

**SBI4U BIOCHEMISTRY Unit Checklist**

Name: _____

Mastery Checks may be attempted more than once and are not considered complete until $\geq 70\%$ is achieved.

Notes and activities will be checked for completion & corrections.

Topic	Objective(s)	Key Concepts	Approx. # classes	Notes	Mastery Check Inc. # of attempts
1	Cells & Organelles: <i>Explain the role of various organelles in cellular processes</i>	- Eukaryotic vs. Prokaryotic - Comparing Plant & Animal Cells - Structure & Function of organelles	1		
2	Atoms, Bonding & Polarity: <i>Understand various types of bonds between elements Identify molecules as polar, non-polar and their solubility Explain the unique properties of water</i>	- Atomic Structure - Isomers - Isotopes - Bonds: Ionic, Covalent, Intermolecular, Hydrogen - Electronegativity - Polar vs. Non-Polar, dipoles - Adhesion & cohesion	2		
3	Functional Groups: <i>Identify common functional groups within biological molecules Explain how they contribute to function</i>	- Carboxyl - Carbonyl (aldehyde, ketone) - Hydroxyl - Amino - Phosphate - Sulfhydryl	2		
4	Macromolecules: <i>Describe the structure of biochemical compounds (carbohydrates, proteins, lipids, nucleic acids) Explain their functions within cells</i>	- Monomers & Polymers - Structures, functions & uses - Bonds: glycosidic linkages ester linkages peptide bonds phosphodiester bond - Dehydration & Synthesis Reactions	6		
5	Enzymes: <i>Explain chemical structures and mechanisms of various enzymes</i>	- Models: Induced Fit & Lock & Key - Factors Affecting Rate of Reaction (denaturing) - Cofactors - Competitive Inhibitors - Allosteric Regulation	5		
6	Types of Chemical Reactions: <i>Identify & describe the 4 main types of biochemical reactions (condensation, neutralization, hydrolysis, redox)</i>	- Anabolic (dehydration synthesis) vs. Catabolic (hydrolysis) - Redox - Neutralization	1		X
7	Phospholipid Bilayer & Transport: <i>Describe the structure of cell membranes Explain the dynamics various forms of transport across membranes</i>	- Structure & Function - Cell Membrane: Fluid Mosaic Model - Passive vs. Active Transport - Facilitated Diffusion - Endocytosis vs. Exocytosis	3		

Assessments & Labs

All assessments & labs must be completed in class and are due at the end of the in-class work period(s) unless otherwise indicated.

SUMMATIVE EVALUATION	DATE
Unit Test	Tentatively Tuesday Oct. 3 rd

Biochemistry Terms to Know



- Activation Energy
- Activator
- Active Form
- Active Site
- Active Transport
- Adenine
- Adhesion
- Aldehyde
- Allosteric Activator
- Allosteric Inhibitor
- Allosteric Regulation
- Allosteric Site
- Amino
- Amino acid
- Amphipathic
- Anabolic
- Analytical
- Antiport
- Aquaporin
- ATP
- Base Pair
- Bioremediation
- Bond Energy
- Buffer
- Carbohydrate
- Carbonyl
- Catabolic Reactions
- Catalyst
- Cholesterol
- Coenzyme
- Cofactor
- Cohesion
- Competitive inhibition
- Concentration
- Concentration Gradient
- Condensation
- Condensation Reaction
- Coupled Transport
- Covalent Bond
- Cytosine
- Dehydration Synthesis
- Denature
- Deoxyribose
- Dialysis
- Diffusion
- Dipole
- Disaccharide
- Disulfide Bridge
- DNA
- Dynamic
- Electronegativity
- Endergonic
- Endocytosis
- Energy
- Enzyme
- Enzyme-Substrate Complex
- Equilibrium
- Ester Bond
- Eukaryote
- Exergonic
- Exocytosis
- Facilitated Diffusion
- Feedback Inhibition
- First Law of Thermodynamics
- Fluid Mosaic Model
- Functional Group
- Glycerol
- Glycolipid
- Glycoprotein
- Glycosidic Linkage
- Guanine
- Heat Capacity
- Hydrogen Bonds
- Hydrolysis
- Hydrophilic
- Hydrophobic
- Hydroxyl
- Hypertonic
- Hypotonic
- Inactive Form
- Induced Fit Model
- Inhibitor
- Integral Protein
- Ionic Bond
- Isomer
- Isotonic
- Isotope
- Ketone
- Kinetic
- Lipid
- Lock & Key
- Membrane
- Metabolism
- Monomer
- Monosaccharide
- Na⁺/K⁺ Pump
- Negative
- Nitrogenous Base
- Non-competitive inhibition
- Non-Polar
- Nucleic Acid
- Nucleotide
- Oligosaccharide
- Osmosis
- Osmotic Concentration
- Oxidation
- Oxidation-Reduction (Redox) Reactions
- Passive Transport
- Pentose Sugar
- Peptide Bond
- Peripheral Protein
- pH
- Phagocytosis
- Pharmaceutical
- Phosphate
- Phosphate Group
- Phosphodiester Bond
- Phospholipid
- Pinocytosis
- Polar
- Polymer
- Polypeptide
- Polysaccharide
- Positive
- Primary
- Product
- Prokaryote
- Protein
- Protein Carrier
- Protein Channel
- Purine
- Pyrimidine
- Quaternary
- Reactant
- Receptor-Mediated Endocytosis
- Reduction
- Ribose
- RNA
- Saturated
- Secondary
- Selectively Permeable
- Simple Diffusion
- Solute
- Solvent
- Steroid
- Substrate
- Sulfhydryl
- Symport
- Temperature
- Tertiary
- Thalidomide
- Therapeutic
- Thymine
- Transition State
- Triglyceride
- Unsaturated
- Uracil
- Vesicle
- α – Helix

Mastery Checks:

- Must be written during class or after school during **supervised** extra help times.
- Up to 3 attempts are permitted during class time. If more attempts are required they must be completed after school.
- **Mastery** or a **minimum of 3** attempts must be completed to consider a topic complete
- Keep track of the number of attempts on the unit checklist
- Must be attempted as you progress through the topics – you **cannot** let them accumulate until the end of the unit