Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Genetic Patterns

*Mendel, Punnett Squares, Monohybrid/Dihybrid Crosses, Dominant/Recessive Alleles, Incomplete/Codominance, Multiple Alleles (Blood Types), X-linked Traits, Pedigrees*

Standard 3 / Objectives 2 & 4

**Goals**:

# I can use computational thinking and patterns to make predictions about the expression of specific traits passed on by genes on chromosomes, from parents to offspring.

# I can obtain, evaluate and communicate a conceptual understanding that various inheritance patterns can be predicted by observing the way genes are expressed.

# I can construct an explanation of common allele crosses, including dominant/recessive (Mendelian), incomplete dominance, codominance, or sex-linked alleles.

# I can plan and carry out an investigation, using computational thinking, to explain the variation and patterns of trait distribution within a population.

# I can construct an explanation of the distribution of traits as it relates to both genetic and environmental inﬂuences on the expression of traits.

# **Lab Book:**

* Definitions – *Mendelian genetics, non-Mendelian genetics, gene expression, inheritance patterns, Punnett square, karyotype, pedigree, allele, recessive gene, dominant gene, incomplete dominance, codominance, sex-linked traits, x-linked traits, monohybrid, dihybrid, genotype, phenotype, trait distribution, genetic vs. environmental influence, Pedigree, Autosomal*
* Notes: PowerPoint Slides – Std 3/Obj 2 (Mendel, Punnett Squares)
* Notes: PowerPoint Slides – Std 3/Obj 4 (Pedigrees)
* Handouts
  + Elf Babies [blue]
  + Mendelian Genetics [green]
  + Genetics and Heredity Lab [salmon]
  + Punnett Square Practice [gray]
  + Codominance Worksheet (Blood Types) [hot pink]
  + X-linked Genes [neon orange]
  + Pedigree Review Worksheet [yellow]
* Pedigree – *I’m My Own Grandpa*