

Name: _____ Date: _____ Per: _____

STUDY GUIDE: ADDITIONAL THINGS TO KNOW FOR THE “CLASSIFICATION” TEST:

1. Know what convergent evolution is? **Organisms evolve alongside each other because of their habitat but they are not closely related.** Know what coevolution is? **The process by which two species evolve in relationship to each other.** Why are common names not used by scientists to name animals? **Too many regional differences in the names of one organism.**
2. What Kingdom were Archaeobacteria and Eubacteria previously grouped into? **Monera**
3. Know when the 3-domain system arose? **When scientists grouped organisms according to how long they have been evolving independently.**
4. Review stabilizing selection, directional selection, disruptive selection
5. Review behavioral isolation, geographic isolation, temporal isolation
6. What is evolutionary classification? **Groups organisms by evolutionary descent, rather than body structure.** (**Phylogeny (the evolutionary history of organisms) or Evolutionary classification is classification based on common ancestors whereas traditional classification is based on similarities and differences.**) A cladogram links groups of organisms by showing how **evolutionary** lines, or lineages, branched off from common ancestors

Organization of Living Systems

Background: The classification of organisms continues to evolve as advances in technology and molecular biology reveal new scientific information about evolutionary relationships in organisms. The most widely used classification system being used is the Six Kingdom Classification System. Use the overview of the kingdoms as a guide to help you complete the Dichotomous Key for kingdoms.

I. Archaeobacteria: Includes one-celled prokaryotic organisms that do not have a nucleus, and often live in extreme environments. Some archaeobacteria are autotrophs that make their own food, and some heterotrophs that do not make their own food. Examples include the methanogenic bacteria that live in the digestive tracts of animals, and bacteria that live in extreme heat or salinity.

II. Eubacteria: Includes one-celled prokaryotic organisms that do not have a nucleus, may be autotrophic or heterotrophic, but do not live in extreme environments. Examples include cyanobacteria, soil bacteria, and disease-causing bacteria, such as *Streptococcus* bacteria that causes strep throat.

III. Protista: Includes unicellular and multicellular eukaryotic organisms that have a nucleus and organelles surrounded by membranes. Some protists are autotrophs that make their own food, and some are heterotrophs that do not make their own food. Examples include *Paramecium*, *Euglena*, and algae.

IV. Fungi: Includes unicellular and multicellular eukaryotic organisms that have a nucleus and organelles. Fungi have cell walls made of chitin and are heterotrophic. Examples include one-celled yeasts, molds, and mushrooms.

V. Plantae: Includes multicellular eukaryotes with chlorophyll, cell walls of cellulose, and specialized tissues and organs. Examples include mosses, ferns, and pine trees.

VI. Animalia: Includes multicellular heterotrophic eukaryotes with specialized tissues and organs. Animal cells do not contain cell walls. Examples include worms, insects, and birds.