

About the Book

Text Type: Nonfiction/Informational Page Count: 16 Word Count: 1,520

Book Summary

In 2006, two men made an amazing discovery in eastern Montana when they found the fossilized skeletons of two dinosaurs that died side by side. Evidence suggests that these dinosaurs may have even died as a result of fighting each other. Why, then, are museums and universities hesitant to purchase the fossils and put them on display? Read this informative book to learn about the debate going on between scientists and “fossil hunters” about who should be allowed to excavate fossils and what should happen to them once they’re discovered.

About the Lesson

Targeted Reading Strategy

- Ask and answer questions


Objectives

- Ask and answer questions to understand text
- Compare and contrast details in the text
- Recognize and understand the use of hyphenated compound adjectives
- Identify and understand synonyms

Materials

Green text indicates resources are available on the website.

- Book—*Dino Duel* (copy for each student)
- Chalkboard or dry-erase board
- Colored highlighters or markers
- Thesauri
- Ask and answer questions, compare and contrast, 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 an interactive whiteboard or completed with paper and pencil if the books are reused.)

Vocabulary

*Boldface vocabulary words also appear in a pre-made lesson for this title on VocabularyA-Z.com.

- Content words:
 Story critical: **biased** (adj.), **commercial** (adj.), **debate** (n.), **excavating** (v.), **fossil** (n.), **paleontology** (n.)
 Enrichment: **amateurs** (n.), **auction** (n.), **dueling** (v.), **private** (adj.), **regulate** (v.), **specimens** (n.)

Before Reading

Build Background

- Ask students if they have ever seen real dinosaur bones, fossils, or skeletons. If so, where did they see them? Ask students if they’ve ever seen a dinosaur fossil at a friend’s house or at a store for sale and why they haven’t.
- Show students the cover of the book and read the title. Define the word *duel* as a one-on-one fight, or two parties battling over something. The cover depicts two dinosaurs in a duel, but tell students they will learn of a duel going on about who can own fossils.

Book Walk

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, and so on) and what it might be about.
- Show students the title page. Discuss the information on the page (title of book and author's name).


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

- Explain to students that engaged readers help themselves to understand what they are reading by asking questions before, during, and after reading. Discuss with students how interacting with the text by asking questions will help them understand and remember what they read.
- Read page 3 aloud with students. Model asking questions about the table of contents.
Think-aloud: After reading the table of contents and looking at the map, I see that the author has broken the text into three parts. The first question that comes to mind is, What are dueling dinosaurs? This must have something to do with fossils found in Montana. I'm going to write this question on the board for us to come back to when we finish reading. The second section is titled "Dueling Humans," which leads me to ask, Who is dueling, and what does that have to do with dinosaur fossils? The third section is already a question: "Whose Fossils?" Before I read, several questions often come to mind about the topic. As I read, I enjoy looking for answers to my questions, which often sparks further curiosity and questions to answer while I read.
- Create a chart on the board similar to the ask-and-answer questions worksheet. Write your questions from the think-aloud on it. Distribute the [ask-and-answer-questions worksheet](#) to students. Ask them to think about the title of this section ("Dueling Dinosaurs"), reread page 3, and then have them write a question in the first section on their worksheet. Invite them to share some of their questions and write them on the class chart.

Introduce the Comprehension Skill: **Compare and contrast**

- Explain to students that engaged readers can organize information they read by thinking about how details or topics are alike and how they are different. This is called *comparing and contrasting*. Create a Venn diagram on the board and write the word *Dinosaurs* above the diagram. Label the left circle *Tyrannosaurus rex* and the right circle *Diplodocus*.
- Show students pictures of the two dinosaurs. Invite them to explain how the animals are alike and different (alike: both lived long ago, both are extinct, and so on; different: *Tyrannosaurus rex* ate meat, had huge teeth, walked on two legs, *Diplodocus* had a long neck, ate plants, walked on four legs). Model how to write each response on the Venn diagram.
- *Think-aloud: To understand and remember new information from a book, I can think about how information is alike and different. A Venn diagram is one way to organize information that is alike and different.*
- Explain to students they can look for and use clue words or phrases to compare and contrast ideas or events. Make a list on the board next to the Venn diagram: *both, like, as, alike, similar, also, however, different, now, yet, but, in contrast*. Have each student choose a word from the list and create a sentence using the information in the Venn diagram. (For example, *Both dinosaurs are extinct, but Tyrannosaurus rex ate meat and Diplodocus ate plants.*)
- As students read, encourage them to use other reading strategies in addition to the targeted strategy presented in this section.

