

## Fun with Fictitious Animals

A good classification system will assign a single name to each organism and place organisms into groups that have real biological meaning. Researchers using a good classification system can expect members of a group to share important characteristics.

Read over the following taxonomic, or classification, key that describes ten fictitious animals. Using the information given in the key, answer the questions that follow.

### A Taxonomic Key

<b>1</b>	A. Body covered with hair . . . . .	Go to 2
	B. Body covering is not hair . . . . .	Go to 6
<b>2</b>	A. Has four legs . . . . .	Go to 3
	B. Has more than four legs. . . . .	Go to 4
<b>3</b>	A. Has two heads and two tails . . . . .	Double Trouble
	B. Has one head and a short bushy tail . . . . .	Grenabar
<b>4</b>	A. Has one horn on its head . . . . .	Tamboro
	B. Has two horns on head . . . . .	Go to 5
<b>5</b>	A. Has wheels for feet . . . . .	Skateroo
	B. Has feet with three sharp claws . . . . .	Dweezlehub
<b>6</b>	A. Body covered with scales . . . . .	Go to 7
	B. Body covered with feathers. . . . .	Go to 8
<b>7</b>	A. Has flippers for its six feet and tail . . . . .	Nessie
	B. Has pincers for its six feet and has a long forked tail . . . . .	Marfwheelz
<b>8</b>	A. Has beak with no teeth . . . . .	Go to 9
	B. Has mouth with sharp teeth. . . . .	Tearitup
<b>9</b>	A. Has two antennae and short tongue. . . . .	Quib
	B. Has four antennae and long tongue . . . . .	Ork

1. A tamboro is most like a  
a. bird.    b. fish.    c. mammal.    d. reptile.
2. Where would a nessie be most likely to live?  
a. desert    b. ocean    c. forest    d. meadow
3. How many legs does a dweezlehub have?  
a. two    b. three    c. four    d. more than four
4. What kind of body covering does an ork have?  
a. feathers    b. hair    c. scales    d. none

5. Which animal is most like a real animal?  
a. double trouble    b. skateroo    c. grenabar    d. marfwheel
6. What color is a dweezlebug?  
a. red    b. brown    c. green    d. cannot tell from key
7. Which animal is most likely to be able to climb trees?  
a. dweezlebug    b. nessie    c. skateroo    d. ork
8. Describe what a quib looks like.

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9. Draw a picture of a skateroo, including all of its characteristics mentioned in the key.
10. Draw a picture of one of the animals and see if a friend can guess which one you have drawn.

