

Name: _____ Date: _____

Answer Key: Invisible Microbes vs. Giant Redwoods: A 5th Grade Ecology Challenge

How do scientists group a moldy orange with a mountain gorilla? Classify organisms using cellular traits and nutrient absorption methods.

1. Imagine you find a fuzzy growth on an old log in the damp woods. It isn't green, it doesn't move, and it grows by absorbing nutrients from the rotting wood. Which kingdom does it likely belong to?

Answer: B) Kingdom Fungi

Fungi, such as molds and mushrooms, are multicellular eukaryotes that absorb nutrients from organic matter rather than making their own food like plants.

2. True or False: Organisms in Kingdom Animalia are known as 'autotrophs' because they can make their own food using sunlight.

Answer: B) False

False. Animals are heterotrophs, meaning they must consume other organisms for energy. Plants are the primary autotrophs.

3. When scientists use the hierarchy of classification, which level is the MOST specific, containing only one unique type of organism?

Answer: D) Species

Species is the final and most specific level of classification. Organisms within the same species can typically breed with one another.

4. You are looking through a microscope at a single-celled organism found in a pond. It has a nucleus and moves using tiny hairs called cilia. This complex single cell belongs to which group?

Answer: A) Protista

Kingdom Protista is often called the 'catch-all' kingdom; it includes mostly single-celled eukaryotes like Paramecium and Algae.

5. True or False: Kingdom Archaea contains organisms that are often found in extreme environments, like boiling hot springs or very salty lakes.

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Answer: A) True

True. Archaea are prokaryotes known for being 'extremophiles,' living where most other life forms cannot survive.

6. A Venus Flytrap captures insects, but it also has green leaves and uses sunlight to grow. Because it has cell walls made of cellulose and photosynthesizes, it is classified as a _____.

Answer: B) Plant

Despite catching insects for extra nitrogen, the Venus Flytrap is a plant because it performs photosynthesis and has plant cell structures.

7. If two animals belong to the same 'Family,' which of these other taxonomic levels MUST they also share?

Answer: C) Class

In the hierarchy (Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species), organisms that share a lower level must share all the broader levels above it.

8. Bacteria are considered 'prokaryotes.' This means their single cell is missing a _____, which is the control center found in the cells of plants and animals.

Answer: C) Nucleus

The defining difference between prokaryotes (Bacteria/Archaea) and eukaryotes (Plants/Animals/Fungi/Protists) is the presence of a nucleus.

9. True or False: All living things in Kingdom Animalia are multicellular.

Answer: A) True

True. One of the main requirements to be classified in Kingdom Animalia is being multicellular.

10. Scientists use 'Binomial Nomenclature' to name organisms. In the name *Ursus arctos* (the grizzly bear), the first word '*Ursus*' represents the organism's _____.

Answer: D) Genus

Scientific names consist of the Genus (capitalized) and the Species (lowercase). *Ursus* is the Genus for various types of bears.