

# Taxonomy

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**A Biological Classification System**

# Taxonomy

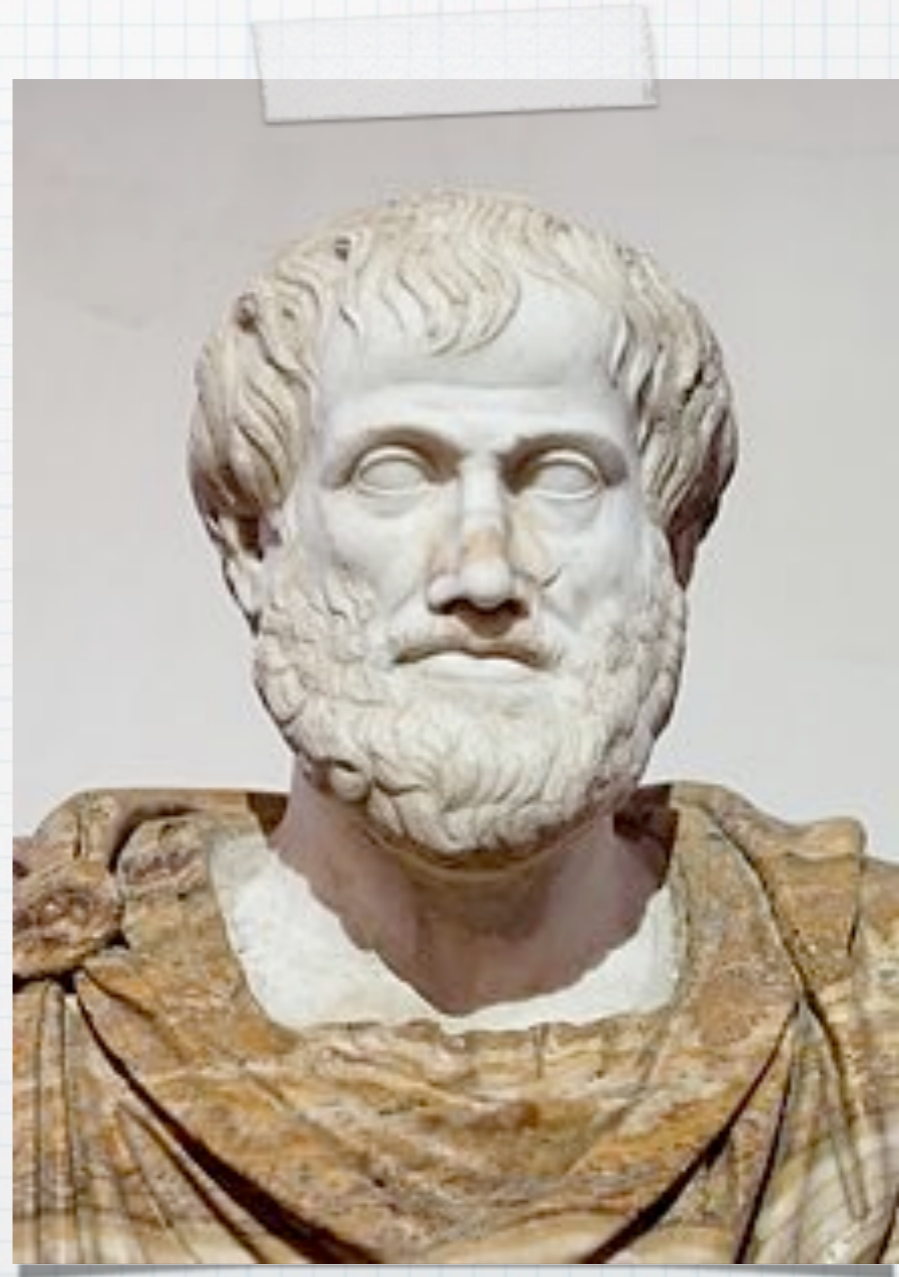
- \* Taxonomy: the study of classifying animals
- \* Taxonomists are scientists who study classifying animals
- \* Taxon is a category into which related organisms can be placed

# Reasons to Classify

- \* Show evolutionary relationships
- \* Accurately and uniformly name organisms
- \* Prevents duplicated names

# Early Taxonomy

- \* Aristotle was the first taxonomist
- \* Divided into land, sea, and air dwellers



