

Pecos High School  
Pre-AP Biology 1<sup>st</sup> Six Weeks  
2009-2010 Syllabus

<p>Week 1:</p> <p>Student Expectations: Students will demonstrate an understanding of the biological processes and characteristics of life exemplified by organisms. Students will recall the steps in the scientific method.</p> <p>August 24: Teacher notes, vocabulary handouts, textbook reading assignments, worksheet questions.</p>
<p>Week 2:</p> <p>Student Expectations: Cell structure and function will be analyzed and students will recognize the differences between prokaryotic and eukaryotic cells. Students will demonstrate an understanding of the structure and function of cell organelles.</p> <p>August 30: Teacher notes, vocabulary handouts, textbook reading assignments, worksheet questions, films over cellular structure and function.</p>
<p>Week 3:</p> <p>Student Expectations: Students will recognize that all organisms are composed of cells and that the cell is the basic unit of structure and function of all living things. Students will analyze the levels of organization of living things.</p> <p>September 7: Teacher notes, vocabulary handouts, textbook reading assignments, worksheet questions. Students will compare and contrast different types of cells.</p>
<p>Week 4:</p> <p>Student Expectations: Chemistry-composition of matter: Students will differentiate between atoms and elements and analyze how compounds are formed. Students will also distinguish between covalent bonds, hydrogen bonds, and ionic bonds. Students will analyze biochemical reactions.</p> <p>September 14: Teacher notes and lecture, illustrations of atoms atomic structure, films over atomic structure and bonding, worksheets, vocabulary notes.</p>
<p>Week 5:</p> <p>Student Expectations: Cell Membrane and it's Environment: Students will analyze membrane structure and relate concentration gradients, diffusion, and equilibrium. They will predict the movement of water into and out of a cell, Students will distinguish between passive and active transport, describe functioning of the sodium-potassium pump.</p> <p>September 21: teacher notes and lecture, illustrations of osmosis and ion channel transport, films over molecular movement across the cell membrane, worksheets, vocabulary notes.</p>
<p>Week 6:</p> <p>Student Expectations: students will demonstrate an understanding of the structure and function of DNA and evaluate the contributions of Chargaff, Franklin, and Wilkins in helping Watson and crick to determine the double-helical structure of DNA. Students will describe the components of a nucleotide (basic DNA unit).</p> <p>September 28: teachers notes and lecture, illustrations of DNA, films over DNA strands and structure.</p> <p><b>BENCHMARK</b></p>

PECOS HIGH SCHOOL  
PRE-AP BIOLOGY(SCOWN)  
Second Six Weeks

Week 1:

Student Expectations: Students will summarize the process of DNA replication. Students will analyze how errors in the DNA are corrected during replication. Students will compare the number of replication forks in prokaryotic and eukaryotic DNA influencing the rate of replication. Students will also relate the role of the base pairing rule to replication.

October 5 : Lecture, textbook, teacher notes, films, diagrams and models.

Week 2:

Student Expectations: Students will demonstrate an understanding of the process of protein synthesis and that the DNA molecule provides the template for the production of transfer RNA. Also that the RNA molecule is a code for the sequencing of amino acids to form a polypeptide (protein).

October 12: Lecture, textbook, teacher notes, films, diagrams and models.

Week 3:

Student Expectations: Students will relate the role of codons to the sequencing of amino acids according to the Messenger RNA code. Students will analyze the genetic code and predict the sequence of amino acids according to the messenger RNA codons in the manufacture of a protein.

October 19: Lecture, textbook, teacher notes, films, diagrams and models.

Week 4 :

Student Expectations: Students will demonstrate a knowledge of the difference between sister chromatids and homologous chromosomes, haploid and diploid cells, autosomes and sex chromosomes. Also the students will demonstrate an understanding of how the genetic code is passes on to offspring through the DNA.

October 26: Lecture, textbook, teacher notes, films, diagrams and models.

Week 5:

Student Expectations: Students will demonstrate an understanding of the cell cycle by drawing each stage and labeling those drawings. Students will describe these major events of the cell cycle. Students will explain the differences between plant and animal mitosis and the role of checkpoints during the cell cycle.

November 2: Lecture, textbook, teacher notes, films, diagrams and models.

Week 6:

Student Expectations: Students will demonstrate an understanding of how chromosome number dictates everything about the organism and how changes in this number will affect the organism. Students will analyze karyotypes to determine changes in chromosome number and orientation and explain how those changes manifest in the organism.

November 9: Lecture, textbook, teacher notes, films, diagrams and models.

PECOS HIGH SCHOOL  
PRE-AP BIOLOGY(SCOWN)  
Third Six Weeks

Week 1:

Student Expectations: Introduction to genetics and the studies of Gregor Mendel (father of genetics). Studying Mendel's breeding experiments using the garden pea, *Pisum sativum*, the student will summarize the three major steps of Gregor Mendel's garden pea experiments. The student will explain the difference between phenotypic and genotypic traits. Students will demonstrate the use of monohybrid crosses using Punnett squares.

November 16 : Lecture, textbook, teacher notes, films, diagrams and models.

Week 2:

Student Expectations: Students will predict the outcomes of monohybrid dominant/recessive genetic crosses by using Punnett squares. Students will be able to express results of genetic crosses using phenotypic and genotypic ratios.

November 23/30: Lecture, textbook, teacher notes, films, diagrams and models.

