

DNA and Protein Synthesis

Name: _____

Per: _____

Protein Synthesis Analogy

My mom has boxes of recipes she won't let out of her house. If I want to make a cake, I go to her house and copy the recipe. I then carry the copy to my kitchen. Before I can make the cake I call the store and have someone deliver the ingredients. I can then follow the recipe instructions, in the right order, to bake a cake.

Baking a Cake Analogy

- _____ Mom's boxes of recipes
- _____ One recipe
- _____ Mom's house, where her recipes are stored and can't leave.
- _____ Me, copying the recipes and delivering them to where cake will be made.
- _____ My kitchen, where the cake will be made.
- _____ The delivery boy bringing the ingredients to my kitchen.
- _____ The ingredients.
- _____ The cake.

Making a protein

1. A ribosome
2. The protein
3. Entire set of DNA in the nucleus
4. Transfer RNA
5. Section of DNA with directions to make one protein
6. Messenger RNA
7. The nucleus
8. Amino acids

Construction Analogy

- A. blueprints
- B. supervisor
- C. trucks
- D. finished building
- E. concrete & lumber
- F. master plans
- G. building plans
- H. architects vault

Vocab Terms

- _____ nucleus
- _____ DNA
- _____ cytoplasm
- _____ ribosome
- _____ mRNA
- _____ tRNA
- _____ amino acids
- _____ protein

Put these steps of protein synthesis in the correct order.

- _____ Nitrogen bases are added together to form a mRNA with the help of RNA polymerase.
- _____ The DNA of a certain section unwinds
- _____ RNA polymerase reads a section of DNA.
- _____ The finished protein is released from the ribosome.
- _____ Bonds form between adjacent amino acids.
- _____ mRNA leaves the nucleus and attached to a ribosome in the cytoplasm.
- _____ The tRNA with an anticodon that complements mRNA's first codon brings its amino acid to the ribosome.
- _____ More tRNAs brings amino acids to the ribosome until a "stop" codon in encountered.



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Read through the steps above. Circle the steps that are part of transcription. Place a star next to the steps involved in translation.

Word Bank:

mRNA

template strand DNA

non-template strand DNA

nucleotides

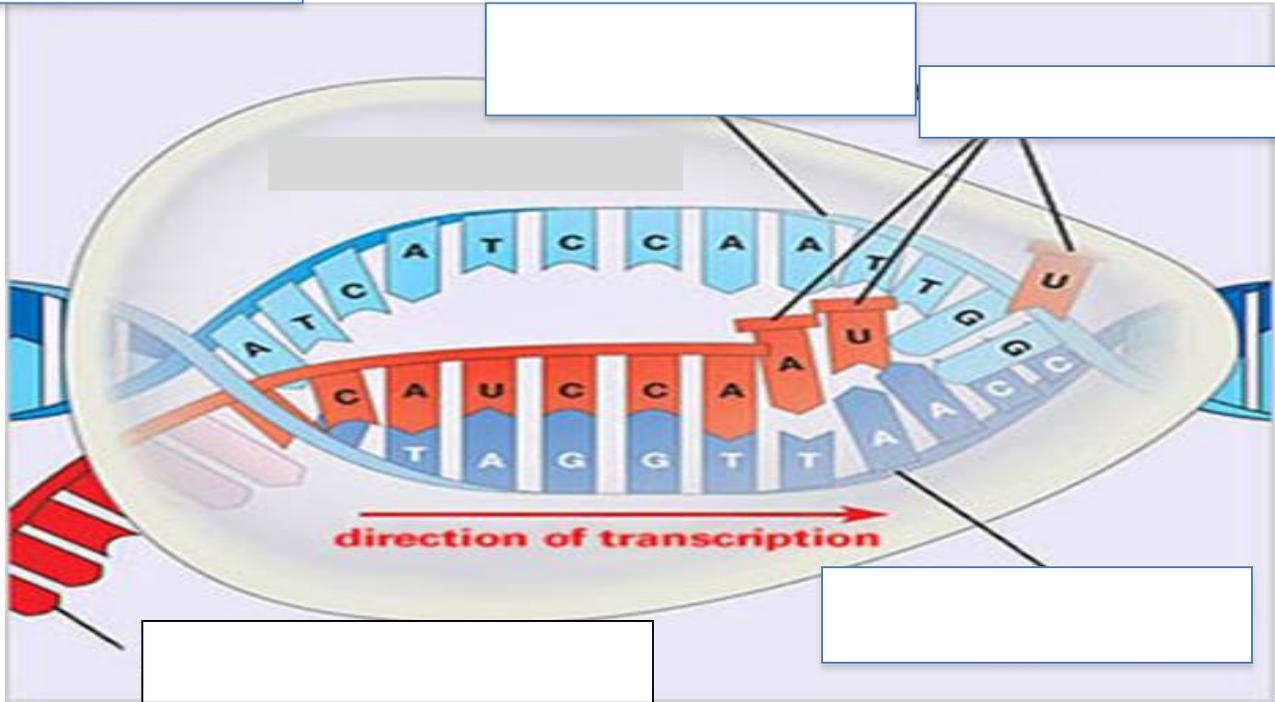
RNA polymerase

replication

transcription

translation

tRNA rRNA



Word Bank:

ribosome

polypeptide

anticodon

mRNA

codon

tRNA

amino acid

DNA

transcription

translation

replication