CHAPTER 15

Classification Systems  
Section 15-2

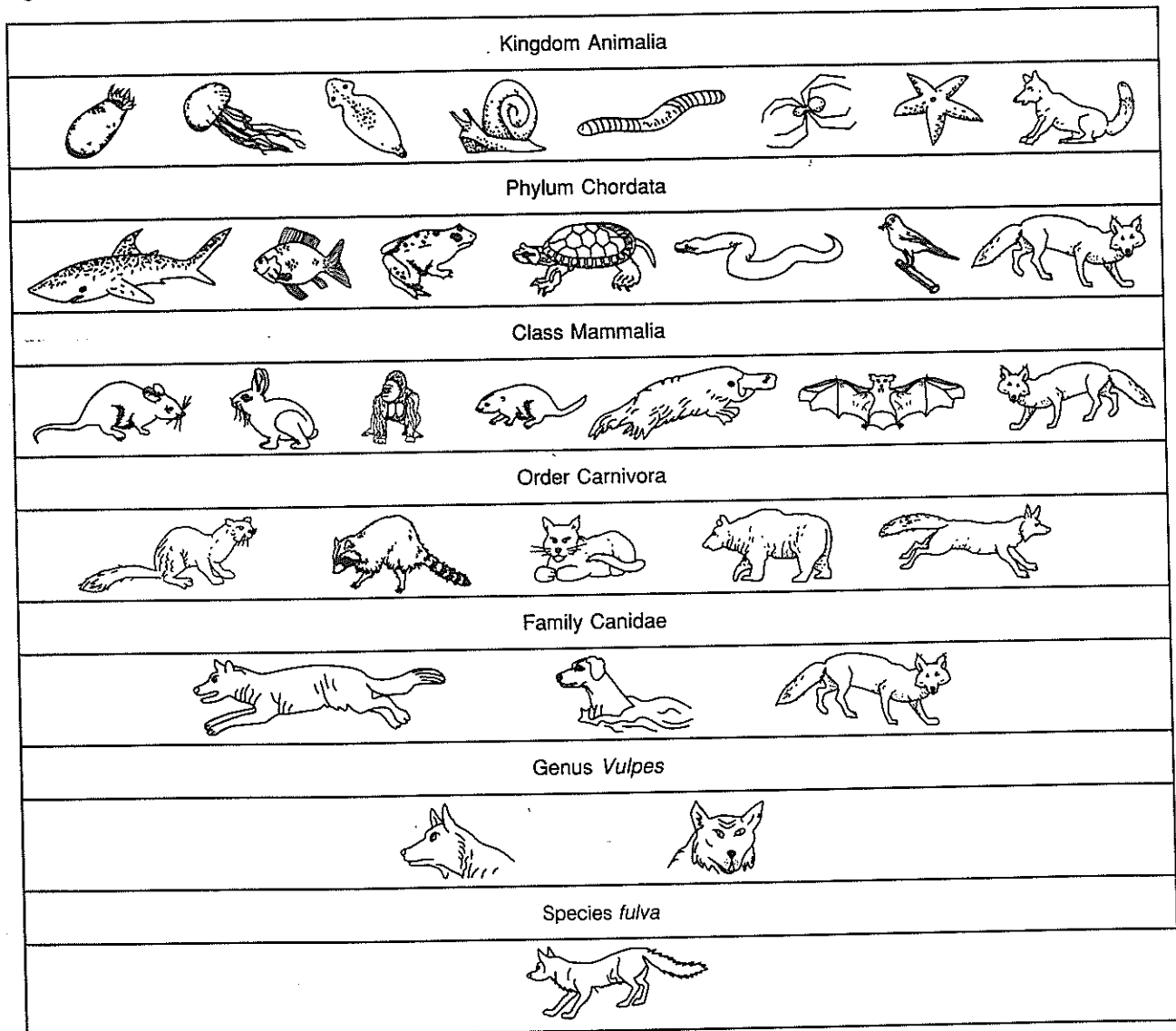
**SKILL ACTIVITY**  
**Identifying relationships**

## Analyzing Relationships Within a Classification System

The living world shows great diversity. There are a large number of different organisms, and each species has characteristics that are different from the others. In this activity you will identify and analyze the structure of a commonly used classification system.

The figure below shows a scheme used to classify animals.

Figure 1



1. List the common features of the animals in each group. \_\_\_\_\_

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2. Describe the major differences between each group. For example, the decision to classify an organism in either kingdom or phylum is that some animals have a spinal cord and others do not.

Phylum-Class \_\_\_\_\_

Class-Order \_\_\_\_\_

Order-Family \_\_\_\_\_

Family-Genus \_\_\_\_\_

Genus-Species \_\_\_\_\_

3. Describe what happens to the degree of diversity at both ends of the scheme, from the higher taxonomic levels to the lower taxonomic levels. \_\_\_\_\_

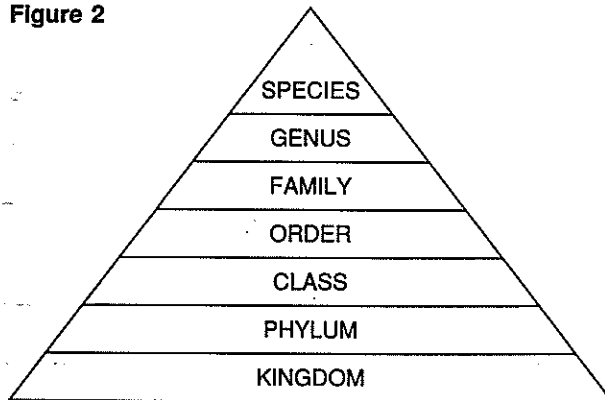
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Classification systems have been represented by various models. The pyramid in Figure 2 is an example. It can be used to illustrate various aspects of the structure of a system, such as the number of organisms per level. Use this as a guide to draw a pyramid that includes the organisms shown in Figure 1.

