

Focus Question:

How and why has space travel evolved?

Book Summary

Text Type: Nonfiction/Informational

Have you ever dreamed of traveling to space? That dream is now accessible to more people than it's ever been. *Private Spaceships* describes the recent shift toward a new era of private space flight. The book can also be used to teach students how to determine an author's purpose for writing and the proper use of adjectives.

The book and lesson are also available for levels Z and Z2.



Lesson Essentials

Instructional Focus

- ☐ Ask and answer questions to understand text
- ☐ Determine author's purpose
- ☐ Describe information provided by captions
- ☐ Identify and use adjectives and identify the nouns they describe
- ☐ Read and understand number words

Materials

- ☐ Book: *Private Spaceships* (copy for each student)
- ☐ KWLS / ask and answer questions, author's purpose, adjectives, number words worksheets
- ☐ Discussion cards
- ☐ Book quiz
- ☐ Retelling rubric

Vocabulary

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

• Words to Know

Story critical: *capsule* (n.), *commercial* (adj.), *mission* (n.), *orbit* (n.), *re-entry* (n.), *spacecraft* (n.)

Enrichment: *aeronautics* (n.), *dock* (v.), *enthusiasm* (n.), *inflatable* (adj.), *robotic* (adj.), *superpowers* (n.)

- **Academic vocabulary:** *available* (adj.), *beyond* (prep.), *continue* (v.), *position* (n.), *return* (v.), *technology* (n.)

Guiding the Reading

Before Reading

Build Background

- Create a KWLS chart on the board with four columns. Introduce and explain the **KWLS / ask-and-answer-questions worksheet**. Review or explain that the *K* stands for knowledge we know, the *W* stands for information we want to know, the *L* stands for the knowledge we learned, and the *S* stands for what we still want to know about the topic.
- Write the word *spaceships* on the board and ask students what they know about the topic. As students share their knowledge, fill in the first column (*K*) on the board. Add the word *private* to the board, changing the phrase to *private spaceships*. Talk about what the word *private* means and how it changes the meaning of the phrase. Add any new information to the first column on the board. Have students complete the same section of their worksheet.

Introduce the Book

- Give students their copy of *Private Spaceships*. 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).
- 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, on the basis of what they see in the table of contents. (Accept all answers that students can justify.)

Introduce the Reading Strategy:

Ask and answer questions

Explain to students that having prior knowledge about a topic, and asking and answering questions while reading, can help readers understand and remember information in a book. Direct students to the "Words to Know" box on the copyright page and model asking questions about the list of words. Ask students what they would like to know about

Guiding the Reading (cont.)

private spaceships. Have them fill in the second column (W) of their worksheet. Write their questions on the class chart. As students read, encourage them to ask questions and record them on their KWLS / ask-and-answer-questions worksheet.

Introduce the Comprehension Skill:

Author's purpose

- Explain to students that authors have a purpose, or reason, for what they write. Write the words *inform*, *entertain*, and *persuade* on the board. Explain to students that to *inform* means to provide information, to *entertain* means to amuse, and to *persuade* means to convince another to think a certain way.
- Have students turn to page 7 and read the first paragraph with a partner. Ask students what they think the author's purpose is on the basis of the information (*to inform*). Invite students to share their thoughts with the class.

Vocabulary

Have students turn to the "Words to Know" box on the copyright page. Discuss each word with students. Then, have students turn to the glossary on page 20. Explain that the glossary provides definitions for the vocabulary words in the book. Point out the use of each content word and academic vocabulary word in the book, and then use each word in a different model sentence. Have students work in groups to create posters for these words. Have them include on each poster the word and its part of speech, the definition, the word in an example sentence, and a picture illustrating the meaning of the word.

Set the Purpose

- Have students read to find out more about the evolution of space travel. Write the Focus Question on the board. Invite students to look for evidence in the book to support their answer to the question.
- Have students make a small question mark in their book beside any word they do not understand or cannot pronounce. These can be addressed in a future discussion.

During Reading

Text-Dependent Questions

As students read the book, monitor their understanding with the following questions. Encourage students to support their answers by citing evidence from the book.

