

## Taxonomy

- How many species do you think there are today?
- Why does that number keep changing?

## Taxonomy and Classification

### Taxonomy

- Science of naming organisms
- Remember: You file your TAXES by NAME

### Classification

- Science of grouping and categorizing organisms

## Systems of Classification

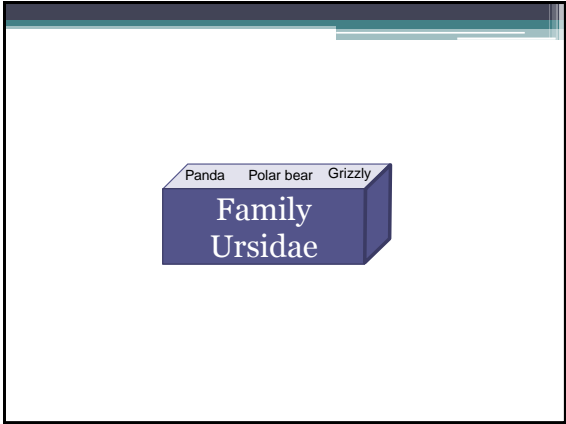
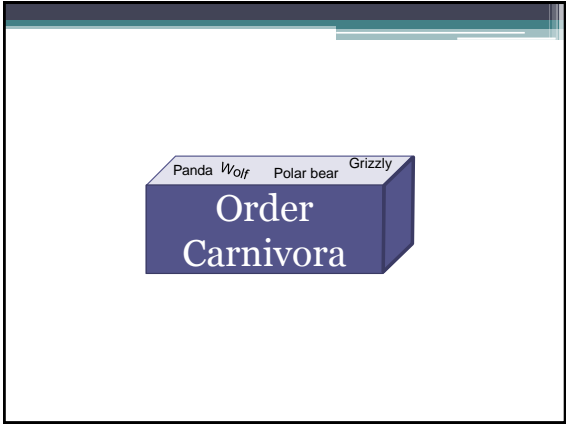
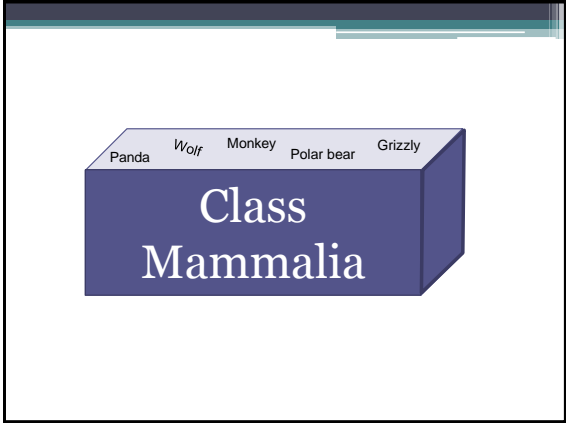
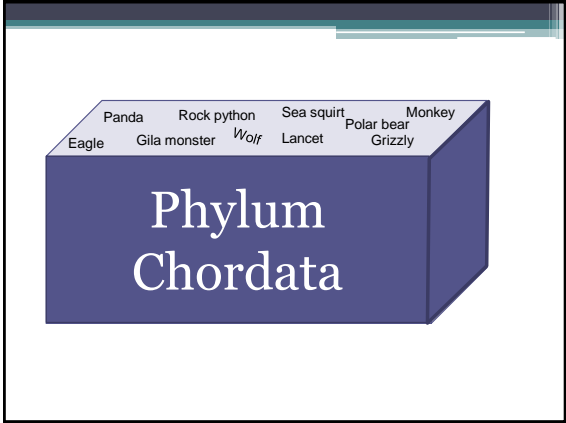
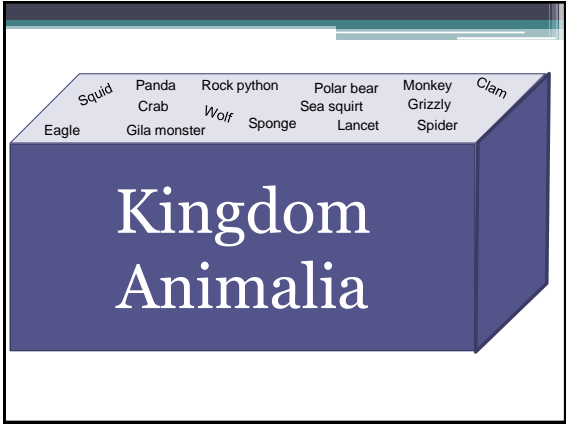
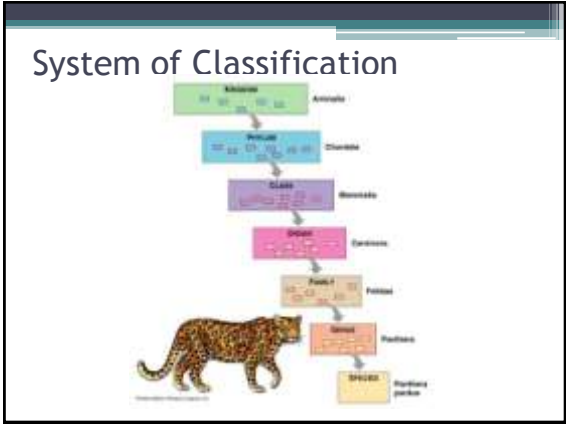
- Aristotle (360 BC)
  - Plants and animals only (2 kingdoms)
  - only used physical characteristics
- Linnaeus (1750 AD)
  - Added scientific names

