

# 1.2 THE PERIODIC TABLE

Some elements placed in incorrect groups  
 Ensured elements with similar properties lined up in groups  
 Early tables were incomplete

Initially periodic tables were ordered by atomic weight  
 Didn't follow strict atomic mass  
 Strong, malleable, good conductors  
 High melting points  
 Towards bottom left of periodic table  
 Metals form positive ions

Mendeleev  
 Undiscovered elements  
 Left gaps  
 Same chemical properties  
 Different atomic masses  
 Isotopes discovered after Mendeleev

Group 0  
 Noble gases  
 Boiling point increases down the group  
 Unreactive  
 Full outer shell  
 Stable  
 More reactive halogens displace less reactive halogens

Group 7  
 Halogens  
 Displacement  
 Molecules of two atoms, e.g. Cl<sub>2</sub>  
 Down the group...  
 Melting and boiling points increase  
 Reactivity decreases

Group 1  
 Alkali metals  
 One electron in outer shell  
 Very reactive  
 Form ionic compounds  
 Harder to gain an electron  
 Reactions with...  
 Water  
 Chlorine  
 Oxygen

## Metals and non metals

Metals  
 Non metals  
 Non-metals do not form positive ions  
 Towards top right of periodic table  
 Brittle, dull looking, don't conduct electricity

Structure  
 In order of atomic number  
 Column  
 Group  
 Group number equals number of outer shell electrons  
 Elements in the same group have similar chemical properties  
 Position used to predict reactivity  
 E.g. Group 1 reacts more violently down the group

Period  
 Row  
 Each period represents new shell of electrons

