

Nova's Autumnal Observations: A Scientific Study

Learning objective: To identify and describe the seasonal changes occurring in the environment during autumn, using scientific vocabulary to explain observable phenomena.

Use this writing frame to document your findings about how the environment changes during autumn. Use the word bank to help make your sentences more descriptive and scientifically accurate.

As the days grow shorter and the temperature begins to drop, Nova the owl notices a remarkable transformation occurring within the woodland canopy.

Word bank: deciduous · chlorophyll · dormancy · photosynthesis · migration · transpiration · consequently · furthermore · in contrast · significantly · gradually

1. The Changing Foliage: Explain why deciduous leaves change colour and fall from the branches. Start your explanation with: 'As the sunlight intensity decreases, the production of chlorophyll...' (3 marks)

2. Biological Adaptations: Compare and contrast how different animals prepare for the colder weather. You might mention: 'While some creatures prepare for migration, others...' (3 marks)

3. Environmental Shifts: Justify why autumn is a critical period for the life cycle of many plants. Consider the role of seed dispersal in your answer: 'It is essential that plants disperse their seeds during this time because...' (3 marks)

4. Scientific Prediction: What might happen to the local ecosystem if the autumn season were significantly shorter than usual? 'If autumn were shortened, the ecosystem would be affected because...' (4 marks)

5. Data Interpretation: Nova observed that the temperature dropped by 5 degrees over three weeks. How does this temperature shift influence the rate of plant growth? 'The reduction in thermal energy causes...' (3 marks)

6. Conclusion: Summarise your findings. 'In conclusion, the transition into autumn is a complex scientific process involving...' (2 marks)

Extension challenge: Design a scientific experiment to measure the rate of leaf decomposition over the coming winter months. Create a hypothesis stating what you expect to observe and identify the variables you will need to keep constant to ensure a fair test.