# Early Taxonomy

- \* John Ray was the first to use Latin for naming



# Early Taxonomy

- \* Linnaeus developed the modern system of naming called binomial nomenclature



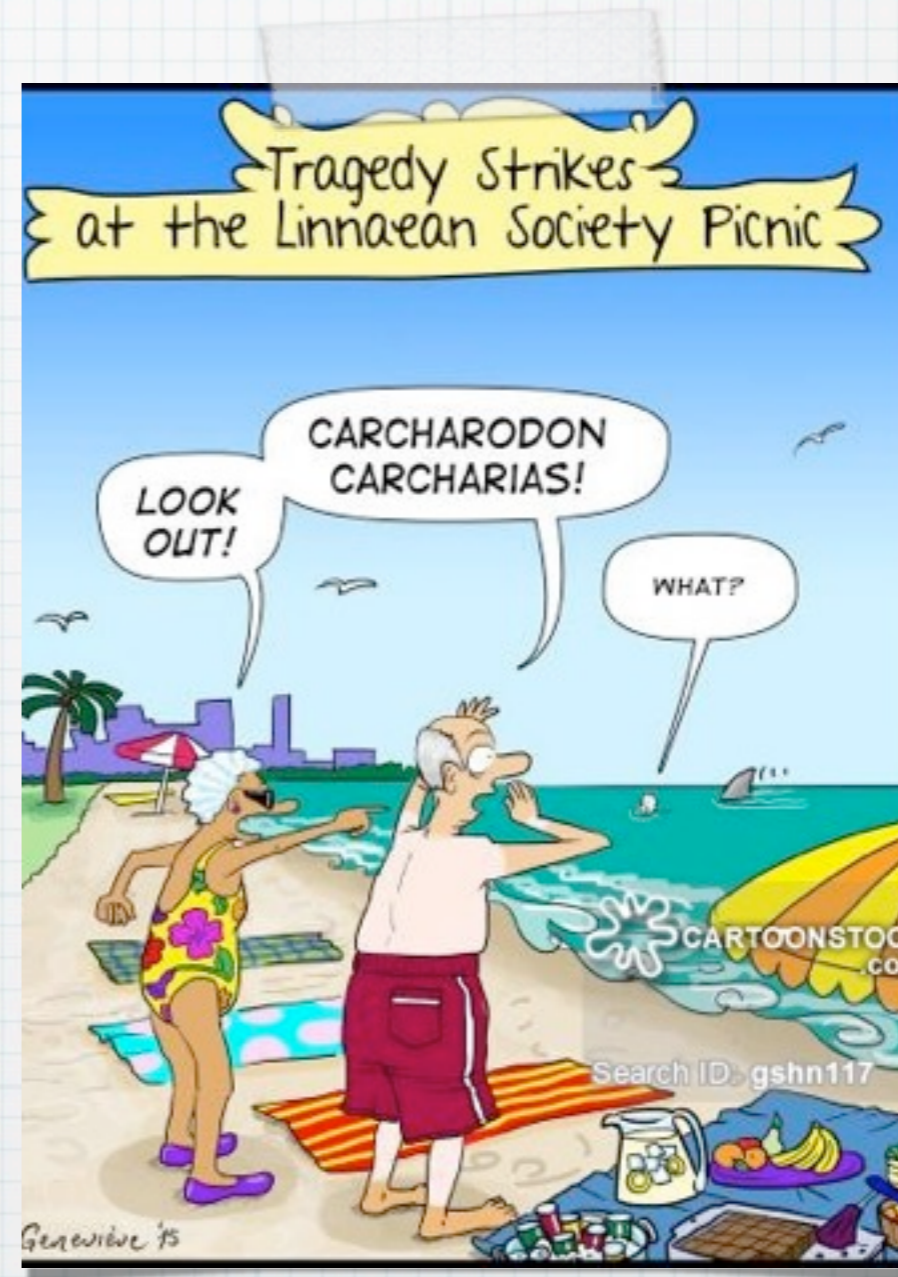
# Binomial Nomenclature

- \* A two word naming system (Genus & species)
- \* Names should always be italicized
- \* Always capitalize genus name, but write the species in lower case
- \* Example: *Homo sapiens*



# Taxonomic Categories

- \* The taxonomic categories are used to sort animals as you move down the tree of life
- \* Linnaeus placed organisms into related groups called taxa based on their structure.





