

Biology Accuplacer Readiness Test Study Guide

Chemistry of Life

- Subatomic particles and atomic structure
- Chemical bonds
- Acids, bases, and pH
- Water properties and polarity
- Solutions: solute, solvent, buffer
- Organic molecules and polymers

Cell Structure & Function

- Cell theory and basic unit of life
- Organelles and their functions
- Cell membrane structure & function
- Membrane transport mechanisms
- Tonicity
- Tissues and cell organization

Cell Division & Reproduction

- Mitosis
- Meiosis
- Somatic vs gamete cells
- Crossing over and connection to genetics

Genetics & Heredity

- Inheritance
- Genotype vs. phenotype
- Dominant and recessive alleles
- Heterozygous and homozygous genotypes
- Genes and chromosomes
- Sex-linked disorders



DNA, RNA, & Protein Synthesis

- DNA structure and base pairing
- DNA replication
- Transcription and translation
- Role of mRNA, tRNA, and ribosomes
- Nucleic acids as macromolecules

Enzymes & Biochemical Reactions

- Metabolism
- Enzyme function and substrate interaction
- Activation energy and enzyme denaturation
- Factors affecting enzyme activity
- Catabolic vs. anabolic reactions
- Examples of metabolic processes (e.g., protein synthesis, glycolysis, oxidative phosphorylation)

7. Thermodynamics in Biology

- First and Second Laws of Thermodynamics
- Exergonic vs. endergonic reactions
- Energy transfer and entropy
- ATP as the energy currency of the cell