

BOOK STATS

Grade Level Equivalent: 2–5

Ages: 7+

Lexile Measure®: NC820L

Pages: 80

Genre: Information Non-fiction

Subject/Theme: Planets, Moon, Solar System

Common Core State Standards	Reading	Writing	Listening & Speaking	Language
Grade 2	RI.2.1, RI.2.3, RI.2.4, RI.2.5, RI.2.7	W.2.2	SL.2.1, SL.2.2	L.2.4
Grade 3	RI.3.1, RI.3.3, RI.3.4, RI.3.5, RI.3.7	W.3.2	SL.3.1, SL.3.2	L.3.4
Grade 4	RI.4.1, RI.4.3, RI.4.4, RI.4.5, RI.4.7	W.4.2	SL.4.1	L.4.4, L.4.6
Grade 5	RI.5.1, RI.5.3, RI.5.4, RI.5.5, RI.5.7	W.5.2	SL.5.1	L.5.4, L.5.6

OVERVIEW

Book Summary

Discover More: Planets is a new-generation reference book that combines amazing facts with an exciting graphic design to present the vastness of space in an approachable way for young readers. Students who have wondered about their place in the universe while looking up into the night sky will have their questions answered and their curiosity piqued. The book takes readers on a tour of the major planets, moons, asteroids, comets, galaxies, and beyond.

The latest NASA and European Space Station images, many unique to this book, combine with up-to-the-minute information from space experts across the globe. A timeline of space exploration, diagrams of a rocket and an astronaut suit, and an interview with an ESA astronaut add human interest to the science of planets and stars. Plus, readers put their new knowledge to work by finding constellations in the night sky and imagining the possibility of alien life on other planets.

Teaching the Book

Start the countdown! *Discover More: Planets* will blast students into outer space to explore planets, moons, asteroids, comets, and far-away galaxies. Use this informational book to introduce the solar system and space exploration, integrate knowledge with a compare and contrast matrix, and reinforce key space vocabulary. Activities engage students in writing a space captain's log, recording the phases of the moon, and imagining an encounter with an extraterrestrial.

Theme Focus: Information Non-fiction

Comprehension Focus: Comparison and Contrast Matrix

Language Focus: Space Vocabulary

ABOUT THE AUTHOR

Penny Arlon is an author who writes children's non-fiction, taking inspiration from her own children. Her books range from pre-school to family reference, and include the Art Attack books, based on the award-winning CITV children's television program. She has also written 14 titles in Dorling Kindersley's Eye Know series.

Get Ready to Read

Pre-Reading Activities

Ask students to think about where they are in the universe. What would be your school's complete universe address? Write the following parts of an address on the whiteboard or chart paper. Then ask students to fill in place names for the school's address.

School:

Street Address:

City, State, and Zip Code:

Country:

Planet:

Solar System:

Galaxy:

Universe:



Tell students that they will find out exactly where in the universe they live as they read *Discover More: Planets*.

Preview and Predict Spend time with students on pages 2 and 3, going over the explanation of how the book works. Point out the different types of text and photographs in the book and the kinds of information they provide.

Vocabulary

Space Vocabulary The book includes a glossary on pages 76 and 77 which contains key vocabulary related to space and space exploration. The words below are especially important for students to understand as they read. Encourage them to look for clues in the text and illustrations to figure out the meaning of the words and have them check the glossary definition.

Use **Resource #1: Vocabulary Cards** on page 7 and distribute copies to students.

planet (p. 6)

solar system (p. 10)

sun (p. 16)

galaxy (p. 48)

universe (p. 8)

gravity (p. 22)

asteroid (p. 34)

astronaut (p. 68)

STORIA ENRICHMENTS

This book will be available as a Storia enriched e-book in May 2013.



BIG QUESTION

Critical Thinking Ask students to think about this question as they read and be ready to answer it when they have finished the book. Write the question on chart paper or have students write it in their reading journals.

What would be the most exciting discovery we could make about space?

As You Read

Reading the Book

Modeled Reading Read aloud pages 6 and 7, modeling for students how to approach the different chunks of text on the page. Draw their attention to the call-out lines that show what part of a photo the text is referencing. Also help students figure out the order in which to read the different chunks of text on a page and how to tell which text connects to which photo.

Paired Reading Encourage students to read the book independently but to share questions and reactions with a partner. Suggest that partners conference with each other after every four to six pages.

Comprehension Focus

Compare and Contrast Show students how to create a comparison and contrast matrix to help students integrate the information they are learning about the planets. By arranging information in this way, students learn how the planets relate to each other in size, distance from the sun, and so on. The matrix provides a means for them to draw relationships from the separate chunks of text in the book.

Display on a whiteboard or screen the matrix on **Resource #2: Comparison and Contrast Matrix**. Then model for students how to fill out the information for the planet Mercury.

