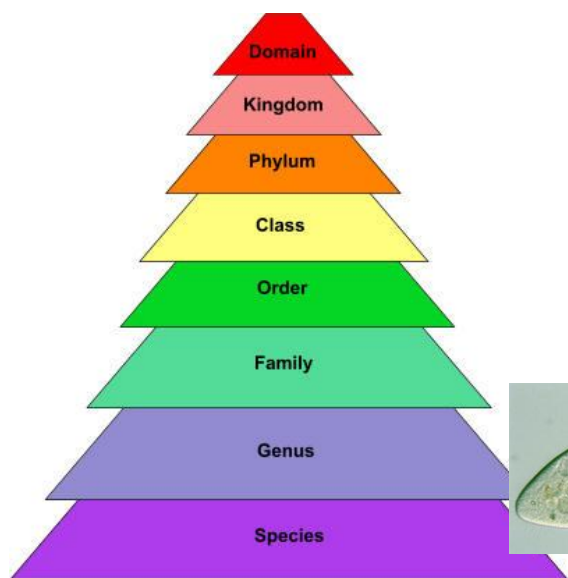


EOC Review-Taxonomy and Classification

- **Taxonomy:** is the science of identifying and naming species, and arranging them into a classification (groups).
- **Carl Linnaeus (1707-1778):** developed the **binomial nomenclature** that gives the scientific name to all living organisms.

Scientific name: is usually in latin and is composed of the **Genus species**. Genus is first name & it is always capitalize, species is the second name & it is written in lower case letters.

- **Biological Classification** - is a method by which biologists group and categorize organisms by biological type.



Classification categories or groups are: domain, kingdom, phylum, class, order, family, genus, species. (Dumb, King, Philip, Came, Over, For, Good, Soup).

- **Domain** - is the highest taxonomic rank of organisms

3 domains

Archae – 1 kingdom of prokaryotic cells (Archaeobacteria)

Bacteria – 1 kingdom of prokaryotic cells (Eubacteria)

Eukarya – have eukaryotic cells, unicellular to multicellular organisms, and 4 kingdoms (Protista, Fungi, Plantae, Animalia)

Table 1 Kingdom and Domain Characteristics

Domain	Kingdom	Characteristics				Example
		Cell type	Cell structure	Body type	Nutrition	
Bacteria	Eubacteria	Prokaryotic	Cell wall, peptidoglycan	Unicellular	Autotrophic and heterotrophic	Enterobacteria Spirochetes
Archaeobacteria	Archaeobacteria	Prokaryotic	Cell wall, no peptidoglycan	Unicellular	Autotrophic and heterotrophic	Methanogens
Eukarya	Protista	Eukaryotic	Mixed	Unicellular and multicellular	Autotrophic and heterotrophic	Amoebas Euglenas Kelps
Eukarya	Fungi	Eukaryotic	Cell wall, chitin	Unicellular and multicellular	Heterotrophic	Yeasts Mushrooms
Eukarya	Plantae	Eukaryotic	Cell wall, cellulose	Multicellular	Autotrophic	Ferns Pine trees
Eukarya	Animalia	Eukaryotic	No cell wall	Multicellular	Heterotrophic	Birds Earthworms

EXAMPLE OF DICHOTOMOUS KEY

- ✦ 1a Animal has feathers - Go to 2
- ✦ 1b Animal does NOT have feathers- Go to 3
- ✦ 2a Animal swims- Duck
- ✦ 2b Animal does NOT swim- Chicken
- ✦ 3a Animal has legs- Lizard
- ✦ 3b Animal does NOT have legs-Snake



Animal A



Animal B

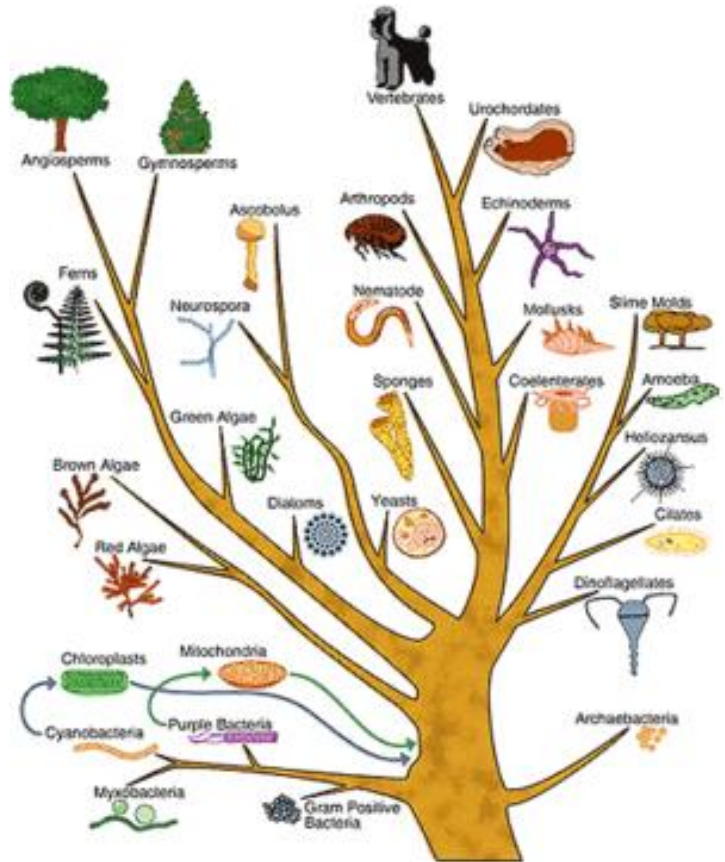


Animal C

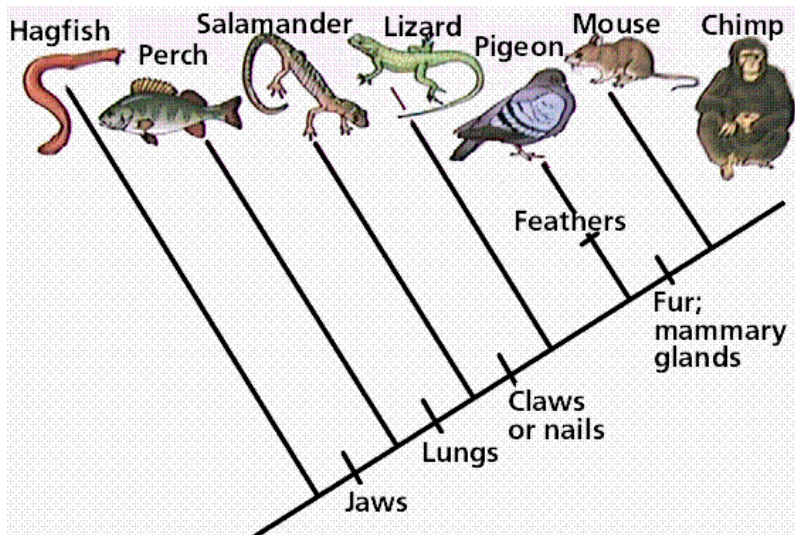


Animal D

- **Dichotomous Key** - is an **organized set of couplets (opposing statements)** of mutually exclusive characteristics of biological organisms, used to identify biological organisms.



- **Phylogenetic tree**- is a branching diagram showing the inferred evolutionary relationships among various biological species or other entities—their phylogeny—based upon similarities and differences in their physical or genetic.



- **Cladogram** - branching diagram, which shows the evolutionary relationships among groups of organisms; organisms that share characteristics, are grouped together on the cladogram.