

Meiosis

- Mutations are caused by
 - Mistakes in DNA replications
 - Damage that is not repaired correctly
 - Create new alleles of genes
- Recombination = generating new combinations of alleles
- Mutations can
 - Destroy or alter the functions of enzymes or proteins
 - Alter expression of genes
- Most mutations are not beneficial, but some are under the right circumstances

- Advantages of recombination- can get rid of damaging alleles
- Disadvantages of recombination
 - requires 2 organisms
 - can alter an already ideal combination

- Recombination in Bacteria = Horizontal Gene Transfer

- 1) Transformation
- 2) Transduction
- 3) Conjugation

★ Not related to reproduction

- $1N = 23$ chromosomes, $2N = 46$ chromosomes

1N cells, each with a unique selection of the parent cell's alleles

