Mendel's Law of Segregation

Chapter 11 Sections 1 and 2

Objective:

A) Summarize Mendel's Law of Segregation
B) Define monohybrid and dihybrid crosses
C) List the purpose and steps of completing a Punnett Square
D) Use punnett squares to predict genotypic and phenotypic expectations of single trait crosses

1

- **Obj. A) Summarize Mendels' Law of Segregation – Focus on the F_2**

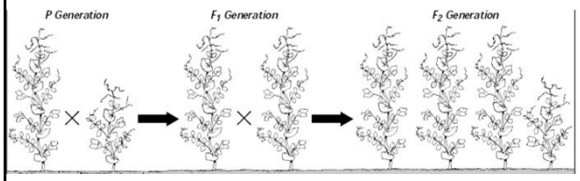
During the formation of _____ (_____), the two _____ for a _____ _____ from each other.

Each gamete carries a _____ copy of each _____

_____ for a trait are then "_____" at _____, one from each _____ producing the _____ for the _____ of the _____

2

A) Summarize Mendel's Law of Segregation



3

Obj B) Define monohybrid and dihybrid crosses

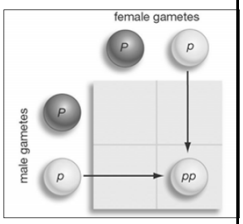
- **Heredity - passing of _____**
- **Genetics - study of _____**
- **Monohybrid cross - cross of a _____ trait, proves _____ law**
  e.g. _____
- **Dihybrid cross - cross of two _____, proves _____**
  e.g. _____

4

Obj C)List the purpose and steps of completing a Punnett Square

Used to predict _____ _____outcomes

Gives a _____ _____ for the _____ of a genetic _____ = _____



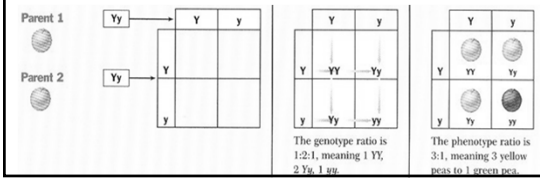
5

C) List the purpose and steps of completing a Punnett Square

1. Make the _____. Place _____ of _____parent along the _____. Place _____ of other parent on the _____.

2. Fill in the _____ like _____ tables.

3. Use the Law of _____ to determine _____. Write the _____.

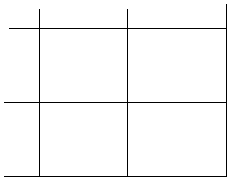


6

P_1 Single Trait Cross

Obj. D) Use punnett squares to predict genotypic and phenotypic expectations of single trait crosses

- **Trait: Seed Shape**
- **Alleles: R – Round r – Wrinkled**
- **Cross: _____seeds x _____ seeds**
- **_____ x _____**



Genotype Ratio:

Phenotype Ratio:

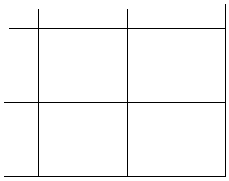
7

F_1 Monohybrid Cross

Obj. D) Use punnett squares to predict genotypic and phenotypic expectations of single trait crosses

- **Trait: Seed Shape**
- **Alleles: R – Round r – Wrinkled**
- **Cross: Heterozygous seeds x Heterozygous seeds**
- **_____ x _____**

Genotype:



Phenotype:

G.Ratio:

P.Ratio:

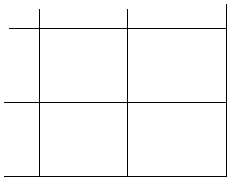
8

Single Trait Practice

Obj. D) Use punnett squares to predict genotypic and phenotypic expectations of single trait crosses

- **Trait: Flower color**
- **Alleles: P – Purple p – White**
- **Cross: White flowers x Heterozygous flowers**
- **_____ x _____**

Genotype:



Phenotype:

Genotypic Ratio:

Phenotypic Ratio:

9

Summary of Single Trait Crosses

- **_____ are responsible for all heritable _____**
- **_____ is based on _____**
- **_____is based on _____, one from the _____ and the other from the _____**
- **True-breeding individuals are _____ (both alleles) are the _____**

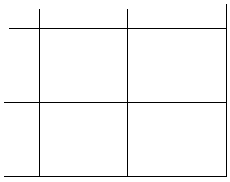
10

Understanding Check

Single Trait Practice

- **Trait: Flower Height**
- **Alleles: T – Tall t – short**
- **Cross: Homozygous tall x Heterozygous plant**
- **_____ x _____**

Genotype:



Phenotype:

Genotypic Ratio:

Phenotypic Ratio:

11