

What are rocks?

- Rocks are solid materials that are made of one or more minerals.





Rocks and minerals

Non living part of Earth

Hard, different sizes ,shapes and colours



ROCK TYPES

There are 3 main types of rock:

IGNEOUS

SEDIMENTARY

METAMORPHIC



Types of Rocks

- There are *three groups of rocks*:
 1. Igneous rock forms from the cooling and crystallizing of magma or lava.
 2. Sedimentary rock is made up of sediments.
 3. Metamorphic rock is a rock that is formed from another rock due to heat and pressure.

igneous ROCKS

-made from magma that has cooled



obsidian



sedimentary ROCKS

-made from layers of dirt, rocks, and shells pressed together



sandstone



shale



conglomerate

metamorphic ROCKS

-made when heat and pressure change existing rocks

pressure



heat



gneiss



mica schist



marble

rock type posters

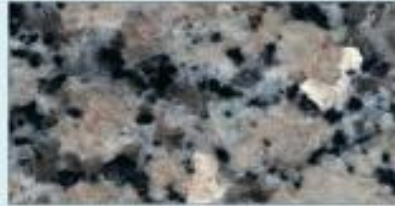
Igneous Rocks

- ❖ Igneous rocks are found by volcanoes and in mountain belts
- ❖ They form when melted rock cools and becomes a solid.
- ❖ There are 3 prominent ways that igneous rocks form:
 - ❖ Some cool slowly and have bigger crystals
 - ❖ Some cool very fast and have small crystals
 - ❖ Some even show the direction of the lava flow.



Igneous Rocks - Examples

- The most common types of igneous rocks include:
 - Rhyolite
 - Andesite
 - **Basalt**
 - **Granite**
 - Diorite
 - Gabbro



(A) Granite: K-feldspar, quartz, plagioclase, and biotite.



(B) Rhyolite: K-feldspar, plagioclase, quartz, biotite, and light-colored fine-grained groundmass.



(C) Diorite: plagioclase, amphibole, quartz, and biotite.



(D) Porphyritic andesite: plagioclase, pyroxene, and amphibole along with fine-grained, gray groundmass.



(E) Gabbro: pyroxene, plagioclase, and olivine.



(F) Porphyritic basalt: pyroxene, plagioclase, and olivine along with black vesicles and gray groundmass.



(G) Peridotite: olivine and pyroxene.



(H) Komatiite: olivine and pyroxene. (Photograph by D. A. Hollister)

Uses of Igneous Rock

- Igneous rock has been used for thousands of years for buildings and statues. Granite is the most widely used igneous rock.



Sedimentary Rocks

● Clastic

- fragments of other rocks and minerals.
- The size and shape of the rock fragments helps determine their names
- Conglomerate, sandstone and shale



A



Sandstone

B



Conglomerate

C



Limestone

D



Shale

Uses of Sedimentary Rocks



- People have used sedimentary rocks throughout history for many different purposes, including building materials and tools.

Example

- **flint for arrowheads**
- **Limestone for cement and steel**



Metamorphic Rocks

- ❖ Metamorphic Rocks are found in areas that have been under lots of pressure and/or temperature.
 - ❖ ex: mountains
- ❖ There are 2 types of Metamorphic Rocks:
 - ❖ Foliated
 - ❖ Non-foliated
- ❖ They can form from either igneous rocks or sedimentary rocks
 - ❖ Sandstone changes to quartzite
 - ❖ Granite changes to gneiss (which is shown at the right)

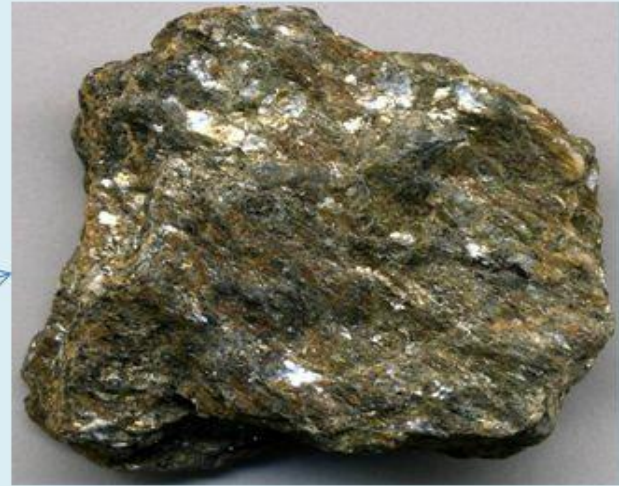


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Metamorphic rocks - Examples

- Some common types of metamorphic rock include:

- Slate
- Schist
- Gneiss
- Amphibolite
- Marble
- Quartzite
- Metaconglomerate



TYPES OF METAMORPHIC ROCKS AND THEIR USES



- ▶ Slate has been used for roofs and patios.
- ▶ Marble has been used in buildings such as churches, banks and government buildings.
- ▶ Marble is also used in sculptures.