

4.2 Types of Minerals

Mineral Groups:

Silicate

- Minerals that contain silicon and oxygen, and usually one or more other elements.
- make up 96% of minerals on earth's crust
- (feldspar and quartz)
- basic building block - **silica tetrahedron**
- **tetrahedron**: three -dimensional shape that resembles a pyramid.
- The bonds between the atoms help determine several mineral properties.

Carbonates

- minerals composed of one or more metallic elements and the carbonate ion
- (calcite, dolomite , and rhodochrosite.)
- Primary minerals found in rocks such as limestone and marble.
- Some have distinctive colorations

Oxides

- compounds of oxygen and a metal.
- Hematite and magnetite

Other groups

sulfides- compounds of sulfur and one or more elements

sulfates - composed of elements with the sulfate ion

halides - made up of chloride or fluoride along with calcium, sodium, or potassium

native elements - (silver or copper) is made up of one element only.

Economic Minerals

-minerals are used to make computers, cars, tvs, roads, buildings, jewelry, beds paints, sports equipment, and medicines.

Ores

-a mineral is an ore if it contains a useful substance that can be mined at a profit. -mineral as an ore can also change if the supply of or demand for that mineral changes.

Mines

-ores at earth's surface are obtained from large, open -pit mines
gangue-unwanted rock and dirt

Gems - valuable minerals that are prized for their rarity and beauty.

-Very hard and scratch resistant

-cut, polished and used for jewelry.

-**Mineral corundum**, the presence of trace elements in a mineral, can make it more colorful and more prized than other varieties of the same mineral.