

Science
Updated

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Space and Technology

Earth and Space

by Harriet Stansbury



Genre	Comprehension Skill	Text Features	Science Content
Nonfiction	Alike and Different	• Captions • Labels • Glossary	Earth and Space

Scott Foresman Science 2.12



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ISBN-13: 978-0-328-34224-2
ISBN-10: 0-328-34224-6



Vocabulary

axis

constellation

crater

orbit

phase

rotation

solar system

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Illustrations: 6, 8, 15, 21, 22 Bob Kayganich

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ISBN 13: 978-0-328-34224-2; ISBN 10: 0-328-34224-6

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What is the Sun?

You can see stars in the night sky.

Stars are made up of hot gases.

The Sun is a star.

You might think the Sun is the biggest star.

This is because the Sun is the closest star to Earth.

 The Sun is very bright.

This is why you cannot see other stars in the day.



Why We Need the Sun

The Sun is far from us.

This makes it look small.

The Sun is really much bigger than Earth.

 This is the Sun in space.

 We need the Sun.

Plants and animals need the Sun too.

The Sun gives living things light and heat.



What causes day and night?

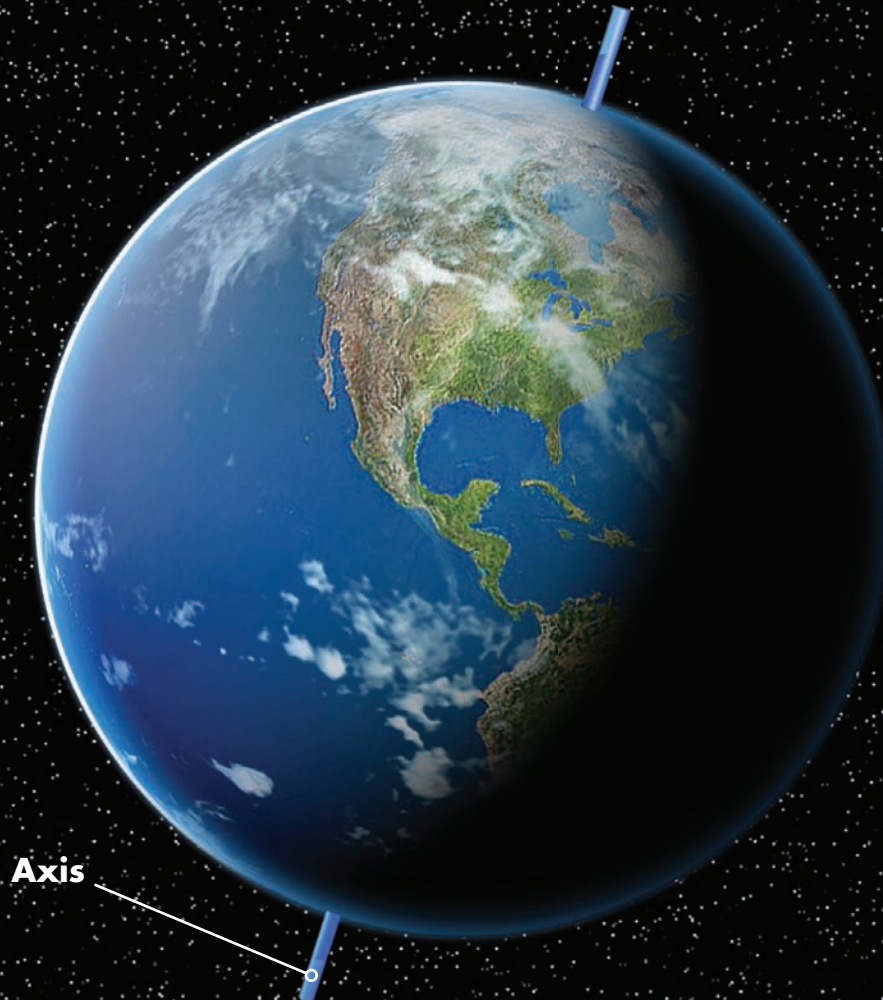
Look at the picture.

