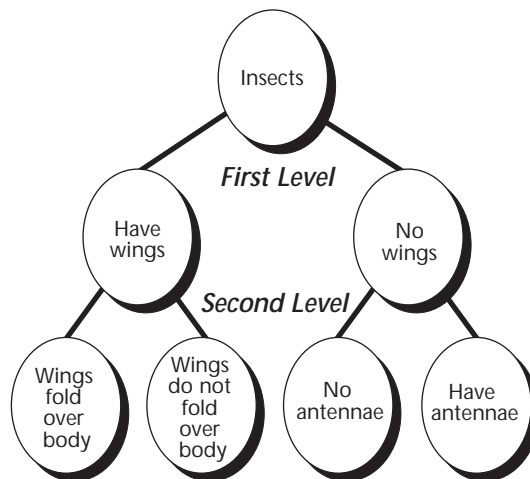


SKILLS INTRODUCTION

Classifying

Can you imagine shopping for a CD in a store that kept its recordings in a single, huge pile? Chances are you'd take your business to a place that classified CDs into groups, such as rock, rap, country, and other categories.

Classifying is organizing objects and events into groups according to a system, or organizing idea. The most simple type of classification system uses two groups, one that has a certain property and another that does not. Other systems may begin with three or more groups.



Example 1: Plants With Wood; Plants Without Wood (simplest system using two groups)


Example 2: Locations at Sea Level, Locations Above Sea Level; Locations Below Sea Level (three groups based on one idea)

Many classification systems, like the one in the diagram above, have more than one level. Each of the first-level groups in the system is further classified into smaller categories based on new organizing ideas.

In science, objects and processes can be classified in different ways. Scientists choose the system that best suits their purpose. They may classify to organize objects, such as the chemicals stored in a laboratory. They also classify to help simplify and make sense of the natural world. Good classification systems make finding information easier. They also help to clarify the relationships among the things being classified.

Tips for Classifying

- ◆ Carefully observe the group of objects to be classified. Identify similarities and differences among the objects.
- ◆ Choose a characteristic that some of the objects share. Using this characteristic as the organizing idea, place the objects into groups.
- ◆ Examine the groups and decide if they can be further classified. Each round of further classification may need a different organizing idea.

 **Checkpoint** Develop a classification system for your clothes that has at least two levels. Write a word or phrase that shows the organizing idea for each grouping.



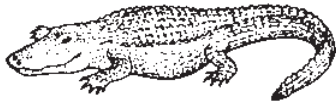
SKILLS PRACTICE

Classifying

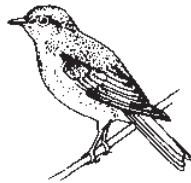
The 8 rows of illustrations that follow contain 32 animals. (The illustrations are not drawn to scale.) There are many different ways to classify these animals. As you try out various organizing ideas, don't be discouraged if you have to revise some of those ideas.

Use the illustrations to answer the questions on page 19.

1.



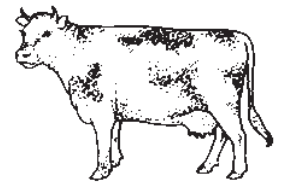
Alligator



Bluebird

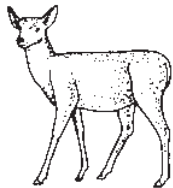


Chicken

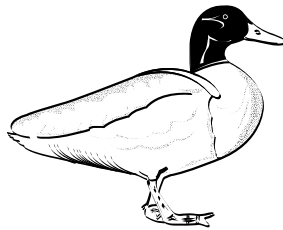


Cow

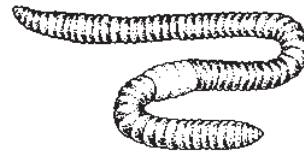
2.



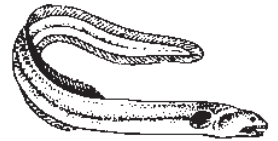
Deer



Duck

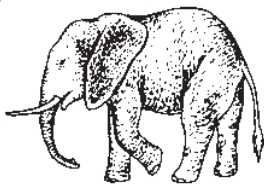


Earthworm

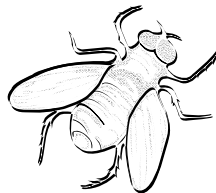


Eel

3.



