Evolution and Inheritance: The Journey of Life

Learning objective: To understand how living things have changed over time and how they adapt to their environments to survive.

Read each question carefully and use your scientific knowledge of evolution, inheritance, and adaptation to provide detailed answers.

Nova the owl is observing the forest floor, noticing how different creatures have developed unique features to help them survive. Using your understanding of Year 6 science, answer the questions below to help Nova complete her nature journal.

Word bank: adaptation · evolution · inheritance · offspring · natural selection · fossil · environment · characteristic

1. Explain the difference between an inherited characteristic and an environmental adaptation. Give one example of each. (2 marks)

2. How do fossils provide evidence for the theory of evolution over millions of years? (2 marks)

3. A species of bird lives on an island where all the food is hidden inside deep, narrow tree bark. Explain how natural selection might lead to the birds having longer beaks over many generations. (3 marks)

4. Why is variation between offspring important for the survival of a species? (2 marks)

5. If a polar bear (adapted for cold climates) were moved to a hot, sandy desert, why would it struggle to survive? Use the term 'adaptation' in your answer. (2 marks)

Draw: Imagine a brand new creature that lives in a floating city in the clouds. Draw this creature and label three specific adaptations that help it survive in its high-altitude, windy environment.

Extension challenge: Research a historical scientist who contributed to our understanding of evolution. Write a short paragraph explaining their key discovery and why it was controversial at the time.