

About the Book

Text Type: Nonfiction/Informational Page Count: 24 Word Count: 1,812

Book Summary

What do humans have in common with snakes, elephants, and whales? A skeleton! The numbers of bones may vary, but the purpose is the same—to support and protect all of the organs inside the body. Photographs, illustrations, X-rays, and detailed diagrams of various bones help readers make meaningful connections with the text.

Book and lesson also available at Levels R and U.

About the Lesson

Targeted Reading Strategy

- Connect to prior knowledge

Objectives

- Connect to prior knowledge to understand text
- Identify main idea and details in nonfiction text
- Recognize complex sentences
- Identify and use multiple-meaning words

Materials

Green text indicates resources available on the website

- Book—*The Hard Stuff! All About Bones* (copy for each student)
- Chalkboard or dry-erase board
- Connect to prior knowledge, main idea and details, complex sentences, multiple-meaning words worksheets
- Dictionaries
- 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

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

- Content words:

Story critical: *appendages* (n.), *bone marrow* (n.), *cartilage* (n.), *ligaments* (n.), *tendons* (n.), *vertebrates* (n.)

Enrichment: *ball-and-socket-joints* (n.), *dexterous* (adj.), *fused* (adj.), *hinge joints* (n.), *legumes* (n.), *spinal cord* (n.), *sutures* (n.), *swivel joints* (n.)

Before Reading

Build Background

- Write the word *bones* on the board. Have pairs of students brainstorm and list words, phrases, and concepts related to the word that come to mind.
- Record class ideas on the board as each pair shares their list aloud.
- Have students discuss the list on the board, noting words that are familiar or unfamiliar to them, how the words might be categorized, which words make them think of questions, and so on.

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 and what it might be about.
- Show students the title page. Discuss the information on the page (title of book, author's name).
- Ask students to turn to the table of contents. Remind them that the table of contents provides an overview of what the book is about. 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: **Connect to prior knowledge**

- Explain that good readers use what they already know about a topic to understand and remember new information as they read a nonfiction book.
- Model connecting to prior knowledge using the information in the table of contents.
Think-aloud: The section title "Put Your Back Into It" suggests to me that this section will be about the backbone. I know that another name for the backbone is the spine. I also know that the spine is very important and that if it is damaged, it affects whether people are able to walk or not. I'm not sure exactly why this is so, but I hope to find out when I read that section. I will be able to add new information about the spine to what I already know.
- Have students preview the covers of the book. Ask them open-ended questions to facilitate the discussion: *What does the photo on the front cover show? What do you see on the back cover? What are the similarities and differences between the two images? What else do you know about bones?*
- Introduce and explain the [connect-to-prior-knowledge worksheet](#). Have students complete the first portion of the 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 to students that sometimes the amount of information about a topic is so large that it is grouped into sections, each section having its own main idea.
- Reread the section titles in the table of contents together. Explain to students that they will be learning how to use what they read to identify main ideas in the book as a strategy for understanding and remembering the content of the book.
- Read pages 4 and 5 aloud to students. Model identifying the main idea and details.
- *Think-aloud: I know that the section headings sometimes identify the main idea. Each section in this book contains details that support a main idea about bones. The first section is titled "Body Shapers." In this section, I learned that skeletons are the bones inside humans and other animals—vertebrates—that give their bodies shape. Many bones have muscles attached to them by tendons, and those bones help the animal move. Some bones protect soft organs inside the body. Large bones have areas in the center that make blood cells. I will underline this important information. Based on what I've read, I think the main idea of the section is: Bones are important to a vertebrate's body for many reasons: they give our bodies shape, attach to muscles and tendons to help us move, protect our organs, and contain areas that make blood cells.*
- Ask students to identify details from the section that support this main idea (skeleton is a frame, 206 bones, and so on). Point out the difference between interesting details and essential facts that support the main idea.
- Introduce and explain the [main-idea-and-details worksheet](#). Draw a similar chart on the board.
Say: I can use this chart to help me keep track of the main idea and details of each section of the book. I will use the section heading as a strong clue as to the main idea for that section.

