

<b>Standard 2. Evolution and Diversity</b> <i>A. Evolution is the fundamental concept underlying all of biology and is supported by multiple forms of scientific evidence.</i> <i>B. Organisms are classified based on their evolutionary history.</i> <i>C. Natural selection is the primary mechanism leading to evolutionary change.</i>		
	Code	Benchmark
☉	SC.912.L.2.1	Explain how evolution is demonstrated by the fossil record, extinction, comparative anatomy, comparative embryology, biogeography, molecular biology (crosscuts with earth/space), and observed evolutionary change.
	SC.912.L.2.2	Discuss the use of molecular clocks to estimate how long ago various groups of organisms diverged evolutionarily from one another.
	SC.912.L.2.3	Explain the reasons for changes in how organisms are classified.
☉	SC.912.L.2.4	Compare and contrast organisms at kingdom level.
	SC.912.L.2.5	Discuss distinguishing characteristics of major kingdoms, vertebrate phyla and classes taking typical examples.
☉	SC.912.L.2.6	Describe how and why organisms are hierarchically classified and related with emphasis on the Linnaean system and cladistics.
☉	SC.912.L.2.7	Express scientific explanations of the origin of life on Earth.
	SC.912.L.2.8	Explain the role of reproductive isolation in the process of speciation.
☉	SC.912.L.2.9	Identify basic trends in hominid evolution from early ancestors six million years ago to modern humans.
	SC.912.L.2.10	Discuss specific fossils hominids and what they show about human evolution.
	SC.912.L.2.11	List the conditions for Hardy-Weinberg equilibrium in a population and why these conditions are not likely to appear in nature. Use the Hardy-Weinberg equation to predict genotypes in a population from observed phenotypes.

## Draft

☼	<b>SC.912.L.2.12</b>	Describe the elements of natural selection, including overproduction of offspring, inherited variation, and the struggle to survive, resulting in differential reproductive success.
☼	<b>SC.912.L.2.13</b>	Discuss other mechanisms of evolutionary change such as genetic drift, gene flow, founder effect.
☼	<b>SC.912.L.2.14</b>	Discuss mutation and genetic recombination as sources of variation.
<p><b>Standard 3. Heredity and Reproduction</b></p> <p><i>A. DNA stores and transmits genetic information. Genes are sets of instructions encoded in the structure of DNA.</i></p> <p><i>B. Genetic information is passed from generation to generation by DNA in all organisms and accounts for similarities in related individuals.</i></p> <p><i>C. Manipulation of DNA in organisms has led to commercial production of biological molecules on a large scale and genetically modified organisms.</i></p> <p><i>D. Reproduction is characteristic of living things and is essential for the survival of species.</i></p>		
	<b>Code</b>	<b>Benchmark</b>
☼	<b>SC.912.L.3.1</b>	Use Mendel's laws of segregation and independent assortment to analyze patterns of inheritance.
☼	<b>SC.912.L.3.2</b>	Use a Punnett Square to determine the probabilities for genotype and phenotype combinations.
☼	<b>SC.912.L.3.3</b>	Discuss observed inheritance patterns caused by various modes of inheritance including dominant, recessive, incomplete dominance, sex-linked, polygenic, multiple alleles, sex-linkage.
☼	<b>SC.912.L.3.4</b>	Describe the basic process of DNA replication and how it relates to the transmission and conservation of the genetic information.
☼	<b>SC.912.L.3.5</b>	Explain how mutations in the DNA sequence may or may not result in phenotypic change. Explain how mutations in gametes may result in phenotypic changes in offspring.
☼	<b>SC.912.L.3.6</b>	Explain the basic processes of transcription, translation, and how they result in the expression of genes.
	<b>SC.912.L.3.7</b>	Discuss the mechanisms for regulation of gene expression in prokaryotes and eukaryotes at transcription and translation level.