**Unit VII Vocabulary: Evolution and Classification**

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| 1. Evolution | The change in a species as a whole over time |
| 1. Natural Selection | “Survival of the fittest” – organisms that are best suited for survival are the ones that successfully reproduce and pass on their beneficial characteristics; leads to evolution |
| 1. Speciation | The emergence of a new species due to natural selection |
| 1. Co-Evolution | Occurs when two or more populations evolve at the same time |
| 1. Divergent Evolution | Occurs when two species evolve to be more and more different over time |
| 1. Convergent Evolution | Occurs when different species develop similar traits for similar functions; examples: fish, dolphin, penguin |
| 1. Homologous Structures | Structures that originate from the same type of tissue but may be used differently in different organisms |
| 1. Vestigial Structures | A structure that may have once had a function in a species but has evolved to be useless over time (appendix, whale’s hip bone) |
| 1. Streptococcus | Genus of bacteria; commonly known for causing strep throat |
| 1. Virus | Non-living pathogen that causes many harmful conditions; (vaccines protect against them, but once you’ve caught it, it is in your body forever); examples: common cold, flu, AIDS, small pox |
| 1. Active Immunity | An organism’s defense against invading pathogens due to the production of antibodies; example: vaccine |
| 1. Passive Immunity | An organism’s defense against invading pathogens due to the transfer of antibodies; example: baby receiving breast milk |
| 1. Binomial Nomenclature | The system of naming organisms based on their scientific genus and species |
| 1. Classification | System of placing organisms in groups based on similarities; Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species |
| 1. Dichotomous Key | A multi-step tool used to identify a species based on physical characteristics it may possess |
| 1. Cladogram | A diagram beginning with an outgroup organism, shows relationships based on shared derived traits |
| 1. Phylogenetic Tree | A diagram beginning with a common ancestor; shows evolutionary history of a species |
| 1. Stabilizing Selection | Nature favors the average phenotype in a population; example: average baby weight |
| 1. Directional Selection | Nature favors one extreme phenotype in a population; example: finch beak size during different seasons |
| 1. Disruptive Selection | Nature favors both extreme phenotypes in a population; example: clam shell color against the environment |
| 1. Abiogenesis | The theory that living organisms can come from non-living matter; theory of spontaneous generation |
| 1. Biogenesis | The theory that living organisms can only come from other living organisms |
| 1. Survival of the Fittest | A natural process resulting in the evolution of organisms best adapted to the environment to produce offspring |
| 1. Adaptation | The changes in behavior, function and structure of an organism to become more suited to an environment. |
| 1. Geographic Isolation | A term that refers to a population of animals, plants, or other organisms that are separated from exchanging genetic material with other organisms of the same species |
| 1. Reproductive Isolation | The situation where different species may live in the same area, but properties of individuals prevent them from interbreeding. |
| 1. Punctuated Equilibrium | The hypothesis that evolutionary development is marked by isolated episodes of rapid speciation between long periods of little or no change. |
| 1. Gradualism | The view that evolution proceeds by imperceptibly small, cumulative steps over long periods of time rather than by abrupt, major changes. |
| 1. Biochemical Evidence | The changes that occur at the molecular level in organisms over a period of time. These range from deletions, additions, or substitutions of single nucleotides, through the rearrangement of parts of genes, to the duplication of entire genes or even whole genomes. |
| 1. Vaccine | A biological preparation that improves immunity to a particular disease. A vaccine typically contains an agent that resembles a disease-causing microorganism, and is often made from weakened or killed forms of the microbe. |