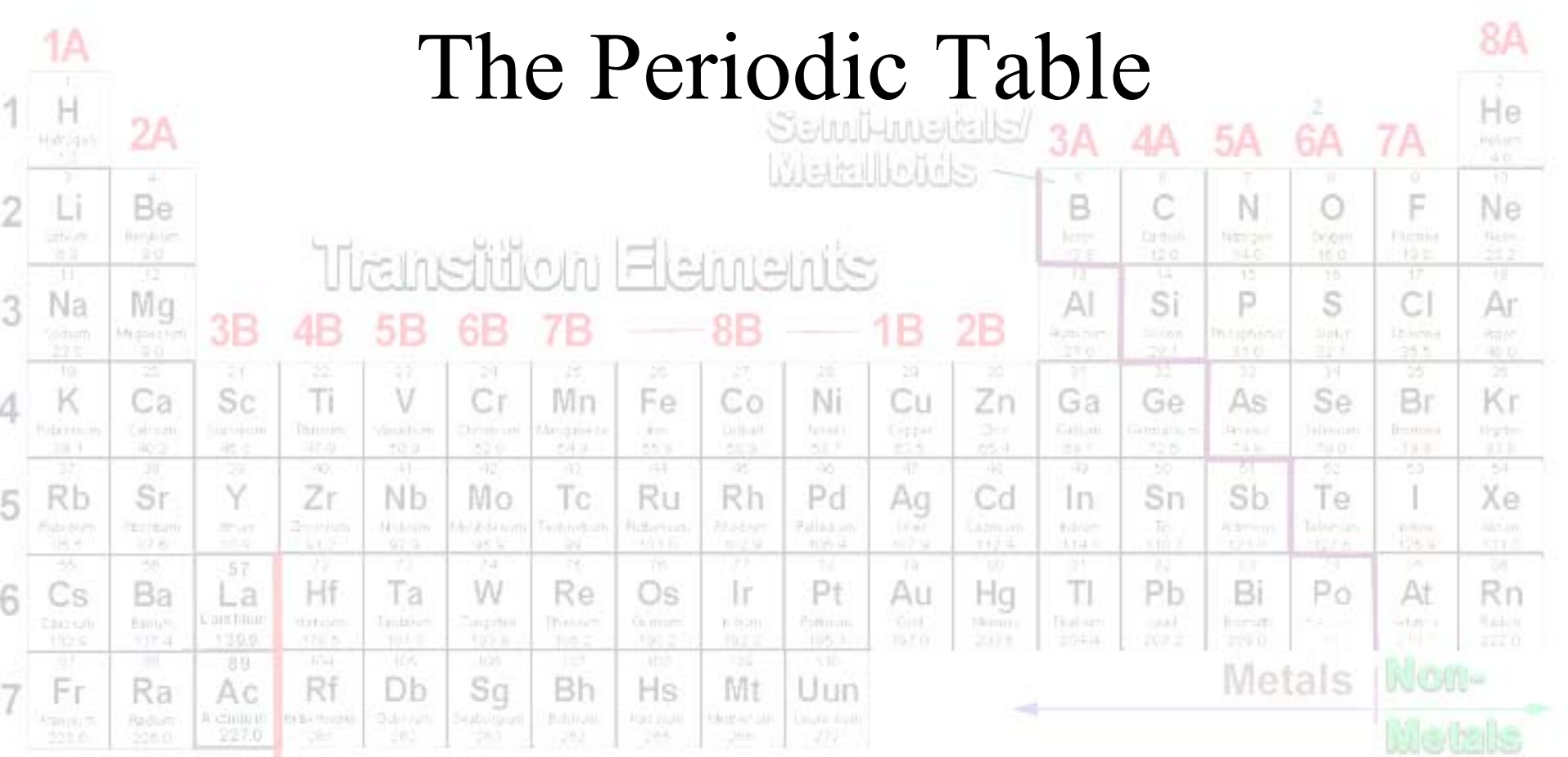
The Periodic Table



How to Use It…

And Why Would I Ever Use It…

Who Made This Thing Anyway?

- In 1829, J.W. Dobereiner tried to classify elements into various groups based on some chemical and physical properties.
- He called these groups Triads…since they were in groups of 3.
- When he did this he found that the middle element ended up with an atomic mass that was about the average of the other 2.

