

## 25 - DEVELOPING A DICHOTOMOUS KEY

### PURPOSE

To practice grouping organisms on the basis of characteristics and to determine the process by which marine organisms are grouped

### MATERIALS

- preserved animals, models or animal flash cards could be substituted for pictures included

### PROCEDURE

Study the example of this key of shoes. Notice that first the shoes are divided into two groups - heel and flats. Then the shoes with heels are keyed out before the group of flat shoes. To use a key, start at the top for each picture. Do not try to just match up characteristics on the key as this will cause errors. Choose a picture and see if you can use the key to get the right answer.

1. a. heels .....go to #2  
b. flats .....go to #6
2. a. closed toe .....go to #3  
b. open toe ..... go to #4
3. a. t-strap over foot .....Teacher  
b. clog-style .....Jane
4. a. heel strap .....Sarah  
b. backless, sling .....go to #5
5. a. platform, sandal straps .....Laura  
b. not platform ..... Monique
6. a. canvas ..... go to #7  
b. leather ..... go to #8
7. a. white toes .....James  
b. white design on sides ..... Chris
8. a. high tops .....go to #9  
b. low, ankle cut .....Joe
9. a. dark suede with rubber soles ..... Mike  
b. light leather, work boot .....Scott



Mike



Laura



Scott



Monique



James



Jane



Joe



Sarah



Chris



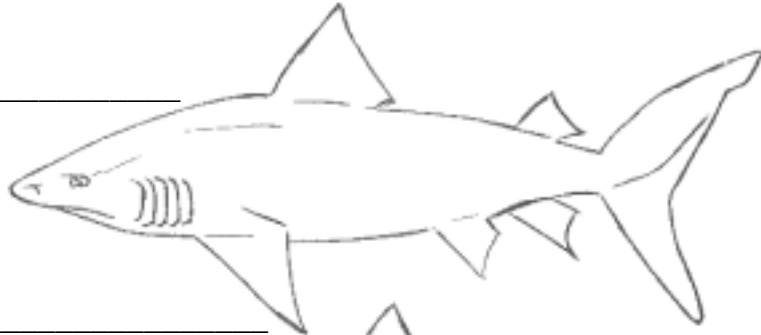
Teacher

The example key, based on two choices, is called a dichotomous key. It is the method used to group all organisms. Study the pictures of the taxonomic Classes for the marine animals in the Chordata Phylum shown below. List one structural characteristic for each animal that makes them VISIBLY different from those in the other groups.

Class Agnatha: \_\_\_\_\_  
structural characteristic



Class Chondrichthyes: \_\_\_\_\_



Class Ostichthyes: \_\_\_\_\_



Class Amphibia: \_\_\_\_\_



Class Reptilia: \_\_\_\_\_



Class Aves: \_\_\_\_\_



Class Mammalia: \_\_\_\_\_



Date \_\_\_\_\_ Class \_\_\_\_\_ Name \_\_\_\_\_

Now divide the animals pictured into two groups - fins and feet. Construct the rest of a dichotomous key for these Chordates.

Construct a key like the example on the first page. Use one shoe from each of ten students. Develop a classroom key on the board. The student's name is the species of the shoe.

Date \_\_\_\_\_ Class \_\_\_\_\_ Name \_\_\_\_\_

## CONCLUSION

1. What is a dichotomous key? \_\_\_\_\_

\_\_\_\_\_

2. On what characteristic is the key for organisms in this lab, based?

\_\_\_\_\_

3. What is the basis for grouping organisms in a true dichotomous key? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. How can you tell which organisms are related by looking at a taxonomic key?

\_\_\_\_\_

\_\_\_\_\_

5. How did the plate tectonic movement of continents affect the development and evolution of species?

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