Nova’s Solar System Expedition

Learning objective: To identify and describe the movement of the Earth and other planets relative to the Sun in the solar system, and to understand the geocentric vs. heliocentric models.

Nova the owl is helping young astronomers map out our solar system. Read each statement below about space. Decide if the statement is True or False. If you choose False, rewrite the statement correctly in the space provided to show your scientific knowledge.

Word bank: Sun · Orbit · Spherical · Heliocentric · Geocentric · Gravity · Rotation · Axis

1. 1. The Earth takes approximately 24 hours to complete one full rotation on its axis, which causes day and night. True or False? If False, explain why. (2 marks)

2. 2. In the ancient geocentric model, scientists believed that the Sun orbited around the Earth. True or False? If False, explain why. (2 marks)

3. 3. All planets in our solar system travel in a perfectly circular path around the Sun. True or False? If False, explain why. (2 marks)

4. 4. The Sun is a star located at the centre of our solar system, and all planets are held in orbit by the Sun's gravity. True or False? If False, explain why. (2 marks)

5. 5. Because the Earth is tilted on its axis, different parts of the planet receive varying amounts of sunlight throughout the year, causing seasons. True or False? If False, explain why. (2 marks)

Draw: Draw a diagram of the Heliocentric model. Include the Sun in the centre and show the Earth orbiting it. Label the Earth's axis and draw an arrow to show the direction of its orbit.

Extension challenge: Nova wants to know what would happen to the Earth if the Sun's gravity suddenly disappeared. Write a short paragraph (3-4 sentences) explaining your theory based on what you know about forces and movement in space.