More on Dobereiner

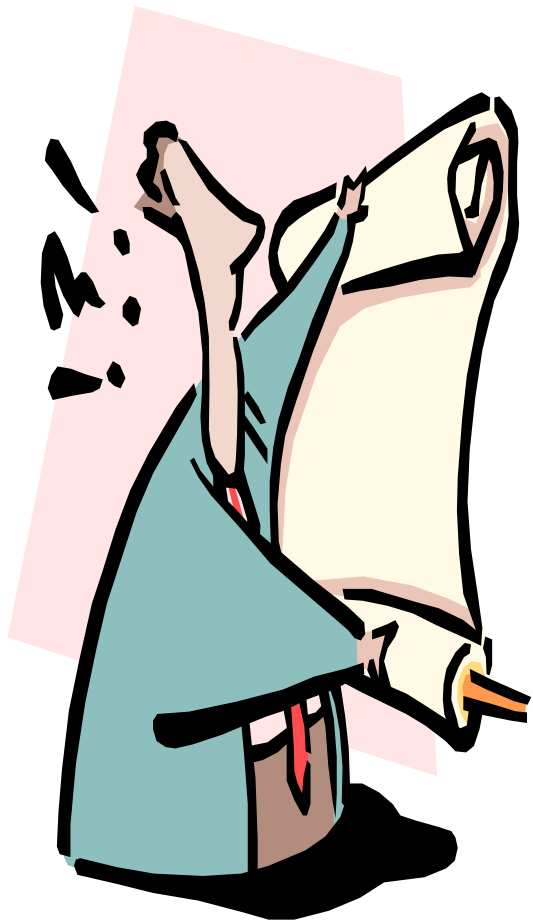
- While Mr. D's triads worked great (and still are accurate) there was a more important discovery…
- His work helped to show that atomic mass was somehow related to the properties of an element.

Enter Another Dead Guy…

- In 1869, while working as a professor in Russia, Dmitri Mendeleev, developed what he called a periodic table of the elements.
- He noticed that when he put the elements in order of increasing atomic mass, that the elements properties repeated in an orderly way.

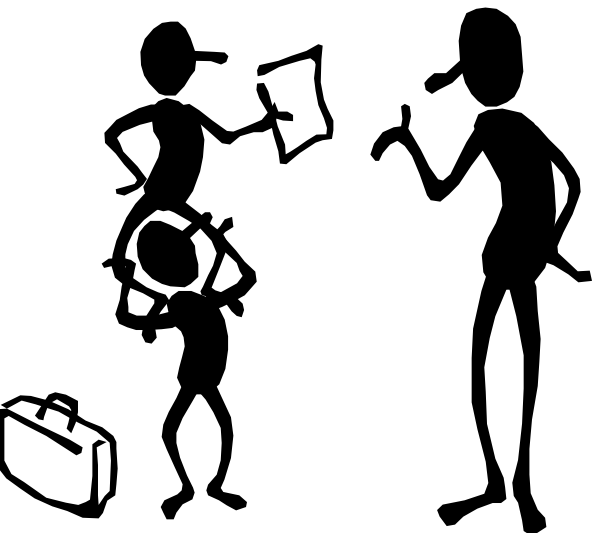
So Really How Good Was His Table…

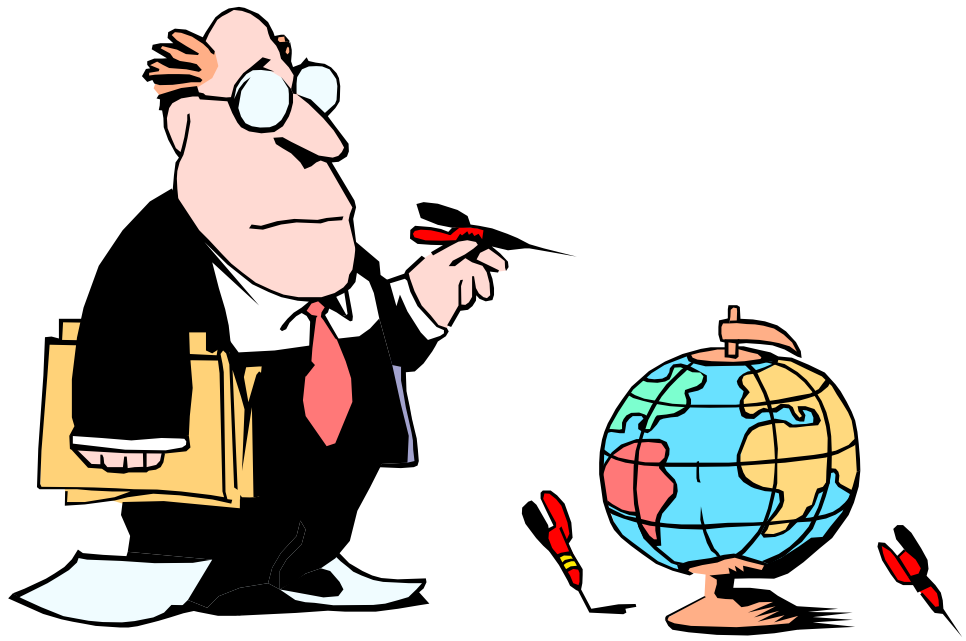
- Mendeleev's table was so good at predicting properties of elements at certain atomic masses…that he left blank spaces in the table where he thought elements should be…
- In later years, those elements were indeed discovered!



Mendeleev Made a Table…
So What!

- His insight into the periodicity of the elements was one of the greatest contributions to chemistry…





His Table Is Similar to Today's

Each vertical column on the table represents elements that have similar properties.

Its kind of similar to a monthly calendar…

Each time you go to the next horizontal row, you know that the elements will have a certain pattern of properties.

Some Differences Today

The current Table is arranged by atomic number (number of protons), not according to atomic mass.

However, you will note that with only a few exceptions, atomic mass also increases with each element.

Why is that?