Week 3:

Student Expectations: Students will be able to predict the outcomes of monohybrid multiple allele problems using human blood type as an example. Using blood antigen alleles (codominance) students will be able to express the possible parents as type A, B, AB, or O and then to predict the possible phenotypes and genotypes of children from those crosses. Students will also demonstrate how to read a pedigree and to analyze if the genetic disorder is sex-linked or autosomal, dominant or recessive. Students will also determine the heterozygous recessive "carriers" shown in pedigrees.

December 7 : Lecture, textbook, teacher notes, films, diagrams and models.

Week 4:

Student Expectations: Students will be able to predict the outcomes of dihybrid dominant/recessive genetic crosses by using Punnett squares. Students will be able to express the results of these crosses using genotypic and phenotypic ratios. Students will also explore the inheritance of "intermediate characteristics" through incomplete dominance.

December 14: Lecture, textbook, teacher notes, films, diagrams and models.

Week 5:

Student Expectations: Students will describe Darwin's work aboard the HMS *Beagle* and its Voyage to the Galapagos Islands. Students will identify Lyell's *Principles of Geology* and Malthus' "Essay on the Principle of Population" (1798) as being major influences on Darwin's work. Students will also compare and contrast Lamarck's theory of evolution with the theory of natural selection by Darwin.

January 4: Lecture, textbook, teacher notes, films, diagrams and models.

Week 6:

Student Expectations: Identify several observations that led Darwin to conclude that species

January 11: Lecture, textbook, films and Semester BENCHMARK

Pecos High School  
Biology  
4th Six Weeks Syllabus

Student Expectations: The student is expected to be able to define and identify characteristics of Prokaryotic cells and compare characteristics of viruses with prokaryotic and eukaryotic cells.

January 18 : Teacher notes, vocabulary, text book, and ancillary materials

Student Expectations: Students should be able to identify the species of bacteria in the gut of mammals and how bacteria help the digestive process and how viruses can be detrimental to the cell.

January 25: Teacher notes, vocabulary, text book, and ancillary materials

Student Expectations: Students should be able to identify the different function that each specialized cell structure contributes to the overall stability of the cell

February 1-5: Teacher notes, vocabulary, text book, and ancillary materials

Student Expectations: The students will be able to identify the characteristics of organisms in the Kingdom Protista.

February 7-12: Teacher notes, vocabulary, text book, and ancillary materials

Student Expectations: The student is expected to be aware of the importance of Protozoan commercially and the disease associated with Protozoans.

February 15-19: Teacher notes, vocabulary, text book, and ancillary materials,

Student Expectations: The student is expected to analyze the characteristics of Fungus.

February 22-26: Teacher notes, vocabulary, text book, and ancillary materials: 4<sup>th</sup> Benchmark

Pecos High School  
Biology  
5th Six Weeks Syllabus

<p>Student Expectations: The student is expected to analyze the different parts of a plant. March 1-5: Teacher notes, vocabulary, text book, and ancillary materials TAKS Week (Seniors)</p>
<p>Student Expectations: The student is expected to differentiate between the parts of a plant and their primary function.  March 9-12: Teacher notes, vocabulary, text book, and ancillary materials March 15-19 (spring break):</p>
<p>Student Expectations: Begin TAKS Preparation Review: The students are expected to identify and define with body system is at work based on function as well as recognize that all systems are interconnected.  March 22-26: Teacher notes, vocabulary, text book, and ancillary materials</p>
<p>Student Expectations: TAKS Review- Review 1<sup>st</sup>-5<sup>th</sup> Six Weeks Material, such as cell structure and function.  March 29-April 2: Teacher notes, vocabulary, text book, and ancillary materials</p>
<p>Student Expectations: TAKS Review- Review 1<sup>st</sup>-5<sup>th</sup> Six Weeks Material, such as taxonomic groups including plants, animals, fungi, archeabacteria, eubacteria.  April 5-9: Teacher notes, vocabulary, text book, and ancillary materials,</p>
<p>Student Expectations: TAKS Review- Review 1<sup>st</sup>-5<sup>th</sup> Six Weeks Material, such as food webs, food chains, ecological review.  April 12-16: Teacher notes, vocabulary, text book, and ancillary materials: 5<sup>th</sup> Benchmark</p>

Pecos High School  
Biology  
6th Six Weeks Syllabus

<p>Student Expectations: TAKS Review- Review 1<sup>st</sup>-5<sup>th</sup> Six Weeks Material, Review protein synthesis. April 19-23: Teacher notes, vocabulary, text book, and ancillary materials</p>
<p>Student Expectations: TAKS Review- Review 1<sup>st</sup>-5<sup>th</sup> Six Weeks Material, such as relationships between organisms including predation, mutualism, commensalisms and parasites.</p> <p>April 26-30: Teacher notes, vocabulary, text book, and ancillary materials (TAKS TESTING WEEKS)</p>
<p>Student Expectations: Review 1<sup>st</sup>-5<sup>th</sup> Six Weeks Material with the focus on end of course exam.</p> <p>May 3-7 : Teacher notes, vocabulary, text book, and ancillary materials</p>
<p>Student Expectations: Review 1<sup>st</sup>-5<sup>th</sup> Six Weeks Material with the focus on end of course exam.</p> <p>May 10-14: Teacher notes, vocabulary, text book, and ancillary materials</p>
<p>Student Expectations: Review 1<sup>st</sup>-5<sup>th</sup> Six Weeks Material with the focus on end of course exam.</p> <p>May 17-21 : Teacher notes, vocabulary, text book, and ancillary materials, (End of Course Exam Testing Window)</p>
<p>Student Expectations: Lab activities such as frog, worm dissection.</p> <p>May 24-25: Teacher notes, vocabulary, text book, and ancillary materials: Semester Benchmark</p>