

Week of: 11/2-11/6

Teacher: Anderson

Subject: Biology

Monday

TLW: Objective: Explain replication, transcription, and translation as it relates to the structure and function of DNA and RNA. TEKS: 6B

Activities:

Warm-up: DNA strands are given to each student as they walk in the door.

Students will need to find the person in the room who has the complementary strand of DNA that matches the strand they have. Once all partners are found, students will show how their DNA strands would be replicated. This will all be recorded in their composition notebooks. (10 min)

Elaborate: Students will use a vocabulary strategy to familiarize themselves with the following terms: DNA Replication, Helicase, DNA Polymerase, 5', 3', Nucleotide, Nitrogenous Base, Hydrogen Bond, Base Pairing, Backbone, Semi-Conservative, Double Helix, and Daughter Strands. Students will be given these terms in addition to definitions of these terms, and pictures of these terms. They will all be mixed up on their lab tables and students will need to put the correct vocabulary word with the correct definition, and picture. (20 min)

-Homework from last Friday to be reviewed before quiz.

Evaluate: Quiz on DNA Structure and Function (10 min)

Materials: DNA Strands, DNA Cards, Quiz

Follow Up/HW:

Tuesday

TLW: Objective: Explain replication, transcription, and translation as it relates to the structure and function of DNA and RNA. TEKS: 6B

Activities:

Engage: Video-Transcription animation

Explore: Compare/Contrast Sheets will be given to each student. Students will write what they can about similarities and differences between DNA and RNA. (10 min)

Explain: Students will take notes about RNA and transcription. (15 min)

Elaborate: Students will model transcription using K'NEX kits. Students need to explain the process of transcription in addition to creating the structure. Teacher will question students on the new base used in transcription, ribose sugar, what you end up with after transcription is complete, and where transcription happens in the cell. (20 min)

Students work in groups on a packet that reviews transcription and introduces translation. If not complete, the packet will be homework. (5min)

Materials: Transcription animation, Compare/contrast handout, K'NEX kits

Follow Up/HW:

Wednesday /Thursday

TLW: Objective: Explain replication, transcription, and translation as it relates to the structure and function of DNA and RNA. TEKS: 6B

Activities:

Warm-up: Homework Review-Transcription Packet (15 min)

Engage: Video-Translation animation (10 min)

Explore: Students will complete Protein Synthesis simulation. Students will be given a DNA sequence. The DNA sequence will be transcribed and translated to create a sentence which represents the protein. Students become familiar with mRNA, tRNA, amino acids, proteins, and the processes transcription and translation. After the first sentence is created and checked by the teacher, students will receive another DNA sequence to repeat the process. Students will receive a total of 3 DNA sequences. (30 min)

Explain: Students take notes about translation and should see the connection between the processes transcription and translation. Teacher will model how to find amino acids using a codon chart. (15 min)

Elaborate: Students are given a practice sheet in which they will need to convert DNA into mRNA. From mRNA, students convert to tRNA, and from there to amino acids. Students practice using the codon chart to find amino acids. (15 min)

Materials: Projector, Transcription Packet, Website, Protein Simulation worksheet-DNA sequence, codon chart, Practice Worksheet

Follow Up/HW:

Friday

TLW: Objective: Describe components and structure of DNA and illustrate how DNA carries the information for traits. Explain replication, transcription, and translation as it relates to the structure and function of DNA and RNA.

TEKS: 6A, 6B

Activities:

Students will complete DNA Web quest assignment in the library. Students will have the opportunity to learn more about DNA, genes, traits, heredity, proteins, chromosomes, and will get to play interactive games to model replication, transcription, and translation.

We will also review how to use codon charts during this time if students had difficulty with this in the homework.

Websites: http://nobelprize.org/educational_games/medicine/dna_double_helix

<http://learn.genetics.utah.edu>

Materials: Web quest assignment packet

Follow Up/HW:

