

- x. The allele that exerts a controlling influence on the phenotype in a heterozygote is said to be **dominant**.
 - xi. An allele that has no effect on the phenotype when paired with a dominant allele in a heterozygote is said to be **recessive**.
 - xii. A **genetic cross** is a controlled mating experiment performed to examine how a particular trait is inherited.
 - xiii. The parents, or **P generation**, are crossed to produce offspring, called the **F₁ generation**.
 - xiv. Two individuals from the F₁ generation are then crossed to produce the **F₂ generation**.
 - xv. **True-breeding**, or purebred, individuals have a homogenous genotype.
 - xvi. In a **single-trait cross**, the experimenter tracks the inheritance of the two alleles of a *single gene*.
 - xvii. If all F₂ offspring are hybrids for that one trait, as they were in all of Mendel's experiments, this type of cross is a **monohybrid cross**.
 - xviii. Thus, according to Mendel's **law of segregation**, the two copies of a gene are separated during meiosis and end up in different gametes.
 - xix. Mendel crossed **dihybrids**, individuals that are heterozygous for two traits.
 - xx. He observed two nonparental combinations of phenotypes (**recombinant phenotypes**) in the F₂: Round shape; green color (*RRyy* and *Rryy*) Round shape; green color (*RRyy* and *Rryy*).
 - xxi. The **law of independent assortment** states that when gametes form, the two copies of any given allele are sorted independently of any two alleles of other genes.
 - xxii. **Incomplete dominance** of alleles produces an intermediate phenotype in the heterozygote.
 - xxiii. **Codominance** occurs when the effect of both alleles is equally visible in the phenotype of the heterozygote.
 - xxiv. The situation in which a *single gene* influences two or more distinctly different traits is called **pleiotropy**.
 - xxv. The term **epistasis** applies when the phenotypic effect of the alleles of one gene depends on the presence of certain alleles for another, independently inherited gene.
 - xxvi. Traits governed by the action of more than one gene are **polygenic traits**.
 - xxvii. Geneticists estimate there are more than a dozen genes that control melanin production in our skin, which, when coupled with environmental influences, results in **continuous variation** in the trait.
 - xxviii. **Complex traits** are those that cannot be predicted using Mendel's laws of inheritance; complex traits display often display continuous variation in a population.
- c. Chapter Nine Patterns of Inheritance Outline
- i. 9.1 principles of genetics: an overview
 - 1. Intro
 - a. Genetics it's the study of genes