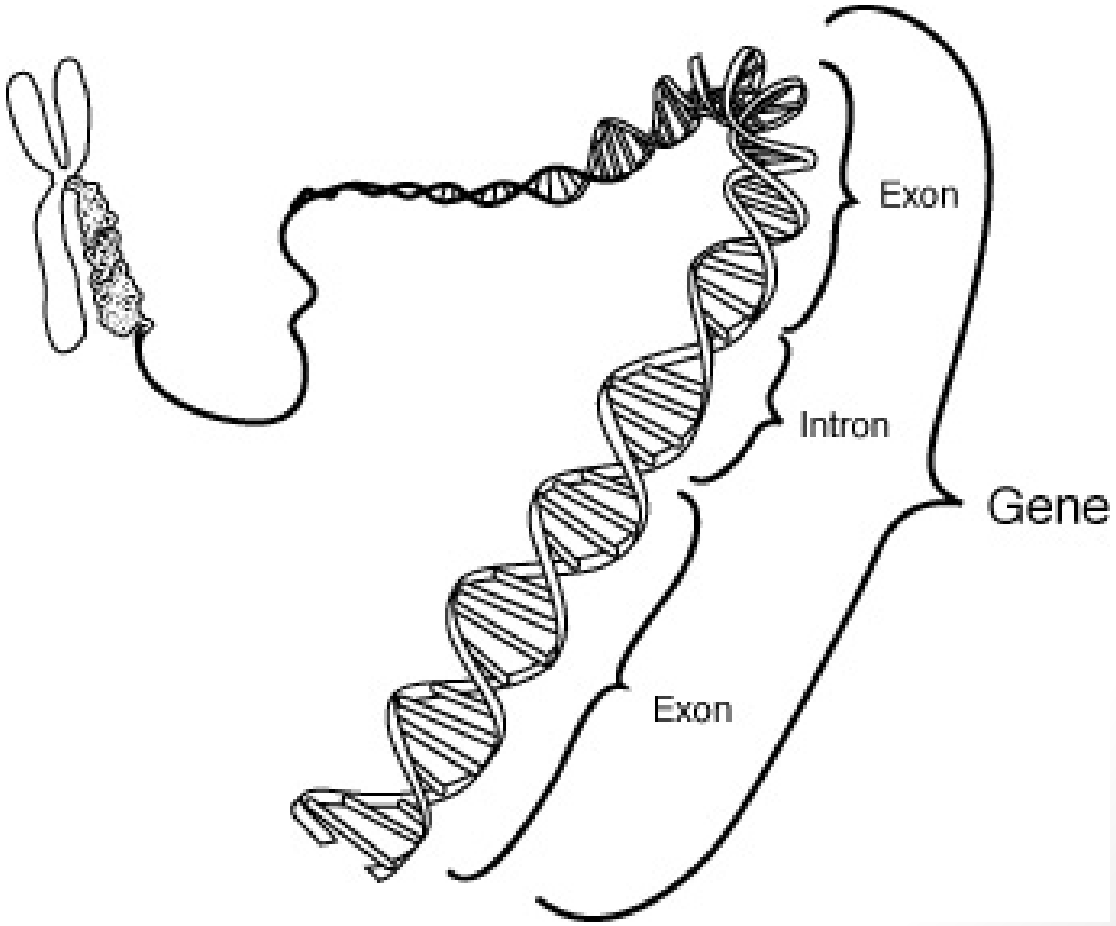
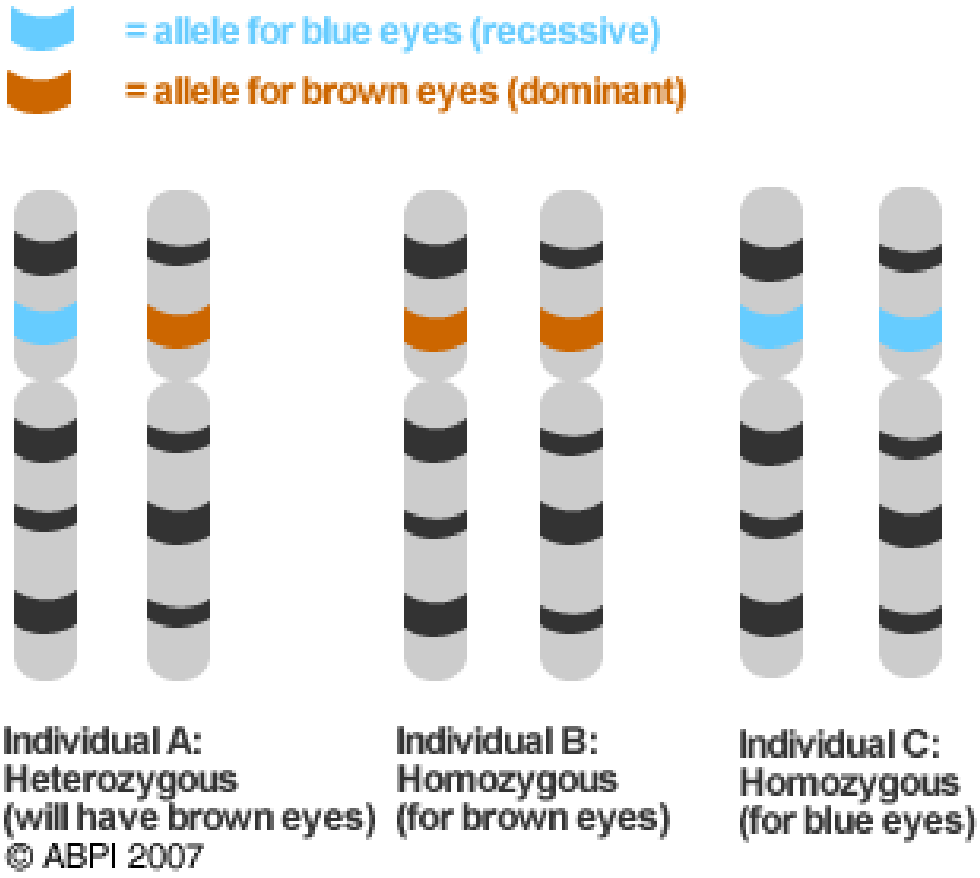
Ch. 16.1

