

Name: _____ Date: _____

Taxonomic Tensions: The Great Grade 7 Grouping Game

Biological detectives will decode DNA evidence and morphological traits to solve complex classification puzzles in this advanced taxonomic challenge.

1. A scientist discovers a multicellular organism in a deep-sea hydrothermal vent. It lacks chloroplasts, has cell walls made of chitin, and absorbs nutrients from decaying tube worms. How should this be classified?

- A. Kingdom Plantae
- B. Kingdom Animalia
- C. Kingdom Fungi
- D. Kingdom Protista

2. When comparing two organisms, they share the same Domain, Phylum, Class, and Order, but belong to different Families. This implies that they are _____ related than organisms that only share the same Phylum.

- A. More closely
- B. Less closely
- C. Equally
- D. Not at all

3. Organisms within the Kingdom Archaea are genetically more similar to Kingdom Bacteria than they are to the Domain Eukarya because both are prokaryotic.

- A. True
- B. False

4. You are analyzing a microscopic organism collected from a stagnant pond. It is unicellular, possesses a nucleus, utilizes a flagellum for locomotion, and contains chloroplasts. Which group does it likely belong to?

- A. Flagellated Bacteria
- B. Archaeal Extremophiles
- C. Unicellular Fungi
- D. Plant-like Protists

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

- A. Species
- B. Genus
- C. Family
- D. Order

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6. The primary difference between the Kingdom Animalia and the Kingdom Plantae is that animals are heterotrophs while plants are autotrophs.

- A. True
- B. False

7. Modern taxonomists are increasingly moving away from relying solely on physical morphology (shape and structure). What specialized evidence provides the most accurate data for modern phylogenetic trees?

- A. Geographic distribution
- B. Dietary habits
- C. DNA and RNA sequencing
- D. Fossilized footprints

8. An organism that can survive in extreme boiling sulfuric acid is mostly likely a member of the Domain _____.

- A. Bacteria
- B. Eukarya
- C. Archaea
- D. Protista

9. Why is the group previously known as 'Monera' now split into two distinct Domains (Bacteria and Archaea)?

- A. One group has a nucleus and the other doesn't.
- B. They have significant biochemical and genetic differences.
- C. One group is multicellular and the other is unicellular.
- D. They occupy different trophic levels in the food web.

10. A phylum is a more specific taxonomic category than a class.

- A. True
- B. False