

Occurrence of metals:

Earth's crust  $\rightarrow$  many minerals

Sea water  $\rightarrow$  salts such as NaCl,  $MgCl_2$

Minerals

The elements or compounds which occur naturally in the Earth's crust are known as minerals.

Ores

Minerals from which a metal can be profitably extracted is called ore.

Extraction of metals

On the basis of reactivity, we can group the metals into following three categories:

i) Metals of low reactivity

eg: Gold, platinum, silver, copper

these are found in free state.

Copper and silver are also found in the combined state as their sulphides or oxide ore.

ii) Metals of medium reactivity

eg: Zn, Fe, Pb

They are found in earth's crust mainly as oxides, sulphides or carbonates.

Many ores of metals exist as oxides. This is because oxygen is a very reactive element and is very abundant on the earth.

iii) Metals of high reactivity.

K, Na, Ca, Mg, Al

