**1.5 The Periodic Table: The Elements Organised.**

**1828 –** Jӧns Jakob Berzelius identified many of the chemical elements and hundreds of compounds. It was his idea to use letters as symbols to represent the names of the elements which we still use today. Berzelius calculated accurate relative atomic masses for many elements.

**1869 –** Dmitri Mendeleev having collected a large amount of experimental data was able to organise it in such a way that he could conclude that *chemical properties vary periodically with increasing relative atomic weights.* Mendeleev constructed a periodic table by:

* Arranging elements with similar chemical properties into vertical groups.
* Arranging the elements in order of increasing relative atomic mass into horizontal periods.

When he first created his periodic table there were only 63 elements. He left gaps in his table, based on observed patterns, for elements yet to be discovered. He was able to predict the properties of undiscovered elements, and although not perfect he was mostly correct with his predictions.

Although not complete in his lifetime, the blank spaces in the periodic table directed research in chemistry thereafter.

We now use amended versions of Mendeleev’s periodic law and the periodic table continues to form a cornerstone to our chemical understanding.

Lothar Meyer and John Newman each independently devised a similar periodic table at about the same time as Mendeleev.

*The periodic pattern of properties of the elements is referred to as periodicity.*

**Key Terms**

**alchemist Conservation of mass period**

**atom element periodic law**

**chemist group periodic table**

**Chapter Review Questions: 16, 17, 19, 21, 22 and 23.**