Central Dogma WebQuest　　　　　　　　Name: _____

　　　　　　　　　　　　　　　　　　　　　Period: ____Date: _____

Answer each of the questions as you travel to the webpages below. Links can be found here:
　　　　mvhslifescience.weebly.com → Biology → DNA → WebQuest (bottom of the page)

From Gene to Protein: Transcription

Complete the tutorial by clicking "Next Concept" and reading each page. Answer the questions and fill in the blanks below as you go through the information.

1. What two-step process does the central dogma describe? _____ and _____

2. Transcription is the synthesis of _____ of a segment of DNA.

3. In a eukaryotic cell, transcription occurs in the <u>nucleus</u>, and translation occurs in the _____.

4. Write the functions of the following forms of RNA:

mRNA: _____

tRNA: _____

rRNA: _____

5. List one way that DNA and RNA are different. _____

_____

From Gene to Protein: Translation

Complete the tutorial by clicking "Next Concept" and reading each page. Answer the questions and fill in the blanks below as you go through the information.

1. According to the central dogma, what three forms does information in genes take? _____ →
　　_____ → _____

2. What is the basic building block of a protein? _____

3. How many amino acids exist in humans? _____

4. Name one amino acid. _____

5. What type of bond holds amino acids together?_____

6. How many nucleotides code for each amino acid?_____

7. What is the three letter mRNA base code (codon) for the "start" codon? _____

8. List one "stop" codon. _____

9. In a eukaryotic cell, where is mRNA made? _____

10. In a eukaryotic cell, where is mRNA translated? _____

11. What form of RNA brings amino acids to the ribosomes during translation? _____

12. What happens when the ribosome reads a "stop" codon during translation? _____

13. What is a protein?_____

RNA is an intermediary between DNA and protein

Concept, Animation (only through Watson's narration), and Problem.

1. What type of RNA transcribes DNA? _____

2. Who narrates the animation? _____

3. What kind of sugar is used in RNA? _____

4. What nitrogenous base replaces thymine in RNA? _____

5. What base does the base you named in #4 bond with? _____

6. DNA is double-stranded; how would you describe RNA? _____

7. What enzyme makes RNA from a DNA template? _____

8. True or False: Any changes in the DNA sequence will be reflected in the mRNA sequence. _____

Scitable: Ribosomes, Transcription, and Translation (Begin at "What Are the Initial Steps in Accessing Genetic Information?")

1. What is the first step in decoding a cell's genetic information? _____

2. List one way that RNA is different from DNA. _____

3. What is the function of mRNA? _____

4. What is the function of rRNA? _____

5. What is the function of tRNA? _____

6. What process begins after the transcription of DNA to mRNA is complete? _____

7. What is the product of the process named in #6? _____

8. What amino acid does the codon AGC code for? _____

9. True or False: Protein chains can be hundreds of amino acids in length. _____

Learn.Genetics Transcribe & Translate A Gene

For the RNA strand, type in the complementary base as the cursor flashes above each letter. Follow the instructions to find the "start" codon. Then, select the correct amino acid for each codon.

1. What are the six amino acids, in order, that the mRNA strand codes for? _____

_____