

Nova's Cosmic Journey: Our Solar System

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

Read the passage carefully, then answer the questions below. Ensure you use full sentences and specific evidence from the text to support your answers.

Nova the barn owl spends her nights gazing at the vast, velvety sky. She knows that our home, Earth, is a spherical planet held in place by the Sun's powerful gravity. Earth does not sit still; it performs two distinct movements. Firstly, it rotates on its tilted axis once every twenty-four hours, which creates the cycle of day and night. While it spins, Earth also travels in a near-circular path called an orbit around the Sun. This complete revolution takes approximately 365.25 days, forming our calendar year. Nova often reminds her friends that the other seven planets in our solar system also orbit the Sun, each at different distances and speeds. Mercury, the closest planet, races around the Sun in just 88 Earth days, while distant Neptune takes over 160 years to complete a single journey. Because Earth is tilted on its axis, different parts of our planet receive varying amounts of sunlight throughout the year, which is why we experience the changing seasons. Looking up, Nova marvels at how this cosmic dance keeps our world in perfect balance.

Word bank: spherical · orbit · axis · gravity · celestial · revolution

1. According to the text, how long does it take for the Earth to complete one full revolution around the Sun? (1 mark)

2. Name the two specific movements that Earth performs as it moves through space. (2 marks)

3. Explain why the length of a 'year' is different on Mercury compared to Earth. (2 marks)

4. What might happen to our experience of seasons if the Earth were not tilted on its axis? Use evidence from the text to support your reasoning. (3 marks)

5. Nova describes the solar system as a 'cosmic dance'. Do you think this is an effective way to describe the movement of planets? Justify your opinion. (2 marks)

Draw: Draw a diagram showing the Earth orbiting the Sun. Include an arrow to show the Earth rotating on its axis and label the Sun and Earth clearly.



Extension challenge: Research the 'leap year'. Explain why we add an extra day to our calendar every four years, using the information provided in the text about the length of Earth's revolution.