

## Far-Out Guide to the Solar System

### Introduction

This teacher's guide helps students learn about the Sun, planets, moons, dwarf planets, asteroids, and comets that make up our fabulous Solar System. Books in the series take readers on a voyage to discover the diversity of objects moving about in space: how they got there, what they are made of, how they relate to the overall system circulating around the Sun, and what the future holds for them.

### National Standards

This series supports [Science and Language Arts](#). Go to [www.enslowclassroom.com](http://www.enslowclassroom.com) and/or [www.enslow.com](http://www.enslow.com) and click on the Curriculum Correlations tab. Click on your state, grade level, and curriculum standard to display how any book in this series backs up your state's specific curriculum standard.

### Classroom Activities

Activities linking to the five curriculum areas: Reading/Language Arts; Math, Science; Social Studies; and the Arts, can be found in this teacher's guide. Hands-on activities and a reproducible handout encourage readers to use comprehension and vocabulary skills relating to the book's subject. Some activities can be reworked to use with any book in the series.

### Guided Reading Level: **N**

### Reproducible for Educational Use Only

This guide is reproducible for educational use only and is not for resale. © Enslow Publishers, Inc.

### Where to Find More Information About Titles in this Series:

Visit [www.enslowclassroom.com](http://www.enslowclassroom.com) and/or [www.enslow.com](http://www.enslow.com) to search for other titles and series, as well as download the teacher's guides for other titles in this series:

Titles in this series:	Library Edition ISBN:	Paperback Edition ISBN:
<b>Far-Out Guide to the Sun</b>	978-0-7660-3179-1	978-1-59845-180-1
<b>Far-Out Guide to Mercury</b>	978-0-7660-3180-7	978-1-59845-181-8
<b>Far-Out Guide to Venus</b>	978-0-7660-3181-4	978-1-59845-182-5
<b>Far-Out Guide to Earth</b>	978-0-7660-3182-1	978-1-59845-183-2
<b>Far-Out Guide to the Moon</b>	978-0-7660-3189-0	978-1-59845-184-9
<b>Far-Out Guide to Mars</b>	978-0-7660-3183-8	978-1-59845-185-6
<b>Far-Out Guide to Jupiter</b>	978-0-7660-3184-5	978-1-59845-186-3
<b>Far-Out Guide to Saturn</b>	978-0-7660-3178-4	978-1-59845-187-0
<b>Far-Out Guide to Uranus</b>	978-0-7660-3185-2	978-1-59845-188-7
<b>Far-Out Guide to Neptune</b>	978-0-7660-3186-9	978-1-59845-189-4
<b>Far-Out Guide to the Icy Dwarf Planets</b>	978-0-7660-3187-6	978-1-59845-190-0
<b>Far-Out Guide to Asteroids and Comets</b>	978-0-7660-3188-3	978-1-59845-191-7

### Titles in this series can be purchased through all major vendors or directly from:

Enslow Classroom, an imprint of Enslow Publishers, Inc.  
40 Industrial Road, Box 398 Berkeley Heights, NJ 07922-0398  
Phone: 1-800-398-2504 E-mail: [customerservice@enslow.com](mailto:customerservice@enslow.com)  
Web Page: [www.enslowclassroom.com](http://www.enslowclassroom.com) and/or [www.enslow.com](http://www.enslow.com)

## Teacher's Guide for **Far-Out Guide to Jupiter**

Jupiter, the fifth planet from the Sun, is a giant gas planet. It is so big that all the other planets in the solar system could fit inside it! Jupiter is also home to the most violent storm in the Universe, a storm that has been raging for over 200 years! In this book, readers discover even more fascinating facts about Jupiter: why you cannot stand on it, how many moons orbit it, how it gobbled up a comet, and what space probes have uncovered about this awesome planet. Readers get the facts straight from real scientists who study Jupiter and run programs designed to investigate the second largest object in our solar system, overshadowed only by the Sun,.

**Introduction, pages 4–7** Read the title, *Far-Out Guide to Jupiter*, aloud and have students discuss the cover photograph. Then browse a few pages, pointing out text features such as the Contents, Index, headings, photo captions, text boxes, maps, and labeled diagrams. Read aloud the second paragraph on page 5. Explain that authors often use a descriptive text structure to help readers visualize, or create pictures in their minds, by giving details that appeal to readers' five senses (sight, hearing, smell, taste, touch). Invite students to share what they visualize when they read *Now squash all 14 together*.

**Chapter 1, pages 8–23** Point out how the author chooses words for the chapter title, *A Giant With Stripes*, to help readers visualize. Add that authors may use several kinds of text structure in a selection. They choose a structure they think will best help readers understand and remember certain information. Here, the author uses a sequence text structure to tell events in the order they happened. Discuss how dates and words and phrases like *after*, *then*, *by the time*, *now*, and *eventually* signal sequence. Encourage students to make sequence charts on which to list events in order. Explain that the charts help readers better understand the relationships between events. Skim and scan the *At a Glance*, *Fast Facts*, and *Timeline* pages together and stress that they summarize information for readers.

**Chapter 2, pages 24–37** Point out that in this chapter the author uses a compare-and-contrast text structure to describe Jupiter's many moons. Remind students that to compare things, find ways they are alike; to contrast them, find ways they are different. Ask students to note compare-and-contrast relationships as they read. Point out the large fact box on page 26. Explain that facts boxes are set apart from the main text to focus on one fact or event related to the main text. Have students note how photo and illustration captions not only describe the visual but explain information related to the main text.

