Honors Biology Chapter 17 Section 1 Student Notes

**The History of Classification**

Early Systems of Classification

* Biologists use a system of classification to organize information about the diversity of living things.





Aristotle’s System

* More than 2000 years ago, Aristotle developed the first widely accepted system of biological classification.
* Aristotle classified organisms as either animals or plants.
* Animals were classified according to the presence or absence of “red blood.”
* Animals were further grouped according to their habitats and morphology.
* Plants were classified by average size and structure as trees, shrubs, or herbs.

Linnaeus’s System

* Linnaeus’s system of classification was the first formal system of taxonomy.

Binomial Nomenclature

* Linnaeus’s method of naming organisms, called binomial nomenclature, gives each species a scientific name with two parts.
* The first part is the genus name, and the second part is the specific epithet, or specific name, that identifies the species.
* Biologists use scientific names for species because common names vary in their use.
* When writing a scientific name, scientists use these rules:
	+ The first letter of the genus name always is capitalized, but the rest of the genus name and all letters of the specific epithet are lowercase.
	+ If a scientific name is written in a printed book or magazine, it should be italicized.
	+ When a scientific name is written by hand, both parts of the name should be underlined.
	+ After the scientific name has been written completely, the genus name will be abbreviated to the first letter in later appearances (e.g., *C. cardinalis*).

Taxonomic Categories

* The taxonomic categories used by scientists are part of a nested-hierarchal system.
* Each category is contained within another, and they are arranged from broadest to most specific.



Species and Genus

* A named group of organisms is called a taxa.
* A genus (plural, genera) is a group of species that are closely related and share a common ancestor.

Family

* A family is the next higher taxon, consisting of similar, related genera.

Higher Taxa

* An order contains related families.
* A class contains related orders.
* A phylum or division contains related classes.
* The taxon of related phyla or divisions is a kingdom.
* The domain is the broadest of all the taxa and contains one or more kingdoms.