Translation

Go to the following web page:
http://sce.uhcl.edu/boetticher/ML_DataMining/gene3.swf
Answer the following questions:

1. How many steps are there to the process of making proteins? _____
2. What is the first step to making proteins, and what happens during this step?
   _____
3. Where does the mRNA carry the information from the DNA to?
   _____
4. What is the second step called and what takes place during this step?
   _____
5. What molecules in the cytoplasm read the mRNA strand? _____
6. What do the ribosomes link together? _____
7. The ribosome reads the mRNA… how many nucleotides at a time? _____
8. What is a codon? _____
9. What is the start codon that the ribosome looks for? _____
10. What is the significance of a start codon? _____
11. What brings the amino acids to the mRNA strand and ribosome? _____
12. Draw a picture of a tRNA and show what the tRNA has at each end.

13. What determines what amino acid the tRNA carries? _____
14. What is coiled up to form the tRNA? _____
15. The anti-codon is complimentary to what? _____
16. What happens when the ribosome reads the next codon after the start codon?
    _____
17. What kind of bond forms between the two amino acids? _____
18. As the ribosome moves along the mRNA strand, what happens to the first tRNA?
    _____
19. This process of adding amino acids continues until what?
    _____
20. What does the stop codon indicate? _____
21. In reality an amino acid chain is usually composed of how many amino acids?
    _____
22. What is it that gives each protein its unique function and job in your body?
    _____
23. How can your cell produce larger quantities of proteins?
    _____

Translation

Answer Key!

Go to the following web page:
*www-**class**.**unl**.edu/biochem/gp2/m_biology/.../gene_a3.html*
Answer the following questions:

1. How many steps are there to the process of making proteins? **2**
2. What is the first step to making proteins, and what happens during this step? **Transcription/ an mRNA copy is made of the DNA**
3. Where does the mRNA carry the information from the DNA to? **To the cytoplasm**
4. What is the second step called and what takes place during this step? **Translation; mRNA is read and amino acids link to form a protein**
5. What molecules in the cytoplasm read the mRNA strand? **Ribosomes**
6. What do the ribosomes link together? **Amino acids**
7. The ribosome reads the mRNA… how many nucleotides at a time? **3**
8. What is a codon? **Each group of 3 nucleotides**
9. What is the start codon that the ribosome looks for? **AUG**
10. What brings the amino acids to the mRNA strand and ribosome? **A tRNA**
11. What is the significance of the start codon? **It tells the ribosome where to start translating the mRNA.**
12. Draw a picture of a tRNA and show what the tRNA has at each end. **(It has an amino acid at one end and an anticodon at the other)**
13. What determines what amino acid the tRNA carries? **The anti codon**
14. What is coiled up to form the tRNA? A t**RNA molecule**
15. The anti-codon is complimentary to what? **To the codon on the mRNA**
16. What happens when the ribosome reads the next codon after the start codon? **Another tRNA comes up with an anticodon complimentary to the second codon**
17. What kind of bond forms between the two amino acids? **Peptide bonds**
18. As the ribosome moves along the mRNA strand, what happens to the first tRNA? **Falls of and leaves its amino acid**
19. This process of adding amino acids continues until what? **Until the ribosome reaches a stop codon (UAA, UGA, or UAG)**
20. What does the stop codon indicate? **The end of a gene**
21. In reality an amino acid chain is usually composed of how many amino acids? **Hundreds**
22. What is it that gives each protein its unique function and job in your body? **Its 3D shape**
23. How can your cell produce larger quantities of proteins? **Each mRNA strand can be read by multiple ribosomes.**