

1. The Rock Cycle

We are learning to: understand the life cycle of rocks including how they form, change and are recycled.

The rock cycle (shown right) is how rocks form within the earth.

There are three types of rocks, each with distinct characteristics. These rock types are **Igneous**, **Metamorphic** and **Sedimentary**.



Fill in the gaps below. Use all the words from the Word Bank

- A** W..... breaks down rocks on the surface of the E..... There are three types of w..... which are called Biological, Physical and Chemical. Wind and water move the broken rock particles away. This is called e.....
- B** Rivers transport rock particles to other places. They are deposited in lakes and seas.
- C** Rock particles form l.....
- D** Compacting and squashing the different rock layers sticks the p..... together. This creates s..... rock.
- E** Rocks underground get h..... and put under pressure. They are changed into m..... rock.
- F** Rocks underground that get heated so much they turn into magma. Pressure can force magma out of the ground, creating a v..... When magma cools it turns into i..... rock.

Word Bank

metamorphic weathering heated igneous erosion particles
Earth layers volcano weathering sedimentary

2. Types of rock

We are learning to: identify rock types based on their properties.

i Igneous rocks

Igneous rocks are formed when molten rock; called magma, from inside the Earth cools and solidifies.

The speed that the rock becomes solid will affect the type of igneous rock that is formed, if igneous rock is cooled quickly, the rock will have small crystals within it, like **obsidian**, but if the rock is cooled slowly like **granite**, it will give it large crystals. Photos of these can be seen below.



Basalt



Granite



Obsidian

Igneous rocks do not contain any fossils. This is because any fossils in the original rock will have melted when the rock melted to form magma.

i Sedimentary rocks

Sedimentary rock is formed when the broken up remains of other rocks (like sands and silts) are deposited (dropped).

These deposited rocks build up layers, called sediment. The weight of layers and layers of these rocks pressing down on each other causes the different layers to be cemented together, like a jumbled pile of disconnected Lego blocks.

Over millions of years, this forms sedimentary rock.



The oldest layers are at the bottom. The youngest layers are at the top. Sedimentary rocks often contain fossils, made when animals and plants became trapped in the sediment. Fossils tell us when in history different species were found.



Chalk



Sandstone



Limestone

Metamorphic rocks

Metamorphic rock is formed from other rocks that are changed due to heat or pressure when they are deep within the Earth.

Marble is formed from the heating of limestone. **Slate** is formed from the heating of shale. Metamorphic rocks rarely contain fossils, as any that existed in the previous rock will most likely be destroyed due to the heat and pressure.



Marble



The Parthenon (in Athens) is built of marble



Slate



Slate is used for roof tiles

3. Looking closer at rocks

We are learning that: rocks have different types and are made differently.



In the magnifying glass draw a 'close up' of the internal structure of the three rock types, from the description next to them.



Igneous rocks

- These are made up of lots of lots of connected crystals, like joined up diamonds
- They are very hard
- They are formed by cooling magma inside the earth or on the surface

Sedimentary rocks

- These are formed from layers and layers of sediment and shells over millions and millions of years, like a wall of lego
- They often contain fossils
- They can be quite soft, like chalk or hard like limestone



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Metamorphic rocks

- Like igneous rocks, these are also made of crystals, but this time they are arranged in loose layers
- They tend to be quite hard and resistant to erosion