Scholars/ Honors Biology Genetic Code/ Protein Synthesis Worksheet

BREAKING THE CODE

REPLICATION
For each of the three DNA sequences below, write the sequence of the complementary strand of DNA that results after replication.

DNA molecule #1: **TACCGGATGCCAGATCAAATC**
Complementary DNA #1_____

DNA molecule #2: **TACGGGGGCGTAACCACAACT**
Complementary DNA #2_____

DNA molecule #3: **TACCTGTTAAGCTACAAAATT**
Complementary DNA #3_____

TRANSCRIPTION
For each of the same DNA sequences below, write the sequence of messenger RNA codons that is synthesized during transcription. Be sure to separate the codons into **triplets**.

DNA molecule #1: **TACCGGATGCCAGATCAAATC**
mRNA #1 _____

DNA molecule #2: **TACGGGGGCGTAACCACAACT**
mRNA #2_____

DNA molecule #3: **TACCTGTTAAGCTACAAAATT**
mRNA #3_____

TRANSLATION
For each of the mRNA codon sequences you have written, determine the sequence of tRNA anticodons that match it.

Anticodons for mRNA #1: _____

Anticodons for mRNA #2: _____

Anticodons for mRNA #3: _____

Using the chart on the back side, write the amino acid sequence coded for by each mRNA.
(Note: The code is based on mRNA codons, not tRNA anticodons.)

Polypeptide #1: _____

Polypeptide #2: _____

Polypeptide #3: _____