

# Nova's Botanical Blueprint: The Life of a Flowering Plant

*Learning objective: To identify and describe the functions of different parts of flowering plants, including roots, stem, leaves, and flowers, and to explore the requirements of plants for life and growth.*

Nova the Barn Owl has been observing the wildflowers in the meadow. Use the word bank to label the functions of the plant parts. Once labelled, answer the higher-order thinking questions to demonstrate your understanding of how plants survive and thrive.

*Word bank: Roots · Stem · Leaves · Flowers · Water · Sunlight · Carbon dioxide · Nutrients*

**1. Explain why a plant would struggle to grow if it were placed in a cupboard without any light. Justify your answer using scientific reasoning. (2 marks)**

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**2. Compare and contrast the role of the roots and the leaves. How do they work together to keep the plant healthy? (2 marks)**

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**3. What might happen to a plant if the stem became damaged or blocked? Explain the effect this would have on the rest of the plant. (2 marks)**

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**4. Justify why flowers are essential for the survival of a plant species, even though they are not needed for the individual plant to grow. (2 marks)**

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**5. If you were designing a new plant for a desert environment, which part of the plant would you make largest and why? (2 marks)**

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**6. Nova wonders if plants can grow without soil. Explain how a plant might obtain nutrients if it were grown in only water and sunlight. (2 marks)**

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**Draw:** Draw a detailed diagram of a flowering plant. Include labels for the roots, stem, \_\_\_\_\_ leaves, and flower. Add small arrows to show the direction that water travels through the plant from the soil up to the leaves.



*Extension challenge: Design an experiment to test how different amounts of sunlight affect the growth of a cress plant over one week. Write a hypothesis predicting the results and explain the variables you will keep the same to ensure a fair test.*