

The Sun

Read the information from the different sources. Then, answer the questions about what you read.

SOURCE 1- National Geographic

Compared with the billions of other stars in the universe, the sun is unremarkable. But for Earth and the other planets that revolve around it, the sun is a powerful center of attention. It holds the solar system together; provides life-giving light, heat, and energy to Earth; and generates space weather.

The sun resides some 26,000 light-years from the Milky Way's center, in a tendril of our home galaxy known as the Orion Arm. Every 230 million years, the sun—and the solar system it carries with it—makes one orbit around the Milky Way's center. Though we can't feel it, the sun traces its orbit at an average velocity of 450,000 miles an hour.

The sun formed more than 4.5 billion years ago, when a cloud of dust and gas called a nebula collapsed under its own gravity. As it did, the cloud spun and flattened into a disk, with our sun forming at its center. The disk's outskirts later accreted into our solar system, including Earth and the other planets. Scientists have even managed to see these planet-birthing disks around our sun's distant young cousins.

Our home star is a yellow dwarf, a medium-size variety that's fairly common in our galaxy. The label “yellow” is misleading, though, since our sun burns a bright white. On Earth, the sun can take on warmer hues, especially at sunrise or sunset, because our planet's atmosphere scatters blue and green light the most.

From our perspective, “dwarf” might not be the best word for our sun, either. At about 864,000 miles (1.4 million kilometers) wide, the sun is 109 times wider than Earth, and it accounts for more than 99.8 percent of the solar system's total mass. If it was a hollow ball, more than a million Earths could fit inside it. But the sun isn't hollow: It's filled with scorching gases and soups of electrically charged particles called plasma. The sun's surface temperature is about 10,000 degrees Fahrenheit (5,500 degrees Celsius), and it's 27 million degrees Fahrenheit (15.5 million Celsius) at the core.

SOURCE 2- NASA

The Sun is a yellow dwarf star, a hot ball of glowing gases at the heart of our solar system. Its gravity holds the solar system together, keeping everything – from the biggest planets to the smallest particles of debris – in its orbit. The connection and interactions between the Sun and Earth drive the seasons, ocean currents, weather, climate, radiation belts and auroras. Though it is special to *us*, there are billions of stars like our Sun scattered across the Milky Way galaxy. The Sun has many names in many cultures. The Latin word for Sun is “sol,” which is the main adjective for all things Sun-related: solar.

The Sun and the rest of the solar system formed from a giant, rotating cloud of gas and dust called a solar nebula about 4.5 billion years ago. As the nebula collapsed because of its overwhelming gravity, it spun faster and flattened into a disk. Most of the material was pulled

toward the center to form our Sun, which accounts for 99.8% of the mass of the entire solar system.

Like all stars, the Sun will someday run out of energy. When the Sun starts to die, it will swell so big that it will engulf Mercury and Venus and maybe even Earth. Scientists predict the Sun is a little less than halfway through its lifetime and will last another 6.5 billion years before it shrinks down to be a white dwarf.

The Sun, and everything that orbits it, is located in the Milky Way galaxy. More specifically, our Sun is in a spiral arm called the Orion Spur that extends outward from the Sagittarius arm. From there, the Sun orbits the center of the Milky Way Galaxy, bringing the planets, asteroids, comets and other objects along with it. Our solar system is moving with an average velocity of 450,000 miles per hour (720,000 kilometers per hour). But even at this speed, it takes us about 230 million years to make one complete orbit around the Milky Way.

The Sun rotates as it orbits the center of the Milky Way. Its spin has an axial tilt of 7.25 degrees with respect to the plane of the planets' orbits. Since the Sun is not a solid body, different parts of the Sun rotate at different rates. At the equator, the Sun spins around once about every 25 days, but at its poles the Sun rotates once on its axis every 36 Earth days.

1. What information do both Source 1 and Source 2 have that are the same? _____

2. What information is in Source 1 that is not in Source 2? _____

3. What information is in Source 2 that is not in Source 1? _____

4. Write a summary of what you learned about the sun. _____
