

Appendix I: Scientific Writing Paper Rubric

Abstract Section Elements (10 points)	Possible Points	No Credit	Partial Credit	Full Credit	Points Awarded
The abstract is between 200-400 words	(2)				
There is at least 1 sentence representing each of the following sections: Intro, M&M, Results, Discussion	(4)				
The abstract does not contain unnecessary Materials and Methods information	(2)				
The abstract provides the reader with the conclusions of the study	(2)				
Abstract Grade					/10

Title Page Elements (10 points)	Possible Points	No Credit	Partial Credit	Full Credit	Points Awarded
Title Page Content					/7
Title defines the treatment variable	(2)				
Title defines the response variable	(2)				
Title provides the organism , preferable by scientific name	(1)				
Title is explanatory ; Reader can tell what author did without reading the paper; Title not excessively long	(2)				
Title Page Format					/3
Correctly formatted with: <ul style="list-style-type: none"> • Title centered correctly on page 1/3 of the way down page; Author and affiliation are at bottom center, single-spaced • Page typed in black 12 pnt normal Times New Roman font • Title page does not contain header at top • There is no period at the end of the title 	(1) (1) (0.5) (0.5)				
Title Page Grade					/10

Introduction Section Elements (10 points)	Possible Points	No Credit	Partial Credit	Full Credit	Points Awarded
Introduction is in a funnel shape starting with a global view and ending with the hypothesis	(2)				
Introduction describes the context of your work and how it relates to existing work (such as providing new information to the field of study)	(3)				
Introduction clearly states the purpose of your work- why did you do this study?	(2)				
Introduction is clear, concise, well-organized, and provides sufficient detail	(1)				
Introduction contains cited references that support the content	(2)				
Introduction Grade					/10

Materials & Methods Section Elements (10 points)	Possible Points	No Credit	Partial Credit	Full Credit	Points Awarded
Materials and Methods Content					/8
The elements of experimental design are woven throughout the paragraphs and not simply listed	(1)				
Contains all information needed to replicate the experiment, including: <ul style="list-style-type: none"> The scientific name of organism, unless common The basic experimental design (treatments and controls) The concentrations, quantities, and sources for reagents used The precise methods for measuring responses 	(1) (1) (1) (1)				
Does not contain information <i>not</i> needed to complete experiment	(1)				
Lists the statistical test chosen for data analysis	(2)				
Materials and Methods Format					/2
Paper is written from a scientist's perspective , not as a student in a class group/table	(1)				
Paper is entirely in paragraph form (no lists of materials)	(1)				
Materials and Methods Grade					/10

Results Section Elements (10 points)	Possible Points	No Credit	Partial Credit	Full Credit	Points Awarded
Body of Results Content and Format					/6
Results section is present in paragraph form	(1)				
The statistic was correctly chosen and calculated	(1)				
The data was correctly interpreted based on the obtained p-value and a conclusion about the relationship between the treatment and response variables was made	(1)				
Contains all information needed to substantiate your results claim, including: <ul style="list-style-type: none"> Statistic(s) used p-value Mean and SE for each group n value 	(0.5) (0.5) (0.5) (0.5) (0.5)				
Does <i>not</i> contain any intro, discussion, or methods information	(0.5)				
Figure Content and Format					/4
Figures are present for each statistical test and parenthetically referred to within the body of the results	(1)				
Figure axes are correctly labeled and provide units where applicable (both x and y)	(1)				
Each figure contains a legend below the figure that is framed as a complete sentence summarizing the experimental results and basic design/organism information	(1)				
Legend contains all information needed to substantiate your figure, including statistic(s) used, p-value, mean and SE for each group, and n value	(1)				
Results Grade					/10

Discussion Section Elements (10 points)	Possible Points	No Credit	Partial Credit	Full Credit	Points Awarded
Discussion contains an effective interpretation of results (Was the hypothesis supported? Are there alternative interpretations?)	(3)				
Discussion contains an effective comparison of results to the literature (Are the results consistent with other studies on the topic?)	(3)				
Discussion uses the reverse funnel approach, ending with a summary of the overall significance of the work within a more global framework	(2)				
Discussion contains cited references that support the content	(1)				
Discussion DOES NOT point out and discuss flaws in the current study design or methodology	(1)				
Discussion Grade					/10

