

### About the Book

Text Type: Nonfiction/Informational Page Count: 24 Word Count: 1,633

### Book Summary

Have you ever seen a shooting star? This informational nonfiction book explains where space rocks of all shapes and sizes come from. *Meteors and Meteorites* also looks at the similarities and differences among comets, asteroids, and meteors. The author includes interesting examples of meteorites found in different places on Earth—including some that are billions of years old. The book also explains why one giant meteorite is believed to have caused the extinction of the dinosaurs. Photographs, maps, and diagrams support the text.

### About the Lesson

#### Targeted Reading Strategy

- Ask and answer questions

#### Objectives

- Use the reading strategy of asking and answering questions to understand text
- Identify main ideas and details
- Identify nouns and the suffixes that change their meanings
- Arrange words in alphabetical order

#### Materials

Green text indicates resources available on the website.

- Book—*Meteors and Meteorites* (copy for each student)
- Chalkboard or dry erase board
- [KWLS, main idea and details, nouns, alphabetical order 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](#).

- Content words:

Story critical: *atmosphere* (n.), *craters* (n.), *meteor* (n.), *meteorites* (n.), *meteoroids* (n.), *orbit* (v.)

Enrichment: *collides* (v.), *comets* (n.), *constellation* (n.), *gravity* (n.), *particles* (n.), *solar system* (n.)

### Before Reading

#### Build Background

- Create a KWLS chart on the board, with one letter heading each of the four sections. Introduce and explain the [KWLS 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.

## Lesson Plan *(continued)*

## Meteors and Meteorites

- Write *meteors* on the board, and ask students what they know about the topic. Ask leading questions if necessary, and as students share their prior knowledge, fill in the first row (K) on the board with information students already know about the topic. Add the word *meteorites* to the board, changing the phrase to *meteors and meteorites*. Talk about what the word *meteorites* means, and how that changes or adds to the meaning of the phrase. Add any new information to the first row on the board. Have students complete the same section of their KWLS worksheet.
- Ask students what they would like to know about meteors and meteorites. Have them fill in the second row (W) of their worksheet. Write their questions on the class chart.

### 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.
- Show students the title page. Discuss the information on the page (title of book, author's name, photo credits).
- 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**

- Discuss with students how having prior knowledge about the topic, and asking and answering questions while reading, can help readers understand and remember the information in a book.
- Direct students to the table of contents. Remind them that the table of contents provides an overview of the information in a book and how it is organized. After previewing the table of contents, use it to model asking questions.

**Think-aloud:** *I can use the table of contents to think of questions I would like to have answered about meteors and meteorites. For example, the first section is titled "The Sky Is Falling." That phrase reminds me of the story of Chicken Little, but I don't think this book is about that character. Since I know that this book has to do with our solar system, it makes me wonder what might be falling out of the sky. I wonder if meteors ever land on Earth, and where they come from. I'll have to read the book to find out. I'll write my questions on the chart.*

- Have students look at the other section titles. Have them write any questions they have, on the basis of the covers and table of contents in the W section of their KWLS worksheet.
- Have students preview the rest of the book, looking at the photographs, diagrams, and maps. Invite students to read through the glossary. Have them add any additional questions they might have on their KWLS worksheet. Invite students to share their questions aloud. Write shared questions on the class chart.
- 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**

- Write the following list of words on the board: *Earth, Mars, Jupiter* and *Saturn*. Ask students to describe what these words refer to (planets). Point out that the definitions of these words helps to identify a main idea. (There are eight different planets in our solar system.) The words *Earth, Mars, Jupiter* and *Saturn* are the details that support this main idea.
- Explain that sometimes the amount of information about a topic is so large that it is grouped into sections or chapters, and each section or chapter of the book has its own main idea.

- Model using the table of contents to infer supporting details in the text.  
**Think-aloud:** *I know the title of the book is Meteors and Meteorites, and that has to do with the main idea of the book. When I look at the table of contents on page 3, I see the word Micrometeorites. I know that the prefix micro- means small. I think learning about all different types and sizes of meteors and meteorites is a supporting detail to the main idea. When I read, I know that I will find out even more details about meteors and meteorites. As I read, I will pause after a few pages to review in my mind the important details. This strategy will help me make sure I understand what I'm reading. I know that good readers do this when they read, so I am going to look for supporting details as I read this book.*
- Have students turn to the table of contents and list some of the supporting details they think they will read about when they read the book *Meteors and Meteorites* (meteor showers, space gold, and so on).

