

SOLAR SYSTEM

BY NORMA O'TOOLE

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The activities in this book explain elementary concepts in the study of the solar system, including orbits, the sun, the moon and moon phases, planets, seasons, and day and night.

General background information, suggested activities, questions for discussion, and answers are included.

Encourage students to keep completed pages in a folder or notebook for further reference and review.

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SOLAR SYSTEM

ACTIVITIES FOR SOLAR SYSTEM



Sun

Hint: To help you remember the planets in their correct order from the sun, memorize this sentence.

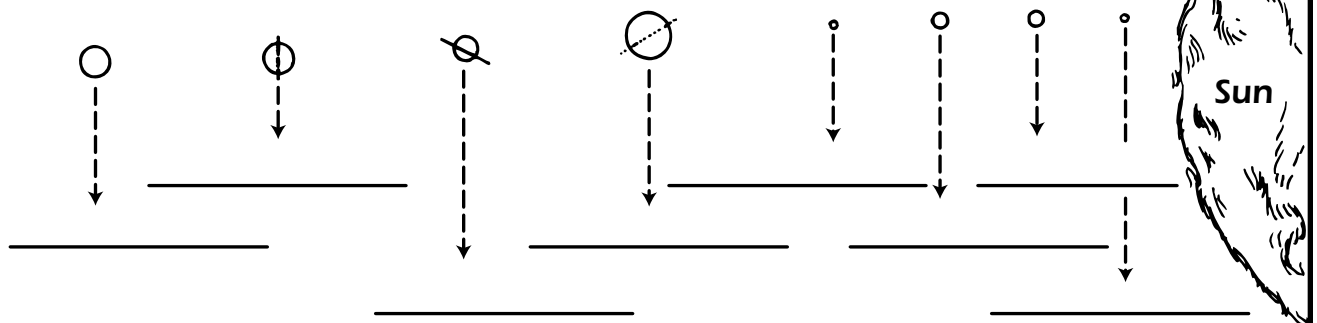
M	y	V	e	r	y	E	d	u	c	a	t	e	d	M	o	t	h	e	r	J	u	s	S	e	r	v	e	d	U	s	N	a	c	h	
e	e	a	a	u	a	r	e	r	n	r	r	p	t	a	p	c	u	t	s	i	u	n	t	u	s	h	t	r	u	u	r	e	n	s	n
y																																			

Write the answers on the blanks.

1. The Sun is the center of what system? _____
2. What are comets? _____
3. Explain the main difference between a planet and a star. _____

4. Name the largest member of our Solar System. _____
5. Does the Sun travel around the planets or do the planets travel around the Sun? _____
6. Our Solar System is in what Galaxy? _____
7. How does our Solar System compare in size to this Galaxy? _____

8. Fill in the names of the planets in their correct order in space.

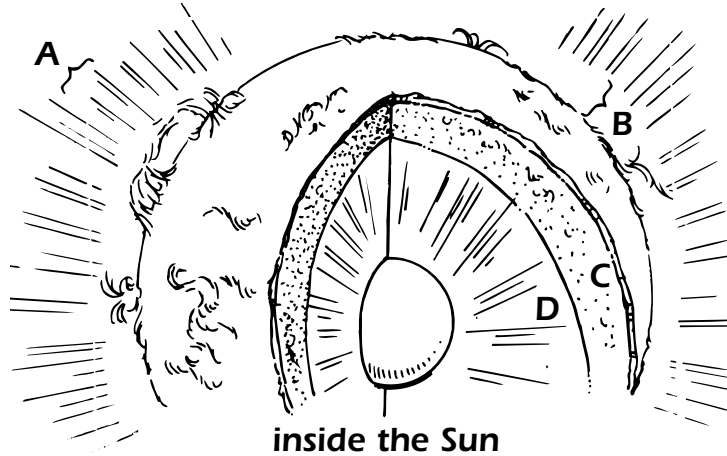


SOLAR SYSTEM**THE SUN**

The Sun is a star made up of hot gases that explode with energy similar to that of a continuously exploding nuclear bomb. It is the center of our Solar System. It provides us with heat and light. The Sun has been spinning on its axis and exploding for about 5 billion years.

The Sun is an average-size star, but seems larger because it is the star nearest to us—only 93,000,000 miles (150,000,000 km) away. This is a very, very long way, but the other stars are even farther out in space. Light from the Sun takes about eight minutes to reach us, so actually we see the Sun as it was eight minutes ago!

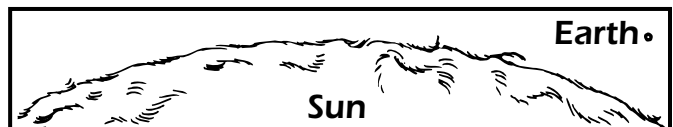
The **corona** is the outer part of the Sun's atmosphere. The **chromosphere** is made of very, very hot gases which shoot up into the corona at high speeds. Heat is sent to the surface of the Sun through the **middle** and **outer** layers from the **core**. The temperature of the core is approximately 57,000,000°F (31,350,000°C).