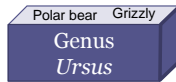
## Systems of Classification

- Present Day
  - Add DNA, genes, proteins, and ancestry
  - 5 Kingdoms
  - 3 Domains (larger than kingdoms)

## System of Classification

- K= Kingdom
- P= Phylum
- C= Class
- O= Order
- F= Family
- G= Genus
- S= Species
- Domains??

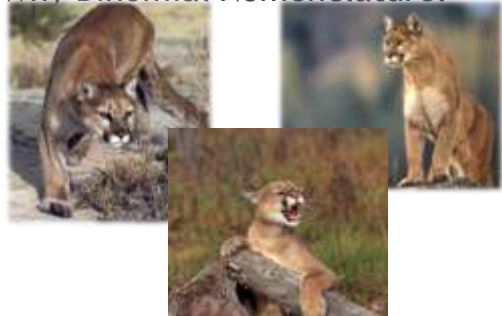




## Binomial Nomenclature

- *Genus species* = scientific name
- “bi” = two; “nomen” = name
  - Invented by Carolus Linneaus
  - Latin: not spoken; no one gets an unfair advantage
  - each species only has one name

## Why Binomial Nomenclature?



## *Felis concolor*



## Binomial Nomenclature

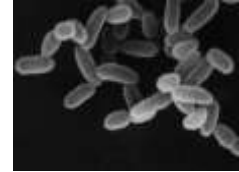
- *Querus alba* – white oak
- *Querus rubra* - red oak
- *Felis domestica*
- *Felis leo*
- *Canis lupus*
- *Canis familiaris*

## The 6 Kingdoms

- Archaeobacteria
- Eubacteria
- Protista
- Fungi
- Plantae
- Animalia

## Kingdom Archaeobacteria

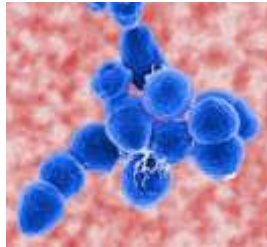
1. Unicellular
2. Prokaryotic
3. Autotrophic (photosynthesis/chemo synthesis) + heterotrophic
4. Asexual reproduction (binary fission)
5. Cell walls
6. Found in harsh environments.



*Sulfolobus*

## Kingdom Eubacteria

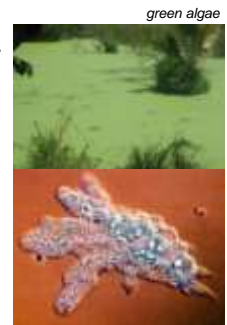
1. Unicellular
2. Prokaryotic
3. Autotrophic + heterotrophic
4. Asexual reproduction (binary fission)
5. Cell walls-peptidoglycan
6. Found EVERYWHERE



*Streptococcus*

## Kingdom Protista

1. Unicellular/multicellular
2. Eukaryotic
3. Autotrophic (algae) and/or heterotrophic (protozoa)
4. Sexual/asexual reproduction
5. Some w/cell walls
6. Any where with water
7. Mostly parasitic

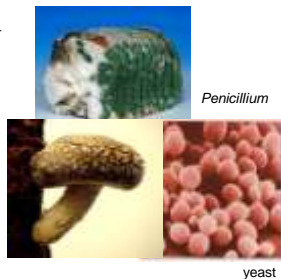


green algae

*Amoeba*

## Kingdom Fungi

1. Mostly multicellular (a few can be unicellular)
2. Eukaryotic
3. Heterotrophic
4. Asexual/sexual
5. Cell walls-chitin
6. Anywhere with rotting material



*Penicillium*

yeast

## Kingdom Plantae

1. Multicellular
2. Eukaryotic
3. Autotrophic-photosynthesis
4. Asexual/sexual
5. Cell walls - cellulose
6. Anywhere with light, carbon dioxide, and water.



saguaro cactus

## Kingdom Animalia

1. Multicellular
2. Eukaryotic
3. Heterotrophic
4. Asexual/sexual
5. No cell walls
6. Anywhere with oxygen