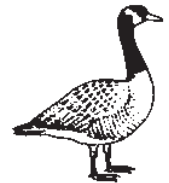
Elephant



Fly



Frog

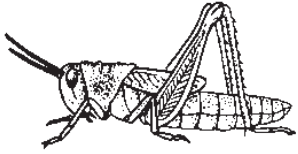


Goose

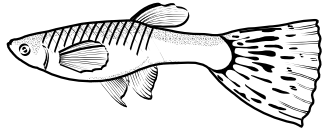


Classifying (continued)

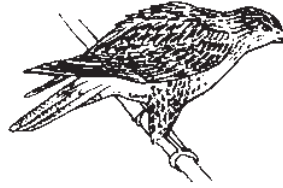
4.



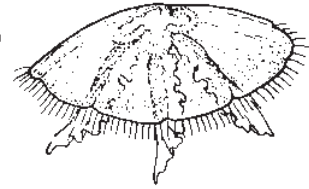
Grasshopper



Guppy



Hawk

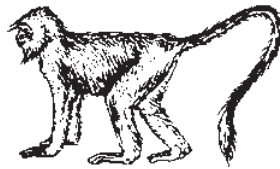


Jellyfish

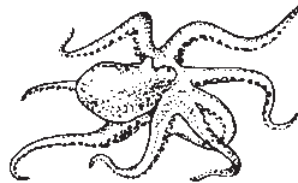
5.



Lizard



Monkey

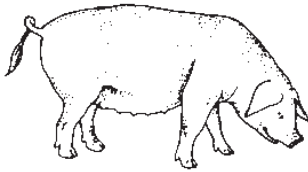


Octopus



Ostrich

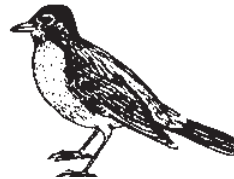
6.



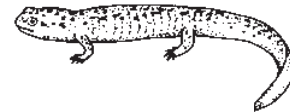
Pig



Ray

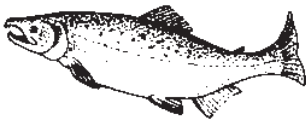


Robin

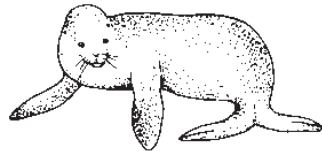


Salamander

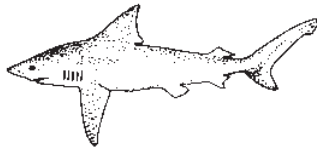
7.



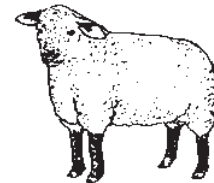
Salmon



Seal

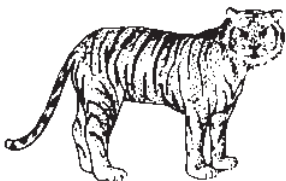


Shark

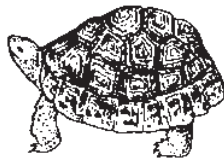


Sheep

8.



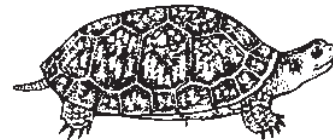
Tiger



Tortoise



Tuna



Turtle



Classifying (*continued*)

Use the illustrations on pages 17 and 18 to answer the following questions. Write your answers on the back of this page or on a separate sheet of paper.

1. Develop a classification system for the animals that contains just 2 groups. Give a name to each group, and classify the animals according to this system.
2. Develop a classification system for the animals that uses 3–5 groups. Give a name to each group, and classify the animals according to this system.
3. Develop a classification system for the animals that contains 2 levels. You can use one of your systems from Questions 1 and 2, or develop a new system. Use a diagram to show all the groups in your system.
4. Classify the animals according to the system that you developed in Question 3. (*Hint: You may want to use a data table to organize your lists.*)
5. Suppose that you are designing a zoo. Your goal is to prepare exhibits that will be easy to maintain. Would you use any of your classification systems from Questions 1–4 to plan the zoo? Explain.
6. Think About It Which of the classification systems that you developed in Questions 1–4 would help you learn the most new information about animals? Explain.