- *When did NASA end its space shuttle program?* (level 1) page 4
- *How would you contrast space travel in the 1950s and 1990s?* (level 2) pages 6 and 7

- *How would you describe the sequence of events leading to Scaled Composite's win of the Ansari X-Prize?* (level 3) page 9
- *How is Virgin Galactic related to the Ansari X-Prize?* (level 3) multiple pages
- *How would you adapt spacecraft to create a different space delivery service?* (level 3) pages 13 and 14
- *How could you classify the purposes of spacecraft?* (level 2) multiple pages
- *Why has the ISS never been empty?* (level 3) page 16
- *What do you think the outcome would have been if people stay in Bigelow habitats?* (level 3) page 18

Text Features: Captions

Explain that captions clarify photographs and illustrations by describing the details of the image. Captions may provide the reader with names, dates, and locations. Have students work with a group to review the photograph on page 8 and its caption. Ask students: *How does the caption help the reader understand the purpose of the photograph in the book? How do captions clarify visual information? Why are captions an important tool for describing images?* Have students review other images in the book and discuss in groups what the captions describe. Invite volunteers to share their thoughts with the rest of the class.

Skill Review

- Model for students how you ask and record questions while reading on the KWLS class chart. Invite volunteers to share their questions. Discuss with students how their questions help them better understand the book.
- Have students work in groups to periodically review the details they have read and discuss their effect on the reader. Have groups discuss their opinion on the author's purpose for writing each time they convene.
- Model evaluating details to determine the author's purpose.
Think-aloud: *The book is providing me with many details about how private spaceships are evolving space travel. The author discusses the many contests for private companies to develop their own space crafts. This is making space travel possible for many more people than it was in the past. All of these facts give me new information on the topic, so I believe the author's purpose is to inform. Still, I will read to the end of the book, examining each detail, to see whether she has a different main purpose or more than one.*
- Model how to complete the **author's purpose worksheet**. Have students identify details from the book and circle them. Then, have students discuss the details with a partner and determine the author's purpose for the book.

Guiding the Reading (cont.)

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.

Skill Review

Worksheet: Author's purpose

Review the author's purpose worksheet that students completed. Have students share their work in groups. Invite volunteers to share with the rest of the class the details they chose, and have students point to the correct purpose on the board. Circle the word *inform*. Discuss with students the justification for choosing this purpose.

Comprehension Extension

Discussion cards covering comprehension skills and strategies not explicitly taught with the book are provided for extension activities.

Response to Focus Question

Have students cite specific evidence from the book to answer the Focus Question. (Answers will vary. Reasons should include how and why space travel has evolved. Samples: *Space travel has evolved from government-funded missions to space exploration that is accessible to more people. In the past, only a few governments had enough money to explore space, but advances in technology and engineering make it possible for privately owned companies to build rockets, spaceships, satellites, and even space stations.*)

Comprehension Checks

- **Book quiz**
- **Retelling rubric**

Book Extension Activities

Build Skills

Grammar and Mechanics: Adjectives

- Have students find and point to one adjective on page 15. Review with students or explain that *adjectives* are words that describe nouns and pronouns.
- Write the following sentence on the board. *While these blow-up habitats aren't ready yet, Bigelow sent two empty test models into space in 2006 and 2007.* Ask students to count the number of adjectives in the sentence. Have volunteers come to the board and circle the adjectives in the sentence and underline the nouns they describe.
- Point out to students that more than one adjective can describe the one noun and that adjectives can come before or after the nouns they describe. Explain that some adjectives are hyphenated and that they are called *compound adjectives*.

- **Check for understanding:** Have students look through the book to locate adjectives. Ask them to share with a partner five adjectives they found and confirm which one(s) are compound.
- **Independent practice:** Introduce, explain, and have students complete the **adjectives worksheet**. If time allows, discuss their answers.

Word Work: Number Words

- Explain that when reading, readers will sometimes encounter different symbols, numbers, and abbreviations within a text. Effective readers read these parts of the text fluently, just as they read the words.
- Have students read the first paragraph on page 4. Ask them to find the numbers in the text with a partner. Review or explain that numbers written in standard form are called *cardinal numbers* and are used to describe an amount, a date, or a time. Point out that a cardinal number is read in the same manner as the written word for the number. Practice reading the numbers, symbols, and abbreviations aloud. Review or explain that the decimal point is read as *point*.
- **Check for understanding:** Have students work in pairs to identify and read the symbols, numbers, and abbreviations on page 11. Ask volunteers to write their word equivalents on the board.
- **Independent practice:** Introduce, explain, and have students complete the **number words worksheet**. If time allows, discuss their answers.

Connections

- See the back of the book for cross-curricular extension ideas.