Lab Report Rubric

This is what I will use to grade your lab notebooks. Every lab does not require every section/detail!

SECTION	DETAILS	PTS
Title & Table of Contents	***Each lab needs a title. Also include the date you started the lab and your lab partner. ALWAYS update your table of contents!***	/2
Beginning Question(s)	***What questions(s) did I have? What question(s) did the class group decide to use?*** **2 pts** The student provided her own relevant beginning question(s) as well as the beginning question(s) selected by his/her group or the class. **1pt** The student provided either his/her own beginning question(s) or the class beginning question(s), but not both. **0 pts** The student provided no beginning question(s) or a beginning question that was not relevant.	/2
Variables	**1 pt** What variable am I going to selectively manipulate (independent variable)? **1 pt** What variable am I going to measure (dependent variable)? **1 pt** What variable(s) need to be held constant in case they too cause changes in the dependent variable? Is there a control?	/3
Safety Considerations	***What general point(s) can I make about staying safe in this experiment? Look up one MSDS sheet – what are the specific safety concerns for the chemical?*** **2pts** The student provided both a relevant **general** safety statement as well as a more **specific** concern about a particular substance or procedure. **1 pt** The student provided **either** general safety concerns or a specific concern, but not both. **0 pts** The student provided **no** discussion about safety concerns or made a statement that was not relevant.	/2
Procedures	***What is the procedure needed in order to perform this experiment? (In outline form, specific enough for someone else to follow.)*** **3 pts** The procedure is complete, logical, and the instructor can read and follow it. **2 pts** Steps of the procedure are missing but the instructor can still make as sense of it. **1 pts** The procedure does not make sense as written. **0 pts** The procedure is missing.	/3
Data, Observations, Calculations, and Graphs	***What qualitative observations did I make? What quantitative data have I collected, and what calculations did I do to make sense of my data? What balanced equations have I written? Have I prepared a properly labeled and titled graph?*** **TYPICAL POINT VALUES (up to 15 points):** **2 pts** Qualitative Data **3 pts** Quantitative data **1 pt** Units **1 pt** Significant Figures **2 pt** Calculations (no work, no credit) **2 pt** Balanced equations (must include if lab involved chemical reactions) **1 pt** Graph title (**descriptive** title, not just "y vs. x") **2 pt** Graphs (spread out data!) full page **2 pt** Graph labels with units	/15

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Claim(s)	***What can I claim to answer my beginning question(s) or the class beginning question(s)? (one-two statements maximum)*** **4 pts** The student provided his/her own relevant claim to answer either his/her own or the class beginning question(s). **2 pts** The student does not provide a relevant claim to answer either his/her own or the classes' beginning question(s). **0 pts** The student provides no claim at all.	/4
Evidence & Reasoning **NOTE:** This section involves **interpretation** and **evaluation** of data, NOT **summary** and **reiteration**!	***What is my interpretation of my data (graphs, class data, trends, or other analysis) to support my claim(s)? Why did we see the observations that we did in the lab? What did those observations mean? How is my accuracy (<u>compare to known!</u>) and precision? Have I connected the proper evidence with the proper claim?*** **6 pts** The student does an excellent job of providing her own relevant interpretation of the data (graphs, class data, trends or other analysis) to support the claim(s) and connected the proper evidence with the proper claim. **4 pts** The student does an average job of providing his/her own relevant interpretation of the data (graphs, class data, trends or other analysis) to support the claim(s) and connected the proper evidence with the proper claim **OR** does not compare experimental values to accepted values **2 pts** The student does a poor job of providing his/her own relevant interpretation of the data (graphs, class data, trends or other analysis) to support the claim(s) and connected the proper evidence with the proper claim **0 pts** The student provides no interpretation of the data	/6
Errors & Improvements	***Use complete sentences to address the following:*** • **What are at least two sources of error, weakness, or limitations in the lab design?** This refers to those aspects that would require a **redesign** of the lab, rather than simply **redoing** the lab. Unclean glassware and wrong calculations **DO NOT** count! Must include at least two. • **How might I improve the lab design to account for the issues addressed above?** Consider better procedures and/or equipment that would enhance the accuracy and precision.	/4
Reflection	***Address the following questions/concerns in complete sentences:*** • **What new EXPERIMENTAL question(s) do I have, and what new things do I have to think about?** Propose a question for the next stage of experimentation. This question must have **<u>specific</u>**, but **<u>new</u>** independent and dependent variables. • **How does this work tie into concepts about which I have learned in class?** • **Describe a real life application / connection of this laboratory work.**	/6
Presentation	***Am I proud of how I have presented my work?*** The student has carefully done the following. a) Used a **ruler** (or word processor as allowed) to draw tables in which to clearly present both qualitative and quantitative data. b) Used a **ruler** or a computer for graphs. c) Written in lab notebook **neatly** and **legibly IN INK** (no pencil), using a single stroke to cross out mistakes. **2 pts** The student has fulfilled all three of the above **1 pt** The student has fulfilled one or two of the above **0 pts** The student has fulfilled none of the above	/2