You can see an imaginary line through Earth.

This line is called an **axis**.

Earth spins on its axis.

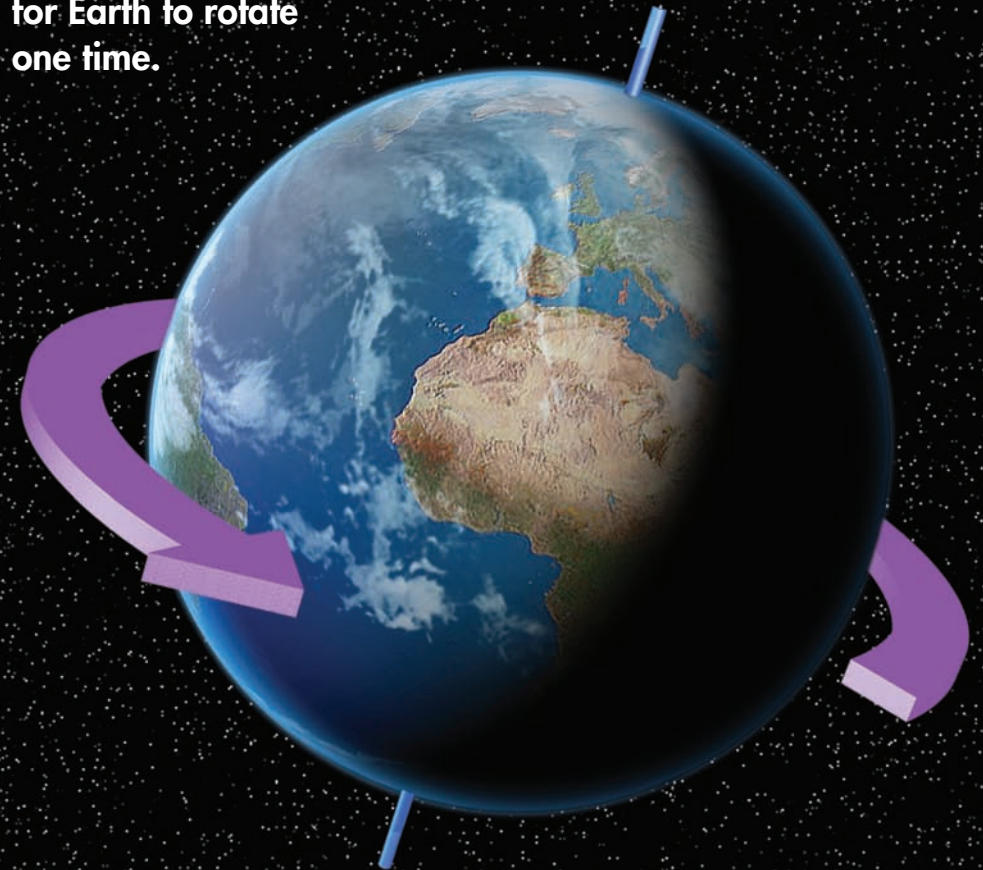
