

Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
PreAP Biology Unit 5 – Molecular Basis of Inheritance	9	3 rd Cycle	10 days
TEKS/Student Expectations		Examples/Specifications:	
<p>1A Students will demonstrate safe practices during field and laboratory investigations</p> <p>1B Students will make wise choices in the use and conservation of resources and the disposal or recycling of materials</p> <p>2A Students will use scientific methods during field and laboratory investigations.</p> <p>2B Students will collect data and make measurements with precision;</p> <p>2C Students will organize, analyze, evaluate, make inferences, and predict trends from data;</p> <p>2D Students will communicate valid conclusions.</p> <p>3D The student uses critical thinking and scientific problem solving to make informed decisions.</p> <p>3E The student is expected to evaluate models according to their adequacy in representing biological objects or events;</p> <p>3F The student is expected to research and describe the history of biology and contributions of scientists</p> <p>4B The student will investigate and identify cellular processes including homeostasis, permeability, energy production, transportation of molecules, disposal of wastes, function of cellular parts, and synthesis of new molecules;</p> <p>6A The student knows the structures and functions of nucleic acids in the mechanisms of genetics. The student is expected to describe components of deoxyribonucleic acid (DNA), and illustrate how information for specifying the traits of an organism is carried in the DNA;</p> <p>6B The student will explain replication, transcription, and translation using models of DNA and ribonucleic acid (RNA);</p> <p>6C The student will identify and illustrate how changes in DNA cause mutations and evaluate the significance of these changes</p>		<p>Students will:</p> <ul style="list-style-type: none"> -Gather, graph, interpret data, distinguish observations from inferences, use laboratory equipment properly. -Describe the components of the DNA molecule -Model the structure of the DNA molecule and demonstrate how replication occurs -Compare the structure and function of DNA to that of RNA -Perform a DNA Extraction -Contrast mRNA, tRNA and rRNA -Sequence the steps in protein synthesis -Practice transcribing and translating information to build proteins -Summarize the relationship between DNA and genes -Identify types of mutations 	

Language of Instruction:	Instructional Resources/Textbook Correlations:
<p>Transformation, bacteriophage, Griffith, Avery, Hershey-Chase, Rosalind Franklin, Watson and Crick, nucleotide, base pairing, adenine, guanine, cytosine, thymine, Chargaff's rule, purines, pyrimidines, chromatin, histone, nucleosomes, replication, helices, ligase, DNA polymerase, gene, messenger RNA, ribosomal RNA, transfer RNA, transcription, RNA polymerase, promoter, intron, exon, codon, translation, anticodon, uracil, point mutation, frame shift mutation, polyploidy, operon, operator, differentiation, hox gene</p>	<p>Prentice- Hall Biology: Chapter 12 Sections 1-4</p> <p>Laboratory Investigations:</p> <p><i>DNA Replication Modeling Lab</i> <i>DNA Extraction Lab</i> <i>Genetic Decoding Activity</i> <i>Protein Synthesis Lab</i></p> <hr/> <p>Weblinks/Other Resources:</p> <p>TAKS Workbook Prentice-Hall Video Clips www.unitedstreaming.com</p>
Evaluation/External Assessment/Local Assessment:	Best Instruction Timeline:
<p>TAKS Bell Warmers and Workbook Key Terms and Reading Quiz Chapter 12 DNA Model Chapter worksheets Laboratory reports and performance in lab Chapter 12 Test</p>	<p>4 days - Structure of DNA and Replication 3 days - Protein Synthesis 1 day – Mutations, Chromosome Structure and Abnormalities 2 days - Assessment</p>