Introduce the Vocabulary

- Write the following vocabulary words on the board: *appendages*, *cartilage*, and *ligaments*.
- Explain that these words can be found in the text and that knowing what they mean will help students better understand what they are reading. Divide students into pairs and assign each pair one of the content vocabulary words. Give each pair a blank piece of paper and have them write or draw what they know about the word and create a definition using prior knowledge.
- Model how students can use the glossary to find a word's meaning. Have them locate the word *appendages* in the glossary. Invite a volunteer to read the definition for *appendages*.
- Have students turn to page 14 in the book and read the sentence in which the word *appendages* is found. Have students confirm the meaning of the word.
- Repeat the exercise with the remaining vocabulary words.

Set the Purpose

- Have students read the book to find out more about bones. Remind them to think about what they already know about bones and to identify important details in each section of the text as they read.

During Reading

Student Reading




Guide the reading: Have students read from page 6 to the end of page 13. Ask them to put an asterisk or a star next to information they connected with prior knowledge. Encourage students who finish before everyone else to go back and reread.

- Model making connections using prior knowledge.
Think-aloud: *I read that the facial part of a skeleton is missing a nose. I know that a nose is made of cartilage and that cartilage is not bone. I have touched my nose before and have moved it around. It feels different from the hard bones in my cheeks, forehead, and chin.*
- Ask open-ended questions to facilitate discussion: *What do you know about cartilage in your body? What other parts of your body are made of cartilage?* Ask students to share additional ways they connected to prior knowledge while reading the text.
- Review with students that the title of each section can be a clue to the main idea for that part of the book. Have them turn back to page 6. Say: *The title of this section is "Heads Up." It makes me think that the main idea has something to do with the head as a part of the skeleton.* Ask students to provide details for this main idea and write them on their main-idea-and-details worksheet (cranium protects the brain, skull is made up of many different bones, and so on). Ask them to check their main-idea-and-details worksheet with a partner, adding important details that they may have left out, or erasing details that they added that weren't essential to the main idea. Review the details that were important to add to their worksheet when reading "Put Your Back Into It." Add those details to the class chart.
- **Check for understanding:** Have students read to the end of page 17. Ask them to share examples of how they connected to prior knowledge. Then ask students to turn to page 14 and identify the main idea of the section (appendages). Have them identify the important details (hands and arms, feet and legs; hands and wrists have 27 bones, more than any other part of the body; so many small bones allow flexibility and precision; each foot has 26 small bones). Check worksheets for individual understanding. Encourage additions or subtractions to accurately record the most important details in the section "And Now the Appendages."



Have students read the remainder of the book. Remind them to think about what they know about bones as they read and to identify important details in each section. Have them continue to put an asterisk or a star next to information they connected with prior knowledge.

-  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

- Have students complete the prior knowledge worksheet and compare what they knew before they read the book with what they know after reading it.
- Discuss how making connections between information read and information known about the topic keeps readers actively involved and helps them remember what they have read.
- **Think-aloud:** *When I read pages 21 and 22, I thought about how important it is to keep our bones healthy. When I read about a broken bone needing a cast, it reminded me of my cousin. Her doctor put a cast on her arm after she fell off the monkey bars. Although she didn't like wearing the cast, her doctor told her that it was necessary to hold her bones in the correct place while they were healing. I know that keeping my bones strong makes me a healthier person. Thinking about what I already knew about keeping bones strong helped me to understand and remember this information.*
- Have students share examples of how they connected to prior knowledge to understand the information in the book.

Reflect on the Comprehension Skill

- **Discussion:** Talk about how stopping to review the important details helped students remember facts and better understand the information. Ask them to use the important details they identified to confirm the main idea of the book.
- **Independent practice:** Have students complete their main-idea-and-details worksheet. Have students work in pairs to check their work.
- **Enduring understanding:** The human body is made up of many different parts, each with a special job to do. All of the parts are connected, and they only work at their best when all of the other parts are working well, too. Now that you know this information, how does it make you feel about making choices to keep your body healthy?

Build Skills


Grammar and Mechanics: Complex sentences

- Write the following sentence on the board: *He got a cast on his leg _____ he broke his fibula.*
- Have students read the sentence and suggest words that belong in the blank to complete the sentence (*because, since, when*).
- Review or explain that a *conjunction* is a word that joins together two parts of a sentence. Point to the examples that students suggested to complete the sentence on the board. Explain that these conjunctions join parts of sentences together to form a *complex sentence*. List examples of conjunctions on the board (*after, although, as, as if, because, before, for, if, once, since, than, that, though, unless, until, when, whenever, where, whereas, wherever, whether, while*).
- Reread the sentence on the board, including a conjunction in the sentence. (*He got a cast on his leg because he broke his fibula.*) Underline *He got a cast on his leg*. Explain that this part of the sentence is called the *independent clause*. Circle *because he broke his fibula*. Explain that the part of the sentence that follows the conjunction is called the *dependent clause*. Point out that even though both sentence parts contain a subject and verb, the dependent clause does not express a complete thought and is not a sentence on its own.

