Nova’s Cosmic Quest: Earth and Space

Learning objective: To understand the movement of the Earth and other planets relative to the Sun in the solar system, and to explain day and night using the rotation of the Earth.

Read each question carefully. Use your scientific knowledge of the solar system to provide clear, accurate answers. Ensure you use the correct terminology.

Nova the barn owl is stargazing from her favourite oak tree. She is recording her observations about how the Earth moves through space and how this affects the world below.

Word bank: Axis · Rotate · Orbit · Solar System · Spherical · Gravity · Hemisphere

1. Nova observes that the Earth is a sphere. Explain how the Earth’s rotation on its axis creates day and night for people living in the UK. (2 marks)

2. It takes approximately 365 days for the Earth to complete one full journey around the Sun. What is the scientific term for this movement? (1 mark)

3. If you were standing on the Moon, why would you be able to jump much higher than you can on Earth? Mention the force involved in your answer. (2 marks)

4. Name the eight planets in our solar system in order, starting from the planet closest to the Sun. (2 marks)

5. Why do the Sun and the Moon appear to move across the sky during the day and night? Does the Sun actually move around the Earth? (2 marks)

Draw: Draw a diagram showing the Earth orbiting the Sun. Label the Earth's axis and draw an arrow to show the direction of the Earth's rotation.

Extension challenge: Research why we have seasons. Write a short paragraph explaining how the tilt of the Earth's axis affects the amount of sunlight different parts of the world receive throughout the year.