

Nova's Autumnal Science Challenge

Learning objective: To identify seasonal changes in the environment and understand how plants and animals adapt to the transition into fall.

Join Nova the barn owl on an exploration of the changing seasons! Read each question carefully and circle the best answer. Remember to use your scientific knowledge to explain your reasoning.

Answer Key: 1. A (Deciduous), 2. False, 3. True, 4. B (Chlorophyll), 5. Hibernation, 6. C (Shorter days and lower temperatures), 7. True, 8. B (The tree is conserving energy), 9. Migration, 10. True.

Word bank: Deciduous · Chlorophyll · Migration · Hibernation · Photosynthesis · Dormancy

1. Which type of tree sheds its leaves during the fall season? A) Deciduous*, B) Coniferous, C) Evergreen, D) Tropical. (1 mark)

2. True or False: Animals that migrate during fall are preparing to hibernate for the winter. (1 mark)

3. True or False: Fall marks the time of year when daylight hours begin to decrease in the UK. (1 mark)

4. What is the green pigment in leaves that breaks down during fall, allowing other colors like yellow and orange to appear? A) Carotene, B) Chlorophyll*, C) Glucose, D) Oxygen. (1 mark)

5. What is the scientific term for the state of deep sleep that some animals, like hedgehogs, enter to survive the cold winter months? (1 word) (1 mark)

6. What are the two main environmental triggers that cause trees to prepare for fall? A) More rain and wind, B) Higher sun intensity, C) Shorter days and lower temperatures*, D) Soil acidity. (1 mark)

7. True or False: Many plants enter a state of dormancy in fall to protect themselves from frost damage. (1 mark)

8. Why does a tree drop its leaves in fall? A) They get too heavy, B) The tree is conserving energy*, C) The leaves are no longer needed for rain, D) To make space for flowers. (1 mark)

9. 9. What is the term for the seasonal movement of animals from one region to another to find food or warmer climates? (1 word) (1 mark)

10. 10. True or False: Fall is the primary season for seed dispersal for many species of trees, such as the oak and horse chestnut. (1 mark)

Draw: Draw a scientific diagram of a deciduous tree in late fall. Include labels for the 'canopy' (with fewer leaves) and the 'root system' below the ground.



Extension challenge: 1. Explain why coniferous trees stay green while deciduous trees change color. 2. Compare and contrast the survival strategies of a squirrel and a migrating swallow. 3. Justify your answer: Is fall a period of death or a period of preparation for life? 4. What might happen to the local food chain if fall temperatures remained as high as summer temperatures? 5. If you were a plant, how would you ensure your seeds survived the winter? 6. Research and describe the role of fungi in the fall ecosystem.