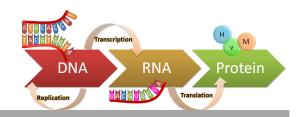
The Central Dogma of Biology



Genes:

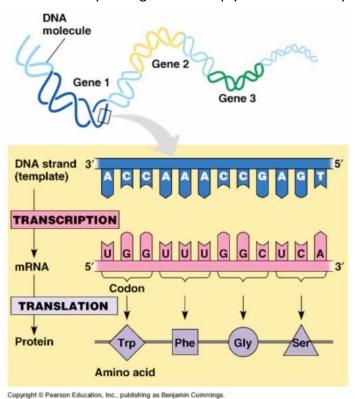
Central Dogma



From Gene to Protein: Overview of Protein Synthesis

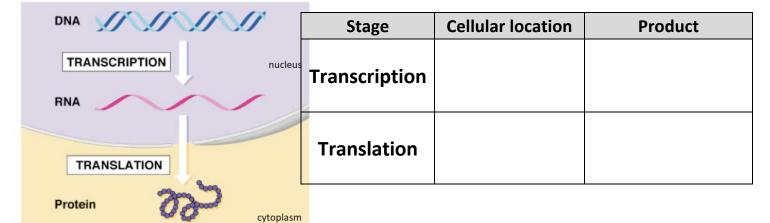
http://bit.ly/2D6ULIU

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



- 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



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

First Position							lesese			
Second Position Second Pos	First Position									
U C A G M G U C A G M G M G M G M G M G M G M G M M G M	G	Þ	> 0 C		=					
C	GUC GUA	AUC AUA AUG	CUG	CUC	UUA	UUU	code			
Second Position C A G amino acid code amino acid code amino acid JAU tyr UGU cys U UAG STOP UGG STOP A UAG STOP UGG trp G CAU his CGG trp G CAG CAG CGA arg A AAU asn AGG Ser C AAG AAG AGG arg G GAC GGG GGG C C AAG AAG AGG arg G GGAG GGG GGG C C GGAG GGG GGG G C	val	met START		leu		amino acid	C			
Hosition A G Code amino acid code amino acid UAU UAC UAC UAA STOP UGA STOP A UAG CAU CAU CAA CAAC CAAA AAAA AAAA AAAA GGAA GG	GCC GCA GCG	ACC ACA ACG	CCG	CCC	UCA	ncn	code			
A GGG GGG GGG GGG GGG GGG GGG GGG GGG G	<u>a</u>	thr		pro		ser		amino acid		Second
code amino acid UGU CYS UGC STOP A UGG trp G CGA AGU Ser C AGG AGG AGG GGG GGG GGG GGG GGG GGG GGG	GAU GAC GAA	AAC AAA AAG	CAG AAU	CAC	UAA	UAU UAC	code		Position	
amino acid cys trp trp G trp G U ser C A arg A A G G	asp	lys	gh	his	STOP	tyr	amino acid	Α		
0	GGC GGA	AGC AGA AGG	CGG	CGC	UGA	nec	code			
	γlg	arg		arg	STOP	cys	amino acid	G		
noitied Position	6 A C C	G A C	_ G A	CC	G A	C				
	noitiso9 bridT									