Model: I'm going to use this matrix to help me remember the information in the book and draw relationships between the planets. First, I'll see how information should be put into the matrix. The names of the planets go down the left side of the matrix. Across the top, there are important pieces of information, like distance from the sun. I'll begin with Mercury and look on pages 18 and 19 where I'll find the information about this planet. It says that Mercury is the first planet from the sun. I'll write, "Mercury" into the matrix first.

Pass out copies of **Resource #2** and guide students to reread the text to fill out the rest of the matrix for Mercury and the other planets. Then ask students compare and contrast questions about the planets such as: Which planet is the biggest in size? Which planet has the most moons? How does Jupiter compare with Mars in size and length of its year?

After You Read

Questions to Discuss

Lead students in a discussion of these focus story elements.

1. Information Non-fiction How does the book provide information about the phases of the moon on pages 24 and 25? (*It shows eight pictures of the phases of the moon in the order they happen.*) Why is this better than explaining the moon's phases in words? (*The pictures show the changes more clearly than words could.*)

2. Compare and Contrast What do Mercury, Venus, Earth, and Mars all have in common? (*They are made of rock.*) Which planets have fewer moons than Earth? (*Mercury and Venus*) Which planet is the smallest in the solar system? (*Mercury*)

3. Space Vocabulary Compare a galaxy and the solar system. What is the difference between these two space bodies? (*A galaxy is a group of stars. The*

solar system is the stars, planets, moons, and other bodies orbiting the Sun. Our solar system is part of a galaxy called the Milky Way.)

Questions to Share

Encourage students to share their responses with a partner or small group.

1. Text-to-Self What fact about the planets surprised you most? Would you ever like to be an astronaut?

2. Text-to-World Have you ever seen the Big Dipper in the sky? How would you go about identifying it?

3. Text-to-Text What do you find most challenging about reading this book? Do you like reading it more or less than books that have the text all together in

WORDS TO KNOW

Space Vocabulary

Give students the following definitions and ask them to hold up the vocabulary card that each defines. Then have students turn to the referenced pages to give one or two more facts about each space term.

1. a group of stars (*galaxy*, p. 48)
2. the planets, moons, asteroids, comets, and other objects orbiting the Sun (*solar system*, p. 10)
3. the entirety of space, including all the planets and stars (*universe*, p. 8)
4. a rock that floats in space, orbiting the Sun (*asteroid*, p. 34)
5. a huge ball of hot fiery gas (*sun*, p. 16)
6. a person who has been trained to travel and work in a spacecraft (*astronaut*, p. 68)
7. the force that attracts objects to one another; also the force that attracts objects to the Earth (*gravity*, p. 22)
8. a round object, either rocky or made up of gases, that orbits a star (*planet*, p. 6)

one place? How do the photographs and illustrations help you understand the information about outer space? How does the way the words look influence how you react to them? How does the type make a point about a planet?

Extension Activities

Reading/Writing Connection

Captain's Log Assign students to write a log, or informational journal, imagining that they are the captain of a space mission in the future. First, tell students to choose a name for their spaceship and its mission. Then have them choose one of the planets in our solar system as the destination of their mission. Instruct students to make three log entries about what they observe. They can use their imaginations, but should also include information from the book about their planet.

Don't forget the



BIG QUESTION

Critical Thinking Give each student an opportunity to answer the big question. Encourage students to support their answers with details and evidence from the text. Tell them there is no one right answer.

What would be the most exciting discovery we could make about space?

Content Area Connections

Math Moon Olympics What would it be like to play sports on the moon? Students find out in this interactive science exploration activity. They guess how the gravity of the moon affects activities like weightlifting, diving, and skateboarding. To access the Moon Olympics, visit the following link at the Scholastic website: <http://bit.ly/Rjv4JR>.

Science Star Gazing Encourage students to ask their families to study the night sky with them for familiar constellations like the Big Dipper and for the planet Venus, the brightest natural object in the night sky after our Moon. If they are interested, guide students to reference books about constellations or direct them to a website such as kidsastronomy.com.

Arts Moon Watch Flip Book The American Museum of Natural History has an extensive astronomy section on its kids' website, OLogy. One activity asks students to record the changing appearance of the moon for a full cycle. They then cut apart their drawings and create a flip book that shows the moon moving through its phases. To find these activities, visit: <http://bit.ly/Qr4ltu>.

Technology Rocket Scientist Students learn how real rockets work in *Discover More: Planets*. The future rocket scientists in your classroom will enjoy creating their own rockets using simple household supplies. Guide students to the NASA Space Place website for kids for an excellent rocket experiment that must be done with the assistance of an adult: <http://1.usa.gov/SXgAg7>.

BIG ACTIVITY

Take Me to Your Leader Reread with students the text about the possibility of alien life on pages 54 and 55. Ask students to study the pictures of alien life on the pages and then challenge them to draw their own E.T., or Extra Terrestrial. Make copies of the printable, **Big Activity: Take Me to Your Leader** on page 5 and distribute to students. Explain how to fill in the information about their alien and clarify any questions students have.

