

Nova's Atmospheric Adventure: The Water Cycle

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

Use your scientific knowledge to answer the following questions about how water moves around our planet. Refer to the word bank for help with key terminology.

Nova the owl is watching the forest from her branch. She observes the morning mist rising from the pond as the sun warms the water, turning it into invisible vapour. High above, she watches clouds form, grow heavy, and eventually release rain. She knows that every drop of water on Earth is part of this never-ending, circular journey.

Word bank: evaporation · condensation · precipitation · collection · water vapour · temperature · liquid · gas

1. Explain the role of the sun in the process of evaporation. Why is heat necessary for this stage to occur? (2 marks)

2. Compare and contrast the state of water during evaporation and condensation. What changes occur to the water molecules? (2 marks)

3. Describe the journey of a raindrop from the moment it falls as precipitation until it reaches 'collection'. Where might it land? (2 marks)

4. Justify why the water cycle is described as a 'cycle' rather than a 'straight line' process. (2 marks)

5. What might happen to the rate of evaporation if the Earth's global temperature were to increase significantly? Predict the impact on the rest of the water cycle. (3 marks)

6. If you were a water droplet, which stage of the water cycle would you find the most exciting and why? (2 marks)

Draw: Draw a diagram of the water cycle. Ensure you include labels for evaporation, _____, condensation, precipitation, and collection. Show Nova the owl watching the cycle from a high branch!



Extension challenge: Research how the water cycle differs in a tropical rainforest compared to a cold, icy desert. Write a short paragraph explaining why precipitation levels vary so greatly between these two environments.