

Name: _____ Date: _____

Answer Key: Nail the Tree of Life: 9th Grade Classification Challenge

Perfect for a quick formative assessment or bell ringer, students will identify key traits separating domains and kingdoms using new biological examples.

1. Which taxonomic level is more specific than 'Class' but broader than 'Family'?

Answer: B) Order

In the Linnaean hierarchy, Order follows Class and precedes Family (Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species).

2. Kingdom Fungi is composed of organisms that are primarily autotrophic, making their own food through photosynthesis.

Answer: B) False

Fungi are heterotrophs; they absorb nutrients from decomposing organic matter rather than producing food via photosynthesis.

3. A scientist discovers a multicellular organism with a cell wall made of cellulose. This organism most likely belongs to Kingdom _____.

Answer: C) Plantae

Kingdom Plantae is defined by multicellular eukaryotes that have cell walls composed of cellulose.

4. What is the main difference between organisms in Domain Bacteria and Domain Eukarya?

Answer: C) Eukarya contain membrane-bound organelles, while Bacteria do not.

Eukaryotes are defined by having a nucleus and membrane-bound organelles, whereas Bacteria are prokaryotes and lack these structures.

5. The scientific name of the Red Maple is *Acer rubrum*. In this binomial nomenclature, 'Acer' represents the _____ level of classification.

Answer: C) Genus

In binomial nomenclature, the first word is the Genus (capitalized) and the second word is the specific epithet or species.

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6. Organisms classified as Archaea are often found in extreme environments like hot springs or salt lakes.

Answer: A) True

Archaea are well-known extremophiles, meaning they thrive in conditions that would be toxic to most other life forms.

7. Which of the following kingdoms includes mostly unicellular eukaryotes that do not fit neatly into the plant, animal, or fungi categories?

Answer: A) Protista

Kingdom Protista acts as a diverse 'catch-all' group for eukaryotic organisms that are not plants, animals, or fungi.

8. Organisms in Kingdom Animalia are described as _____ because they must consume other organisms for energy.

Answer: B) Heterotrophs

Heterotrophs are organisms that cannot produce their own food and must ingest or absorb organic carbon.

9. The broadest and most inclusive level of modern biological classification is the Kingdom.

Answer: B) False

Domain is the broadest level of classification, sitting above the Kingdom level.

10. If two organisms belong to the same Family, which other taxonomic group must they also share?

Answer: C) Class

Organisms that share a lower taxonomic level (like Family) must also share all the broader levels above it (Domain, Kingdom, Phylum, Class, Order).