

Summer MCAS Enhancement Program
Week 1 Key Terms

7 Characteristics of Life

Cellular organization – all organisms have one or more cells, which is the basic unit of life

Heredity - the passing of traits from parent to offspring

Homeostasis - the maintenance of stable internal conditions in spite of changes in the external environment

Metabolism - the sum of all the chemical reactions carried out in an organism

Responsiveness – ability to respond to stimuli from the external environment

Growth and Development – growth is the increase in living material and development is a change in an individual during its life

Reproduction - the process by which organisms make more of their own kind

Organic Compounds and their Building Blocks

Carbohydrates - glucose

Lipids – fatty acid and glycerol

Proteins – amino acids

Nucleic Acids – nucleotides

Elements of Living Things

C (carbon)

H (Hydrogen)

O (Oxygen)

N (Nitrogen)

P (Phosphorus)

S (Sulfur)

Enzymes - Substances (mostly proteins) that increase the speed of chemical reactions

Atom - the smallest unit of matter that cannot be broken down by chemical means

Consists of three kinds of particles:

Electrons: negatively charged (-)

Protons: positively charged (+)

Neutrons: no charge

Element - a pure substance made of only one kind of atom

Molecule - a group of atoms held together by covalent bonds (sharing of electrons between atoms)

Density - mass per unit volume (mass/volume)

Cohesion - the attraction between substances of the same kind

Adhesion - an attraction between different substances

Surface tension - Water molecules are linked together at the surface by hydrogen bonds this prevents the surface from breaking (“skin”)

Polar molecules – molecules that have an unequal distribution of electrical charges (one positive pole and one negative pole)

Acid - compounds that form Hydrogen ions when dissolved in water (pH = 0 → 6.9)

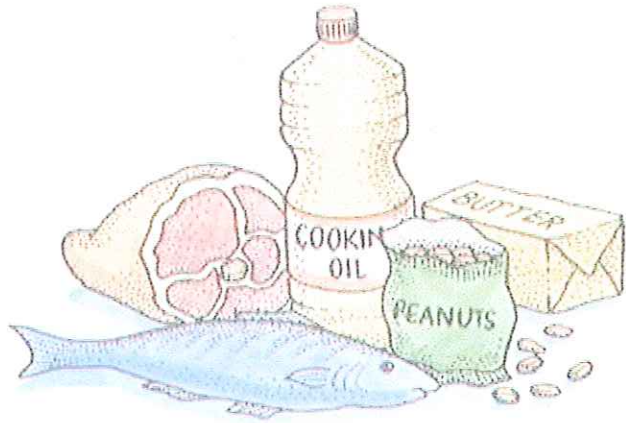
Base - compounds that reduce the concentration of hydrogen ions and increases the concentration of Hydroxide ions (pH = 7.1 → 14)

pH - a measure of the hydrogen ion concentration within a solution

Salinity - the saltiness or dissolved salt content of a body of water



CARBOHYDRATES

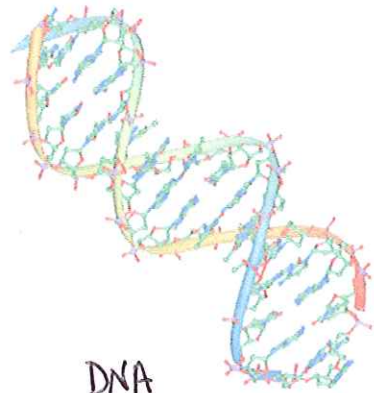


LIPIDS



PROTEINS

*ADAM.



DNA