

About the Book

Text Type: Nonfiction/Informational Page Count: 16 Word Count: 489

Book Summary

Two unmanned *Voyager* spacecraft were launched in 1977 with a mission of studying the large outer planets of our solar system. *Voyagers in Space* describes their journeys, the information the *Voyagers* learned about the giant planets, and their current task of exploring deep space. Photographs, diagrams, and time lines support the text. Build on students' intrinsic interest in space exploration to teach about distinguishing between fact and opinion and using past-tense verbs.

Book and lesson are also available for Levels P and S.

About the Lesson

Targeted Reading Strategy

- Ask and answer questions

Objectives

- Ask and answer questions to understand text
- Distinguish details as fact or opinion
- Identify *r*-controlled vowel *er*
- Identify and use past-tense verbs
- Recognize and use compound words

Materials

Green text indicates resources are available on the website.

- Book—*Voyagers in Space* (copy for each student)
- Chalkboard or dry-erase board
- Sheets of paper
- Photographs of astronomical objects
- Photograph for each story-critical vocabulary word
- Highlighters
- **Fact or opinion, past-tense verbs, compound words 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: *exploring* (v.), *moons* (n.), *planets* (n.), *rings* (n.), *solar system* (n.), *spacecraft* (n.)
Enrichment: *discoveries* (n.), *journey* (n.), *telescopes* (n.)

Before Reading

Build Background

- Ask students to draw a picture of a spaceship. Invite volunteers to share their picture with the class along with details they know about the subject. Record on the board information about spaceships, using key words and pictures.
- Have students share with a partner what they know about outer space. Place on the board

photographs of astronomical objects, such as stars and planets. Have students identify the photographs. Discuss these images with students and how scientists learn more about items in space.

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, 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).

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

- Explain to students that effective readers help themselves to understand what they are reading by asking questions before and during reading. Discuss with students how seeking answers to their questions will help them understand and remember what they read.
- Direct students to the table of contents. Model how to ask questions.
Think-aloud: The table of contents provides clues about the information in the book. Reading the section titles leads me to think of questions for this book: What kind of job will the spacecraft have? Are there people on the ship who have to do the work? I will search for the answers to these questions as I read.
- Record your questions from the think-aloud on the board. Remind students that they will form questions using the information in the text and their own prior knowledge of the subject.
- Have students review the table of contents. Ask them to share with a partner some of the questions they have on the basis of this information. Invite volunteers to share their questions with the rest of the class, and record them on the board.
- As students read, encourage them to use other reading strategies in addition to the targeted strategy presented in this section.

Introduce the Comprehension Skill: **Fact or opinion**

- Explain to students that nonfiction books usually contain both facts and opinions. A fact is a detail that can be verified or proven, and an opinion expresses how a person feels. *Explain to students that it is necessary to distinguish between facts and opinions so they are not misled by emotion and personal feeling.*
- Point out that a reader can agree or disagree with an opinion. A fact can be proven by outside sources, such as scientific research or historic accounts.
- Write the following sentences on the board: *Jupiter is a planet in our solar system. Jupiter is the best planet in our solar system.*
- Model distinguishing between fact and opinion.
Think-aloud: When I read the first sentence, I ask myself, is this a fact or an opinion? I can look up this information in scientific journals and discover proof that Jupiter is a planet. Therefore, I know it is a fact. What about the second sentence? Some people may think Jupiter is the best planet, but some may disagree. This is not something that can be verified with research, because it expresses a preference. The second sentence must be an opinion.
- Write on the board the following fact: *Spacecraft are ships that travel through outer space.* Read it aloud with students. Have students share with a partner an opinion about spacecraft. Invite volunteers to share their opinions with the rest of the class, and have other students give a thumbs-up signal if they agree that the statements are opinions, not facts.

