

Name \_\_\_\_\_

Date: \_\_\_\_\_

## MUTATIONS WORKSHEET

**Directions:** Use the following DNA strand to answer the questions below.

Original DNA strand separated from its base pair:

T A C T G T T G T A A A C C

1. Use Original DNA to make complementary base pairs in DNA

\_\_\_\_\_

2. Take Original DNA strand and transcribe mRNA.

\_\_\_\_\_

3. What is the sequence of anticodons on tRNA that would be needed to transfer proper amino acids?

\_\_\_\_\_

4. What sequence of amino acids would be made from the mRNA in # 2 above?

\_\_\_\_\_

\_\_\_\_\_

5. Assume the Base Position of nucleotide # 6 in the original DNA strand point mutates to an "A". How will this change the following:

Original DNA strand (Now Mutated)

\_\_\_\_\_

6. New mRNA sequence:

\_\_\_\_\_

7. New tRNA sequence:

\_\_\_\_\_

8. New amino acids formed:

\_\_\_\_\_

\_\_\_\_\_

9. Another mutation occurs. Assume there is a frame shift mutation. The nucleotide base in position 6 of the original is moved to the end of the sequence. What will be the new original DNA strand? *Mutations accumulate*

Original DNA strand (now with 2 mutations)

\_\_\_\_\_

10. New mRNA sequence:

\_\_\_\_\_

11. New tRNA sequence:

\_\_\_\_\_

12. New amino acids formed:

\_\_\_\_\_

\_\_\_\_\_

13. Another mutation occurs. There is a deletion at nucleotide base #8. What will be the new original DNA strand? *Mutations accumulate.*

Original DNA strand (now with 3 mutations)

\_\_\_\_\_

14. New mRNA sequence:

\_\_\_\_\_

15. New tRNA sequence:

\_\_\_\_\_

16. New amino acids formed:

\_\_\_\_\_

\_\_\_\_\_

17. What types of mutations did we see in #'s:

5: \_\_\_\_\_

9: \_\_\_\_\_

13: \_\_\_\_\_

18. Which mutation is likely to cause the most intense change in an organism? Why?

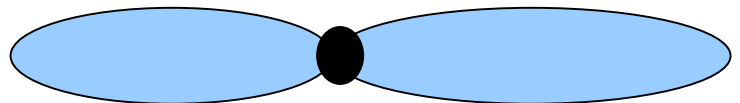
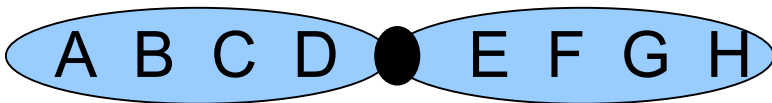
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\_\_\_\_\_

19. If Chromosome A is considered to be normal, use Chromosome B to model one kind of chromosomal mutation. In the space provided, label and describe the type of mutation shown.

**Chromosome A**

**Chromosome B**



\_\_\_\_\_

\_\_\_\_\_