Introduce the Vocabulary

-  Have students turn to the glossary on page 16. Ask them to fold the back page over to cover the definitions of the words. Provide them with three different colored highlighters or markers. Have them use one color to highlight words they are very familiar with and can tell what the word means and use it in a sentence. Have volunteers identify and define words they know.



Ask students to use another color to highlight words they have heard before and are somewhat familiar with, but can't really define or use in sentences. Explain to students that these are words they will probably be able to infer or remember the meaning of on the basis of the context. Ask students to make a mental note of the words highlighted in this color, so they can be looking for them in the text.

- Ask students to use their last color to highlight any words they don't know at all and may not know how to pronounce. Ask students to fold back the page and carefully read the definition of the words highlighted in this color, then have them turn to the page each word is found on and read it in its context.

Set the Purpose

- Have students read to find out more about the dueling dinosaur fossils found in Montana. Encourage students to ask questions about what they are reading and to seek answers as they read.

During Reading


Student Reading


- **Guide the reading:** Have students read from page 4 to the end of the first paragraph on page 6. Encourage those who finish early to go back and reread. Ask students to go back and look at their ask-and-answer-questions worksheet and see if this part of the text answered their question.
- Model answering a question and filling in the second section of the ask-and-answer-questions chart on the board.

Think-aloud: *Before reading this section, some questions came to mind. I wondered, on the basis of the table of contents, what dueling dinosaurs are. I now know that two fossil hunters found two complete, incredibly well-preserved skeletons of dinosaurs that died while fighting each other. I will write this answer on the ask-and-answer-questions chart on the board.*

- Point out to students that often when reading, one question will get answered but others will be generated. As an example, discuss how, after reading the first paragraph on page 6, the first thing that came to mind were the questions, *Why hasn't this been in the news?* and *What museum has the fossils?*
- Ask students to write answers to their question(s) on their ask-and-answer-questions worksheet and any new questions that come to mind. Invite them to share the information they learned and the questions they answered as they read this section.
- Have students read the rest of page 6. Reread the third paragraph aloud, defining unfamiliar words, rephrasing, and summarizing to ensure that students understand the focal debate in the field of paleontology. Point out the two key questions the author has presented for the reader, and write them on the board in the class chart: *Should dinosaur bones belong to the world or to the people on whose land they're found?* and *Who should be allowed to collect them?* Circle these two questions on the chart.
- Have students read pages 7 through 10. After reading, explain to students that you now know the answer to your second question, *Who is dueling, and what does that have to do with dinosaur fossils?* Write *Commercial fossil hunters and scientists are fighting over what should be done with the dueling dinosaurs and how they were excavated.* Ask them to check their worksheet and write in any answers to questions they had.
- Explain to students that, like a Venn diagram, a comparison matrix is another way that information can be organized to compare and contrast. Show students the **compare-and-contrast worksheet** on the board. Distribute a copy to each student, and point out how the column headings match the topics that commercial fossil hunters and paleontologists are debating. Discuss what information they can record in the first column of their comparison matrix, under *Who Profits?* (for example, *Commercial Fossil Hunters: fossil hunters and land owners split the profits;* *Paleontologists: fossils should be available to scientists for study.*)

- **Check for understanding:** Ask students to go back and reread from the middle of page 8 to the end of page 10. Discuss and summarize what excavation techniques are and what the two groups think about it. Decide as a group what should be written in to the next column on their comparison matrix. Point out the questions in the *Think About It* box on page 10. Invite students to continue thinking about these questions as they read. Ask students to check their worksheet and share any recorded questions that have been answered and new questions that have arisen. Allow a few minutes for students to record any new questions.

 Have students read the remainder of the book. Point out the remaining two columns on the comparison matrix, and remind them to look for the two opposing views on these topics.

 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 enjoy what they read.
- **Think-aloud:** *Before reading, I wanted to know what dueling dinosaurs and humans were. I now know that there is a big debate between paleontologists and fossil hunters.*
- **Independent practice:** Have students look over their worksheet and finish recording the answers they found to their questions. Point out to students that all of their questions may not have been answered in this text. Return to the two circled questions on the class chart, and discuss with students that the author has asked questions throughout the text for the reader to reflect on and form an opinion about after learning both sides of the argument. In fact, the author has left the reader with a question at the end of the book, *What will the fate of those fossils be?* Ask students to share their opinions.

