UNIT OF STUDY

Title: Evidence for Evolution	Subject/Course: Biology	Length: 2 Weeks
Topic: Heredity and Evolution 3	Grade: 10th grade	Designer: Woods

UNIT GOALS AND EXPECTATIONS

IMPORTANT CONCEPTS/UNDERSTANDINGS:	ESSENTIAL QUESTIONS:
Species evolve over time. Evolution is the consequence of the interactions of (1) the potential for a species to increase its numbers, (2) the genetic variability of offspring due to mutation and recombination of genes, (3) a finite supply of resources required for life, and (4) the ensuing selection by the environment of those offspring better able to survive and leave offspring. The great diversity of organisms is the result of more than 3.5 billion years of evolution that has filled every available niche with life forms. Natural selection and its evolutionary consequences provide a scientific explanation for the fossil record of ancient life forms, as well as for the striking molecular similarities observed among the diverse species of living organisms. The millions of different species of plants, animals, and microorganisms that live on earth today are related by descent from common ancestors. Biological classifications are based on how organisms are related. Organisms are classified into a hierarchy of groups and subgroups based on similarities which reflect their evolutionary relationships. Species is the most fundamental unit of classification.	What is the molecular basis for organisms changing over time? What evidence is available to support evolution?
STUDENT LEARNING EXPECTATIONS: HE.6.B.1 Compare and contrast Lamarck's explanation of evolution with Darwin's theory of evolution by natural selection HE.6.B.2 Recognize that evolution involves a change in allele frequencies in a population across successive generations HE.6.B.3 Analyze the effects of mutations and the resulting variations within a population in terms of natural selection HE.6.B.4 Illustrate mass extinction events using a time line	HE.6.B.5 Evaluate evolution in terms of evidence as found in the following: • fossil record -Compare the processes of relative dating and radioactive dating to determine the age of fossils(HE.6.B.6) • DNA analysis • artificial selection • morphology -homologous and analogous structures • embryology • viral evolution • geographic distribution of related species • antibiotic and pesticide resistance in various organisms HE.6.B.7 Interpret a Cladogram • phylogeny
SPECIFIC DECLARATIVE KNOWLEDGE – know Describe the pattern Darwin observed among organisms in the Galapagos. State how Lyell and Hutton described geological change. Identify how Lamarck thought species evolve. Describe Malthus' theory of population growth. List events leading up to Darwin's publication of *On*	SPECIFIC PROCEDURAL KNOWLEDGE –do Locate the Galapagos islands on a map.

the Origin of Species. Describe how artificial selection is used in natural selection. Explain how natural selection is related to species' fitness. Identify evidence Darwin used to present his case for evolution. State Darwin's theory of evolution by natural selection.	

UNIT ASSESSMENTS (Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)	
"Variety is the Spice of Life" Lab-Cooperative Group Work using TI-83's "Like Moths Around a Flame?" Lab-Cooperative Group Work using TI-83's "Chicken DNA" Open Response	
Traditional Assessments: Tests Quiz	Other Evidence of Learning: Vocabulary Strategy Daily Notebook Entries

ACTIVITIES AND LEARNING EXPERIENCES	Resources
Powerpoint-Origins and Natural Selection Establish Habits of Mind for Science in Critical Thinking, Creative thinking, and Self Regulated Thinking "Chicken DNA" Open Response Vocabulary Strategy Daily Notebook Entries	Glencoe Textbook-Biology:The Dynamics of Life TI-83 Calculators Internet Powerpoint

Career Connections
Archaeologist