

History of the Periodic Table

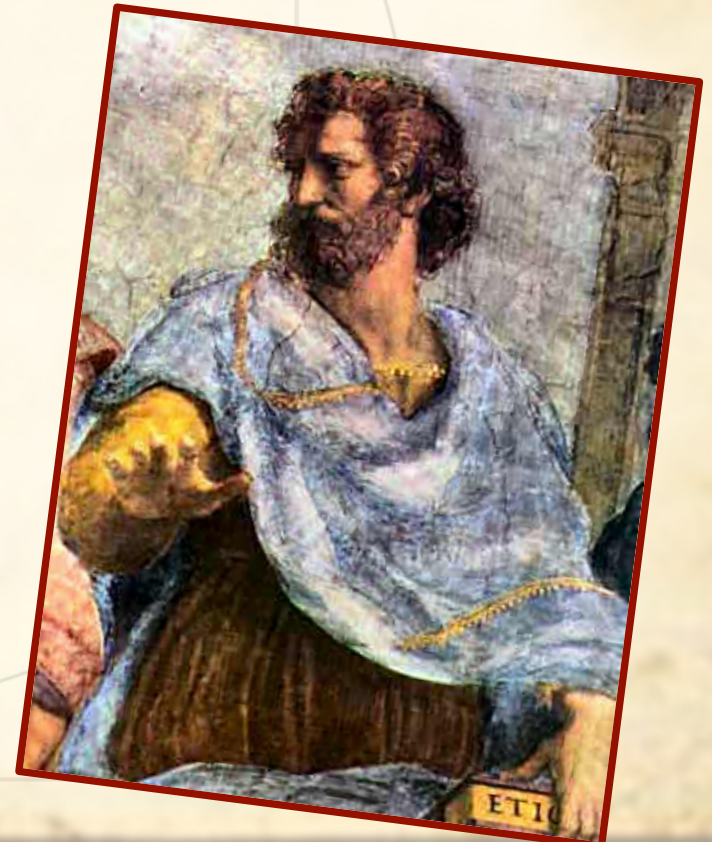
November 15, 2010

Chapter 6



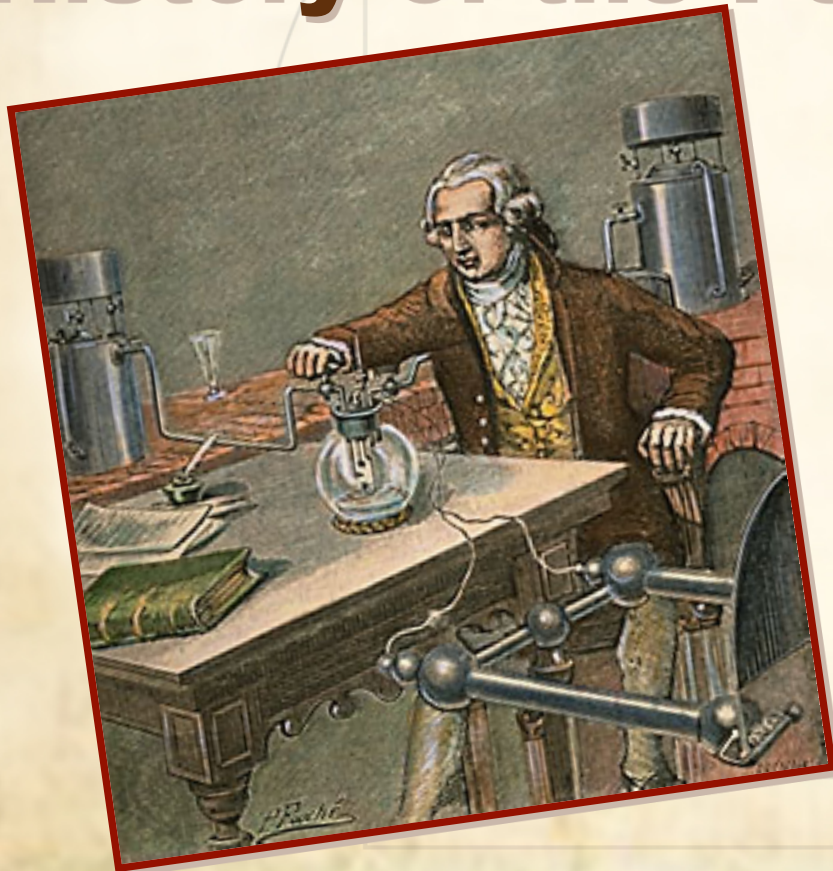
History of the Periodic Table

- **Aristotle ~330 B.C.**
- **Four element theory:**
 - Earth, Fire, Water, Air





History of the Periodic Table



- **Antoine Lavoisier**
