

Nova's Night Sky Adventure

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

Read the passage below carefully and answer the questions using full sentences. Refer back to the text to support your answers.

Nova the barn owl spent her evenings perched high in the old oak tree, gazing through her telescope at the twinkling lights above. She knew that our home, Earth, is one of eight planets in our solar system. Nova loved to explain that the Earth is not sitting still; it is constantly spinning on its axis, a journey that takes twenty-four hours and gives us our cycle of day and night. While it spins, Earth also travels in a giant, oval-shaped path called an orbit around the Sun. This massive journey around the Sun takes approximately 365 days, which we call a year. Because the Earth is a spherical body, only one side faces the Sun at any given time, creating the shadow of night on the other. As Nova watched the stars, she reminded her forest friends that it is the Sun's powerful gravity that keeps all the planets held safely in their paths, preventing them from drifting off into the deep, dark vacuum of space.

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

1. How long does it take for the Earth to complete one full rotation on its axis? (1 mark)

2. Identify two things that Nova says the Sun does for the planets in our solar system. (2 marks)

3. Why do you think the text describes Earth's path around the Sun as an 'orbit' rather than a straight line? (2 marks)

4. Based on the text, what might happen to the planets if the Sun's gravity suddenly stopped working? (2 marks)

5. Nova says the Earth is a 'spherical body'. Why is it important that Earth is a sphere for us to have both day and night? Explain your reasoning. (3 marks)

Draw: Draw a diagram of the Earth orbiting the Sun. Make sure to label the Sun, the Earth's orbit, and show which side of the Earth is experiencing 'day' and which side is experiencing 'night'.



Extension challenge: Research why we have seasons on Earth. Write a short paragraph explaining how the tilt of the Earth's axis, rather than the orbit alone, affects our weather throughout the year.