

# Chapter 4 Lesson 1 Notes

## Heredity

### Meiosis:

**Table 1 Comparison of Meiosis and Mitosis**

Characteristic	Meiosis	Mitosis
Number of chromosomes in parent cell	diploid	diploid
Type of parent cell	only certain reproductive cells in eukaryotic organisms	nearly all eukaryotic cells
Number of divisions of nucleus	2	1
Number of daughter cells produced	4	2
Chromosome number in daughter cells	haploid	diploid
Functions in the organism	<ul style="list-style-type: none"> <li>• produces sperm and egg cells</li> <li>• maintains chromosome number for the species</li> </ul>	<ul style="list-style-type: none"> <li>• daughter cells genetically identical to each other and to the parent cell</li> <li>• growth, cell repair, some types of reproduction</li> </ul>

### Early Ideas About Heredity

- \_\_\_\_\_ is the \_\_\_\_\_ of traits from parents to offspring.

### Dominant or Recessive Activity

Outcome	Tally	Who wins?
Bear Bear		
Bear bunny		
bunny Bear		
bunny bunny		

### Dominant Factors

- A \_\_\_\_\_ factor that \_\_\_\_\_ another genetic factor is called \_\_\_\_\_.
- A dominant trait is observed when offspring have \_\_\_\_\_ or \_\_\_\_\_ dominant factors.

### Recessive Factors

- A \_\_\_\_\_ factor that is \_\_\_\_\_ by the presence of a dominant factor is \_\_\_\_\_.
- A recessive trait can be observed only when \_\_\_\_\_ genetic factors are present in offspring.

### Mendel's Laws of Heredity

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## Heredity

- **Law of segregation:** the two factors for each trait segregate— \_\_\_\_\_ from each other— during \_\_\_\_\_ when gametes form

### Genes and Alleles

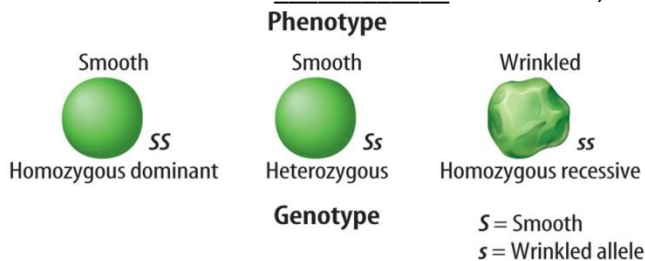
- A \_\_\_\_\_ is a \_\_\_\_\_ of \_\_\_\_\_ that has information about a \_\_\_\_\_ in an organism.
- Each form of a gene with \_\_\_\_\_ information is called an \_\_\_\_\_.

### Phenotype and Genotype

- The \_\_\_\_\_ traits and all characteristics of an organism make up the organism's \_\_\_\_\_.
- The \_\_\_\_\_ that make up an organism is the organism's \_\_\_\_\_.

### Homozygous and Heterozygous Genotypes

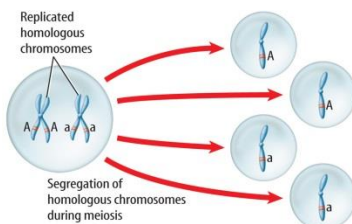
- If the two alleles have the \_\_\_\_\_ information, the genotype is \_\_\_\_\_.
- If the two alleles have \_\_\_\_\_ information, the genotype is \_\_\_\_\_.



### Law of \_\_\_\_\_ Assortment

- The \_\_\_\_\_ cells produced by \_\_\_\_\_ receive only \_\_\_\_\_ from each pair of homologous chromosomes.

### Law of Segregation Explained



### Importance of Mendel's Genetic Studies

- All the research of \_\_\_\_\_ is based on \_\_\_\_\_ conclusions from his work with \_\_\_\_\_.