

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

## Answer Key: Slippery Slope Taxonomy: A 6th Grade Kingdom Quest

Mid-expedition scientists must distinguish between slough-dwelling protists and deep-sea archaea while mapping the invisible lines that connect all living things.

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**1. A biologist discovers a multi-cellular organism growing on a fallen log. Under a microscope, she notices the cells have thick walls made of chitin and no chloroplasts. Which kingdom does this belong to?**

**Answer:** B) Kingdom Fungi

Fungi are multicellular eukaryotes that absorb nutrients and possess cell walls made of chitin, unlike plants which use cellulose.

**2. True or False: Organisms in the same 'Class' are more closely related than organisms in the same 'Family'.**

**Answer:** B) False

In the taxonomic hierarchy, 'Family' is a more specific level than 'Class'. As you move down from Domain to Species, the organisms share more specific traits.

**3. The scientific name of the Great White Shark is *Carcharodon carcharias*. In this binomial nomenclature system, 'Carcharodon' represents the \_\_\_\_\_ level of classification.**

**Answer:** C) Genus

Scientific names consist of the Genus (capitalized) followed by the species (lowercase).

**4. You are analyzing a microscopic organism found in a sample of boiling volcanic water. It is single-celled and lacks a nucleus. This organism likely belongs to which group?**

**Answer:** A) Archaea

Archaea are prokaryotes (no nucleus) often known as extremophiles because they thrive in harsh conditions like volcanic vents.

**5. Organisms that must consume other living things for energy, such as a Red Panda or a Blue Jay, are scientifically described as \_\_\_\_\_.**

**Answer:** C) Heterotrophs

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

Heterotrophs cannot produce their own food and must ingest organic substances, a key characteristic of Kingdom Animalia.

**6. True or False: Kingdom Protista is often called the 'junk drawer' of classification because it contains diverse eukaryotes that don't fit into plants, animals, or fungi.**

**Answer:** A) True

Protista includes a wide variety of organisms like kelp and paramecia that are eukaryotic but lack the specific defining features of the other three eukaryotic kingdoms.

**7. Which of the following is the correct order of the taxonomic hierarchy from the broadest group to the most specific?**

**Answer:** C) Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species

The hierarchy starts with the broadest (Domain) and narrows down through Kingdom, Phylum, Class, Order, Family, Genus, to the most specific (Species).

**8. A scientist finds a new organism that is multicellular, performs photosynthesis, and has cells containing a nucleus. This organism should be placed in Kingdom \_\_\_\_\_.**

**Answer:** D) Plantae

Kingdom Plantae is characterized by multicellular eukaryotes that produce their own food through photosynthesis.

**9. True or False: Both Bacteria and Archaea are comprised of prokaryotic cells, meaning their DNA is not contained within a nucleus.**

**Answer:** A) True

Wait, the distinction between prokaryotes and eukaryotes is based on the presence of a nucleus; both Bacteria and Archaea lack one.

**10. Why did scientists decide to create the 'Domain' level above the 'Kingdom' level?**

**Answer:** B) To reflect fundamental differences in cell chemistry and RNA.

The Domain level was added to distinguish between the major molecular and chemical differences in cell types, specifically between Bacteria, Archaea, and Eukaryotes.