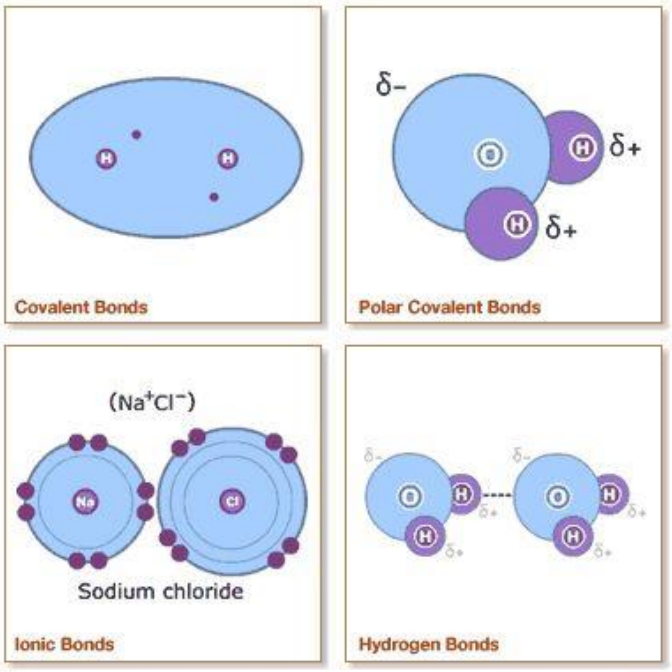
Study Guide: Unit 1 Test

HONORS BIOLOGY: UNIT 1

Directions: *The list below identifies topics, terms, and concepts that will be addressed on your Unit 1 Test. This list should help you focus your review. This is <u>not</u> a homework assignment you will turn into me.*

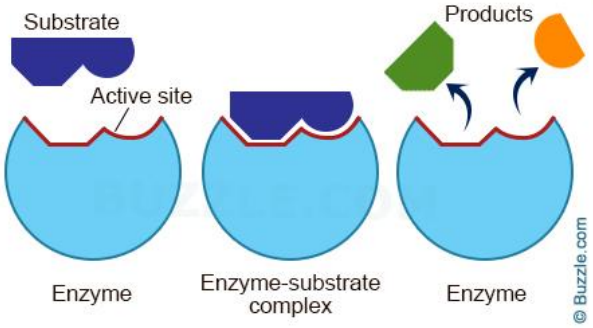


Chemical Bonds

- 3 types of bonds
  - Examples of each
  - Comparative strengths of bonds
- Importance of electron configuration
- Importance of each type of bond

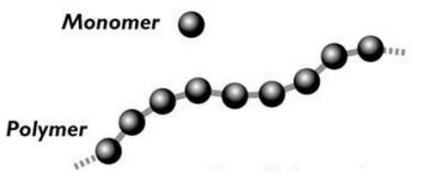
Enzymes

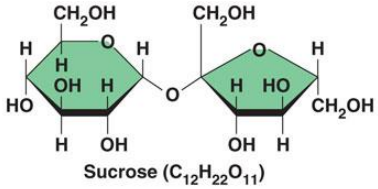
- Importance to living things
- Effects of enzymes on chemical reactions
- Homeostatic imbalances and effect on enzyme action (pH and temperature)
- Lock and key model
  - Enzyme
  - Substrate
  - Active site
- Importance of 3-demensional shape
  - "Structure determines function"

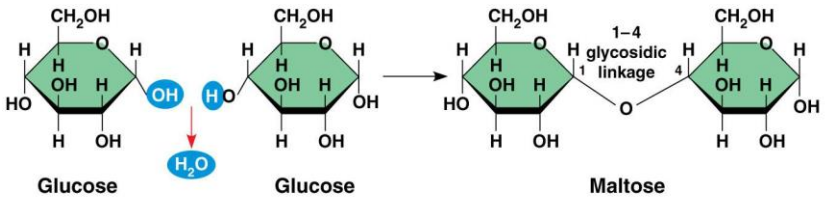


Organic Compounds

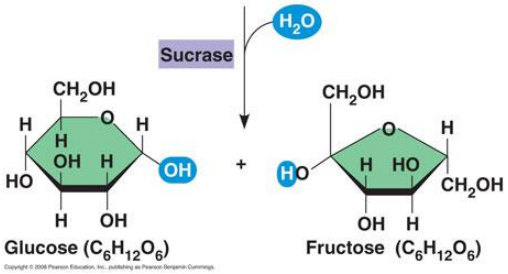
- Unique qualities of carbon
- 4 categories of carbon-based (organic) compounds
  - Monomers and polymers of each
  - Importance to living things
  - Structures (parts of) of monomers
- Dehydration synthesis (examples)
- Hydrolysis (examples)
- Good and bad lipoproteins
- Metabolism, catabolism, anabolism
- Chemical indicators (benedicts, biurets, iodine)
  - Positive (+) color changes
  - Used for which organic compounds
- Lipoproteins (good and bad types)
- Compare and contrast saturated and unsaturated fats





