



Can a Key Be Used to Identify Organisms?

20-1

LAB

Classification is a way of separating a large group of closely related organisms into smaller subgroups. Identification of an organism is easy with a classification system. The scientific names of organisms are based on the classification systems of living organisms. To identify an organism, scientists often use a key. A key is a listing of characteristics, such as structure and behavior, organized in such a way that an organism can be identified.

OBJECTIVES

- Use a key to identify fourteen shark families.
- Examine the method used in making statements for a key.
- Construct your own key that will identify another group of organisms.
- Hypothesize how organisms can be identified with a key.

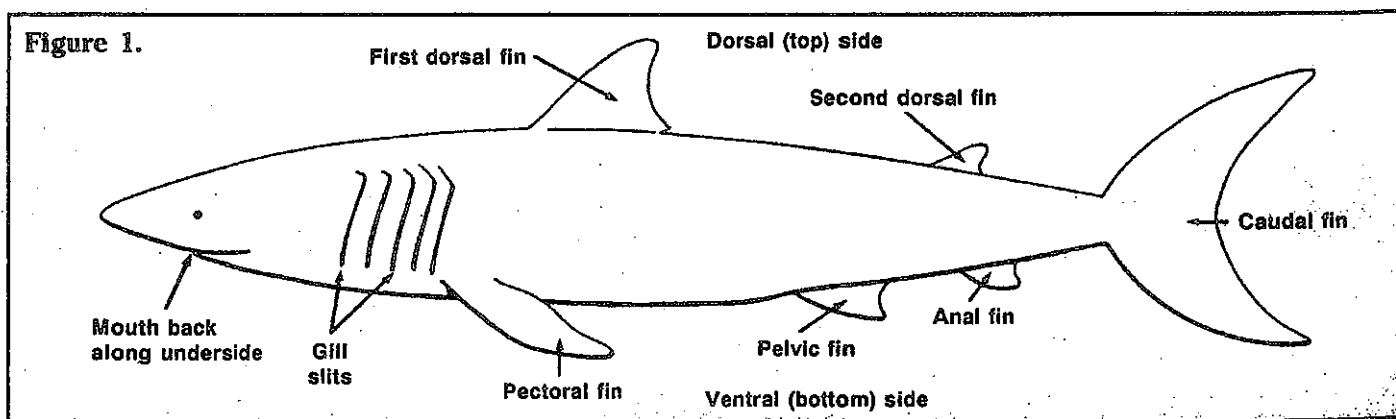
MATERIALS

none

PROCEDURE

1. Make a **hypothesis** to describe how sharks can be identified using a key. Write your hypothesis in the space provided.
2. Use Figure 1 as a guide to the shark parts used in the key on page 109.
3. Read statements 1A and 1B of the key. They describe a shark characteristic that can be used to separate the sharks into two major groups. Then study Shark 1 in Figure 2 for the characteristic referred to in 1A and 1B. Follow the directions in these statements and continue until a family name for Shark 1 is determined. For example, to key a shark that has a body that is not kite shaped, and has a pelvic fin, and six gill slits, follow the directions of 1B and go directly to statement 2. Follow statement 2B to statement 3. At statement 3A, identify the shark as belonging to Family Hexanchidae.
4. Continue keying each shark until all have been identified. Write the family name on the line below each animal in Figure 2.
5. Have your teacher check your answers.

