



DNA Mutations Lab



Insertion, Deletion, and Substitution Mutations

Name: _____ Date: _____ Block: _____

Objective: To observe and predict the type of mutations that are found in the Genetic Code. Though you are coding a message with a partner, be sure to **answer independently and in complete sentences**.

Vocabulary Review: *Define the terms below:*

1. **Point mutation:** _____

2. **Frameshift mutation:** _____

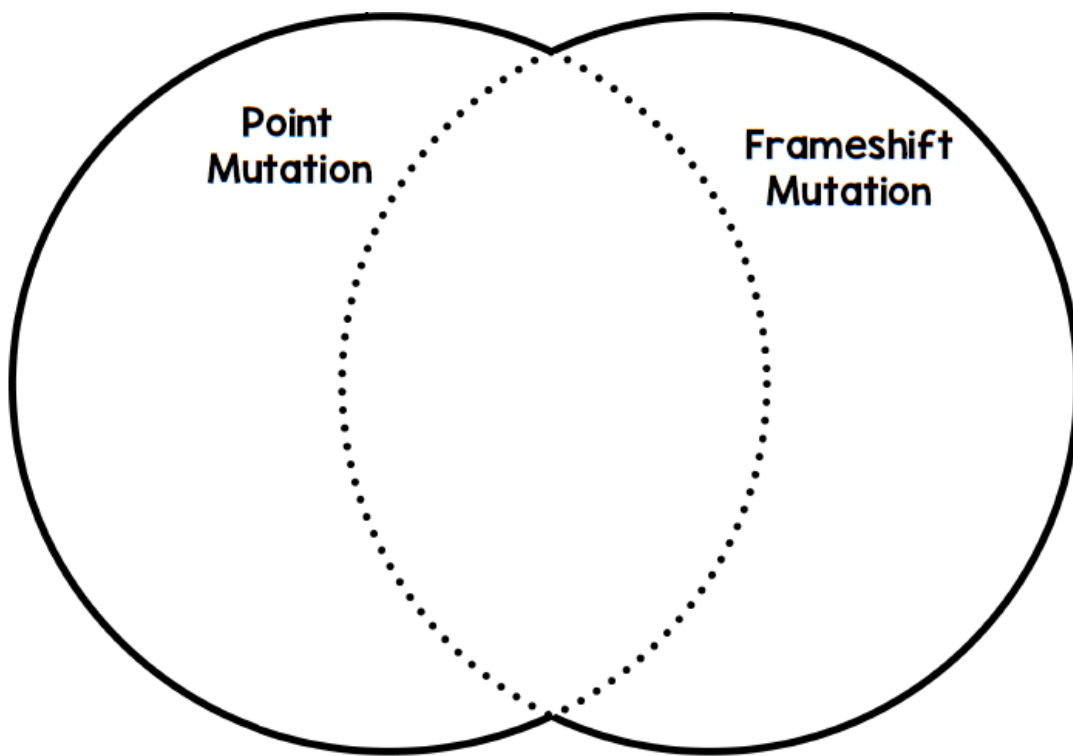
Procedure:

1. Take the cards you have been given and place them in **numerical order** (1-21 ONLY)
2. Write the sentence created:
3. Why do you think the words are all represented by **THREE LETTERS**? *Think about DNA Translation.*
4. Remove card **number 8** and replace it with the **Letter I** (card #22).
5. Write the new sentence below:
6. How do you think this would affect the sequence of a protein? *Think about how having red hair and green eyes are a mutation, does it affect the overall organism? Is the organisms being harmed?*
7. What type of **mutation** would this be similar to? _____
8. Now **REMOVE** the letter you just inserted (#22) and **adjust** the sentence so that all the words are **THREE LETTERS**. Write the sentence:
9. How do you think a mutation like this would affect the sequence of a protein? *Can you read the message anymore?*

10. What type of **mutation** would this be called? _____

11. Predict which would be more harmful to the sequence of a protein, the insertion of card #22 in front of #9 or in front of card #21? **EXPLAIN WHY!**

12. Complete the Venn Diagram below:



CHROMOSOMAL MUTATIONS

Below is a **normal human chromosome before mutating**. Each letter represents a gene not an amino acid. Using your notes, show what would happen to this chromosome if the following mutations occurred.

The Chromosome:

A B C D E F G

Deletion	Duplication	Inversion	Translocation