Year 6 Science Assessment: Evolution and Inheritance

Learning objective: To demonstrate an understanding of how living things have changed over time and how they adapt to their environments.

Read each question carefully. Answer in full sentences where required. Use the word bank to help you with scientific terminology.

Nova the barn owl has been studying the history of life on Earth. She has observed that living things today look very different from their ancestors. By examining the rock layers, she has found evidence of creatures that no longer exist, and she wonders how these changes happened over millions of years.

Word bank: Adaptation · Inheritance · Fossil · Natural Selection · Environment · Offspring · Variation · Characteristic

1. What is meant by the term 'inheritance'? Explain how a characteristic might be passed from a parent to its offspring. (2 marks)

2. Nova observes two birds of the same species. One has a thick beak for cracking seeds, and the other has a thin, pointed beak for catching insects. Use the word 'adaptation' to explain why these differences might exist. (3 marks)

3. How do fossils provide us with evidence that living things have changed over time? (2 marks)

4. Explain the process of 'natural selection' in your own words. Why are animals with favourable traits more likely to survive? (4 marks)

5. Identify one way a polar bear is adapted to live in a cold environment. Explain how this specific feature helps it survive. (3 marks)

6. Describe a scenario where an environment changes (e.g., a forest becomes a desert). What might happen to a species that is not well-adapted to the new conditions? (3 marks)

7. Imagine you have discovered a new creature living in a dark, underground cave system. Write a paragraph describing two adaptations this creature might have to help it survive in this specific environment. Explain why these adaptations are useful. (5 marks)

Draw: Draw a sketch of a creature that is perfectly adapted to living in the high treetops, and label two of its key features.

Extension challenge: Total: /25. Research task: Find out who Charles Darwin was and write one sentence about his contribution to our understanding of evolution.