**Chapter 3, pages 38–43** Let students partner-read and discuss what is ahead for Jupiter. Encourage them to continue to visualize and to note the sequence of events, then share their visualizations and sequence charts. Did both readers visualize the same thing? Explain that visualizing makes the text meaningful to different people in different ways. Draw attention to the *Words to Know*, *Find Out More*, and *Index* pages that follow the chapter. Discuss how such information can help readers find information more easily.

**After Reading** Ask students to share what they learned about the make-up, moons, and explorations of Jupiter. To draw out personal responses to the book, ask: *What one thing did you find most interesting about Jupiter? Did any information about the planet or its moons surprise you? Why or why not? Did the book answer any question you might have about Jupiter? If not, where could you find that information?* (sources on *Find Out More* page)

Activities linking to Reading/Language Arts, Math, Science, Social Studies, and the Arts on the page that follows. Make copies of the Handout on the last page. Read the directions aloud, then let students do the page independently. Answers: 1. storm, 2. largest, 3. Mars, 4. gases, 5. lights, 6. Io, 7. moons, 8. rings, 9. Mercury, 10. comet.

## **Activities The Five Curriculum Activities**

### **SAFETY WARNING:**

Before doing any activity, make sure students do not have allergies to items needed. Have an adult present at all times to supervise activities requiring the use of sharp or hot/cold objects. Always review directions and safety rules with students before they begin a project.

### **Reading/Language Arts activity:**

Let students use the information they have read about giant Jupiter to write giant postcards to friends about the planet. Have students use tagboard or heavy paper. Explain that on half of one side, students should write as much information as possible about Jupiter. On the other half, they should use proper addressing skills to write to whom the postcard would go. On the reverse side, students should make an illustration about the planet. Let students display the big cards on a bulletin board labeled *Giant Postcards from a Giant Planet*.

### **Math activity:**

Remind students that there are 24 hours in a day. *Say, It takes Jupiter 9 hours and 56 minutes to make one complete rotation. If you watched a rotation start at 8:45 a.m., what time to the nearest hour would rotation be complete?* Let students work alone or with a partner to get the answer. (8:45 a.m. + 9 hours and 56 minutes = 18 hours and 1 minute, or 6:01 p.m., to the nearest hour, 6 p.m.)

### **Science activity:**

Let students work together to make a volcano. You need clay, a soda bottle, baking soda, vinegar, water, measuring spoons, a funnel, and liquid dishwashing detergent. Go outside or do the activity in a baking pan or a pile of newspapers to catch the "lava." First, have students form a clay "mountain" around the soda bottle, leaving the top open as the volcano shaft. Put 3-4 tablespoons of baking soda into the bottle. Add a few drops of detergent and about ½ cup of water. Finally, add about ½ cup of vinegar, quickly remove the funnel, and watch the eruption!: Discuss how the vinegar reacts with the baking soda to create carbon dioxide gas. The bubbles in the gas push the "lava" up and out.

### **Social Studies activity**

Use the information about Rosaly Lopez in Chapter 2 to discuss careers. Explain that or many years, women were not always accepted in science. People thought men did well at science and math and women did better in literature, the arts, and taking care of a home. Tell students that things are different now, Many girls students do as well, and sometimes better, than boys in math and science, and more and more science, or math scholarships are available for girls entering college. List with students as many careers as possible in which people use science and/or math. Include the obvious and the not so obvious, such as: doctor, nurse, astronaut, cook (chemistry and measurement), meteorologist, teacher, grocery clerk (math), car mechanic (science of engines and measurement), stockbroker, and architect.

### **Arts activity:**

Let students practice non-verbal communication. Have them take turns pantomiming looking through a giant telescope at Jupiter and discovering a new volcano, moon, ring, or even some form of life. Then ask the student to convey to a partner or group of classmates and convey what was seen, using only pantomime, gestures, and/or body language. The partner or group must guess what the "astronomer" saw. Make sure each student has a turn as astronomer

## Handout

### Choose-a-Word

Circle the word or words that best complete each sentence.

1. The Great Red Spot on Jupiter is a \_\_\_\_\_.  
**probe**                      **rover**                      **storm**
2. Jupiter is the \_\_\_\_\_ planet in our solar system.  
**oldest**                      **largest**                      **hottest**
3. The asteroid belt is a region of space between Jupiter and \_\_\_\_\_.  
**Earth**                      **Saturn**                      **Mars**
4. Spaceships can't land on Jupiter because it's made up of \_\_\_\_\_.  
**solids**                      **gases**                      **water**
5. Auroras are \_\_\_\_\_ near Jupiter's poles.  
**volcanoes**                      **winds**                      **lights**
6. Loki, the largest volcano in our solar system is on \_\_\_\_\_.  
**Ganymede**                      **Io**                      **Europa**
7. Jupiter has at least 60 \_\_\_\_\_.  
**gases**                      **rocks**                      **moons**
8. *Voyager 1* discovered Jupiter's \_\_\_\_\_.  
**rings**                      **Great Red Spot**                      **clouds**
9. Jupiter's moon, Ganymede, is as large as the planet \_\_\_\_\_.  
**Mars**                      **Mercury**                      **Earth**
10. Shoemaker-Levy 9 is a \_\_\_\_\_ that Jupiter gobbled up!  
**asteroid**                      **space probe**                      **comet**