

## Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
PreAP Biology Unit 2 – Biochemistry	9	1 <sup>st</sup> Cycle	18 days
<b>TEKS/Student Expectations</b>		<b>Examples/Specifications:</b>	
<p>1A Students will demonstrate safe practices during field and laboratory investigation</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 plan and implement investigative procedures</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>3A Students will analyze, review, and critique scientific explanations, as to their strengths and weaknesses using scientific evidence and information;</p> <p>3C Students will evaluate the impact of research on scientific thought, society, and the environment</p> <p>9C The student will investigate and identify the effects of enzymes on food molecules</p> <p>11A The student knows that organisms maintain homeostasis. The student is expected to identify and describe the relationships between internal feedback mechanisms in the maintenance of homeostasis.</p> <p>11B The student knows that organisms maintain homeostasis, the student is expected to investigate and identify how organisms, including humans, respond to external stimuli.</p>		<p>Students will:</p> <ul style="list-style-type: none"> <li>-Continue gathering data, graphing data, interpreting data, distinguishing observations from inferences, using laboratory equipment properly.</li> <li>-Explain the polarity of water molecules and relate to various biological processes; cellular action, transpiration in plants,</li> <li>-Differentiate between solutions and suspensions</li> <li>-Explain pH levels of biological substances and how pH affects biological systems;</li> <li>-Observe enzymatically controlled reactions and relate to digestive system, homeostasis, internal feedback systems.</li> <li>-Distinguish among the structural formulas of different macromolecules and relate each to it's function and use by the human body.</li> </ul>	

Language of Instruction	Instructional Resources/Textbook Correlations:
<p>Atom, nucleus, electron, proton, neutron, atomic number, mass number, periodic table of elements, element, isotope, compound, ionic bond, ion, covalent bond, molecule, van der Waals forces, polar vs. nonpolar substances, cohesion, adhesion, mixture, solution, solute, solvent, suspension, pH scale, acid, base, buffer, organic chemistry, monomer, polymer, carbohydrate, monosaccharide, polysaccharide, lipid, nucleic acid, nucleotide, DNA, RNA, protein, amino acid, chemical reaction, reactant, product, activation energy, catalyst, enzyme, substrate, competitive and noncompetitive inhibitors, internal feedback systems</p>	<p>Prentice-Hall Biology: Chapter 2, Sections 1-4; Chapter 35, Section 1; Chapter 38 Sections 1,2</p> <p>Laboratory Investigations:</p> <p><i>Physical and Chemical Compounds Demo</i>  <i>Modeling Compounds and Chemical Reactions Activity</i>  <i>Polar, Nonpolar Lab</i>  <i>Determining pH of Biological Substances</i>  <i>Identifying Organic Compounds (Macromolecules)Lab</i>  <i>Modeling competitive and noncompetitive inhibitors (Enzyme) Activity</i>  <i>Hot Liver Lab (enzyme action)</i></p> <p><b>Weblinks/Other Resources:</b></p> <p>TAKS Workbook  Prentice Hall Video Clips  <a href="http://www.unitedstreaming.com">www.unitedstreaming.com</a></p>
Evaluation/External Assessment/Local Assessment:	Best Instruction Timeline:
<p>TAKS bell warmers and workbook  Key terms and Chapter 2 Reading Quiz  Chemistry Worksheets  Laboratory reports and performance in lab  Chapter 2 Test</p>	<p>5 days - Basic Chemistry: atoms, elements, compounds, bonding, physical/chemical reactions, solutions and suspensions, pH scale  2 days - Chemistry of Water: polar properties, solutes and solvents, importance  4 days - Organic Chemistry: structure and function of macromolecules  5 days - Enzyme Action: homeostasis, feedback systems, digestive system  2 days – Assessment</p>