

Skills Worksheet

Science Skills**Interpreting Graphics**

Use the table below to answer questions 1–6.

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

Science Skills *continued*

Determine how the mutations below will affect each amino acid sequence. Use the mRNA codons in the table on the previous page to complete items 1–4 below. In the space provided, write the names of the amino acids that correspond to each mRNA sequence and mutation given. An example is provided for you.

Example:

mRNA sequence:	cysteine-proline	UGU-CCG
mutation sequence:	cysteine-arginine	UGC-CGC
1. mRNA sequence:	_____	GAA-CGU
mutation sequence:	_____	GAU-CGU
2. mRNA sequence:	_____	AUC-UGC
mutation sequence:	_____	AUC-UGG
3. mRNA sequence:	_____	UGU-CCU-CCU
mutation sequence:	_____	UGU-UUC-CCU
4. mRNA sequence:	_____	GGG-UUA-ACC
mutation sequence:	_____	GGU-UAA.

5. Does item 1 above demonstrate a missense or silent mutation? Explain.

6. What kind of mutation occurred to the mRNA sequence in item 4 above? Explain.
