*MODIFIED FROM: www2.informns.k12.mn.us/schoolties/files/2733330/01464/jstern/138692**Transcription_and_Translation**_WS02.doc*

Transcripton and Translation Worksheet

Name _____

Hour _____ Date _____

For each of the following sequences, fill in either the DNA, the mRNA sequence, the rRNA anticodons, or the amino acid sequences that have been left blank. If several sequences might work choose any one.

1. DNA T A C C G C T C C G C C G T C G A C A A T A C C A C T

   mRNA _____

   tRNA _____

   AA _____

2. DNA _____

   mRNA A U G A C U A G C U G G G G G U A U U A C U U U U A G

   tRNA _____

   AA _____

3. DNA _____

   mRNA _____

   tRNA U A C C A C C C C C G U A U G G C U G G G A A U A U C

   AA _____

4. DNA _____

   mRNA _____

   tRNA _____

   AA MET ARG GLY PHE PHE MET VAL GLY (STOP)

5. DNA T A C _____ A T G _____

   mRNA _____ U G U G A U _____

   tRNA _____ C U C _____ U U G _____ A U U

   AA _____ ALA _____ PRO _____

6. What are some differences between RNA and DNA?

7. Where is DNA found in the cell? _____

8. Where is RNA found in the cell? _____

9. Name the three types of RNA and explain what they do.

9. Draw an mRNA strand that is complementary to the DNA strand AATTGC. Circle a nucleotide.

10. What are the steps of transcription?

In-Class Group Activity

11. Working in groups of three or four:

    1. Students will create a sequence of bases on a strand of DNA
    2. Students will alter a base sequence from the original strand. (Point, frameshift, deletion, insertion…)
    3. Another group will then develop a transcription and translation process for the altered strand and from there determine what kind of mutation occurred in the altered strand and why.