Nova’s Rock Explorers: A Journey Through the Earth

Learning objective: To identify and describe the formation of igneous, sedimentary, and metamorphic rocks and understand how fossils are formed within rocks.

Read each question carefully and use your knowledge of the rock cycle to provide detailed answers. Use the word bank to help you with scientific terminology.

Word bank: Magma · Sediment · Pressure · Erosion · Fossil · Igneous · Sedimentary · Metamorphic · Crystallisation

1. Nova the owl is studying a rock that formed from cooled magma. Name this type of rock and explain how the speed of cooling affects the size of the crystals found within it. (2 marks)

2. Sedimentary rocks are often found in layers. Describe the process of how loose sediment eventually turns into solid rock over millions of years. (2 marks)

3. Explain why fossils are almost exclusively found in sedimentary rock rather than igneous or metamorphic rock. (2 marks)

4. If a sedimentary rock is buried deep underground and subjected to intense heat and pressure, what type of rock does it become? Provide one example of this rock type. (2 marks)

5. Max the monkey has found a stone by the river. It has visible, rounded grains cemented together. Identify the rock type and explain one way that water might have helped form it. (2 marks)

Draw: Draw a diagram of the rock cycle. Use arrows to show how igneous rock can turn into sediment, how sediment becomes sedimentary rock, and how heat and pressure change rocks into metamorphic rock.

Extension challenge: Research the 'Giant's Causeway'. Write a short paragraph explaining which type of rock it is and how the specific cooling process created its famous hexagonal columns.