

	High Level Achievement - Exemplary - (4pts.)	Mid-Level Achievement - Proficient - (3 pts.)	Low Level Achievement - Marginal - (2 pts.)	Poor (1 pt.)
Introduction ~20%				
Main Topic - States an empirical problem or question (SM1)	<ul style="list-style-type: none"> • Introduction begins with a general observation that clearly conveys why readers should be interested in the topic at hand. • The problem/question is specific and clearly stated. 	<ul style="list-style-type: none"> • The beginning of the introduction is overly technical or overly simplistic for the intended audience. • The problem/question is clear and adequately detailed. 	<ul style="list-style-type: none"> • The main topic is unclear or not fully relevant to the rest of the introduction. • The problem/question is superficially stated. 	<ul style="list-style-type: none"> • The problem/question is unclear or • not stated.
Theory/Background Information (SM2)	<ul style="list-style-type: none"> • Sufficient, relevant background information is summarized clearly and concisely, highlighting the question or unresolved problem being addressed by this study. • Rationale is explicit. 	<ul style="list-style-type: none"> • Relevant background information is included, but some key concepts are not addressed or unnecessary details are provided. • Rationale is understandable, but not well developed. 	<ul style="list-style-type: none"> • Minimal prior research is summarized, or the intro strays far off-course into topics of minimal relevance. • Rationale is vague. 	<ul style="list-style-type: none"> • Rationale is implied or missing.
Develops a hypothesis & Objectives of Current Work (SM3)	<ul style="list-style-type: none"> • Hypothesis is clear and well developed • Objectives are clearly articulated and contain sufficient detail. 	<ul style="list-style-type: none"> • Hypothesis is understandable, but not well developed • Objectives contain minor errors, such as excessive experimental detail or unclear phrasing. 	<ul style="list-style-type: none"> • The hypothesis is vague. • Objectives are inaccurate or contain other major problems. 	<ul style="list-style-type: none"> • Hypothesis is not relevant or • Objectives are not explicitly stated or • No hypothesis is stated

~20%

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Communication - Format of Data Presentation (SM7)				
~15%				
Graphs/Figures	<ul style="list-style-type: none"> • Clear and well sized with accurate and legible axis labels and legend. • Color (or lack thereof) is used appropriately. 	<ul style="list-style-type: none"> • Minor problems such as missing units or legend, or the size is inappropriate. 	<ul style="list-style-type: none"> • Major problems, such as no axes labels, significant size issues (much too big or much too small), illegible fonts, etc. 	<ul style="list-style-type: none"> • No graphs included.
Table	<ul style="list-style-type: none"> • Includes relevant data, meaningful headings, neat alignment, specified units, and clear spacing. 	<ul style="list-style-type: none"> • Minor formatting issues, such as inconsistent data alignment or unclear units. 	<ul style="list-style-type: none"> • Significant problems such as missing data or headings. 	<ul style="list-style-type: none"> • Table not included
Captions	<ul style="list-style-type: none"> • Figures and tables are numbered correctly with a clear and concise title. • Captions concisely identify the data and distinguish among different trials. 	<ul style="list-style-type: none"> • Minor errors, such as overly vague titles, excessive detail about methods, or formatting issues. 	<ul style="list-style-type: none"> • Captions have significant errors, such as no title, or no description of methods. 	<ul style="list-style-type: none"> • No caption included.
Equations	<ul style="list-style-type: none"> • Equations presented in isolated lines, numbered sequentially, with unambiguous symbols defined in nearby text. • Order is sensible, algebra is clear. 	<ul style="list-style-type: none"> • Minor errors, such as lengthy equations incorporated in text, ambiguous symbols, or a confusing order of algebraic progression. 	<ul style="list-style-type: none"> • Major errors, such as incorrect equations, ambiguous symbols, or incorrect algebra. 	<ul style="list-style-type: none"> • No equations presented.

~15%

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Data, Results, & Analysis					~30%
Tests Hypothesis & Rationale (SM4)	<ul style="list-style-type: none"> Data (generated or chosen) skillfully test the hypothesis & Rationale is clearly stated at the beginning of the paragraph. 	<ul style="list-style-type: none"> Data (generated or chosen) appropriately test the hypothesis & Minor errors, such as wordiness or lack of clarity or awkward placement within the paragraph. 	<ul style="list-style-type: none"> Data (generated or chosen) are not sufficient to test the hypothesis & Major errors, such as inaccuracy or confusion 	<ul style="list-style-type: none"> Data (generated or chosen) is inappropriate to test the hypothesis Rationale not provided. 	
Data Description - Analyzes relevant data and Error analysis (SM5)	<ul style="list-style-type: none"> Trends in data are described succinctly and accurately, with an appropriate level of quantification. Interpretations are consistent with the data/scientific reasoning and display an insightful understanding of the data. Data precision and accuracy are assessed quantitatively. Potential sources of error are identified and investigated. 	<ul style="list-style-type: none"> Minor errors, such as imprecise quantitative description. Interpretations are generally consistent with the data/scientific reasoning and display an appropriate understanding of the data. Minor errors in attributing causes of error or in evaluating its magnitude. 	<ul style="list-style-type: none"> The data description is inaccurate or has other major errors. Some interpretations are not consistent with the data/scientific reasoning and display a general understanding of the data. Implausible or vague sources of error are proposed without assessment of their magnitude. 	<ul style="list-style-type: none"> Data not described. Interpretations are not consistent with the data/scientific reasoning and display a lack of understanding of the data. Sources of error not discussed. 	~30%

Conclusion & Discussion (SM6)					~20%
Draws conclusions with an overview of results	<ul style="list-style-type: none"> States a conclusion grounded in and fully supported by the data As the results are reviewed, variability in the data is addressed appropriately, and findings are integrated with each other. 	<ul style="list-style-type: none"> States a conclusion grounded primarily in the data, but with some points based on misinterpretation Overview of results contains one or two minor flaws, such as an excessive focus on sources of experimental error or failure to integrate results with each other. 	<ul style="list-style-type: none"> States a general conclusion supported with minimal data Overview of results contains significant errors, such as the omission of some results or no mention of variability in the data. 	<ul style="list-style-type: none"> States an ambiguous or illogical conclusion no conclusion is stated no mention of results. 	~20%

	High Level Achievement - Exemplary - (4pts.)	Mid-Level Achievement - Proficient - (3 pts.)	Low Level Achievement - Marginal - (2 pts.)	Poor (1 pt.)
Communication - Explanation of data (SM8)				~15%
Organization and Flow	<ul style="list-style-type: none"> The report is well organized and follows a logical train of thought. Transitional phrases and sentences are used to ensure that each idea flows into the next. 	<ul style="list-style-type: none"> The report has minor organizational problems or gaps in logic. Some transitions may be awkward. Understandable with extra effort on the reader's part. 	<ul style="list-style-type: none"> Multiple aspects of the exposition are unclear and do not clearly relate the data to the theory. Extended redundant passages. 	<ul style="list-style-type: none"> The report is disorganized and/or simply presents facts without logical coherence or explanation.
Experimental Procedure	<ul style="list-style-type: none"> An appropriate level of detail is provided; a competent scientist could repeat the experiments described. 	<ul style="list-style-type: none"> Minor errors, such as lack of clarity, slightly excessive detail, or missing a step. 	<ul style="list-style-type: none"> Major errors, such as missing multiple steps of the protocol or extremely excessive detail. 	<ul style="list-style-type: none"> Experiment can't be reproduced from procedure or No procedure included
Writing Style	<ul style="list-style-type: none"> Concise, in the past tense, with a minimal use of personal pronouns. 	<ul style="list-style-type: none"> Minor errors, such as wordiness, or a run-on sentence 	<ul style="list-style-type: none"> Major errors, such as persistent use of first-person pronouns in describing the experimental activity 	<ul style="list-style-type: none"> Persistent colloquial narrative with little or no effort to conform to the required standards.
Grammar and Spelling	<ul style="list-style-type: none"> The report was carefully proofread and contains no or almost no typos. 	<ul style="list-style-type: none"> The report requires more careful proofreading, as it contains some misspellings and/or grammatical errors. 	<ul style="list-style-type: none"> Little evidence of thoughtful proofreading, as the report contains numerous misspellings and/or grammatical errors. 	<ul style="list-style-type: none"> Appears to be a first draft

~15%