Genes and Variations

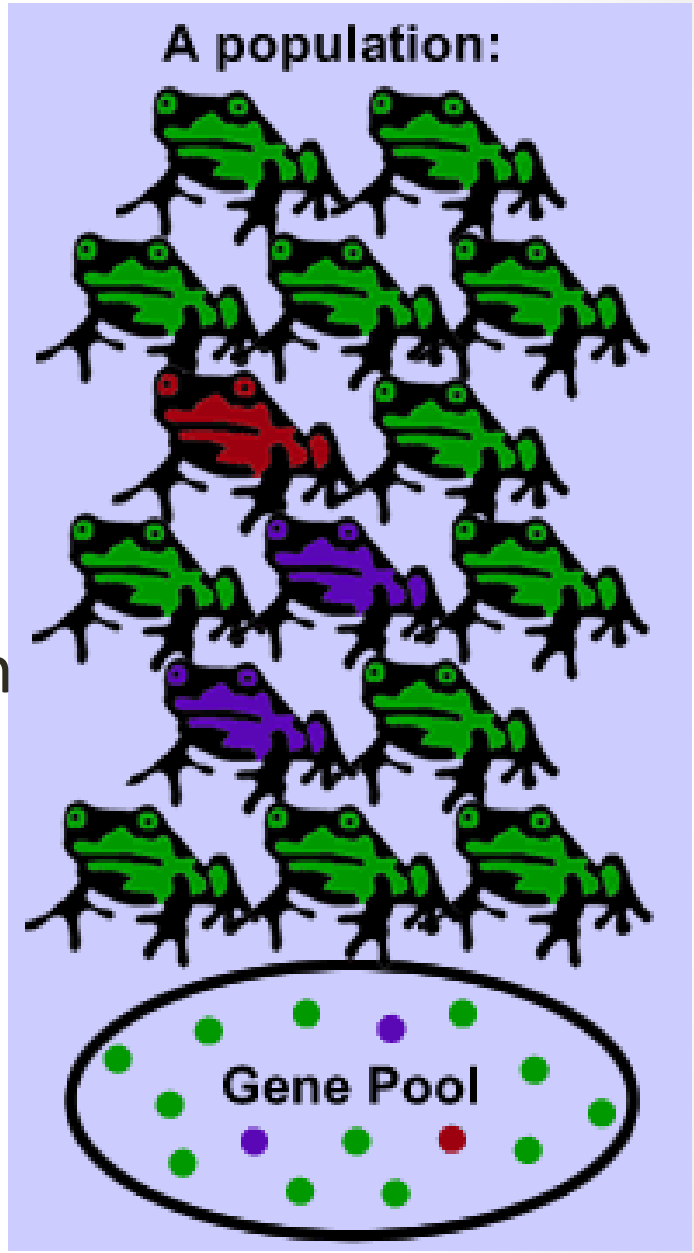
A gene = a segment of a strand of DNA



- A form or version of a gene is called an Allele. (a-leel)



