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# Stars: Lights in the Night Sky

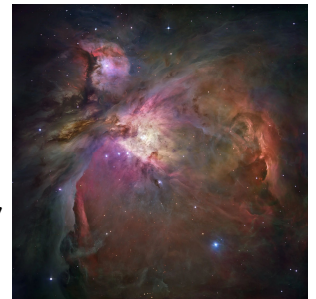
When you look up at the night sky, you see tiny points of light shining brightly. These are stars! Stars are huge, glowing balls of gas that give off light and heat. Let's explore what stars are, how they form, and why they are so important.

## What Are Stars Made Of?

Stars are made of hot gases, mostly hydrogen and helium. At the center of a star, the gases are under so much pressure that a process called nuclear fusion happens. This is when hydrogen atoms combine to form helium, releasing a lot of energy. This energy makes the star shine.

## How Are Stars Born?

Stars are born in large clouds of gas and dust called nebulae. Gravity pulls the gas and dust together into clumps. As the clumps grow larger, they get hotter and hotter. When the center of the clump becomes hot enough, nuclear fusion begins, and a star is born!



Orion nebulae

## Different Types of Stars

Not all stars are the same size, color, or temperature. Here are a few types of stars:

**Red Stars:** Cooler stars that shine with a reddish light.

**Yellow Stars:** Medium-temperature stars like our Sun.

**Blue Stars:** The hottest stars, which shine brightly with a blue-white light.

Stars also come in different sizes. Some stars are much larger than the Sun, while others are smaller. The largest stars are called giants or supergiants, and the smallest are called dwarfs.

## The Life of a Star

Stars go through a life cycle. After being born in a nebula, they spend most of their life in a stable phase, shining brightly. Over time, a star uses up its fuel and changes. Large stars might explode in a dramatic event called a supernova, leaving behind a black hole or a dense object called a neutron star. Smaller stars like the Sun become white dwarfs after shrinking and cooling down.



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### Why Are Stars Important?

Stars do more than light up the night sky. They help create the elements that make up planets and even living things. When stars explode as supernovas, they spread elements like carbon, oxygen, and iron into space, which eventually become part of new stars, planets, and life.

### Fun Facts About Stars

The Sun is a star and the closest one to Earth. It's about 93 million miles away!

The brightest star in the night sky is Sirius, also called the Dog Star.

Stars look tiny from Earth, but they are actually incredibly large.

The Milky Way, our galaxy, has billions of stars!

1. What releases energy in a star? \_\_\_\_\_

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2. Where are stars created? \_\_\_\_\_

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3. What causes a star to change? \_\_\_\_\_

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4. How does the Sun compare to other stars in size? \_\_\_\_\_

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