Marine Biology

Lab Exercise 1

“Scientific Methods”

Names \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Some Types of Questions**

Below are several yes-or-no questions that differ in their structure and in the kinds of answers you can provide. Individually, take a few minutes to answer each question in the left column. Then discuss each question as a group and record your group’s consensus answer in the next column.

**Your Answer Group Answer**

\_\_\_\_\_ \_\_\_\_\_ 1. Do all species of salmon spawn in streams and lakes?

\_\_\_\_\_\_ \_\_\_\_\_\_ 2. Is the earth’s atmosphere mostly oxygen?

\_\_\_\_\_\_ \_\_\_\_\_\_ 3. Is the total worldwide contribution of marine food to total human food consumption greater than 5%?

\_\_\_\_\_\_ \_\_\_\_\_\_ 4. Must all sharks continually swim to force water over their gills?

\_\_\_\_\_\_ \_\_\_\_\_\_ 5. Does the heartbeat rate of a clam increase with increase of water temperature?

\_\_\_\_\_\_ \_\_\_\_\_\_ 6. Does more plant production occur each year in the ocean than on land?

\_\_\_\_\_\_ \_\_\_\_\_\_ 7. Is a meter longer than a yard?

\_\_\_\_\_\_ \_\_\_\_\_\_ 8. Does warm water contain more dissolved oxygen than cold water?

\_\_\_\_\_\_ \_\_\_\_\_\_ 9. Do baleen whales commonly feed on phytoplankton?

\_\_\_\_\_\_ \_\_\_\_\_\_ 10. Is it safe to eat fish caught offshore from a nuclear generating plant?

**Now group the questions by the following criteria.**

1. Which question(s) are answerable by definition of term?
2. Which question(s) cannot be answered or are confusing unless one or more terms are first provided with operational terms?
3. Which question(s) require you to make a value judgment before answering?
4. Which question(s) are presently unanswerable by you, but appear to be answerable through some type of practical investigation?