Name_____ Biology II --- December 2011

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 or organisms are based on the classification systems of living organisms.

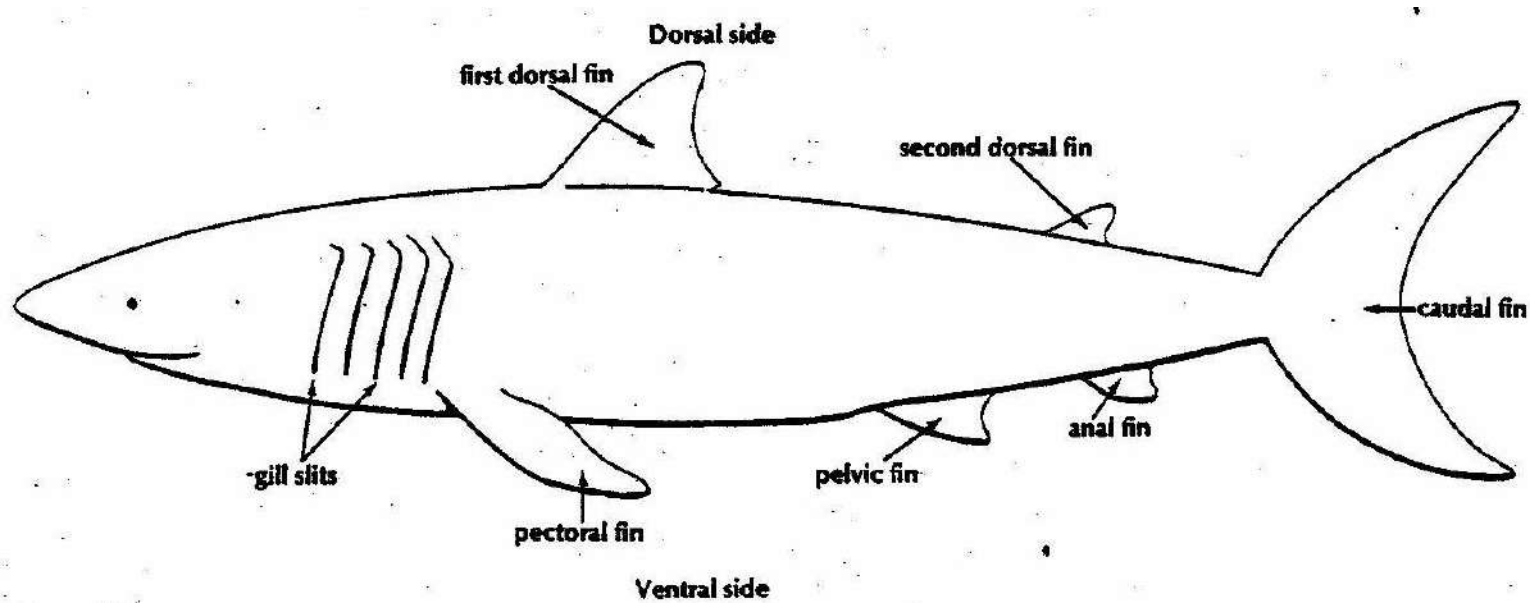
To classify an organism, scientists often use a key. A key is a listing of species characteristics such as structure and behavior in such a way that an organism can be identified through a process of elimination.

In this investigation, it is expected that you:

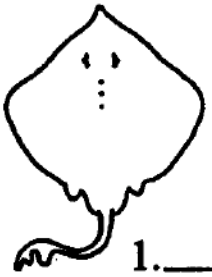
1. ***Use a key to identify 14 shark families***
2. ***Study the method used in phrasing statements of a key***
3. ***Construct your own key which will identify fictitious organisms***

Procedure

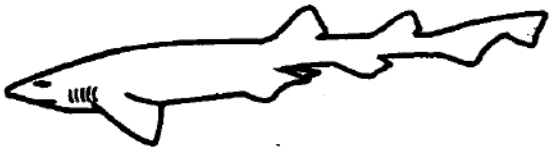
1. Read sentences 1A and 1B of the key.
2. Then study Shark 1 for the characteristics referred to in 1A and 1B.
3. Follow the directions in these sentences and continue with this process until a family name for shark 1 is determined.
4. For example, if the shark has an anal fin and its body is not kite-shaped, follow the directions of 1A and go directly to sentence 2. If the shark lacks an anal fin OR has a kite-shaped body, follow the directions of 1B and go to sentence 10.
5. Continue this process with each shark until all animals have been identified. Write the family name on the line below each animal.
6. Use the following figure as a guide to the anatomical features used in the key.



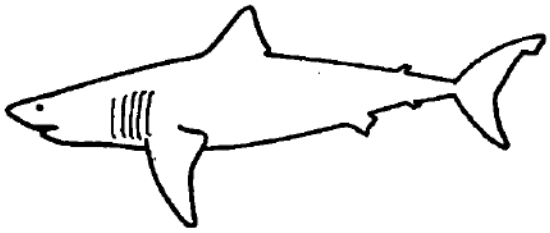
Name that fish: Use the "Key to Identifying Shark Families" found on the next page to identify each shark's family.