Introduce the Vocabulary

- Remind students of the strategies they can use to sound 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 words within words, and prefixes and suffixes. For example, point to the word *spacecraft* on page 4 and say: *I can break this word in smaller pieces to help me decode it. Looking closely, I see the first part of the word is one I know: space. That just leaves the second half of the word. On the basis of the picture, I might think the word is spaceship, but the second part of the word begins with the cr-blend, not the sh-digraph that makes the /sh/ sound. Another word for spaceship is spacecraft. The second part of spacecraft begins with the /cr/ sound, and the sentence and picture make sense with this word. The word must be spacecraft.*
- Introduce the story-critical vocabulary words listed in the vocabulary section of this lesson and write each one on the board. Place a corresponding photograph beneath the recorded word. Have students share with a partner a definition for the word on the basis of the photographs. Invite volunteers to share their definitions with the class. Discuss with students the definition for each word.
- Turn to the glossary on page 16. Read the words and discuss their meanings aloud.
- Have students write the words on a separate sheet of paper. Ask students to draw their own picture for each word. Invite volunteers to share their pictures with the rest of the class.

Set the Purpose


- Have students read to find out more about the *Voyager* spacecraft. Encourage students to ask and answer questions while reading.

During Reading

Student Reading

- **Guide the reading:** Have students read from page 4 to the end of page 7. Encourage those who finish early to go back and reread. Ask students to review questions they had earlier and see if this part of the book answered their question(s).
- Model asking and answering questions.
Think-aloud: *Earlier, I wanted to know what job the spacecraft had to do and whether any people would be involved. Now that I have read the beginning of the book, I can answer the first question. The Voyagers' job was to fly past Jupiter and Saturn and collect information. As for the second question, whether people would be doing the work, the book has not answered that yet. The book hasn't described any astronauts on the ships. I would guess these spacecraft are automatic since they are traveling so far away that no person would be able to return to Earth. However, I will keep reading to see if the book explains more fully. I will also keep reading to look for answers to a new question I have: What discoveries did the Voyagers make about our solar system?*
- Record the new question on the board, and write the answer you found beneath the corresponding question. Review the other questions on the board with students. Have students point to a questions that the book answered. Ask students to discuss the answer with a partner, and then invite volunteers to share the answer with the rest of the class. Record answers on the board, with pictures and underlined key words.
- Have students share with a partner questions they thought of as they read new information in the book. Ask the pairs to make predictions about the answers to those questions. Invite volunteers to share their questions with the rest of the class, and record them on the board, underlining key words.
- Write the following sentences from the book on the board: *Still, they thought the Voyagers would only work for about five years. More than thirty-five years later, both spacecraft are still working.* Have students discuss with a partner which of these sentences shares an opinion and which one states a fact. Ask students to point to the fact on the board, and underline it. Discuss with students how they could verify the information in the sentence (check the records to prove the date the *Voyagers* were launched).

- Point out to students that facts frequently involve objective information such as dates and numbers, and opinions often represent emotions or thoughts. Opinions frequently use superlative words such as *best*, *worst*, *most*, and so on.
- **Check for understanding:** Have students read pages 8 through 11. Have them write new questions on a separate sheet of paper, using key words and pictures if necessary. Invite them to share the information they learned and the questions they generated as they read this section of the book.
- Have students review page 11 with a partner. Ask partners to find a fact that *Voyager 2* discovered about Neptune (five new moons). Invite a volunteer to share the fact with the rest of the class.
- Have students share with their partner one opinion they have about this fact. Encourage students to think about how they feel about the discovery. Call on random students to share their opinion with the rest of the class, and record opinions on the board. Point out to students that many different opinions can surround one fact.
- Have students read the remainder of the book. Remind them to look for answers to their questions, and encourage them to add new questions they might have to their separate sheet of paper.

