

CHEMISTRY - 'How does one rock compare to another?'

How are rocks different?

Rocks on earth were made billions of years ago from stars in space.

Rocks are found inside the Earth's crust and can reach the surface with volcanoes. When they reach the surface we see them as features like mountains, caves and cliffs. They can break up into smaller rocks like boulders, pebbles and sand.

Rocks can be **similar** or **different** in *colour, shape, size, texture and appearance* depending on how they were made.



Mohs Hardness Scale



Mineral Name	Scale Number	Common Object
Diamond	10	
Corundum	9	Masonry Drill Bit (8.5)
Topaz	8	
Quartz	7	Steel Nail (6.5)
Orthoclase	6	
Apatite	5	Knife/Glass Plate (5.5)
Fluorite	4	
Calcite	3	Copper Penny (3.5)
Gypsum	2	
Talc	1	Fingernail (2.5)

Can rocks be soft?

Rocks can be hard or soft.

The hardness of rocks can be measured on the Mohs Scale.

Hard rocks – granite, precious stones

Soft rocks – talc, chalk, limestone

SUPERFACT: A diamond is the hardest thing on earth

Are rocks permeable or impermeable?

permeable (adjective) a rock that allows liquid or gas to pass through it.

impermeable (adjective) not allowing liquid (e.g. water) to pass through.

Will water soak into it?



Try dropping a small amount of water on your rock samples and watch to see if it soaks in

What will this tell you about your rocks?
















If water can soak into a rock or pass through it, we say it is a permeable rock. Sedimentary rocks are usually permeable.



If water can not soak into a rock, the rock is said to be impermeable. Metamorphic and igneous rocks are often impermeable.

TYPES OF ROCKS

How
are
rocks
made?

IGNEOUS		SEDIMENTARY		METAMORPHIC	
					
Granite	Scoria	Sandstone	Limestone	Marble	Slate
					
Pumice	Obsidian	Shale	Conglomerate	Gypsum	Quartzite
					Gneiss

Igneous rock comes from molten magma. Molten magma is the very hot stuff you find in volcanos! The magma turns to rock when it cools.

Sedimentary rock is very common. It is formed of layers of sand, mud and small stones. The layers are compacted with new layers joining on top.

Metamorphic rocks have been put under a lot of pressure and heat. The pressure and heat can be made by the Earth's movements. It changes the rocks.



What is a fossil?

Fossils are the preserved remains of plants and animals whose bodies were buried in sediments, such as sand and mud, under seas, lakes and rivers.

Key vocabulary

Spelling	Definition
rock	the solid mineral material forming part of the surface of the earth
permeable	allowing liquids or gases to pass through it
impermeable	not allowing liquid (e.g. water) to pass through
igneous	a rock made from solidified lava or magma
sedimentary	a rock made from layers of sediment deposited by water or air
metamorphic	a rock that has been changed by heat or pressure
magma / lava	hot liquid below (magma) or above (lava) the earth's surface
fossil	the remains of a plant or animal embedded in sedimentary rock