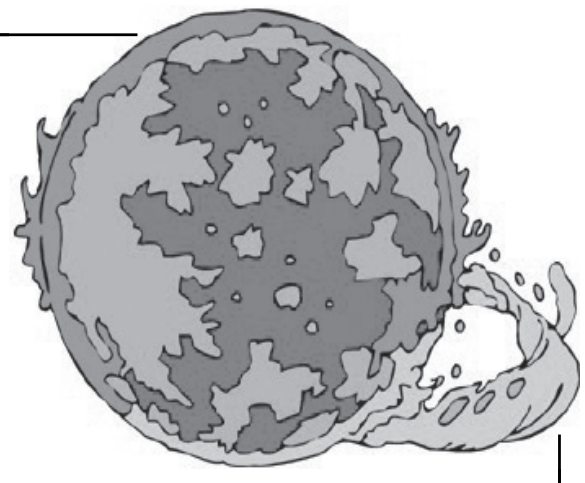
4th Grade

Name: _____

The Sun

by **Cynthia Sherwood**



You may have heard people use the term "solar energy." They're probably talking about the technology that powers a house or heats a swimming pool. But there's only one place that you can find true "solar energy"—the sun!

Without the sun, there wouldn't be life on earth. The sun provides us with both light and heat. It's at the very center of our solar system, with all eight planets revolving around it. The planets' moons, thousands of asteroids, and trillions of comets also revolve around the sun.

From earth, we see the sun as a bright yellow dot in the sky that's sometimes hidden by clouds. But the sun is actually a glowing ball of fiery gas. The part of the sun that we see has a temperature of 10-thousand degrees Fahrenheit (5,600 degrees Celsius). Inside the sun, at its core, the temperature is 27-million degrees (15-million Celsius).

The core is where the sun's incredible energy is created. The temperature is so extreme that nuclear reactions take place and energy travels to the surface of the sun. That energy is then released as light and heat. It takes a million years for energy produced in the sun's core to reach its surface.

Besides being hotter than we can even imagine, the sun is amazingly big. You could fit more than a million Earths inside the sun! But believe it or not, the sun isn't anywhere close to being the biggest object in the universe. The sun is actually a star, just like the others you see at night. It's about average in size when compared to other stars. But to us here on earth, there's nothing average about the sun!

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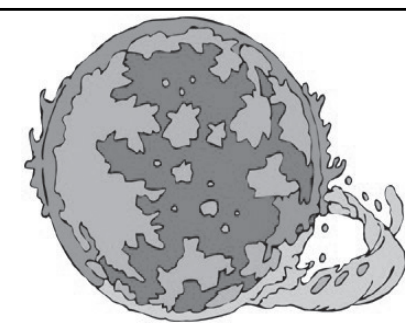

1. Where is the sun located?

- **a.** the center of the universe
- **b.** the center of the galaxy
- **c.** the center of the solar system
- **d.** the center of the Earth

2. How hot is the sun's surface? How hot is the sun's core?

_____

3. The sun is....

- **a.** the largest known star
- **b.** an average-sized star
- **c.** a small star
- **d.** the hottest known star

4. Match the words on the left with the definitions on the right.

_____ **1.** solar energy	**a.** center, inside of a ball-shaped object
_____ **2.** solar system	**b.** heat, light, or electrical power made from the sun
_____ **3.** core	**c.** the sun, and all of the things that orbit around it

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Earth

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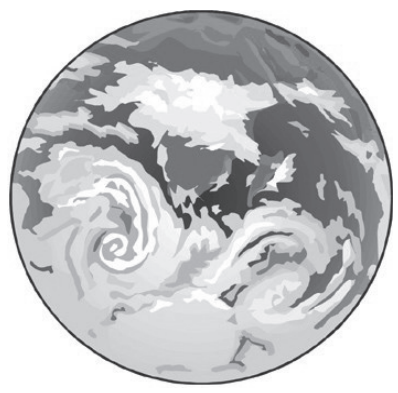

Earth is the "just right" planet. It's not too close to the sun and it's not too far away. That means Earth doesn't get too hot or too cold, unlike all the other planets. Because of its comfortable temperatures, Earth is the only place in the entire universe where we know that life exists. That makes Earth very special!

Earth is unique in another way too. Living creatures must have water to survive. Since water covers about seventy percent of Earth's surface, our planet is an ideal place to support life in many different forms. The rest of Earth's surface is made up of seven land masses called *continents.*

Scientists say Earth is about four-and-a-half billion years old. Fossils show microscopic life first appeared about a billion years later. Evidence of the first human beings came much later—only about 200 thousand years ago. That's many millions of years after the dinosaurs became extinct.

Earth is the fifth largest planet and the third planet from the sun, which is about 93 million miles away. It takes one year for Earth to travel completely around the sun. Earth also spins around like a top, going about a thousand miles an hour. You'd think we'd all need seat belts! Earth rotates around like this once every twenty-four hours, and that's what gives us night and day.

Earth is divided into several layers: the top part is called the *crust*, the part below that is called the *mantle*, and the part in the center is called the *core*. The core is solid and is probably made up of iron. Temperatures at the center of the core may be even hotter than the surface of the sun!

Scientists who study Earth are called *geologists.* Astronauts can also study Earth from space, adding to what we know about our unique and beautiful blue and green planet. Don't you feel lucky to live on the "just right" planet?

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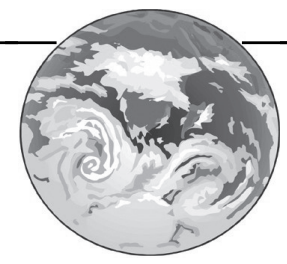

1. Complete the following sentences with information from the article.

Seventy percent of the Earth's surface is covered in _____.

Earth is _____ years old.

Earth is the _____ planet from the sun.

Earth is the _____ largest planet in our solar system.

Earth is _____ miles away from the sun.

2. What causes night and day on Earth?

- **a.** The rotation of Earth.
- **b.** Earth orbiting the sun.
- **c.** The moon moving around Earth.
- **d.** Wind moving across Earth.

4. Which sentence correctly describes Earth's layers?

- **a.** The crust is below the mantle.
- **b.** The mantle is below the core.
- **c.** The mantle is above the crust.
- **d.** The mantle is below the crust.

5. Describe the temperature at the center of the Earth.

_____

Challenge: People have never walked on any planet besides Earth. (Astronauts have been to the moon, but that's not a planet.) On a separate sheet of paper, write a paragraph telling why you would or would not like to visit another planet.