

Directed Reading A

Section: Sorting It All Out

1. What is classification?

WHY CLASSIFY?

- _____ 2. Putting plants and animals into orderly groups based on similar characteristics is called
- a. arrangement.
 - b. classification.
 - c. identification.
 - d. biology.
- _____ 3. Classifying living things helps human beings
- a. improve the world.
 - b. make sense of the world.
 - c. destroy the world.
 - d. make sense of the useful plants only.

HOW DO SCIENTISTS CLASSIFY ORGANISMS?

- _____ 4. Taxonomy is the science of
- a. naming plants and animals.
 - b. describing, classifying, and naming organisms.
 - c. naming and describing living things.
 - d. describing organisms.
- _____ 5. Today, a system of classification similar to the system developed by Carolus Linnaeus
- a. includes only plants.
 - b. is no longer used.
 - c. is still used.
 - d. does not include plants.
- _____ 6. The more closely related living things are to each other, the more
- a. characteristics they share.
 - b. food they share.
 - c. space they share.
 - d. water they will share.
- _____ 7. Organisms are thought to be closely related when they have
- a. almost no characteristics in common.
 - b. no characteristics in common.
 - c. few characteristics in common.
 - d. many characteristics in common.

Directed Reading A *continued*

- _____ **8.** Bears, lions, and house cats give birth to live young, and lions and house cats have retractable claws. Which of the three types of animals are most closely related?
- a.** lions and house cats
 - b.** lions and bears
 - c.** house cats and bears
 - d.** None of the animals are related.

- 9.** Before the 1600s, scientists divided organisms into what two groups?

- 10.** What Swedish scientist created the first organized, modern taxonomy?

- 11.** How many levels of classification do scientists use today?

- 12.** Why are the platypus, brown bear, lion, and house cat thought to be related to each other?

- 13.** What characteristics do the bear, lion, and house cat have that the platypus does not have?

LEVELS OF CLASSIFICATION

- _____ **14.** All organisms are classified into
- a.** one of three domains.
 - b.** one of eight phyla.
 - c.** plants or animals.
 - d.** living or nonliving things.

- _____ **15.** Each domain of organisms is divided into several
- a.** genera.
 - b.** classes.
 - c.** orders.
 - d.** kingdoms.

- _____ **16.** The smallest, most specific classification level is
- a.** phylum.
 - b.** species.
 - c.** class.
 - d.** order.

- 17.** The plural form of the word phylum is _____.

Directed Reading A *continued*

18. What is a group of organisms that are closely related and can mate to produce fertile offspring called?

19. In order from largest to smallest, what are the eight levels of classification?

SCIENTIFIC NAMES

20. No matter how many common names an organism might have, it only has one

21. How was the naming of organisms different before Carolus Linnaeus, and how was the system difficult for scientists?

22. Who simplified the naming of living things by giving each species a two-part scientific name?

23. In the scientific name for the Asian elephant, *Elephas maximus*, the word *Elephas* indicates the animal's _____.

24. All genus names begin with a(n) _____.

25. All specific names begin with a(n) _____.

Directed Reading A *continued*

26. Scientific names are usually in one of these two languages,

27. In the scientific name *Tyrannosaurus rex*, what is the species name?

28. What abbreviation do scientists sometimes use when referring to *Tyrannosaurus rex*?

29. What is the scientific name for the common house cat?

DICHOTOMOUS KEYS

_____ **30.** Scientists use dichotomous keys to

- a. name organisms.
- b. count organisms.
- c. identify organisms.
- d. catch organisms.

31. What kind of identification aid are scientists using when they work through a series of paired, descriptive statements?

A GROWING SYSTEM

_____ **32.** Of all the organisms on the Earth,

- a. all have been discovered.
- b. all have been classified.
- c. not all have been discovered or classified.
- d. all have been given scientific names.

_____ **33.** What do scientists do when a newly discovered organism does not fit any existing category?

- a. leave the organism alone
- b. try to change the organism
- c. destroy the organism
- d. create a new category

_____ **34.** What newly discovered organism, first found in 1995 on lobster lips, did not fit in any existing phyla?

- a. *Symbion pandora*
- b. *Felis domesticus*
- c. *Elephas maximus*
- d. *Tyrannosaurus rex*

Section Review

Sorting It All Out

USING KEY TERMS

1. In your own words, write a definition for each of the following terms:
classification and *taxonomy*.

UNDERSTANDING KEY IDEAS

- _____ 2. The two parts of a scientific name are the names of the genus and the
- a. specific name.
 - b. phylum name.
 - c. family name.
 - d. order name.

3. Why do scientists use scientific names for organisms?

4. List the eight levels of classification.

5. Describe how a dichotomous key helps scientists identify organisms.

Section Review *continued*

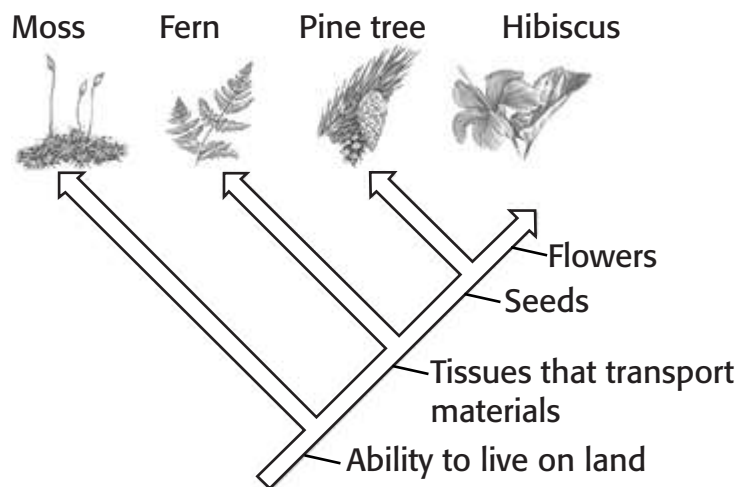
CRITICAL THINKING

6. Analyzing Processes Biologists think that millions of species are not classified yet. Why do you think so many species have not been classified yet?

7. Applying Concepts Both dolphins and sharks have a tail and fins. How can you determine if dolphins and sharks are closely related?

INTERPRETING GRAPHICS

Use the figure below to answer the questions that follow.



8. Which plant is most similar to the hibiscus?

9. Which plant is least similar to the hibiscus?
