

Dissolved Oxygen Lab Report Rubric

Lab Report Structure	Points Possible	Points Earned
Title – Dissolved Oxygen Changes with Varying Depth, Temperature, and Salinity	1	
Introduction: General background information (2pts per topic) <ul style="list-style-type: none"> • Describe the following: gross primary productivity, net primary productivity, respiration, dissolved oxygen, how NPP is measured, and things that can impact primary productivity. <ul style="list-style-type: none"> • This needs to be a full, complete paragraph and not just a list of vocab words. Come up with an opening sentence and link terms together in a cohesive way. • Purpose of the lab 	6 3	
Experimental Design: All of the following need to be labeled and underlined in the lab notebook <ul style="list-style-type: none"> - Question – How do different abiotic factors impact dissolved oxygen levels in various water samples? - Hypothesis – one for each of the 3 exercises - Variables: Independent variable, Dependent variable, Control, and Constants (at least 2 constants) – for each of the 3 exercises - Safety precautions - Materials and Procedure – put “See lab handout” in your report 	1 3 6 1 1	
Results: All of the following need to be labeled and underlined in the lab notebook with appropriate titles. The class mean data is all you have to fill in unless you directly measured a lab group data. Type a straight line dash in each of the lab group data boxes that you did not directly measure <ul style="list-style-type: none"> • Data Charts Exercise A: <ul style="list-style-type: none"> • Table 1 Temperature / DO data chart: label chart and fill in temp with degrees Celsius units, class mean DO in parts per million (ppm) units, class mean % DO saturation (use Figure 2 in lab handout to determine saturation) • Data Charts Exercise A: <ul style="list-style-type: none"> • Table 2 Salinity / DO data chart: label chart and fill in the salinity with parts per thousand (ppt) units, class mean DO, class mean % DO saturation (use Figure 1 in lab handout and draw an estimated 32 ppt line on the graph, then estimate the % saturation) • Data Charts Exercise C: <ul style="list-style-type: none"> • Table 3 Respiration data chart: label chart, class mean data • Table 4 Lab group data chart: label chart, list type of water that was sampled and DO amounts, complete calculations (if you are in another group that helped on Day 2, then fill in the data chart using the original groups data) • Table 5: Class mean data chart: label chart, DO amounts 	3 3 4 4 4	

<ul style="list-style-type: none"> • Graph Exercise A: <ul style="list-style-type: none"> • Axes labeled, correct scale with units, IV and DV oriented correctly, appropriate title, accurate graph of class mean % saturation versus temperature, and you will not earn points for an accurate graph without a key • Graph Exercise C: <ul style="list-style-type: none"> • Axes labeled, correct scale with units, IV and DV oriented correctly, appropriate title, accurate graph of class mean GPP and NP versus DO (ppm) and you will not earn points for an accurate graph without a key 	7	
<p>Conclusion:</p> <ul style="list-style-type: none"> • Discussion Questions: You can number each question and then just put the answer in your lab report <ul style="list-style-type: none"> 1. Three ways to measure productivity 2. Relationship between oxygen production and assimilation of carbon – use lab handout to find answer and calculate the amount of carbon assimilated based on the lake class mean NPP for 100% light 3. Effect of temperature on DO levels 4. Effect of salinity on DO levels 5. Light intensity with no GPP or no NPP – use your graph 6. Energy use to collect oxygen in mammals versus fish 7. DO levels in streams entering a lake compared to the lake itself 8. DO levels in the morning compared to the afternoon 9. Eutrophication and use of N or P fertilizers 10. Oxygen availability in identical containers with differing amounts of water – there will be an answer for initial and then long term • Paragraph: <ul style="list-style-type: none"> - State whether your 3 hypotheses were correct or not - Discuss your results for the depth of lake exercise in complete sentences - Discuss why the DO levels changed as the depth of the simulated lake increased – (essentially, explain the science behind what you saw in the lab) • Paragraph: <ul style="list-style-type: none"> - Discuss at least 2 possible errors that could have occurred and how that could have impacted your results and include at least one additional questions you could expand on in the future 	3 2 4 4 2 3 3 3 3 4 1 3 8 3	
<p>References – include textbook and any other resources used documented in MLA format</p>		

Total: 100

