

Biomolecules unit

What you'll need to know...

In this unit you will be learning a series of concepts. If you master these you will have an excellent grasp of organic chemistry and biomolecules. The trick here is to learn the details, which is the reason that we have assembled here together!!!

17 important concepts you need to know

- 1. Life's diversity depends on the characteristics of carbon chemistry*
- 2. Functional groups determine the properties of organic molecules*
- 3. Cells make a huge number of molecules from smaller units*
- 4. Monosaccharides are the simplest carbohydrates*
- 5. Cells link simple sugars to form carbohydrates*
- 6. Polysaccharides are long chains of sugar units*
- 7. Lipids include fats that are mostly energy storage molecules*
- 8. Phospholipids, waxes and steroids are lipids*
- 9. Proteins are essential to structures and activities of life*
- 10. Proteins are made up of only 20 kinds of amino acids*
- 11. Amino acids are linked by peptide bonds*
- 12. A protein's shape determines its function*
- 13. A protein's primary structure is its amino acid sequence*
- 14. Secondary structure is the polypeptide folding due to hydrogen bonds*
- 15. Tertiary structure is the overall shape of a polypeptide*
- 16. Quaternary structure is the relationship between many polypeptides in a protein*
- 17. Nucleic acids are information rich polymers of nucleotides*

Water

1. Look over the basic material in chapter 4 related to water.
 - a. You should know basic terminology
 - b. Know about the polarity of water
 - c. Know the words solvent, solute, solution, suspension
 - d. Know in general the Ph scale and its importance in Biology

Below are the basic concepts you should understand about water:

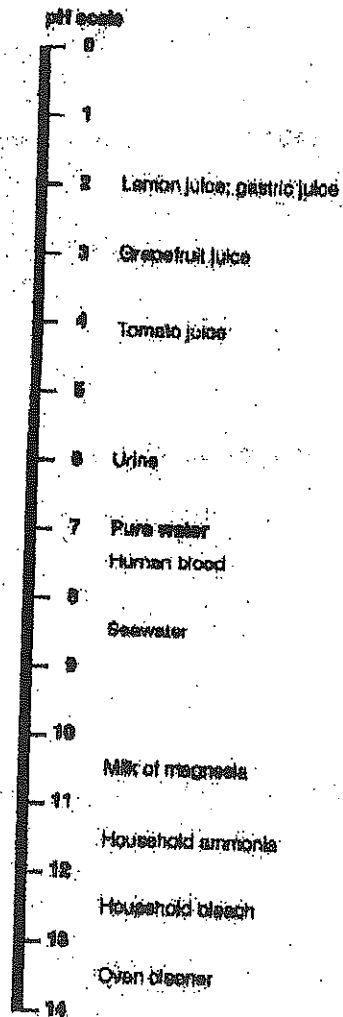
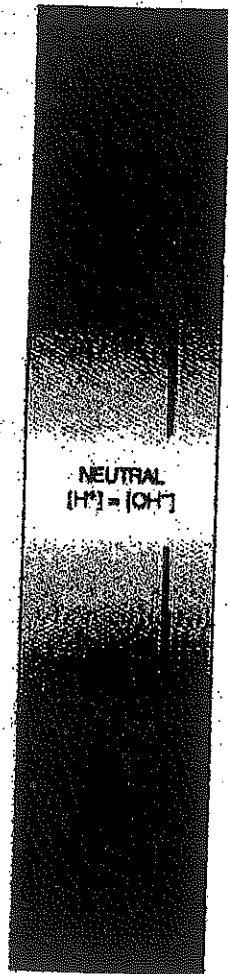
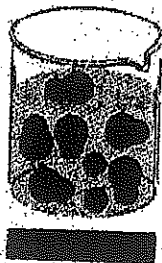
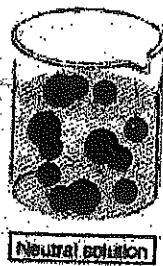
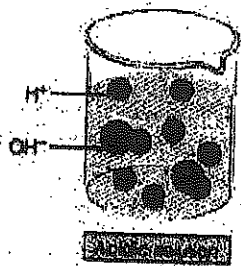
Concept 1: Water is a polar molecule:

Concept 2: Water's polarity leads to hydrogen bonding and other properties.

Concept 3: Hydrogen bonds make water cohesive.

Concept 4: Ice is less dense than water.

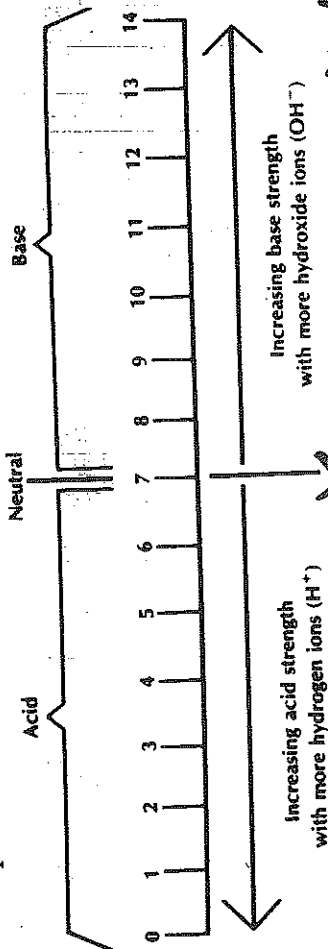
Concept 5: Water is a versatile solvent.



pH scale

Acids And Bases

Many of the common liquids you use each day are acids or bases. Other solutions are considered to be neutral. The pH of a substance indicates how acidic or how basic the substance is. The pH may be measured by using pH paper. The color change of the paper, when compared with a color scale, reveals the pH of the substance. The pH scale is reviewed in the illustration below.



H^+
hydrogen
ions

OH^-
hydroxide
ions

alkaline (base)

