

The rock cycle

Earth's rocks don't stay the same forever. They are always changing from one form to another due to **weathering, transportation, pressure** and **heat**. We don't see these transformations owing to the huge timescales involved, but we make use of the **materials** they produce in the construction of our schools, houses and roads.

There is no set route around the **rock cycle**; **sedimentary rocks** are not all converted into **metamorphic rocks** before then forming **igneous rocks**. The transformations that happen depend on which conditions the rock is exposed to.

Weathering

Weather, plants, animals and **chemical processes** break rocks into smaller pieces.

Transportation

The fragments of rock formed by weathering fall from the rock face and can be carried away by moving **wind** or **water**.

Sediment

Small fragments of rocks and **minerals**, as well as the remains of plants and animals, are carried out to sea and **deposited** in layers.

Compaction and cementation

As layers of sediment build up, water and air in the lower layers is squeezed out. Minerals **dissolved** in the water are left behind and act like **cement**, leading to the formation of **sedimentary rocks**.

Uplift

Unbalanced forces in the Earth's **crust** bring rocks from deep underground to the surface.

Metamorphic rocks

Formed when high temperatures and pressures change the **mineral structures** in rocks without melting the rocks completely.

Heat and pressure

Deep in the Earth's crust, or at plate boundaries where **tectonic plates** collide, rocks are exposed to extreme heat and pressure.

Did you know ...?

Geologists measure the **hardness** of rock using the **Mohs scale**, introduced in 1822 by Friedrich Mohs. It is based on one mineral's ability to scratch another.

Did you know ...?

Igneous comes from the word **ignis** which means fire in Latin.

Igneous rocks

Formed when molten rock cools and crystallises. **Intrusive** igneous rocks form deep underground when rocks cool slowly. **Extrusive** igneous rocks form when molten rock erupts from a volcano.

Lava

When **magma** flows or erupts onto the Earth's surface it is called **lava**. Under **lava flows**, rocks are exposed to less extreme temperatures and pressures but still enough to change their structure.

Magma

Underground, rocks are exposed to high temperatures and form **molten** and **semi-molten** rock called **magma**.

Did you know ...?

Glass is made from liquid sand. Most beach sand is grains of **silicon dioxide** (or quartz). When melted then cooled it is transformed into glass.

Sedimentary rocks

May contain **fossils** of animals and plants trapped in the sediments.