

4th GRADE MINIMUM CONTENTS- SOCIAL SCIENCE UNIT 4: ROCKS AND MINERALS

► ROCKS

Rocks are inorganic natural substances. They are normally composed of more than one mineral.

Rocks are divided into three types depending on how they are formed.

- **Sedimentary rocks.**

These were made from fragments of other rocks that were transported by water, ice or the wind and have become compacted. For example: clay.

They can also be formed from the remains of living things, which have solidified over many years. For example, coal.



- **Igneous rocks.**

When magma comes out in volcanic eruptions, it cools and solidifies, forming new types of rocks. For example: granite and basalt.

Granite is composed of three minerals, quartz, feldspar and mica, which are easily visible on its surface.



- **Metamorphic rocks.**

These are sedimentary or igneous rocks that have been buried deep in the Earth and transformed by pressure and high temperatures. Examples: marble and slate.



► MINERALS

Minerals are inorganic natural substances. To distinguish one type from another, we must look at their **properties**.

- Structure

A mineral can be geometrical in structure, or irregular.



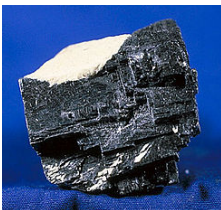
Pyrite is cubic in structure.



Gold is irregular in structure.

- Lustre

Each mineral has a characteristic lustre.



Galena has a metallic lustre



Talc has a silky lustre

- Hardness

The hardness of a mineral depends on how easy it is to scratch it.



Gypsum is very soft.



Diamond is the hardest mineral we know.

- Colour

Each mineral has each own colour. In some cases, this is very distinctive.



Olivine is green.



Cinnabar is vermillion.

► WHERE WE GET MINERALS AND ROCKS

Minerals and rocks are found on or under the ground. They are often concentrated in places called **deposits**.

If they are underground, like coal and silver, we have to dig **underground mines** with **shafts** and **galleries** to reach them.

If the minerals or rocks are on the Earth's surface, they are excavated from **opencast mines** or **quarries**.

► HOW WE USE MINERALS AND ROCKS

They use them for different purposes, depending on their properties.

- **To generate electricity**. Some minerals are used as fuel. For example, we use coal in thermal power station and uranium in nuclear power plants.

- **In construction**. We use rocks to build roads and buildings. Rocks provide us with construction materials such as bricks, marble, glass, cement...

- **In industry**. Some minerals give us metals for industry: iron for machinery, aluminium for cars and containers, copper for cables and pipes.

We use other minerals to manufactured medicine, paint and detergents.

Some minerals because of their colour and shine (lustre), are used to make jewellery: gold, diamond, rubies...

UNIT 4: ROCKS AND MINERALS

ACTIVITIES

1.- Complete.

- a. Minerals have four main properties: structure,....., hardness and
- b. Rocks are usually composed of more than one
- c. There are three types of rocks: sedimentary, and
- d. Granite is composed of three minerals:, feldspar and

2.- Identify the rock or mineral.

- a. A mineral with an irregular structure and a metallic lustre, which is used in jewellery.
- b. A sedimentary rock formed from the remains of living organisms.
- c. It is golden in colour, shiny and has a cubic structure.
- d. An igneous rock made up of three minerals, which are clearly visible within it.

3.- Complete with these words: underground mines- deposits- quarries - galleries.

Minerals and rocks are often concentrated in places called.....

If they are underground we have to dig with to reach them.

If the minerals or rocks are on the Earth's surface, they are excavated from

4.- Identify the main minerals used to make these items.

- Electric cables:.....
- Roof tiles:
- Floor tiles:.....
- Walls:.....
- Window frames:
- Water pipes:

5.- Decide if these statements are true or false. Then, correct the false ones.

- a. Most of the materials deposited in the river turn into sedimentary rocks.
- b. Minerals have four properties.
- c. Granite is composed of two minerals: mica and quartz.
- d. Metamorphic rocks are only sedimentary rocks.

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6.- Complete your bilingual dictionary.

MINERALS AND ROCKS		
- Minerals : _____ - Rocks: _____ -Sedimentary rocks: _____ - Igneous rocks: _____	-Metamorphic rocks: _____ -Lustre: _____ -Hardness: _____ -Properties: _____ - Galleries: _____	- Underground mines: _____ -Quarries: _____ -Shafts : _____