

Use the Genetic Code Chart to Fill in the Missing Spaces!

Order of Codon in DNA	Order of Codon in mRNA	Amino Acid coded for by mRNA
CTT	GAA	Glutamic Acid
GCA		
	UCA	
CCT		
	ACU	
GGG		
	UAA	STOP codon
CAT		
	AUC	
CGA		
ATC		STOP codon
	CAA	
AAA		
ACT		
	UUG	
ATG		
		Histadine
		Lysine
		Tryptophan
		Methionine
		Start code



Similarities and Differences between DNA and RNA		
Characteristics	DNA	RNA
Dexoxyribonucleic acid		
Ribonucleic acid		
Ribose present		
Phosphoric acid present		
Adenine present		
Thymine present		
Uracil present		
Guanine present		
Cytosine present		
Formed from nucleotides		
Double stranded		
Single stranded		
Remains in nucleus		
Moves out of nucleus		
Contains a chemical message or code		



Transcription and Translation Practice

Here is a DNA code for a fictional protein.....

TAC CAA AAC CCG TTA CGA AGT TTC GAG ACT TTT AAA CAT TAC ATC

1. Determine the corresponding DNA strand
2. Determine the mRNA sequence that corresponds to the initial strand
3. Use the following chart to determine the amino acid sequence
4. Repeat the process with this strand:

TAC AAC CCA GGC CCG TTA AAT TAT CAT GTA ATT CAT GGG ATC

mRNA Code Chart						
		Second Base				
		U	C	A	G	
F i r s t B a s e	U	UUU Phe	UCU Ser	UAU Tyr	UGU Cys	U
		UUC Phe	UCC Ser	UAC Try	UGC Cys	C
		UUA Leu	UCA Ser	UAA Stop	UGA Stop	A
		UUG Leu	UCG Ser	UAG Stop	UGG Trp	G
	C	CUU Leu	CCU Pro	CAU His	CGU Arg	U
		CUC Leu	CCC Pro	CAC His	CGC Arg	C
		CUA Leu	CCA Pro	CAA Gln	CGA Arg	A
		CUG Leu	CCG Pro	CAG Gln	CGG Arg	G
	A	AUU Ile	ACU Thr	AAU Asn	AGU Ser	U
		AUC Ile	ACC Thr	AAC Asn	AGC Ser	C
		AUA Ile	ACA Thr	AAA Lys	AGA Arg	A
		AUG Met or Start	ACG Thr	AAG Lys	AGG Arg	G
	G	GUU Val	GCU Ala	GAU Asp	GGU Gly	U
		GUC Val	GCC Ala	GAC Asp	GGC Gly	C
		GUA Val	GCA Ala	GAA Glu	GGA Gly	A
		GUG Val	GCG Ala	GAG Glu	GGG Gly	G

5. Determine the mRNA code and draw the amino acid chain coded for by the following sequence.

CCT CTT TGC ACT CGG ATC GTA CGC

CCT CTT TGG ACT CGG ATC GTA CGC

6. Describe differences and similarities in the sequence and shape of the two amino acid chains.



Amino Acids

<http://www.psrc.usm.edu/macrog/images/amino.gif>