Name: _____ Date: _____

BIG ACTIVITY: Take Me to Your Leader!

What do you think an extraterrestrial being might look like? Draw a picture of an alien in the spaceship below. Then write its name, where it lives, and its special features.



Name: _____

Home Planet or Galaxy: _____

Special Features:

1. _____

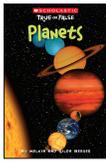
2. _____

3. _____

READ MORE AND LEARN MORE

Use these books and other resources to expand your students' study of the book or theme.

Subject/Theme Connections



Scholastic True or False #9: Planets

Melvin Berger and Gilda Berger

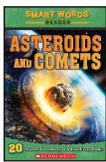
Ages: 7–8

Grades: 2–3

Lexile Measure®: AD490L

Pages: 48

This small book is packed full of facts and full-color photographs about our solar system. Readers will find out which planet rolls around like a barrel in space, which planets have rings, and the number of places in the solar system that humans have explored. The true-or-false format of the book turns learning the mysteries of the universe into a fun game. **Available as a Storia e-book**



Smart Words Science Reader# 18: Asteroids and Comets

Ages: 6–8

Grades: 1–3

Pages: 32

The photos and diagrams in this clever science reader help students identify the nucleus and coma of a comet, visit the asteroid belt to learn about its orbit, and watch space probes and telescopes in action. And as they learn about the rocks hurtling through Earth's solar system, students will also gain exposure to the foundational words that are essential to reading and talking about science. With a vocabulary review quiz and an apply activity, this book is a great choice to prepare kids for further research and learning. **Available as a Storia e-book**



The Night I Saved the Universe

Abby Klein

Ages: 7–10

Grades: 2–5

Lexile Measure®: 640L

Pages: 80

Space cops don't really exist . . . do they? Mickey had never even heard of the Galactic Police Department. But then he meets Crotis—a giant, hairy alien cop. Together, the two have amazing adventures exploring volcanic planets, dodging angry snow monsters, and more. But when they start noticing mysterious criminal activity all over the galaxy, Crotis realizes that he needs some backup. Mickey's just a kid—but can he help Crotis save the universe?

Available as a Storia e-book

To find PDF versions of the Storia teacher guides and links to purchase the related books, visit:
<http://teacher.scholastic.com/ereading-resources/>

Genre Connections



Smart Words Science Reader #15: Tornadoes

Ages: 6–9

Grades: 1–4

Lexile Measure®: 1000L

Pages: 32

Guided Reading Level: S

The United States gets an average of one thousand tornadoes a year—that's more than any other country! These twisting columns of air leave massive destruction in their wake. Learn how they start, where they hit, what types there are, how they are measured, and ways to stay safe in tornado conditions. Packed with mind-blowing photos, informative illustrations and maps, and cool facts, this book also introduces 20 “smart words” that are essential for grasping exciting science concepts. **Available as a Storia e-book**



National Geographic Readers: Storms!

Miriam Goin

Ages: 6–8

Grades: 1–3

Pages: 32

What makes the wind howl? Why does thunder crash? How do snowflakes form? Learning about weather is fun with this engaging introduction to some important elements of our natural surroundings. There's even a section about weather on other planets! Readers will build weather vocabulary while learning a few fun climate-related jokes. Don't miss the weather dance at the end!

Available as a Storia e-book



National Geographic Readers: Volcanoes

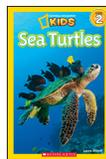
Anne Schreiber

Ages: 6–8

Grades: 1–3

Pages: 32

In this fascinating fact-filled book, readers can learn about how volcanoes work, where they came from, and what causes them to erupt. The pages are packed with cool full-color photos, sprinkled with funny jokes, and have enlightening word bursts that offer definitions of terms like magma and tsunami. Both playful and informative, this is a great book for budding scientists or anyone who enjoys learning about the wonders of the world. **Available as a Storia e-book**



National Geographic Readers: Sea Turtles

Laura Marsh

Ages: 6–8

Grades: 1–3

Lexile Measure®: 620L

Pages: 32

Guided Reading Level: J

Meet the sea turtles! Children will love learning about these unique and graceful creatures, which can grow to seven feet in length. Topics covered include the seven different kinds of turtles, how they swim, where they live, and how they mate. There's also a section on dangers these mysterious creatures face, and how young people can help keep them safe.

Available as a Storia e-book

planet (p. 6)

universe (p. 8)

solar system (p. 10)

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galaxy (p. 48)

astronaut (p. 68)

Name: _____ Date: _____

RESOURCE #2: Compare and Contrast Matrix

Fill in the information for all the planets. Then compare and contrast them.

Planets	Distance from Sun	Diameter	Length of Year	Made of	Numbers of Moons
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					