Student Conducted Lab: Shark Dichotomous Key

Name: ..... _____/10

If you need to review WHAT you are supposed to DO, go to the class recording for October 10!

WATCH Due and END Dates!

Classifying & Identifying Sharks using a Dichotomous Key

A classification system is a way of separating a large group of closely related organisms into smaller subgroups. With such a system, identification of an organism is easy. The scientific names of organisms are based on the classification systems of living organisms. The genus and species makes up an organisms scientific name.

To identify an organism, scientists often use a tool known as a **dichotomous key**. A **dichotomous key** consists of 2 opposing statements that lead the user to another set of statements or the identity of the organism based on its observable characteristics.

In this investigation, it is expected that you:

1) Use a key to identify 14 shark families.
2) Study the method used in phrasing statements in a key.

Procedure

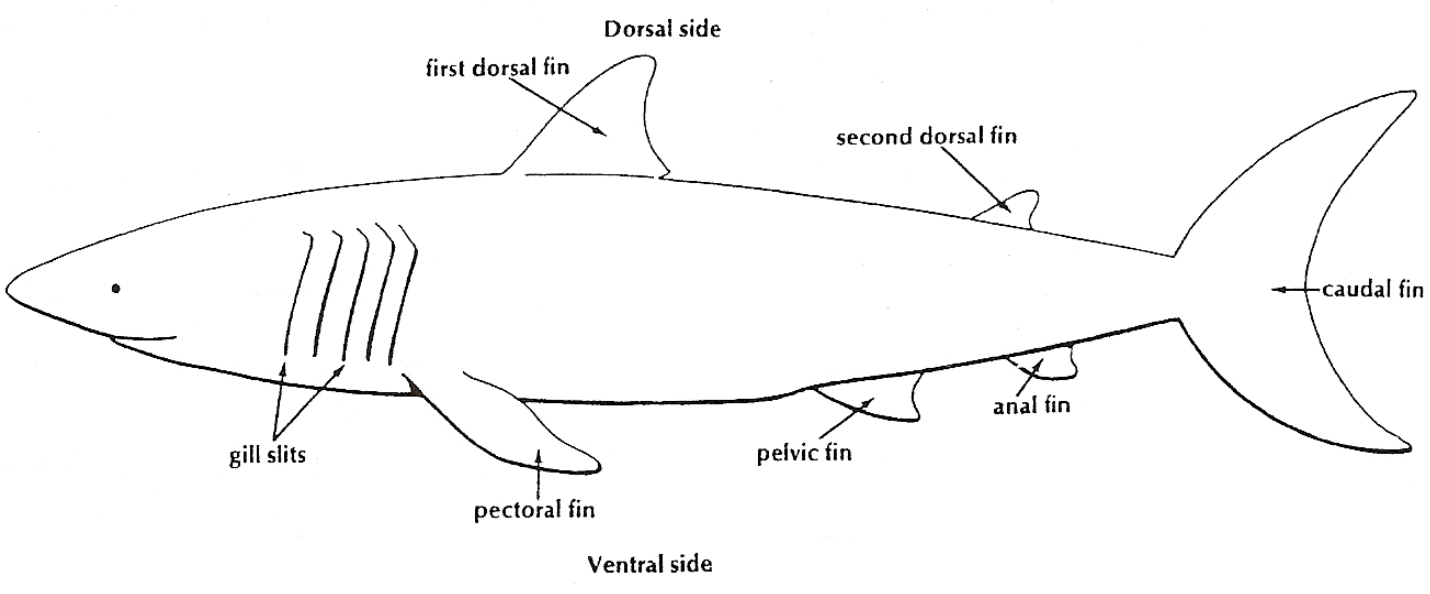
1. Read sentences 1A and 1B of the key. Then study shark 1 in figure A for the characteristics referred to in 1A and 1B. Follow the directions in these sentences and continue with this process until a family name for Shark 1 is determined.

   For example, if the shark has an anal fin, and its body is not kite shaped, following the directions of 1A and go directly to sentence 2. If the shark lacks and anal fin or has a kite shaped body, follow the directions of 1B and go to sentence 10.

2. Continue this process with each shark until all animals have been identified. Write the family name on the line below each animal.

3. Use figure 1 as a guide to the anatomical features used in the key.

Figure 1 – Anatomy of a Shark



Dichotomous Key to Shark Families

1. A. Body kite-like in shape (if viewed from the top) .....Go to statement 12
   B. Body not kite-like in shape (if viewed from the top) .....Go to statement 2

2. A. Pelvic fin absent and nose saw-like ..... Family **Pristiophoridae**
   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 ..... Family **Scyliorhinidae**
   B. Two dorsal fins ..... Go to statement 5

5. A. Mouth at front of snout..... Family **Rhinocodontidae**
   B. Mouth on underside of head ..... Go to statement 6

6. A. Head expanded on side with eyes at end of expansion ..... Family **Sphymidae**
   B. Head not expanded ..... Go to statement 7

7. A. Top half of caudal fin about the same size as bottom half ..... Family **Isuridae**
   B. Top half of caudal fin different in size than bottom half ..... Go to statement 8