## Introduce the Vocabulary

- As students preview the book, ask them to talk about what they see in the photographs, maps, and diagrams. Reinforce the vocabulary words they will encounter in the text.
- Give groups of students a large sheet of poster paper with the following (story critical) vocabulary words: *atmosphere*, *craters*, and *meteorites* written in a bubble drawn on the page. Have them write and draw what they know about each word, reminding them to collaborate and share ideas. Remind students that they can look for context clues in the text and photographs to help them define an unfamiliar word.
- When all groups are finished collaborating, invite them in to a class discussion. Ask volunteers to share their posters and what they know about their word. Create a class definition for each word, using students' prior knowledge.
- Review or explain that the glossary contains a list of vocabulary words and their definitions. Model how students can use the glossary or a dictionary to find a word's meaning. Have them locate the glossary at the back of the book. Invite a volunteer to read the definition for *atmosphere* in the glossary. Have students compare the definition with their prior knowledge of the word. Then have them follow along on page 7 as you read the sentence in which the word *atmosphere* is found to confirm the meaning of the word. Repeat the exercise with the remaining vocabulary words.
- Invite students to turn to the photograph on the cover. Have them write a short paragraph about meteors and meteorites, utilizing all three vocabulary words. Repeat the activity after reading the book, to check for student understanding of the vocabulary.

## Set the Purpose

- Have students think about what they already know about meteors and meteorites as they read the book to find answers to their questions, and write what they learned in the *L* section of their KWLS worksheet.


## During Reading

### Student Reading

- **Guide the reading:** Have students read to the end of page 8. Remind them to look for information about meteors and meteorites that will answer questions on their KWLS worksheet. Encourage students who finish before everyone else to go back and reread.
- When students have finished reading, have them circle any questions on their KWLS worksheet that were answered and write any new questions that were generated.

## Lesson Plan *(continued)*

## Meteors and Meteorites

- Model answering a question and filling in the third section (L) of the KWLS chart.  
**Think-aloud:** *I wanted to know if meteors ever land on Earth, and where they come from. I found out that meteors are comets, asteroids, or dust particles from space that burn up after entering Earth's atmosphere. I read that they are fast-moving balls of fire that race through the sky and explode, scattering pieces of themselves over a wide area. They range in size from a speck of sand to a large boulder. When a meteor hits Earth's surface, scientists call it a meteorite. I noticed another interesting section title, "Space Gold". I wonder if gold actually comes from space. I will write this new question on my chart.*
  - Have students write answers to the questions they circled in the L section of their KWLS worksheet. Invite them to share the information they learned and the questions they generated as they read the book. Record shared responses on the class KWLS chart.
  - **Check for understanding:** Have students read pages 9 through 12. Have them write any answers they found while reading in the L section of their KWLS worksheet and additional questions they raised in the W section. Invite them to share the information they learned and the questions they generated as they read pages 9 through 12. Write shared responses on the class KWLS chart.
  - Invite students to share the important details they identified in the section titled "Fireballs and Micrometeorites." Write these details on the board. Have students work with a partner to identify the main idea from these details (Some meteoroids grow extremely bright when striking Earth's atmosphere, and some move faster than the speed of sound). Discuss their responses as a class and write the main idea and supporting details on the board. Point out how referring to the photographs helps readers understand the points being made in the text.
  - Have students read the remainder of the book. Remind them to continue to look for and write answers to their KWLS worksheet questions, and to identify important details in each chapter. Encourage them to add new questions they might have to their KWLS worksheet as they read.
-  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 if gold actually comes from space. I read that scientists say an ancient meteor shower is the reason gold can be found in the rocks near Earth's surface. I learned that, about 650 million years after Earth formed, a firestorm of meteorites rained down, forever changing the makeup of Earth's crust. Scientists say that most of the gold on our planet came from those meteorites. Now that I'm finished reading this book, I would like to know more about meteor showers, such as when and where to watch for them, and how often they happen. I will write those questions down in my chart in the S column.*
- Ask students to share questions they added to their KWLS worksheet while reading, and ask them what questions were answered (or not answered) in the text. Have students write answers they found while reading in the L column of their KWLS worksheet.
- 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 have read.
- Remind students that all of their questions may not have been answered in this text. Brainstorm other sources they might use to locate additional information to answer their questions. Invite students to fill in the final section (S) of their KWLS worksheet with information they would still like to know about meteors and meteorites.

### Reflect on the Comprehension Skill

- **Discussion:** Talk about how stopping to review the important details helped students remember the facts and better understand the information. Ask them to use the important details they identified to confirm or refine the main idea of the book.
- Have students reread pages 17 and 18, looking for supporting details about the main idea. Write the details about “Types of Meteorites” on the board (*three main types; some from the Moon or Mars; a few have glassy beads; iron, stony, and stony-iron meteorites; nearly all are stone; stony-iron are rare; Earth’s atmosphere protects the planet from meteorites; the pull of the Moon’s gravity steers some away*). Ask students how this information supports the main idea of the section. (There are three types of meteorites, and some are more rare than others.) Write the main idea on the board above the supporting details.
- **Independent practice:** Introduce, explain, and have students complete the [Main idea and details worksheet](#). When students have finished working, discuss their answers.
- **Enduring understanding:** In this book, you learned about the different types of meteors and meteorites, and the effects they have on our planet. Now that you know this information, do you think the study of meteors is important? How does science help us better understand the world around us?

