

Taxonomy: Classification of Life Web Quest

Introduction

Taxonomy is the science of naming and classifying organisms. Taxonomy arranges organisms into groups based on similarities. In this webquest, you will explore the classification system currently used to sort and categorize living organisms.

Part I: Use the following links to answer the questions below:

https://www2.palomar.edu/anthro/animal/animal_1.htm

1. Why are classification systems useful?
Classification is used in the biological sciences to describe and categorize all living things
2. What is *Systema Naturae*? Who wrote it and when?
It was the book published by Carolus Linnaeus in 1735 describing his classification scheme for living things based on structural similarities.
3. While the form of the Linnaean classification system remains substantially the same, the reasoning behind it has undergone considerable change. Why is this so?
Biological classification has come to be understood as reflecting evolutionary distances and relationships between organisms.

Part II: Use the following links to answer the questions that follow:

Go to <http://www.sciencespot.net/Pages/kdzbioclass.html>

- Choose Cells and Classification
- Click on the sites that are in **bold** on this page

Site #1: Biological Classification

1. What does the word "species" mean in Latin? **Kind**
2. What two terms are used for an organism's binomial name? **Genus and Species**

Site #2: Ology: The Tree of Life

1. What type of diagram do scientists use to show how species are related? **Cladogram**
2. What does each new branch represent?
New branches represent where organisms diverged from a common ancestor.

3. Explore the groups shown on the cladogram to answer these questions:
- What percentage of the world's organisms are classified in each group?
Bacteria - [0.54%](#) Protocists – [22.33%](#) Green Plants – [16.26%](#) Fungi – [5.84%](#)
 - Which animal group makes up the largest percentage of the world's organisms?
[Arthropods 47.42%](#)
 - What are tetrapods? [Organisms having 4 limbs with movable joints](#)
 - What structure do eukaryotes have in their cells? [Nucleus](#)
 - Into what group would humans be classified? [Vertebrates](#)

Site #3: Brainpop: The Six Kingdoms:

- What are the six kingdoms?
[Animal, Plant, Fungi, Protist, Eubacteria and Archaeobacteria](#)
- What type of traits do modern scientists look at to classify something?
[Appearance, Cell Structure, DNA, Ancestry, etc.](#)
- What are the 7 categories of classification from broadest to smallest?
[Kingdom, Phylum Class, Order, Family, Genus, Species](#)
- Mnemonics are memory devices to help you remember important information. One type of mnemonic used to remember involves making a sentence arranging the first letter of each item in a list to form a phrase or word. **le. Bad Elephants Destroy Many A Swing.**
By looking at the first letter of each word you can remember the order of operations in Mathematics.
Create a phrase to help you remember the 7 levels of classification in order:

[Mine:](#)

[King Phillip Can Only Fight Great Soldiers.](#)

Part II: Follow the link and watch the video to answer the questions that follow:

<https://www.youtube.com/watch?v=KPtAuoijPQVQ>

1. Look at the diagram below. As you go from domain to species what do you notice about:

Classification of the Brown Bear 🐻		
Taxonomic Group	Number of Species	Examples
Domain Eukarya	About 4–10 million	
Kingdom Animalia	About 2 million	
Phylum Chordata	About 50,000	
Class Mammalia	About 5,000	
Order Carnivora	About 270	
Family Ursidae	8	
Genus <i>Ursus</i>	4	
Species <i>Ursus arctos</i>	1	

a) the number of organisms? **Decreases**

b) the structural similarity of the organisms? **Increases**

2. What rules must be followed when writing a scientific name?

Genus name comes first and must be capitalized, Species name is second and is lower case

If the scientific name is written it is underlined, if typed then it is put in italics.