



## About the Book

Text Type: Nonfiction/Informational Page Count: 24 Word Count: 1,827

### Book Summary

**Satellites** informs the reader in detail about various artificial satellites and provides some of the history of these satellites. The book also describes how we use satellites in our lives today and the ways satellites may be used in our future. Readers learn even more as they view the exceptional photographs.

## About the Lesson

### Targeted Reading Strategy

- Summarize

### Objectives

- Use the reading strategy of summarizing important information in text
- Sequence events
- Understand and use articles
- Use a dictionary to look up content words

### Materials

Green text indicates resources available on the website

- Book—**Satellites** (copy for each student)
- Chalkboard or dry erase board
- **Sequence, articles, dictionary skills 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](http://VocabularyA-Z.com).

- Content words:

Story critical: **artificial satellites** (n.), **bus** (n.), **GPS** (n.), **gravity** (n.), **orbits** (n.), **payload** (n.)

Enrichment: **astronomical satellites** (n.), **communication satellites** (n.), **environmental satellites** (n.), **low-Earth orbit** (n.), **meteorologists** (n.), **military satellite** (n.), **navigational satellites** (n.), **Polar Orbit** (n.), **weather satellites** (n.)

## Before Reading

### Build Background

- Draw a web on the board with the word *satellites* in the center circle. Ask students to share their definition of this term. Then invite student volunteers to tell what they already know about satellites. Attach smaller circles to the center circle and record the information students already know.

## 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.
- Preview the table of contents on page 3. Remind students that the table of contents provides an overview of the book. Ask students to predict what they might learn about satellites, based on what they see in the table of contents.

### Introduce the Reading Strategy: **Summarize**

- Tell students that one way to understand and remember what they read is to summarize paragraphs, sections, or chapters of a book in their mind or on paper. Explain that a summary is a brief overview of the most important information in a book or a section of a book.
- Read page 4 aloud to students. Model how to summarize.
- **Think-aloud:** *To summarize what I've read, I need to decide what's important and what isn't. Then, in my mind, I organize the important information into a few sentences and think about them. For example, on page 4 the author tells us that natural and artificial are the two types of satellites, that the planets in our solar system are natural satellites, and that artificial satellites are manmade. When I write a summary, I put the information in my own words. Since I haven't read the book yet, it's difficult to decide what's important and what isn't. I think all of the sections will probably contain important information about satellites, but I'll have to read the book to find out.*
- As students read, encourage them to use other reading strategies in addition to the targeted strategy presented in this section.

### Introduce the Vocabulary


- Remind students of the strategies they can use to work out words they don't know. For example, they can use what they know about letter and sound correspondence to figure out a word. They can look for base words within words, prefixes, and suffixes. They can use the context to work out meanings of unfamiliar words.
- Model how to apply word-attack strategies. Point out a word in bold, such as the word **orbits** on page 4. Model how students can use context clues to figure out the meaning of the word. Read the complete sentence. Tell students they can substitute *revolves around* for the word **orbits**. Remind students to check whether a word makes sense by rereading the sentence in which it occurs.
- Have students turn to the glossary on page 23. One at a time, have them read each glossary word and its definitions aloud. Next, have students turn to the page indicated and read the sentence in which the glossary word appears. Use context clues in the surrounding sentences to work out unfamiliar vocabulary words as necessary.

### Set the Purpose


- Have students read to find out more about satellites. Remind them to pause at the end of each section and quickly summarize what they have read about satellites. Students can summarize in their mind or use a pencil and scrap paper.

## **During Reading**

### Student Reading

-  **Guide the reading:** Have students read to the end of the first paragraph on page 5. Ask them to underline the most important information as they read. Have students go back and reread the pages if they finish before everyone else.
- Ask students what important information they underlined while reading. Make a list on the board.

- Model summarizing the main idea and supporting details in the first section.  
**Think-aloud:** *As I read, I underlined the words, phrases, and sentences I thought were most important. (Add any information not generated by students to the list on the board. Review the list and explain which details are important and which are not, crossing out the unimportant details as you go.) After sorting through the information and deciding which information is important and which isn't, I put the information in my own words to make a summary. (Sample summary to write on the board: Natural satellites include Earth's moon and all of the planets that revolve around the Sun. Thousands of artificial satellites orbit Earth so that we can use cell phones, watch TV, and better predict the weather.)*
- Have students read the remainder of the book, looking for the most important information about satellites in each section.

