Name: _____ Date: _____

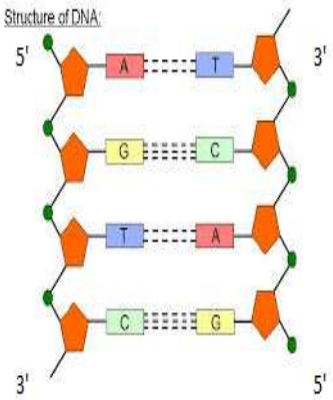
Protein Synthesis: Transcription/Translation Notes

Khan Academy Video Title: *DNA, Hot Pockets, and the Longest Word Ever*

This sheet will serve as your notes for this section of content. Keep it in your binder so you can use this information as a reference for worksheets and to study from. DO NOT throw it away!

*Link:*https://www.khanacademy.org/science/biology/crash-course-biology-science/v/crash-course-biology-111

1. Animals and food are made of salty water, _____, fats, and _____combined in proportions.
2. The DNA _____manual is copied by _____into RNA.
3. Translation follows the instructions to assemble amino acids into _____.
4. Most polypeptides aren't structural proteins, they are _____that help reactions break or build things.
5. The 4 nitrogenous bases of DNA are:
   a. _____ (A)
   b. _____ (T)
   c. _____ (C)
   d. _____ (G)



Transcription

6. The promoter code T A T A A A A on one strand of DNA matches with _ _ _ _ _ _ _ on the opposite strand
7. DNA runs in the ___ to ___ direction or the 3' to 5' direction.
8. The enzyme RNA _____creates an mRNA strand from the DNA template.
9. In RNA, Thymine (T) is not used, instead _____(U) is used.
10. This means that ____ matches with _____, not T, in RNA.
11. The mRNA can now move out of the _____.

Translation

12. During translation, mRNA gets fed into the _____ like a dollar bill into a vending machine.
13. tRNA _____ from the language of nucleotides into the language of amino acids and proteins.
14. A _____is any set of 3 nucleotide bases.
15. The codon AUG has a tRNA anticodon of ____ ____ ____ .
16. The codon UUA has a tRNA anticodon of ____ ____ ____ .

17.This anticodon codes for ________________.

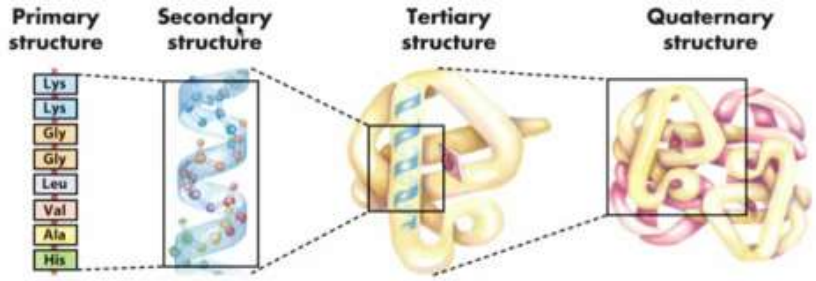
18.The next amino acid gets connected onto the other amino acids to create a ________________chain.

19.________________structure is an amino acid covalently bonded to another, and then another.

20.Secondary structures include helix and ________________.

21. Tertiary structure occurs when proteins fold and the _____-____________bond.

22.Quarternary structures form when ________________proteins bond together.



Practice:

Transcribe this DNA strand:

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

Translate the mRNA strand:

Online Simulation:

http://learn.genetics.utah.edu/content/molecules/transcribe/

1. What is the DNA template strand given on the simulation page?

   ____

2. What is the mRNA strand you created from the DNA template?

   ____

3. What is the start codon?

   ____

4. What amino acid does the start codon always code for?

   ____

5. Write the chain of amino acids you created from the mRNA strand:

   ______________ – ____________ – ______________ – ______________ – ________________

6. What is the “stop” codon you reached?

   ____