HYPOTHESIS



DATA AND OBSERVATIONS

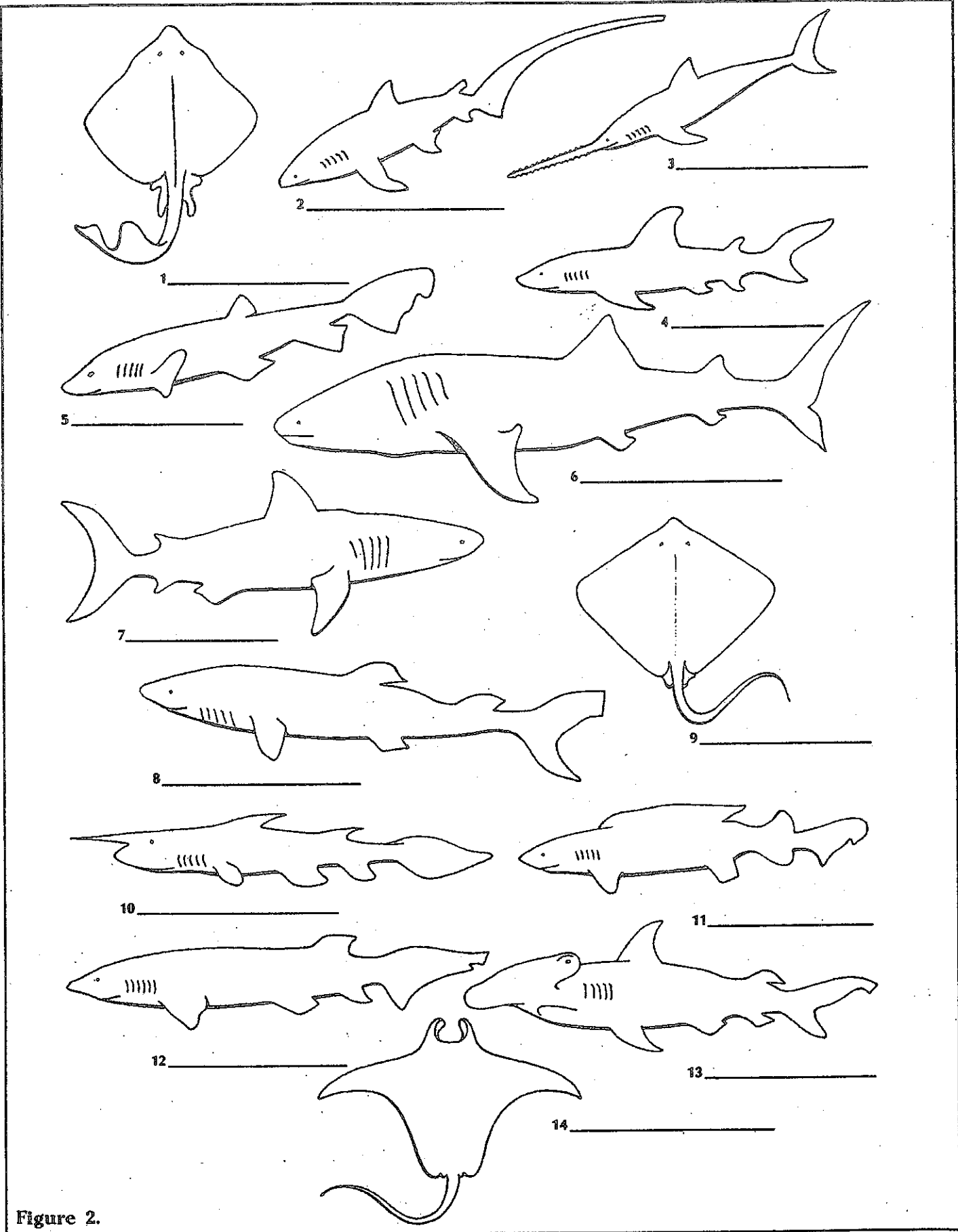


Figure 2.

- 1. A. Body kitelike in shape (if viewed from above) Go to statement 12
 B. Body not kitelike in shape (if viewed from above) Go to statement 2
- 2. A. Pelvic fin absent and nose sawlike Family Pristophoridae
 B. Pelvic fin present Go to statement 3
- 3. A. Six gill slits present Family Hexanchidae
 B. Five gill slits present Go to statement 4
- 4. A. Only one dorsal fin present Family Scyliorhinidae
 B. Two dorsal fins present Go to statement 5
- 5. A. Mouth at front of head rather than back along underside of head Family Rhinocodontidae
 B. Mouth back along underside of head Go to statement 6
- 6. A. Head expanded on side with eyes at end of expansion Family Sphyrnidae
 B. Head not expanded Go to statement 7
- 7. A. Top half of caudal fin exactly same size and shape as bottom half Family Isuridae
 B. Top half of caudal fin different in size and shape from bottom half Go to statement 8
- 8. A. First dorsal fin very long, almost half total length of body Family Pseudotriakidae
 B. First dorsal fin length much less than half the total length of body Go to statement 9
- 9. A. Caudal fin very long, almost as long as entire body Family Alopiidae
 B. Caudal fin length much less than length of entire body Go to statement 10
- 10. A. Nose with long needlelike point on end Family Scapanorhynchidae
 B. Nose without needlelike point Go to statement 11
- 11. A. Anal fin absent Family Squalidae
 B. Anal fin present Family Carcharhinidae
- 12. A. Small dorsal fin present near tip of tail Family Rajidae
 B. Small dorsal fin absent near tip of tail Go to statement 13
- 13. A. Hornlike appendages at front of shark Family Mobulidae
 B. Hornlike appendages not present at front of shark Family Dasyatidae

ANALYSIS

- 1. What is a biological key and how is it used? _____

- 2. List four different characteristics that were used in the shark key. _____

- 3. a. Which main characteristic could be used to separate Shark 4 from Shark 8? _____

- b. Which main characteristic could be used to separate Shark 4 from Shark 7? _____
