Name_____ Period_____ Binder Page #_____

Chemistry of Life

A. **Identify and define the parts of an ATOM.**

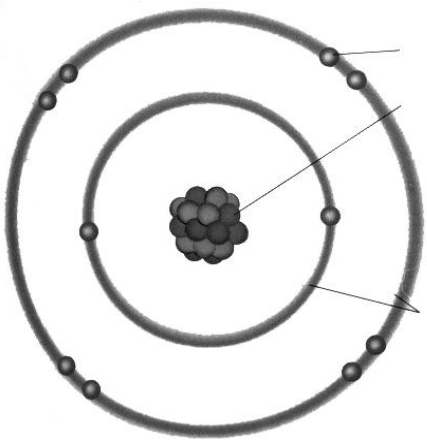
Atoms: The _____ particle that can exist and still be considered a certain kind of matter.

- All _____ and _____ things are made up of atoms.

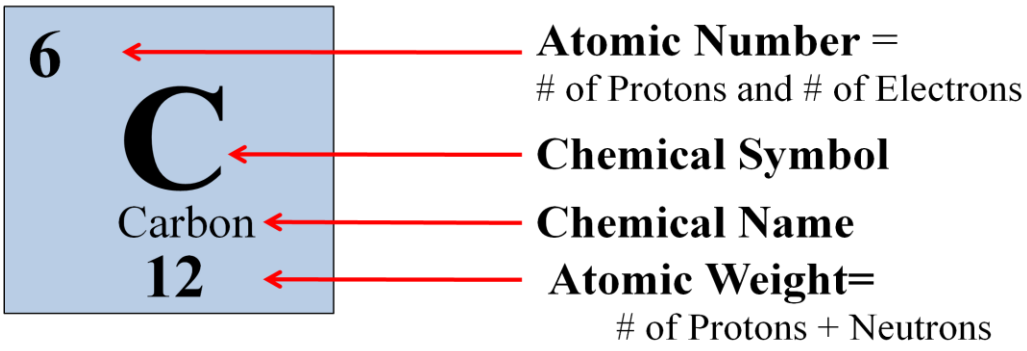
Electrons: _____ charged; surround the nucleus

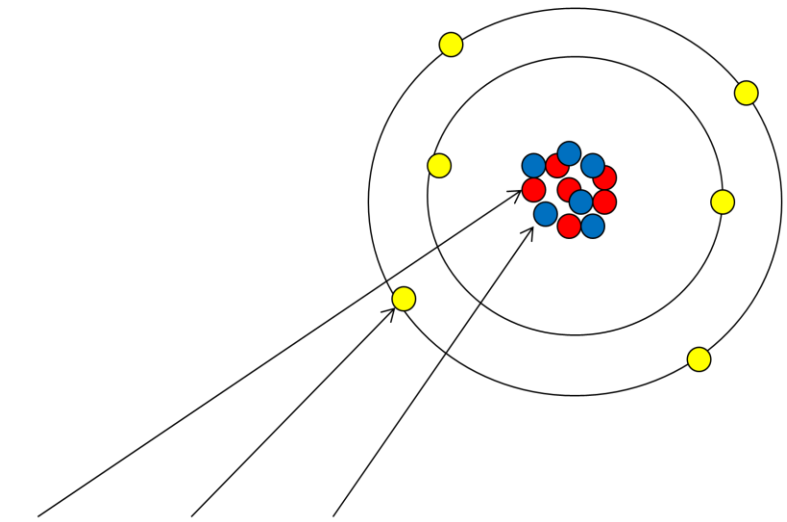
Protons: _____ charged; found in the nucleus

Neutrons: _____ charge; found in nucleus



B. **Demonstrate how to use the PERIODIC TABLE OF ELEMENTS**





Remember: No more than 2 electrons on first ring, No more than 8 on second

P= 6 E=6 N= 6 (Atomic Weight- Atomic # = Neutrons)

C. **List the major chemical ELEMENTS and COMPOUNDS.**

Elements:

C=

H=

O=

P=

K=

I=

N=

S=

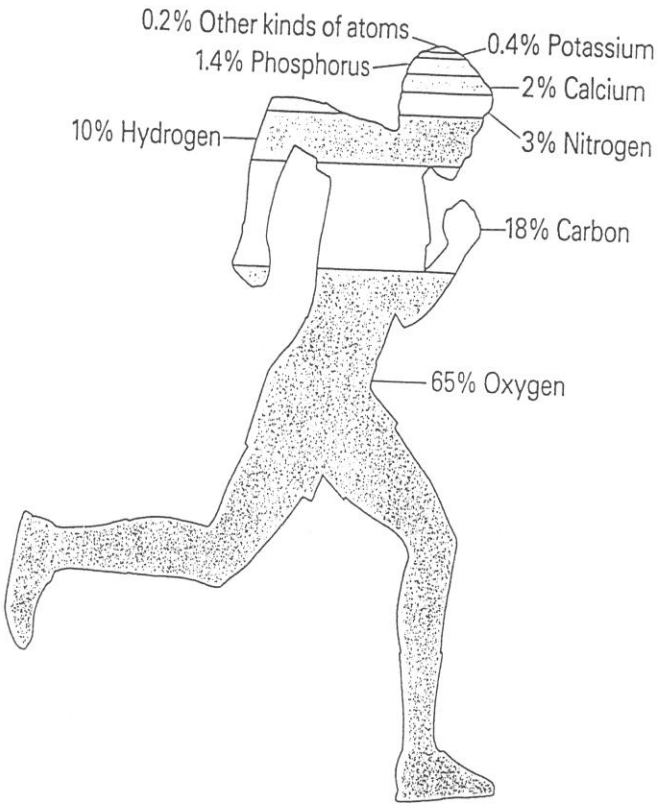
Ca=

Fe=

Mg=

Na=

Cl=

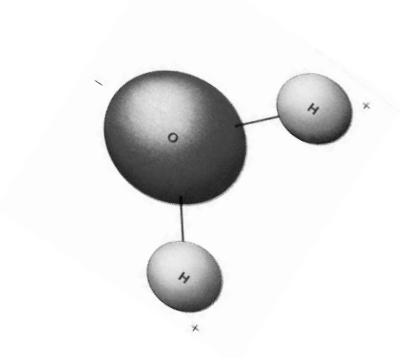


Where do we find these elements?

