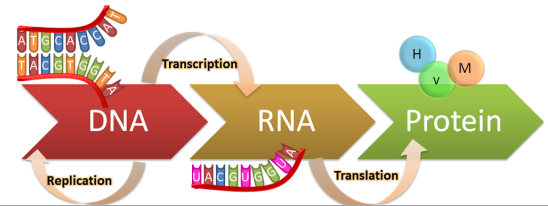


Genes:

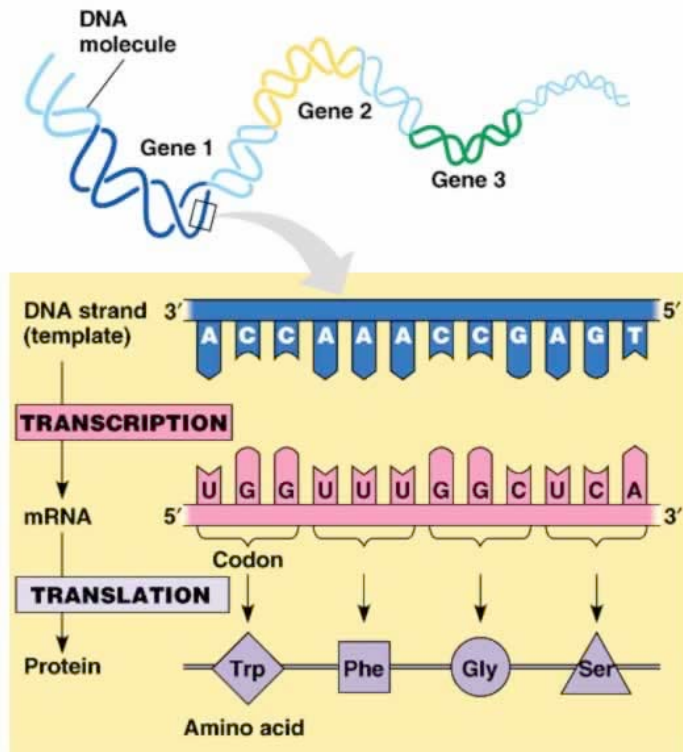
Central Dogma



From Gene to Protein: Overview of Protein Synthesis

<http://bit.ly/2D6ULIU>

Use the activity & diagrams to help you answer the questions.



Copyright © Pearson Education, Inc., publishing as Benjamin Cummings.

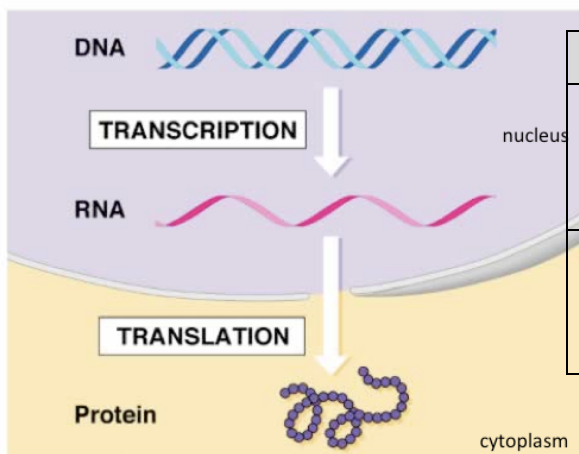
1. What is messenger RNA (mRNA) and what is the process that makes it?

2. What is a codon?

3. How is mRNA used to make a protein and what is this process called?

4. What is a tRNA? How does it work?

Basics of Gene Expression



©Addison Wesley Longman, Inc.

Stage	Cellular location	Product
Transcription		
Translation		

Amino acid	3& 1 letter code
Arginine	Arg, R
Lysine	Lys, K
Phenylalanine	Phe, F
Tyrosine	Tyr, Y
Tryptophan	Trp, W
Glutamine	Gln, Q
Glycine	Gly, G
Alanine	Ala, A
Histidine	His, H
Serine	Ser, S
Proline	Pro, P
Glutamic Acid	Glu, E
Aspartic Acid	Asp, D
Threonine	Thr, T
Cysteine	Cys, C
Methionine	Met, M
Leucine	Leu, L
Asparagine	Asn, N
Isoleucine	Ile, I
Valine	Val, V

Second Position											
U				C		A			G		
code	amino acid	code	amino acid	code	amino acid	code	amino acid	code	amino acid	U	
UUU	phe	UCU	ser	UAU	tyr	UGU	cys	C			
UUC		UCC		UAC		UGC		C			
UUA		UCA		UAA		UGA		A			
UUG	leu	UCG		UAG	STOP	UGG	trp	G			
CUU	leu	CCU		pro	CAU	his	CGU	arg	U		
CUC		CCC	CAC		CGC		C				
CUA		CCA	CAA		CGA		A				
CUG		CCG	CAG		CGG	G					
AUU		ile	ACU		thr	AAU	asn		AGU	ser	U
AUC	ACC		AAC	AGC		C					
AUA	ACA		AAA	AGA		A					
AUG	met START		ACG	AAG		lys	AGG	arg	G		
GUU	val		GCU	ala		GAU	asp	GGU	gly		U
GUC		GCC	GAC		GGC	C					
GUA		GCA	GAA		GGA	A					
GUG		GCG	GAG		GGG	G					
Third Position											