

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. Full-color photographs and illustrations, and engaging text that includes quotes from real space scientists, capture readers' attention as they take a ride through our neighborhood in the Universe. Sidebars, factsheets, and timelines add information that not only educates but entertains readers.

National Standards

This series supports [Science and Language Arts](#). Go to www.enslowclassroom.com and/or 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: **M**

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Teacher's Guide for
Far-Out Guide to Earth

Earth is the third planet from the Sun and the only one that has what it takes to support life like us. It has water, oxygen, and enough gravity to hold on to our atmosphere. In this book, readers discover fascinating facts about Earth, how it compares to other planets, what its layers are like, from the inside out, and how it rotates on its axis like a spinning top. Readers also learn how satellites and reports from astronauts help us constantly monitor storms and changes to Earth, getting the facts from scientists who help us learn more about our home planet..

Introduction, pages 4–8 Read the title, *Far-Out Guide to Earth*, aloud and browse a few pages with students, pointing out text features such as the Contents, Index, headings, photo captions, text boxes, maps, and labeled diagrams. Read the word *causing* in the third sentence on page 5. Explain that words like *causing*, *because*, *effect*, *so*, and *therefore* can signal a cause-and-effect text structure. Review that a cause is **why** something happens; an effect is **what** happens. Add that a cause-and-effect text structure helps readers understand the relationship between events. Explain that sometimes there are no signal words and readers must infer the relationship. Suggest that as students read, they put sticky notes where they find other cause-and-effect relationships.

Chapter 1, pages 9–24 Set a purpose for reading by asking students why they think the author used the words *zooming in* as part of the chapter title. As they discuss the reasons, point out that they can find the answer by reading on. (*zooming in with camera lenses*) Discuss how the photos, maps, fact boxes, and captions relate to the information in the text. Skim and scan the *At a Glance*, *Fast Facts*, and *Timeline* pages together and stress that they summarize information for readers.

Chapter 2, pages 25–33 Explain that every chapter in a book has a main idea—what it is mostly about. Sentences and paragraphs in the chapter give details that support that main idea. Point out that a main idea may be stated or implied in the chapter title. Read the chapter title, then ask students to use stickies to note important details as they read that support the main idea of what Earth, the planet, is like. Later, have students use the information to create concept webs with *Earth* in a center circle and details, such as *orbits the Sun*, *spins on its axis*, *has plants*, and *has plates* in smaller circles around it.

Chapter 3, pages 34–43 Let students partner-read and discuss what is ahead for Earth. Encourage partners to list ways they can personally help to protect our planet from pollution. 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, functions, explorations, and pollution of Earth. To draw out personal responses to the book, ask: *What did you find most interesting about Earth? If you could work with scientists on one thing, such as studying Earth's past, controlling its weather and natural disasters, or designing ways to save its future, which would you choose? Why?*

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 with you or independently.

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:

Tell students that a word ladder defines a word using the letters in that word. Explain that you write a word vertically, then write words horizontally to explain the word you chose. Write an example on the board to look like the rungs of a ladder.

EarTh
Is
Leaning
slighTly

Then challenge each student to work with a partner to make one or two word ladders for terms listed in the *Words to Know* or *Index*. Let partners share their work with the class.

Math activity:

Remind students that on page 18 they read that Earth travels around the Sun at 66,629 miles per hour. Ask students how many miles Earth travels in 3 hours. In 5 hours. (66,629 mph x 3 hours = 199,887 miles; 66,629 mph x 5 hours = 333,145 miles)

Science activity:

Direct attention to the text and illustration on page 28 about Earth's plates. Clarify that earthquakes are caused when two of the huge plates rub together violently. The plates are always moving and usually move past one another relatively easily, but sometimes they get stuck, build up pressure, then move forcefully, causing an earthquake. Demonstrate the concept by having students hold their hands in front of them, palms up, and press the sides of their hands together very tightly. Then have students try to move one hand forward so that they feel the pressure before one hand finally slips forward and up to the side.

Social Studies activity

Put stickies on a globe to locate your community, a state or country further east, and a state or country further west. Hold a flashlight so it shines horizontally on the globe. Turn off the classroom lights. Have a volunteer slowly spin the globe counterclockwise, the direction Earth rotates on its axis. Ask students which location gets sunlight first as the Earth rotates. Which gets sunlight last? When the sunlight leaves the location to the west, is it still light in your community?

Arts activity:

Give each student a long strip of paper to fold and divide into four equal-sized panels, then label in order: *Summer, Fall, Winter, Spring*. Challenge students to make four drawings of the same scene, illustrating how it changes over the year as the Sun creates the four seasons for us here on Earth. Let students share their finished drawings with the class.

Handout

Find-a-Word

Find these 22 words from the book hidden across, down, or diagonally in the puzzle below: AIR, ANIMALS, BIOSPHERE. BREATHE, CRUST, EARTH, FOSSILS, HUMANS, HYDROSPHERE, LAND, LANDSAT, LIFE, OCEANS, OXYGEN, OZONE, PLANTS, PLATES, POLLUTION, SATELLITES, SPIN, TILT, WATER. How does each word relate to Earth?

P	O	L	L	U	T	I	O	N	Z	X	S
J	B	I	O	S	P	H	E	R	E	H	A
X	R	F	X	L	L	L	Z	J	W	Y	T
Z	E	E	Y	Z	A	A	A	Z	A	D	E
F	A	K	G	S	N	N	Z	T	T	R	L
O	T	Z	E	P	T	D	D	I	E	O	L
S	H	H	N	I	S	S	J	L	R	S	I
S	E	J	U	N	E	A	R	T	H	P	T
I	Z	J	A	M	Z	T	Z	S	J	H	E
L	X	E	Z	J	A	O	Z	O	N	E	S
S	C	R	U	S	T	N	J	A	I	R	Z
O	A	N	I	M	A	L	S	J	Z	E	J

Answer:

