

Nova's Night Sky Expedition

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

Read the passage carefully, then answer the questions below in full sentences.

Nova the barn owl adjusted her telescope, peering into the velvet darkness of the night sky. She often explains to her friends that the Earth is not sitting still, even though it feels that way beneath our feet. Our planet is constantly spinning on its axis, an imaginary line running from the North Pole to the South Pole. This rotation takes twenty-four hours and gives us our cycle of day and night. While we spin, Earth also travels on a journey around the Sun, following a path called an orbit. This entire trip takes approximately 365 days, which we mark as one year. Nova loves to point out that the Sun is a star at the centre of our solar system, held in place by its immense gravity. Surrounding this star are eight planets, all spherical in shape, each moving at different speeds depending on their distance from the Sun. It is this complex, cosmic dance that creates the changing seasons and the beautiful patterns of stars that Nova spends her nights observing from the comfort of her oak tree.

Word bank: orbit · rotate · axis · spherical · solar system · constellation

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

2. What is the imaginary line that runs from the North Pole to the South Pole called? (1 mark)

3. Why does Nova mention that the Earth feels like it is standing still even though it is moving? (2 marks)

4. How does the Earth's rotation on its axis affect the lives of people on the ground? (2 marks)

5. Nova says the solar system is like a 'cosmic dance'. Do you think this is a good way to describe how planets move? Explain your reasoning. (3 marks)

Draw: Draw a diagram of the Earth orbiting the Sun. Make sure to include an arrow showing the Earth's rotation on its axis and label the Sun at the centre.



Extension challenge: Research the other seven planets in our solar system. Create a fact file for one planet, noting its distance from the Sun and how long its 'year' lasts compared to Earth's.