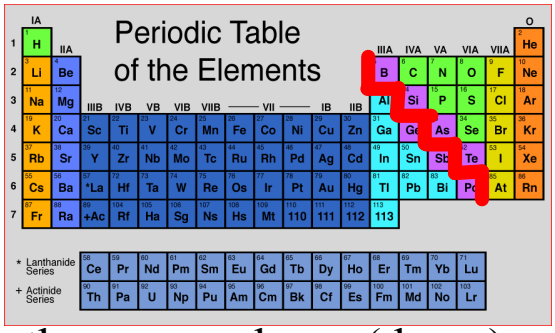
Today's Plan...

- Pass in Case Study
- Begin study on Periodic Table
- Bohr Diagrams
- Exercise p.187



Elements in the same column (down) are called a group. Ex: Li, Na, K, Rb, Cs and Fr are in a group.

Rows on a periodic table (across) are called periods. Ex. Going across from lithium to neon

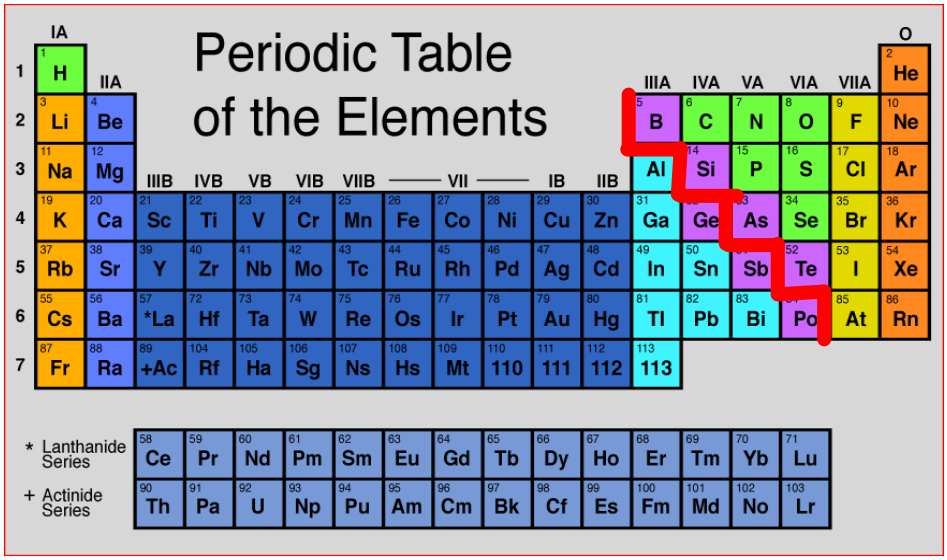
In your textbook periodic table, gases (g) are red, liquids (l) are blue and solids (s) are black.

What state are most elements on the periodic table??

Review of the Periodic Table

Periodic table - a structured arrangement of elements that help us explain and predict physical and chemical properties.

Metals are generally located on the left, while the non-metals are located on the right side of the table.
(staircase line)

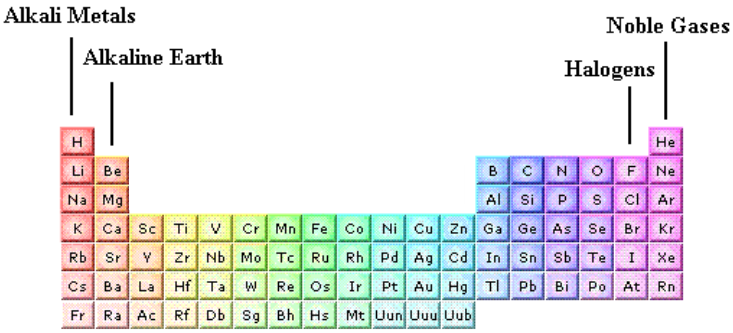


Hydrogen, the lightest element, is the exception to almost every rule in chemistry. Although it is located on the left side of the staircase, it behaves mostly as a **nonmetal**.

Metals are normally shiny, malleable, conductors, react with acid, and are mostly solids at room temperature.

Non-metals are generally dull, brittle, good insulators, do not react with acid, and can be solid, liquids or gas at room temperature.

Chemical Families (groups) are vertical columns in the periodic table. They tend to have similar physical and chemical properties.



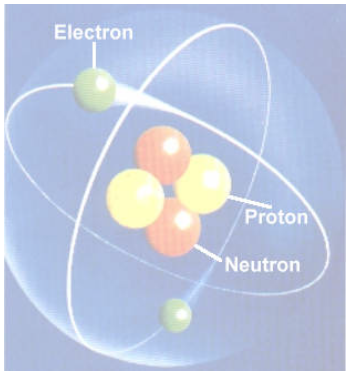
Alkali metals (group 1) are shiny, silvery metals and form compounds that are mostly white solids and soluble in water. i.e. H, Li etc

Alkaline earth metals (group 2) are shiny, silvery metals, but they form compounds that are not soluble in water. i.e. Mg, Ca etc

The *halogens* (group 17) generally react with alkali metals. i.e. F, Cl, Br etc

Noble gases (group 18) generally do not form compounds. i.e. He, Ne etc

Parts of an Element



The smallest part of an element is called the atom.

The atom has three types of subatomic particles:
protons, neutrons and electrons .

Protons: are 'heavy', positively charged (p^+) particles found in the nucleus
- the number of protons is equal to the atomic number

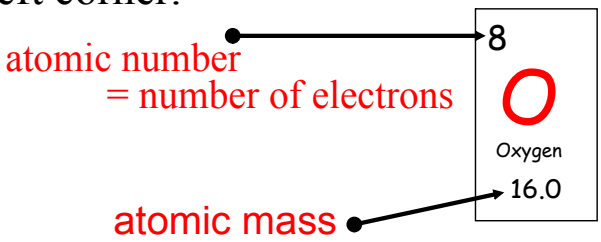
Neutrons: are neutral particles that have the same mass as a proton and are found in the nucleus.
What does neutral mean??

Electrons: are negatively charged (e^-) particles that circle or orbit the nucleus at different energy levels.

Bohr Diagrams

- can be drawn to represent the arrangement of electrons in various levels or orbits

- to find the number of electrons look at the periodic table. The number in the upper left corner.

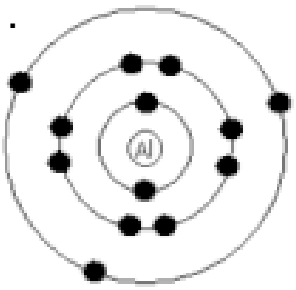


- each orbit of the Bohr diagram has a definite number of electrons

- the first level can have two
- the second can have eight
- the third can have eight

Examples of Bohr Diagrams

1.



Aluminum Al
atomic number = 13
so 2 in first orbit
8 in second orbit
3 in third orbit

Exercise p.187

#1-4

Attachments

S10 answers pg 187 #1-4.doc