

Rocks

To geologists, a rock is a natural substance composed of solid crystals of different minerals that have been fused together into a solid lump.

The minerals may or may not have been formed at the same time. What matters is that natural processes glued them all together.

The three main ways terrestrial **rocks are formed**:

- Sedimentary rocks are formed through the gradual accumulation of sediments: for example, sand on a beach or mud on a river bed. As the sediments are buried they get compacted as more and more material is deposited on top. Eventually the sediments will become so dense that they would essentially form a rock. This process is known as lithification.

- Igneous rocks are rocks which have crystallised from lava or magma. The melt is made up of various components of pre-existing rocks which have been subjected to melting either at subduction zones or within the Earth's mantle. The melt is hot and so passes upward through cooler country rock. As it moves, it cools and various rock types will form through a process known as fractional crystallisation. Igneous rocks can be seen at mid ocean ridges, areas of island arc volcanism or in intra-plate hotspots.

- Metamorphic rocks are rocks which once existed as igneous or sedimentary rocks but have been subjected to varying degrees of pressure and heat within the Earth's crust. The processes involved will change the composition and fabric of the rock and their original nature is often hard to distinguish.

Metamorphic rocks are typically found in areas of mountain building.

Rock can also form in the absence of a substantial pressure gradient as material that condensed from a protoplanetary disk, without ever undergoing any transformations in the interior of a large object such as a planet or moon. Astrophysicists classify this as a fourth type of rock: **Primitive rock**. Primitive rock is common in asteroids and meteorites

IDENTIFYING CHARACTERISTICS:

SL NO.	NAME OF ROCK	TYPE OF ROCK	COLOUR	MINERAL COMPOSITION	FORM	TEXTURE	SPECIFIC GRAVITY	USE/OTHERS
1	GRANITE	Igneous	Light with patches of pink	Quartz, Orthoclase Feldspar, Biotite, sometimes Hornblende and Tourmaline	Macro Crystalline	Medium even to coarse grained, sometimes grains large enough to be visible with unaided eye	2.75	Granite is the best-known igneous rock. It is used in making countertops, floor tiles, paving stone, and cemetery monuments.
2	BASALT	Igneous	Greenish black to black	plagioclase and pyroxene minerals	Micro Crystalline to dull amorphous	Fine Grained	3.1	It is most commonly crushed for use as an aggregate in construction projects.

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3	LATERITE	Sedimentary	Reddish brown	iron, aluminum, titanium, and manganese oxides	Massive	Uneven, pisolitic (pea like)	3	Laterite is a type of earthy soil, but it hardens into solid rock in air and is therefore suitable as a construction material.
4	LIMESTONE	Sedimentary	Generally greenish white	calcite, a calcium carbonate mineral with a chemical composition of CaCO3	Massive	Fine Grained	2.8	it effervesces in contact with hydrochloric acid, most limestone is used in construction. It is used to make cement. Also used for producing lime and chalk
5	SHALE	Sedimentary	Greenish black	Silt and mud	Amorphous	Fine grained, fissile and laminated	2.7	Black shales contain organic material that sometimes breaks down to form natural gas or oil
6	SANDSTONE	Sedimentary	Reddish Brown	Quartz, silt and some other minerals	Massive	Granular	2.5	it might be crushed and used as a source of silica for glass manufacturing.
7	CONGLOMERATE	Sedimentary	Grey with patches of brown and white	Cemented Pebbles, calcite and quartz	Massive	Clastic due to agglomeration of rounded pebbles	2.8	Conglomerate can be crushed to make a fine aggregate that can be used where a low-performance material is needed.

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8	SLATE	Metamorphic	Black	Clay Minerals and Muscovite	Platy	Lamination present	2.5	Slate performs well in roofing . Had been used for making chalkboards.
9	PHYLLITE	Metamorphic	Light (shiny)	Clay minerals and Muscovite, often with quartz and feldspar	Platy	Lamination present	2.5	Can provide valuable information about the geologic conditions that a geographic area or a rock mass was subjected to in the past.
10	SCHIST (mica schist)	Metamorphic	White (shiny)	Muscovite, Quartz and Biotite	Platy	Foliated	2.5	Often used as base of gemstone jewellery, or as fillers in construction.

SL NO.	NAME OF ROCK	TYPE OF ROCK	COLOUR	MINERAL COMPOSITION	FORM	TEXTURE	SPECIFIC GRAVITY	USE/OTHERS
11	GNEISS	Metamorphic	Grey with bands	Quartz, Mica, feldspar and Other minerals	Massive	Coarse, Foliated, interlocking bands	2.7	Gneiss is used as a crushed stone in road construction, building site preparation, and landscaping projects, beautiful floor tiles, facing stone, countertops, etc.
12	QUARTZITE	Metamorphic	Light brown or white	Primarily Quartz and certain other minerals	Massive	Mosaic with interlocking grains of Quartz	2.5	Quartzite has a diversity of uses in construction, manufacturing, architecture, and decorative arts. However, its consumption has always been low for various reasons.