

# Granite

Granite in its natural form.



Granite is an igneous rock which is very common all over the world.



It is commonly used in architecture because it is a very hard and durable rock.

Granite and other igneous rocks are formed by magma.

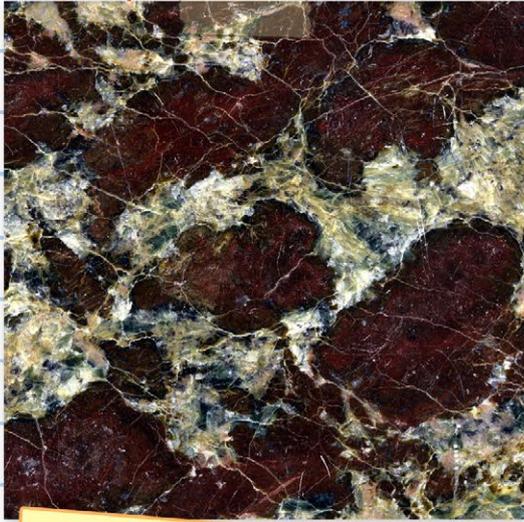


## Did You Know?

The word granite comes from the Latin 'granum' which means grain. This refers to the coarse-grained structure of the rock.

# Marble

Marble is a metamorphic rock, made from highly compressed limestone.



Marble in its natural form.



## Did You Know?

Today you may find marble in flooring, clocks, tables and statues.

The ancient Greeks and Romans used marble in their buildings and artwork.

In architecture, marble is usually polished and smooth.



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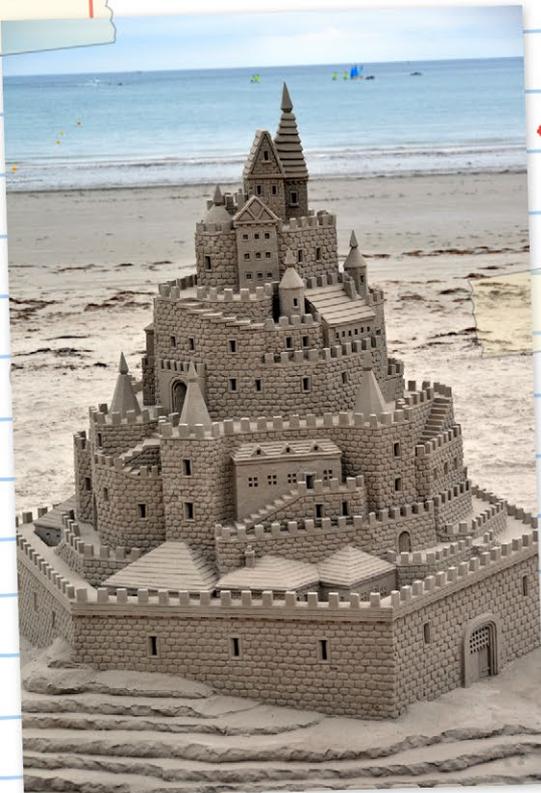
# Sand

Sand is a naturally occurring granular material made up of fine rock and mineral particles.



Sand can be found in desert regions.

It can also form beaches where the land meets the sea.



Some people use wet sand to make beautiful sculptures.

Sand is sometimes used in agriculture because sandy soils are ideal for crops such as peaches, watermelons and peanuts.

## Did You Know?

Concrete is made by mixing sand together with cement, gravel and water..

# Chalk



**Did You Know?**  
Toothpaste contains a small amount of chalk!

Chalk is a soft, white, porous sedimentary rock which is made from a form of limestone.

Chalk is most commonly white-coloured but not always.

It is most often used for writing and drawing with but it is also used by snooker players and to mark the boundaries of tennis courts.



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# Clay

## Did You Know?

Clay is sometimes used as a natural seal such as in the cores of dams because it is relatively impermeable to water.



Natural clay deposit.

Clay is a natural material made of fine-grained minerals. When wet, clay is easily mouldable, then hardens when dried.

Clay can be used to make pottery, bricks and artwork.

A potter uses clay with water to produce cups, plates, bowls and vases.



# Rock Types

## The Rock Cycle

Rocks do not stay the same forever. They do not stay in one place forever. They move about. The rock cycle is the entire journey a rock make as it changes. This takes millions of years.



### Igneous

Igneous rocks are formed when magma from volcanoes cools and solidifies. It may do this above or below the Earth's surface. Igneous rocks were once sedimentary or metamorphic rocks. Examples: granite, pumice and basalt.

## Metamorphic

Metamorphic rocks form when existing rocks are exposed to heat and pressure deep within the Earth's surface. These rocks were once igneous or sedimentary rocks.

Examples: marble, slate and quartzite.



### Sedimentary

Eroded rocks (sediments) are transported by streams and rivers to the ocean. The sediments compact together in layers, which creates sedimentary rock. In this way, igneous rock can become sedimentary rock. Examples: chalk, limestone and sandstone.

# Coal

## Coal

Coal is a black or brown-black sedimentary rock.

It usually occurs in layers or veins called coal bed or coal seams.

Coal is composed primarily of carbon.

Coal is extracted from the ground by coal mining.



## Did you know?

Throughout history, coal has been used as an energy source. It has been burned for electricity and heat.

Coal is the largest source of energy worldwide.



# Pumice

## Pumice

Pumice is called Pumicite in its powdered or dust form.

It is a volcanic rock that consists of rough textured volcanic glass.

Pumice is created when superheated, pressurised rock is ejected from a volcano.

The foam-like look of pumice happens when the rock rapidly cools and depressurises causing bubbles.

Pumice is widely used to make lightweight concrete.



## Did you know?

Eruptions under water can be a hazard for cargo ships as the rock is rapidly cooled and a large volume of pumice is created.

# Limestone

## Limestone

Limestone is a sedimentary rock. It has many different fragments of marine habitat e.g. coral, molluscs and forams.

About 10% of sedimentary rocks are limestone.

Organisms that bury into the rock causing decay often erode coastal limestone.

Limestone is very common in architecture, especially in Europe and North America.

Limestone is crushed and the main source of rock used when creating roads. It is used as a solid base when building a road.



## Did you know?

Some of limestone's uses are; a building material, component of concrete and can be found in toothpaste and paint.

# Slate

## Slate

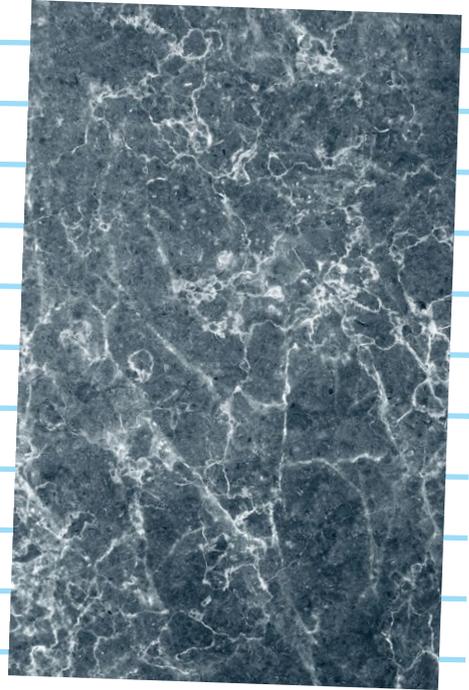
Slate is a fine grained metamorphic rock.

This sedimentary rock is made up of clay and or volcanic ash through metamorphism.

The word 'slate' is used for certain types of object made form slate rock. Like a writing slate or the roof tile made of slate.

Slate is well suited to become a roofing material as it has a low water absorption index making slate waterproof.

Due to slate having thermal stability, slate has been used in laboratories as bench tops.



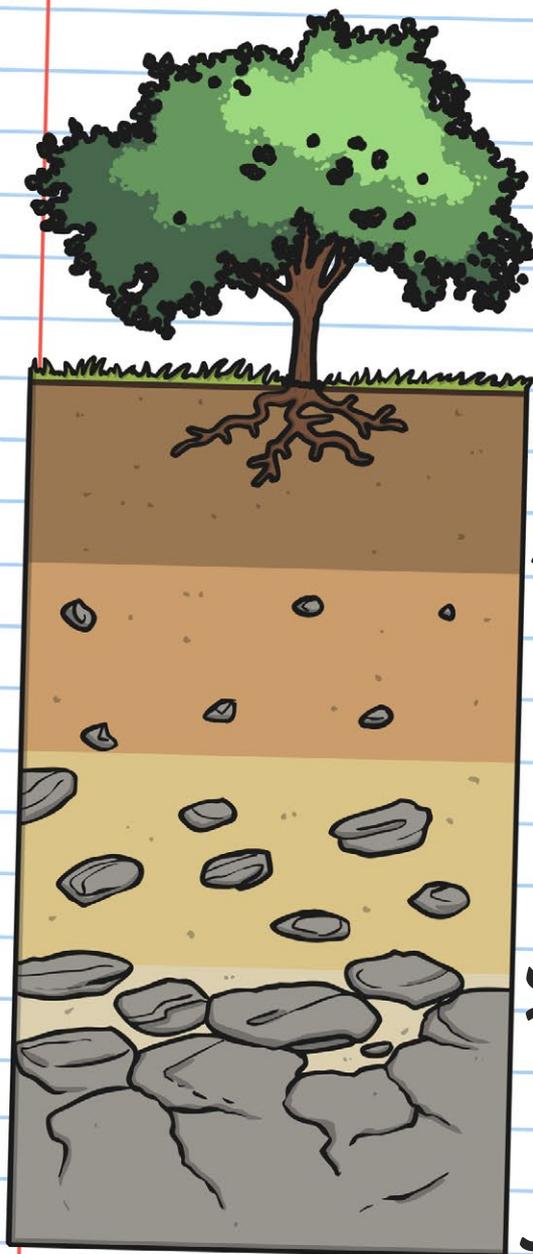
## Did you know?

Because slate is a smooth piece of rock the phrases 'clean slate and 'blank slate' come from this characteristic.

# Soils

Soils are a mixture of tiny rock particles, dead plants and animals, air and water.

## How is Soil Formed?



Soil is formed in layers.

Soil layers take many years to form.

Top Soil

A layer of dark, fertile soil, made of rotting plants, lies at the surface.

Sub Soil

Underneath, the topsoil contains plant roots, and rotting plant and animal remains.

Base Rock

Below are rock fragments, then solid bedrock.

# Are there different types of soil?



**Sandy soil** is pale and dry with lots of small air gaps.

**Clay soil** is a wet, sticky soil with very few air gaps.



**Peat soil** is dark and is made from very old decayed plants.

**Silty soil** is smooth and soapy to the touch.



**Chalky soil** is stony and drains easily.

**Loamy soil** is the perfect soil, which drains well and is full of nutrients.



**Did You Know?**  
Peat is different from other soils because it does not contain any rock particles.

**Did You Know?**  
Different plants grow better in different types of soil.