Mutations

Mutations _________________________________. Some mutations are harmful, some have no effect, and some could be beneficial.

Mutations range in size from a single DNA building block (DNA base) to a large segment of a chromosome.

How do Mutations Occur?

1. Germline mutations:

2. Acquired Mutations:

Types of Mutations:

1. **Substitution**: the replacement of one base in a DNA sequence by another base.

2. **Insertion**: The placement of an extra nucleotide or group of nucleotides in a DNA sequence.
3. **Inversion**: a piece of DNA breaks off and reattaches in the reverse order.

4. **Deletion**: The elimination of a base or group of bases from a DNA sequence.

5. **Translocations**: Translocations are the transfer of a piece of one chromosome to a nonhomologous chromosome. Translocations are often reciprocal; that is, the two nonhomologues swap segments.

Read pages 176-181: Errors in Meiosis and answer questions #12, 13, and 15 on page 181.