preview the rest of the book, including the photographs, captions, and the glossary on page 24. Invite them to share any additional questions they might have about the topics of this book. Write their responses on the class chart and have them copy the questions onto their worksheet.
- As students read, encourage them to use other reading strategies in addition to the targeted strategy presented in this section.

Introduce the Comprehension Skill: **Main idea and details**

- Explain that a book has a general topic that is the subject of the book; this is the main idea of the book. The extra information or the descriptions that help us to better understand the book are the details of the book. We need both a main idea and details in order to fully comprehend and enjoy a book.
- Explain that sometimes there is so much information on a topic that it is grouped into sections, and each section has its own main idea. Oftentimes, the reader has to read carefully to determine what is the main idea and what is the extra information that either supports or enhances the main idea.

- Read page 4 aloud to students. Model for them how to identify the main idea and details of the section titled “Darkness at Noon or Midnight.”
Think-aloud: As I read this section of the book, I noticed that the first paragraph described what it might be like to suddenly experience darkness in the middle of the day or to see the Moon turn from white to red. The second paragraph explains the difference between the two types of eclipses, lunar and solar. Based on what I’ve read, I think the first paragraph has interesting details that help the reader visualize, but I think the main idea of this section of the book is really stated in the second paragraph: A solar eclipse occurs when the Moon blocks out the Sun, and a lunar eclipse occurs when the Moon is darkened by Earth’s shadow.
- Write the main idea on the board. Ask students to identify the details from the book that support this main idea (*Eclipses have caused fear and excitement throughout history; imagine being outside on a sunny day and the world becomes dark; imagine a full, white moon suddenly turning blood-red*). Write these details on the board.
- Introduce and explain the [main-idea-and-details worksheet](#). Have students write the main idea and details for “Darkness at Noon or Midnight” on their worksheet.

Introduce the Vocabulary

- Write the following content vocabulary words on the board: *accuracy, coincidence, obscured, omens*. Read the words aloud with students.
- Divide students into small groups. Have each group discuss what they know about the meaning of each word and then write a definition on a separate piece of paper. Ask each group to share their meaning and definition for each word.
- Review the definition of each word that students wrote. Create a definition based on each group’s knowledge and write it on the board under each word.
- Model how students can use the glossary or a dictionary to find a word’s meaning. Remind students that they will often need to delete a suffix from a word to locate it in a dictionary. Have students locate the glossary at the back of the book. Invite a volunteer to read the definition for *accuracy* in the glossary. Have students compare the definition with their prior knowledge of the word (*for example, how does this word relate to the root word of accurate?*). Then have them follow along on page 16 as you read the sentence in which the word *accuracy* appears to confirm the meaning of the word. Repeat the exercise with the other words.


Set the Purpose

- Have students read to find out more about eclipses. Remind them to stop and fill in the answers to their questions as they find them.

During Reading

Student Reading

- **Guide the reading:** Have students read to the end of page 11. Remind them to read for information about eclipses that will answer their questions on their worksheet. Encourage students who finish early to go back and reread.
- When students have finished reading, have them circle any questions on their worksheet that were answered in the text and add any new questions that were generated. Remind them that as we read, new questions will often arise, even as we are finding the answers to our original questions.
- Model asking and answering questions.
Think-aloud: Before reading, I had many questions that I wanted answered about the topics in the book. One question I had was about the Moon turning red. I found out that the Sun’s light is made up of many colors. During a lunar eclipse, the red light from the Sun passes through our atmosphere and is scattered before passing back out in space. Some of this light hits the Moon’s surface and makes it appear red—but it can also look orange, yellow, or brown. If I think of any further questions while reading, I will write them on my ask-and-answer-questions worksheet.

- Ask students to write on their ask-and-answer-questions worksheet the answers to their circled questions and additional questions they raised. Invite them to share information they learned and the questions they thought of as they read the book.
 - Model identifying the main idea and details in the section titled “Eclipses in History.”
Think-aloud: *As I read the section titled “Eclipses in History,” I noticed that it gave examples of what ancient peoples thought about eclipses. It even talked about one event in the ancient Middle East where a war was ended because of the random occurrence of an eclipse. I think these are all details that support the main idea of the book.*
 - Ask students to identify other important details in the section (for example, *ancient Chinese thought the Sun was being eaten by a dragon*). Write this detail and others on the board.
 - Review the details from the section on the board. Discuss with students a main idea for the section, based on the details on the board. (*Long ago, people were afraid of eclipses because they didn’t understand them*). Write the main idea on the board.
 - Discuss with students how sometimes the main idea is an actual sentence in the paragraph, but sometimes the main idea is implied. It is up to the reader to determine the main idea from the details the author provides.
 - Have students write the main idea and details for “Eclipses in History” on their main-idea-and-details worksheet.
 - **Check for understanding:** Ask students to read the section titled “The Sun Blotted Out.” Invite them to share the information they felt was important about the section. Write these details on the board. Have students work in pairs to determine the main idea from the details of this section. Have them write the main idea and details for “The Sun Blotted Out” on their main-idea-and-details worksheet.
 - Have students circle any questions on their ask-and-answer-questions worksheet that were answered in the text they read. Ask them to write answers to any circled questions and to write additional questions they raised on their worksheet. Invite them to share the information they learned and the questions they generated while reading.
 - Have students read the remainder of the book. Remind them to look for and write answers to their questions on their ask-and-answer-questions worksheet. Encourage them to add new questions they might have to their worksheet 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


- Reinforce that asking questions before and during reading, and looking for the answers while reading, keeps readers interested in the topic. It also encourages them to keep reading to find answers to their questions and helps them understand and remember what they have read.
Think-aloud: *I wanted to know how the Moon could blot out the Sun when it is so much smaller than the Sun. I learned that because the Sun is so much farther from Earth than the Moon is from Earth, it looks to us as though they are the same size.*
- Remind students that all of their questions may not have been answered in this text. Discuss as a class other sources they might use to locate additional information to answer their questions.
- **Independent practice:** Have students fill in the remainder of their ask-and-answer-questions chart. Invite them to share the information they learned and any questions they may still have.

