

Name and surname:

Date:

Group:

2.- The main minerals -read this with a dictionary-

Gypsum is a very soft mineral composed of calcium sulfate dihydrate, with the chemical formula $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$. **Colourless** to white; with impurities may be yellow, **tan**, blue, pink, **brown**, reddish brown or gray. **Plaster** ingredient used globally for the finish construction of interior **walls**; the term plaster can refer to plaster of Paris, lime plaster, or cement plaster; and also gypsum is used for fertilizer and **soil** conditioner.

Magnetite is a ferrimagnetic mineral with chemical formula Fe_3O_4 . Colour: black, greyish.

Cinnabar is a name applied to red mercury sulfide (HgS), or native vermilion, the common **ore** of mercury. Colour: brownish-red.

[An ore is a type of rock that contains minerals such as gemstones and metals that can be extracted through mining and refined for use. Metal ores are generally oxides, sulfides, silicates, or "native" metals (such as native copper or "noble" metals such as gold) that are not commonly concentrated in the Earth's crust.]

Galena is the natural mineral form of **lead** sulfide. It is the most important lead ore mineral. Colour: lead gray, silvery. Galena is one of the most abundant and widely distributed sulfide minerals. Galena deposits often contain significant amounts of **silver**.

Siderite is a mineral composed of iron carbonate FeCO_3 . Colour ranges from yellow to **dark brown** or black.

The mineral **pyrite**, or **iron pyrite**, is an **iron** sulfide with the formula FeS_2 . Colour: **pale** metal yellow, **dull** gold. Pyrite is used commercially for the production of sulfur dioxide, for use in such applications as the paper industry, and in the manufacture of sulfuric acid for the chemical industry.

Calcite is a carbonate mineral of calcium carbonate (CaCO_3). Colour: Colourless or white, also gray, yellow, green. It has a Mohs hardness of 3 and its luster is vitreous in crystallized varieties. Calcite is often the primary constituent of the **shells** of marine organisms, e.g., plankton (*foraminifera*), the hard parts of red *algae*, some *sponges*, *echinoderms*, *bivalves*). Calcite is a common constituent of **sedimentary rocks**, limestone in particular, much of which is formed from the shells of dead marine organisms. Approximately 10% of sedimentary rock is limestone. Calcite is the primary mineral in metamorphic **marble**. It also occurs in caverns as stalactites and stalagmites.

Malachite is a carbonate mineral normally known as "**copper** carbonate" with the formula $\text{Cu}_2\text{CO}_3(\text{OH})_2$. Colour: bright **green** to blackish green. Malachite often results from weathering of copper ores and is often found together with azurite [$\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$] and calcite. Except for its vibrant green colour, the properties of malachite are similar to those of azurite and aggregates of the two minerals occur frequently together. Green mineral, a kind of **stone** used for ornaments, decoration, etc.

Azurite is a soft, **deep** blue copper mineral produced by weathering of copper ore deposits. Colour: light blue, azure blue, dark blue. Azurite was used as a blue pigment for centuries.

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2.- The main minerals -read this with a dictionary- (continuation)

Quartz is the most abundant mineral in the Earth's continental crust (although feldspar is more common in the world as a whole). It is made up of silica (SiO_2). Quartz has a hardness of 7 on the Mohs scale. Colour: clear if no impurities. Sorts of hard mineral including agate and other semiprecious stones.

The mineral **olivine** is a magnesium iron silicate with the formula $(\text{Mg,Fe})_2\text{SiO}_4$. It is one of the most common minerals on Earth, and has also been identified in **meteorites** and on the Moon, Mars, and comet Wild 2. Colour: yellow to yellow-green.

Talc is a mineral composed of hydrated magnesium silicate with the chemical formula $\text{H}_2\text{Mg}_3(\text{SiO}_3)_4$. It is the **widely** used substance known as *talcum powder*. Colour: white, grey, green, blue, or silver. Soft, smooth mineral that can be split into thin transparent plates.

Biotite is a common phyllosilicate mineral within the mica group, with the approximate chemical formula $\text{K}(\text{Mg,Fe})_3\text{AlSi}_3\text{O}_{10}(\text{F,OH})_2$. Biotite is a sheet silicate. It is also sometimes called "black mica" as opposed to "white mica" (**muscovite**) -both form in some **rocks**, in some instances side-by-side. Transparent mineral substance easily divided into thin **layers**, used as an electrical insulator, etc.

Kaolinite is a clay mineral with the chemical composition $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$. Rocks that are rich in kaolinite are known as china clay or kaolin. Colour: white, sometimes red, blue or brown tints from impurities. Kaolin is used in ceramics, medicine, coated paper, as a food additive, in **toothpaste**, as a light diffusing material in white incandescent light bulbs, and in cosmetics. Fine white clay used in making porcelain. It is generally the main component in porcelain.

Feldspar is the name of a group of rock-forming minerals which make up as much as 60% of the Earth's crust. This group of minerals consists of framework or tectosilicates. Compositions of major elements in common feldspars: Albite is $\text{NaAlSi}_3\text{O}_8$ and Anorthite is $\text{CaAl}_2\text{Si}_2\text{O}_8$.

2.1.- Translate the coloured words.

2.2.- Complete the next sentences:

1) _____ is a common constituent of sedimentary rocks, limestone in particular; approximately 10% of sedimentary _____.

2) The _____ white, sometimes red, blue or brown.

3) The _____ a kind of stone used for ornaments and decoration.

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2.2.- Complete the next sentences: (continuation)

- 4) The _____ has also been identified in meteorites and on the Moon.
- 5) _____ often results from weathering of copper ores and is often found together with _____.
- 6) The _____ colourless or white, also gray, yellow, green.
- 7) The _____ is a ferrimagnetic mineral. Colour: black, greyish.
- 8) The _____ is a name applied to red mercury sulfide, or native vermilion, the _____.
- 9) _____ is one of the most abundant and widely distributed sulfide minerals. _____ deposits often contain significant amounts of silver.
- 10) The _____ is used for fertilizer and soil conditioner.

2.3.- Complete the next table:

<i>mineral</i>	<i>group / class</i>	<i>application</i>
cinnabar	sulfide	ore of mercury
.....	oxide
.....	ore of lead
.....	sulfate
.....	phyllosilicate
.....	chemical industry
.....	decoration
.....

Words: *phyllosilicate, carbonate, galena, sulfide, kaolinite, malachite, electrical insulator, ore of iron, plaster, pyrite, biotite, toothpaste, gypsum, magnetite.*