

# Worksheet 3: DNA, RNA, and Protein Synthesis

## HONORS BIOLOGY: UNIT 5

**Directions:** Use your notes and book to answer the following questions concerning Replication, Transcription, and Protein Synthesis.

1. Break the following DNA sequence into **triplets**. (Draw a line to separate triplets)

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

2. If the above code showed the bases on one strand of DNA, what would the **complementary strand** read?

3. What would the code in problem #1 be **transcribed** into (What would the mRNA sequence be?)

4. What would the **amino acid sequence** be translated from the mRNA sequence in problem #3? (Use the Genetic Code table below to translate)

### Codons Found in Messenger RNA

		<i>Second Base</i>				
		U	C	A	G	
First Base	U	Phe	Ser	Tyr	Cys	Third Base
		Phe	Ser	Tyr	Cys	
		Leu	Ser	Stop	Stop	
		Leu	Ser	Stop	Trp	
	C	Leu	Pro	His	Arg	
		Leu	Pro	His	Arg	
		Leu	Pro	Gln	Arg	
		Leu	Pro	Gln	Arg	
	A	Ile	Thr	Asn	Ser	
		Ile	Thr	Asn	Ser	
		Ile	Thr	Lys	Arg	
		Met	Thr	Lys	Arg	
	G	Val	Ala	Asp	Gly	
		Val	Ala	Asp	Gly	
		Val	Ala	Glu	Gly	
		Val	Ala	Glu	Gly	