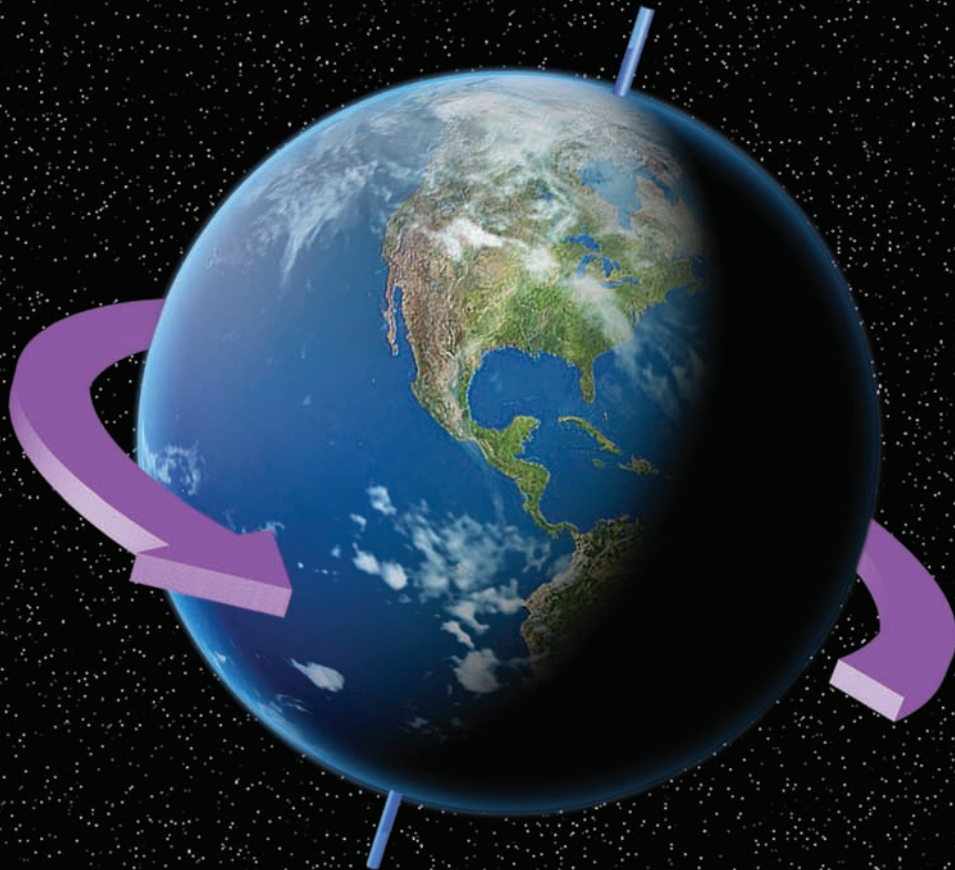
 Spinning on an axis is called a **rotation**.
Earth makes one full rotation each day.



