



BIOLOGY PACING GUIDE



Below is the order of information for the semester. The goal is to spend anywhere from 1-2 weeks per unit, but the timing may change if needed.

Unit	Topic	Sub-Topics
1	Introduction to Class	Syllabus, Procedures, Materials, Pre-Assessment
	Intro to Biological Concepts	What is biology, Characteristics of Life, Technological Design Process, Communication
2	Nature of Science	What is science & how is it done, Hypothesis vs. Theory vs. Law, Credible Sources of Information
3	Process of Science	Lab Equipment / Safety, Measurement, Scientific Method, Graphing / Data Analysis
4	Foundations of Life	Introduction Biochemistry, Atomic Structure, Water & Polarity, Carbon-Based Molecules, Caloric Values, Enzymes
5	Basic Unit of Life	Cell Structure & Function, Eukaryotes vs. Prokaryotes Virus Structure / Reproduction, Cell Membrane Structure & Function, Cellular Transport
6	Life is a Cycle	Binary Fission, Asexual Reproduction, Cell Differentiation, Stem Cells, Cell Cycle & Mitosis, Cancer
7	Bioenergetics	ATP, Autotroph/Heterotroph, Photosynthesis, Cellular Respiration, Fermentation
MIDTERM: End of Quarter 1		
8	All in the Family	Chromosome Types, Haploid / Diploid, Meiosis, Introduction to Genetics
9	Family Tree	Mendelian Genetics, Punnett Squares, Laws of Segregation & Independent Assortment, Dominance; Chromosome Theory of Inheritance, Exceptions to Mendelian Genetics: Co-Dominance, Incomplete Dominance, Polygenic Traits, Multiple Alleles
10	Express Yourself	DNA/RNA Structure & Function, DNA Replication, Protein Synthesis, Extensions of Genetics: mutations, built-in repair mechanisms, effects of mutations in gametes vs. somatic cells, Genetic Engineering & Modification, Pedigrees.
11	Biological Evolution	Charles Darwin, Natural Selection, Adaptations, Mechanisms of Evolution, Evidence of Evolution, Patterns of Evolution, Speciation, Phylogeny
12	Circle of Life	Biotic vs. Abiotic, Levels of Ecology, Interdependence in Nature, Limiting Factors, Biogeochemical Cycles, Ecosystem Maintenance, Succession, Human Impact
Biology EOC (Final Exam)		