

Nova's Atmospheric Adventure: The Water Cycle Journey

Learning objective: To describe and understand the processes of the water cycle, including evaporation, condensation, precipitation, and collection.

Nova the Owl is mapping the journey of a water droplet as it travels through the sky and back to the ground. Use the words in the word bank to correctly sequence the stages of the water cycle in the boxes below. Then, provide the detailed explanations requested in the questions to show your scientific understanding.

Word bank: Evaporation · Condensation · Precipitation · Collection · Water Vapour · Transpiration

1. Explain why the Sun is the most important factor in the process of evaporation. Justify your answer using the concept of thermal energy. (3 marks)

2. Compare and contrast the process of condensation with the process of evaporation. How do temperature changes affect the state of the water? (3 marks)

3. What might happen if the Earth's temperature increased significantly, causing all surface water to evaporate faster than it could fall as precipitation? (3 marks)

4. Describe the journey of a water droplet that begins in the ocean and ends up in a mountain lake. Use at least three key terms from the word bank. (3 marks)

5. Why is the water cycle considered a 'closed system'? Explain why no new water is added to the cycle. (3 marks)

6. If you were designing an experiment to demonstrate 'collection' in a classroom, what equipment would you need and how would you simulate the ground? (3 marks)

Draw: Draw a labelled diagram of the water cycle. Ensure you include the Sun, clouds forming, rain falling over a mountain range, and a river flowing back into the sea. Add arrows to show the direction of the cycle.



Extension challenge: Imagine you are a single water droplet. Write a short, creative diary entry describing your transformation from a warm, salty ocean wave into a fluffy cloud, and finally, your descent back to Earth as a raindrop.