 Earth's rotation makes day and night.
It is day when your side of Earth is facing
the Sun.

 It is night when your side of Earth is facing
away from the Sun.

 It takes 24 hours
for Earth to rotate
one time.



The Sun in the Sky

The Sun seems to go up and down in the sky.

The Sun looks low in the sky in the morning.

 By noon, the Sun is high in the sky.

 Sunrise



 Noon



 At night, the Sun is low in the sky again.
The Sun is not moving.
It is Earth that is moving.

 The Sun is always shining, but you cannot
always see it.

 **Sunset**



What causes seasons to change?

Earth spins on its axis.

Earth's axis is tilted.

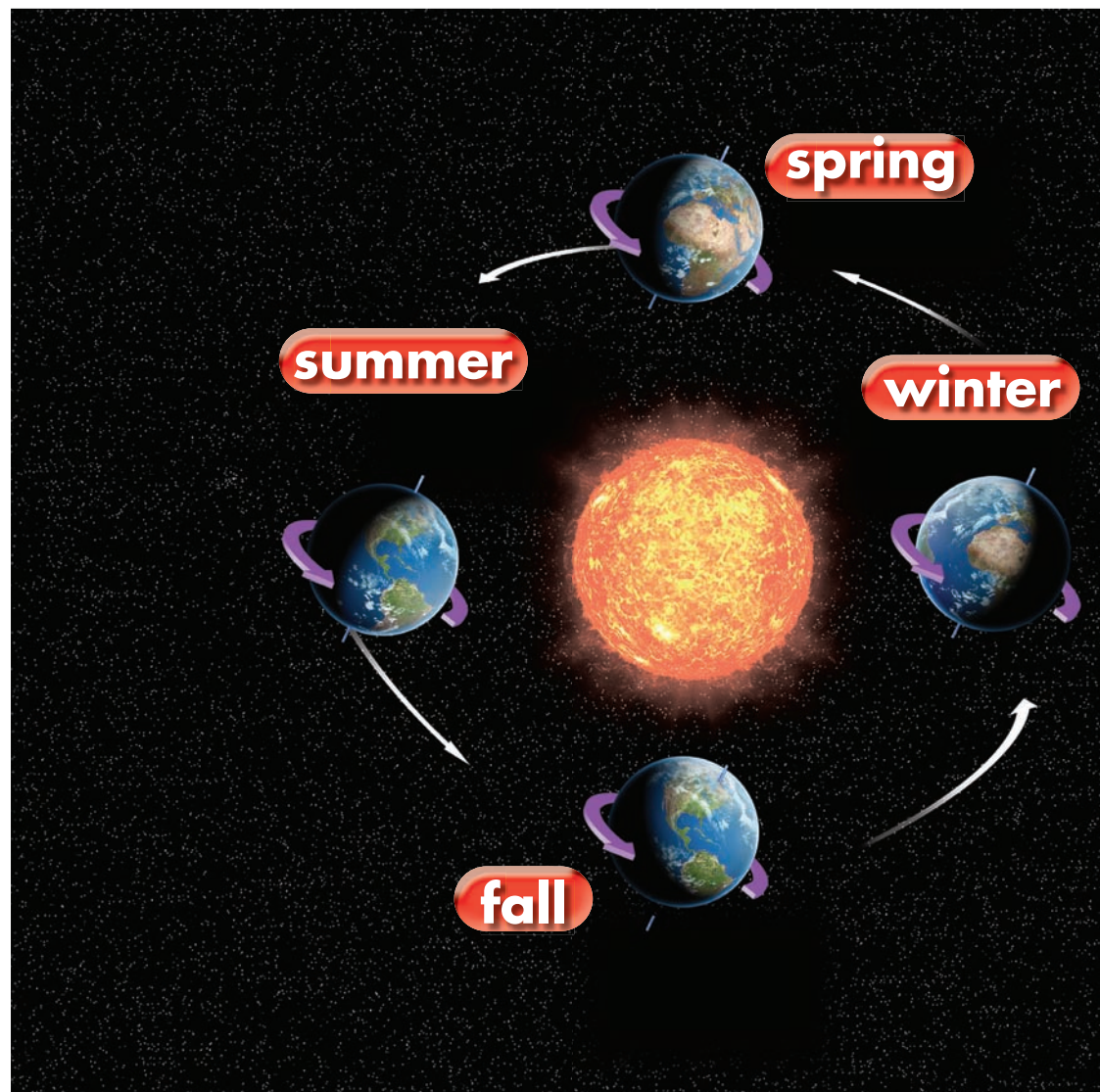
Earth also makes an **orbit** around the Sun.

This means it moves in a path around the Sun.

In the summer the part of Earth where we live is tilted toward the Sun.

It takes a year for Earth to move around the Sun one time.
The tilt of Earth and Earth's orbit around the Sun make the seasons change.

In the spring the part of Earth where we live is starting to tilt toward the Sun.



In the winter the part of Earth where we live is tilted away from the Sun.