# Kingdom

Kingdom

- \* We sort organisms into six different kingdoms
- \* Archaea, Bacteria, Protista, Fungi, Plants, Animals

# Phylum

Kingdom

Phylum

- \* Organisms sorted based on more specific characteristics
- \* Animalia contains approximately 35 phyla while plantae contains approximately 12 phyla

# Class

Kingdom

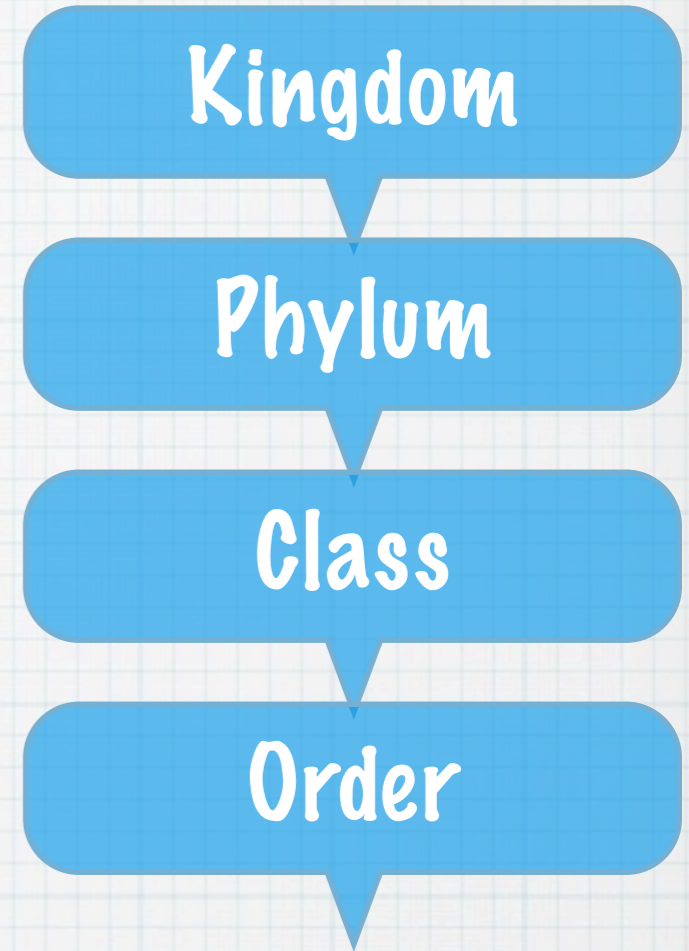
Phylum

Class

- \* Organisms sorted based on more specific characteristics
- \* Examples include Mammalia, Maxillopoda, Sauropsida