Lesson Plan *(continued)*

The Hard Stuff! All About Bones

- Ask students to turn to page 8. Write the following sentence from the sidebar on the board:
When the eardrum picks up sounds and vibrates, the eardrum moves the hammer.
- Have students identify the conjunction (*when*), the dependent clause (*When the eardrum picks up sounds and vibrates*), and the independent clause (*the eardrum moves the hammer*). Point out that in this example, the dependent clause comes at the beginning of the sentence.
- Have students read the sentence with the independent clause at the beginning (*The eardrum moves the hammer when the eardrum picks up sounds and vibrates*). Point out that either sentence is correct. However, when the dependent clause is at the beginning of the sentence, a comma often separates the clauses.

 **Check for understanding:** Have students highlight the following sentence from page 11 in their book: *Because the backbone is a chain of bones instead of one solid bone, it is very flexible and can move in many directions.* Have students underline the dependent clause (*Because the backbone is a chain of bones instead of one solid bone*) and circle the independent clause (*it is very flexible and can move in many directions*). Ask students to identify the conjunction (*because*). Repeat the process with the following sentence from page 14: *Your arms and hands allow you to lift and hold things (independent clause), while your legs and feet help you to move around (dependent clause).* Ask students to identify the conjunction (*while*).

- **Independent practice:** Introduce, explain, and have students complete the [complex sentences worksheet](#). If time allows, discuss their responses.

Word Work: **Multiple-meaning words**

- Write the following sentences on the board: *She drove over the snowy mountain pass. He asked me to pass the bread.* Ask students to identify the word in each sentence that is spelled the same (*pass*).
- Have students explain the difference between the meanings of the two words (a narrow passage between mountains; to move something from one place to another). Explain that words that are spelled and sound the same but have different meanings are called *multiple-meaning words*.
- Have students locate the word *face* on page 6. Ask a volunteer to define the word using the context of the sentence (the front of the head). Invite students to share other meanings of the word *face* (to confront or deal with).
- Ask a volunteer to locate the word *face* in the dictionary and read the definitions aloud. Write each definition on the board and have volunteers use each meaning of the word *face* in a sentence.
- Repeat the dictionary exercise for the word *watch*.
- **Check for understanding:** Write the words *can* and *show* on the board. Have students locate each word in the dictionary and read the definitions. Then have them use each of two different definitions of the word in a sentence on a separate piece of paper. Have students share their sentences aloud.
- **Independent practice:** Introduce, explain, and have students complete the [multiple-meaning-words worksheet](#). If time allows, discuss their answers.

Build Fluency

Independent Reading

- Invite students to read their book independently or with a partner. 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 compare prior knowledge about bones with someone at home.

Extend the Reading

Informational Writing Connection

Have students choose a topic to research further: the skeletal system, bone marrow, or spinal column. Provide index cards for students to record information they discover while researching online. Have students present the information in a written report. Require that the report be comprised of five paragraphs, including an introduction and conclusion, and encourage students to add photographs or illustrations to their work.

Science Connection

Take a class trip to the school or city library. Instruct students to find print and Internet resources to further research how to keep their bones healthy. Have groups of two or three students make “Healthy Bones” posters that explain different ways to keep their bones strong. Encourage the addition of illustrations or photographs. Display the finished posters in the classroom, lunchroom, or library.

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.
- Conduct a class discussion as a review before the book quiz.

Assessment

Monitor students to determine if they can:

- consistently use the strategy of connecting to prior knowledge to understand nonfiction text during discussion and on a worksheet
- accurately identify important details in each section that support the main idea during discussion and on a worksheet
- correctly identify the two parts of complex sentences in the book and the conjunctions that join them during discussion and on a worksheet
- correctly use multiple-meaning words in sentences during discussion and on a worksheet

Comprehension Checks

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