Name: _____ Date: _____ Period: _____

Classification Notes

Finding Order in Diversity
- How living things are _____
- Binominal Nomenclature
- _____ System of Classification

Modern Evolutionary Classification
- _____ relationships
- _____
- Comparing dissimilar organisms

Kingdoms and Domains
- _____ kingdoms of Life
- _____ Domain system of classification

Finding Order in Diversity

- What is a species?
  - A _____ of organisms that share similar characteristics and can _____ freely
- Biologists have identified 1.5 million species, and they estimate 2-100 million species have yet to be identified
- Order out of chaos? You bet! Classify it!
- **Classification**
  - A system to _____ and _____ organisms in a logical order, used to study diversity of life
- **Taxonomy**
  - Classifying organisms and giving them a universally accepted _____
- Using common names is confusing
  - Mountain lion, cougar, bear cat, puma, panther (all the same animal)
- 18th century scientists agreed to use a single name for each species, and to use _____ as the common language
- Carolus Linnaeus- a Swedish botanist (mid 1700's) who developed the _____ _____system of naming organisms
  - **Binominal Nomenclature =**
    _____ word naming system we still use today

2 Rules of the Binominal Nomenclature System:

1. Written in italics or _____
2. First word is _____, second word is in _____
3. Species names are unique to that individual group of organisms and are usually a description of an important _____ or an indication of _____ that organism _____

Modern System of Classification (8 levels – largest to smallest)

D_____

K_____

P_____

C_____

O_____

F_____

G_____

S_____

Evolutionary Classification

- Linneaus grouped organisms based on _____ similarities, but Darwin's concept of Descent with Modification changed all that

Phylogeny = grouping organisms into categories that represent lines of _____ descent instead of physical

Cladogram = shows the_____ relationships among a group of organisms

- In Linnaeus's time, life was much simpler. Either you were a plant or an animal.
- Today, classification is more complicated.
  - Protists? Bacteria? Viruses?
- Tree of Life (www.tolweb.org)
- Life is full of _____
  - Robert Hooke and Van Leewenhoek – showed us the microscopic world, bacteria, protists, microorganisms
  - Discovering all these microscopic life forms, added _____ to the Tree of Life

Three Domain System

- Using a molecular clock, scientists group organisms according to how long they have been _____ independently
- Now, we have another level added to Linnaeus's 7 level system, called _____
- Today, we have 3 Domains
  - _____ = all bacteria in the kingdom Eubacteria, unicellular, members are Prokaryotes
  - _____ = includes the kingdom Archaebacteria, Prokaryotes
  - _____ = protists, fungi, plants and animals

Domain Bacteria:

- Members of Kingdom Bacteria are _____
- Prokaryotes = lack a _____, no membrane-bound _____

Domain Archaea:

- Archaebacteria are CRAZY bacteria
- _____, _____
- Live in the most _____ environments, where only crazy things live

Domain Eukarya:

- All organisms whose cells have a _____
- Everything that is _____ a bacteria- including YOU!

<u>Kingdom Protista:</u>

– if it's not a bacteria, plant, fungi or animal, it's a _____, remember that!
Live in _____ places, like ponds
Keywords: _____, lives in _____ places, hard to _____

<u>Kingdom Fungi:</u>

– _____ that feed on dead/decaying organic matter (_____ = from living organisms), _____ enzymes that _____ and then absorb (not eat) the smaller food molecules
Keywords: _____, feeds on organic matter, secretes _____ - _____ food

<u>Kingdom Plantae:</u>

– _____, photosynthetic _____, that don't move, have _____ with _____
Keywords: _____, photosynthesis, _____ and _____

<u>Kingdom Animalia:</u>

– _____ and _____, do _____ have cell walls, _____(can move), can live almost everywhere
Keywords: _____, _____, _____, _____

Now, let's fill out your Key Characteristics of Kingdoms and Domains chart! ☺