

Nova's Cosmic Journey

Learning objective: To understand the structure of the Solar System and the movement of celestial bodies.

Read the text carefully and answer the questions below using evidence from the passage.

Nova the barn owl spent her nights gazing at the vast, glittering expanse of space. She knew that our Solar System is held together by the immense gravitational pull of the Sun, a star located at the very centre. Eight planets travel in elliptical paths called orbits around this massive heat source. Nova often marvelled at how Earth, our home, completes one full orbit every 365 days. While the planets travel around the Sun, they also spin on their own invisible lines, known as axes. It is this rotation that gives us the cycle of day and night. Nova's favourite planet is Saturn, famous for its icy, rocky rings, while she finds the smaller, rocky inner planets like Mars fascinating for their potential history. Beyond the planets, countless moons, asteroids, and comets journey through the dark, silent vacuum. To Nova, the night sky is not just a dark curtain; it is a giant, rhythmic clockwork machine that has been ticking away for billions of years, perfectly balanced by the laws of physics.

Word bank: orbit · axis · celestial · gravitational · sphere · solar system

1. According to the text, what force keeps the planets within the Solar System? (2 marks)

2. How long does it take for Earth to complete one full orbit around the Sun? (1 mark)

3. Why does the author describe the Solar System as a 'giant, rhythmic clockwork machine'? (2 marks)

4. What does the rotation of Earth on its axis provide for the people living on it? (1 mark)

5. Nova finds Saturn and Mars particularly interesting. If you were an astronomer, which planet would you most like to study and why? (2 marks)

Draw: Draw a diagram of the Solar System showing the Sun in the centre and the eight planets in their orbits, including Saturn's rings.



Extension challenge: Research why the moon appears to change shape in the night sky and write a short paragraph explaining the phases of the moon.