**Classification & Taxonomy**

**What is classification?**

* Organizing things into categories of some kind
* Grouped based on their characteristics

**Why do Scientists Classify Living Things?**

* Grouping living things helps us learn about them
* Grouping living things helps us understand them better

**Who Figured Out How to Classify Living Things?**

* Carolus Linnaeus developed the classification system used by scientists

**What is the Classification System used by Scientists Today?**

* **Kingdom**: Highest level...most general
	+ 5 Kingdoms
		- Monera
			* Ex. bacteria (single, simple cells)
		- Protista
			* Ex. algae, amoeba (single, complex cells)
		- Fungi
			* Ex. mold, mushrooms and yeast
		- Plantae
			* Ex. producers who make their own food through photosynthesis
		- Animalia
			* Ex. mammals, reptiles, amphibians, birds and fish
	+ Phylum or Phyla (Division for plants and fungi)
		- Grouped by shared characteristics
		- Share a common structure and organization
			* Ex. Chordate phylum are all animals with backbones
	+ Class
		- Share common structures
			* Ex. Class Reptilia are all cold blooded
	+ Order
		- Share common structures
			* Ex. Order Primates have flexible hands and feet
	+ Family
		- Share common characteristics
			* Ex. Family Homindae walk on two feet
	+ Genus
		- share common characteristics
			* Ex. Genus Homo (Latin for man) have large brains
	+ Species
		- Most basic, members resemble each other
			* Ex. Species sapiens (Latin for wise) are known for their thinking abilities

**How can you remember the levels of classification?**

“Kids Prefer Cheese Over Fried Green Spinach”

**What is Taxonomy?**

* Scientific way of naming and classifying organisms
* Binomial Nomenclature
	+ “two names” made of the organism’s genus and species
	+ Ex. Humans are named Homo sapiens

**How can we IDENTIFY organisms?**

* There are millions of different species on Earth….how can we possibly identify them all?
* Ex. a beetle--even if we knew its kingdom (Animalia), its Phylum (Arthropoda) , its class ( insecta) and its order (coleoptera), you’d still have about 300,000 different species of beetles to choose from
* Scientists use a ***dichotomous key*** to identify organisms
	+ asks a series of questions that can be answered in two ways (***di***chotomous)
	+ Your answer leads you to another question with only two choices
	+ The questions are asked about traits
	+ Eventually, you are lead to the identity of the organism