1. _____

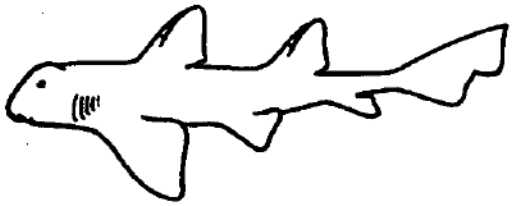


2. _____

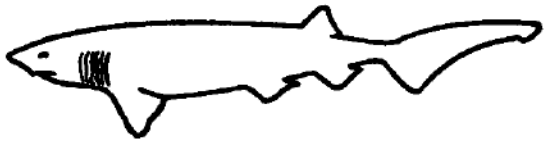


3. _____

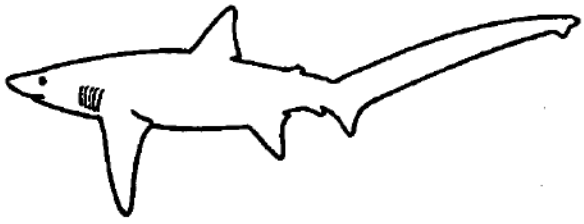
4. _____



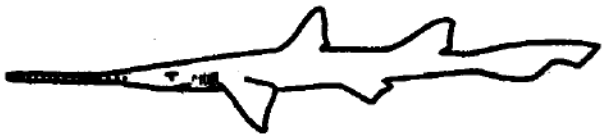
5. _____



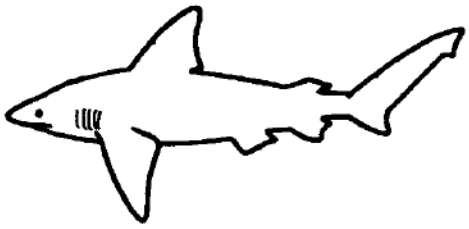
6. _____



7. _____



8. _____



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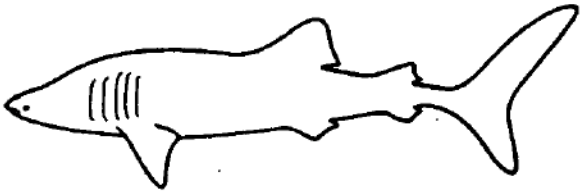
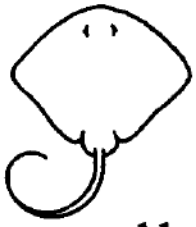


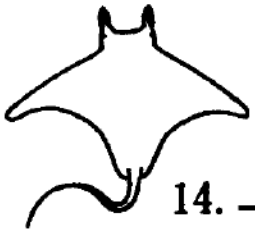
10. _____



11. _____

12. _____

13. _____



14. _____

KEY TO IDENTIFICATION OF SHARK FAMILIES

1.	A.	Body kitelike if viewed from the top	Go to 12
	B.	Body not kitelike if viewed from the top	Go to 2
2.	A.	Anal fin absent	Go to 11
	B.	Anal fin present	Go to 3
3.	A.	Six gill slits present	**Cow Shark**
	B.	Five gill slits present	Go to 4
4.	A.	Dorsal fin with spines	**Bullhead Shark**
	B.	No spines on dorsal fin	Go to 5
5.	A.	Mouth at front of snout (rather than on underside of head)	**Whale Shark**
	B.	Mouth on underside of head	Go to 6
6.	A.	Head expanded with eyes at ends of expansion	**Hammerhead Shark**
	B.	Head not expanded	Go to 7
7.	A.	Top half of caudal fin about same size as bottom half	**Mackerel Shark**
	B.	Top half of caudal fin different size than bottom half	Go to 8
8.	A.	First dorsal fin very long, almost half the total length of the body	**False Cat Shark**
	B.	First dorsal fin “regular” length	Go to 9
9.	A.	Caudal fin very long, almost as long as entire body	**Thresher Shark**
	B.	Caudal fin “regular” length	Go to 10
10.	A.	Base of first dorsal fin beyond pelvic fin	**Cat Shark**
	B.	Base of first dorsal fin in front of pelvic fin	**Requiem Shark**
11.	A.	Long point at end of snout	**Saw Shark**
	B.	Snout without long point	**Dogfish Sharks**
12.	A.	Front of animal has two hornlike appendages	**Mantas**
	B.	No hornlike appendages	Go to 13
13.	A.	Small dorsal fin present near tip of tail	**Skate**
	B.	No dorsal fin present near tip of tail	**Stingray**

Analysis

Write a key that will identify the fictitious animals below. Use the following guidelines and suggestions in preparing your key:

(A) Use all animals shown

(B) Assign a name to each representative animal. This name should describe some major characteristic NOT found in the other animals. This characteristic should be one that could be used in placing other animals having this same trait into only this phylum (Example: Animal 8 may have the name "Toenail Tentacles.")

(C) Prepare your key to identify phyla on the following page

BONUS

Draw a picture of 3 other creatures, assign them scientific names, and write any additional steps your key may need to identify them.

KEY TO IDENTIFICATION OF CRAZY CREATURES

1. A.	
B.	