

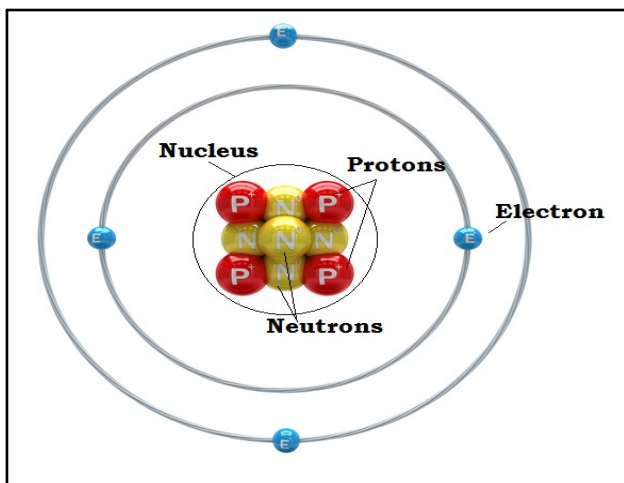
Chemistry of Life
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Nov 6-10:20 AM

The Nature of Matter

- 1) Everything around you is made of matter and energy.
- a. Matter is anything that has mass and takes up space.
 - b. Energy can hold matter together or break it apart.
 - c. Matter is made of atoms.
 - i. A nucleus contains protons and neutrons.
 - ii. Outside the nucleus are electrons, which are involved in chemical reactions.

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Nov 6-11:00 AM

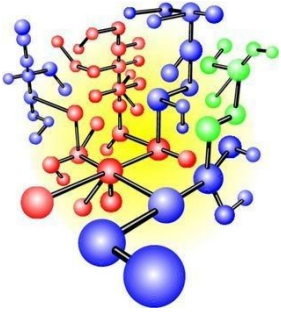
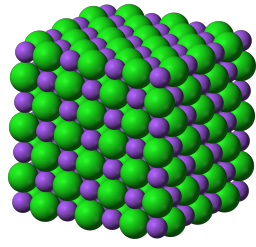
- a. Elements-made up of only one kind of atom.
 - i. Cannot be broken down into a simpler form by ordinary chemical reactions.
 - ii. Arranged in a chart called the periodic of elements.

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Nov 6-11:03 AM

- a. Compounds - made of two or more elements in exact proportions.
 - i. Have properties that are different from elements they are made of
 - ii. TWO TYPES:
 1. Molecular Compound
 - a. Molecule - group of atoms held together by the energy of a chemical bond
 - b. Formed when atoms share electrons.
 2. Ionic Compound
 - a. Ions - electrically charged atoms, positive or negative
 - b. Ions of opposite charges attract to form neutral compounds

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<p>Molecular Compound</p>  <p>water, carbon dioxide</p>	<p>Ionic Compound</p>  <p>salt, rock</p>
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Nov 6-11:12 AM

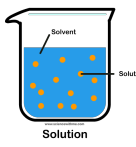
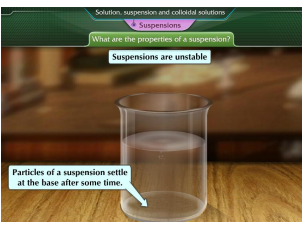
2) Mixture - combination of substances in which individual substances keep their own properties

- a. Solution - mixture in which two or more substances are mixed evenly in water. (dissolves)
- b. Suspension - forms when a liquid or gas has another substance evenly spread throughout it. (does not dissolve)

Examples of Mixtures:

- mixing salt and sugar
- mixing sand and water

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<p>Solution</p> <p>sugar in coffee</p> 	<p>Suspension</p> <p>blood in a test tube - blood cells sink to bottom</p> 
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3) Organic compounds - contain carbon and hydrogen and are usually associated with living things.

- a. carbohydrates - supply energy for cell processes
- b. lipids - store and release large amounts of energy
- c. protein - are the building blocks of many structures
 - i. amino acids - smaller molecules that make up protein.
 - ii. enzymes - proteins that regulate nearly all chemical reactions in cells.
- d. nucleic acid - store important coded information in cells.

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<p>Carbohydrates</p> 	<p>Lipids (fats)</p> 
<p>Protein</p> 	

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Amino Acids

19 essential to keep your body going

10 are made by your body

9 must be obtained from food

- Break down food
- Grow
- Repair body tissue
- give you energy

Nov 6-11:43 AM

http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_enzymes_work.html

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4) Inorganic compounds - usually made from elements other than carbon

5) Importance of water

a. Living things are composed of more than 50% water and depend on it to survive.

b. All chemical reactions in living things take place in water solutions

c. Most living things use water to transport materials through their bodies.

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Organic Compounds found in Living Things				
	Carbohydrates	Lipids	Proteins	Nucleic Acids
Elements				
Examples				
Function				

Nov 6-12:06 PM

Vocabulary	
Mixture	
Organic Compound	
Enzyme	
Inorganic Compound	

Nov 6-12:07 PM