Reflect on the Comprehension Skill

- **Independent practice:** Have students finish their compare-and-contrast worksheet. Discuss and compare the answers they recorded in the grid.
- **Discussion** Discuss how comparing and contrasting the viewpoints of the two groups in the book helped students to understand both sides of the argument and helped them to form conclusions on the debate.
- **Enduring understanding:** In this book, you learned about two opposing viewpoints in the field of paleontology. If you came across a fossil while hiking, how would you answer the author's questions: *Should you pick it up and take it home? Report your find? Leave it alone?*

Build Skills

Grammar and Mechanics: Hyphenated compound adjectives

- Write the following sentence on the board: *The area is known for its many fossils.* Have a volunteer come to the board and circle the adjective in the sentence (*many*). Then, have the student underline the noun that the adjective describes (*fossils*).
- Review or explain that *adjectives* are words that describe nouns or pronouns. An adjective tells *which one, how many, or what kind*.

- Write the following sentence on the board: *The bones belonged to a plant-eating dinosaur.* Underline the word *dinosaur*. Have a volunteer come to the board and underline the word that describes dinosaur (*plant-eating*).
- Explain that this word is an example of a hyphenated compound adjective. Point out that not all compound adjectives are hyphenated. However, each part of a compound adjective alone does not describe the noun. For example, it doesn't make sense to describe the dinosaur as a *plant dinosaur*. The meaning associated with the dinosaur would not be as strong or descriptive if the dinosaur were described as an *eating dinosaur*. However, together the words *plant* and *eating* create a compound adjective that better describes the dinosaur.
- **Check for understanding:** Write the following sentence on the board: *Collecting fossils is a one-shot event.* Circle the word *event*. Have a volunteer come to the board and underline the words that describe the event (*one-shot*). Invite students to read the sentence again, substituting the phrase *one-shot event* with *one event* and *shot event*. Have them explain whether each one makes sense and how the meaning of the sentence is changed.



Independent practice: Have students identify and circle the remaining hyphenated compound adjectives in the book. Have them underline the nouns that the adjectives describe.

Word Work: **Synonyms**

- Write the word *huge* on the board, and then read the third sentence from the book. Ask students to suggest a word that means almost the same thing (*large*). Review or explain that a word that means the same or almost the same as another word is called a *synonym*.
- Ask students to explain why the use of synonyms is important in writing (they help describe something in text, they make the writing more interesting and varied, and so on). Have them provide examples that support their thinking from the first paragraph. (For example, the author uses *enormous* instead of *huge* in the fourth sentence.)
- Have students find the word *excavating* in the second paragraph. Write the word on the board and have students turn to the glossary on page 16. Ask them what synonyms are used in the definition (*uncovering, digging*).
- Show students a thesaurus. Use the word *excavate* to demonstrate how a thesaurus is used. Write synonyms for *excavate* on the board and compare the meanings of the words. Point out that a thesaurus identifies synonyms for words.
- **Check for understanding:** Give pairs of students a thesaurus. Ask them to locate the synonyms for the word *duel*. If needed, provide additional practice using a thesaurus.
- **Independent practice:** Introduce, explain, and have students complete the **synonyms worksheet**. If time allows, discuss answers aloud after they are finished.

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 students discuss what they've learned about the differences between paleontologists and fossil hunters.

Extend the Reading

Informational Writing Connection

Divide the group in half and assign each group to either *Paleontologists* or *Fossil Hunters*. Challenge them to research and find out as much as they can about the work the two groups do. Have them take notes from their research and present their findings to the other group. Invite them to compare and contrast the two, and discuss. Require them to cite their sources. Visit WritingA-Z.com for a lesson and leveled materials on informational writing.

Science Connection

Ask students to investigate the latest developments in the Montana Dueling Dinosaurs debate. Review the key question from the *Think About It* box on page 12: *If you found an amazing dinosaur specimen, how important would it be to you where it ended up?* to guide their investigation. Provide time for students to share what key facts or details they found.

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
- correctly compare and contrast nonfiction details within the text during discussion and on a worksheet
- correctly identify hyphenated compound adjectives in the text and during discussion
- accurately identify and understand synonyms for selected words from the text during discussion and on a worksheet

Comprehension Checks

- [Book Quiz](#)
- [Retelling Rubric](#)