Reflect on the Comprehension Skill

- **Discussion:** Discuss with students the importance of stopping to review the details that helped them to remember the facts and information in the book. Ask them how the details they identified support the main idea.
- **Independent practice:** Have students complete the last section of their main-idea-and-details worksheet for any of the remaining sections of the book. If time allows, discuss their answers.
- **Enduring understanding:** In this book, you learned about the history of the study of eclipses and their scientific explanation. Now that you know this information, why do you think ancient cultures made up stories to explain eclipses?

Build Skills

Grammar and Mechanics: Commas

- Remind students that commas can be used in many different ways. Three specific ways are: *with introductory words, words in a series, and in compound or complex sentences.*
- Write the following sentence on the board: *However knowledge about what really caused eclipses spread slowly.* Select a student to read the sentence aloud. Then circle the word *However* and explain that this is an introductory word. Explain that introductory words are often used as a lead-in or a transition to the rest of the sentence. Inform students that a comma is often used after an introductory word. Place a comma after the word *However* and have the student read the sentence again.
- Write the following sentence on the board: *Eclipses are amazing events that have caused wonder, fear, and excitement throughout history.* Ask a volunteer to read it aloud as it is written, without pauses. Ask students to tell what is missing from the sentence (commas). Explain that this sentence contains a list, or series, of words that need to be separated by commas. Add commas to punctuate the sentence: *Eclipses are amazing events that have caused wonder, fear, and excitement throughout history.* Have the volunteer reread the sentence using proper pauses.
- Write the following sentences on the board: *During a solar eclipse the Moon blocks out the Sun; Earth has an atmosphere and light from the Sun passes through it.* Explain that the first sentence is an example of a complex sentence—it contains one dependent clause (*During a solar eclipse*) and an independent clause (*the Moon blocks out the Sun*). A complex sentence requires a comma between the clauses. The second sentence is an example of a compound sentence—it contains two independent clauses (*Earth has an atmosphere; light from the Sun passes through it*) separated by the conjunction *and*. A compound sentence requires a comma between the two clauses, and it belongs in front of the conjunction.
- Demonstrate the placement of the commas in both example sentences on the board. Circle or underline the dependent and independent clauses in each sentence. If students are unfamiliar with independent and dependent clauses, provide more examples and modeling.
-  **Check for understanding:** Have students turn to page 15. Ask students to find and circle two examples of a comma being used to set off an introductory word (*However, many solar eclipses...; Also, because the Moon's darker center...*). Next, have students turn to page 13 and read the first sentence. Have them circle the comma, and ask a volunteer how the comma is being used (to separate a dependent and independent clause in a complex sentence). Then have students turn to page 6, and read the first sentence in the second paragraph. Ask another volunteer to explain the use of commas in this sentence (to punctuate a series).
- **Independent practice:** Introduce, explain, and have students complete the [commas worksheet](#). If time allows, discuss their responses.

Word Work: Conjunctions

- Review or explain that a *conjunction* is a word that links together and relates two parts of a sentence. Examples of conjunctions are: *and, but, or, because, when, for, so, if, and yet.*

- Ask students to turn to page 8. Write the following sentence from the book on the board: *But Earth does have an atmosphere, and light from the Sun passes through it.* Explain that the conjunction *and* connects the two independent clauses. Discuss how authors often combine sentences with a conjunction to make their writing more fluent and interesting.
- **Check for understanding:** Have students turn to page 9. Ask them to find a sentence that uses the conjunction *and* (the third sentence: *But red light passes through the atmosphere and is scattered before passing back out into space*). Next ask students to identify a sentence on the same page that connects two phrases with the conjunction *but* (the fifth sentence: *The Moon usually turns a reddish color, but it can also be orange, yellow, or brown.*).



Independent practice: Assign student pairs a page from the book. Ask them to identify and circle any sentences that use a conjunction to join phrases or clauses together. Share and discuss their findings if time allows.

Build Fluency

Independent Reading

- Allow students to read their book independently. Additionally, partners can 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 their questions about eclipses with someone at home.

Extend the Reading

Informational Writing Connection

Provide student pairs with additional print and Internet resources to further research early astronomers (for example, Galileo, Ptolemy, Halley, and Newton). Have them create a 5"x7" card with important facts, such as when the astronomer was born, what major discovery he was responsible for, and how it challenged the thinking at the time. Post students' cards along a large timeline to make a class bulletin board.

Visit [Writing A-Z](#) for a lesson and leveled materials on expository writing.

Science Connection

Have students explore the website (<http://eclipse.gsfc.nasa.gov/eclipse.html>) to find out when the next eclipse will occur in their area. Then provide materials and extra copies of instructions on page 19, and guide students to make their own pinhole projector. Remind students to never look directly at the Sun, especially during a solar eclipse.

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 use the strategy of asking and answering questions to comprehend the text during discussion and on a worksheet
- identify the main idea and supporting details in each section of the text in discussion and on a worksheet
- recognize and use commas in the text, during discussion, and on a worksheet
- accurately identify conjunctions in text and during discussion

Comprehension Checks

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