

1. How are DNA and RNA models similar and different?

DNA	RNA
<ul style="list-style-type: none">▪Double stranded▪Deoxyribose Sugar▪ATCG▪Only in nucleus	<ul style="list-style-type: none">▪Single stranded▪Ribose Sugar▪AUCG▪Made in nucleus and moves to ribosome

2. Why was it easy to create your mRNA from the DNA model?

The Complementary strand of DNA is the same as mRNA except the Ts are replaced with Us

3. Where is cellular information stored in the DNA model?

- The code of bases (ATCGU)

4. What two processes allow DNA to transmit cellular information?

- Transcription and Translation

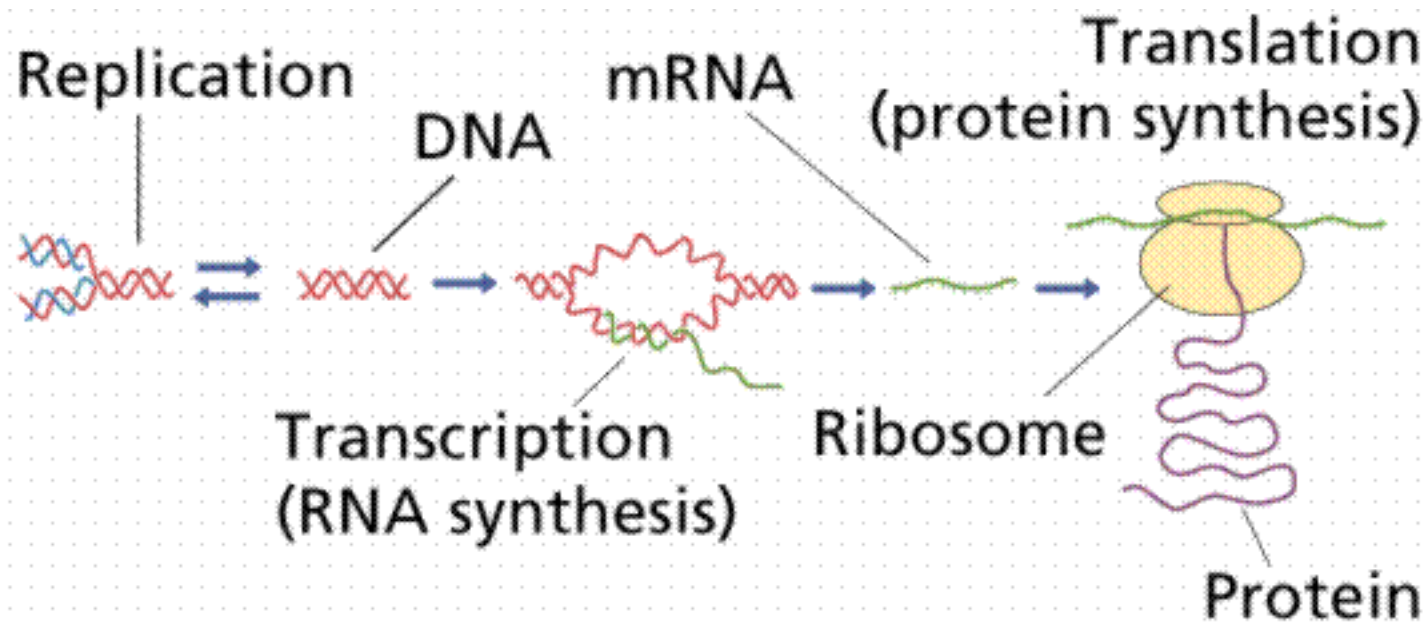
5. What process were you demonstrating when mRNA was created?

