Systematics PowerPoint Notes

A simple branching diagram may be used to classify living groups of organisms by shared derived (original) characteristics and expanded to include fossil organisms.

Systematics
The process of classifying living things according to their ________________ relationships is called __________________. Systematics is based upon both ________________ characteristics as well as upon derived characteristics. ________________ means that the characteristics evolved from a common ancestor.

Cladogram
A ________________ is used to show these evolutionary relationships. The evolutionary development of a house ______ is shown by this cladogram. The characteristics listed along the right-side of the cladogram distinguish the levels above each node. A ________________ is the point where two branches meet. The nodes indicate a common ________________ between two groups. As you move up a cladogram, organisms are separated into more specific groups. Following the cladogram down to the root points to a ________________ ancestor for all of the organisms.

Evolutionary development for primates
Humans, chimpanzees, baboons, and lemurs, for example, are classified together in the order ________________. All four organisms are thought to have evolved from a common ancestor with similar ________________. Exactly what are some of the shared common characteristics of primates? All primates, for example, have binocular ____________ and opposable _____________. Binocular refers to vision in which both eyes are used together. Opposable means the thumb can touch the tips of all of the other fingers.

DNA analysis to classify living species
By comparing the DNA base sequences of different species, scientists can tell how closely _________ the species are. Then they can accurately ________________ them. Skunks, for example, were once thought to part of the weasel family, which includes weasels, ferrets, and minks. All have a “musky” odor. By comparing their ________________ though, scientists have determined that skunks are very different from other members of the weasel family, and they have created a new ________________ especially for skunks!
An evolutionary tree is another way to classify organisms which or either living or extinct. An evolutionary _______________ is a diagram with many branches that shows evolutionary relationships among organisms. The _____________ of the diagram represents a common ancestor of all organisms. The point between each branch represents a common ancestor between branching groups. In a complete evolutionary tree, the levels of _________________ (phylum, class, order, etc.) would branch off from each kingdom all the way down to the species level.