**EVOLUTION and CLASSIFICATION STUDY GUIDE**



* The earth is 4.6 Billion Years Old
* Relative Dating: We know the order of events, but not actual dates.
* Absolute Dating: We know dates. We find the dates by measuring half life.
* Half Life: The time required for the amount of radioactive material to decrease by one-half. KNOW HOW TO CALCULATE!
* Uniformitarianism: The same laws that govern our world governed the past.
* There is a lot of diversity and variety on earth!
* Cladograms or Phylogenetic Trees show evolutionary relationships. Know how to find common ancestors.
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* Know how to read a dichotomous or taxonomic key
* CLASSIFICATION:
* There are 6 kingdoms:
	+ Prokaryotes:
		- Bacteria – one celled organisms; microscopic; no organelles
		- Archaebacteria: Oldest form of life. Live in extreme environments
	+ Eukaryotes (separate organelles in their cells)
		- Protists – any eukaryotic organism that isn’t a plant, animal or fungi.
		- Plants
		- Fungi
		- Animals
* You can further separate organisms into the 7 levels of classification:
	+ Kingdom
	+ Phylum
	+ Class
	+ Order
	+ Family
	+ Genus
	+ Species
* Organisms belonging to the same Kingdom are most DISSIMILAR (Fruit Fly and Monkey).
* Species are most SIMILAR.
* The Classification system has changed over time based on increased technology that has allowed us view more organisms etc.
* Carolus Linnaeus proposed Binomial Nomenclature: Each species has a two part name:
	+ Genus species (Homo sapiens).
* Darwin had two main ideas:
	+ Tree Thinking: Organisms do not change in one straight path; it looks like a family tree. Organisms are organized by STRUCTURE and function.
	+ Natural Selection
		- Variation must already exist in the population.
		- There is a change in Environment (new predator; different food source etc.)
		- Organisms must survive their new environment
		- Those organisms pass on their genes to the next generation.
	+ 
* **KNOW THE EVIDENCES FOR EVOLUTION WORKSHEET VERY WELL!!!!!**
* Know “Why The Theory of Evolution Matters”