Reviewer Worksheets: Cover sheet

Article Title: _____

Article Number: _____

Reviewer's name: _____

Date: _____

Reviewer Worksheet: Title and Abstract

Article number: _____

The title of a paper draws in a reader. The abstract lets a reader know if the paper is relevant and worthy of further time investment. An effective abstract communicates what was done, why it was done, and what was discovered. The reader is assumed to be a peer, but should not be assumed to be familiar with the particular project. More generally, the abstract should be written so that any expected reader of the journal can read and understand it. An abstract is usually one short paragraph (about five sentences).

Review the title and abstract. Consider the following, and suggest improvements, if needed.

1. Do you understand why the project was undertaken?
2. Do you understand what methods/techniques were used, at least in a general way?
3. Do you understand what was measured or discovered?
4. Is the abstract concise?
5. Are the title and abstract free from spelling, grammar, and punctuation errors?
6. Most importantly, are the title and abstract logical and clear?

Reviewer Worksheet: Introduction

The introduction provides the background and context for the work being reported. This includes references to the relevant literature. It need not summarize the paper or state the main results. An effective introduction provides sufficient background to understand what the project is and why it was undertaken. The reader is assumed to be a peer, but should not be assumed to be familiar with the particular project. Standard physics concepts need only be stated, while more advanced or specialized concepts need derivations, more detailed explanations, and/or appropriate references.

Review the introduction. Consider the following, and suggest improvements, if needed.

1. Is there a good overview?
2. Do you understand the significance of the project?
3. Do you feel interested or engaged?
4. Do you understand the physics?
5. Do all figures (if any) have appropriate captions?
6. Are there adequate references to relevant work?
7. Is the introduction free from spelling, grammar, and punctuation errors?
8. Most importantly, is it logical and clear?

Reviewer Worksheet: Experimental Section

This is where the authors describe how they conducted their project. An effective Experiment/Procedure Section allows a peer with reasonable skills to replicate the project. The reader is assumed to be a peer, but perhaps unfamiliar with the particular project. Thus, it is not necessary to describe details of standard techniques and apparatus, but specific techniques and apparatus should be described in greater detail.

Review the experimental section. Consider the following, and suggest improvements, if needed.

1. Would you be able to set up the apparatus and repeat the experiment from the information provided?
2. Do you understand the significance of each experimental step?
3. Are relevant schematic diagrams presented with descriptive captions and are they referenced in the text?
4. Is the section free from spelling, grammar, and punctuation errors?
5. Most importantly, is it logical and clear?

Reviewer Worksheet: Results Section

This is the section that describes what the data mean, how it was analyzed, and what conclusions can be drawn from it. An effective Data Analysis/Discussion Section clearly communicates the meaning of the data to the reader. The reader is assumed to be a peer, but should not be assumed to be familiar with the particular project. This is typically one of the longer sections, possibly being several pages long. Discussions of uncertainties should be included.

Review the results section. Consider the following, and suggest improvements, if needed.

1. When presenting calculations and statistical analysis, are non-obvious formulae displayed and explained?
2. Are proper uncertainties associated with experimental results?
3. Are the results compared with the expected results? Are uncertainties considered appropriately?
4. Do all tables, graphs, and figures include descriptive captions? Are they all referenced in the text?
5. Is the section free from spelling, grammar, and punctuation errors?
6. Most importantly, is it logical and clear?

Reviewer Worksheet: Conclusion

An effective conclusion section clearly communicates the main results and their significance. This section recaps this specific project, but it also usually includes a discussion placing the results within a larger context. The reader is assumed to be a peer, but perhaps unfamiliar with the particular project. A good conclusion is understandable even if the reader has skipped much of the experimental and results sections.

Review the conclusion section. Consider the following, and suggest improvements, if needed.

1. Did you understand the significance of this project? Are the broader implications of the results made clear?
2. Are the results presented with proper uncertainties?
3. Are the results compared to the expected results, if any are available?
4. Is the section free from spelling, grammar, and punctuation errors?
5. Most importantly, is it logical and clear?

Reviewer Worksheet: References

You should keep a list of materials (books, journals, websites, etc.) referenced when researching and writing a paper. The Reference Sections makes it possible for the reader to find these source materials, so pertinent information needs to be included in the report (e.g., title, author, volume, page, publisher, year, edition, and update date). The exact format varies from journal to journal, but consistency matters. In most journals, citations are automatically processed to turn them into hyperlinks whenever possible. Accuracy and consistency count.

Here are some general guidelines, based on the *American Journal of Physics*. If you use the LaTeX template, LaTeX will take care of some of these details automatically. If you also use BibTeX, even more details will be handled automatically. More information, and examples, are available at http://ajp.dickinson.edu/Contributors/manFormat.html.

Endnotes must be grouped together at the end of the manuscript, in the same sequence in which they are first referenced in the body of the manuscript. (BibTeX will do this automatically for you. Plain LaTeX will not.)

Within the body of the manuscript, references to endnotes should appear as superscripts placed after any punctuation:

Correct: as shown by Einstein.[3]
Incorrect: as shown by Einstein[3].

To avoid ambiguity, place superscripts where they won't be mistaken for mathematical exponents. References can also appear as online citations, for example, "... as shown by Eq. (5) in Ref. 3, ..." The American Journal of Physics formats citations like this:

Freeman J. Dyson, "Feynman's proof of the Maxwell equations," Am. J. Phys. **58** (3), 209–211 (1990).

Review the references. Consider the following, and suggest improvements, if needed.

1. Are there sufficient references for the project?
2. Are obvious references missing?
3. Are the references appropriate?
4. Is it possible to find the references with the given information?
5. Is the format consistent?