

### Topic 5.3: Classification of Biodiversity Reading Guide

5.3.U1 The binomial system of names for species is universal among biologists and has been agreed and developed at a series of congresses.

1. How many different names are used for the plant *Arum maculatum*?
2. Describe the importance of an internationally recognized system of naming organisms.
3. Explain how are names of new species recognized.

5.3.U2 When species are discovered they are given scientific names using the binomial system.

4. Who is credited with our modern system of naming species?
5. What are the two parts of a species name? Define both terms.
6. Outline the conventions by which species are named.
7. On page 263, read the TOK: What factors influence the development of a scientific consensus? and answer questions 1-3.

5.3.U3 Taxonomists classify species using a hierarchy of taxa.

8. Define the term taxon (taxa pl.).
9. Create a flow chart to describe how taxa are classified in a hierarchy. Remember: **Daring King Phillip Came Over For Great Sandwiches!**
10. What happens to the number of shared features as a taxon progresses from genus to domain?

5.3.U4 All organisms are classified into three domains.

11. What are the two groups recognized by the traditional classification system?
12. List the three domains.
13. Briefly describe the features used to define the three domains.
14. Explain where do viruses fit into the classification system.

5.3.U5 The principal taxa for classifying eukaryotes are kingdom, phylum, class, order, family, genus and species.

15. Define the terms prokaryote and eukaryote.
16. Create a flow chart to describe how eukaryotes are classified in a hierarchy.
17. Classify humans from the domain to species level [5.3.A1].
18. Complete the DBQ's on page 262 #1-3.

5.3.U6 In a natural classification, the genus and accompanying higher taxa consist of all the species that have evolved from one common ancestral species.

19. Describe the conventions of natural classification.
20. What is one difficulty with natural classification?

5.3.U7 Taxonomists sometimes reclassify groups of species when new evidence shows that a previous taxon contains species that have evolved from different ancestral species.

21. Describe why it is important that the classification schemes for organisms is periodically reviewed.

5.3.U8 Natural classifications help in identification of species and allow the prediction of characteristics shared by species within a group.

22. Briefly summarize the two advantages to the natural classification system.
23. Describe how dichotomous keys are used to help identify specimens in to a species [5.3.S1]
24. List the four main phyla for plants.
25. How many animal phyla exist today? List the six animal phyla given in the text.
26. List the five vertebrate classes.