

Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
PreAP Biology Unit 4 – Cellular Energetics	9	2 nd Cycle	15 days
TEKS/Student Expectations		Examples/Specifications:	
<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>3C Students will evaluate the impact of research on scientific thought, society, and the environment.</p> <p>3F The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to research and describe the history of biology and contributions of scientists</p> <p>4B The students 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>9A Students will compare the structures and functions of different types of biomolecules such as carbohydrates, lipids, proteins, and nucleic acids.</p> <p>9B Students will compare the energy flow in photosynthesis to the energy flow in cellular respiration.</p> <p>11 C Students will investigate and identify the effects of enzymes on food molecules.</p>	<p>Students Will:</p> <ul style="list-style-type: none"> -Gather, graph, interpret data, distinguish observations from inferences, use laboratory equipment properly. -Diagram the pathway of sunlight to chemical energy. -Draw, label and describe the function of chloroplasts and mitochondria. -Draw and label the parts of a plant, listing the functions of each. -Compare light dependent and light-independent reactions (Calvin cycle). -Describe what happens during the process of glycolysis, Krebs cycle, electron transport chain. -Explain autotrophy and heterotrophy. -State the overall formula for photosynthesis and cellular respiration. -Evaluate the different effects intensity and amount of light play on plant growth. -Distinguish between anaerobic and aerobic cellular respiration. 		

Language of Instruction:	Instructional Resources/Textbook Correlations:
<p>Autotrophy, heterotroph, adenosine triphosphate, photosynthesis, palisade and spongy mesophyll, pigment, chlorophyll, thylakoid, photosystem, stroma, NADP+, light-dependent reactions, ATP synthase, Calvin cycle, calorie, glycolysis, cellular respiration, NAD+, alcohol and lactic acid fermentation, anaerobic, aerobic, Krebs cycle, pyruvic acid, electron transport chain</p>	<p>Prentice-Hall Biology: Chapter 8 Sections 1-3, Chapter 23 Section 4, Chapter 9 Sections</p> <p>Laboratory Investigations:</p> <p><i>Chromotography Lab</i> <i>Photosynthesis Paper Lab</i> <i>Measuring the Effect of Light Intensity on Photosynthesis Lab</i> <i>Observing Respiration w/ Radish Seedlings Lab</i> <i>Effect of Exercise and CO₂ as wastes from Cellular Respiration Lab</i></p> <hr/> <p>Weblinks/Other Resources:</p> <p>TAKS Workbook Prentice-Hall Video Clips www.unitedstreaming.com Photosynthesis and Cellular Respiration Videos</p>
Evaluation/External Assessment/Local Assessment:	Best Instruction Timeline:
<p>TAKS Workbook Key Terms and Reading Quizzes 8 and 9 Plant structure Diagrams Chapter Worksheets Laboratory reports and performance in lab Cellular Energetics Unit Test</p>	<p>5 days - Photosynthesis 1 day - Plant Structures (roots, stems, leaves) 5 days - Cellular Respiration 2 days - Alcohol and Lactic Acid Fermentation 2 days - Assessment</p>