Dissolved Oxygen Lab Protocol

Safety Questions:

1. What is an O-ring bottle?
2. Why is it important to unscrew the O-ring before inserting the sensor?

Directions:

For this lab you will be constructing your own lab. You are given the Problem and Hypothesis.

The Hypothesis and Statement of Problem:

Problem: All the salmon are dying in Jackson creek. pH, temperature, and turbidity are all found to be in acceptable levels for salmon habitat.

Hypothesis: There is not enough dissolved oxygen in the river for the salmon to survive. To do this you will need a few steps in your lab report these are:

Make sure everything below this is on your lab report in the order listed.

1. **Statement of the problem** (This has been given to you)
2. **Background** (This is where you list knowledge you need to obtain to prove/disprove the hypothesis include the following)
   a. What is dissolved oxygen
   b. What is the dissolved oxygen necessary for salmon
3. **Hypothesis** (This has been given to you)
4. Materials
   a. List all materials you are going to use
5. **Procedure** include the following:
   a. How you are going to perform your experiment.
   b. What information you are going to keep track of and how you are going to keep track of this information. As in, are you going to keep track of the information in a chart?
   c. How many times are you going to test what you are testing.
   d. A clean up
   e. This whole section should be detailed enough that anyone could repeat what you are going to do.
6. **Before you move onto the next steps have me check off your previous pieces**
7. **Results**
   a. This is where your data that will be collected is stored
   b. Your data should be easy to find and recognized (hint: a chart may be useful)
   c. Make sure everything is labeled
8. **Conclusions:**
   a. Was the hypothesis correct or incorrect? Make sure to restate the hypothesis.
   b. Why would the hypothesis correct or incorrect. Explain this using the data from the lab. Actually restate your data, but don't just copy make it relevant to your argument. Assume I lost the rest of the paper when writing this portion
   c. What are some possible errors that could have caused errors in your data?

d. Include at least three reasons in full sentences, with citations, as to why dissolved oxygen important to rivers.

Helpful tools

To set up the Dissolved Oxygen sensor:

1. Remove the blue cap off the sensor
2. Unscrew the metal cap
3. Empty the metal cap into the sink
4. Fill the cap (up to the grip) with “electrode filling solution” not what is in the brown bottle
5. Plug in the sensor
6. Load logger pro
    a. It may take a few minutes for the sensor to load

DO Sensor:

1. Experiment → Calibrate → LabPro DO
2. Calibrate Now
3. Put sensor in the brown bottle (0 mg/L solution)
4. Type “0” in the box; click Keep
5. Rinse and blot dry
6. Fill empty, clear, O-ring bottle ½ full with tap water
7. Put the sensor through the O-ring; put the O-ring on the bottle so that the sensor tip is NOT in the water – it is in the air above the water
8. Type “8.7” in the box; click Keep; click Done
9. Test calibration with both the 0 mg/L solution and the O-ring (between all measurements, rinse and blot dry)