**AP Biology: Tree Thinking Name:**

Do the HHMI Biointeractive: Interpreting a Phylogenetic Tree – Creating Phylogenetic Trees from DNA Sequences

**Vocabulary**

1. SNP – Single Nucleotide Polymorphism (formerly referred to as a substitution point mutation)

* What is potential impact on the protein
* Give an example of a SNP

1. Indel – insertion or deletion point mutation

* What is potential impact on the protein
* Give an example of an Indel

1. In slide 15:

* Identify the indel and what is it and what position (start counting from the left) is it in?
* Identify the SNP and what position it is in.

1. In slide 16:

Identify the three mistakes. Keep in mind that scientists apply the rule of parsimony which means that the simplest explanation is probably the best. Since there is more than one possible answer to my question go for the explanation that involves the fewest changes.

1. In slide 18:

Draw the camel etc cladogram here and answer the questions:

1. What group are hippos most closely related to? Provide evidence.
2. Are pigs more closely related to camels or Hippos? Provide evidence.
3. Name a possible outgroup.
4. In slide 22 what organism(s) is / are most closely related to the Gorilla? Support your claim with evidence.
5. In slide 23 justify the claim that both trees represent the same evolutionary relationships.
6. For slide 24: When you get to class on Wednesday visit the microscope station that has my collection of cone snail shells. (I got them from Dr. Olivera!)
7. Explain why aligning and evaluating DNA sequences provides good information for developing trees and observing evolution.
8. Give an example for which DNA might give you confusing results.