

LAB 12: MENDELIAN GENETICS AND INHERITANCE PATTERNS

pp. 281-283, 287, 288-292, C29, 298, 324-325, C33-38, C31-32

GOALS:

- Understand the Law of Segregation and the Law of Independent Assortment
- Understand the relationship between genotype and phenotype
- Solve genetics problems with Punnett squares involving:
 - One trait crosses (e.g. autosomal traits)
 - Two-trait crosses (e.g. dihybrid crosses)
 - X-linked traits (e.g. color blindness)
 - Codominance (e.g. blood typing)

KEY TERMS:

gene	allele	genotype	phenotype
homozygous	heterozygous	hybrid	Law of Segregation
monohybrid crosses	dihybrid cross	phenotypic ratio	autosomes
sex chromosomes	sex-linked genes	codominance	Law of Independent Assortment

I. Introduction and Monohybrid Crosses:

-pp. 281-282, top of 283, top of 287: Read and complete practice monohybrid cross Punnett squares (we are not actually counting tobacco seedlings or fruit flies).

II. Human Genetics I – Autosomal traits:

- pp. 288-289: Read and follow procedure for autosomal traits. Collect class data.
- pp. 290: Answer the genetics problems on the top of the page.

III. Dihybrid Crosses:

- pp. 290-292, C29: Read about two-trait crosses and complete the Punnett square. Only answer the first two conclusion questions on the top of page 292.
- Follow procedure and use table on page C29 to record your corn and class corn data.

IV. Review:

- pp. 298: Answer questions 1, 2, 3, 6, 8, 9, 12, 14 and 15.

V. Human Genetics II - X-linked traits:

- pp. 324-325: Read and answer questions. **SKIP** the genetics problems on the top of page 324. **SKIP** question 3 on the bottom of page 325.

VI. Codominance - Blood Type Simulation – SKIP Rh types:

- pp. C33-C38: Read *ABO Blood System*, *Blood Typing* and *Genetics of ABO Blood Types*
- SKIP** Rh types.
- Read *Switched Babies Scenario* and follow procedures. Answer questions 1 and 2 on page C38.

VII. Genetics Problems:

- pp. C31-C32: Complete the genetics problems in lab OR on your own time. ONE OF THESE QUESTIONS WILL BE ON YOUR QUIZ.