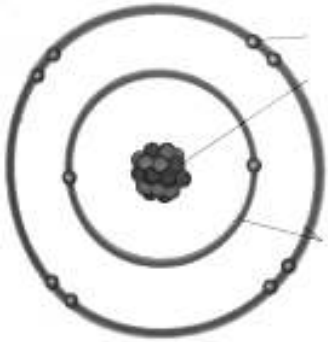
Name _____

Chemistry of Life

Matter -- anything that has _____ and takes up _____
-- _____ is made of matter

Atoms – the _____ particle that can exist and still be considered a certain kind of matter; all _____ and _____ things are made of atoms



Atoms have three components

1. _____ -- negatively charged
2. _____ -- positively charged; found in nucleus
3. _____ -- neutral; found in nucleus

Elements -- a substance that is made of only _____ kind of _____

Some Major Elements found in or required by living things

C. H O P K I N S Ca Fe Mg Na Cl

- _____, _____, _____, _____ make up more than _____ of the mass of a human.
- ** _____, _____, _____, _____, _____, _____ make up _____ of all living things

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

Bonding

- Atoms _____ with other atoms when conditions are right to become more _____.
- This means their _____energy level is _____.
- To become more stable they share or take _____from other atoms (_____).

Covalent Bonds

- When atoms _____electrons to bond.

Ionic Bonds

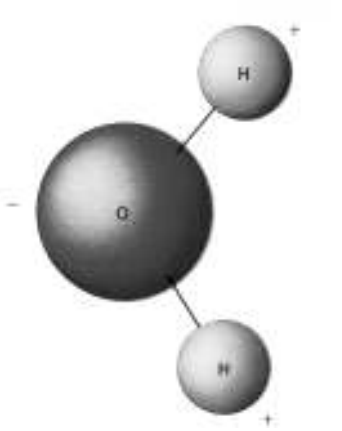
- When atoms _____or _____electrons to bond with another atom.

Chemical Reactions

- Chemical reactions occur when bonds between atoms are _____or _____.
- Chemical reactions occur _____and _____inside _____.
- All of the chemical reactions that occur within an organism are referred to as that organisms _____.

Name _____

Inorganic (Non-living) Compounds



Water (_____) – each molecule is made of two _____ atoms and one _____ atom

Unique Properties of Water

- Water molecules cling to each other as a result of _____bonds.
- This attraction of water molecules to each other is called _____.
- _____ _____is a film-like surface on water caused by cohesion.
  - Importance:

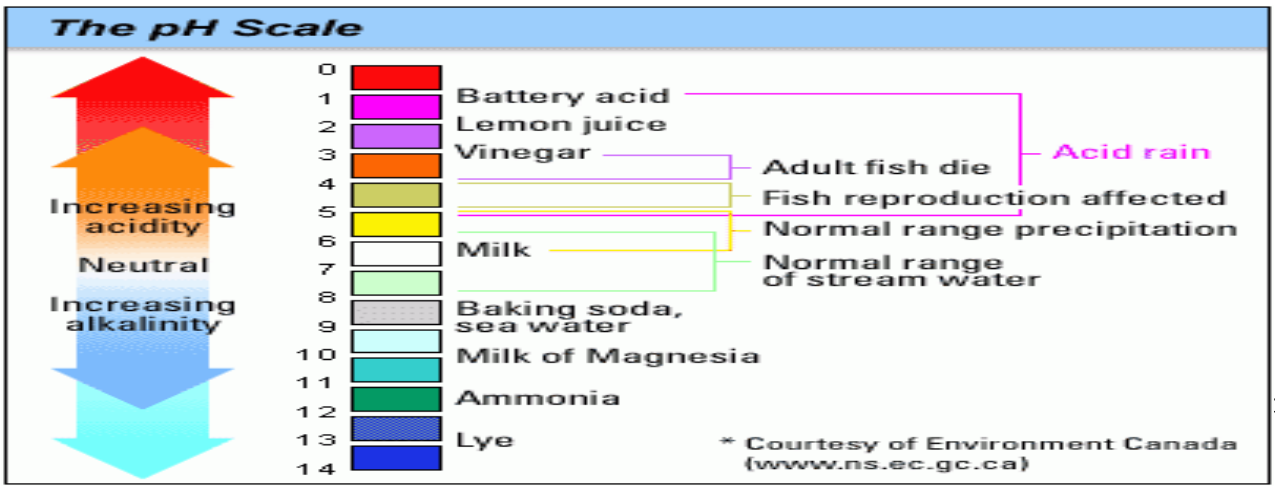
- _____ _____moves water and all of the things that are dissolved in it around.
  - Importance:

- Only substance found in all three states -- _____, _____, _____
- _____ – Water changing from a liquid to a gas.
  - Importance:

- High _____ _____ index -- water can absorb a lot of heat before it begins to get hot.
  - Importance:

- Water is called the "_____ _____" because it dissolves more substances than any other liquid. This means that wherever water goes, either through the ground or through our bodies, it takes along valuable chemicals, minerals, and nutrients.
  - _____– a mixture in which one or more substances (_____) are distributed evenly in another substance (_____).
  - _____– a combination of substances in which the individual components _____their own properties.