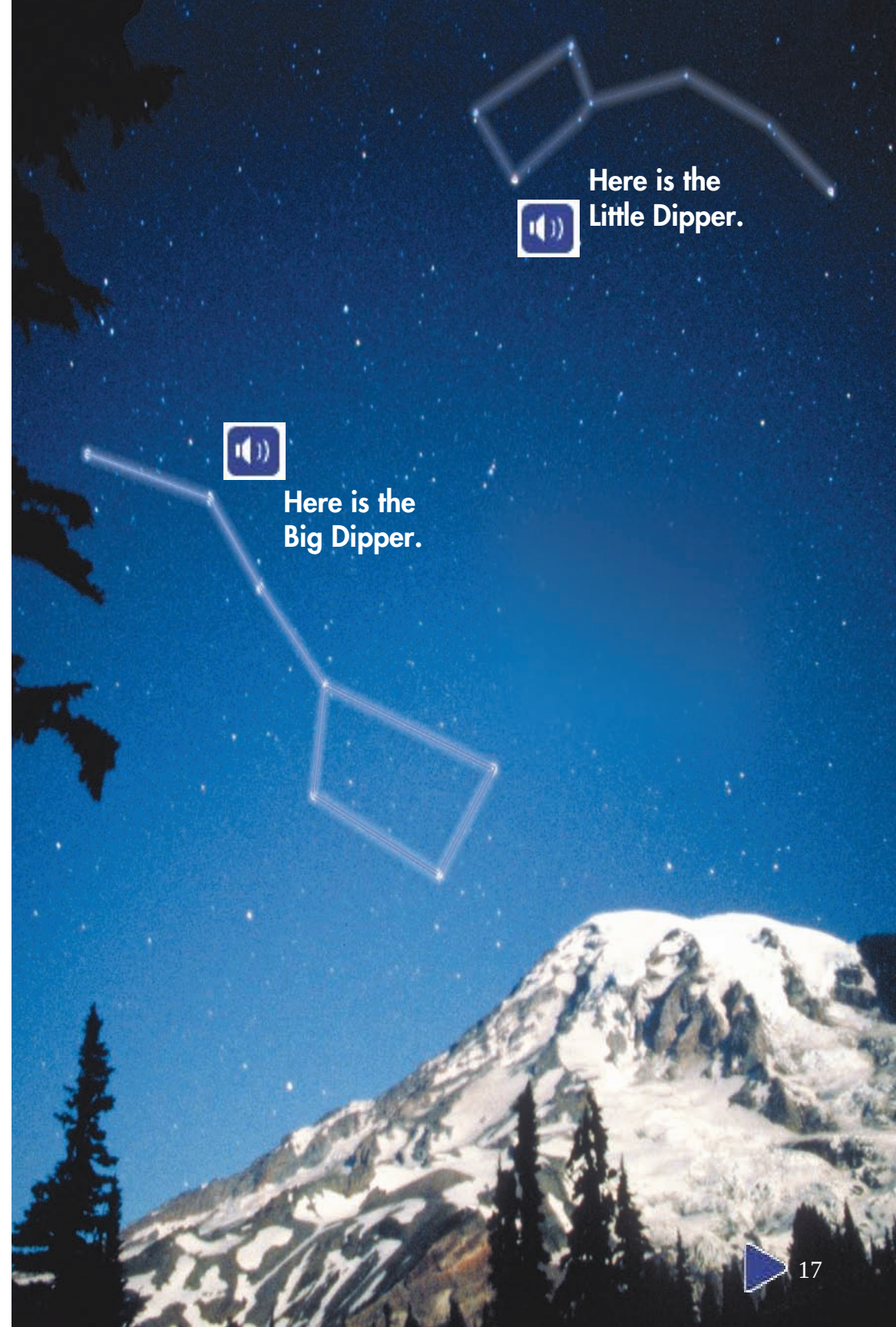
In the fall the part of Earth where we live is starting to tilt away from the Sun.

What can you see in the night sky?

You can see stars in the night sky.
The stars look small.
Stars are far from us.

People see pictures when they look
at the stars.
A group of stars that look like a picture
is called a **constellation**.

 This constellation
is called Leo.



 Here is the
Little Dipper.

 Here is the
Big Dipper.

