Name_____ Date_____ Period_____

DNA DRY LAB

This worksheet illustrates how the order of nucleotides in DNA determines the order of amino acids in proteins. It reinforces the concept that any change in the order of nucleotides can change the order of amino acids in proteins. To do this exercise, you will need a copy of the **Codons in mRNA** chart. Answer each of the following questions in the space provided.

The following is the base sequence on one strand of a DNA molecule (the side to be copied). For our purposes, the strand not copied has been left out.

Original DNA Strand = T A C A A T A G A C G G T A A A C T

1. Give the base sequence of the strand of mRNA read from the original DNA strand

2. Draw this mRNA molecule. Be sure to label the appropriate bases, sugars and phosphate groups. I have started the first nucleotides for you.

3. Circle the mRNA codons and write the amino acid sequence for the following DNA code. Use your chart.

Original DNA Strand = T A C A A T A G A C G G T A A A C T

mRNA Strand =

Amino Acid Sequence =

4. If the 6th nucleotide in the original DNA strand were changed from a T to a C, what would the resulting mRNA base sequence look like?

Original DNA Strand = T A C A A T A G A C G G T A A A C T

mRNA Strand =

5. What would the amino acid sequence look like in the resulting protein?

Amino Acid Sequence =

6. If a G were added to (not replacing anything) the original DNA strand after the 3rd nucleotide, what would the resulting mRNA base sequence look like?

Original DNA Strand = T A C A A T A G A C G G T A A A C T

mRNA Strand =

7. What would the amino acid sequence look like in the resulting protein?

Amino Acid Sequence =

8. If the 5th nucleotide in the original DNA strand were change from an A to a T, what would the resulting mRNA base sequence look like?

Original DNA Strand = T A C A A T A G A C G G T A A A C T

mRNA Strand =

9. What would the amino acid sequence look like in the resulting protein?

Amino Acid Sequence =

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