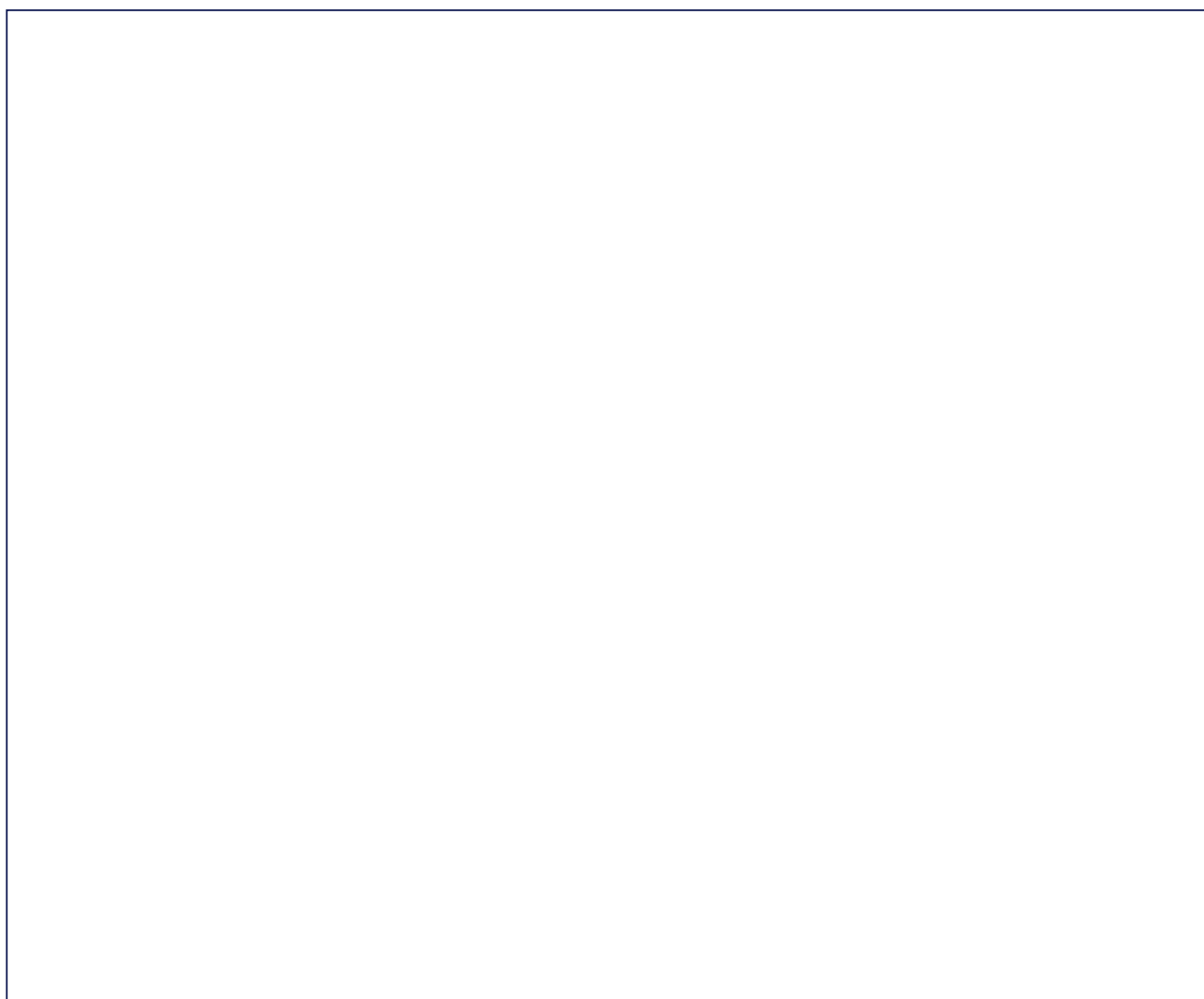


Autumnal Investigations with Nova the Owl

Learning objective: To identify and describe the life cycle and seasonal changes of deciduous trees and the environmental shifts during autumn.

Follow Nova the Owl's guide to observing an autumn woodland scene. Use the word bank to label your diagram accurately and complete the scientific analysis questions below.

Draw: Create a detailed scientific illustration of a woodland scene in late October. The style should be realistic and educational. Include a mature deciduous tree with some leaves still attached (some green, some yellow/brown) and others falling. Draw a close-up section of the forest floor showing fallen leaves, fungi, and small seeds (like acorns or conkers). Include Nova the Owl perched on a branch, observing the scene with a magnifying glass. Ensure there is space provided for clear labelling with arrows pointing to specific biological features.



Label words: Chlorophyll · Deciduous · Photosynthesis · Dormancy · Nutrient reabsorption · Decay · Senescence · Seed dispersal

Steps:

1. Step 1: Draw a large oak tree showing a mix of green and brown leaves. Label the area where the tree is absorbing nutrients from the dying leaves before they fall.

2. Explain why the leaves change colour from green to orange or brown during the autumn months. Consider the role of chlorophyll.
3. Justify why it is an evolutionary advantage for deciduous trees to shed their leaves rather than keeping them throughout the winter months.
4. Compare and contrast the process of photosynthesis in a summer leaf versus an autumn leaf.
5. What might happen to the local ecosystem if the trees did not shed their leaves, and how would this affect the forest floor?
6. Label the forest floor in your drawing to show where decomposition is occurring. Why is this process vital for the tree's future growth?