

## Creating a Dichotomous Key from Bridges to the Natural World

### CREATING A DICHOTOMOUS KEY

GRADE LEVELS  
1 - 6

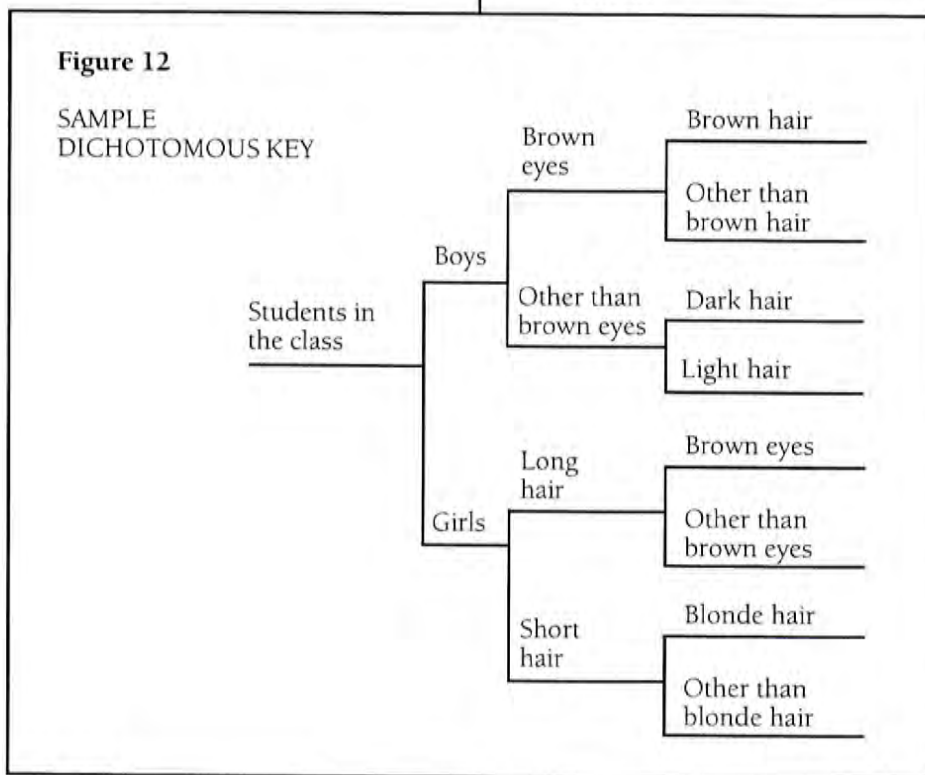
OBJECTIVE  
To classify objects by distinctive characteristics.

BACKGROUND INFORMATION  
A dichotomous key provides a method for distinguishing between species of animals or plants. An observer creates a dichotomous key by separating species initially into two all-inclusive categories according to distinctive characteristics. These categories are then repeatedly subdivided so as to more specifically describe the initial categories.

MATERIALS  
• chalkboard  
• chalk  
• Making A Dichotomous Key (Figure 13)\*

#### PREPLANNING

1. Assemble the class in an area where they can all stand in a large group.
2. Tell the students they will be learning how to create a dichotomous key, which is a tool that people use to help organize scientific information so it can be identified more easily.
3. Lead the students through this process in the following way:
  - A. Ask the students to divide themselves into two groups. The two groups must include all students. (For example: boys and girls, or people with shoelaces and no shoelaces.) The categories must always be observable. Qualities such as age, virtues, etc., do not apply.
  - B. Ask each group to divide itself into two subgroups. Each subgroup must include all members of the main group. Let the students decide on the criteria. (For example: boys with brown eyes and boys with different eye color or girls with slacks and girls with dresses.) Call on each group to define themselves by the criteria.



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- C. Each of these subgroups must divide into two more subgroups. As before, these smaller groups must contain all members. (For example: brown-eyed boys with button shirts and those with no-button shirts.) Again, have the groups define themselves by the criteria they have chosen.
4. On the chalkboard, create the dichotomous key using the divisions that the students made.
5. To practice further, divide the students again by a different observable characteristic. Allow the groups to divide themselves again and have the opposite teams try to determine the physical feature that divides them. Continue with one or two more divisions.

(See Figure 12 for a sample dichotomous key for this activity.)

#### FOLLOW-UP LEAF KEY

1. Have each student collect eight different leaves from the ground. (This activity works well in autumn.)
2. Provide each student with a blank dichotomous key (Figure 13).

