

Nova's Magnificent Mineral Mystery

Learning objective: To identify, describe, and compare different types of rocks based on their appearance and physical properties.

Join Nova the owl on an expedition through the Earth's crust! Read each question carefully and select the best answer. Use your scientific knowledge to explain your reasoning for the deeper questions.

Answer Key: 1.C, 2.True, 3.Igneous, 4.False, 5.Sedimentary, 6.B, 7.Permeable, 8.True, 9.Metamorphic, 10.Magma. Explanation for Q6: Sedimentary rocks often form in layers over millions of years, trapping dead plants and animals which become fossils. Igneous rocks are formed from cooling lava/magma, which would destroy organic matter.

Word bank: Igneous · Sedimentary · Metamorphic · Permeable · Fossil · Magma · Erosion · Sediment

1. 1. Which type of rock is formed from the cooling and solidification of molten rock? A) Sedimentary B) Metamorphic C) Igneous* D) Chalk (1 mark)

2. 2. True or False: Metamorphic rocks are formed when existing rocks are subjected to intense heat and pressure. (1 mark)

3. 3. What is the one-word name for rock formed from cooled lava? (1 mark)

4. 4. True or False: All rocks are hard and impossible to scratch with a coin. (1 mark)

5. 5. Which rock type is most likely to contain a fossil? (Igneous/Sedimentary/Metamorphic) (1 mark)

6. 6. Explain why fossils are rarely found in igneous rocks. A) They are too heavy B) The heat of the magma would destroy them* C) They are too deep in the ocean D) They are made of plastic (1 mark)

7. 7. If a rock allows water to pass through its pores, what scientific term describes it? (1 mark)

8. 8. True or False: Erosion is the process that helps break down rocks into smaller particles called sediment. (1 mark)

9. 9. Which rock type usually displays a 'ribbon-like' or foliated structure due to extreme pressure? (1 mark)

10. 10. What is molten rock called when it is still deep underground? (1 mark)

Draw: Draw a diagram of the 'Rock Cycle', showing how sediment becomes sedimentary rock, how heat creates metamorphic rock, and how magma creates igneous rock. Label your arrows to show the processes involved.



Extension challenge: Greater Depth Challenges: 1. Compare and contrast the properties of Granite and Sandstone. 2. Justify why an architect would choose marble (a metamorphic rock) over chalk for a building facade. 3. What might happen to the landscape of the UK if all rocks were impermeable? 4. Explain the process of 'weathering' and its impact on the formation of sediment. 5. If you found a piece of slate, how could you deduce its geological history? 6. Design an experiment to test the hardness of three different rock samples using household items.