

Year 4 Science Assessment: The Wonderful World of Rocks

Learning objective: To assess understanding of rock types (igneous, sedimentary, metamorphic), their formation, the process of fossilisation, and the composition of soil.

Read each question carefully. Use your scientific vocabulary to explain your answers. Ensure your spelling is accurate.

Nova the owl has been exploring the ancient cliffs near the coast. She has discovered layers of different rocks and found a mysterious object trapped inside a piece of limestone. Max the monkey is helping her categorise these rocks based on how they were formed.

Word bank: sedimentary · igneous · metamorphic · magma · fossilisation · permeable · sediment · pressure · erosion

1. Identify the three main types of rock and briefly describe how one of them is formed. (3 marks)

2. Max finds a rock with visible layers. Explain why these layers exist and name the type of rock he has found. (2 marks)

3. Nova finds a fossil inside a rock. Describe the process of fossilisation in your own words. (3 marks)

4. Compare and contrast igneous rocks and sedimentary rocks. How do their origins differ? (4 marks)

5. Why is soil not considered a rock, even though it contains tiny pieces of rock? Use your knowledge of soil composition to justify your answer. (3 marks)

6. If a metamorphic rock is subjected to intense heat and pressure, what might happen to its physical appearance? Explain your reasoning. (5 marks)

Draw: Draw a labelled diagram showing the three layers of the Earth: the crust, the mantle, and the core.



Extension challenge: Imagine you are a geologist like Nova. Write a short diary entry explaining how a piece of molten magma deep underground eventually becomes a solid igneous rock on the surface. Use the words: cooling, solidification, and erosion. Total: /25