

## Autumnal Investigations with Bea the Bee

*Learning objective: To identify and describe the functions of different parts of a flowering plant and understand the seasonal changes that occur during autumn.*

Bea the Bee has been busy observing the garden as the seasons shift. Look at the list of botanical processes and seasonal changes below. Your task is to sort these into two categories: 'Plant Anatomy' (the parts of a plant) or 'Seasonal Changes' (things that happen when autumn arrives). Once sorted, use your scientific knowledge to answer the questions about how these changes affect the lifecycle of plants.

*Word bank: Photosynthesis · Chlorophyll · Deciduous · Dormancy · Roots · Stem · Petals · Stamen · Migration · Temperature*

**1. Sort the following terms into the correct category: Roots, Stamen, Chlorophyll, Deciduous, Dormancy, Stem. Explain why 'Deciduous' is classified as a seasonal change rather than a physical part of a plant. (3 marks)**

---

---

---

**2. During autumn, the amount of sunlight decreases. Explain why this change causes leaves to change colour and eventually fall from deciduous trees. (2 marks)**

---

---

**3. Compare and contrast the needs of a plant in the height of summer versus the depths of autumn. How does the plant adapt its energy usage? (3 marks)**

---

---

---

**4. Justify your answer: If a plant did not enter a state of dormancy during the cold winter months, what might happen to its internal transport systems (the stem and roots)? (3 marks)**

---

---

---

**5. What might happen if the climate changed so that autumn lasted for nine months of the year? Consider the impact on the plant's reproductive cycle. (2 marks)**

---

---

**6. Bea the Bee notices that some plants keep their leaves all year round (evergreens). Based on what you know about autumn, why might an evergreen have a different survival strategy than a deciduous tree? (2 marks)**

---

---

**Draw: Draw a scientific diagram of a deciduous tree in autumn. Label the root system, the stem (trunk), and show how the tree is preparing for dormancy. Include a magnified bubble showing what happens to the leaves at a cellular level.**



*Extension challenge: Design a 'Winter Survival Guide' for a garden plant. Write a persuasive paragraph explaining the specific biological adaptations the plant must undergo to survive the transition from the warmth of summer through the frost of winter.*