Reference Section Elements (10 points)	Possible Points	No Credit	Partial Credit	Full Credit	Points Awarded
Reference section contains the assigned number of sources	(2)				
References were appropriately chosen from peer-reviewed journals and supported the paper content	(2)				
Each reference was used and cited correctly within the body of the paper	(2)				
Contains all information needed to FIND the reference again, correctly formatted: <ul style="list-style-type: none"> • Author(s) • Year • Article title • Journal name • Volume • Pages 	(4)				
Reference Grade					/10

Content and Format Elements (30 points)	Possible Points	No Credit	Partial Credit	Full Credit	Points Awarded
Overall Writing Style					/20
Tone and style are appropriate to the audience; Paper displays control, variety, and complexity of prose; Written in a professional manner	(5)				
Paper is generally free of distracting surface errors (editing and proofreading)	(5)				
Each paragraph has a topic sentence (typically the first sentence of each body paragraph) that makes a scaffold on which the content of the paragraph hangs.	(5)				
Writer uses clear transitions that connect sentences and paragraphs (development; organization)	(5)				
Overall Format					/10
Correctly FORMATTED with: <ul style="list-style-type: none"> • 1-inch margins on all sides • 12 pnt Times New Roman font • Double spaced • Stapled together if printed out • Pages are numbered • Pages contain header at top right after title pg • Has sub-headings (in bold) at the top of each section 	(1) (1) (1) (1) (1) (1) (1)				
Entirely written in the PAST TENSE	(3)				
Overall Content and Format Grade					/30
Final Paper Grade					/100

Appendix II: Writing Attitudes Survey

Answer the questions below based on your experiences and feelings about writing in science. Circle the number that best expresses your feeling. Work quickly. If you don't understand a statement, leave it blank. If you understand, but have no strong opinion, circle 3.

(1)strongly disagree (2)disagree (3)neutral (4)agree (5)strongly agree (6)not applicable (7)don't know

- | | |
|---|---------------|
| 1. I am a strong writer. | 1 2 3 4 5 6 7 |
| 2. I am good at writing in general, but not good at science writing. | 1 2 3 4 5 6 7 |
| 3. Writing a science paper is very different than writing a non-science research paper. | 1 2 3 4 5 6 7 |
| 4. I have had a lot of experience writing about science. | 1 2 3 4 5 6 7 |
| 5. I feel like it's important to learn to write effectively about scientific concepts. | 1 2 3 4 5 6 7 |
| 6. Writing and science don't really go together. | 1 2 3 4 5 6 7 |
| 7. I don't like writing. | 1 2 3 4 5 6 7 |
| 8. I like scientific subjects. | 1 2 3 4 5 6 7 |
| 9. I tend to perform better on papers than on exams. | 1 2 3 4 5 6 7 |
| 10. Writing concepts have little relation to what I experience in biology lab. | 1 2 3 4 5 6 7 |
| 11. I can write a good scientific paper. | 1 2 3 4 5 6 7 |
| 12. Scientific writing is boring. | 1 2 3 4 5 6 7 |
| 13. I feel like scientific writing is confusing. | 1 2 3 4 5 6 7 |
| 14. Overall, I feel like I'm a better writer now than at the beginning of the semester. | 1 2 3 4 5 6 7 |
| 15. My science writing skills are stronger now than at the beginning of the semester. | 1 2 3 4 5 6 7 |
| 16. I would enjoy science more if I didn't have to write up the results. | 1 2 3 4 5 6 7 |

I write most effectively by ...

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|--|---------------|
| 17. working on drafts one-on-one with someone. | 1 2 3 4 5 6 7 |
| 18. modeling my papers after an example paper. | 1 2 3 4 5 6 7 |
| 19. watching someone else construct a paper from scratch. | 1 2 3 4 5 6 7 |
| 20. looking at a detailed grading rubric. | 1 2 3 4 5 6 7 |
| 21. participating in small group writing workshops. | 1 2 3 4 5 6 7 |
| 22. listening about to how to place the experimental elements into the paper during a lecture. | 1 2 3 4 5 6 7 |