**Do**

Protein Synthesis Analogy Drawing

Activity

Protein synthesis involves connecting amino acids into chains beginning at a control center (the nucleus of the cell) to get a copy of the original plan (DNA) and transcribe that plan into a code that will result in a specific amino acid sequence in a polypeptide chain. To make an analogy (comparison) drawing, think of real life situations where instructions are given to workers who will assemble coded sequences of a product.
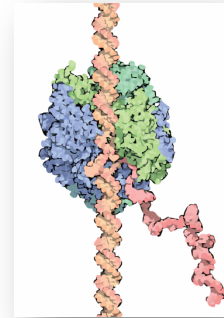
Procedure:

1. In your lab journal, create your **Key**. Be sure to explain each part of your analogy and how it represents the actual process of Protein Synthesis.   An example key:
    DNA = Original Pyramid Blue-print
    mRNA = The Scribe's Copy of the Pyramid Blue-prints
    Ribosome = The Builders/Workers
    rRNA = Assistant Architects that Break the Building of the Pyramid into smaller tasks
    tRNA = Quarry Workers that bring the stones to the Builders/Workers
    Amino Acids = Limestone Blocks of the Pyramid
    Peptide Bond = Stuff between the Limestone Blocks that Keeps the Pyramid Together
    Protein = The Finished Pyramid and all its parts
2. In your lab journal (excluding the space for your Key), draw, as well as describe, a depiction of each step of protein synthesis. See the example on the next page.
3.   Additional steps to be included:
    1. DNA cannot leave the nucleus, so it unzips to allow mRNA to make a copy.
    2. Before leaving the nucleus, mRNA reviews the copied sequence of DNA and removes introns, only leaving exons. This represents splicing.
    3. mRNA leaves the nucleus and heads to the ribosome.
    4. Ribosome (rRNA) translates the mRNA into sections of three bases called a codon.
    5. Once all the codons are translated correctly, a chemical signal is sent out to the tRNAs. tRNA then brings the correct amino acids (anticodon) one at a time to the ribosome.
    6. The ribosome binds the amino acids together by peptide bonds.
    7. Lastly, the finished protein (chain of amino acids) gets sent where it is needed, OR goes to the Golgi Body for modification/folding, etc.

Do

Protein Synthesis Analogy Drawing

Activity, continued

Drawing Example: