**Mutation Notes Guide: - General Biology B**

You are responsible not only for the material in this guide but the diagrams and pictures on the notes. The notes can be found on Mr. Walkers website: [www.walkersclass.com](http://www.walkersclass.com).

**Objective 7: Describe how mutations occur and the various types.**

Students will be able to:

 1) Describe the different types of chromosomal, frameshift, and point mutations.

**Genetic Changes**

•A mutation is any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the DNA sequence.

–Chromosomal mutations

–Frameshift mutations

–Point mutations

•Only mutations in sex cells can be transmitted to offspring.

–Potentially can produce new species

**Chromosomal mutations**

* Deletions: When part of a chromosome is left out.
* Insertion: When part of a chromatid breaks off and attaches to its sister chromatid
* Inversion: When part of a chromosome breaks off and reattaches \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Translocation: When part of one chromosome breaks off and is added to a different chromosome.

**Frameshift mutations**

* A mutations in which a single base is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to or deleted from DNA

-THE DOG BIT THE CAT

-THE DOB ITT HEC AT

**Point mutations**

* A change in a single base \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in DNA

-THE DOG BIT THE CAT

-THE DOG BIT THE CAR

-Example: Tay Sachs dz

**Causes of mutations**

* Mutagens are any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which can cause a change in DNA.

-Radiation

-X-rays

-UV light

-Chemicals like asbestos, benzene, formaldehyde

**Are mutations bad?**

* It depends

-If the change causes disease (Dz). For example….. cancer

-If the change allows the organism to be faster, stronger, smarter?

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ BABY!