Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_

**5E Lesson Unit 6 – Nucleic Acids: Mutations**

**Standard – As a student, I should be able to…**

* **SC.912.L.16.4** *Explain* how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the DNA sequence \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ result in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ change. *Explain* how mutations in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ may \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in offspring.
* HE.912.C.1.7 Analyze how heredity and family history can impact personal health.

**Guiding Questions – As a student, I should be prepared to correctly answer the following on a test:**

* How can we describe the impacts of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that may occur in a DNA \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

**Telephone Game Discussion**

* Why did the original message differ from the end message?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Similarly, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the message, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, can occur as they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Mutations**

* Mutations = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_ of the DNA in an organism’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (total DNA) is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or “junk DNA”
* Changes to a DNA sequence \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ does not affect protein production and, therefore, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2 Categories of Mutations**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involve changes in one or a few nucleotides = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involve changes in the number or structure of chromosomes

**Gene/Point Mutations**

* Occur at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the DNA sequence
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ “subbed”/\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for another, usually affect no more than a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into the DNA sequence, an extra letter \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the DNA sequence, a missing letter \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*\**Make your gene/point mutation index cards, you have 10 minutes!\*\**

**Chromosomal Mutations**

* Involve changes in the number or structure of chromosomes

\*\**Make your chromosome mutation index cards, you have 10 minutes!\*\**

**Use 13.2 in the textbook**

***Effects of Mutations Essay***

* **2-3 paragraph essay including examples & descriptions of the following topics:**
	+ **Gene vs. chromosome mutations**

**This website is VERY helpful!**

**http://learn.genetics.utah.edu/content/history/**

* + **Harmful & helpful mutations**
	+ **Frameshift mutations**
	+ **Effect of mutations on living things**
	+ **How might scientists determine if a mutation has occurred in a species?**

***What you don’t finish in class is …***

* Turn in the essay AND flash cards next class!!