Unit 1: Natural Selection

13-20% of AP Exam

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| Topic | Objective | Objective Check | Objective Check after Exam |
| 7.1 | Describe the causes of natural selection. |  |  |
|  | Explain how natural selection affects populations. |  |  |
| 7.2 | Describe the importance of phenotypic variation in a population. |  |  |
| 7.3 | Explain how humans can affect diversity within a population. |  |  |
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| 7.4 | Explain how random occurrences affect the genetic makeup of a population. |  |  |
|  | Describe the role of random processes in the evolution of specific populations. |  |  |
|  | Describe the change in the genetic makeup of a population over time. |  |  |
| 7.5 | Describe the conditions under which allele and genotype frequencies will change in populations. |  |  |
|  | Explain the impacts on the population if any of the conditions of Hardy- Weinberg are not met. |  |  |
| 7.6 | Describe the types of data that provide evidence for evolution. |  |  |
|  | Explain how morphological, biochemical, and geological data provide evidence that organisms have changed over time. |  |  |
|  | Describe the fundamental molecular and cellular features shared across all domains of life, which provide evidence of common ancestry. |  |  |
| 7.7 | Describe structural and functional evidence on cellular and molecular levels that provides evidence for the common ancestry of all eukaryotes. |  |  |
| 7.8 | Explain how evolution is an ongoing process in all living organisms. |  |  |
| 7.9 | Describe the types of evidence that can be used to infer an evolutionary relationship. |  |  |
|  | Explain how a phylogenetic tree and/or cladogram can be used to infer evolutionary relatedness. |  |  |
| 7.10 | Describe the conditions under which new species may arise. |  |  |
|  | Describe the rate of evolution and speciation under different ecological conditions. |  |  |
|  | Explain the processes and mechanisms that drive speciation. |  |  |
| 7.11 | Describe factors that lead to the extinction of a population. |  |  |
|  | Explain how the risk of extinction is effected by changes in the environment. |  |  |
|  | Explain species diversity in an ecosystem as a function of speciation and extinction rates. |  |  |
|  | Explain how extinction can make new environments available for adaptive radiation. |  |  |
| 7.12 | Explain how the genetic diversity of a species or population affects its ability to withstand environmental pressures. |  |  |
| 7.13 | Describe the scientific evidence that provides support for models of the origin of life on Earth. |  |  |