~1770-1789
- Wrote the first list of elements containing 33 elements
- Distinguished between metals and non-metals



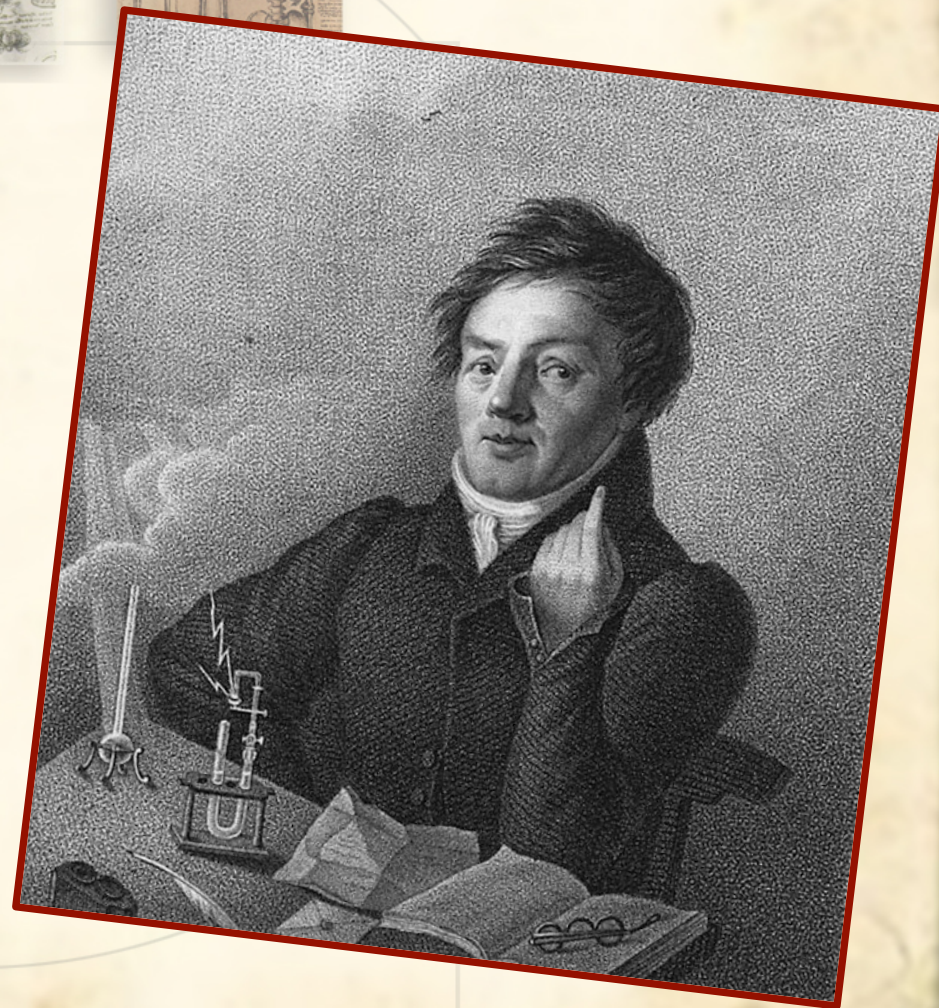
History of the Periodic Table



- Jons Jakob Berzelius ~ 1828
- Developed a table of atomic weights
- Introduced letters to symbolize elements



