

potassium	most reactive	K
sodium		Na
calcium		Ca
magnesium		Mg
aluminium		Al
carbon		C
zinc		Zn
iron		Fe
tin		Sn
lead		Pb
hydrogen		H
copper		Cu
silver		Ag
gold		Au
platinum	least reactive	Pt

Displacement reaction: More reactive metal will displace the less reactive metal from its solution. For example – Magnesium (more reactive metal) + Zinc sulphate → magnesium sulphate + zinc (more reactive metal displaces the less reactive metal).

Iron + Tin chloride → Iron chloride + Tin

Copper + Lead oxide → Copper oxide + Lead

Extraction of Metals: Metal ores often contain metal oxides. To obtain the metal, the oxygen must be removed. The removal of oxygen from a substance is called **reduction**.



Carbon can be used to extract metals by **reduction**. **Carbon** can be only used to reduce metals which are less reactive than itself for example - Lead ore is lead oxide. Lead is less reactive than carbon so can be used to remove oxygen from its ore.

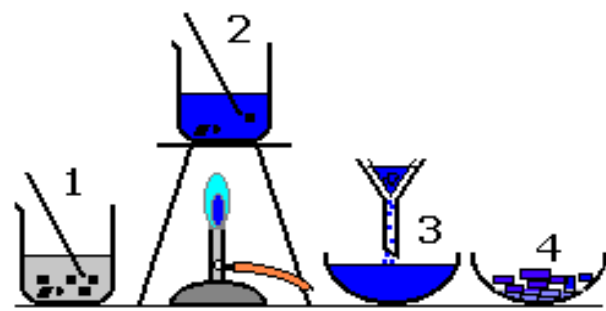
Lead oxide + carbon → lead + carbon dioxide

Copper oxide + carbon → copper + carbon dioxide (copper is less reactive than carbon).

Carbon cannot be used to extract metals which are more reactive than itself.

Making Salts: The following are the three ways you can make salts
 1) metal + acid → metal salt + Hydrogen
 2) metal carbonate + acid → metal salt + carbon dioxide + water
 (3) acid + alkali → metal salt + water

Metal/Metal compound	Acid	Name of salt
Magnesium	Hydrochloric acid	Magnesium chloride
Lead oxide	Nitric acid	Lead nitrate
Copper oxide	Sulphuric acid	Copper sulphate
Potassium	Hydrochloric acid	Potassium chloride



Making salt - the diagram shows the 4 stages in making salt for example copper oxide reacting with sulphuric acid to give copper sulphate. Stage 1 you mix copper oxide and sulphuric acid and you stir the mixture. Step 2 you heat the mixture to ensure maximum copper oxide is dissolved. Step 3 filter any excess copper oxide which has not dissolved. Step 4 you leave the solution to crystallise to give copper sulphate salt.