

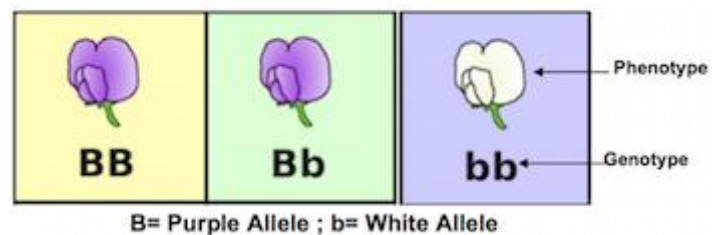
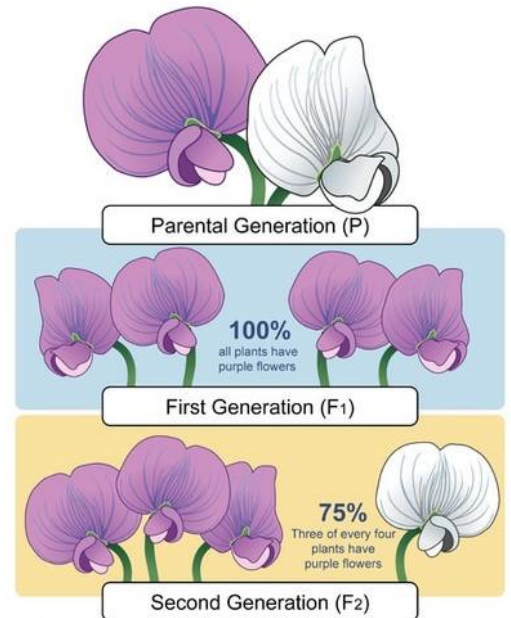
Study Guide: Unit 6 Test

HONORS BIOLOGY: GENETICS

Directions: The list below identifies topics, terms, and concepts that will be addressed on your Unit 6 Test. This list should help you focus your review. This is not a homework assignment you will turn into me.

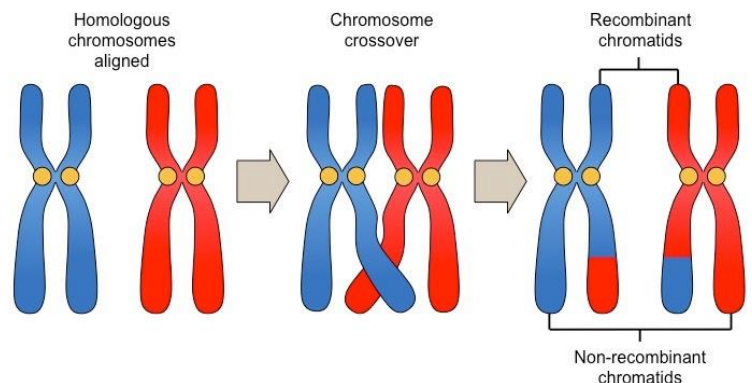
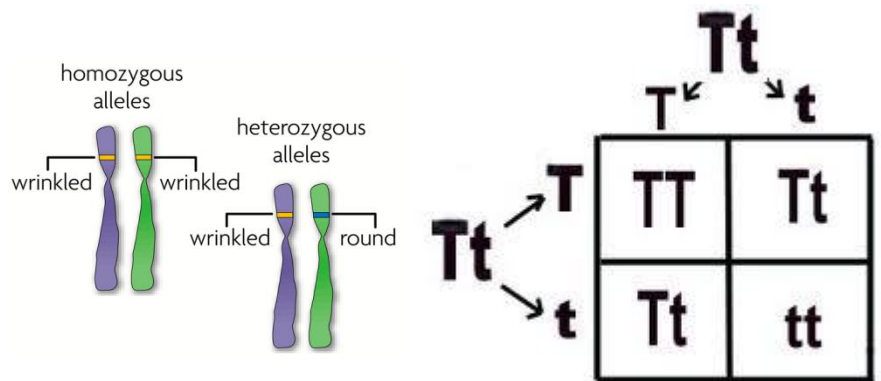
Gregor Mendel

- Genetics (definition)
- Mendel's Experiments
 - 3 key decisions in his experiments:
 - Control over breeding
 - Use of purebred plants
 - Observation of "either/or" traits (only appear two alternate forms)
 - Nomenclature
 - P generation
 - F₁ generation
 - F₂ generation
 - Cross # 1: Purebred white X Purebred purple
 - Cross # 2: Allowed F₁ generation to self-pollinate
 - Terminology
 - Genotype
 - Phenotype
 - Homozygous
 - Heterozygous
 - Dominant
 - Recessive
 - Gene
 - Allele
 - Genome
 - Mendel made three important conclusions
 - Traits are inherited as discrete units
 - Law of segregation



Punnett Squares

- Punnett square problems
 - Monohybrid cross
 - Dihybrid cross
 - Law of Independent Assortment
 - Incomplete dominance
 - Co-dominance
 - Sex-linked
 - Multiple alleles
- Calculate genotypic and phenotypic ratios
- Test Cross

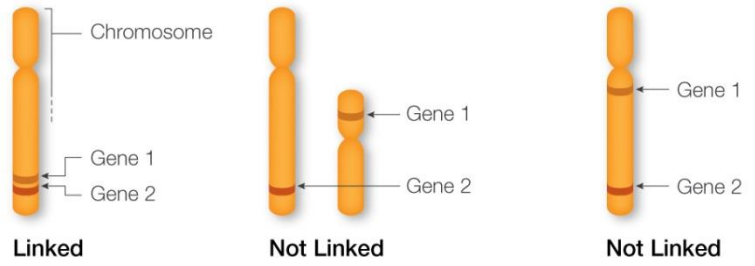


Meiosis and Genetic Variation

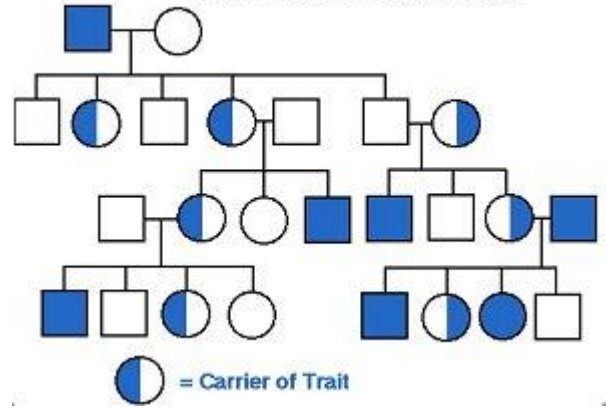
- Sexual reproduction creates unique gene combinations
 - Independent assortment
 - Random fertilization of gametes
 - Crossing Over

Chromosomes and Phenotype

- Linked genes
- Autosomal traits
 - Recessive disorders
 - Examples
 - Carrier
 - Dominant disorders
 - Examples
- Sex-linked traits
 - Examples
 - Expression of Sex-Linked Genes
 - Males vs. females
 - X Chromosome Inactivation
- Polygenic traits
 - Examples
- Epistasis
- Phenotype is more than sum of gene expression
 - Effect of environment
- Epigenetics
- Gene Linkage and Mapping
 - Thomas Hunt Morgan
 - Linked genes
 - Effect of crossing over



Inheritance of Red-Green Color Blindness: an X-linked Recessive Trait



Pedigrees

- Autosomal
- Sex-linked

Karyotype

- How are they used?
- Autosomes
- Sex-chromosomes

