

## Classifying Organisms (pages 42–49)

### Why Do Scientists Classify? (page 43)

**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.  
\_\_\_\_\_

## The Naming System of Linnaeus (pages 44–45)

**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 45–46)

**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***Domains and Kingdoms (page 47)**

**Key Concept:** Organisms are placed into domains and kingdoms based on their cell type, their ability to make food, and the number of cells in their bodies.

- The three domains are Bacteria, Archaea, and Eukarya.
- Members of the domain Bacteria are single-celled living things.
- Bacteria are prokaryotes. **Prokaryotes** (proh KA ree ohtz) are living things whose cells do not have a nucleus. A **nucleus** (NOO klee us) is a dense area in a cell that holds genetic material.
- Some bacteria make their own food. These bacteria are autotrophic. Other bacteria cannot make their own food. They are heterotrophic.
- Members of the domain Archaea (ahr KEE uh) live in harsh environments like hot springs.
- Archaea are single-celled organisms that do not have a nucleus. Some archaea make their own food. Others cannot make their own food.
- Archaea have a different chemical makeup than bacteria have.

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

7. Circle the letter of the best description of members of the domain Bacteria.
  - a. are single-celled
  - b. are many-celled
  - c. have a nucleus

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8. Circle the letter of each sentence that is true about prokaryotes.
- a. Prokaryotes hold genetic material in a nucleus.
  - b. Prokaryotes do not have a nucleus.
  - c. Prokaryotes do have genetic material.
9. Draw lines to show how archaea compare to bacteria.

**Archaea**

like bacteria

different from bacteria

**Characteristic**

a. single-celled

b. do not have nucleus

c. chemical makeup

10. Is the following sentence true or false? All archaea are autotrophs, which make their own food. \_\_\_\_\_

**Domain Eukarya** (pages 48–49)

**Key Concept: Scientists classify organisms in the domain Eukarya into one of four kingdoms: protists, fungi, plants, or animals.**

- All members of the domain Eukarya have cells that contain a nucleus. **Eukaryotes** (yoo KA ree ohtz) are living things with cells that have a nucleus.
- Members of the domain Eukarya are classified into one of four kingdoms. These kingdoms are protists, fungi, plants, and animals.
- A protist (PROH tist) is any eukaryote that cannot be classified as a fungi, plant, or animal. Most protists are single-celled.

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- Fungi (FUN jy) are eukaryotes that cannot make their own food. Most fungi are many-celled.
- Plants are many-celled eukaryotes that can make their own food.
- Animals are many-celled eukaryotes that cannot make their own food.

*Answer the following questions. Use your textbook and the ideas on page 26 and above.*

- 11.** Circle the letter of the *best* description of all members of the domain Eukarya.
- a. can make their own food
  - b. have bodies made of many cells
  - c. have cells with a nucleus
- 12.** Fill in the table below about members of the domain Eukarya.

<b>Domain Eukarya</b>		
<b>Kingdom</b>	<b>Cell Number</b>	<b>Able to Make Food?</b>
Protists	single-celled and many-celled	yes and no
<b>a.</b> _____	single-celled and many-celled	no
Plants	many-celled	<b>b.</b> _____
Animals	<b>c.</b> _____	no