**AP Biology Unit 5 – Heredity**

# AP Biology Standards:

* Construct a representation that connects the process of meiosis to the passage of traits from parent to offspring.
* Pose questions about the ethical, social, or medical issues surrounding human genetic disorders.
* Apply mathematical routines to determine Mendelian patterns of inheritance provided by data sets.
* Explain deviations from Mendel’s model of the inheritance of traits.
* Explain how the inheritance patterns of many traits cannot be accounted for by Mendelian genetics
* Describe representations of an appropriate example of inheritance patterns that cannot be explained by Mendel’s model of the inheritance of traits.
* Construct explanations of the influence of environmental factors on the phenotype of an organism.
* Use evidence to justify a claim that a variety of phenotypic responses to a single environmental factor can result from different genotypes within the population.

# Objectives:

* How are traits passed from one generation to the next?
* How do eukaryotic cells store, retrieve, and transmit genetic information?
* How does genotype affect phenotype?
* How are genotype and human disorder related?

Major Topics and Textbook Correlations:

Chapter 14 – Mendel and the Gene Idea

* + Basic Mendelian Inheritance
  + Extending Mendelian Genetics: Multiple Alleles, Pleiotropy, Epistasis, Polygenic Inheritance, Environmental Influence on Genes
  + Mendelian Inheritance in Humans

Chapter 15 – The Chromosomal Basis of Heredity

* + Chromosomal Theory of Inheritance
  + Linked Genes
  + Sex Chromosomes and Sex Linked Disorders
  + Errors and Exceptions in Chromosomal Inheritance