

1. Which taxonomic level was added above kingdom?
2. What are the domain and kingdom names for a unicellular prokaryote that has a cell wall containing peptidoglycan?
3. What are the seven taxonomic levels developed by Carolus Linnaeus in order from least inclusive (smallest) to most inclusive (largest)?
4. Why do biologists assign each organism a universally accepted name?
5. Which characteristics are used to place an organism in the domain Bacteria?
6. What characteristics differentiate members of the kingdom Animalia from members of the kingdom Plantae?
7. *Read the descriptions of each organism below and place them in the correct kingdom.*

**Organism A:** Multicellular, photosynthetic autotrophs, with cell walls that contain cellulose.

**Organism B:** Their cell walls lack peptidoglycan, and their cell walls contain certain lipids not found in any other organism. Many live in extreme environments and can only survive in the absence of oxygen.

**Organism C:** Unicellular, eukaryotic organisms that have chloroplasts.

8. Suppose you discovered a new unicellular organism. This organism has a nucleus, mitochondria, and a large chloroplast. In which kingdom would you place this organism, and why?
9. Why was the former kingdom Monera divided in two separate kingdoms? What are the names of these kingdoms?
10. Which kingdoms contain only heterotrophic organisms?
11. Which kingdoms contain both autotrophs and heterotrophs?
12. The meadow rose (*Rosa blanda*), cherry tree (*Prunus avium*), apple tree *Malus pumila*) and moss rose (*Rosa centifolia*) all belong to the same family. Which two plants do you expect to be most similar, and why?
13. Why are fungi classified as heterotrophs, rather than autotrophs?
14. What characteristics do organisms require to be considered the same species?

15. *Use the following table to answer the questions:*

<b>Kingdom</b>	Animalia	Animalia	Animalia	Animalia
<b>Phylum</b>	Chordata	Chordata	Chordata	Chordata
<b>Class</b>	Mammalia	Mammalia	Mammalia	Mammalia
<b>Order</b>	Cetacea	Carnivora	Carnivora	Carnivora
<b>Family</b>	Mysticeti	Mustelidae	Felidae	Felidae
<b>Genus</b>	<i>Balaenoptora</i>	<i>Mustela</i>	<i>Felis</i>	<i>Felis</i>
<b>Species</b>	<i>physalus</i>	<i>furo</i>	<i>domesticus</i>	<i>rufus</i>
<b>Common Name</b>	Blue Whale	Ferret	Domestic cat	Bobcat

- a) How does the table indicate that a cat is more closely related to a bobcat than a ferret?
- b) At what level does the relationship between a blue whale and a ferret separate?
- c) Which two animals are most closely related? Explain.
- d) What kind of animal is *Balaenoptora borealis*? How do you know?