  The pH Scale
  - pH – is a measure of how _____or _____a solution is.
    - Substances with a pH below 7 are _____.
    - Substances with a pH above 7 are _____.
    - _____ _____depend on a certain pH.

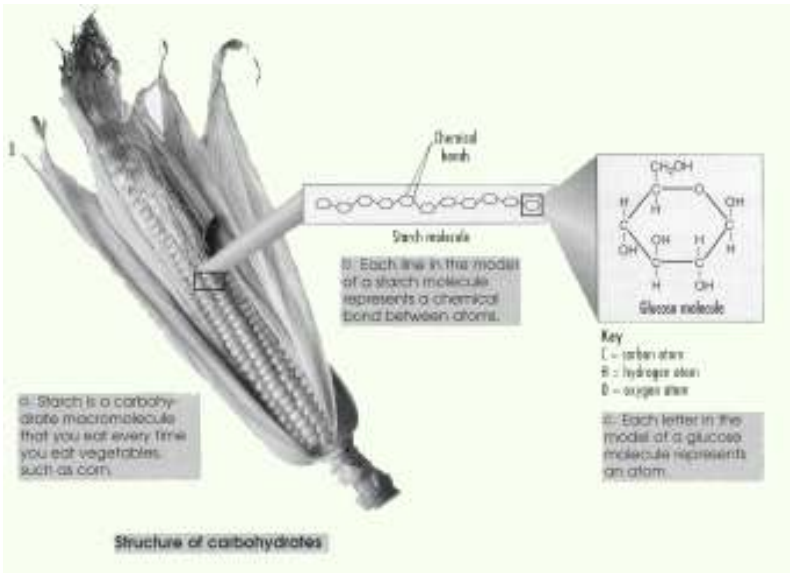


Name _____

SO, why is water so important in nature?

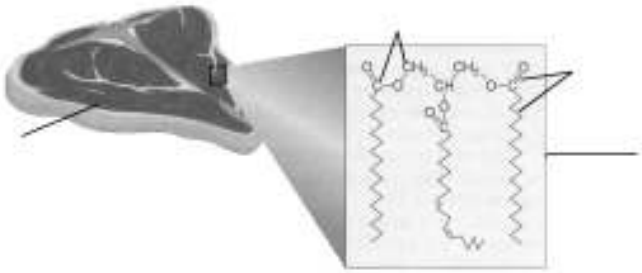
- _____
- _____
- _____
- _____
- _____
- _____

Organic Compounds



Carbohydrates – provide _____

- Monosaccharides – simple _____
  -- contain $C_6H_{12}O_6$
  _____, _____
  and _____
- Disaccharides – double _____
  -- contain two _____
  _____ and _____
- Polysaccharides – complex _____
  -- made of _____ of _____
  _____, _____ and
  _____



Proteins – Provide cell _____and _____

- Make up _____
- Made of _____
- Amino Acids – building _____
  - _____different kinds – all have the same elements but in different amounts
- Proteins – chains of _____

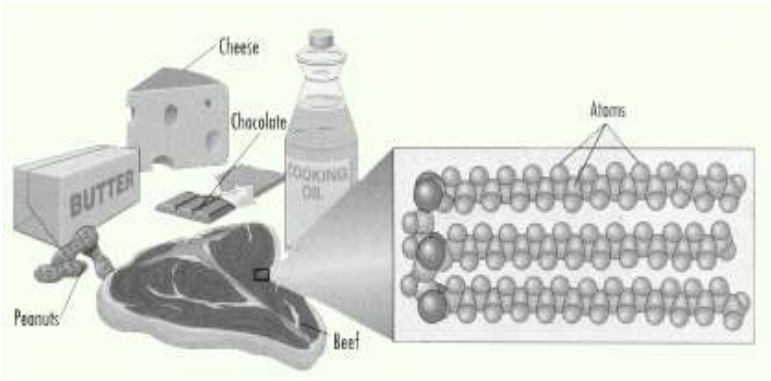
Used to make _____, _____, _____, _____, etc.

Enzymes -- An enzyme is a _____that changes the rate of a _____ reaction. They are involved in nearly all _____processes.

Name _____

Lipids – _____ molecules

- used to store _____
- Make up cell _____
- Made of long _____of H & C followed by COOH
- Do not _____ in _____
- Lipids have less _____ than carbohydrates
- Examples of Lipids are: _____, _____, _____



Nucleic Acids – store _____ that controls _____ activities

- Made of a _____, a _____, and a _____.
- Examples of Nucleic Acids are: _____ and _____
- Also known as the _____ _____of DNA