Name _____ Class _____ Date _____

Skills Worksheet

Science Skills

Interpreting Tables

Use the table below to complete items 1–17.

Codons in mRNA					
First base	**Second base**				**Third base**
	U	**C**	**A**	**G**	
U	UUU, UUC – Phenylalanine UUA, UUG – Leucine	UCU, UCC, UCA, UCG – Serine	UAU, UAC – Tyrosine UAA, UAG – Stop	UGU, UGC – Cysteine UGA – Stop UGG – Tryptophan	U C A G
C	CUU, CUC, CUA, CUG – Leucine	CCU, CCC, CCA, CCG – Proline	CAU, CAC – Histidine CAA, CAG – Glutamine	CGU, CGC, CGA, CGG – Arginine	U C A G
A	AUU, AUC, AUA – Isoleucine AUG – Start	ACU, ACC, ACA, ACG – Threonine	AAU, AAC – Asparagine AAA, AAG – Lysine	AGU, AGC – Serine AGA, AGG – Arginine	U C A G
G	GUU, GUC, GUA, GUG – Valine	GCU, GCC, GCA, GCG – Alanine	GAU, GAC – Aspartic acid GAA, GAG – Glutamic acid	GGU, GGC, GGA, GGG – Glycine	U C A G

Complete the table below showing sequences of DNA, mRNA codons, anticodons, and corresponding amino acids. Use the list of mRNA codons in the table above to assist you in completing this exercise. Remember that the genetic code is based on mRNA codons.

Example	Decoding DNA			
DNA	**1.** ACC	**2.** _____	GAT	**3.** _____
mRNA codon	**4.** UGG	**5.** _____	**6.** _____	UAU
Anticodon	**7.** ACC	UUC	**8.** _____	**9.** _____
Amino acid	Tryptophan	**10.** _____	**11.** _____	**12.** _____

Name _____ Class _____ Date _____

Questions 8–10 refer to the mRNA sequence CUC-AAG-UGC-UUC and the table below, which lists mRNA codons.

Codons in mRNA

First base	Second base: U	Second base: C	Second base: A	Second base: G	Third base
U	UUU, UUC – Phenylalanine UUA, UUG – Leucine	UCU, UCC, UCA, UCG – Serine	UAU, UAC – Tyrosine UAA, UAG – Stop	UGU, UGC – Cysteine UGA – Stop UGG – Tryptophan	U C A G
C	CUU, CUC, CUA, CUG – Leucine	CCU, CCC, CCA, CCG – Proline	CAU, CAC – Histidine CAA, CAG – Glutamine	CGU, CGC, CGA, CGG – Arginine	U C A G
A	AUU, AUC, AUA – Isoleucine AUG – Start	ACU, ACC, ACA, ACG – Threonine	AAU, AAC – Asparagine AAA, AAG – Lysine	AGU, AGC – Serine AGA, AGG – Arginine	U C A G
G	GUU, GUC, GUA, GUG – Valine	GCU, GCC, GCA, GCG – Alanine	GAU, GAC – Aspartic acid GAA, GAG – Glutamic acid	GGU, GGC, GGA, GGG – Glycine	U C A G

_____ **8.** Which of the following would represent the sequence of DNA from which the mRNA sequence was made?
- **a.** CUC-AAG-UGC-UUC
- **b.** GAG-UUC-ACG-AAG
- **c.** GAG-TTC-ACG-AAG
- **d.** AGA-CCT-GTA-GGA

_____ **9.** The anticodons for the codons in the mRNA sequence above are
- **a.** GAG-UUC-ACG-AAG.
- **b.** GAG-TTC-ACG-AAG.
- **c.** CUC-GAA-CGU-CUU.
- **d.** CUU-CGU-GAA-CUC.

_____ **10.** Which of the following represents the portion of the protein molecule coded for by the mRNA sequence above?
- **a.** serine-tyrosine-arginine-glycine
- **b.** valine-aspartic acid-proline-histidine
- **c.** leucine-lysine-cysteine-phenylalanine
- **d.** glutamic acid-phenylalanine-threonine-lysine