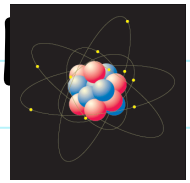
Atomic Structure Notes

Atoms:

- Smallest particle of an element that has all the properties of that element.
- -Atoms are the basic building bloc of matter that make up everyday objects.



-2 main parts of an atom:
Nucleus-99.9% of the atom's mass
Electron cloud or energy rings

-Atoms are made of subatomic particles: protons, neutrons, & electrons

Atoms are composed of three primary particles: protons, neutrons, and electrons

Particle	Symbol	Location	Electrical Charge	Relative Mass (amu)	How do you find out how many?
Electron					
Proton					
Neutron					

Atoms are composed of three primary particles: protons, neutrons, and electrons

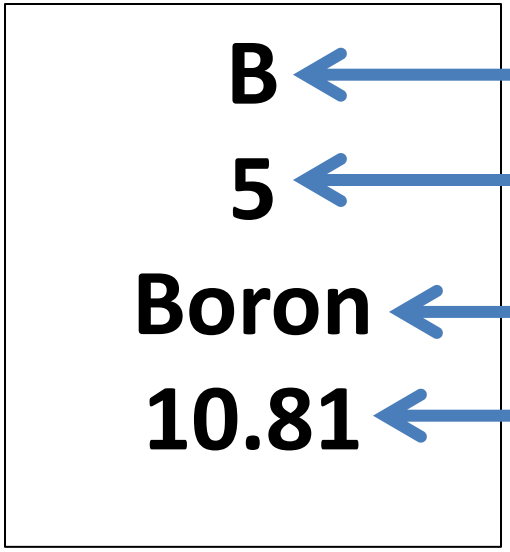
Particle	Symbol	Location	Electrical Charge	Relative Mass (amu)	How do you find out how many?
Electron	e^-	Orbits nucleus in energy levels	-1 (negative)	1/1840	Atoms are neutral and therefore have the same # of electrons as protons
Proton	P^+	Inside Nucleus	+1 (positive)	1	Atomic # (# of protons in an atom's nucleus), Element specific
Neutron	n^o	Inside Nucleus	0 (no charge/ neutral)	1	Mass # minus atomic #

Electron Energy Levels

There is a unique number of electrons that can fit in each electron level.

Energy Level	How many electrons it holds up to
1	2
2	8
3	18

Determining Atomic Structure Using the Periodic Table



Chemical Symbol

Element Name

Atomic Number

Atomic Mass #: The weighted average mass of all the isotopes (different versions) of an atom of a specific element; measured in atomic mass units, amu.

Mass #: Atomic Mass Number rounded to the nearest whole number.

ATOMIC STRUCTURE DIAGRAMS

Step 1: Complete the squares for each element by adding the atomic number, name and atomic mass.

- Write the atomic number at the top of the square.
- Write the element's name under the symbol.
- Write the atomic mass at the bottom of the square.

Step 2: Determine the number of protons, neutrons, and electrons in each element.

Step 3: Create an atomic structure diagram for each element.

Step 4: Draw the Bonding Structure for each element.