

Lesson 6: The Story of Rocks

Pick up a rock and look at it closely. Does it have layers? Is it speckled with crystals, or smooth and sandy? Does it contain the faint outline of a shell or a leaf? Each of those things is a clue about where that rock has been and what it has been through. Rocks are not just hard lumps on the ground. They are Earth's oldest record-keepers, and once you know how to read them, they open a window into billions of years of history.

There are three families of rock, and each has its own origin story. **Igneous rock** forms when molten rock cools and hardens, either deep underground or on the surface as lava flowing from a volcano. Granite beneath your feet and basalt on the ocean floor are both igneous. **Sedimentary rock** forms when particles of sand, mud, and the remains of living things pile up in layers over thousands or millions of years. As the layers grow heavier, they compress and cement into stone. The stripes in canyon walls are sedimentary layers, and they often preserve **fossils**, the shapes and traces of ancient creatures, locked inside. **Metamorphic rock** is any rock that has been changed by intense heat and pressure without melting, transformed into something new. Marble and slate are metamorphic.

These three types are not separate and fixed forever. They are connected in an endless **rock cycle**. Igneous rock weathers and breaks apart into sediment. That sediment compresses into sedimentary rock. Sedimentary rock, buried deep, becomes metamorphic. Metamorphic rock, heated still further, melts and cools as igneous rock again. The cycle has no beginning and no end, driven by **erosion** on the surface and heat from within the Earth, reshaping our planet in ways that are slow but absolutely certain.

For the story of life on Earth, sedimentary rock is the most precious of all. Its layers are like pages in a history book. The deeper the layer, the older it is. The fossils locked inside those layers tell us which creatures lived in which era, how they changed over time, and which ones disappeared. Without rocks, we could not read the story of life. Rocks remember what nothing else could.