

Living Things ▪ *Guided Reading and Study*

Classifying Organisms

This section tells how scientists divide living things into groups. It also describes the first classification systems and how the theory of evolution changed classification systems.

Use Target Reading Skills

Before you read, preview the red headings. In the graphic organizer below, ask a what, why, or how question for each heading. As you read, write the answers to your questions.

Classifying Organisms

Question	Answer
Why do scientists classify?	Scientists classify because...

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Why Do Scientists Classify?

1. The process of grouping things based on their similarities is _____.
2. Why do biologists use classification?

3. The scientific study of how living things are classified is called _____.
4. Is the following sentence true or false? Once an organism is classified, a scientist knows a lot about that organism. _____

The Naming System of Linnaeus

5. Is the following sentence true or false? Linnaeus placed organisms into groups based on their features that he could observe.

6. In Linnaeus's naming system, called _____, each organism is given a two-part name.
7. Is the following sentence true or false? A species is a group of similar organisms that can mate with each other and produce offspring that can also mate and reproduce. _____
8. *Felis concolor* is the scientific name for mountain lions. To which genus do mountain lions belong? What is the species?
Genus: _____ Species: _____
9. Circle the letter of each sentence that is true about binomial nomenclature.
 - a. A scientific name is written in italics.
 - b. Many scientific names are in Latin because Latin was the language of scientists during Linnaeus's time.
 - c. The genus name begins with a small letter.
 - d. Binomial nomenclature makes it easy for scientists to talk about an organism.

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Levels of Classification

10. List the eight levels of classification used by modern biologists in order from the broadest level to the most specific level.

11. Is the following sentence true or false? The more classification levels that two organisms share, the more characteristics they have in common.

12. Look carefully at the figure, *Levels of Classification*. What order does the great horned owl belong to?

Taxonomic Keys

13. Name two ways to learn the identity of an organism.

a. _____

b. _____

14. Is the following sentence true or false? A taxonomic key is a book with illustrations that highlight the differences between organisms that look similar. _____

15. Look at the taxonomic key in the figure, *Identifying Organisms*. How many legs does a tick have? _____

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Evolution and Classification

16. Is the following sentence true or false? Darwin's theory of evolution did not affect the way in which species were classified. _____

17. What is evolution?

18. Is the following sentence true or false? Species with shared ancestors are classified more closely together. _____

19. What do scientists today rely on primarily to determine evolutionary history?