Transcription

6. What process were you demonstrating when the amino acids were linked?

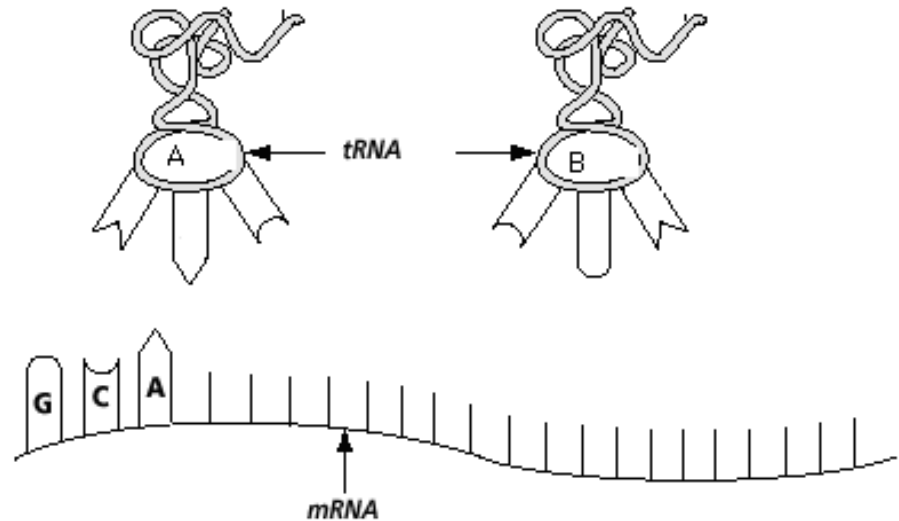
Translation

7. Summarize the steps involved in building protein from the cellular information stored in DNA including the cellular location where all events occurred.



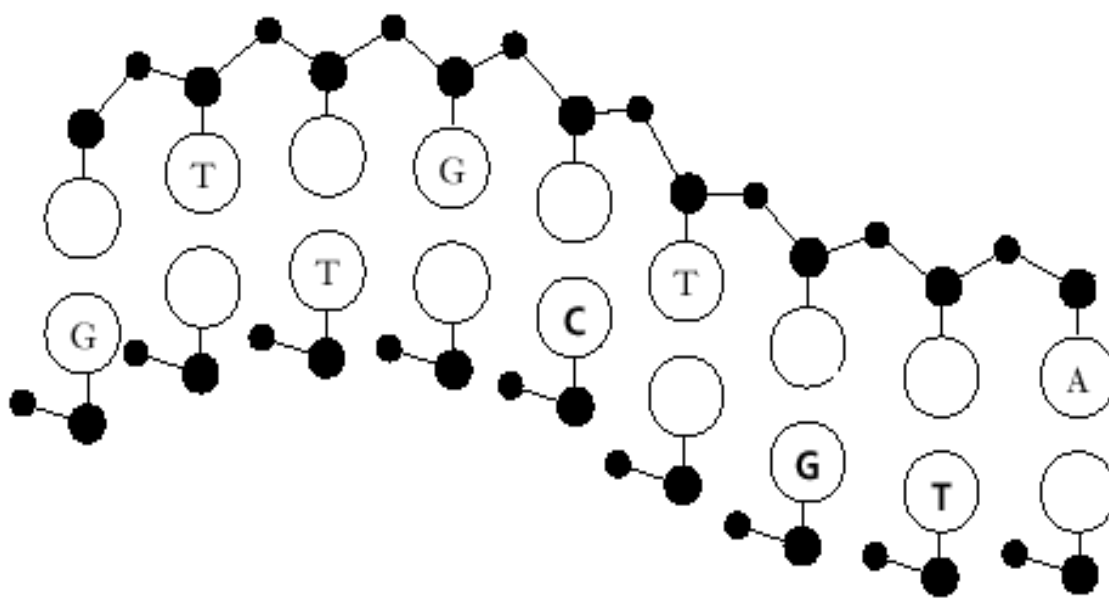
8. Which piece of transfer RNA would be used to carry the amino acid for the mRNA shown below?

B



9. For the picture above, what would the anticodon be for the mRNA codon?

CGU



10. Using the TOP strand of the DNA molecule as the Template Strand in the picture above, complete the mRNA codons. What are these 9 bases?

GAU, CCA, GUU

11. How are DNA replication and Transcription different?

- DNA Replication makes exact copies of DNA while Transcription makes a copy of DNA in the form of RNA

12. How does DNA transfer cell information?

- to RNA by transcription
- to make proteins by translation

13. The "factory" through which the "protein assembly line" is fed is the ribosome.

14. To make a protein, amino acids
must be brought **from** the
cytoplasm

to join with the mRNA strand at the
ribosome.

mRNA: CUCAAGUGCUUC

	U	C	A	G	
U	Phe	Ser	Tyr	Cys	U
	Phe	Ser	Tyr	Cys	C
	Leu	Ser	stop	stop	A
	Leu	Ser	stop	Trp	G
C	Leu	Pro	His	Arg	U
	Leu	Pro	His	Arg	C
	Leu	Pro	Gln	Arg	A
	Leu	Pro	Gln	Arg	G
A	Ile	Thr	Asn	Ser	U
	Ile	Thr	Asn	Ser	C
	Ile	Thr	Lys	Arg	A
	Met	Thr	Lys	Arg	G
G	Val	Ala	Asp	Gly	U
	Val	Ala	Asp	Gly	C
	Val	Ala	Glu	Gly	A
	Val	Ala	Glu	Gly	G

15. Refer to the illustration above. What is the portion of the protein molecule coded for by the piece of mRNA shown above?

Leu—Lys—Cys—Phe