

**HSSU Bio. 201 – Plants and People**  
**Study Guide: Chapter 7 – Genetics**

**Important Terms and Concepts**

General Genetics

Inheritance

Genes

Locus

Alleles

Homologous

Homozygous

Heterozygous

Mendelian Genetics

Garden Peas

Self-fertilizing

True-breeding

Monohybrid Cross

Parental Generation (P)

F1 Generation

F2 Generation

Dominant

Recessive

Phenotype

Genotype

Punnett Square

3:1 Ratio

Testcross

Dihybrid Cross

9:3:3:1 Ratio

Independent Assortment

Incomplete Dominance

Codominance

Multiple Alleles

Polygenic Inheritance

Linkage

Molecular Genetics

DNA Structure

Nucleotides

Bases

G, A, C, T

Phosphate group

Double Helix

DNA

RNA

Transcription

messenger RNA (mRNA)

Translation

RNA Polymerase

Intron

Exon

Codon

Genetic Code

Transfer RNA (tRNA)

Mutations

Point Mutation

Deletion

Insertion

Frameshift Mutation

Inversion

Recombinant DNA

Restriction Enzymes

Plasmid

Gene Splicing

Genetically Modified Organism (GMO)

## **Discussion Questions**

1. In one experiment, Mendel crossed a pea plant that bred true for green pods with one that bred true for yellow pods. All the F1 plants had green pods. Which form of the trait (green or yellow) is recessive?
2. In squash an allele for white color (W) is dominant over the allele for yellow (w). Give the genotypic and phenotypic ratios for the results of each of the following crosses.  
WW x ww  
Ww x Ww  
Ww x ww
3. In the commercial development of seeds, how would you determine if the newly established strain will breed true?
4. What is a gene? How are the genes related to the chromosomes?
5. What is a genetically modified organism (GMO)? How are GMO's produced, and why?
6. Do you think GMO's are beneficial or harmful? Give some examples. How might they be regulated in the food supply?