

Springtime Science Assessment: Growth and Life Cycles

Learning objective: To assess understanding of plant life cycles, animal reproduction, and the environmental changes that occur during the spring season.

Read each question carefully. Use your scientific knowledge to provide detailed, accurate answers. Ensure your spelling and grammar are correct.

As spring arrives, the warming temperature and increased daylight hours signal a period of rapid biological activity. Nova the barn owl observes the forest floor waking up, while Bea the honeybee begins her vital work among the emerging wildflowers. From the germination of seeds to the metamorphosis of frogspawn in the pond, the spring season is a time of renewal and development for all living organisms.

Word bank: germination · pollination · photosynthesis · life cycle · amphibian · stamen · ovary · environment

1. Explain the process of pollination and why it is essential for the survival of many flowering plants. (3 marks)

2. Compare and contrast the life cycle of a flowering plant with the life cycle of a frog. Identify one key similarity. (3 marks)

3. Nova notices that plants grow faster in spring than in winter. Justify why increased daylight is a major factor in this growth. (3 marks)

4. A gardener buys a packet of sunflower seeds for £2.50 and fertiliser for £4.75. If they pay with a £10.00 note, how much change do they receive? Explain how these items assist in the germination stage. (3 marks)

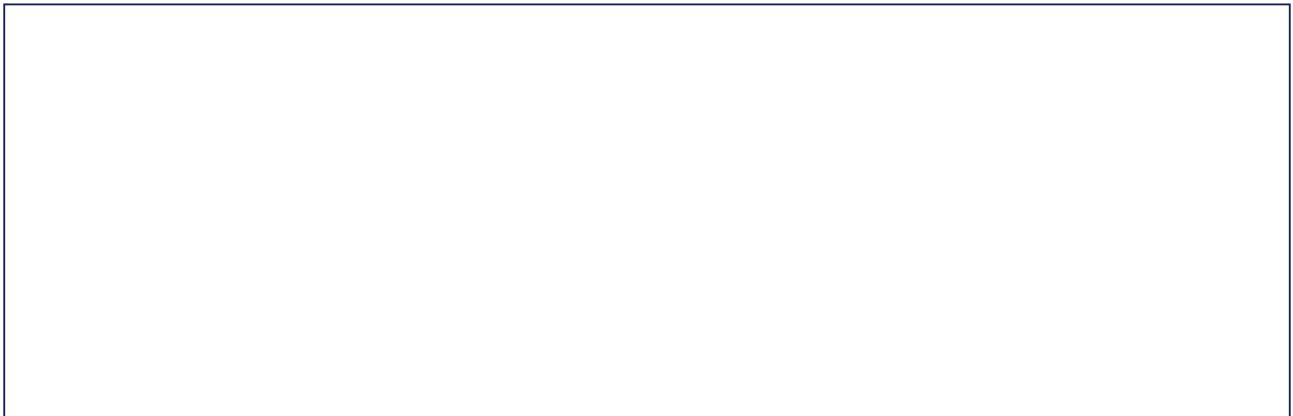
5. Describe the function of the stamen and the ovary within a flower. Why are these parts crucial for reproduction? (3 marks)

6. What might happen to the local ecosystem if the population of pollinating insects, like Bea the honeybee, were to suddenly decline? Provide a detailed explanation. (5 marks)

7. Name two environmental changes that occur in the UK during spring that trigger animals to emerge from hibernation or start breeding. (2 marks)

8. Define the term 'metamorphosis' as it applies to amphibians. (3 marks)

Draw: Draw a labelled diagram of a flowering plant, clearly identifying the stamen, carpel/ovary, petals, and stem.



Extension challenge: Total: /25. Creative Task: Write a short, scientific diary entry from the perspective of Bea the honeybee describing a day of pollination in a spring meadow. Use at least five scientific terms from the word bank in your writing.