Water Quality Project Research and Proposal

Field Biology

For this project, you will investigate at least two parameters of the water quality of Jackson Creek. Your goal will be to evaluate the correlation between these parameters and one other measureable abiotic or biotic factor of the creek. The document you create today will be a proposed plan for your study. You should work individually on this assignment. When you are done, please e-mail your work as a Microsoft Word attachment to dan.bregar@corvallis.k12.or.us with the subject line "per *X your name* WQ project proposal".

To begin, you need to familiarize yourself with four of the most important parameters that scientists use to evaluate water quality. To answer these questions, you can use Google to do internet research. You also might find some useful information on the web links in the "Water Quality Questions" assignment. Some of the information is also available on the notes posted on my web page (specifically the "Temperature" and "pH" documents). You should do a total of 5-10 minutes of research for each parameter in order to answer the questions below, and your responses should be around 2-3 sentences for each question. To do a thorough job of researching this information, you should spend around ½ hour on this part of the assignment.

The water quality parameters we'll be looking at are temperature, pH, dissolved oxygen, and turbidity.

1. For each of these parameters, describe **in your own words** what the parameter is and how it is measured.
2. Explain **in detail** some of the ways that each of these parameters could affect aquatic organisms.
3. Describe **in detail** some reasons why these parameters might be important considerations for evaluating the quality of drinking water.

Now that you have a foundation of information on the different water quality parameters we'll be studying, you can think about how you might use those parameters to investigate a "what is the relationship between" question involving Jackson Creek. Complete the following template in order to create a proposed study. You will be carrying out this investigation next week, so make sure to take into consideration time, weather, and seasonal factors that might affect your ability to collect data.

Proposed Water Quality Study:

1. Brainstorm five biotic (living) factors and five abiotic (non-living) factors that might affect or be affected by the water quality of Jackson Creek. List and describe these factors below:
    a. Biotic Factors
        i. _____
        ii. _____
        iii. _____

iv. _____
v. _____

b. Abiotic Factors
   i. _____
   ii. _____
   iii. _____
   iv. _____
   v. _____

2. Pick ONE biotic or abiotic factor that you feel would be the most interesting and reasonable to study for your project. Make sure that this is a factor that you will definitely be able to observe and measure during the timeframe of the project (for example, "snow" would not be a good factor to look at because we can't guarantee that it will snow next week). List this factor here: _____
3. Pick two of the water quality parameters (temperature, pH, dissolved oxygen, or turbidity) to investigate. These parameters should be the ones that you feel are most likely to affect or be affected by the biotic or abiotic factor you listed in question 2. List the two water quality parameters here: _____ and _____
4. In "what is the relationship between" form, write a question that examines the interaction between the two water quality parameters you listed in question 3 and the biotic or abiotic factor you listed in question 2. Make sure that you include a good measuring word or phrase for the biotic or abiotic factor. Write your question here: What is the relationship between _____ (*water quality parameter #1*) and _____ (*water quality parameter #2*) of Jackson creek and _____ (*measuring word*) of _____ (*biotic or abiotic factor*)?