

Unit 1 - Lesson 1 - The Universe

## Vocabulary





### Universe - Vocabulary

cosmic: (adj) anything related to the universe or outer space





Large telescopes allow us to see **cosmic** phenomena like distant galaxies and nebulae.

### Universe - Vocabulary

massive: (adj) very large in size or amount; forming or consisting of a large mass

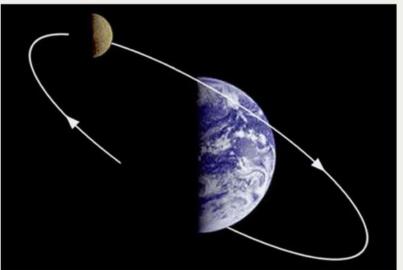




Building a massive bridge took several years and a lot of materials.

### Universe - Vocabulary

orbit: (n) the path one object takes around another object in space





The moon's **orbit** around the Earth affects the tides in the ocean.

### Universe - Vocabulary

asteroid: (n) asteroid is a small rocky body that orbits the Sun, mostly found in the region between Mars and Jupiter





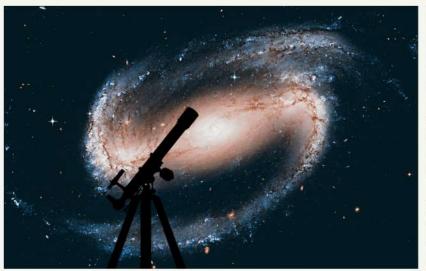
An asteroid is much smaller than a planet but can still cause damage if it hits Earth.

### Let's Read!





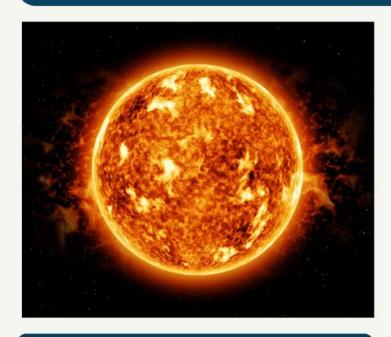
## The Solar System: Our Cosmic Neighborhood





Have you ever looked up at the night sky and wondered what's out there? The vast space beyond our planet is filled with fascinating objects, and our Solar System is just one small part of the universe. Let's take a fun journey through our **cosmic** neighborhood and explore what makes it so amazing.

## The Solar System: Our Cosmic Neighborhood



8 minutes and 20 seconds to reach Earth, traveling 149.6 million kilometers at nearly 300,000 km per second.

The Sun: The Center of It All

At the heart of our Solar System is the Sun. It's a **massive** ball of hot, glowing gas that provides the energy necessary for life on Earth. The Sun is so big that over one million Earths could fit inside it! It's like a gigantic power station that warms our planet and gives us daylight. Without the Sun's energy, our planet would be a frozen, lifeless rock. Its powerful gravitational pull keeps all the planets in orbit, ensuring the stability of our Solar System.

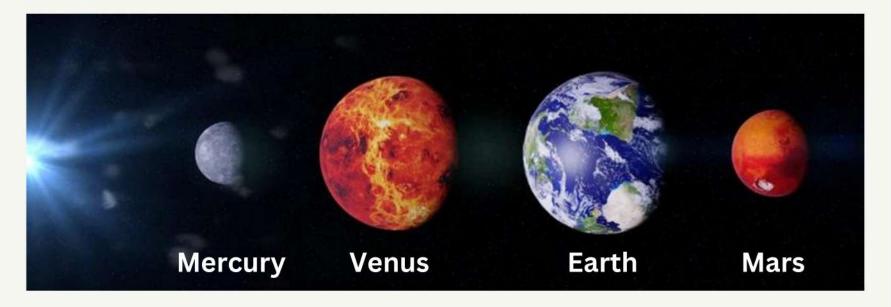
## The Solar System: Our Cosmic Neighborhood



#### The Planets: A Diverse Family

There are eight main planets in our Solar System, and they are all very different from each other. These planets are divided into two groups: the inner planets and the outer planets.