 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

- **Think-aloud:** *I wanted to know about the discoveries the Voyagers made, and the book gave me a lot of information on the topic. I learned that thanks to the Voyagers, we know the Great Red Spot on Jupiter is a spinning storm. We now know Jupiter has a ring around it, and Saturn has more rings than we thought. The Voyagers showed us Neptune has five new moons. The Voyagers made many significant discoveries! Searching for answers to my questions kept my attention focused on the book and helped me remember and understand what I read.*
- Record your answer on the board beneath the corresponding question. Review the remaining questions on the board, and invite volunteers to share with the class answers the book provided.
- Ask students to review the questions they wrote on a separate sheet of paper. Have students discuss with a partner all the questions they had before and during reading, and the answers they found. Invite volunteers to share their questions and answers with the rest of the class.
- Have students point to questions on the board that remain unanswered. Remind them that the book never fully explained whether there were people on board the *Voyagers*. Point out to students that books may not answer every question. Discuss with students resources they could use to find answers to these questions.

Reflect on the Comprehension Skill

- **Discussion:** Have students discuss in groups the facts they learned while reading. Call on random students to share a fact with the rest of the class, and record facts on the board. Have each student share with a partner at least one opinion about the information they read, and invite volunteers to share their opinion with the rest of the class. Discuss with students opinions that are expressed in the book (for example, the scientist's words on page 15). Have students discuss in groups how they can distinguish between fact and opinion. Discuss with the class why it is important to recognize the difference between these two types of details.

- **Independent practice:** Introduce, explain, and have students complete the **fact-or-opinion worksheet**. If time allows, discuss their answers.
- **Enduring understanding:** In this book, you learned about the *Voyagers* spacecraft and their mission. Why do you think the trips of these spacecraft have been so important? What discoveries might the *Voyagers* make in deep space?

Build Skills


Phonics: **R-controlled vowel er**

- Write the word *Voyager* on the board. Read it aloud with students. Have students find the word on page 4 and point to it. Repeat the word, and emphasize the /ur/ sound at the end of *Voyager* to highlight the sound. Ask students what vowel sound they hear at the end of the word, and have students repeat the sound.
- Explain to students that the *er*-letter combination is one of the letter combinations that are called *r*-controlled vowels. The letter *r* that follows the vowel changes its sound. The vowels are neither long nor short and are sometimes difficult to hear.
- Write the words *first* and *turn* on the board, and read them aloud with students. Have students discuss with a partner how the vowel sounds in the words compare. Point out that these words use the same /ur/ sound as that at the end of *Voyager*. Explain to students that the *ir* and *ur* letter combinations also create the *r*-controlled /ur/ sound.
- Write the words *germ* and *gem* on the board and say them aloud. Ask students to point to the word that contains the same *r*-controlled vowel sound as *Voyager*. Continue with other examples until students can differentiate between the long or short /e/ sound and the *r*-controlled *er*-letter combination.
- **Check for understanding:** Have students work with a partner to find and circle all examples of the *r*-controlled /ur/ sound in the book. Then, have students review the circled words and underline those that use the *er*-letter combination. Call on students to share a word they found, and record the words on the board. Invite volunteers to come to the board and underline words using the *er*-letter combination.

Grammar and Mechanics: **Past-tense verbs**

- Remind students that verbs are words that show action. Have students turn to page 9, and ask them to point to a verb. Invite a volunteer to share a verb with the rest of the class, and record all examples on the board (*arrived*, *took*, *showed*).
- Have students discuss with a partner whether the action described by these verbs is happening in the present or the past. Explain to students that *past-tense verbs* are words describing *actions that happened in the past*.
- Cover the *-ed* ending on the words *arrived* and *showed*, and ask students to read the words aloud. Point out that these are the present-tense forms of the words, which describe action happening in the present. Explain to students that most verbs are changed to the past tense by adding the suffix *-ed* to the end of the words.
- Point out the word *arrived*. Explain to students that when a verb ends in the letter *e*, they just add the suffix *-d* to the end of the word. Invite a volunteer to explain a reason for this rule (the word already has an *e* at the end). Explain to students that when the verb ends in the letter *y*, they change the *y* to an *i* before adding the suffix *-ed*.
- Write the following words on the board: *explore*, *kick*, *head*, *carry*, *arrive*, and *jump*. Ask students to work with a partner to change the verbs to past tense. Remind them to check whether the verbs end in the letter *e* or *y*, and modify the endings as necessary. Invite volunteers to come to the board and change the word to its past-tense form. Have other students give a thumbs-up signal if they agree with the new spelling.

