

BIOLOGY-WHAT SHOULD I KNOW ABOUT DNA, RNA, & PROTEINS

NAME THE PEOPLE:

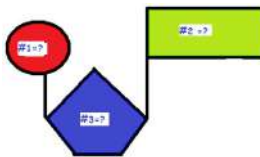
_____ & _____ used _____'s X-ray images to help them figure out the structure of DNA.

SUBUNIT	SUBUNIT NAME	SUBUNIT PICTURE
PROTEINS		
NUCLEIC ACIDS (DNA & RNA)		

	DNA	RNA
Double stranded? Or Single stranded?		
Nitrogen bases it contains		
Nitrogen base missing		
Sugar it contains?		
Function?		
Where found in eukaryotic cells?		

Name the 3 parts of a nucleotide molecule:

#1 = _____



#2 = _____

#3 = _____

What is a purine? _____

What is a pyrimidine? _____

What is the shape of a DNA molecule? _____

Which molecules form the backbone of the DNA molecule? _____ & _____

What molecules form the "steps of the ladder"? _____

What kind of bond holds the nitrogen bases together in the middle of the strand? _____

Chargaff's rule says: A always = _____; G always = _____

What are histones?

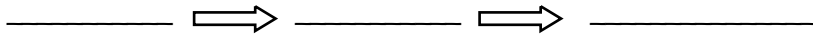
What is a nucleosome?

	CHROMATIN	CHROMOSOMES
Tightly packed? OR loosely packed?		
In dividing? OR non-dividing cells?		
Easy to read & copy? OR Easy to move?		

What is the difference?

	REPLICATION	TRANSCRIPTION	TRANSLATION
WHAT HAPPENS?			
WHERE IT HAPPENS?			

What is the Central Dogma of molecular biology that shows how information is passed in cells?



What enzyme adds nucleotide subunits to the strand when DNA is copied? _____

What enzyme adds nucleotide subunits when RNA is made from DNA? _____

The place on the DNA where RNA POLYMERASE attaches to start transcription = _____

	Messenger RNA (m-RNA)	Ribosomal RNA (r-RNA)	Transfer RNA (t-RNA)
Job during translation (protein synthesis)			
SHAPE?			

Which kind of RNA has a CODON? _____

Each CODON in an m-RNA message is made of _____ nucleotides.

Each CODON in an m-RNA message represents _____ amino acid.

Which kind of RNA has an ANTICODON? _____

What kind of molecules make up ribosomes? _____ & _____

Which cell part makes r-RNA? _____

Which cell part makes proteins? _____

The ribosome makes sure the amino acid is put in the right spot by matching the _____ on the t-RNA with the _____ on the m-RNA

After an m-RNA message is transcribed from the DNA it is edited. _____ are cut out and _____ stay in the message that gets sent to the ribosomes.

Be able to use an mRNA decoder wheel to determine the amino acid sequence if given an mRNA message.

What is a mutation?

What causes mutations?

How are *GENE* mutations different from *CHROMOSOMAL* mutations?

What is a frameshift mutation?

Why is a frameshift mutation at the beginning of the code more damaging than one at the end?

TYPE OF MUTATION	DESCRIPTION	PICTURE

What is polyploidy?

Polyploidy in plants makes them _____; polyploidy in humans is _____