

## The Periodic Table

### An Introduction

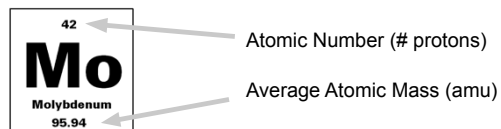
## The Modern Periodic Table

- The ancients believed there were just four elements: earth, air, fire, water.
- By the 1800's, chemists knew of many elements and a method of organization was sought.
- Dimitri Mendeleev arranged the elements in order of increasing atomic mass.
  - When arranged in such a way, he found that the properties of elements repeated in a systematic way.
  - Based on his arrangement, scientists could predict the existence and properties of yet undiscovered elements.

## Periodic Table Basics:

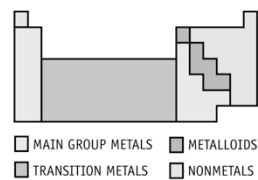
- The principal method of arrangement of elements in the modern periodic table is **atomic number**.
- The **rows** of the periodic table are called **periods**.
- The **columns** of the table are called **groups** or **families**.
- The **periodic law** states that when elements are arranged in order of increasing atomic number, then they fall into groups of repeating properties.

## Interpreting an element symbol:



## There are three types of elements:

- Metals
- Metalloids (semi-metals)
- Non-metals



## Specific Families and Blocks

- Main Group – Representative elements
  - Group 1A – Alkali metals.
  - Group 2A – Alkaline earth metals.
  - Group 7A – Halogens.
  - Group 8A – Noble Gases.
- Transition Metals
- Inner Transition Metals

## Diatomic Elements

- The following elements are diatomic molecules in their standard elemental form:

