Criteria	Not Included	Beginning	Developing	Proficient	Advanced
Format					
Date and Time	Date and time missing	Date and time on a few entries	Date and time on most entries	Date and time on all entries	
Goal for the day	No goal for the day is given	Vague goal is given	Goal is given but success is not easily measured	Specific goals that can be evaluated as complete are given	
Organization	Random phrases with no clear sentence structure	Material is presented in complete sentences but is not very organized	Material is somewhat organized	Clear organization that includes headers, easy to follow with well-aligned plots	Organization is consistent from day-to-day plus extra effort (e.g. links to different sections)
Mistakes	Mistakes are deleted from the lab notebook		Mistakes are struck out but not explained	Mistakes are struck out and an explanation is included	
Data Record					
Original Data	Missing	Numbers are recorded but basic information (what is measured, units, conditions) is missing.	Mostly complete record of data and other relevant information	Original data is recorded, along with units, conditions, and other useful information	
Plots	Data is not plotted	Data is plotted, but basic information (units, labels, fit function) is unclear	Clear plots and fits are included, but could be improved.	Plots of data and fits are included as needed and can be readily understood by the reader.	
Literature Review and Other Resources	No articles or other resources mentioned	Links to some articles and resources used	Links to all articles and resources used	Previous plus some comments on literature	Previous plus extensive comments on the literature
Experimental Design and Measurement					
Experimental design	No description of experiment is given	Cursory description of how experiment was conducted is given.	Brief description of how experiment was conducted is given and partial list of steps.	Full description of how experiment was conducted and steps are well described	Previous items plus reasoning behind why steps were performed in the manner described
Measurement Equipment (Only on first use)	No attempt to examine how the apparatus or measurement tools function.	Attempts to test or calibrate the measurement system, but the understanding is incomplete or incorrect.	Basic operation of the measurement devices is demonstrated, but perhaps a small omission, or could benefit from quantitative comparison to expected behavior.	Notebook includes clear tests/measurements aimed at verifying understanding the operation of the key measurement tools. Good use of diagrams, equations, and comparison to expected behavior.	
Limitations and uncertainty of measurements	No mention of uncertainty of measurement or validity of measurement	Mentions limitations, but only a partial list, or incorrect list. Uncertainties on key quantities missing. No attempt or discussion of how to improve the measurement.	Identifies relevant limitations of the measurement in a qualitative way. Gives estimates of uncertainties. Some attempt or mention of how to improve the measurement, but incomplete or incorrect.	All relevant measurement limitations are identified. Estimates of uncertainties in key measurements are included. Efforts made to identify the key limitation and improve the measurement (if possible).	
Physical Concepts and Calculations					
Mathematical Caclulations	No calculations present	Some scattered calculations with no explanation	Complete calculations but no explanation included	Complete calculations with an explanation of the steps	Previous column plus a description of new insights gained from calculations
Physics background	Does not identify key physics ideas, equations, or principles.	Some of the principles are identified, and partially used to explain the system.	Identified the principles, but incomplete or unclear explanation.	Basic physics ideas or equations are included.	Advanced ideas or equations are included and the student goes above and beyond