- Ask students to review the verbs on page 9 and identify the one that does not follow the rule of adding the suffix *-ed*. Explain to students that *took* is an irregular verb. Explain to students that some verbs take an entirely different form when they change from present to past tense. Point out that *took* is the past-tense form of the word *take*. Explain to students that they will memorize these irregular verbs as they read, and they should still recognize them as verbs because they describe actions, even if their endings are unfamiliar.

 **Check for understanding:** Pass out highlighters. Have students find and highlight every past-tense verb in the book. Point out that some verbs in the book are in the present tense, so students need to look at the word endings and the context of the sentences to determine whether the words are in the past or present tense. Call on random students to share with the class a past-tense verb and the page where it was located. Discuss with students any irregular verbs they found.

- **Independent practice:** Introduce, explain, and have students complete the [past-tense-verbs worksheet](#). If time allows, discuss their answers aloud.

Word Work: Compound words

- Write the word *spacecraft* on the board and read it aloud with students. Ask students if they see two different words within *spacecraft*. Have them call out the words. Point out that *spacecraft* can be separated into the words *space* and *craft*.
- Review or explain to students that *compound words* are formed when *two words are combined to make a new one*. The new word has its own definition, but the meaning of the word is usually influenced by the two words that form the compound.
- Have students discuss with a partner the meanings of the words *space* and *craft*. Invite volunteers to share the definitions with the rest of the class, and write them on the board. Have students discuss with a partner their thoughts on the meaning of the word *spacecraft*.
- Explain to students that since *space* means the region outside Earth, and a *craft* is a vessel or a ship, *spacecraft* means a ship that travels through space.
- Have students turn to the glossary and point to a different compound word. Remind students that compound words are words formed by the combination of two words. Have students call out the compound word (*solar system*). Discuss with students the difference between *spacecraft* and *solar system*. Explain to students that some compound words have a space between the two words, and some compound words have no space.
- Have students identify with a partner the two words that create the compound word *solar system*. Discuss with students the meaning of the words *solar* and *system*. Guide students in determining the definition of *solar system*, on the basis of the other two definitions.
- **Check for understanding:** Write the following compound words on the board: *goodbye*, *peanut butter*, *eggshell*, *wheelchair*, *bus driver*, *raincoat*, and *ice cream*. Have students work in groups to separate the compound words into two smaller words, and use those words to determine a definition for the compound word. Invite volunteers to come to the board, underline the smaller words in each compound, and share a definition for the word.
- **Independent practice:** Introduce, explain, and have students complete the [compound words worksheet](#). If time allows, discuss their answers aloud.

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 demonstrate how a reader asks questions then seeks answers while reading.

Extend the Reading

Informational Writing and Art Connection

Have students draw a picture of an astronomical object that interests them, such as comets, a planet, stars, black holes, and so on. Provide resource materials on outer space, such as other nonfiction books, magazines, and Internet articles. Guide students in researching their topic, and provide a graphic organizer for them to record facts they learn. Have students use that information to write three sentences that describe the subject of their picture. Invite volunteers to share their picture with the rest of the class and read their sentences aloud.

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

Science Connection

Divide students into groups and assign each group a planet. Provide picture books and beginning chapter books on the Solar System. Have groups study their planet, using the provided books and the book from this lesson. Have students then pretend they are interstellar travel agents, trying to convince people to travel to their planet. Pass out travel brochures for destinations around the world, and discuss with students how these brochures persuade people to visit places. Ask groups to create a travel brochure for their planet that includes three facts and two opinions. Have each group present their information to the rest of the class, pretending the other students are clients looking to go on a trip into outer space.

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 text during discussion
- accurately distinguish details as facts or opinions during discussion and on a worksheet
- consistently identify *r*-controlled vowel *er* in the text and during discussion
- correctly use past-tense verbs during discussion and on a worksheet
- accurately use compound words during discussion and on a worksheet

Comprehension Checks

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