

**WRITE YOUR ANSWERS ON YOUR OWN PAPER!!!!!!**

**DNA Transcription//Translation Internet Lab**

Go to: <http://learn.genetics.utah.edu/> and click on **DNA to Protein**

1. Go to: **Build a DNA Molecule** and make a DNA strand - Write down the DNA strand you made:

2. Look at Making Copies (right side of page) and read about how the DNA makes a copy of itself. How is this different from how it was described in class?

Go back to **DNA to Protein** and go to: **Transcribe and Translate a Gene**

3. Each gene codes for a \_\_\_\_\_ that performs a specialized function in the cell. The human genome contains more than \_\_\_\_\_ genes. A protein is made up of a string of \_\_\_\_\_.

4. Transcription and translation: (**bottom of page-right side**) - How is mRNA (messenger RNA) different from DNA?

5. Where is the protein made?

6. What is the sequence that tells the ribosome to start making a protein? \_\_\_\_\_

7. What are the sequences that tell the ribosome to stop making the protein? \_\_\_\_\_

8. Three nucleotides make up a particular \_\_\_\_\_.

9. Click on: **Click here to begin** and make an RNA copy - What is the mRNA sequence you created?

10. Find the start codon. It is \_\_\_\_\_.

11. List the amino acids you used to create your protein.

12. What was your stop codon? \_\_\_\_\_

Go to <http://www.pbs.org/wgbh/aso/trvit/dna/#>

Click on **DNA Workshop Activity**

Click on **Protein Synthesis** and follow the directions to work through synthesizing a strand of DNA

13. Why is there a U instead of a T in the four nitrogen bases?

14. Read what happens as you make your protein.

15. What is the job of tRNA?

16. What is an anti-codon?

17. Name the three amino acids that you use to make your protein.

Go back to the first website (at the top of the page) and click on **What Makes a Firefly Glow?** Watch the animation and answer the following questions.

18. What does the enzyme luciferase do?

19. What information does the LUC gene have?

20. During transcription, the DNA sequence for the LUC gene has been copied onto a single-stranded molecule called \_\_\_\_\_?

21. Where does the mRNA go after transcription?

22. Name the cell organelle where proteins are made.

23. What product is created using the information carried by the LUC mRNA?

24. Name the process by which the ribosome changes the information into a new form.

25. Luciferase enzyme is a protein. It is made of a string of \_\_\_\_\_.

26. Finish watching to see how the luciferase helps make the firefly glow. Tell me what you think about it.