

## Unit: Genetics (Ch. 11, 13-14)

### **“I can...”**

- ✓ *summarize* the findings of Gregor Mendel’s experiments with pea plants.
- ✓ *differentiate* between a gene and an allele.
- ✓ *explain* that alleles occur in pairs on chromosomes with dominant alleles being able to mask recessive alleles.
- ✓ *identify* a pair of alleles as homozygous dominant, homozygous recessive, or heterozygous.
- ✓ *differentiate* between genotype and phenotype.
- ✓ *use* monohybrid Punnett squares to predict the outcomes of the crosses of various traits.
- ✓ *compare* and *contrast* the genotype and phenotype ratios that result from complete dominance, incomplete dominance, and codominance crosses in Punnett squares.
- ✓ *use* the rules of probability to determine the likelihood of an organism having multiple combinations of traits (dihybrid crosses or multiplication rule/addition rule).
- ✓ *use* Punnett squares to analyze inheritance patterns of sex-linked traits.
- ✓ *analyze* a pedigree to trace the progression of an allele through successive generations.
- ✓ *conclude* that blood types result from various combinations of alleles that demonstrate both codominance and complete dominance inheritance.

### **Essential Vocabulary/Concepts:**

addition rule	gene	monohybrid cross
allele	genotype	multiple alleles
autosome	Gregor Mendel	multiplication rule
chromatid	heterozygous	pedigree
chromosome	homozygous	phenotype
codominance	hybrid	polygenic traits
complete dominance	incomplete dominance	Punnett square
dihybrid cross	Law of Independent	recessive
dominant	Assortment	sex-linkage
gamete	Law of Segregation	trait
		true (pure) breeding