

# Nova's Rock and Fossil Expedition

*Learning objective: To identify and describe the properties of igneous, sedimentary, and metamorphic rocks, and to explain how fossils are formed.*

Join Nova the owl on her night-time expedition! Read the questions carefully, select the best answer, or write your response in the space provided. Remember to think like a geologist.

Answer Key: 1.C, 2.True, 3.Sedimentary, 4.B, 5.False, 6.Igneous, 7.A, 8.True, 9.Metamorphic, 10.Pressure.

Explanation for Q10: Heat and pressure change existing rocks into metamorphic rocks over millions of years.

*Word bank: Igneous · Sedimentary · Metamorphic · Magma · Fossil · Permeable · Erosion · Pressure*

**1. 1. Which type of rock is formed when molten magma cools and solidifies? A) Sedimentary B) Metamorphic C) Igneous\* D) Chalk (1 mark)**

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**2. 2. True or False: Fossils are most commonly found in sedimentary rocks. (1 mark)**

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**3. 3. Which rock type is often made of layers of sand, mud, and pebbles compressed together over time? (1 mark)**

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**4. 4. What is the name of the process that breaks down rock into smaller pieces? A) Melting B) Erosion\* C) Cooling D) Crystallisation (1 mark)**

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**5. 5. True or False: All rocks are hard and cannot be scratched by a coin. (1 mark)**

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**6. 6. Granite is an example of which type of rock? (1 mark)**

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**7. 7. What does the word 'permeable' mean? A) Water can pass through it\* B) It is very shiny C) It is extremely heavy D) It is made of fossils (1 mark)**

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**8. 8. True or False: Metamorphic rocks are formed deep underground where there is intense heat. (1 mark)**

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**9. 9. Which rock type is formed when other rocks are changed by extreme heat and pressure? (1 mark)**

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**10. 10. Describe in one word what is required alongside heat to create metamorphic rock. (1 mark)**

**Draw: Draw a diagram of the 'Rock Cycle'. Use labels to show where magma turns into igneous rock, and where sediment builds up to form sedimentary rock.**



*Extension challenge: Greater Depth Challenges: 1. Explain why igneous rocks are often used for kitchen worktops. 2. Compare and contrast how sedimentary and igneous rocks are formed; what are the key differences in their environments? 3. Justify why a scientist would look for fossils in a cliff made of sandstone rather than a cliff made of granite. 4. What might happen to a sedimentary rock if it were pushed deep into the Earth's crust? 5. If you found a rock with large, visible crystals, what could you conclude about how it cooled? 6. Design an experiment to test which common rock is the most permeable.*