The Moon

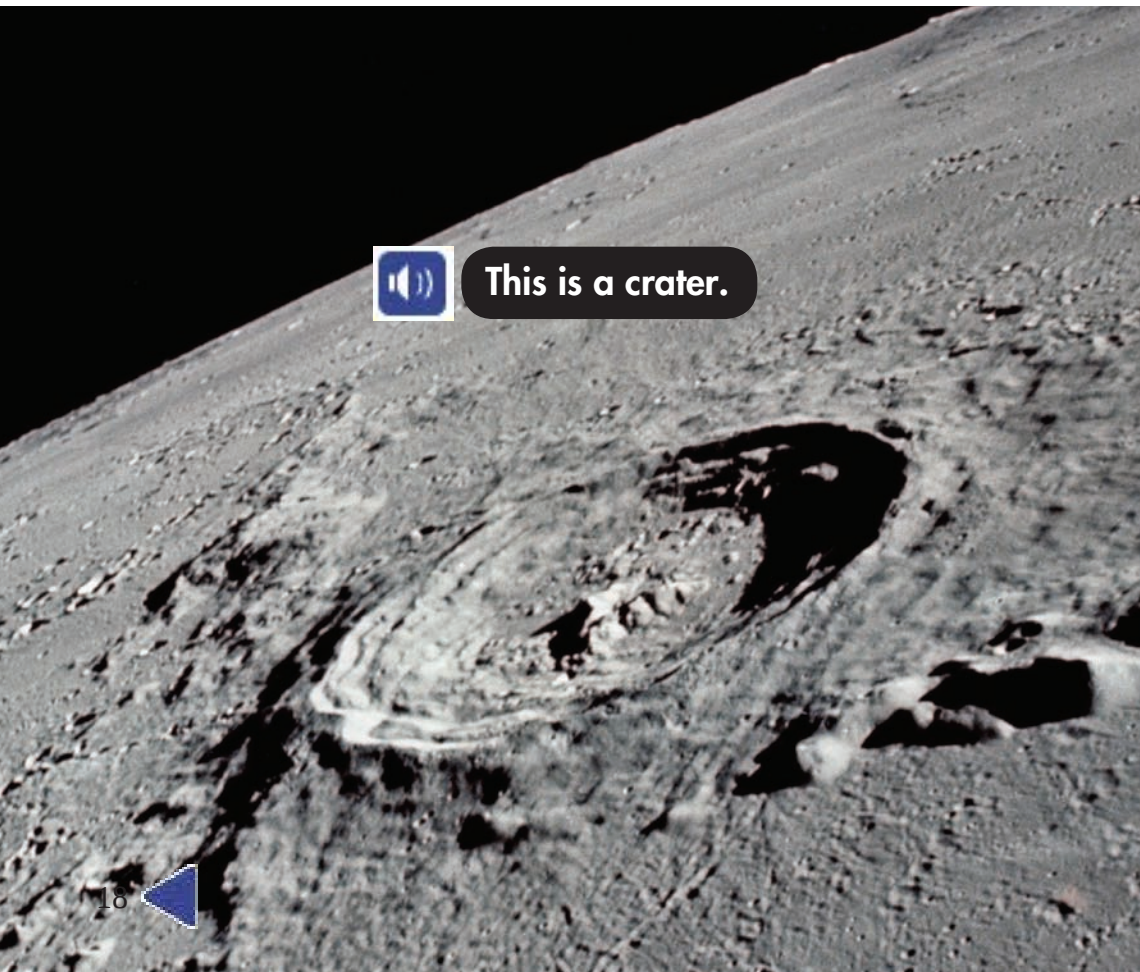
You can see the Moon at night.
The Moon is big and bright.

The Moon has hills and craters.

A **crater** is a hole.

A crater is shaped like a bowl.

Big rocks from space hit the Moon and made craters.



This is a crater.

 You may see the Moon during the day.



Why does the Moon change?

The Moon moves in an orbit around Earth.
The Moon orbits Earth while Earth orbits the Sun.

It takes four weeks for the Moon to go around Earth.

The Sun shines light on the Moon.
You can only see the part of the Moon that is lit up.

 The shape of the Moon seems to change.
It may look round.
It may look like half of a circle.
At times you cannot see the Moon.
The shape of the lighted part of the Moon is called a **phase**.



What is the solar system?

Earth is a planet.

Earth moves around the Sun.

