

Classifying Organisms (pages 16–24)

Why Do Scientists Classify? (page 17)

Key Concept: Biologists use classification to organize living things into groups so that the organisms are easier to study.

- Biologists put living things into groups based on how the living things are alike. **Classification** is grouping things based on their similarities.
- The scientific study of how living things are classified is called **taxonomy** (tak SAHN uh mee). Taxonomy is useful because once a living thing is classified, a biologist knows a lot about it. For example, if a crow is classified as a bird, you already know that a crow has feathers and lays eggs.

Answer the following questions. Use your textbook and the ideas above.

1. Read each word in the box. In each sentence below, fill in the correct word.

classification	organization	taxonomy
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- a. The scientific study of how living things are classified is called _____.
 - b. The grouping of things based on their similarities is called _____.
2. Is the following sentence true or false? It is easier to study living things when they have not been classified.

Living Things ▪ *Adapted Reading and Study***The Naming System of Linnaeus** (pages 18–19)

Key Concept: Carolus Linnaeus devised a system of naming organisms in which each organism has a unique, two-part scientific name.

- Linnaeus gave each living thing a scientific name with two parts. The first part of the name is the genus. A **genus** (JEE nus) is a group of similar organisms. For example, all cats belong to the genus *Felis*.
- The second part of a scientific name is the species. A **species** (SPEE sheez) is a group of similar organisms that can mate and produce offspring that can also mate and reproduce. House cats and lions are in the same genus, but are different species.
- Scientific names make it easier for scientists to talk about organisms. For example, woodchucks are also called groundhogs and whistlepigs. But this animal has only one scientific name—*Marmota monax*.

Answer the following questions. Use your textbook and the ideas above.

3. The scientific name for pumas is *Felis concolor*. Circle the letter of the genus to which pumas belong.
 - a. *Felis*
 - b. *concolor*
 - c. puma
4. Circle the letter of each sentence that is true about scientific names.
 - a. Scientific names have two parts.
 - b. Organisms in the same genus can mate and produce offspring.
 - c. Scientific names make it easier for scientists to talk about an organism.

Living Things ▪ *Adapted Reading and Study***Levels of Classification** (pages 20–21)

Key Concept: The more classification levels that two organisms share, the more characteristics they have in common.

- The classification system that scientists use has more groups than just genus and species. Scientists use a series of eight levels to classify organisms.
- Organisms are grouped by characteristics that they have alike. Organisms with the same classification at lower levels share more characteristics.
- The highest level in the classification system is the domain. The living things in a domain are very wide-ranging. A domain has the largest number of organisms.
- The lowest level in the classification system is the species. The characteristics of a species are very specific. Only one kind of organism is in the species level.

Answer the following questions. Use your textbook and the ideas above.

5. Is the following sentence true or false? Organisms with the same classification at lower levels share more characteristics. _____
6. Circle the letter of the classification level where you would find the most organisms.
 - a. species
 - b. family
 - c. domain

Living Things ▪ *Adapted Reading and Study*

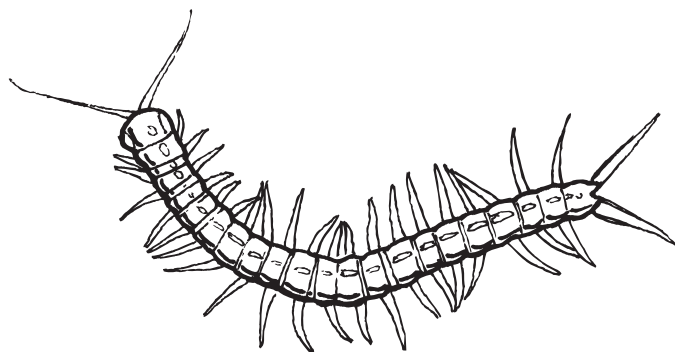
Taxonomic Keys (page 22)

Key Concept: Taxonomic keys are useful tools for determining the identity of organisms.

- Field guides and taxonomic keys are tools that you can use to find out what an organism is.
- A field guide is a book with pictures that show the differences among living things that look similar.
- A taxonomic key has a series of paired statements that describe physical characteristics of a living thing. To use the key, you choose the one statement that applies to the living thing. You continue choosing the one statement of each pair that best describes the living thing. The key leads you to the living thing's identity.

Answer the following questions. Use your textbook and the ideas above.

7. Use the taxonomic key in Figure 14 of your textbook to identify the organism pictured below. Circle the letter of what the organism is.
- a. centipede
 - b. spider
 - c. scorpion



8. A book with pictures that show the differences among similar-looking organisms is a(an)

_____.

Living Things ▪ *Adapted Reading and Study***Evolution and Classification** (pages 23–24)

Key Concept: Species with similar evolutionary histories are classified more closely together.

- **Evolution** is the gradual change in species over time.
- Scientists now understand that some living things are similar because they have the same ancestor. For example, the finches on an island and the finches on the mainland both changed little by little from the same species of finch. They became two different species.
- Species that share a common ancestor also share the same evolutionary history. To learn the evolutionary history of a living thing, scientists compare its body structure to other living things. Scientists also compare the chemical makeup of its cells to the cells of other living things.

Answer the following questions. Use your textbook and the ideas above.

9. Read each word in the box. In each sentence below, fill in the correct word.

ancestor	evolution	species
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- a. The process by which species gradually change over time is called _____.
- b. Some living things are similar because they share a common _____.
10. Is the following sentence true or false? Species that share a common ancestor have different evolutionary histories. _____