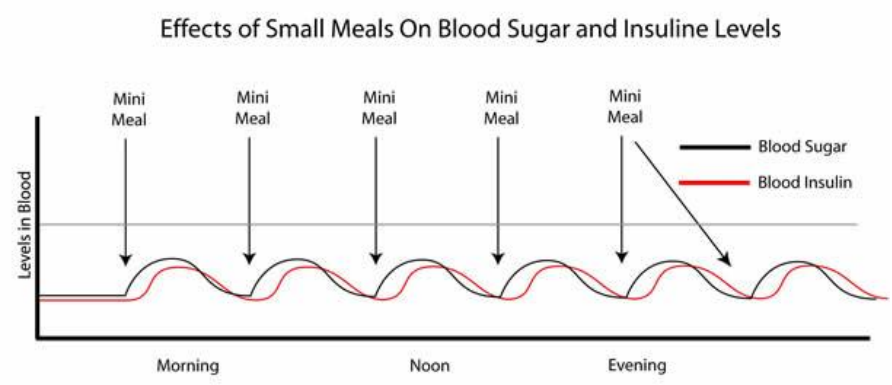


(a) Dehydration reaction in the synthesis of maltose



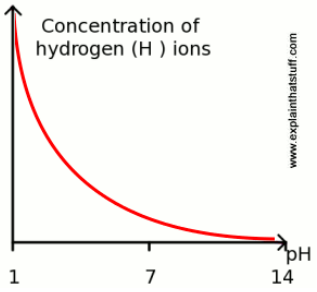
Homeostasis

- Definition
- Examples of homeostasis
- Negative feedback systems (and positive feedback)
- Homeostatic imbalances and effect on human body



pH

- pH scale
- What differentiates an acid from a base
  - Relative hydrogen ion (H^+) concentration



Scientific Method

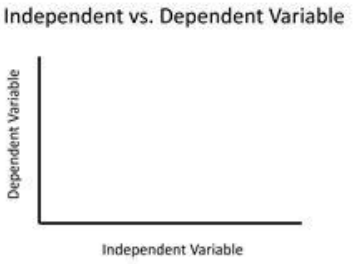
- Steps of Scientific Method
- Controlled experiment (importance)
- Variables
  - Dependent variables (observed and measured)
  - Independent variables (manipulated)
  - Controlled variables (constants)
- Reading graphs and data tables
  - Placement of dependent and independent variables

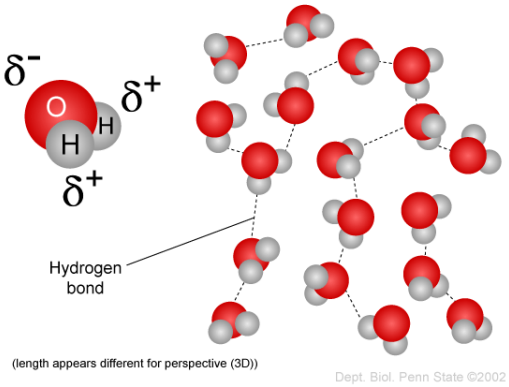
Data Analysis

- Interpreting graphs and data tables
- Interpreting experimental data and forming conclusions

Properties of Water

- Polarity of water molecule
- Adhesion
- Cohesion
- Specific heat





Chemistry

- Ions
- Atoms
- Elements
- Chemical compound
- Chemical reactions
  - Reactants and products
  - Activation energy
  - Endothermic and exothermic reactions
  - Equilibrium
- Solutions
  - Solute
  - Solvent
  - Homogeneous mixtures
- Suspensions
  - Precipitate
  - Heterogeneous mixtures
- Inorganic/organic compounds

TYPES OF ORGANIC COMPOUNDS

· There are **4** types of organic compounds. They are:

ORGANIC COMPOUNDS	COMPOSITION	FUNCTION(S)
CARBOHYDRATES	C, H, O	SOURCE OF ENERGY
LIPIDS	C, H, O	CUSHIONING, INSULATION, ENERGY
NUCLEIC ACIDS	C, H, O, N, P	DIRECT AND CONTROL ACTIVITIES
PROTEINS	C, H, O, N	STRUCTURE AND FUNCTION