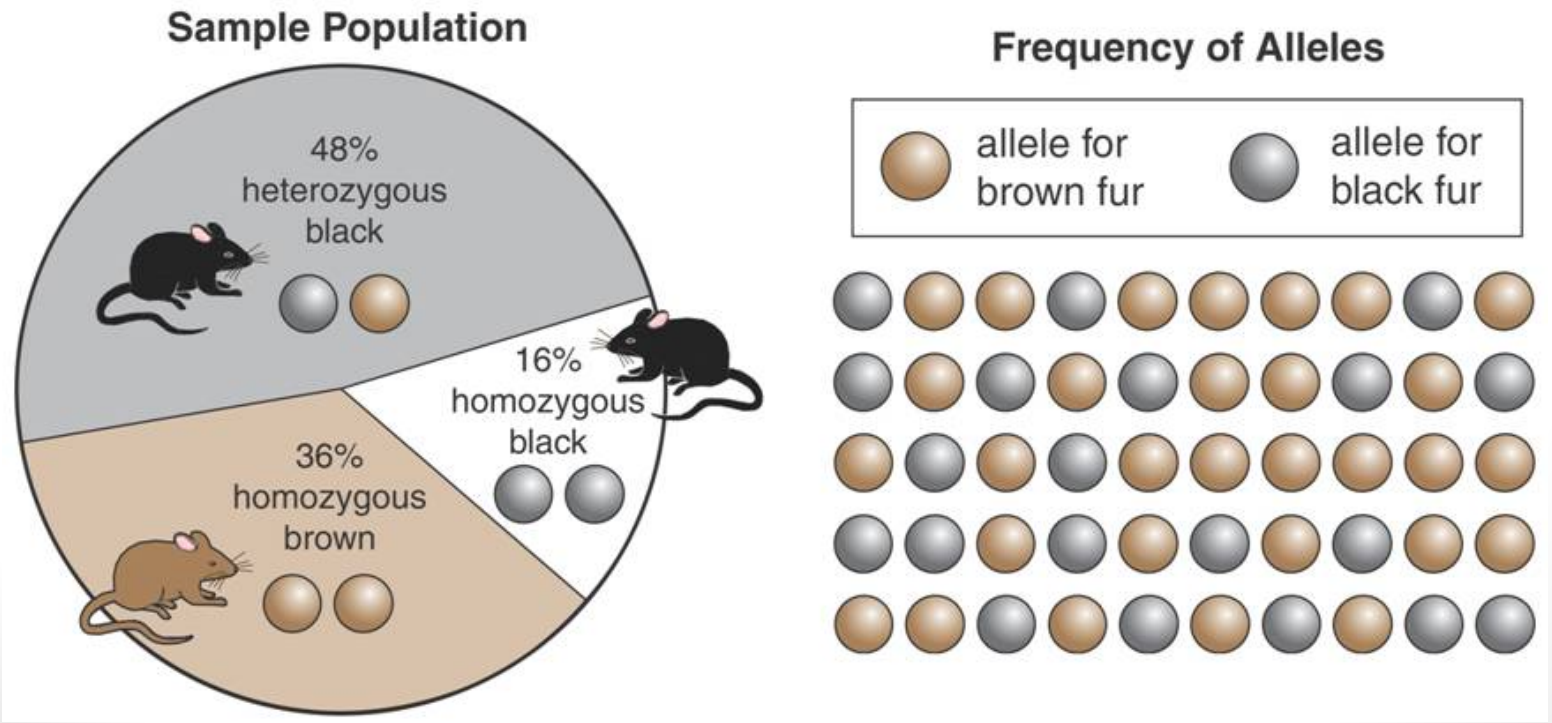
- A population is a group of individuals of the same species that interbreed.
- A **gene pool** consists of all genes, including all the different alleles, in a population



- Relative frequency of an allele = amount of alleles in a gene pool .

  -expressed in percentage

Gene Pool for Fur Color in Mice



- In genetic terms,

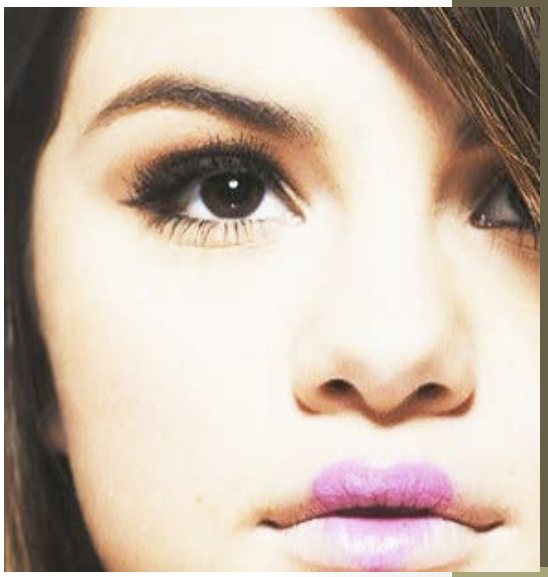
- Evolution is any change in gene frequency in a population.

- Mutations: any change in DNA
  - -occurs b/c of error DNA replication, radiation, or other environmental factor
  - -does not always affect the organism

- Most heritable differences are due to crossing-over/ gene shuffling.
- Sexual Reproduction = more differences in phenotype (observable trait)

- Single-gene trait: controlled by 1 gene (2 alleles)
    - -lead to only 2 possible phenotypes
    - Eg. Widow's peak (have it or don't have it)
    - Widow's peak is dominant

- Polygenic traits = (poly = many) many genes control a trait
  - eg. Height, eye color



- A bell-shaped curve is typical of polygenic traits.
- A bell-shaped curve is also called normal distribution.