Grade 5 Science: The Science of Fall

Learning objective: To understand seasonal changes, plant life cycles, and how living things adapt to the transition into fall.

Read each question carefully. Answer in full sentences where required. Use your scientific knowledge to explain your reasoning.

As the Earth tilts on its axis, the United Kingdom experiences shorter days and cooler temperatures. Nova the owl notices that the oak trees in the forest are changing. Their green leaves are turning vibrant shades of gold and brown, and many are falling to the ground. Meanwhile, Bea the honeybee has noticed the insects around the hive are becoming less active as the air cools. Across the meadow, the animals are preparing for the long winter ahead.

Word bank: deciduous · chlorophyll · photosynthesis · dormancy · migration · hibernation · temperature

1. Explain why deciduous trees change the color of their leaves during fall. Mention the role of chlorophyll in your answer. (3 marks)

2. Why is it important for some animals to hibernate or migrate as the fall season progresses? (2 marks)

3. Max the monkey is calculating the change in daylight hours. If the sun rises at 6:00 am and sets at 8:00 pm in summer, but rises at 7:30 am and sets at 4:30 pm in late fall, calculate the difference in daylight hours. (3 marks)

4. Describe two ways that plants adapt to the changing conditions of fall to ensure they survive until spring. (4 marks)

5. How does the reduction in sunlight affect the rate of photosynthesis in plants? Explain the link between light intensity and plant growth. (4 marks)

6. Extended Writing: Imagine you are a scientist like Bea or Nova. Write a report explaining the cycle of fall. Describe the environmental changes (temperature and light), the impact on local flora, and how fauna prepare for the winter months. Use scientific terminology from the word bank. (9 marks)

Draw: Draw a diagram of a deciduous tree in fall. Label the parts of the tree and use arrows to show where the tree is storing nutrients before it enters dormancy.

Extension challenge: Total: /25