Label the diagram of the sun.

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____

The Sun is much larger than the Earth. The diameter (distance across) of the Sun is 109 times that of the Earth. For comparison, you could fit about one million Earths inside the Sun!



Sun's size compared to the Earth

MAKE A SOLAR COLLECTOR**MATERIALS**

2 cans the same size black paper thermometer

ACTIVITY

1. Cover one can with black paper. Fill both cans with water.
2. Set both cans outside in the sun on a warm sunny day.
3. Record the water temperature at the beginning of the experiment and again after 10, 20, and 30 minutes.
4. Which can collected the most solar energy?

SOLAR SYSTEM**INNER PLANETS**

There are eight planets in our Solar System. They are dark spheres that reflect light from the Sun. They can be divided into two groups—inner planets and outer planets. The inner planets are Mercury, Venus, Earth, and Mars. The outer planets are Jupiter, Saturn, Uranus, and Neptune.

MERCURY

Mercury is the small planet closest to the Sun. Since it is between the Sun and Earth, it is often hidden in the Sun's glare. The Sun appears nine times larger on Mercury than on Earth. It bathes the planet in deadly radiation. Mercury is a ball of rock that has craters, hills, plains, and mountains. The days and nights on Mercury are long—the time between one sunrise and the next is 59 Earth days. Mercury is the speed demon of the Solar System, however, because it takes only 88 days to travel around the Sun.

How Old Would You Be on Mercury?

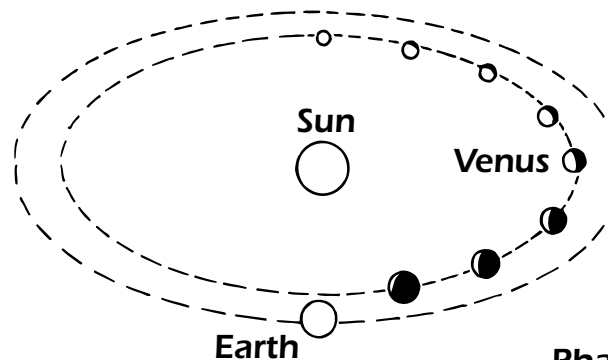
To keep track of your age on Mercury, you would simply have to remember that every 88 days you would be a year older—but a Mercurian year! How old would you be on Mercury? Figure out how many days old you are and divide that number by 88.

I am _____ days old on Earth and _____ years old on Mercury!

VENUS

Venus is second from the Sun and has an orbit twice as big as Mercury. Venus is sometimes called the morning or evening star because it appears shortly after sunset and before sunrise. With sunlight reflecting off its dense cloud cover, Venus is brighter than anything in the sky except for the Sun and moon. Because of its location between the Sun and Earth, Venus goes through phases as does our moon.

Venus is a hostile place. Its atmosphere is 98% carbon dioxide. The upper clouds are poisonous sulfuric acid. Its surface temperature is approximately 900°F (475°C). The atmosphere alone would crush you!

**Phases of Venus**


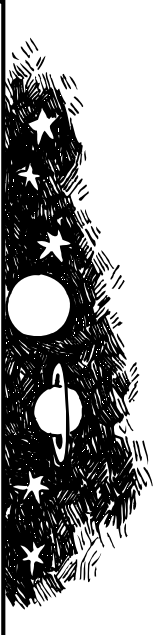
SOLAR SYSTEM**REVIEW OF OUTER PLANETS**

Who am I? Use the clues to name the planet being described.

1. I am a bluish-green planet and have rings. Unlike other planets, I lie on my side. Who am I? _____
2. I am the sixth planet from the Sun. I am known for my beautiful rings and my colors. I am made up mostly of gases. Who am I? _____
3. I was reclassified as a "dwarf planet". Not much is known about me because I am so far away and so hard to study. I have five moons. Who am I? _____
4. I am eighth from the Sun and have a greenish color. I can only be seen through a telescope. I have at least 14 moons. Who am I? _____
5. I am the largest planet and well known for beautiful colors and my great red spot. I have rings and over 60 known moons. Who am I? _____

SPACE MAIL

Pretend you are sending a letter to someone in outer space. It will be carried on board a spaceship. Fill in the information on the envelope below so the letter will reach your friend.

	_____ _____ _____	<div style="border: 1px solid black; padding: 2px; text-align: center;">Place stamp here</div>	
	Name _____ Street _____ City _____ State _____ Country _____ Planet _____ System _____ Galaxy _____		

On a separate piece of paper, design a stamp to fit on the envelope above. Cut it out and paste it in the upper right corner.