

Dobereiner's Triads : He had make ~~three~~ some groups having 3 element each in which average of first's and third's atomic mass is equal to middle one.

Ex

N $\rightarrow$ 14	Ca $\rightarrow$ 40.1	Li $\rightarrow$ 6.9
P $\rightarrow$ 31	Sr $\rightarrow$ 87.6	Na $\rightarrow$ 23
As $\rightarrow$ 74.9	Ba $\rightarrow$ 137.3	K $\rightarrow$ 39

But it was not found useful as  $\neq$  like first one many triads were proved wrong.

Newland's Octaves : He ~~had~~ compared the elements with increasing atomic mass with musical notes (sa re ga ma pa dha ni) and found that property of <sup>every</sup> eighth elements repeat with first.

But it was also proved wrong as it was only applicable for light element. He also proposed that only 56 elements existed in nature but  $\neq$  several new elements were also discovered.

Mendeleev's Periodic Table : He sorted out the elements of similar chemical properties by seeing their formulae of oxides and hydrides. And we arranged all the 63 elements known at that time, He saw the ~~inc~~ order with increasing atomic mass and formulated a Periodic law that "the properties of elements are periodic function of their atomic mass". His periodic table was so accurate. That after the invention of noble gas they get easily fitted in his atomic table. He boldly ~~per~~ predicted that some elements will get discovered and decided their position already.

But he was not able to define the position of hydrogen as it has properties of both alkali metals and halogens.

Also after the discovery of isotopes his periodic table get totally failed...

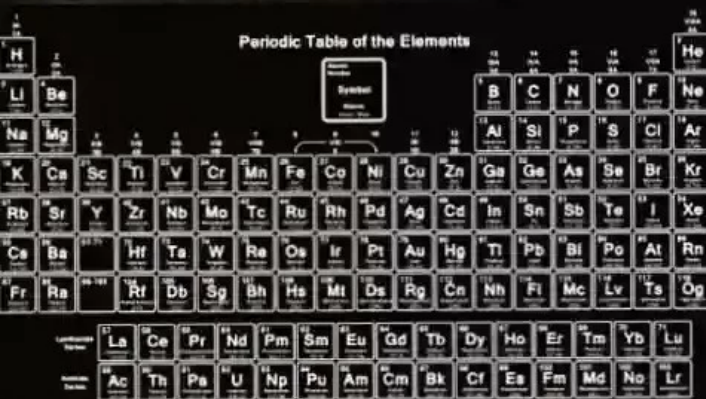
## Modern Periodic Table : Henry

Moseley introduced new Periodic Law states "the periodic function

" Properties of elements are periodic function of their atomic number". And this changes the whole history of Periodic table.

After that all elements get arranged with increasing atomic no. which helps to see the properties of elements more precisely.

Periodic Table of the Elements



Position of Elements : Periodic table 18 vertical columns called group and 7 horizontal rows called Periods. Elements in each group have same <sup>valence</sup> electrons like Carbon (C), Silicon (Si), Germanium (Ge), Tin (Sn), Lead (Pb) have same no. of valence electrons that is 4. Similarly as we move from left to right we see increase in one electron with one step which shows increase in atomic no..

Valency : No. of electrons present in outermost shell.

Atomic Size : The atomic size is visualised as the distance from centre of nucleus to outermost shell of isolated atom.  
ex atomic size of hydrogen(H) atom is 37 pm  
(1 pm =  $10^{-12}$  m)

Metallic and Non Metallic Character : Elements having less no. of valence electrons are usually metals as they can lose electrons very easily and Non Metals have high valence electrons that's why mostly they use to share.