Atom Parts and Function

Parts of the Atom

We have learned:

Nucleus is the center of atom that contains:

Protons - positive charge

Neutrons - neutral, act like glue

Overall charge of nucleus is positive

Electron cloud/energy levels that contain:

Electrons - negative charge

More detail on electron cloud/energy levels

Energy Level	Maximum number of electrons
1	2
2	8
3	8
4	
5	
6	
7	

You will explain how many in each of these levels.

What each part of the atom determines

Protons: the number of protons is unique to each element/atom

Determine the identity of the element/atom

Neutrons: act like glue in the nucleus

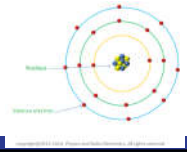
Electrons: all electrons are negatively charged

The electrons that are in the energy level farthest away from the nucleus are called VALENCE ELECTRONS

VALENCE ELECTRONS determine if and how the element/atom can react with other elements /atoms to form new substances

Making molecules and new substances is all about the how VALENCE ELECTRONS interact to make a "happy atom"

The electrons that are in the energy level farthest away from the nucleus are called VALENCE ELECTRONS (other than location, they are exactly the same as other electrons)



Drawing Models to figure out valence electrons

1. To figure out the number of valence electrons, you need to figure out the structure of that atom
2. Use a drawing of a Bohr Model to do this.
3. Remember – this is a model so we can visualize how an atom is arranged.

Analogy

Filling seats at a large stadium

Court/field in the middle (nucleus)

Rows of seats in circles around them (electrons)

Rules –

1. Define what you are there for (fill in nucleus)
2. Fill all seats.
3. Fill in seat rows closest to court/field first and work out.
4. There is a set number of seats per row.

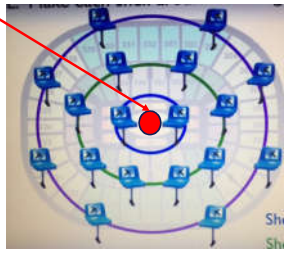
STEPS TO DRAW BOHR MODEL OF AN ATOM

1. Fill in nucleus info:
Atomic number = protons
Atomic Mass – Atomic number = neutrons

2. Figure out total number of electrons: this is equal to the # of protons in a stable atoms

3. Fill in the available "seats" on each level with an electron until each is in a space.

WE WILL FOCUS ON FIRST 3 LEVELS
Level 1 = 2 available seats
Level 2 = 8 available seats
Level 3 = 8 available seats



Practice

Hydrogen

1	atomic number
H	element symbol
Hydrogen	element name
1.008	atomic weight