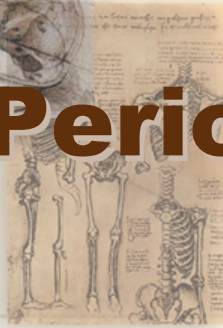
History of the Periodic Table



- **Johann Döbereiner**
~ 1829
- Developed 'triads',
groups of 3
elements with similar
properties
 - Li, Na & K
 - Ca, Sr & Ba
 - Cl, Br & I



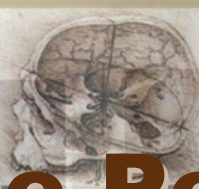
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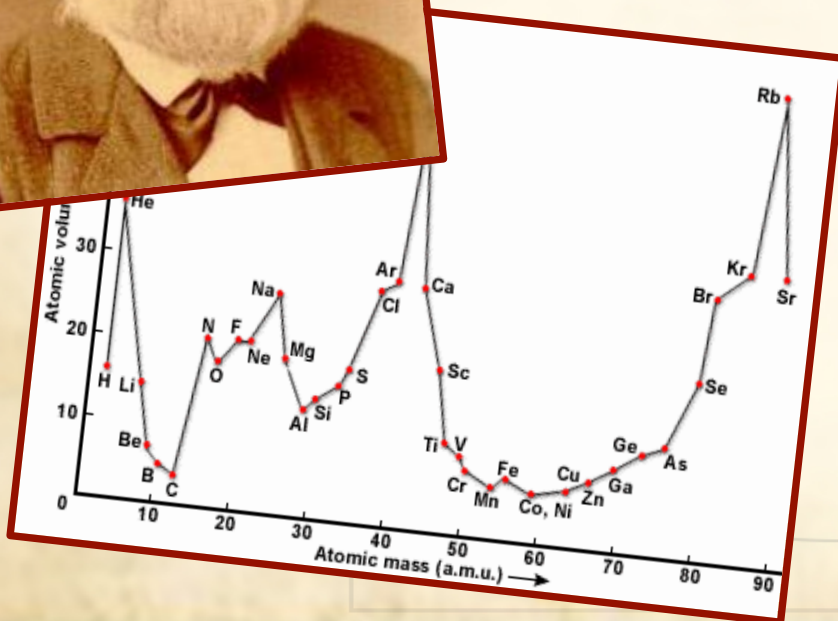
- **John Newlands ~1864**
- The known elements (>60) were arranged in order of atomic weights
- Observed similarities between the first and ninth elements, the second and tenth elements etc
- He proposed the 'Law of Octaves'



History of the Periodic Table



- **Lothar Meyer ~1869**
- Compiled a Periodic Table of 56 elements based on the periodicity of properties such as molar volume when arranged in order of atomic weight





History of the Periodic Table

- **Dmitri Mendeleev ~ 1869**
- Produced a table based on atomic weights but arranged 'periodically' with elements with similar properties under each other
- Gaps were left for elements that were unknown at that time and their properties predicted (the elements were gallium, scandium and germanium)
- The order of elements was re-arranged if their properties dictated it



History of the Periodic Table

- **William Ramsay**
~1894
- Discovered the Noble Gases





History of the Periodic Table

- **Henry Moseley ~1913**
- Determined the atomic number of each of the elements
- He modified the 'Periodic Law' to read that the properties of the elements vary periodically with their atomic numbers
- 1914: Predicted that there were 3 unknown elements between aluminum and gold
- Concluded there were only 92 elements up to and including uranium



History of the Periodic Table

- Glenn Seaborg ~1940
- Synthesized transuranic elements
 - The elements after uranium #92 in the periodic table
 - Also part of the Actinides

