

Biological classification

Biological classification is rooted in the early work of Carolus Linnaeus who began grouping organisms based on shared physical characteristics. Classification is a series of taxonomic ranks designed to categorize all living organisms. The highest grouping is "life", indicating that biological classification does not include pseudo-living organisms like viruses. The order of taxonomic ranks are Domain, Kingdom, Phylum, Class, Order, Family, Genus, and Species. There is almost universal agreement regarding the three domains: Archaea, Bacteria, and Eukarya. Organisms in Archaea and Bacteria are prokaryotes, while those in Eukarya are eukaryotes. There is some disagreement about the number of kingdoms, but they are often presented as six groups: Animalia, Plantae, Fungi, Protista, Archaea, and Bacteria. There are a large amount of phylums, classes, orders, families, genera, and species that do not need to be memorized. Generally, categories in taxonomic ranks lower than phylum are disputed among taxonomists.



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Life

Life-Ring

The highest category of the classification system is life. Biological classification is used to categorize living organisms, so pseudo-living organisms like viruses are not included.

Domain

Dome

The first taxonomic rank is domain, and there are three generally accepted domains: archaea, bacteria, and eukarya. Plants and animals are in eukarya. The archaea and bacteria domains consist of prokaryotes.

Kingdom

King

Kingdom is the second taxonomic rank. There is some disagreement among experts, but there are generally six accepted kingdoms: Animalia, Plantae, Fungi, Protista, Archaea, and Bacteria.

Phylum

File

Phylum is the third taxonomic rank and can be informally thought of as groupings of organisms based on general specialization of body plan. The phenetic definition of phylum is a grouping of organisms with a certain degree of morphological or developmental similarity. The phylogenetic definition is a grouping of organisms with a certain degree of evolutionary relatedness. Examples of phylums in the animal kingdom include Protozoa, Chordata, Arthropoda, Molluska, etc.

Class

Glass

Class is the fourth taxonomic rank, and the composition of each class is determined by a taxonomist. There is often no exact agreement except with well-known organisms. Examples of classes include Mammalia under phylum Cordata (vertebrates) and Insecta under phylum Arthropoda.

Order

Waiter taking Order

Order is the fifth taxonomic class. Examples of orders under the class Mammalia include Primates, Carnivora, Rodentia, and Perissodactyla.

Family

Family

Family is the sixth taxonomic rank. Examples of families under the order Carnivora include Canidae (dogs), Felidae (cats), and Ursidae (bears).

Genus

Genie

Genus is the seventh taxonomic rank. The family, Felidae, can be broken down into several genera: Acinonyx (cheetah), Panthera (lion, tiger), Neofelis (clouded leopard), and more.

Species

Spices

Species is the eighth and final taxonomic rank. The genus Panthera (lions and tigers) can be broken down into species, two of which are Panthera leo (lion) and Panthera tigris (tiger). There are also subspecies, which include the different types of lions (Congo lion, European lion, etc).