

Amazon Voyage Catfish Sorting

Background Information

There are about 15 million kinds of organisms on Earth! To make sense of them all, scientists identify the characteristics they have in common and place them into established categories. This allows them, among other things, to determine how they evolved and how they fit into the ecosystem. This information also helps us identify and protect species threatened with extinction. Modern classification has its root in the work of **Carolus Linnaeus** who grouped species according to shared physical characteristics.



The original purpose of biological classification was to organize the vast number of known organisms into categories that could be named, remembered, and discussed. These groupings have been revised since Linnaeus to improve consistency with the Darwinian principle of common descent -the theory that all organisms on Earth are descended from a common ancestor or ancestral gene pool.

Modern classification attempts to organize species based on their evolutionary relatedness. Scientific classification belongs to the science of **taxonomy** or **biological systematics**. Improvements to the system included the addition of more categories, such as the Kingdom, Phylum, Class, Order, and Family. This **hierarchical**

system of classification, like many modern filing systems, begins by grouping living organisms into a few large aggregations first (the Kingdom level), and then subdividing the groups or **taxa** into ever-smaller units at each step. Each category gets smaller and smaller and includes fewer organisms. The last category is made up of just one kind of organism, namely a species.

Use this trick to help you remember them:



Other improvements to scientific classification include cellular and genetic details. The recent advances in embryology and molecular biology have given new tools such as patterns of life cycle, larval development, and gene sequencing. Taxonomy is a dynamic field of science. As new organisms, both living and fossilized, are discovered, changes and revisions are made.

Scientific knowledge is always evolving and must be adjusted in light of new information, in taxonomy and in every other field. "Taxonomy (the science of classification) is often undervalued as a glorified form of filing with each species in its prescribed place in an album; but taxonomy is a fundamental and dynamic science, dedicated to exploring the causes of relationships and similarities among organisms. Classifications are theories about the basis of natural order, not dull catalogues compiled only to avoid chaos." Stephen Jay Gould, 1990.

Amazon Voyage Catfish Sorting Directions

1. Read the information sheet as a group.
2. Look closely at the words they give you to help you learn the appropriate categories used to organize species. Say the trick saying as a group.
3. Examine the catfish cards carefully and make as many observations as possible (external features, appendages, body coverings, etc.) for each catfish. Discuss how the Amazon catfish are alike or different from the catfish we see in North America.
4. As a group determine how to divide the catfish into different groups. Every member of the group should agree upon the way in which they divide the pictures. There are many different ways to group things so make sure your group is able to defend their way of grouping the fish.
5. Make a chart to record your observations on the white paper that is provided.

Example Chart:

Characteristics	Fish Cards

6. Write all of your group members names on the chart.
7. If your group finishes before the time is up work together to create a new word phrase for classifying animals.

Put all materials back in the basket for the next group/class.