

Nova's Stargazing Adventure: Our Solar System

Learning objective: To describe the movement of the Earth and other planets relative to the Sun in the solar system.

Read the passage carefully and answer the questions below. Use full sentences and clear explanations to demonstrate your understanding of our solar system.

High above the ancient oak trees, Nova the owl sits perched, gazing at the velvet night sky. She explains that our solar system is a vast, beautiful neighborhood. At its heart lies the Sun, a colossal star that provides the light and warmth necessary for life on Earth. Orbiting this radiant center are eight distinct planets, all of which are roughly spherical in shape. Earth, our home, completes one full orbit around the Sun every 365 days, which we measure as a year. While it travels this path, Earth also spins on its own invisible axis, a motion called rotation, which gives us the cycle of day and night. Nova points her wing toward the distant, glowing dots. She notes that gravity acts like an invisible tether, keeping the planets locked in their predictable, elliptical paths. Without this constant pull, the planets would simply drift away into the dark, silent reaches of space. It is a perfectly balanced, cosmic dance that has continued for billions of years, keeping our world safe within the golden glow of the Sun.

Word bank: orbit · spherical · axis · solar system · gravity · rotation

1. According to the text, what are the two movements that Earth performs while in space? (2 marks) (2 marks)

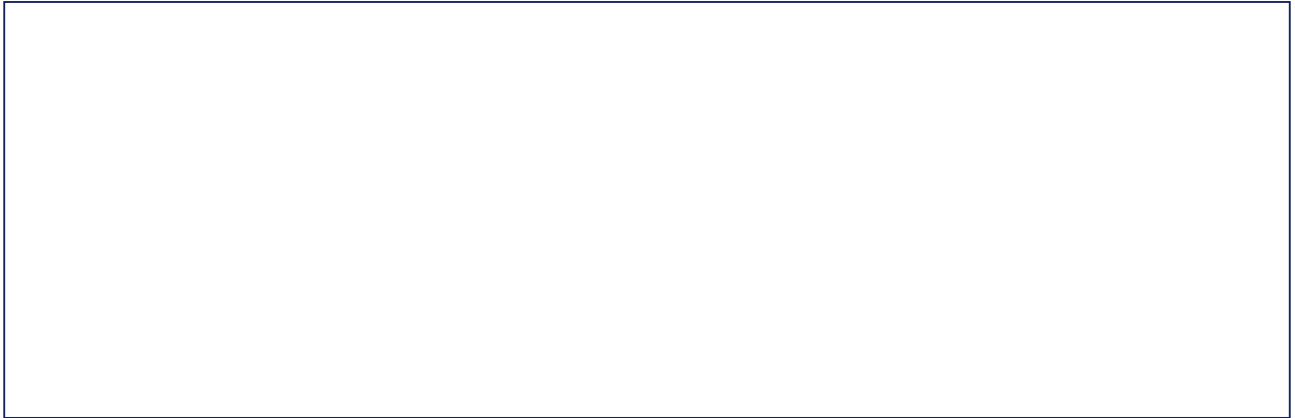
2. What does Nova compare gravity to, and what is its specific purpose in our solar system? (2 marks) (2 marks)

3. Explain why life on Earth would be impossible if the Sun were to suddenly disappear. (3 marks) (3 marks)

4. Compare and contrast the effect of the Sun on Earth versus the effect of gravity on the planets. (3 marks) (3 marks)

5. Nova describes the solar system as a 'cosmic dance'. Justify why you think this is an effective way to describe the movement of planets. (2 marks) (2 marks)

Draw: Draw a diagram of the Sun and the Earth. Use arrows to show Earth's orbit around the Sun and its rotation on its axis. Label these movements clearly.



Extension challenge: Imagine you are an astronaut visiting a newly discovered planet. Write a short paragraph explaining how the length of the 'year' and 'day' might be different there compared to Earth. What might happen if the planet did not rotate at all?