



The Three Types of Rocks and How They Form

KS2 GEOGRAPHY

KS3 SCIENCE

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What Are Rocks?

Rocks are solid materials made of **minerals**. They form in different ways depending on heat, pressure, and time. There are **three main types of rocks**: igneous, sedimentary, and metamorphic. Understanding how they form helps us learn about Earth's story.

Igneous Rocks: Born from Fire

Igneous rocks form when **molten rock** (called **magma**) cools and hardens. This happens in two ways. When magma erupts from a **volcano** and cools quickly on Earth's surface, it creates fine-grained rocks like **basalt**. When magma cools slowly underground, it forms larger crystals, creating rocks like **granite**.

Think of it like: melting chocolate. If you cool it quickly by putting it in a freezer, it sets fast with small crystals. If you cool it slowly at room temperature, larger crystals form.

Sedimentary Rocks: Built from Layers

Sedimentary rocks form from tiny pieces of other rocks and shells that are worn away by wind and water. These pieces, called **sediment**, travel in rivers and collect on the ocean floor. Over millions of years, layers pile up and the weight squeezes them together. The minerals in water also act like glue, binding the particles. **Sandstone** and **limestone** are common examples.

Think of it like: making a clay pot. You press small pieces together, and they stick as one solid object.

Metamorphic Rocks: Changed by Heat and Pressure

Metamorphic rocks form when existing rocks are buried deep underground where heat and pressure squeeze them. The rock doesn't melt—it transforms into something

new. This happens where **tectonic plates** collide or where rocks are pushed deep into Earth. **Marble** forms from limestone, and **slate** forms from shale.

Think of it like: squashing a piece of play dough while heating it gently. It changes shape and texture but stays solid.

The Rock Cycle

All rocks are connected in something called the **rock cycle**. Igneous rock can break down into sediment, which becomes sedimentary rock. Both can be pushed deep underground and become metamorphic rock. If metamorphic or sedimentary rock melts, it becomes magma again and creates new igneous rock. This endless process has been happening for billions of years.