

Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
PreAP Biology Unit 8 – Evolution and Taxonomy	9	4 th Cycle	10 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>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, including hypotheses and theories, 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>3F Students will research and describe the history of biology and contributions of scientists</p> <p>5B Students will identify cell differentiation in the development of organisms</p> <p>6C Students identify and illustrate how changes in DNA cause mutations and evaluate the significance of these changes</p> <p>6D Students will compare genetic variations observed in plants and animals;</p> <p>7A Students will identify evidence of change in species using fossils, DNA sequences, anatomical similarities, physiological similarities, and embryology;</p> <p>7B Students will illustrate the results of natural selection in speciation, diversity, phylogeny, adaptation, behavior, and extinction</p> <p>8A Students will collect and classify organisms at several taxonomic levels such as species, phylum, and kingdom using dichotomous keys;</p> <p>8B Students will analyze relationships among organisms and develop a model of a hierarchical classification system based on similarities and differences using taxonomic nomenclature</p>	<p>Students will:</p> <ul style="list-style-type: none"> -Gather data, graph data, interpret data, distinguishing observations from inferences, use laboratory equipment properly. -Explain Darwin’s Theory of Evolution by Natural Selection including his observations of the Galapagos islands and events leading to his publication of <i>On the origin of Species</i> -Relate their knowledge of gene pools, mutations and variations from our genetics unit to the study of evolution through natural selection -Recognize patterns of evolution in prokaryotes and eukaryotes -Compare the thoughts of Lamarck, Hutton, Lyell, Darwin and Malthus and be able to attest to their contributions to the theory of evolution -Explain how species fitness is used to determine the success of a species and the process of natural selection -Students will investigate population genetics and the 5 precepts of the Hardy-Weinberg Equilibrium -Describe the fossil record and explain the methods used to determine the age of fossils both relative and radioactive dating -Identify the divisions of the geological time scale by constructing a timeline -State the hypotheses that have been proposed for how life first arose on Earth -Identify some of the main evolutionary steps in the early evolution of life -Describe the key forms of life in the Paleozoic , Mesozoic, and Cenozoic Eras -Describe binomial nomenclature and Linnaeus’s system of classification -Identify the principle behind cladistic analysis 		

<p>similarities and differences using taxonomic nomenclature 8C Students will identify characteristics of kingdoms including monerans, protists, fungi, plants, and animals 11A Students will identify and describe the relationships between internal feedback mechanisms in the maintenance of homeostasis; 11B Students will investigate and identify how organisms, including humans, respond to external stimuli 12D Students will identify and illustrate that long-term survival of species is dependent on a resource base that may be limited</p>	<p>-Explain how we can compare dissimilar organisms -Name the six kingdoms of life as they are now identified -Describe the three domain system of classification</p>
<p>Language of Instruction:</p>	<p>Instructional Resources/Textbook Correlations:</p>
<p>Artificial selection, struggle for existence, fitness, adaptation, survival of the fittest, natural selection, descent with modification, common descent, homologous structure, vestigial structure, evolution, theory, fossil gene pool, relative frequency, single-gene trait, polygenic trait, directional selection, stabilizing selection, disruptive selection, genetic drift, founder effect, Hardy-Weinburg principle, genetic equilibrium, speciation, reproductive isolation, behavioral isolation, bacteria, eubacteria, Archaea, Archaeobacteria, Eukarya, Protista, Fungi, Plantae, Animalia, geographical isolation, temporal isolation, paleontologist, fossil record, extinct, relative dating, geological time scale, era, period, proteinoid microsphere, microfossil, endosymbiotic theory, macroevolution, adaptive radiation, convergent evolution, coevolution, punctuated equilibrium, taxonomy, binomial nomenclature, genus, taxon, family, order, class, phylum, kingdom, phylogeny, evolutionary, classification derived character, cladogram, molecular clock, domain</p>	<p>Prentice-Hall Biology - Chapters 15 – 18</p> <p><i>Geologic Timeline Activity</i> <i>Natural Selection (Camouflage) Lab</i> <i>Hardy-Weinberg Lab</i> <i>Dichotomous Key- Sharks, Fish, Mythical Creature Lab</i> <i>Making your own Dichotomous Key Lab</i></p> <p>Weblinks/Other Resources:</p> <p>TAKS Workbook www.unitedstreaming.com Record of Life- Videos</p>
<p>Evaluation/External Assessment/Local Assessment:</p>	<p>Best Instruction Timeline:</p>
<p>TAKS Bell Warmers and Workbook Key Terms and reading quiz Chapter 15-18 Geologic Timeline Chapter Worksheet Laboratory reports and performance in lab Evolution and Taxonomy Text</p>	<p>4 days – Evolution and Natural Selection 2 days – Geologic Time 2 days – Dichotomous Keys 2 days - Assessment</p>