

Name: _____ Date: _____

Crush the Taxon Tree: 6th Grade Classification Challenge

Evaluate complex biological hierarchies and analyze evolutionary relationships using modern cladistics before moving into advanced genetics.

1. An organism is discovered in a sulfurous hot spring. It is unicellular, lacks a nucleus, and its cell membrane contains unique lipids not found in bacteria. How should this be classified?

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

2. In the Linnaean system, if two organisms belong to the same 'Class,' they MUST also share the same _____.

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

3. True or False: Using the Binomial Nomenclature system, the species name of an organism provides more information about its close relatives than the genus name.

- A. True
- B. False

4. Which piece of evidence is considered the most 'sophisticated' and accurate for modern scientists when reclassifying an organism that was previously grouped by physical appearance?

- A. Observing hunting or feeding behavior
- B. Comparing DNA sequences and proteins
- C. Analyzing the skeletal structure
- D. Measuring geographic proximity

5. A multicellular organism that has a cell wall made of chitin and obtains nutrients through external digestion is classified as a _____.

- A. Plant
- B. Protist
- C. Animal
- D. Fungus

6. True or False: All organisms within the Kingdom Protista are unicellular.

- A. True
- B. False

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7. Why did scientists switch from a Five-Kingdom system to a Three-Domain system?

- A. To separate organisms by their habitat
- B. To emphasize differences in ribosomal RNA
- C. To prioritize plants over animals
- D. To simplify the naming process

8. In a dichotomous key used to identify trees, the first step usually asks about the _____ of the leaves.

- A. Age
- B. Color
- C. Shape
- D. Nutrition

9. True or False: Organisms in the Kingdom Animalia are autotrophs because they have complex nervous systems.

- A. True
- B. False

10. Constructing a cladogram requires the identification of 'derived characters.' Which of these is a derived character for birds but NOT for all vertebrates?

- A. The presence of a backbone
- B. The ability to breathe oxygen
- C. The possession of feathers
- D. The use of sexual reproduction