8. A. First dorsal fin very long, almost ½ total length of the body..... Family **Pseudotriakidae**
   B. First dorsal fin regular length ..... Go to statement 9

9. A. Caudal fin very long, almost as long as entire body ..... Family **Alopiidae**
   B. Caudal fin regular length ..... Go to statement 10

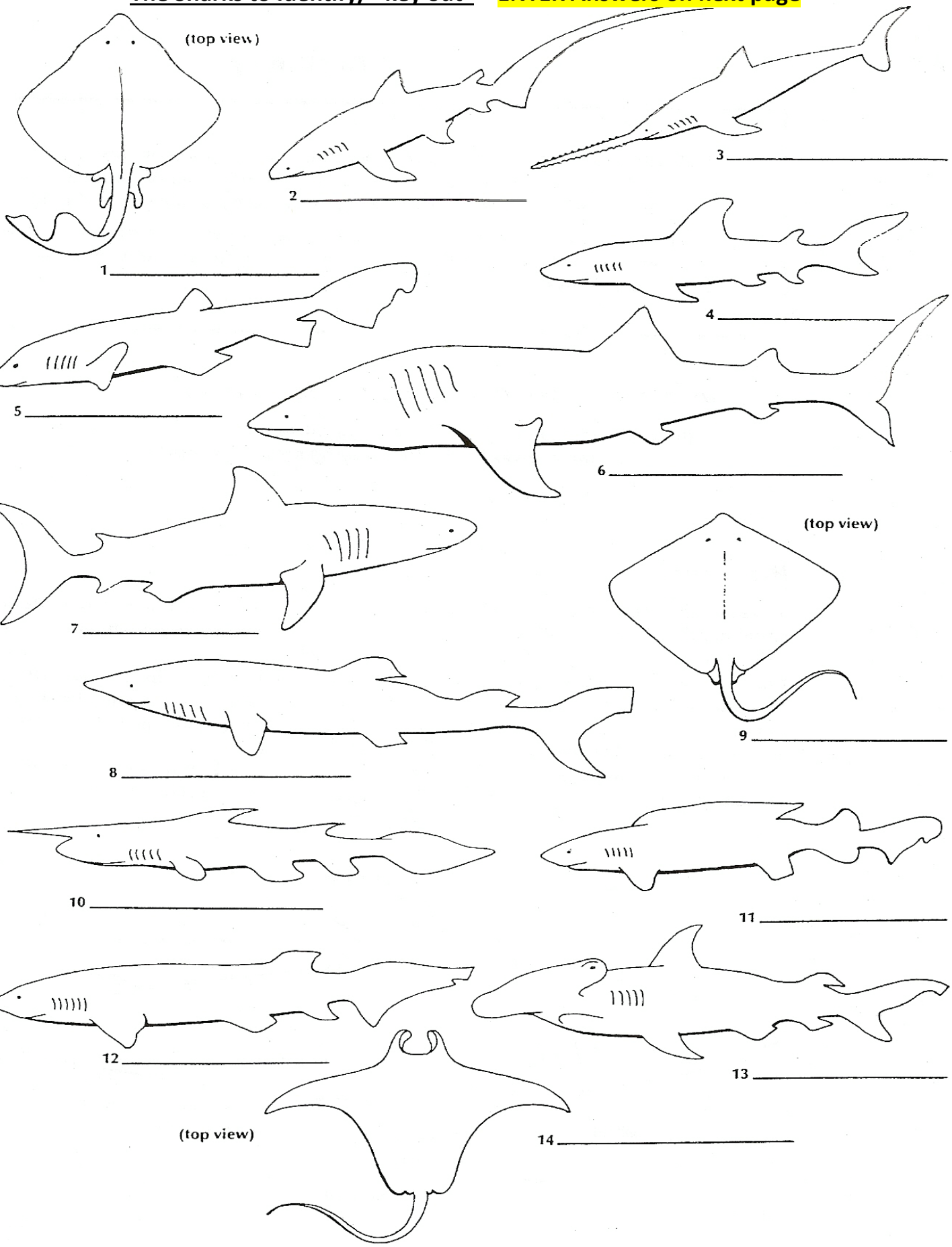
10. A. A long needlelike point on end of nose ..... Family **Scapanorhynchidae**
    B. Nose without long point ..... Go to statement 11

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. No dorsal fin present near tip of tail ..... Go to statement 13

13. A. Front of animal with two horn-like appendages ..... Family **Mobulidae**
    B. No horn-like appendages..... Family **Dasyatidae**

The Sharks to Identify/ "key out" – ENTER Answers on next page



ANSWERS … EACH Shark/Family is worth 0.5 point (7 points)

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.

Analysis Questions: … Each COMPLETE sentence(s) answer is worth 1 points (3 points)

1. As you worked down the dichotomous classification key to identify sharks, did you go from general to specific characteristics or from specific to general characteristics? Explain your answer using characteristics that were used in the shark key.

2. Which main characteristics could be used to distinguish shark 4 from shark 8?

3. Which main characteristic could be used to distinguish shark 4 from shark 7?

Rate your: Effort 1 2 3 4 Achievement 1 2 3 4 **(1 is lowest; 4 is highest)**