Chapter 14

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- Mendel looked at true-breeding purple-flower peas and true-breeding white-flower peas. He went through three generations: P, F_1, and F_2, which are generations 1, 2, and 3, respectively.
- Purple was the dominant allele, with the white flower being recessive.
- Wild type − Refers to the most common (usually dominant) allele.
- Punnett Squares − Used to estimate geno- and pheno- types
    1. Genotype ratio − PP:Pp:pp
    2. Phenotype ratio − Dominant:Recessive
- Law of Segregation − During meiosis, alleles segregate, and homologous chromosomes separate. Each allele for a trait is packaged into a separate gamete.
- Law of Independent Association − Different loci (genes) separate into gametes independently (non-homologous chromosomes align independently). This is only true for genes on separate chromosomes or on same chromosome so far apart that crossing over happens frequently.
- Monohybrid Cross − A probability of a single characteristic
- Dihybrid Cross − Probability of two characteristics
- Mendelian inheritance rules of probability:
    1. Probability of ____ AND ____ happening: multiply the two ratios together
    2. Probability of ____ OR ____ happening: add the two ratios together
- Mendel worked with a simple system − Traits are controlled by a single gene, with 2 alleles and 1 dominant to the other

- Incomplete Dominance − RR is for red flowers, rr is for white flowers. An incompletely dominant gene would mean Rr is pink.
- Codominance − When two alleles are codominant, both are expressed (black and white colored chickens, blood type AB)
- Polygenic Traits − These traits are controlled by two or more genes, such as skin color or height.