



## Summary

**Know How Know Why: Space** is a fact-filled question/answer book that helps children learn about many aspects of space. The universe, solar system, celestial bodies and spacecraft are addressed.

Vocabulary		Comprehension Strategy	Genre Study	Text Features	
astronaut	atmosphere	Determining main idea and supporting details, Inferencing	Text structure: Question/answer, Specificity, Description, Use a variety of beginning techniques	headings	photographs
black hole	comet			illustrations	captions
constellation	ellipse			text boxes	glossary
galaxy	light year			index	
meteor	Milky Way				
nova	observatory				
orbit	sunspot				
supernova	white dwarf				

### Standards: Science

- Knows that the Earth is one of several planets that orbit the sun and that the moon orbits the Earth
- Knows that planets look like stars, but over time they appear to wander among the constellations
- Knows that astronomical objects in space are massive in size and separated from one another by vast distances

### Standards: Technology

- Knows that when things are made up of many parts, the parts usually affect one another
- Knows that new inventions often lead to new inventions and many ways of doing things

Kendall, J. S., & Marzano, R. J. (2004). *Content knowledge: A compendium of standards and benchmarks for K-12 education*. Aurora, CO: Mid-continent Research for Education and Learning (McREL). Online database: [www.mcrel.org/standards-benchmarks/](http://www.mcrel.org/standards-benchmarks/)

### Discussion Prompts Prior to Independent Reading

#### Vocabulary Building and Background Knowledge:

Read the title as students look at the cover. Ask students to talk about what they observe on the cover and what they already know about space. Scaffold a discussion that builds on the background knowledge of students. Introduce students to the vocabulary words by having them look at the glossary on pages 46 and 47.

Discussion questions:

- Read the definitions for *galaxy* and *Milky Way*. How are these words related?
- Where would you work if you were an *astronaut*?
- You might go to an *observatory* to look for *constellations*. What does this mean?

#### Genre Study and Text Features:

State that **Know How Know Why: Space** is an informational text

written in the question/answer format. Ask students to look at pages 2 and 3. Point out that each section starts with a main idea and then provides the answer. Discuss ways to read a question/answer text and highlight features that support students in reading the text.

Highlight prompts:

- This book contains a lot of information. Skim the book to find several ways the author shares facts with the reader.
- Why are some of the pictures illustrations and some photographs? In a book about space, why is it important to distinguish between illustrations and photographs?

#### Reading the Book:

Have students read the book independently or with a partner.

### Comprehension Questions

After students have completed reading **Know How Know Why: Space** gather students together for a discussion based on the questions below or assign students to answer the questions independently or with a partner.

- Even though Mercury is closer to the sun than Venus, why is Venus hotter than Mercury?
- How has space travel changed since the first rocket missiles in the 1800's?
- What judgment would you make about astronauts eating in space?

### BLM: Extension Activity

Students may use the Venn diagram on the next page to compare three planets of their choosing. Attributes to consider are the planets', composition, distance from the sun, number of moons, size, shape, rings, and atmosphere.



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**Comparing Planets**

Directions: Use the Venn diagram to compare three planets that you choose. Some attributes to consider are the planets' composition, distance from the sun, number of moons, size, shape, rings, and atmosphere.

