

Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
PreAP Biology Unit 3 – Cells and Cellular Mechanisms	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>3D The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to describe connections between physics and chemistry</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>4A The students will identify the parts of prokaryotic and eukaryotic cells.</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>5C The students will sequence the levels of organization in multicellular organisms to relate the parts to each other and to the whole.</p>		<p>Students will:</p> <ul style="list-style-type: none"> -Gather, graph, interpret data, distinguish observations from inferences, use laboratory equipment properly. -Explore the structural components of the cell. -Distinguish and identify differences between prokaryotic and eukaryotic cells. -Compare plant and animal cell types. -Identify functions of cell organelles. -Describe the processes of osmosis and diffusion as they relate to cell processes particularly exchange of gases in the respiratory system, absorption of nutrients by the digestive system, removal of waste products, etc. -Identify the organization levels in multi-cellular organisms. -Explain the steps of cell division and the cell cycle and how each is regulated. -Contrast plant and animal cell mitosis. -Distinguish between differentiate normal cell cycles from cancer cell cycles. 	
Language of Instruction:		Instructional Resources/Textbook Correlations:	

<p>Cell, cell theory, nucleus, eukaryote, prokaryote, organelle, cytoplasm, nuclear envelope, chromatin, chromosome, nucleolus, ribosome, endoplasmic reticulum, Golgi apparatus, lysosome, vacuole, mitochondrion, chloroplast, cytoskeleton, centrioles, cell membrane, cell wall, lipid bilayer, diffusion, alveoli, capillaries, equilibrium, osmosis, isotonic, hypertonic, hypotonic, facilitated diffusion, active transport, endocytosis, phagocytosis, pinocytosis, exocytosis, tissue, organ, organ system, mitosis, cytokinesis, chromatid, centromere, interphase, cell cycle, prophase, centriole, spindle, metaphase, anaphase, telophase, cyclin, cancer</p>	<p>Prentice-Hall Biology: Chapter 7 Sections 1-4, Chapter 37 Section 1, Chapter 10 Sections 1-3</p> <p>Laboratory Investigations:</p> <p><i>Observation of Plant and Animal Cells Lab</i> <i>Diffusion Dialysis Tubing Lab</i> <i>Egg Osmosis Lab</i> <i>Cell Model Project or Sell a Cell Organelle Project</i> <i>Limits to Cell Growth Activity</i> <i>Mitosis Modeling Activity</i> <i>Mitosis Slide Lab (Ascaris, Onion Root Tip, Whitefish Blastula)</i></p>
	<p>Weblinks/Other Resources:</p> <p>TAKS Workbook Prentice Hall Video Clips www.unitedstreaming.com www.biology.arizona.edu</p>
<p>Evaluation/External Assessment/Local Assessment:</p>	<p>Best Instruction Timeline:</p>
<p>TAKS bell warmers and workbooks Key Terms and Reading Quizzes Chapters 7 and 10 Cell Model Project or Sell an Organelle Project Mitosis Diagrams Chapter Worksheets Laboratory reports and performance in lab Cells and Cellular Mechanisms Unit Test</p>	<p>5 days - Cell Structure and Function 1 day - Membrane Properties and Transport 2 days - Osmosis and Diffusion 5 days - Cell Cycle and Mitosis 2 days - Assessment</p>