

Reading Level: Grade 3

Subject: Science

Materials

- Books for each student
- Whiteboard or chart paper
- Paper
- Pencils or pens
- KWL Chart handout (p. 3 of this guide)

Lesson Standards

- **CCSS.ELA-LITERACY.RI.3.1:** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

Targeted Reading Strategy/Objectives:

Asking questions before, during, and after reading

Academic Vocabulary: astronaut, dark matter, galaxy, solar system, telescope

Before Reading

Building Background Knowledge

- Ask students to think about what they know about space exploration. Why are people interested in learning about and exploring space? What major events have taken place in space exploration? Inform students that they will be reading about how space exploration has developed, and they will be learning about how scientists are working to shape space exploration in the future.
- As a group, quickly skim the book. Identify the table of contents, glossary, index, notes, and bibliography. Ask students to identify how they will use these text features to help them read and understand the book.

Skill Introduction

- Students will be working on forming questions about their reading. Remind students that asking and answering questions helps strong readers focus their attention on what they're reading. Good readers ask questions before, during, and after they read. Give each student a copy of the KWL Chart handout (p. 3 of this guide) to help them in the process of asking and answering questions as they read. Ask students to fill out the first column of the chart with the information the class discussed during "Building Background Knowledge."
- Prepare to read Chapter 1 ("What Is Space Exploration") as a group. First, model the formation of questions before reading with a think-aloud, and record the questions in a KWL chart on the board or on chart paper. Instruct students to fill in their charts along with you:

Think Aloud: *"As I skim through this chapter, looking at section headings and pictures, I'm already forming a couple of questions to help me focus as I start to read. I'm going to put these questions into the second column of my KWL chart. My two questions are: How do scientists learn information about faraway planets and stars? How many galaxies are there?"*

- Read through the chapters with students and note when the text addresses the questions you asked in the think-aloud. Record these answers in the third column in the KWL chart. Reinforce that answers may not always be obvious and that students might need to use context clues to help them answer questions.
- Model forming additional questions while reading. Remind students that their answers may not always be answered in the text. When you finish reading, model forming questions that help students reflect further on what they have finished reading.

• During Reading

Check for Understanding

- Ask students to read Chapter 2 (“Humans in Space”) independently. Before they start to read, have them skim the chapter and generate one or two focusing questions based on the section headings and pictures. They should record their questions on their KWL charts.
- Have students begin to read the chapter. Remind them that they should be looking for answers to their questions as they read and that they should also be trying to generate new questions as they read through this section. Encourage them to continue to record questions and answers on their KWL charts. Circulate the room, giving assistance when needed.
- When all students have finished reading, have them generate at least one more question to guide further thought and reflection. Ask some students to share some of the answers they found to their questions while reading.
- Have students read the remainder of the book independently, using what they know about asking questions to help them understand as they read.

After Reading

Response to Text

- After students have read the entire book, bring the group together to discuss what they have learned. Use questions like the following to lead the discussion:
 - How has space exploration changed since humans first made it into space?
 - What was most surprising to you as you read about space exploration?
 - What else would you like to learn about space exploration?

Word Work

- Explain that students will be working on making new words from base words. As an example, show how new words can be made by changing letters and adding prefixes and suffixes to the base word **explore**.
 - explore: explorer, exploration, exploring, explored, explores, unexplored
- Find other base words in the text, or allow students to suggest their own base words. Give students time to make new words out of these base words.

Extend the Reading

- Ask students to write a short paragraph in response to this prompt:
 - You have just finished reading about the many new developments in space exploration. Which of these do you think is the most important, and why?



Name: _____

Space Exploration KWL Chart

What do you already KNOW about space exploration?	What do you WANT to know about space exploration?	What have you LEARNED about space exploration?

