A Guide for Analyzing a Laboratory Report

Introduction:

Does the writer…

1. state at the beginning the learning context for the lab, that is, what scientific concept (theory, principle, procedure, etc.) is supposed to be learned by doing the lab;
2. provide pertinent information about the scientific concept (from the lab manual, the textbook, lecture notes, and other sources recommended by the lab manual or teacher; in more advanced labs the writer may also be expected to cite the findings of previous scientific studies related to the lab);
3.. present the objective(s) for the experimental procedure (what is being done in the experiment, such as to measure something, to test something, to determine something, etc.);
4. define the purpose of the lab (the way the experimental procedure is linked to the learning context);
5. state the hypothesis for the outcomes of lab procedure;
6. explain the scientific reasoning that leads to that hypothesis?

Materials and Methods:

Does the writer…

1. provide a step-by-step description of the laboratory procedure the experimenters followed;
2. give enough details so that a competent researcher in the field could replicate the procedure;
3. successfully avoid giving details that a competent researcher in the field would already know;
4. follow the formatting specified for this course?

Results:

Does the writer…

1. begin with a succinct statement (a sentence or two) summarizing the overall findings of the experiment;
2. present visuals (graphs, tables, drawings) that allow the reader to understand the "story" of the data;
3. present clear verbal findings of the data (in words) that summarize or give the main point of each visual and then provide any other pertinent details about the visual;
4. effectively integrate the visual and the verbal (with proper references to the visuals within the verbal part of the Results)?

Discussion:

Does the writer…

1. begin with a statement as to whether the findings in the Results support or do not support the expected findings stated in the hypothesis;
2. effectively explain the relationship between the hypothesis and the findings;
3. address comparisons to other research and explain those comparisons;

4. present a full and detailed discussion of the outcomes of the procedure, a discussion that answers the questions that an intelligent scientific reader would ask about the experiment?

Conclusion:
Does the writer…
1. explicitly state what the researcher learned by doing the experimental procedure;
2. provide enough details that the reader is convinced of what the researcher learned and the value of the lab experience?

Abstract:
Does the writer…
1. summarize each part of the report in the abstract;
2. provide a good sense of the overall report;
3. summarize the report within the required number of words?