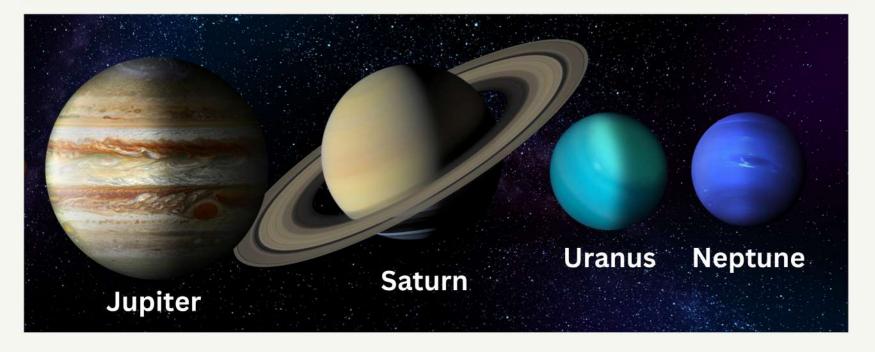
## The Solar System: Our Cosmic Neighborhood



**The inner planets**, also known as terrestrial planets, are the four planets closest to the Sun. They are Mercury, Venus, Earth, and Mars. These planets have rocky surfaces and are much smaller than the outer planets.



## The Solar System: Our Cosmic Neighborhood



The outer planets, also known as the gas giants and ice giants, are Jupiter, Saturn, Uranus, and Neptune. These planets are much larger than the inner planets and are composed mainly of gases and ices.

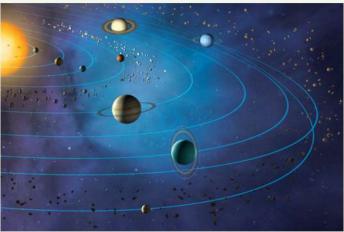
## The Solar System: Our Cosmic Neighborhood

#### **Dwarf Planets and Other Objects**

Besides the main planets, there are also dwarf planets like Pluto. Once considered the ninth planet, Pluto is now known as a dwarf planet. It's a small, icy world far from the Sun.

Our Solar System also contains many other fascinating objects, such as <u>asteroids</u> and comets. Asteroids are rocky bodies that mostly lie in a belt between Mars and Jupiter. Comets are icy bodies that develop bright tails when they approach the Sun.





## The Solar System: Our Cosmic Neighborhood





#### **Exploring the Solar System**

Humans have always been curious about space. We use telescopes to look at distant objects and send spacecraft to explore planets and moons. Missions like Voyager and Mars rovers have given us incredible pictures and information about our Solar System.

In the future, who knows what we might discover? Maybe one day, you could be an astronaut exploring the mysteries of space!

So, the next time you gaze at the stars, remember that you are part of a vast, amazing Solar System. There's so much to explore!

### Grammar





#### might / may / could + be

We can use 'might be,' 'may be,' and 'could be' to express possibilities or actions that are happening now.

They might be watching a movie at the cinema tonight.





He may be doing his homework now.

### Let's Talk!





#### Dialogue - Universe



Sam: Hey Riley, did you catch that documentary on Mars last night?

Riley: Yeah, I did. Mars is fascinating, but Saturn's rings always blow my mind. Imagine seeing them up close!

Sam: Yeah, that would be awesome. I think all the planets are amazing.

Riley: Speaking of planets, we still need a topic for our science project.

Should we do something about the solar system?

Sam: Great idea! Maybe we should make a model of the solar system.

Riley: Good thinking. We could include orbits and planet facts.

Sam: Love it. Let's add LEDs for the sun and some moons too.

Riley: Oh, and we should definitely include the asteroid belt. It's often overlooked and completely underrated.

#### Dialogue - Universe



Sam: Yeah, and Jupiter's gravity keeps those asteroids away from us.

Riley: We should show how all the planet's gravity plays a part and throw in a section about that.

Sam: Good thinking. And the sun's gravity too. It holds everything together.

Riley: For sure. Let's meet back up this weekend, sketch out some ideas, and grab what we need.

Sam: Sounds like a plan. This project is going to be out of this world!

Riley: I'm in. This project is going to be lit.

Sam: Our best one yet! See you Saturday!

Riley: Can't wait, Sam. See ya!

## Exporing Wors



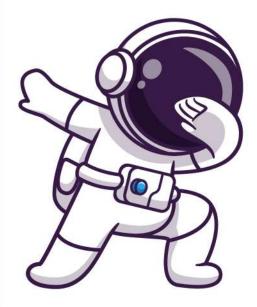




#### Space words

Practice reading these 'space' words!

meteoroid meteorite astronomy interstellar gravitational exoplanet



geostationary
spectroscopy
telescope
extraterrestrial
nebula
quasar

#### The Universe

- 1. What do you think would happen if a huge asteroid hit Earth?
- 2. What would you do if you found out an asteroid was coming toward Earth?
- 3. How do you think discovering an asteroid heading towards Earth would affect people around the world?



See You Next time!

