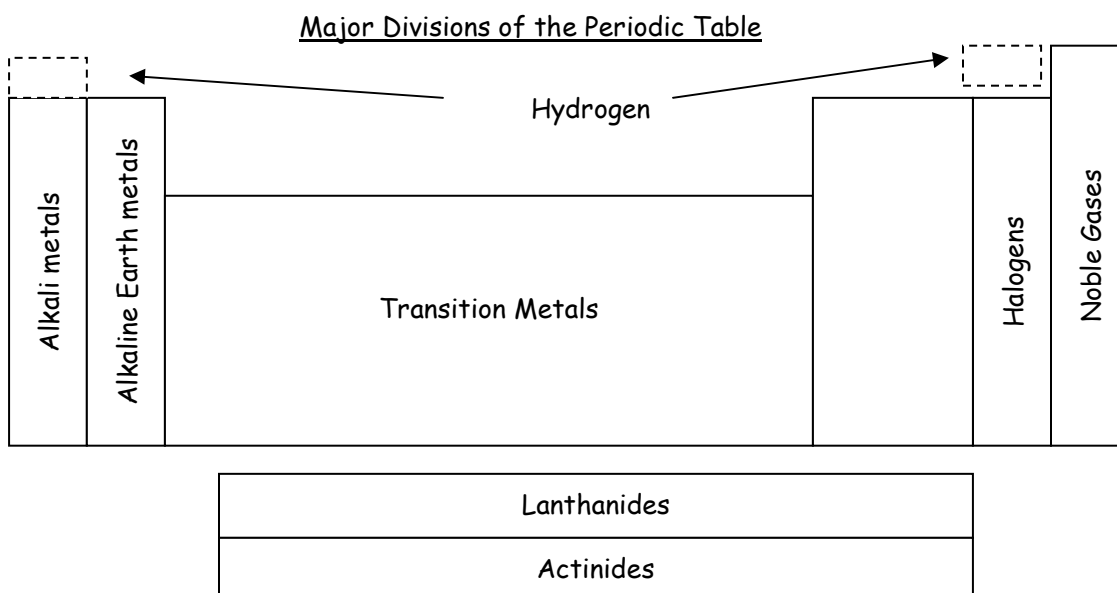


Periodic Table

- In 1817 chemists knew of 52 elements. By 1863 they knew of 62 elements.
- Chemists tried to find a way of organizing the elements. They started by using the masses but different ways of solving for the mass led to different masses.
- William Odling - 1857 pointed out elements could be divided into 13 groups based on physical and chemical properties. His grouping looked like the following:

Group	Elements in Group
1	F, Cl, Br, I
5	Li, Na, K
7	Mg, Zn, Cd

- John Newlands - 1863 showed that by assigning hydrogen an arbitrary mass of 1 and ordering the known elements by their masses, every eighth element shared a common set of properties.
- Demitri Mendeleev - 1869 organized the elements according to both mass and their properties. He showed that when the elements are listed according to masses, certain properties recur PERIODICALLY. He broke the list into rows such that elements in a row are directly over elements with similar properties in other rows. He called a horizontal row a period and a vertical column a group or family.
- In some cases he interchanged elements when their properties dictated that an element SHOULD be in a particular group even though the mass was contrary to this. He left gaps in his table predicting elements that hadn't been discovered at that time and he predicted their properties.
- Today the periodic table is organized off of the atomic number not mass.



- There are many other groups that can be identified within the periodic table.

1.) Metals - properties of metals

- shiny
- opaque
- good conductors of heat and electricity
- malleable
- ductile
- usually solid at room temperature

2.) Non-metals - properties of non-metals

- are gases, liquids or brittle solids at room temperature
- poor conductors of heat and electricity
- if solid they are dull to lustrous and opaque to translucent

3.) Semiconductors or Metalloids - properties of metalloids

- share properties of metals and non-metals
- found on line called "steps" or "stairway" separating metals from non-metals.

*** Properties of the elements change from metallic to non-metallic going from left to right across table.

*** Elements become more metallic going down a family in the table.