Compounds:

- **Compounds:** matter that is made of more than _____ kind of _____.
- Compounds are made by atoms sharing or taking _____ from the other atoms in the compound

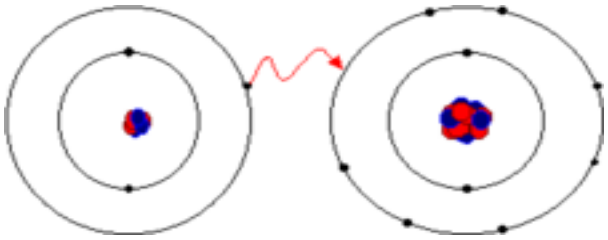
-Example: Water (H2O): Each molecule is made of two _____ atoms and one _____ atom.



Chemical Bonds: The main types of Chemical Bonds in a compound are:

-

-



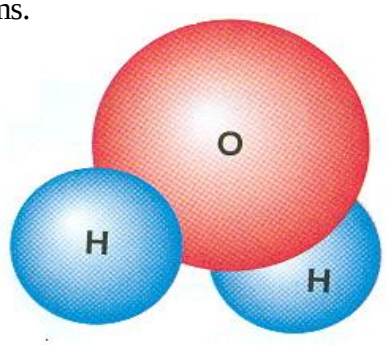
Ionic Bond: An ionic bond is formed when one or more electrons are transferred from one atom to another.

Covalent Bond: formed when electrons are shared between atoms.

Single Bond:

Double Bond:

Triple Bond:



Molecule: The structure that results when atoms are joined together by a covalent bond.

D. **Explain the properties of WATER.**

Draw a water molecule below

Properties of Water

Cohesion= an attraction between molecules of the _____ substance.

- Cohesion causes molecules on the surface of water to be drawn **inward,** which is why drops of water form beads on a smooth surface.

Adhesion= an attraction between molecules of _____ substances.

- Example: water is absorbed into a paper towel

Capillary action= One of the forces that draws water out of the roots of a plant and up into it's stems and leaves.

E. **Summarize the importance of WATER IN AGRICULTURE.**

Why is water so important to agriculture?

-Atleast _____% of an animal's body mass is water

-Plants contain_____% water

-Transports _____ and _____

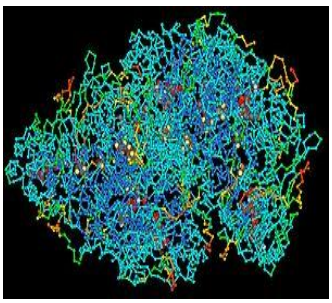
-Dissolves compounds—"_____"

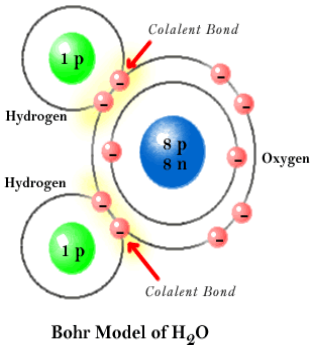
-Regulates_____ in animals

-Provides _____ for plants

F. **Identify the function of the four major MACROMOLECULES.**

Macromolecule=





Bohr Model of H_2O

List 4 Major Macromolecules:

1-

2-

3-

4-

Carbohydrates:

-
- Three types: Monosaccharides, Disaccharides, and Polysaccharides.

Monosaccharides:

- Simple_____
- Contain _____
- Examples:

Disaccharides:

- Double _____
- Contains 2 _____
- Examples:

Polysaccharides:

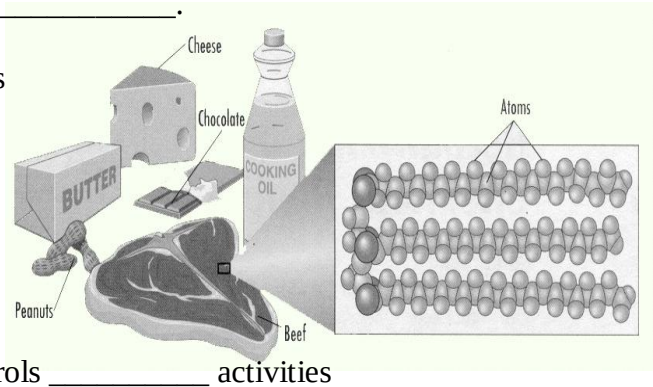
- Comples_____
- Made of _____ of _____
- Examples:

Proteins: Provide Structure and Function

- Amino Acids- Building _____
  - 20 different kinds, all have the same elements but in different amounts
- Polypeptides- chains of _____ joined by peptide bonds.
- Proteins: chains of _____
- Used to make:

Lipids:

- _____ molecules
- Used to store _____
- Do not _____ in _____.
- Lipids have less oxygen than carbohydrates
- Examples:



Nucleic Acids

- Store _____ that controls _____ activities
- Made of a _____ and a _____.
- Examples:

G. **Explain the role of ENZYMES.**

- Cells use enzymes to _____ chemical reactions that take place in cells.
- Enzymes must collide with enough _____ to break bonds creating chemical reactions.
- Chemical reactions create_____