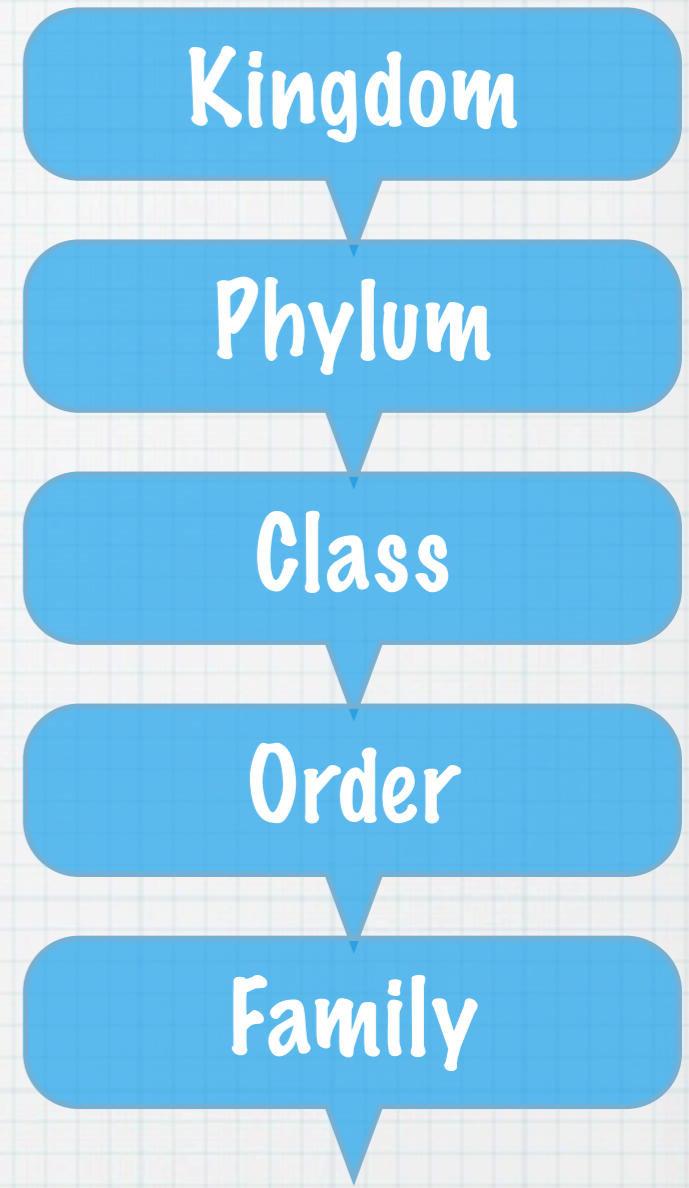
# Order

- \* Organisms sorted based on more specific characteristics
- \* Examples: Primates, Procolophonomorpha



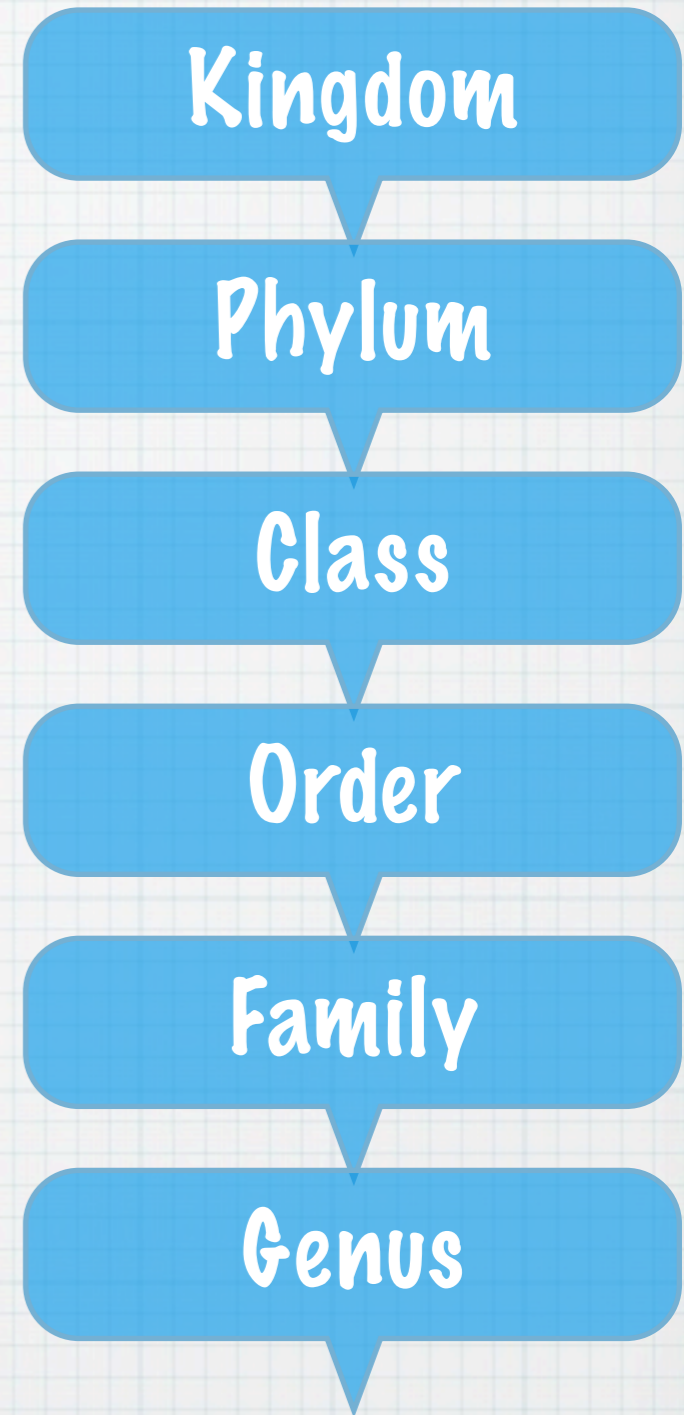
# Family

- \* Organisms sorted based on more specific characteristics
- \* Can be divided into subfamilies
- \* Often named after a common member (walnut family)



