**Protein Synthesis - Intro Webquest**

Link 1 What is a Protein? <http://learn.genetics.utah.edu/content/basics/oldtour/protein.swf>

1. How are proteins involved in the transmission of a pain signal?

a.

b.

2. How many genes code for an individual protein? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. What is mRNA (messenger RNA) and how does is it related to DNA? Where is this made in the cell?

4. What is the name of the process that makes mRNA? \_\_\_\_\_\_\_\_\_\_\_\_

5. Why would the cell go through the trouble of making mRNA when this process requires energy? (**this is not on the website, just think about this one**)

**Link 2 - Types of Proteins** <http://learn.genetics.utah.edu/content/basics/proteintypes/>

Pick 6 proteins and give me their name and function. Use **3 different categories** of proteins to pick your 6 total

|  |  |
| --- | --- |
| **Protein Name** | **Protein Function** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

6. How can proteins be so diverse in their functions?

Link 3 - <http://learn.genetics.utah.edu/content/basics/firefly/flash>

7. Explain What Makes a Firefly Glow using all of the words below in a complete paragraph:

RNA Polymerase, LUC gene, Transcription, mRNA, Luciferase Enzyme, Ribosome Translation, Amino Acids, Three dimensional Luciferin, Oxyluciferin,

Functional Luciferase Enzyme

**Additional Questions - not from any specific website**

8. Draw the amino acid Methionine and the amino acid Serine. Circle the R group on each amino acid.

9. Next draw the resulting structure after **dehydration synthesis** has occurred to create a dipeptide.

10. Was this reaction

a. anabolic or catabolic?

b. Endergonic or exergonic?

c. Have a positive ΔG or a negative ΔG?

d. Which molecule would have a greater potential energy. Serine or the dipeptide?

11. **Hydrolysis** is the breaking apart of a polymer into monomers by adding water. What would your answers have been to 10 if I had asked about hydrolysis?