

New Terms - Molecular Genetics (DNA replication, transcription, and translation)

DNA -	deoxyribonucleic acid, consists of two long chains of nucleotides that form a double helix.
double helix -	the nucleotide chains that form DNA - the chains twist around themselves in the form of a spiral staircase.
nucleotide -	consists of a nitrogenous base, a phosphate group, and a molecule of deoxyribose.
RNA -	ribonucleic acid, the nucleic acid that carries out the instructions of the DNA. Has only two differences from DNA - the carbohydrate ribose (instead of deoxyribose), and the nitrogenous base uracil (instead of thymine).
tRNA -	transfer RNA, in the cytoplasm of the cell and is used in protein synthesis to carry amino acids to the ribosomes.
mRNA -	messenger RNA, in the nucleus and receives the genetic code from DNA and takes it into the cytoplasm to carry out protein synthesis.
rRNA -	ribosomal RNA, used to make ribosomes.
replication -	the process by which DNA makes copies of itself; duplication talked about during the S stage of interphase in the cell cycle.
transcription -	process by which DNA "unzips" and codes a strand of mRNA in the nucleus - one of the first stages in protein synthesis.
translation -	the mRNA is "read" and formed into a protein containing amino acids that were gathered and brought to the mRNA by tRNA.
DNA polymerase -	enzyme used in DNA replication
RNA polymerase -	enzyme used in forming mRNA, and tRNA
protein synthesis -	process by which proteins are formed by linking amino acids.
nitrogenous bases -	part of the nucleotide. They are made up of purines and pyrimidines.
purines -	two fused carbon and nitrogen atoms
pyrimidines -	single fused ring of nitrogen and carbon atoms
adenine -	purine base in DNA and RNA symbolized by A
guanine -	purine base in DNA and RNA symbolized by G
cytosine -	pyrimidine base in DNA and RNA symbolized by C
thymine -	pyrimidine base in DNA symbolized by T
uracil -	pyrimidine base in RNA symbolized by U
complementary base pairing -	describes the pairing of nitrogenous bases during replication, purine bases pair with pyrimidine bases (A-T ; G-C ; A-U).
initiation -	indicates the start of protein synthesis indicated by the start codon
elongation -	period in protein synthesis where protein is formed
termination -	end of protein synthesis indicated by the stop codon
codon -	groups of 3 nucleotides. Each serves as a code word for and amino

anticodon -
start codon -
stop codon -

acid

complementary codon to the codon, found on the tRNA molecule
AUG
UAG