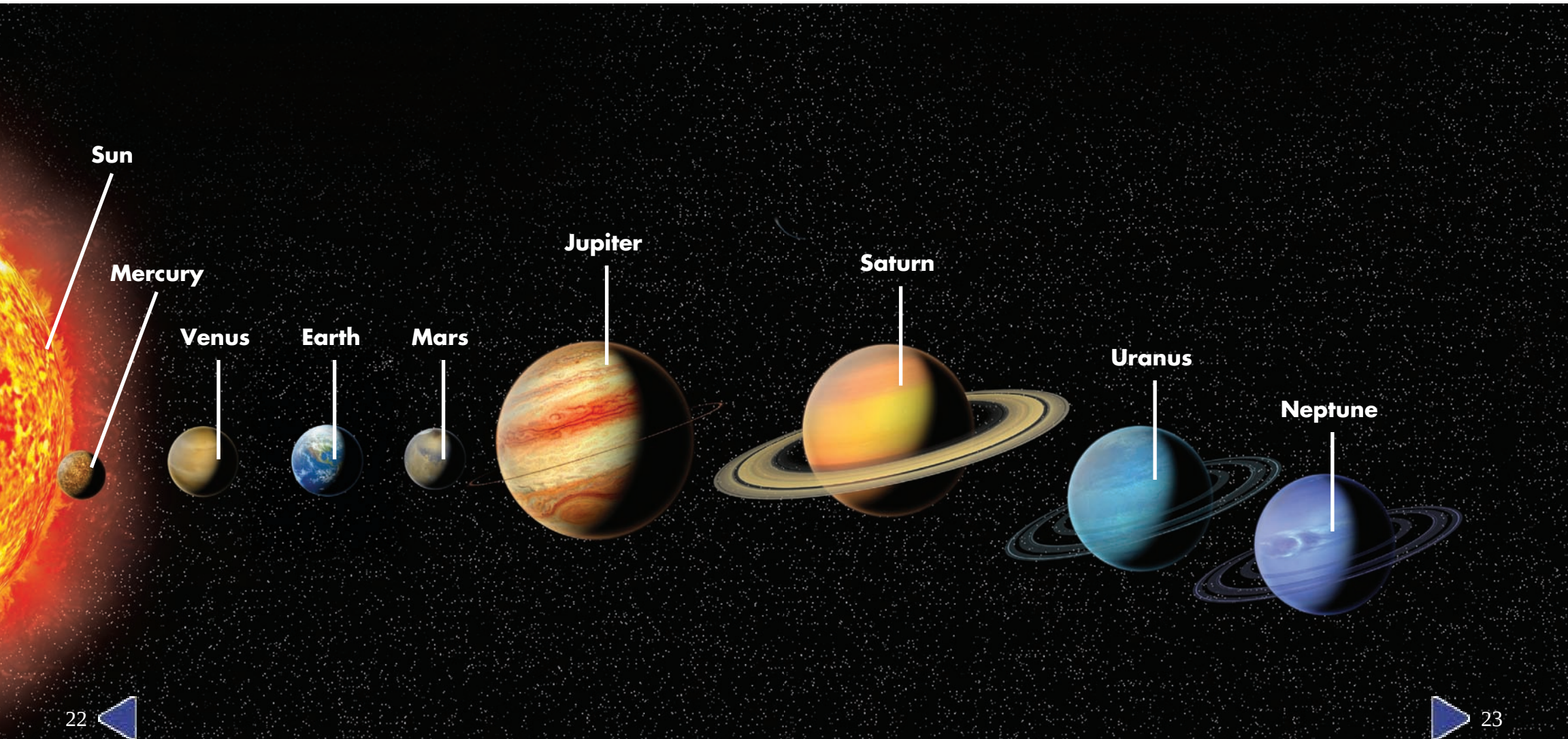
Other planets move around the Sun.

The Sun, the Moon, Earth, other planets, and their moons all make up the **solar system**.

 The Sun is the center of the solar system.
Eight planets orbit the Sun.

Look at the picture.

Can you find Earth?





Glossary

axis	an imaginary line through the center of Earth
constellation	a group of stars that form a picture
crater	a hole in the ground that is shaped like a bowl
orbit	a path around another object
phase	the shape of the lighted part of the Moon
rotation	the spinning on an axis
solar system	the planets and their moons and other objects that move around the Sun

What did you learn?

1. What is the Sun made of?
2. What is Earth's axis?
3. **Writing in Science** Earth's rotation causes night and day. Write to explain how this happens.
4.  **Alike and Different** Look at the picture of the planets in our solar system. How are the planets alike? How are they different?

