

Chapter 5**Classification****Laboratory 5-1 How can a dichotomous key be used to identify an organism?****Background Information**

People organize things to make it easier to identify them. For example, compact discs, audio cassettes, and records are usually grouped in three different sections in an audio store. Scientists also group, or classify, organisms based on similarities and differences. One way to group organisms is by using a dichotomous key. The term "dichotomous" means "divided into two parts." A dichotomous key is designed to separate a group of organisms into two smaller groups. These groups are then separated into two smaller groups, and so on. Each step in the key involves a yes or no question about the organism's appearance.

Skills: observing, classifying, inferring

Objectives

In this laboratory, you will

- identify animals based on their appearance.
- use a dichotomous key to identify leaves.

Prelab Preparation

Review Section 5-1 Classifying Living Things and Section 5-2 Modern Taxonomy.

Materials

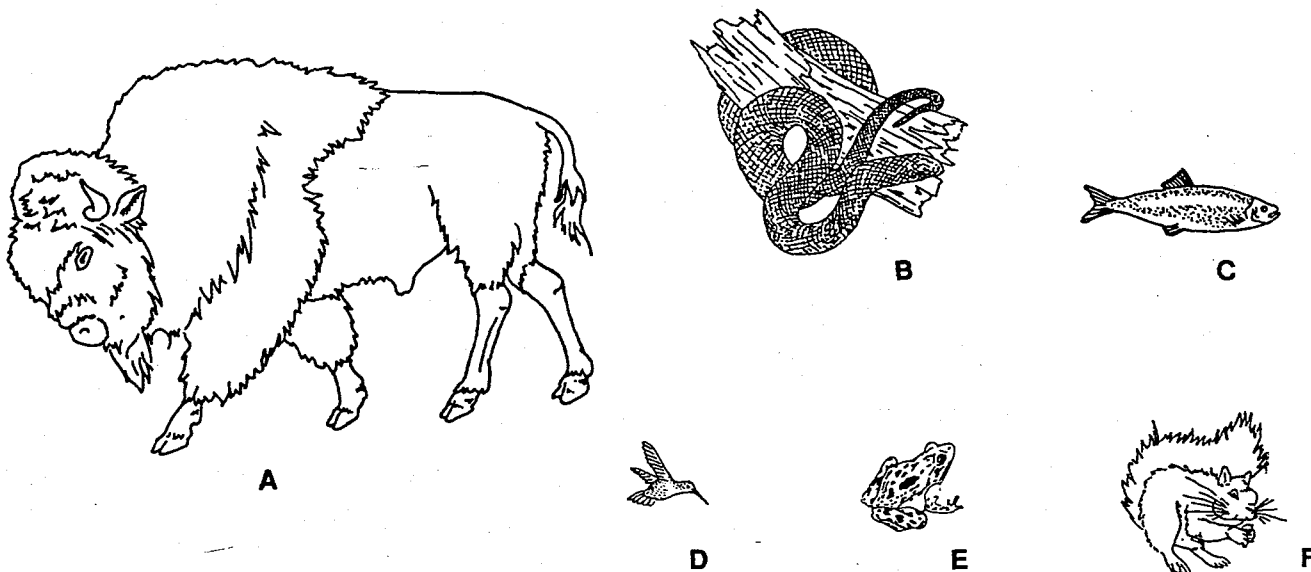
paper

pencil

Procedure

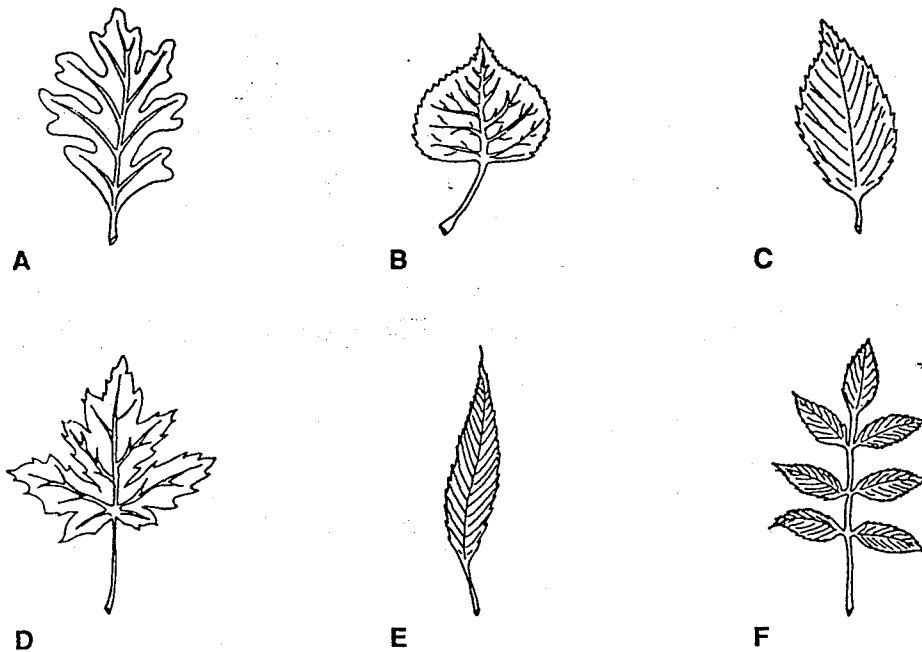
1. Look at the animals shown in Figure 1.
2. Complete Data Table 1 based on your observations of the animals in Figure 1.

Figure 1. Six Different Animals



3. Look at the leaves shown in Figure 2.

Figure 2. Six Different Leaves



4. Use the dichotomous key in Figure 3 to identify each of the leaves in Figure 2. Record your results in Data Table 2.

Figure 3. Dichotomous Key for Leaves

Questions	Yes	No
1. Is the leaf blade made up of small leaflets?	The leaf is a green ash.	Go to 3.
2. Is the leaf blade cut into lobes?	Go to 4.	Go to 5.
3. Is the leaf blade long and narrow?	The leaf is a black willow.	Go to 2.
4. Are the lobes pointed?	The leaf is a silver maple.	The leaf is a white oak.
5. Is the leaf heart shaped?	The leaf is a cottonwood.	The leaf is an American elm.

Observations and Data

Data Table 1: Animals

Animal	Fins	Wings	Legs		Hooves	Claws	Scales	Feathers	Fur	Smooth Skin
			2	4						
A										
B										
C										
D										
E										
F										

Data Table 2: Leaves

Leaf	Identification
A	
B	
C	
D	
E	
F	

Analysis and Conclusions

1. Based on your observations in Data Table 1, match each animal listed with the correct letter in Figure 1.

- Fish _____
- Frog _____
- Snake _____
- Hummingbird _____
- Squirrel _____
- Bison _____

2. Classify each of the animals in Figure 1 in one of the following groups:

Fish	_____	Bird	_____
Amphibian	_____	Mammal	_____
Reptile	_____		

3. How did the dichotomous key help you to identify the leaves in Figure 2?

each leaf.

Extension

Find photographs of at least 10 different flowers. Develop a dichotomous key based on the number and arrangement of the petals to identify each flower.

