

Nova's Geological Explorer Log

Learning objective: To identify and describe the physical properties of different types of rocks and explain how they are formed.

Join Nova the owl on an expedition to classify rocks. Observe your rock sample closely using a magnifying glass. Describe its texture, colour, and hardness. Use the word bank to help you categorise your rock as igneous, sedimentary, or metamorphic based on its characteristics.

Word bank: Igneous · Sedimentary · Metamorphic · Crystalline · Permeable · Layers · Fossils · Magma · Erosion · Sediment

1. Physical Description: Describe the appearance of your rock. Consider its colour, the size of any grains or crystals, and whether it has visible layers. (3 marks)

2. Classification: Which type of rock do you think this is? Justify your choice by explaining which specific features led you to this conclusion. (3 marks)

3. Formation Theory: Explain how your rock might have been formed. Use scientific vocabulary such as 'cooling', 'pressure', or 'compaction'. (4 marks)

4. Compare and Contrast: Compare your rock to a piece of chalk. How are their properties similar or different, and why does this matter for how they are used? (4 marks)

5. Evaluation: If this rock were left in a river for one hundred years, what might happen to its shape and surface texture? Explain your reasoning. (3 marks)

6. Hypothesis: What might happen to a sedimentary rock if it were pushed deep underground and subjected to extreme heat and pressure? (3 marks)

Extension challenge: Imagine you are a geologist discovering a new type of rock. Write a short, formal report explaining where you found it, its unique properties, and what it tells us about the history of the landscape in that area.