mRNA AND TRANSCRIPTION

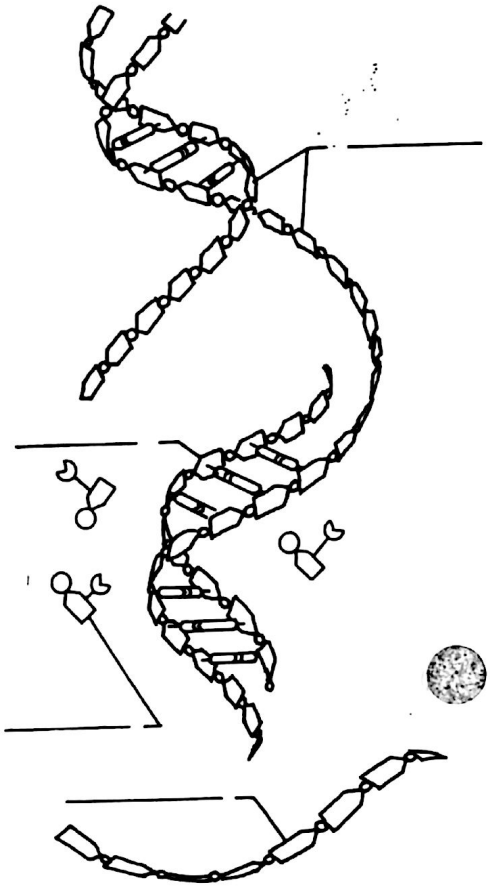
Name _____

Transcription

Fill in the blanks below. On the illustration of transcription, label the DNA, the newly-forming mRNA, the completed strand of mRNA and a free nucleotide.

Messenger RNA (mRNA) carries the instructions to make a particular _____ from the DNA in the _____ to the ribosomes. The process of producing mRNA from instructions in the DNA is called _____.

During transcription, the DNA molecule unwinds and separates, exposing the nitrogenous bases. Free RNA _____ pair with the exposed bases. There is no _____ (T) in RNA. _____ (U) pairs with adenine (A) instead. RNA contains the sugar _____ instead of deoxyribose. The mRNA molecule is completed by the formation of _____ between the RNA _____, and it then separates from the DNA. The mRNA molecule is a _____ strand, unlike DNA.



Codons

Each combination of three nitrogenous bases on the mRNA molecule is a codon, a three-letter code word for a specific amino acid. The table below shows the mRNA codon for each amino acid. Use the table to answer the questions below.

1. The codon for trytophan is _____.
2. For leucine, there are _____ different codons.
3. The codon GAU is for _____.
4. In a stop codon, if the second base is G, the first and third bases are _____ and _____.

Second Base in Code Word

First Base in Code Word	A	G	U	C	Third Base in Code Word
A	Lysine	Arginine	Isoleucine	Threonine	A
	Lysine	Arginine	Methionine	Threonine	G
	Asparagine	Serine	Isoleucine	Threonine	U
	Asparagine	Serine	Isoleucine	Threonine	C
G	Glutamic Acid	Glycine	Valine	Alanine	A
	Glutamic Acid	Glycine	Valine	Alanine	G
	Aspartic Acid	Glycine	Valine	Alanine	U
	Aspartic Acid	Glycine	Valine	Alanine	C
U	"Stop" codon	"Stop" codon	Leucine	Serine	A
	"Stop" codon	Trytophan	Leucine	Serine	G
	Tyrosine	Cysteine	Phenylalanine	Serine	U
	Tyrosine	Cysteine	Phenylalanine	Serine	C
C	Glutamine	Arginine	Leucine	Proline	A
	Glutamine	Arginine	Leucine	Proline	G
	Histidine	Arginine	Leucine	Proline	U
	Histidine	Arginine	Leucine	Proline	C