



Objectives

- ✿ Describe the Linnaeus system of classification.
- ✿ List (in order) the steps in the classification hierarchy.
- ✿ Explain the advantages of scientific names as opposed to common names.
- ✿ Identify the major kingdoms in the modern system and give characteristics of organisms in each.



Biodiversity

- ✿ There are many different living organisms on Earth. This is **biodiversity**.
- ✿ Living organisms are interdependent on each other for survival.
- ✿ Organisms are also related to each other and can be “classified” by their similarities and differences.



Taxonomy

- ✿ **Taxonomy** is the science of describing, naming and classifying organisms.
- ✿ There are different levels of classification called **taxa** (singular **taxon**).
- ✿ There are 7 common taxa in the modern classification system.



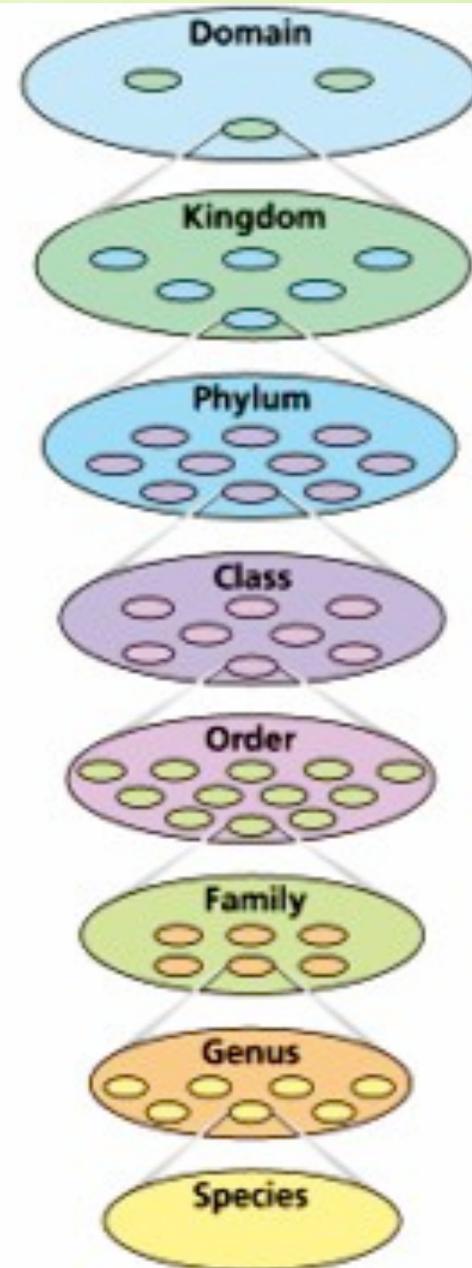
The History of Taxonomy

- ✿ Aristotle was the first to truly classify organisms, but his system consisted of only 2 taxa: Plants and Animals.
- ✿ Later, **Carlous Linnaeus** (1778) devised a system of grouping organisms into hierarchical groups.
- ✿ The Linnaeus system groups all organisms in to seven categories from general to specific based on their evolutionary similarities.

Classification Hierarchy

✿ The 7 taxa are:

- ✿ Kingdom
- ✿ Phylum
- ✿ Class
- ✿ Order
- ✿ Family
- ✿ Genus
- ✿ Species



How do I remember the taxa?

- ✿ Create a mnemonic device to remember the order of the steps in the taxonomic classification system.
- ✿ Now its your turn.
- ✿ For example:
**KeeP Picking Cantaloupe Or Frank
Gets Spanked.**



Kingdom Characteristics

- ✿ There are 6 kingdoms.
- ✿ This is the most general category of the classification system.
 - ✿ Kingdom Eubacteria: Single-celled and means “true bacteria.”
 - ✿ Kingdom Archaeobacteria: Single-celled and means “ancient bacteria.”
 - ✿ Kingdom Protista: Single-celled and Eukaryotes (defined nucleus in the cell) that are NOT plants, animals, or fungi.



Kingdom Characteristics (Con...)

- ❖ Kingdom Fungi: Eukaryote Single or multi-cellular organisms that gain nutrients through absorption.
- ❖ Kingdom Plantae: Eukaryote multi-cellular plants that can convert energy from the sun (photosynthesis.)
- ❖ Kingdom Ananimalia: Eukaryote multi-cellular animals that develop from embryos and ingest food.

Binomial Nomenclature

- ✿ Because of our classification system, all organisms have a **scientific name** which consists of 2 words.
- ✿ The name is derived by using the organism's genus, then species name.
- ✿ The first letter of the genus is ALWAYS capitalized, the species is lowercase, and when typed, they are done so in italics (underlined when handwritten.)
- ✿ **EXAMPLES:**
 - ✿ *Drasophla molanagaster* (Fruit Fly)



Et tu Mr. Doc, Et tu?

- ✿ Biological names, as well as the names within all the taxa of the biological classification system are Latin.
- ✿ Why Latin?
 - ✿ It was the language of the time.
 - ✿ Because it is a dead language and no one speaks it anymore (it doesn't change.)
 - ✿ Latin is the same no matter where you go, so it means the same thing here as it does anywhere else.



Biological Names vs. Common Names

- ✿ Biological names have an advantage because they show relationships between similar species.
- ✿ Common names are often misleading because they do not accurately describe the organism and do not show relation to similar organisms.
- ✿ **EXAMPLES:**
 - ✿ Jelly Fish (...may look like jelly, but not a fish.)
 - ✿ Mudpuppy (...is a lizard and NOT A DOG.)



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