Tuesday, January 15th, 2013

Unit: DNA Topic: Transcription/Translation	Date: 1/15/2013 Class: Biology

Illinois Objectives:
12.11.21 Understand that, in all living things, DNA (deoxyribonucleic acid) carries the instructions for specifying the characteristics of each organism. Understand that DNA is a large polymer formed from four subunits: A, G, C, and T (adenine, guanine, cytosine, thymine, a 5-carbon sugar and a phosphate). The chemical and structural properties of DNA explain how the genetic information that underlies heredity is both encoded in genes (as a string of molecular letters) and replicated (by a templating mechanism). Know that each DNA molecule in a cell is a single chromosome.
12.11.22 Understand that a gene is a set of instructions in the DNA sequence of each organism that specifies the sequence of amino acids in polypeptides characteristic of that organism.
12.11.23 Understand the general steps by which ribosomes synthesize proteins, using information from mRNA and from amino acids delivered by tRNA.

Michigan Biology Objectives:
B4.2f Demonstrate how the genetic information in DNA molecules provides instructions for assembling protein molecules and that this is virtually the same mechanism for all life forms.
B4.2g Describe the processes of replication, transcription, and translation and how they relate to each other in molecular biology.

My Lesson Objectives:
- Write an mRNA sequence from a DNA template.
- Read the codon chart, and write an amino acid sequence from an mRNA template.

Activities:	Materials/Equipment:
Bellringer (10 minutes) Lecture Notes on the structure and function of mRNA, rRNA, and tRNA. (20 minutes) Practice problems at the white board related to transcription and translation. (15 minutes) Exit Ticket (5 minutes)	● PowerPoint Presentation ● Copies of codon chart ● Copies of Exit Ticket

Assessment: (Embedded, Formal)
Embedded:
- Class discussion about student responses to the bellringer questions.
- Exit Ticket: Students receive a strand of DNA bases and they have to write:
    - mRNA strand
    - amino acid sequence using the codon chart.