

Science

Genre

Nonfiction Articles explain a topic by presenting facts about it in text, photos, and graphic aids.

Text Feature

Diagrams are graphic aids that show how things relate to each other.

Content Vocabulary

orbits
craters
rotate
exploration

The Solar System

by Thomas Morabito

Our solar system is made up of the Sun, Earth, our moon, seven other planets and their moons, meteors, asteroids, and all the space around them. All eight planets move in **orbits** around the Sun, which is the center of our solar system.

The Sun

The Sun is a medium-size star made up of very hot gases. The temperature of the Sun is almost 10,000°F! The closer a planet is to the Sun, the higher the temperatures are on its surface. The farther away a planet is from the Sun, the lower the temperatures are on its surface.

The Inner Planets

The inner planets are those closest to the Sun. They are made of solid rock.

Mercury

Mercury is the closest planet to the Sun. It is about one-third the size of Earth. Covered with **craters**, it looks a lot like the moon. Mercury has no water and very little air.

Venus

Venus, the second planet from the Sun, is veiled in thick, swirling clouds. About the same size as Earth, Venus is sometimes called a sister planet.

Venus, though, is very different from Earth. It has no oceans and no life. The air is made up of carbon dioxide. This layer traps in heat.

That makes Venus the hottest planet in the solar system. With temperatures of 900°F, Venus is even hotter than Mercury!

Earth

Earth is the third planet from the Sun. In addition to having the most comfortable temperatures, Earth has water and oxygen. As far as we know, Earth is the only planet able to sustain life.

Besides heat, we also get light from the Sun. It takes about 24 hours for Earth to spin, or **rotate**, all the way around. For half of that time, a side of Earth faces the Sun and it is day. At the same time, the other side faces away from the Sun and it is night.

It takes Earth about 365 days to move around the Sun. We call this time period a year.

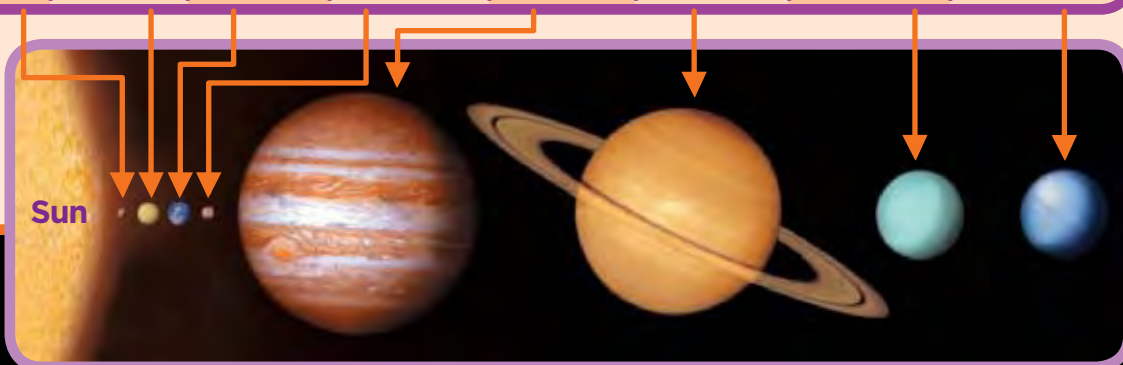
Distance from the Sun



Reading a Diagram

This diagram shows the distance from the Sun to each of the eight planets in miles and kilometers.

Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
57,909,175 km	108,208,930 km	149,597,890 km	227,936,640 km	778,412,020 km	1,426,725,400 km	2,870,972,200 km	4,498,252,900 km
35,983,095 miles	67,237,910 miles	92,955,820 miles	141,633,260 miles	483,682,810 miles	885,904,700 miles	1,783,939,400 miles	2,795,084,800 miles



Mars

Mars, the planet next farthest from the Sun, is often called the Red Planet. The rocks, soil, and sky are red in color. Before space **exploration**, people thought there might be life on Mars. They thought the lines on Mars's surface were canals made by intelligent life forms. Now we know that Mars has no surface water and no life. Traces of shorelines, riverbeds, and islands may suggest that there was water on Mars at one time. Craters and inactive volcanoes cover most of its surface today.

The Outer Planets

In addition to being farther away from the Sun, these planets are not made of rock. Although they may have solid centers, these planets are made up of gases. They are dark and cold.

Jupiter

Jupiter is the largest planet. If Jupiter were hollow, more than one thousand Earths could fit inside. It is the fifth planet from the Sun and is famous for its great red spot. Scientists believe this spot to be a storm.

Saturn

Saturn, the sixth planet from the Sun, is the second largest planet. It has thousands of beautiful shiny rings. These rings are made up of chunks of ice, rock, and dust. Saturn is also very windy. Near the equator, the wind blows at speeds of up to 1,100 miles an hour!



Uranus

Uranus, the third largest planet, has at least 22 moons. Like Saturn, Uranus has faint gray rings that might be made out of graphite, the black material inside a pencil.

Neptune

Neptune has a great dark spot, about the size of Earth. Neptune's spot, like the one on Jupiter, is thought to be a storm. The winds there are the strongest on any planet. They have been found to reach speeds of 1,200 miles per hour. Neptune has faint rings and eight moons.

A Note About Pluto

Pluto was discovered in 1930 and was called the ninth planet. In 2006, the International Astronomical Union said planets

must orbit the Sun, have a nearly round shape, and clear other objects in their orbital neighborhood. Because Pluto's orbit intersects Neptune's, it was renamed a dwarf planet.

Pluto



Connect and Compare



1. Look at the diagram. Which planet is farther away from the Sun—Mars or Neptune? How do you know? **Reading a Diagram**
2. Using information from the article and the latest findings about the solar system, make three observations about the planets. **Synthesize**
3. Think about Gloria from “The Astronaut and the Onion.” What do you know about her that tells you Gloria would probably like to visit the solar system? **Reading/Writing Across Texts**



Science Activity

Research the reasons why the International Astronomical Union calls Pluto a “dwarf planet.” Draw a diagram of Pluto and its nearest neighbors.



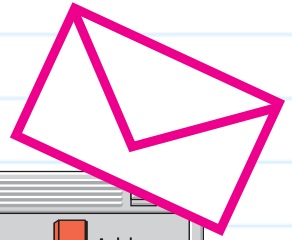
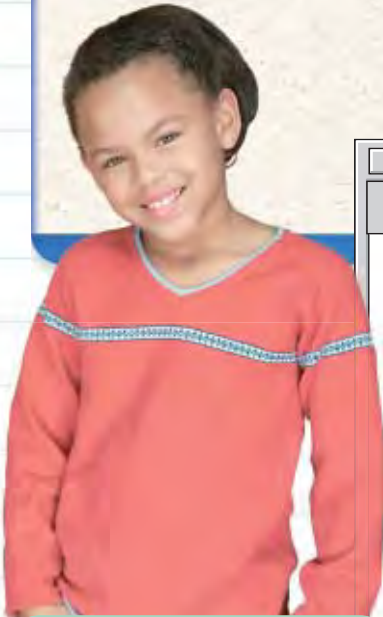
Find more about space travel at www.macmillanmh.com

Write an E-Mail

Writer's Craft

Topic Sentence

Your first sentence, the **topic sentence**, lets the reader know what you are writing about.



e-mail

Write Send Reply Print Delete Address

TO: Chanell97@example.com
FROM: Taqoya123@example.com
SUBJECT: Space Camp

Dear Chanell,

While I was at Space Camp, I felt what it's like to walk on the moon. At first, I just hopped a bit. Then I bounced high in the air! It was awesome. I hope you and I can leap across the moon together some day for real. Write soon!

Your friend,
Taqoya

The topic sentence in my e-mail to a friend is about my Space Camp trip.

Details make my e-mail lively and informative.

Your Turn

Write an e-mail telling about an experience. You may write to a friend or a family member. Be sure to include a topic sentence. Your e-mail should include to whom it is addressed, who is writing, and what it is about. Use the Writer's Checklist to check your writing.



Writer's Checklist

- Ideas and Content:** Did my e-mail clearly describe my experience and include interesting details?
- Organization:** Did my e-mail include a **topic sentence** telling about my experience?
- Voice:** Did the writing show my excitement about the experience?
- Word Choice:** Did I use strong verbs?
- Sentence Fluency:** Did I join related sentences to make complex sentences?
- Conventions:** Did I use commas in the greeting and closing? Did I check my spelling?