 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 to students that summarizing the important information in each section as they read keeps them involved in the reading and helps them understand and remember what they have read.
- **Think-aloud:** *On page 8, I read that gravity keeps artificial satellites on their paths. I learned that the speed of the satellite must be in balance with the pull of Earth's gravity, or it will fall out of the path. Stopping as I read to summarize and put the information from the book in my own words helps me understand what I read.*
- Invite students to share summaries they created as they read sections of the book.

### Teach the Comprehension Skill: **Sequence events**

- Review or explain that many writers present the events of a piece of writing in the order in which they happened, but other writers do not. It is then up to the reader to look for signal words to help organize the events in the order in which they occurred. Signal words may include *today, then, first, and after*, or time references, such as dates. Have students turn to page 18. Say: *This section tells the beginning of artificial satellite history, but we learned about many other satellites earlier in the book. Apparently the historical sequence is not written in time order in this book.*
- **Check for understanding:** Have students continue looking at page 18. Ask them what happened next in the history of artificial satellites. (The USSR launched Sputnik I.)
- **Independent practice:** Give students the **sequence worksheet**. Have students use the book to help them record the missing events in chronological order. Explain that organizing the information will help them remember what they read. Have students complete the worksheet. Discuss their responses.
- **Enduring understanding:** In this book, the many contributions brought to people through the development of artificial satellites are described. How have artificial satellites impacted your everyday life? What other scientific contributions affect your daily life?

### Build Skills

#### Grammar and Mechanics: **Articles**

- Review that there are three articles often used in writing: a, an, and the. Write them on the board to use as reference. Explain that these articles function like adjectives and are usually followed by a noun.

- *The* is called a *definite* article because it refers to a certain person or thing. *A* and *an* are called *indefinite* articles because they don't refer to a specific person or thing.
- ✎ **Check for understanding:** Have students turn to and reread the paragraphs on page 18. Have them circle the articles in both paragraphs (*the, an, the, the, the, the, a, an, the, the, the, the*). Write the articles on the board as students name them. As a group, go through the list and have students tell whether each article is definite or indefinite and explain why.
- Review or explain that writers use *a* before words that start with a consonant or a long /u/ sound. Writers use *an* before words that start with a vowel (*a, e, i, o*, and short /u/) or with words that sound as if they start with a vowel. Have students turn to page 9, and read the first sentence aloud (the indefinite article *a* is used four times). Read the next sentence aloud, stressing the word *an* before the word *orbiting*. Write the following sentence on the board: *It would be an honor and a great achievement to invent a useful satellite.* Discuss why each indefinite article is used (determined by the initial consonant or vowel sound of each noun).
- **Independent practice:** Give students the [articles worksheet](#). Do the first sentence together. After students complete the worksheet, discuss their responses.

## Word Work: Dictionary skills

- Remind or explain that dictionary entry words are divided into syllables. Each entry word has a respelling that shows how to pronounce the word. There is also an accent mark (or marks) to show which syllable should be pronounced with the most stress. Distribute student dictionaries and have students look up the word *orbit*. Have a student write the word showing the syllables (*or•bit*), the pronunciation respelling (*awr-bit*).
- Remind or explain that a dictionary also tells the part of speech for each entry word—for example, *n.* (noun), *pro.* (pronoun), *v.* (verb), *adj.* (adjective), *adv.* (adverb), or *prep.* (preposition). Ask students what parts of speech *orbit* can be (noun or verb).
- Remind or explain that a dictionary lists the definitions of the entry word. Sometimes a definition is followed by a sentence using the entry word.
- **Check for understanding:** Repeat this procedure with the content word *payload*. Stress that the definition must make sense within the context of this text.
- **Independent practice:** Introduce, explain, and have students complete the [dictionary skills worksheet](#). Discuss their responses after they have finished.

## Build Fluency

### Independent Reading

- Allow students to read their book independently. Additionally, allow partners to 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 practice summarizing various sections of the book with someone at home.

## Extend the Reading

### Informational Writing Connection

Assign groups of students to further research Isaac Newton, Laika, Space Race, Sputnik I, Hubble Space Telescope, NASA, Mir, and ISS, using Internet and library resources. Have students write reports and share their research with the class.

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

## Science Connection

Have students use Internet and library resources to further research space junk. Have them determine whether or not space junk is an environmental issue. Divide the class into two groups. Have one group argue *for* (pro) putting more satellites into space and the other side argue *against* (con) putting more satellites into space. Have both groups write solutions for solving the problem of space junk. Remind students that many countries are putting satellites into orbit. Share student solutions with the class.

## 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:**

- summarize important information in text as they read
- identify the historical sequence of artificial satellites and space events named in the book in class discussion and on a worksheet
- identify and use articles correctly in text and on a worksheet
- use a dictionary to understand content words in class discussion and on a worksheet

## Comprehension Checks

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