

What is the Taxonomy System and How Do We Classify Life?

Worksheet

Taxonomy is the classification and naming of organisms using a hierarchical system: Kingdom, Phylum, Class, Order, Family, Genus, Species (KPCOFGS). Modern taxonomy reflects evolutionary relationships - organisms in the same group share a common ancestor.

Questions

1. What is the broadest rank in the Linnaean system?
A) Genus
B) Phylum
C) Kingdom
D) Order
2. Humans have binomial name *Homo sapiens*. What do these words mean?
A) Homo = species, sapiens = kingdom
B) Homo = genus, sapiens = species
C) Homo = family, sapiens = order
D) Homo = phylum, sapiens = class
3. Two organisms in the same Phylum but different Classes
A) must be the same species
B) cannot interbreed
C) share a more recent common ancestor than two in different Phyla
D) are more closely related than two in different Orders
4. Which rank is most specific for identifying a unique organism?
A) Order
B) Family
C) Genus
D) Species
5. Where would you place a lion in the taxonomy system?
6. A human and a chimpanzee share the same Family and Genus. Are they the same species?
7. Name three organisms in the same Phylum but different Classes.
8. Define: What is taxonomy?
9. Define: What is the Linnaean system?
10. Define: What is a binomial name?

Answer Key

1. C) Kingdom - Kingdom is the broadest rank - it includes all organisms of a major type (e.g. all animals).
2. B) Homo = genus, sapiens = species - Homo is the genus (lowercase s); sapiens is the species epithet. Together = Homo sapiens.
3. C) share a more recent common ancestor than two in different Phyla - Same Phylum = closer common ancestor than different Phyla. More specific ranks = more recent split.
4. D) Species - Species is the smallest rank and most specific; it defines a single interbreeding population.
5. Kingdom: Animalia (animal) Phylum: Chordata (vertebrate) Class: Mammalia (mammal) Order: Carnivora (meat-eater) Family: Felidae (cat family) Genus: Panthera (big cats) Species: P. leo (lion) Binomial name: Panthera leo
6. Humans: Kingdom Animalia, Phylum Chordata, Class Mammalia, Order Primates, Family Hominidae, Genus Homo, Species H. sapiens Chimpanzee: Animalia, Chordata, Mammalia, Primates, Hominidae, Genus Pan, Species P. troglodytes Same Family (Hominidae) but different Genus and Species - NOT the same species.
7. Phylum Chordata examples: 1. Eagle (Class Aves) - bird 2. Dolphin (Class Mammalia) - marine mammal 3. Frog (Class Amphibia) - amphibian All share vertebrae and internal skeleton; differ in reproduction, skin and body plan.
8. The science of naming, describing and classifying organisms into hierarchical groups based on evolution.
9. A hierarchical classification system with 7 ranks: Kingdom, Phylum, Class, Order, Family, Genus, Species.
10. A two-part scientific name: Genus species. Example: Canis lupus (grey wolf). Universal and precise.

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