3. Guide the students into creating a key for their leaves in the following way:

- A. Divide your eight leaves into two categories of your choice. Base your decision on the leaves' characteristics. (E.g., leaves may be divided into groups by color, shape, texture, size, etc.) Write a simple description of each category on the lines marked #1.
- B. Look at each of your main groups of leaves separately. Take each group and divide it into two subgroups. Write these descriptions on the lines marked #2.
- C. If possible, divide each of these subgroups one more time. Write these descriptions on the lines marked #3.

#### SCHOOL YARD IDENTIFICATION KEY

Challenge the students to create a dichotomous key for the school grounds. Ask them to follow these steps:

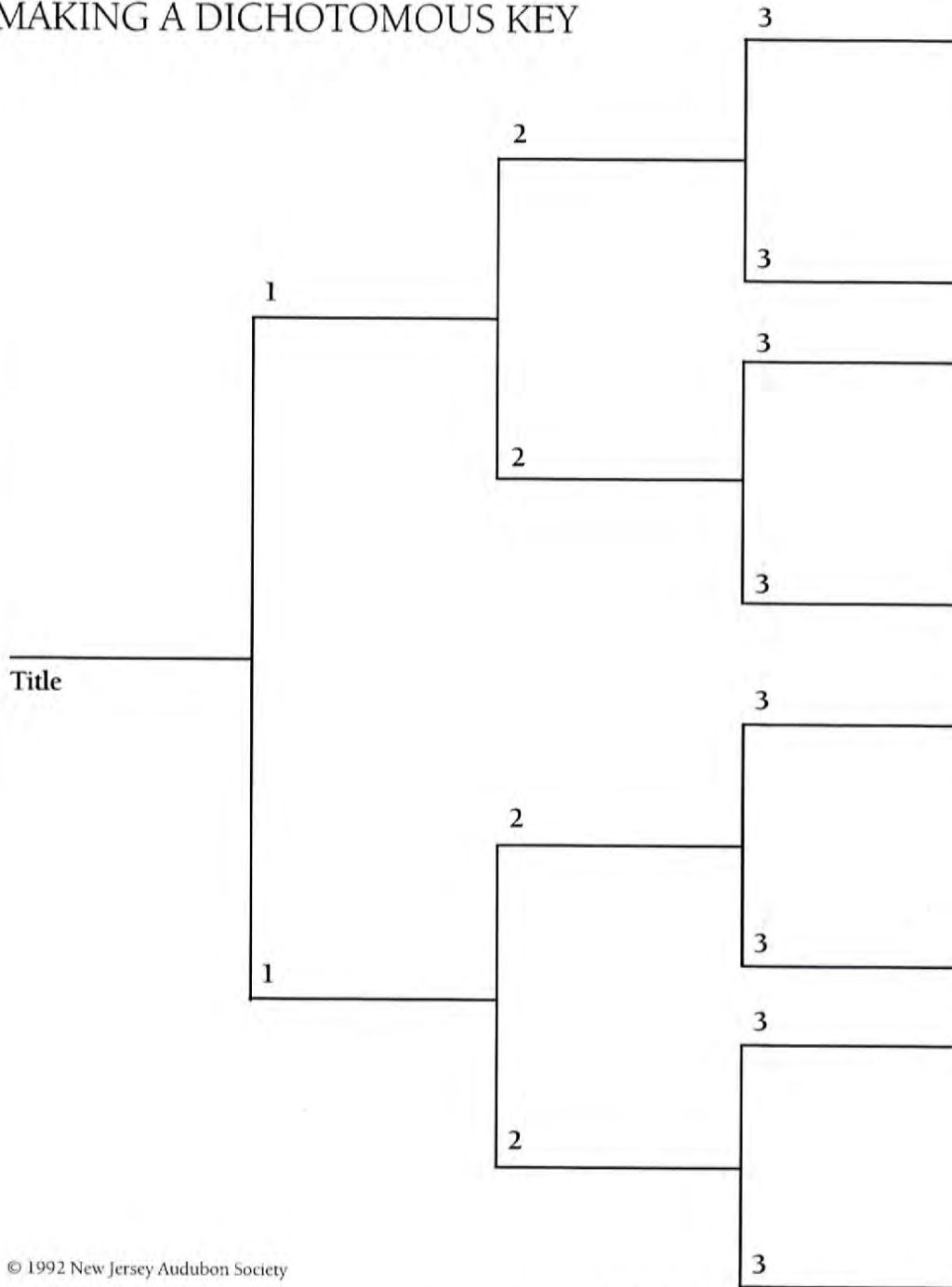
1. Collect a sample leaf from the different trees on the property.
2. Identify each leaf using a tree identification guide.
3. Create a key using the categories suggested in the activity *Leaves on Parade* (p. 165).



Figure 13

Name: \_\_\_\_\_

### MAKING A DICHOTOMOUS KEY



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