

Practicing DNA Transcription and Translation

For the following examples, give the appropriate sequence of DNA, mRNA, tRNA and/or polypeptide (AA = amino acids). **Remember:** A codon chart can only be used for decoding a strand of mRNA.

Codon Chart

Second Position

		Second Position					
		U	C	A	G		
First Position (5')	U	Phenylalanine	Serine	Tyrosine	Cysteine	Third Position (3')	U
		Phenylalanine	Serine	Tyrosine	Cysteine		C
		Leucine	Serine	Stop	Stop		A
	C	Leucine	Proline	Histidine	Arginine		G
		Leucine	Proline	Histidine	Arginine		U
		Leucine	Proline	Glutamine	Arginine		C
	A	Isoleucine	Threonine	Asparagine	Serine		A
		Isoleucine	Threonine	Asparagine	Serine		G
		Methionine	Threonine	Lysine	Arginine		U
	G	Valine	Alanine	Aspartic acid	Glycine		C
		Valine	Alanine	Aspartic acid	Glycine		A
		Valine	Alanine	Glutamic acid	Glycine		G

Example 1:

DNA: T A C G C G C C T A G G G G G T G G

mRNA: _____ _____ _____ _____ _____ _____

AA: _____ _____ _____ _____ _____ _____

Example 2:

DNA: T T C G A T T A G A T G C C G A A G

mRNA: _____ _____ _____ _____ _____ _____

tRNA: _____ _____ _____ _____ _____ _____

AA: _____ _____ _____ _____ _____ _____

Example 3:

DNA: C _ _ _ G _ A _ _ _ A _ _ _ C _ T _

mRNA: _ U _ _ _ A _ _ C _ _ A _ G _ _ A _

tRNA: _ A U G _ U _ U G G _ U C C _ G _ A

AA: _____ _____ _____ _____ _____ _____

Protein Synthesis Overview Diagram

Label the summary of protein synthesis diagrammed below using the following terms: transcription, translation, DNA, mRNA, ribosome, tRNA, amino acid, polypeptide, nucleus, codon, and anticodon.

