

Life Cycles and Botanical Wonders with Bea the Bee

Learning objective: To describe the differences in the life cycles of a mammal, an amphibian, an insect, and a bird, and to compare the process of reproduction in plants.

Read each question carefully and apply your knowledge of life processes to provide detailed explanations. Use the word bank to help structure your scientific terminology.

Word bank: metamorphosis · pollination · germination · amphibian · mammal · asexual reproduction · fertilisation · larva

1. Bea the bee is observing a butterfly's life cycle. Explain the process of metamorphosis. Why is this distinct from the life cycle of a mammal? (3 marks)

2. Compare and contrast the reproduction of a flowering plant and a bird. What essential role does pollination play in the plant life cycle? (3 marks)

3. Justify why an amphibian, such as a frog, is considered to have a more complex transition between habitats than a bird throughout its life cycle. (3 marks)

4. What might happen if a species of plant were unable to reproduce sexually, relying only on runners or tubers (asexual reproduction)? Explain the potential impact on that species' ability to adapt to climate changes. (4 marks)

5. If you were to categorise organisms based on their development, how would you classify a creature that lays eggs on land versus one that lays eggs in water? Provide an example for each. (3 marks)

Draw: Draw a clear, labelled scientific diagram showing the life cycle of a flowering plant, highlighting the stages from germination to seed dispersal.



Extension challenge: Research the life span of three different species: a Bristlecone Pine, a Mayfly, and an African Elephant. Create a graph to compare these. Explain why there is such a vast disparity in their life cycles and how this relates to their reproductive strategies.