I. Scientific Method

A. Observation

B. Hypothesis

1. Prediction

2. Working explanation

C. Experiment

1. Groups

a. Experimental

b. Control

2. Replications

D. Conclusion

E. Theory

a. Microevolution

b. Macroevolution

1. Evolution

a. Artificial selection

b. Natural selection

F. Scientific law

1. Conservation of mass law

2. Gravity

II. Characteristics of life

A. Complexity

1. Cellular

2. Order

3. Organismal

B. Metabolism

1. Photosynthesis

2. Cellular respiration

3. Producer

4. Consumer

5. Decomposer

C. Homeostasis

D. Respond to the environment

E. Reproduce and grow

F. Contain genetic information

1. DNA & RNA

G. Adapt

III. Levels of organization

1. Atom

2. Molecule

3. Cell

4. Tissue

5. Organ

6. Organ system

7. Organism

8. Species

9. Population

10. Community

11. Ecosystem

12. Biosphere

IV. Classification

A. Division

1. Bacteria

2. Archaea

3. Eukarya

B. Kingdoms of Eukarya

1. Protista

2. Fungi

3. Plantae

4. Animalia

INORGANIC CHEMISTRY

I. Atom

A. Atomic structure

1. Nucleus

2. Electrons

3. Electron shells

1st

2nd

3rd

B. Atomic number

C. Atomic mass

D. Ions

1. Anion

2. Cation

E. Isotope

II. Molecular bonds

A. Conditions

B. Number of times an atom will bond

C. Ionic bond

D. Covalent bonds

1. Nonpolar covalent

2. Polar covalent

E. Hydrogen bond

F. Peptide bond

III. Chemical reactions

A. Conservation of mass law

1. Reactants

2. Products

3. Symbols

B. Condensation (dehydration synthesis)

C. Hydrolysis

D. Oxidation / Reduction (redox)\

IV. pH

A. pH scale

B. Acid

C. Base

D. Buffer

V. Properties of water

A. Polar

B. Temperature stabilization

C. Solvent

1. Sphere of hydration (hydration shell)

D. Capillary action

1. Adhesion

2. Cohesion

ORGANIC CHEMISTRY

Organic

I. Properties of carbon

II. Organic macromolecules

A. Carbohydrate

1. Simple

2. Complex

3. Elements

4. Basic unit

5. Function

6. Structural formula

B. Lipids

1. Main property

a. Hydrophilic

b. Hydrophobic

2. Elements

3. Basic unit

4. Function

5. Sterols

6. Structural formula

a. Saturated

b. Unsaturated

c. Cis

d. Trans

C. Proteins

1. Elements

2. Basic unit

3. Function

4. Structural formula

a. Amino acid

D. Nucleic acid

1. Elements

2. Basic unit

3. Function

4. Types