

Botanical Investigation: The Life Cycle of Flowering Plants

Learning objective: To describe the life process of reproduction in some plants and explain the functions of different parts of a flowering plant.

Join Bea the honeybee on an adventure through the garden! Use this template to record your observations of a flowering plant. Carefully examine your specimen, consider the role of pollination, and explain how the life cycle continues. Use scientific vocabulary to justify your findings.

Word bank: pollination · stamen · carpel · fertilisation · germination · dissemination · sepal · nectar

1. Anatomy Analysis: Identify three parts of your chosen flower and explain the specific function of each part in the plant's survival. (3 marks)

2. The Pollination Process: Explain how a visitor like Bea the honeybee assists in the reproduction cycle. Why is this interaction vital for the plant? (3 marks)

3. Seed Dissemination: Describe the method your plant uses to spread its seeds. Compare and contrast this method with a different plant species. (3 marks)

4. Justification: Why might a plant produce brightly coloured petals and sweet-smelling nectar? What is the evolutionary advantage of these features? (3 marks)

5. Hypothesis: What might happen to the plant's life cycle if there were a significant decline in the number of pollinating insects in the habitat? (4 marks)

6. Creative Extension: Design an original plant species that has adapted to a very dry, desert environment. Label its unique features and explain how they help the plant reproduce. (5 marks)

Extension challenge: Research a plant that does not rely on insects for pollination, such as one pollinated by wind or water. Write a short comparative report explaining the differences in its floral structure compared to a bee-pollinated flower.