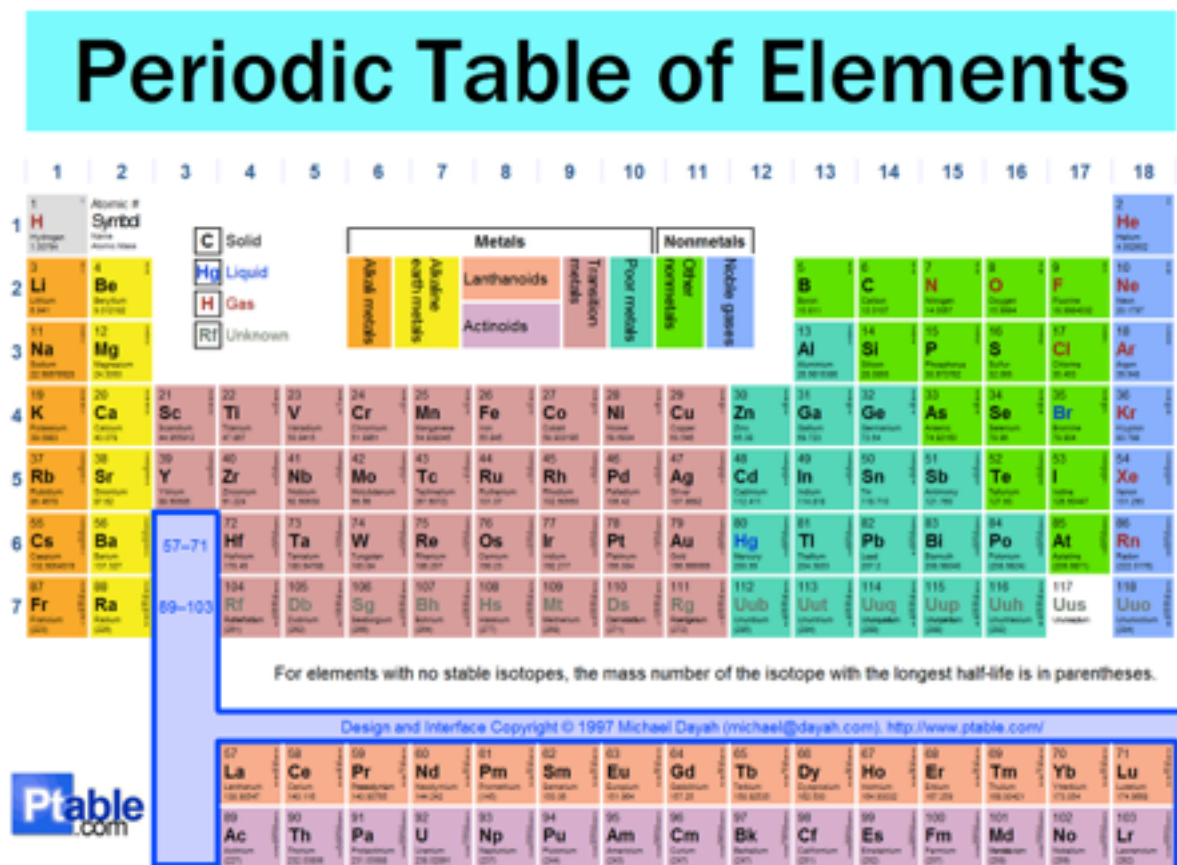


## Periodic Table and Atomic Number Reading

Take notes on this reading on page 27 of your Interactive Notebook

### Introduction:

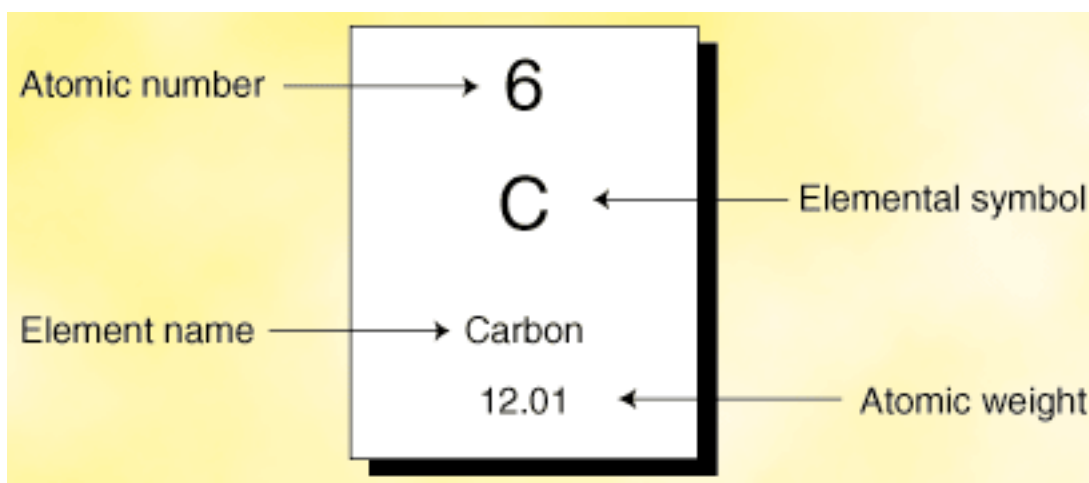
This is the periodic table:



The periodic table organizes the elements according to general patterns of similarity. The vertical columns of the periodic table (marked by yellow stripes in the figure) are called groups. The horizontal rows are called periods. There are 18 groups and 7 periods. In discussing the periodic table from here on out we will use the terms group and period. Down a group means moving from top to bottom; across a period means moving from left to right.

### Reading the Periodic Table: Carbon

To describe the information contained within each individual box we will use a specific example: carbon.



## Periodic Table and Atomic Number Reading

### Element Name

This is the name of the element feature in that particular box. However, many Periodic Tables do not include element names. For those situations you may need another reference table to help you match the symbols that go with each element name.

### Element Symbol

Each element has a specific one or two letter symbol that is used interchangeably with its name. These should be memorized. Most of the time, symbols quite clearly accord to the name of the element they represent, as C accords to carbon. Occasional, however, an element's name and symbol have little relation. For example, the symbol for mercury is Hg.

### Atomic Number:

As you move across a period the atomic number increases. Similarly, as you move down a group the atomic number increases. In this way, the atomic number represents exactly where in the periodic table an element stands.

More importantly, and the reason why the ordering of the elements according to atomic number yields elements in groups with similar chemical and physical properties, the atomic number is the same as the number of protons in the nucleus of an atom of an element, and also the same as the number of electrons surrounding the nucleus in a neutral state. Carbon, for example, has six protons and six electrons.

### Atomic Mass:

Along with protons, an atom also contains neutrons in its nucleus. The atomic mass (also called atomic weight) of an element is the combined number of protons and neutrons in the nucleus.

### READING EXTENSION:

Atoms of particular elements generally have different "versions," meaning that elements have atoms with different numbers of neutrons in their nucleus. These different versions are called isotopes. The atomic weight displayed is actually the weighted average of the mass numbers of the various isotopes. The atomic weight for Carbon is 12.01 because around 99% of all carbon is the carbon-12 isotope.