

Nova's Life Cycles and Living Things Challenge

Learning objective: To identify, describe, and compare the life cycles of mammals, amphibians, insects, and birds, and to understand the process of reproduction in plants.

Join Nova the owl on an adventure through the forest! Use your knowledge of biology to answer these questions. Be sure to explain your reasoning clearly to achieve full marks.

Answer Key: 1. C (Metamorphosis); 2. True; 3. Pollination; 4. B (Mammals); 5. False (They lay eggs); 6. Germination; 7. Amphibians; 8. A (Stamen); 9. True; 10. Life-cycle. Note: For extended answers, look for logical reasoning and accurate use of biological terminology.

Word bank: metamorphosis · reproduction · mammal · amphibian · germination · pollination · asexual · life-cycle

1. What is the scientific term for the dramatic change in form from a larva to an adult, seen in butterflies? A) Growth B) Hibernation C) Metamorphosis* D) Evolution (1 mark)

2. True or False: All mammals give birth to live young rather than laying eggs. (1 mark)

3. In flowering plants, what is the process called where pollen is transferred from the anther to the stigma? (1 mark)

4. Which group of animals typically has a life cycle that includes birth, growth, and reproduction, and provides milk for their young? A) Insects B) Mammals* C) Amphibians D) Reptiles (1 mark)

5. True or False: All birds give birth to live young. (1 mark)

6. What is the name of the process where a seed begins to grow into a new plant under the right conditions? (1 mark)

7. Which class of animals often starts life in water with gills and moves to land as an adult with lungs (e.g., frogs)? (1 mark)

8. Which part of the flower is the male reproductive organ? A) Stamen* B) Ovary C) Petal D) Sepal (1 mark)

9. True or False: Some plants can reproduce asexually, creating identical copies of themselves. (1 mark)

10. What is the collective term for the stages a living thing goes through from birth to death? (1 mark)

Draw: Draw a labelled diagram showing the life cycle of a flowering plant, starting from a seed and ending with a mature plant producing its own seeds.



Extension challenge: 1. Explain why metamorphosis is considered an evolutionary advantage for insects. 2. Compare and contrast the life cycles of a bird and a frog; what are the key differences? 3. Justify why pollination is essential for human food security. 4. What might happen to a plant population if the specific insects that pollinate them were to disappear? 5. Describe the role of 'dissemination' in a plant's life cycle. 6. Design a fictional creature and describe its life cycle in detail—does it undergo metamorphosis or direct development?