

Nova's Galactic Journey: Mapping the Solar System

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

Nova the barn owl is preparing for a star-gazing trip! Use the word bank to complete the sentences and correctly sequence the planets in our solar system starting from the Sun. For each question, explain the scientific reason behind the movement or position described.

Word bank: Sun · Mercury · Venus · Earth · Mars · Jupiter · Saturn · Uranus · Neptune · orbit · spherical · axis · rotation

1. Nova observes that the planets stay in a fixed path around the star at the centre of our system. What is the name of the central star, and what do we call the path the planets take around it? (2 marks)

2. List the eight planets in the correct order starting from the one closest to the centre. (2 marks)

3. Explain why we experience day and night on Earth. Use the words 'axis' and 'rotation' in your answer. (2 marks)

4. True or False: The Earth is a perfect sphere. Explain your reasoning using your knowledge of planetary shapes. (2 marks)

5. If a year is defined as one full trip around the Sun, why would a year on Neptune be much longer than a year on Earth? (2 marks)

Draw: Draw a diagram of the solar system showing the Sun in the centre and the eight planets in their correct orbital positions. Label the Earth and add a small arrow to show the direction of its rotation.



Extension challenge: Nova wants to know how long it takes for the Moon to orbit the Earth. Research the lunar cycle and write a short paragraph explaining why the Moon appears to change shape throughout the month.