ACTIVITY: DECODE THE MESSAGE!
PART I. DECODE THE CODONS!
Directions: Use the Genetic Code Chart below to identify the amino acid represented by each mRNA codon. Write your answer in the space provided. If the codon signals the end of translation, write STOP CODON.

mRNA Codon Chart

Genetic Code: mRNA Codons and Their Correspdnding Amino Acids

1st Letter (5' end)	2nd Letter of Codon (Middle Base)				3rd Letter (3' end)
	U	C	A	G	
U	Phenylalanine (Phe)	Serine (Ser)	Tyrosine (Tyr)	Cysteine (Cys)	U
	Phenylalanine (Phe)	Serine (Ser)	Tyrosine (Tyr)	Cysteine (Cys)	C
	Leucine (Leu)	Serine (Ser)	Stop	Stop	A
	Leucine (Leu)	Serine (Ser)	Stop	Tryptophan (Trp)	G
C	Leucine (Leu)	Proline (Pro)	Histidine (His)	Arginine (Arg)	U
	Leucine (Leu)	Proline (Pro)	Histidine (His)	Arginine (Arg)	C
	Leucine (Leu)	Proline (Pro)	Glutamine (Gln)	Arginine (Arg)	A
	Leucine (Leu)	Proline (Pro)	Glutamine (Gln)	Arginine (Arg)	G
A	Isoleucine (Ile)	Threonine (Thr)	Asparagine (Asn)	Serine (Ser)	U
	Isoleucine (Ile)	Threonine (Thr)	Asparagine (Asn)	Serine (Ser)	C
	Isoleucine (Ile)	Threonine (Thr)	Lysine (Lys)	Arginine (Arg)	A
	Methionine (Met)	Threonine (Thr)	Lysine (Lys)	Arginine (Arg)	G
G	Valine (Val)	Alanine (Ala)	Aspartic acid (Asp)	Glycine (Gly)	U
	Valine (Val)	Alanine (Ala)	Aspartic acid (Asp)	Glycine (Gly)	C
	Valine (Val)	Alanine (Ala)	Glutamic acid (Glu)	Glycine (Gly)	A
	Valine (Val)	Alanine (Ala)	Glutamic acid (Glu)	Glycine (Gly)	G

Legend: **Methionine (Met)** = Start codon (AUG codes for Methionine) | **Stop** = Stop codons (UAA, UAG, UGA end translation) | **Amino Acid Abbreviation Format:** Full name (3-letter abbreviation, e.g., Leucine (Leu))

No.	mRNA Codon	Amino Acid
1	AUG	
2	UUU	
3	GGU	
4	CAA	
5	UGG	
6	AAA	
7	GCU	
8	UGA	
9	CUC	
10	CGA	
11	ACU	
12	GAG	
13	UAC	
14	CCU	
15	UAG	

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PART II. From mRNA to Amino Acids

The cell is in need of protein. Given the strand of DNA on a chromosome having the sequence of bases indicated below. **Transcribe** the message stored in the given DNA strand. Then **translate** the message into amino acid. How many amino acids are present in the synthesized protein?

DNA Template	mRNA	tRNA	Amino acids
Ex. C	G	C	
A	U	A	Valine (Val)
G	C	G	
T			
A			
C			
C			
C			
A			
C			
C			
T			
A			
C			
G			
G			
C			
G			

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