**Classification Guided Notes**

**Benefits of Classifying:**

-Accurately and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ names organisms. It prevents \_\_\_\_\_\_\_\_\_\_\_\_\_\_ such as starfish and jellyfish that aren’t actually fish.

**Species of Organisms**

-There are \_\_\_\_\_ billion known species of organisms. This is only 5% of all organisms that ever lived. New \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are still being found and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**What is Classification?**

-Classification is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of organisms into orderly groups based on their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Classification is also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Taxonomists are scientists that identify and \_\_\_\_\_\_\_\_\_ organisms.

**Early Taxonomists**

-2000 years ago, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ was the first taxonomist. Aristotle \_\_\_\_\_\_\_\_\_\_\_\_ organisms into plants and \_\_\_\_\_\_\_\_\_\_\_\_\_. He subdivided them by their \_\_\_\_\_\_\_\_\_\_\_-land, sea or air \_\_\_\_\_\_\_\_\_\_\_\_\_.

-John Ray, a \_\_\_\_\_\_\_\_\_\_\_\_, was the first to use \_\_\_\_\_\_\_\_\_\_\_ for naming. His names were very long \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ telling everything about the plant.

-Carolus Linnaeus-18th century \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. He classified organisms by their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. He developed a naming system that’s still used today. He is called the “\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of Taxonomy”. He developed the modern system of naming known as \_\_\_\_\_\_\_\_\_\_\_\_\_ nomenclature. It is a two-word name (Genus and \_\_\_\_\_\_\_\_\_\_\_).

**Standardized Naming**

-\_\_\_\_\_\_\_\_\_\_\_\_ nomenclature is used. It includes the Genus and \_\_\_\_\_\_\_\_\_\_. The name could be Latin or \_\_\_\_\_\_\_\_\_\_\_. The names are always italicized in print. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ genus, nut not the species name.

**Rules for Naming Organisms**

-The international code for binomial nomenclature contains the \_\_\_\_\_\_\_\_ for naming organisms. All names must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by the International Naming \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (International Zoological Congress). This \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ duplicated names.

**Classification Groups**

-Taxon (taxa-plural) is a category into which \_\_\_\_\_\_\_\_\_\_\_\_ organisms are placed. There is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of groups (taxa) from broadest to \_\_\_\_\_\_\_\_\_\_\_\_\_\_. The order is as follows:

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_--> Kingdom🡪 Phylum🡪 Class🡪 \_\_\_\_\_\_\_\_\_\_\_--> Family🡪 Genus🡪 \_\_\_\_\_\_\_\_\_\_\_

**Domains**

Three domains:

-Archaea

-Eubacteria

-Eukarya

-Archaea and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are unicellular prokaryotes (no \_\_\_\_\_\_\_\_\_\_\_\_ or membrane bound organelles). Eukarya are more \_\_\_\_\_\_\_\_\_\_\_\_\_ and have a nucleus and membrane bound organelles.

**Archaea**

-Probably the first cells to \_\_\_\_\_\_\_\_\_\_. They live in \_\_\_\_\_\_\_ environments and can be found in thermal or \_\_\_\_\_\_\_\_\_\_\_\_\_ vents, hot springs or \_\_\_\_\_\_\_\_\_\_\_\_ that are acidic.

**Eubacteria**

-Found in \_\_\_\_ habitats except harsh ones. They are important \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for environment. Commercially \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in making yogurt, buttermilk etc.

**Domain Eukarya is Divided into Kingdoms:**

-\_\_\_\_\_\_\_\_\_\_\_\_

-Fungi

-\_\_\_\_\_\_\_\_\_\_\_\_

-Animalia

**Protista**

-Most are \_\_\_\_\_\_\_\_\_\_\_\_\_\_, some are multicellular. Some are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ while others are heterotrophic. Example: \_\_\_\_\_\_\_\_\_\_

**Fungi**

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, except yeast. Absorptive heterotrophs (digest food outside their body and then \_\_\_\_\_\_\_\_\_\_\_ it). Cell walls made of \_\_\_\_\_\_\_\_\_. Example: mushroom.

**Plantae**

-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, autotrophic (absorb sunlight to make glucose). Cell walls made of \_\_\_\_\_\_\_\_\_\_\_\_\_.

**Animalia**

-Multicellular, ingestive \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (consume food and digest it inside their body). They feed on plants or \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**How does Linnaeus’ system of classification help to illustrate the unity of life?**

-We see the similarities and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Organisms in the same \_\_\_\_\_\_\_\_ share many features while those in the same kingdom have many \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but still share common \_\_\_\_\_\_\_\_.

**Basis for Modern Taxonomy**

-Homologous \_\_\_\_\_\_\_\_\_\_\_\_\_\_, similar embryo development, and DNA and \_\_\_\_\_\_\_ are used to compare organisms.

**What’s Cladistics?**

-The classification based on common \_\_\_\_\_\_\_\_\_\_\_\_\_\_. The goal of cladistics is to place species in order in which they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from a common ancestor.

**Cladogram**

-Diagram showing how organisms are \_\_\_\_\_\_\_\_\_\_\_\_ based on shared, \_\_\_\_\_\_\_\_\_\_\_ characteristics such as feathers, \_\_\_\_\_\_\_\_ or scales. Derived characters are \_\_\_\_\_\_\_\_\_ of species placed in order by the characters (traits) that have added up over \_\_\_\_\_\_\_\_. They are shown as dash marks between the branches of a cladogram. All species \_\_\_\_\_\_\_\_\_\_ a dash mark share the derived \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Dichotomous Key**

-It is used to \_\_\_\_\_\_\_\_\_\_\_\_ organisms. Characteristics are given in \_\_\_\_\_\_\_. Read both characteristics and either go to another set of characteristics or \_\_\_\_\_\_\_\_\_\_\_\_\_ the organism.