

The Rock Cycle

Grade 4 • SCIENCE • Sequencing and explaining how rocks can form, break down, and change into new rock material over long periods of time. • Standards: 4-ESS1-1

Read each question about how rocks form, break down, and change over time. Write your answer on the line after each question.

1. When melted rock cools and hardens, what type of rock forms?
2. What do we call the process when wind and water break rocks into smaller pieces?
3. When layers of sand and pebbles are pressed together tightly over a long time, what type of rock can form?
4. A rock deep underground is heated and squeezed by great pressure but does not melt. What type of rock does it become?
5. Small rock pieces are carried by a river and dropped at the river's mouth. What is this dropping process called?
6. Before sediment can be compacted into sedimentary rock, what two processes must happen first to create the sediment?
7. A granite rock is buried very deep in the earth where temperatures are extremely high. What will happen to the granite if it gets hot enough?
8. Limestone is a sedimentary rock that gets buried deep underground where heat and pressure change it into marble. What process changed the limestone into marble?
9. Explain what happens during erosion and how it is different from weathering.
10. A metamorphic rock at the surface is broken into sand grains by weathering. The sand is carried to the ocean, deposited, and compacted into new rock. Describe the complete sequence of changes the rock material went through.

Answer Key — The Rock Cycle

For the teacher / parent. Do not distribute with the worksheet.

1. Igneous rock (*Igneous rocks form when melted rock cools and becomes solid.*)
2. Weathering (*Weathering is the breaking down of rocks into smaller pieces by natural forces.*)
3. Sedimentary rock (*Sedimentary rocks form when sediment layers are compacted and cemented together.*)
4. Metamorphic rock (*Metamorphic rocks form when existing rocks are changed by heat and pressure without melting.*)
5. Deposition (*Deposition occurs when sediment is dropped or laid down in a new location.*)
6. Weathering and erosion (*Weathering breaks rocks into pieces, and erosion moves those pieces to new locations before they can be deposited and compacted.*)
7. It will melt into magma (*When rocks are heated to very high temperatures deep underground, they melt into magma.*)
8. Metamorphism (*Metamorphism is the process by which heat and pressure change one type of rock into metamorphic rock.*)
9. Erosion moves broken rock pieces to new places, while weathering breaks rocks apart but does not move them (*Weathering breaks rocks down in place; erosion transports the broken pieces away.*)
10. The metamorphic rock was weathered into sand, the sand was eroded and deposited in the ocean, then the sand was compacted into sedimentary rock (*This sequence shows weathering, erosion, deposition, and compaction transforming metamorphic rock material into sedimentary rock.*)