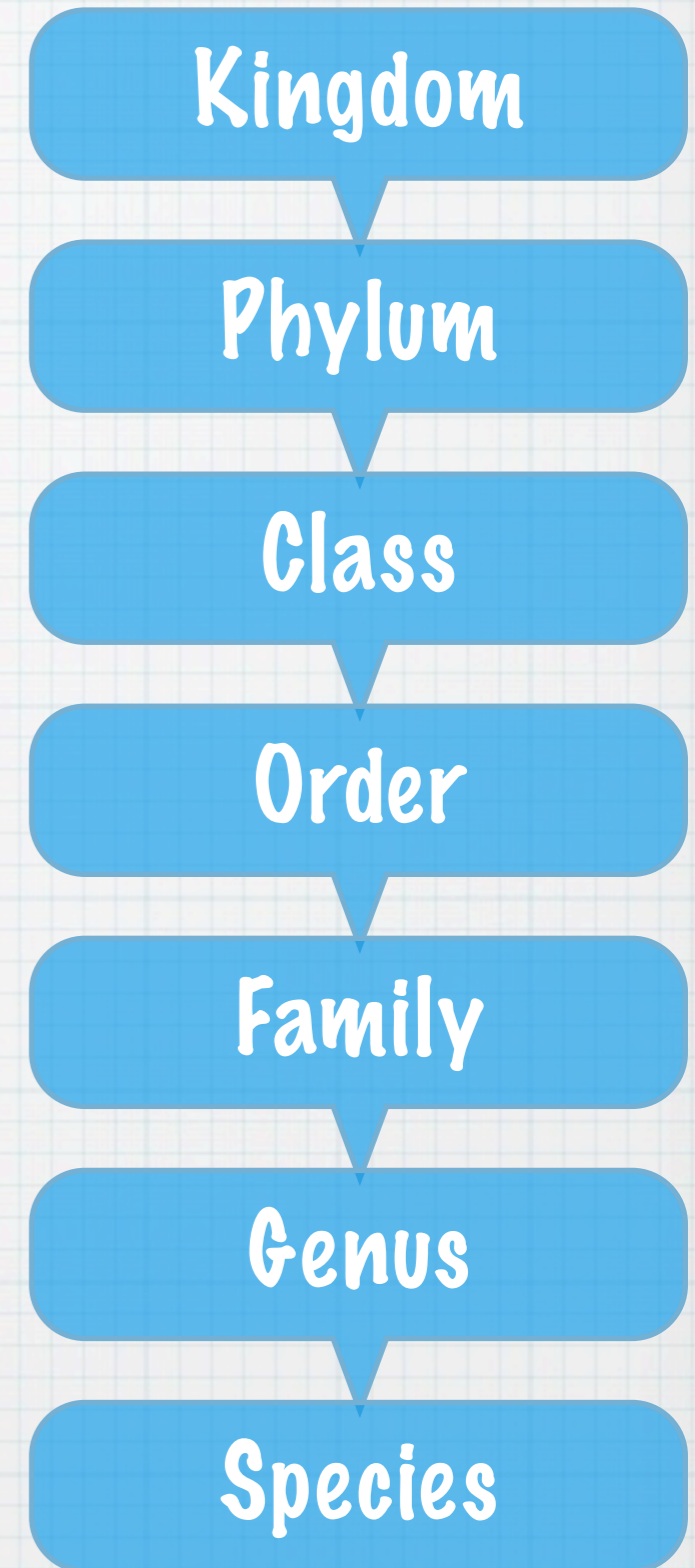
# Genus

- \* Organisms sorted based on more specific characteristics
- \* Forms the first part of the nomenclature name



# Order

- \* Organisms sorted based on more specific characteristics
- \* Most specific categorization of our taxonomic system



**K-P-C-O-F-G-S**

- \* Keep Pond Clean Or Froggy Gets Sick**
- \* King Phillip Came Over For Great Soup**



# Domains

- \* With genetic sequencing now available, we now separate all organisms into three broad categories called domains
- \* Archaea: chemosynthetic bacteria
- \* Bacteria: all other bacteria
- \* Eukarya: all eukaryotic

Archaea

Bacteria

Eukarya

