

Nova's Cosmic Expedition: A Scientific Report

Learning objective: To describe the movement of the Earth and other planets relative to the Sun in the solar system, and to explain the scientific evidence for day and night.

Use this writing scaffold to structure your scientific report about our solar system. Ensure you use precise scientific vocabulary and justify your explanations using evidence.

As Nova the owl gazes up at the velvet night sky, she contemplates the intricate dance of the celestial bodies that make up our solar system.

Word bank: geocentric · heliocentric · orbit · axis · rotation · spherical · gravitational pull · consequently · furthermore · in contrast · due to the fact that

1. Introduction: Define the solar system and describe the position of the Sun. Start by stating: 'The solar system is a complex collection of...' (2 marks)

2. The Earth's Movement: Explain how the Earth moves in relation to the Sun. Consider using the phrase: 'The Earth completes a full orbit around the Sun every...' (3 marks)

3. Day and Night: Explain why we experience day and night on Earth. Use the sentence starter: 'Day and night occur because the Earth rotates on its axis, meaning...' (4 marks)

4. Compare and Contrast: Compare the time it takes for Earth to rotate once versus the time it takes to orbit the Sun. Explain why these durations are different. (3 marks)

5. Justify your answer: If the Earth were to stop rotating on its axis, how would life on our planet change? Provide a scientific justification. (4 marks)

6. Critique and Conclude: Why did early astronomers believe the Earth was the centre of the universe? Explain why this theory was eventually proven incorrect. (4 marks)

Extension challenge: Imagine you are an astronaut reporting back to Nova. Write a creative diary entry describing what you see as you travel past the inner planets. Describe the differences in their surfaces and orbits compared to Earth.