

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Answer Key: Your Guide to Organizing the Tree of Life for College Freshmen

How do scientists organize millions of species? Build your foundation in biological nomenclature and basic taxonomic hierarchy as an entry point to evolutionary biology.

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**1. Which of the following taxonomic levels represents the most inclusive (broadest) group of organisms?**

**Answer:** C) Domain

Domain is the highest taxonomic rank in the three-domain system (Bacteria, Archaea, and Eukarya), making it the most inclusive level.

**2. In the binomial nomenclature system, the first part of an organism's scientific name represents the \_\_\_\_\_.**

**Answer:** B) Genus

The binomial name consists of the Genus name (capitalized) followed by the specific epithet (lowercase).

**3. Organisms classified within the Kingdom Fungi are primarily autotrophic.**

**Answer:** B) False

Fungi are heterotrophic; they obtain nutrients through absorption rather than photosynthesis.

**4. A biologist discovers a single-celled organism living in a high-salinity 'dead zone' in the ocean. This organism lacks a nucleus and peptidoglycan. It likely belongs to:**

**Answer:** B) Domain Archaea

Archaea are prokaryotic (no nucleus) and distinct from Bacteria because they lack peptidoglycan in their cell walls and often live in extreme environments.

**5. The scientific name for the common fruit fly is *Drosophila melanogaster*. In this name, 'melanogaster' refers to the \_\_\_\_\_ identifier.**

**Answer:** D) Species

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The second part of the binomial name is the specific epithet, which identifies the particular species within a genus.

**6. Members of the Kingdom Plantae are characterized by having cell walls composed primarily of cellulose.**

**Answer:** A) True

The presence of a cellulose-based cell wall is a defining structural characteristic of plants.

**7. Which of the following describes a key difference between the Kingdom Animalia and the Kingdom Plantae?**

**Answer:** B) Animals lack cell walls, while plants have cell walls.

Animal cells are surrounded only by a plasma membrane and lack the rigid cell walls found in plants.

**8. If two organisms belong to the same Class, they MUST also belong to the same \_\_\_\_\_.**

**Answer:** C) Phylum

Organisms that share a taxonomic level also share all the levels above it (broader levels like Kingdom and Phylum).

**9. The 'catch-all' kingdom that contains various eukaryotic organisms that do not fit neatly into plants, animals, or fungi is:**

**Answer:** C) Protista

Kingdom Protista is a diverse group of eukaryotes that includes organisms like amoebas and kelp.

**10. In the modern taxonomic hierarchy, a Family is more specific than a Genus.**

**Answer:** B) False

Genus is a more specific (narrower) category than Family. Multiple genera are grouped into a single family.