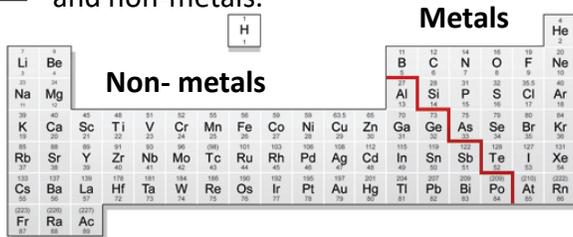


Section 1- Metals and Non-Metals

Elements can be sorted into metals and non-metals.

Yr 8 Science C2.1



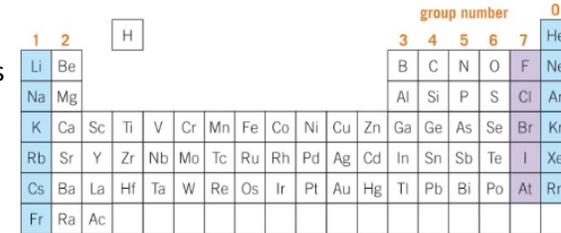
Elements near the stepped line are metalloids. Their properties are between those of metals and non-metals.

Properties of Metals	Properties of Non-metals
good conductor of heat & electricity	poor conductor of heat & electricity
shiny	dull
high density	low density
malleable	brittle
ductile	
sonorous	Not sonorous
metal oxides are usually solid and basic (form alkali solutions)	Non-metal oxides are usually gases and form acidic solutions

Section 2- Groups and Periods

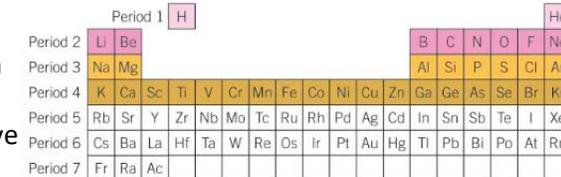
Groups

- The vertical columns
- Elements in the same group have similar properties



Periods

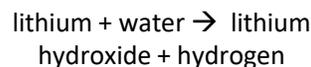
- The horizontal rows
- There are patterns in the properties of elements as you move across the period.



Section 3 - The Elements of Group 1

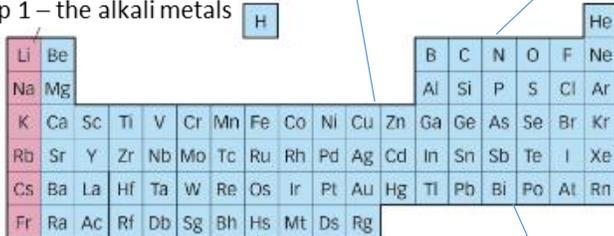
Lithium (Li)
Sodium (Na)
Potassium (K)
Rubidium (Rb)
Caesium (Cs)
Francium (Fr)

They react vigorously with water and produce hydrogen gas and alkali solutions:



Good conductors of heat & electricity

Group 1 – the alkali metals



Shiny when freshly cut

They are more reactive as you go down the group

Solids - High melting and boiling points which decrease as you go down the group.

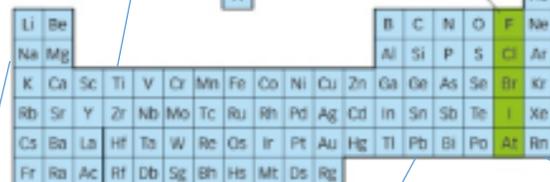
Section 4 - The Elements of Group 7

Fluorine (F)
Chlorine (Cl)
Bromine (Br)
Iodine (I)
Astatine (At)

A more reactive halogen will displace a less reactive halogen from a solution:
chlorine + potassium bromide = bromine + potassium chloride

They are less reactive as you go down the group

Group 7 – the halogens



Low melting and Boiling points which increase as you go down the group.
F and Cl = gas
Br = liquid
I & At = solid

Do not conduct electricity

They are highly reactive:
iron + chlorine = iron chloride

The colour gets darker down the group:
F - pale green
Cl – yellow
Br – orange
I - purple

Section 5 - The Elements of Group 0

Helium (He)
Neon (Ne)
Argon (Ar)
Krypton (Kr)
Xenon (Xe)
Radon (Rn)

They can be found in the atmosphere

They glow brightly when high voltage electricity passes through them

Group 0 – the noble gases



Their melting and boiling points increase as you go down the group

Colourless gasses with very low melting and boiling points

They are very unreactive