**Figure 2**



4. Venn diagrams can also be used to make models of classification schemes. A Venn diagram is shown in Figure 3. Four groups are represented by circular regions—A, B, C, and D. Each region represents a collection of things or members of a taxonomic level. Regions that overlap, or intersect, share common members. Regions that do not overlap do not have members in common. Use the following terms to label the regions shown in Figure 3: *All Animals*; *Animals That Have Backbones*; *Insects*; *Mammals*.

Figure 3

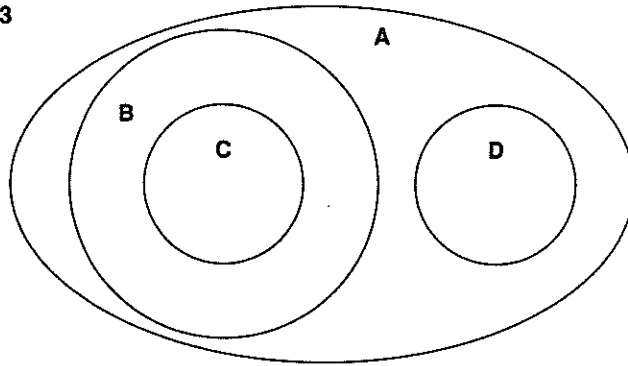


Figure 4 shows a classification scheme for butterflies (family, genus, and species have been omitted).

Kingdom	.....	Animalia
Phylum	.....	Arthropoda
Class	.....	Insecta
Order	.....	Lepidoptera

5. On a separate sheet of paper, construct a Venn diagram that models the information contained in Figure 4.
6. Do any of the regions intersect or overlap? If so, describe the pattern.

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*Classification Systems*

## Word Game

On the lines below, write the word or words that best fit the description on the left. When you are finished, the boxed-in letters will spell out one of the topics discussed in the chapter. Fill in that word or phrase in the space provided.

1. Organic molecule  
found in the blood of  
animals

\_\_\_\_\_  \_\_\_\_\_

2. Taxon to which all  
phyla belong

\_\_\_\_\_  \_\_\_\_\_

3. Kingdom whose  
members are  
heterotrophs that  
build cell walls that  
do not contain  
cellulose

\_\_\_\_\_  \_\_\_\_\_

4. Order whose  
members are meat  
eaters

\_\_\_\_\_  \_\_\_\_\_

5. Group of related  
genera

\_\_\_\_\_  \_\_\_\_\_

6. Scientist who  
developed the system  
of binomial  
nomenclature

\_\_\_\_\_  \_\_\_\_\_

7. Groups to which  
Linnaeus assigned  
organisms

\_\_\_\_\_  \_\_\_\_\_

8. Group of related  
orders

\_\_\_\_\_  \_\_\_\_\_

9. Kingdom in which all  
prokaryotes are  
placed

\_\_\_\_\_  \_\_\_\_\_

10. Science of naming  
organisms

\_\_\_\_\_  \_\_\_\_\_

11. Kingdom that includes multicellular heterotrophs that have cell membranes without cell walls

\_\_\_\_\_  
\_\_\_\_\_  \_\_\_\_\_  
\_\_\_\_\_  \_\_\_\_\_

12. The smallest taxon

13. Kingdom whose members are multicellular photosynthetic autotrophs

\_\_\_\_\_  \_\_\_\_\_

14. Protein molecule found in the electron transport chain of all organisms

\_\_\_\_\_  \_\_\_\_\_

15. Group of related classes

\_\_\_\_\_  \_\_\_\_\_

16. Family name for dogs

\_\_\_\_\_  \_\_\_\_\_

17. Kingdom that includes all single-celled eukaryotes

\_\_\_\_\_  \_\_\_\_\_

18. Group of similar species

\_\_\_\_\_  \_\_\_\_\_

19. In Latin it means red

\_\_\_\_\_  \_\_\_\_\_

20. Group of related families

\_\_\_\_\_  \_\_\_\_\_

Method of classifying organisms using a two-name system

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