### Build Skills

#### Grammar and Mechanics: Nouns

- Draw a picture of a star on the board. Have a student identify the object. Write the word *star* on the board. Have a volunteer identify to which part of speech this word belongs (nouns). Remind students that a noun is a person, place, or thing.
- Draw two stars on the board. Write the word *stars* on the board. Ask students how the meaning of the word *star* changed (the *-s* ending on *stars* means more than one star).
- Write the word *falling* on the board. Ask students what the root word is, and write *fall* next to *falling*. Explain that *fall* is the noun in the sentence “He had a big fall.” When the *-ing* suffix is added to the word *fall*, a verb is created (*falling*) as in the sentence “The stars are falling from the sky.”
- Review or explain that a suffix is a syllable added to the end of a word to alter or change its meaning. Some examples of suffixes are *-ed*, *-s*, *-ness* and *-ing*. Suffixes can be added to nouns, but they can also be added to other parts of speech such as verbs.
- Write the word *meteorite* on the board. Ask students what the root word is and write *meteor* next to *meteorite*. Explain that when the suffix *-ite* is added to the noun *meteor*, the new word has a different meaning. Ask a volunteer to review the definitions of each word by reading them aloud from the glossary. Point out that another suffix, *-s*, is also added to the end of *meteorite*, making *meteorites* plural, and that in this instance, both examples remain nouns.
- Have students continue looking in the glossary for another example of a suffix altering the meaning of the root word (*meteoroids*). Ask students which suffixes are added, and how the definition has changed. Ask students what part of speech *meteoroids* is.



**Check for understanding:** Have students circle the suffixes in the glossary listings of *meteorites* and *meteoroids*. Point out that all three words (including *meteor*) are nouns with different meanings, but they all have the same root word.

- **Independent practice:** Introduce, explain, and have students complete the [nouns worksheet](#). Read and discuss the correct answers once all students have finished working independently.



**Word Work: Alphabetical order**

- Review or explain the process of putting a list of words in alphabetical order. Tell students that they must look at the first letter of each of the two words, then decide which word begins with the letter that comes first in the alphabet. Remind students that if the first letter of two words is the same, they must compare the next two letters instead. Explain that this process continues when comparing two words, until two letters are reached that are not the same.
- Write the words *gravity* and *comets* on the board. Ask a volunteer to tell which word would appear first in alphabetical order and to explain his or her thinking (*comets*, because the first letter, *c*, in *comets* comes before the first letter, *g*, in *gravity*).
- Erase the word *gravity* and replace it by writing the word *craters* in its place on the board. Tell students to compare the words *craters* and *comets*. Point out that the words begin with the same letter. Ask a volunteer to tell which word would appear first in alphabetical order and to explain his or her thinking (*comets*, because the second letter, *o*, in *comets* comes before the second letter, *r*, in *craters*).
- Write the words *fireball* and *fireballs* on the board. Have a volunteer explain which word would appear first in alphabetical order (*fireball*) and why. Point out that all of the letters in *fireballs* and *fireball* are the same until the final letter *s* in the word *fireballs*. Point out that because there are no other letters at the end of *fireball*, it comes first in alphabetical order.
- **Check for understanding:** Write the words *constellation* and *continue* on the board. Have students write the words in alphabetical order in a separate piece of paper, and to explain their thinking. Discuss their answers aloud, pointing out that it is necessary to examine the fourth letters in each, to alphabetize the words correctly.
- **Independent practice:** Introduce, explain, and have students complete the [alphabetical order worksheet](#). Discuss their answers aloud after students finish.

**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. With someone at home, have them reread the text and tell about the information they wrote on the chart. Have students also take home their completed KWLS worksheet and explain what each column means.

**Extend the Reading**
**Expository Writing Connection**

Provide print and Internet resources for students to find out more about meteor showers. Citing information from their research and the book, have them write a report which includes at least three paragraphs, including an introduction, a body, and conclusion. Encourage them to add illustrations, diagrams or photographs to their report. Have students create a book about meteor showers, making sure that it includes a front and back cover, illustrations or photographs. Have each student proofread and edit their book before submitting a final copy. Either bind each report separately, or bind all of the reports together to make a class book with its own front and back cover.

Visit [WritingA-Z.com](http://WritingA-Z.com) for a lesson and leveled materials on expository writing.

### Science Connection

Provide print and Internet resources for students to learn more about the absence of gravity in space, and how it affects the course of meteors and comets. Have students work in groups to collect their data, and have each group create a poster to display their findings. Encourage them to add illustrations, written facts, charts, diagrams, and photographs to their poster. Facilitate a group discussion once each group has completed their research. Display their posters on a wall.

### 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 ask relevant questions about a topic prior to and during reading; locate answers to their questions and write them on a worksheet
- identify the main idea and supporting details to better understand the text in discussion and on a worksheet
- recognize nouns in the text and understand that suffixes change their meaning during discussion and on a worksheet
- understand the process of arranging words in alphabetical order during discussion and on a worksheet

### Comprehension Checks

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