

REPLICATION, TRANSCRIPTION, & TRANSLATION REVIEW

REPLICATION

Use the DNA code provided and fill in the complementary DNA strand.
Which nitrogen base CAN'T you use during replication? uracil!

① A T T C G A T G C ① T A C G G A T C G
T A A G C T A G C ① A T G C C T A G C ① C A G T G A C T T
G T C A C T G A A

TRANSCRIPTION

Use the DNA code provided to copy an m-RNA message.
Which nitrogen base CAN'T you use during transcription? Thymine!

① A C T G G A T A C ① A C G G A T C G T ① T G A C A G A C T A
U G A C C U A U G ① U G C C U A G C A ① A C U G U C C A A

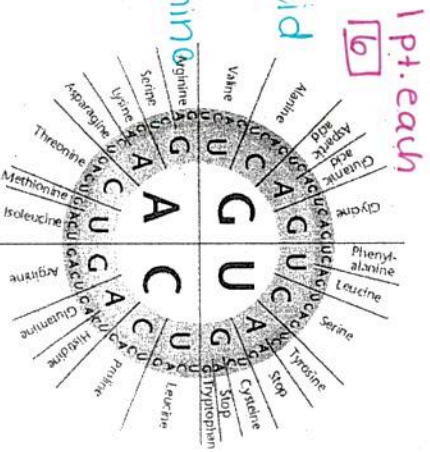
TRANSLATION:

USE the DECODING WHEEL to
DETERMINE the AMINO ACID that
corresponds to the m-RNA CODE GIVEN 1 pt. each
6 that codes for it?
2 Methionine/Tryptophan

mRNA CODE	AMINO ACID
AAA	Lysine
GCG	Alanine
GAU	Aspartic Acid
CAA	Glutamine
CAC	Histidine
UUU	Phenylalanine

Which two mRNA codes correspond to histidine? 1 C A U 1 C A C

How many different mRNA codes correspond to Threonine? 4



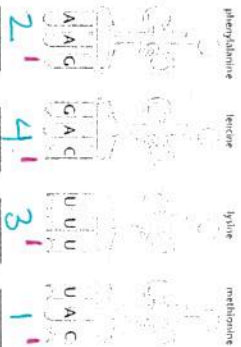
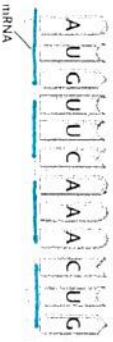
Tell the amino acid sequence for the following mRNA message:

MRNA MESSAGE: A U G C C A U G G C A U

Amino acid sequence:

Methionine - Proline - Tryptophan - Histidine
(start)

Look at the m-RNA message below:
PUT A NUMBER under each of the t-RNA/amino acid complexes to show the correct sequence that they would attach as this message is read.



WHAT IS THE AMINO ACID SEQUENCE FOR THE PROTEIN THAT WOULD BE PRODUCED FROM THIS MESSAGE?

Methionine - Phenylalanine - Lysine - Leucine
(START)

FILL IN THE INFORMATION BELOW with the correct sequence

DNA code	T T A C G G C A	DNA code	<u>U G A A T C G T</u>
MRNA message	<u>A A U G C C G U</u>	MRNA message	<u>G G C U U A G C A</u>
DNA code	A C A C T C G G C	DNA code	<u>G A C C A T G T</u>
MRNA message	<u>U G U C A G C C G</u>	MRNA message	<u>C U G G C U A C A</u>

May go to another ribosome to be read

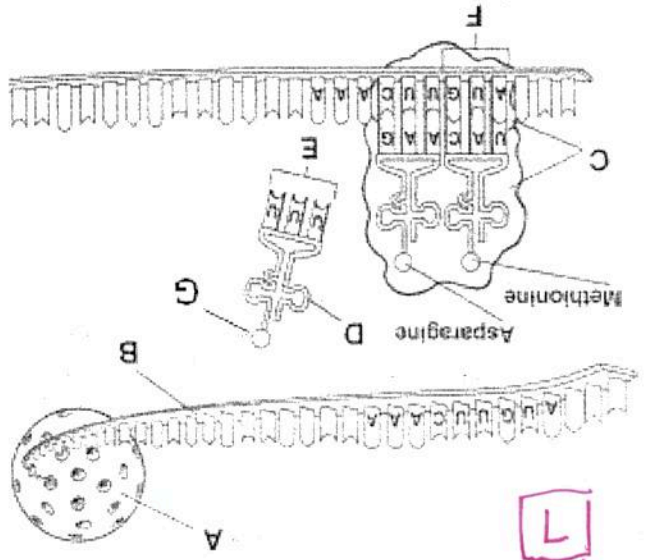
What will happen to B after its message is read?

Goes back to cytoplasm to pick up another amino acid

What will happen to D after it drops off its amino acid?

- D TRANSFER RNA
- F CODON
- G AMINO ACID
- E ANTICODON
- B MESSENGER RNA
- A NUCLEUS
- C RIBOSOME

MATCH THE PARTS IN THE DIAGRAM WITH THE CORRECT LABEL.



1 pt. each

Both code for glycine, so there would be no problem

How would this affect the protein produced?

What if a mutation caused a change in the code so the message read GGA instead of GGC?

Cysteine would be replaced with tryptophan

How would this affect the protein produced?

What if a mutation caused a change in the code so the message read UGG instead of UGC?

Polypeptide

This process of protein synthesis is also called Translation