Check List for a Scientific Paper

Title page
___ Is the title informative and indicates specifically what the study is about?
___ Includes full names of all group members, course number, instructor’s name, lab day and time, and the due date of the paper?

Abstract
___ Are the question(s) studied and principle objectives of the investigation stated clearly?
___ Are the method summarized briefly?
___ Are the major findings/results mentioned?
___ Are the major conclusions stated?
___ Is the abstract a single paragraph with no more than 200-250 words and single-spaced?

Introduction
___ Is the question investigated stated clearly?
___ Includes background material that is relevant to the question?
___ Are the hypotheses tested in the study included?
___ Does the reader understand why this question is interesting/important (i.e., how does this study advance knowledge)?
___ Is a brief description of the experimental approach provided?
___ Gives a brief overview of the method of the investigation?
___ States the principle results and conclusions of the investigation?
___ Are in-text citations of references given for all statements of fact or opinion that are not original to the author of the paper?
___ Written in the past tense when referring to this experiment, but uses the present tense when discussing another investigator’s published work?

Material and Methods
___ Are your hypotheses, the reasoning behind your hypotheses and how you tested your hypotheses clearly described?
___ Are the procedures followed during the experiment explained clearly?
___ Are the treatments and controls clearly described?
___ Are the sampling regime, sample sizes and number of trials indicated clearly?
___ Indicates the dependent variables and how and when these variables were measured?
___ Is this section written in the past tense, rather than the present tense? (e.g., avoid lab manual or cook book type instructions)
___ Is the design of the study or experiment clear and complete?
___ Includes brief descriptions of how the data were analyzed (e.g. calculations made, graphing software used, statistical tests used, etc.)
Results

Text

___ Written in the past tense?
___ Are the major results of the study summarized in words?
___ Are trends in the data described?
___ Is the reader referred to the tables and figures?
___ If the data was subjected to a statistical analysis (e.g. Standard deviation, Chi-square test, T-test, etc.), is the statistical analysis used identified and discussed?
___ If the Chi-square test is used, are the values of test statistics, d, and p noted here or in the figures or tables?
___ Are readers referred to tables and figures for the results of statistical analyses?
___ Does this section include interpretation of the results? If so, edit to remove this material. Interpretation belongs in the discussion section.

Figures & Tables

___ Does every table and figure make a unique and important contribution to the paper?
___ Are the same data presented in both a table and a graph? If so, edit to remove one or the other.
___ Are figures and tables easy to read and interpret?
___ Are tables numbered sequentially and located near the paragraph in which they are discussed?
___ Are figures numbered sequentially and located near the paragraph in which they are discussed?
___ Are figure legends located below figures and table captions located above tables?
___ Are figure axes labeled and units of measurements indicated?
___ Are captions and legends informative and sufficiently complete to allow the tables or figures to stand-alone?
___ Do legends, captions, figures, or tables clearly indicate sample sizes and the number of replications?

Discussion

___ Does this section state clearly the major conclusions that can be drawn from the results?
___ Are the results and conclusions put in the context of the hypotheses and other material in the Introduction?
___ Are specific numerical examples from the Results section quoted to substantiate all conclusions?
___ Are the conclusions justified by the results?
___ Are the results critically analyzed for possible errors or bias?
___ Are the results of this study compared with results of similar investigations?
___ If the results of the current investigation differ from other investigations, are possible reasons for these differences offered?
___ Addresses problems that arose in the study and how could they be avoided in the future?
___ Are suggestions for future research provided?
___ Are In-text citations of references given for all statements of fact or opinion that are not original to the author of the paper?
References
___ Does the format used for citations in the text and references in the Reference section follow style described in, “General Format for Writing a Scientific Paper”?
___ Each reference cited includes the names of all authors, title of paper, year of publication, volume number, and page numbers?
___ List includes only those references that were actually read and cited in the paper?

Acknowledgments
___ Gives thanks to individuals that were helpful in carrying out the study and/or completion of the paper and their specific contributions are indicated?

Miscellaneous things to Consider
___ Are section headings used to identify the parts of the report (e.g., Introduction, Materials and Methods, etc.)
___ Is the paper stapled together (no paper clips) ?
___ Were page breaks placed so that headings do not appear on the last line of a page?
___ Was the document spell checked?
___ Was the document proof read?
___ Is the document double-spaced?
___ Are all pages numbered?
___ When you read the text aloud, do the sentences flow smoothly, and can all sentences be read without stopping to draw a breath?
___ Does the paper only contain pertinent information and no “fluff”??
___ Is information repeated unnecessarily?
___ Are the antecedents of pronouns clearly identified?
___ Are “affect” (a verb) and “effect” (a noun) used properly?
___ Is the word “data” treated as a plural noun (e.g., “data were analyzed” not “data was analyzed)?
___ Are Latin names of species underlined or italicized?
___ When a sentence starts with a number, is the number spelled out in words (e.g., “Ten beakers were ...” not “10 beakers were...”)?
___ Do the authors use conjunctions and/or slang (e.g., “The solutions in the control treatment were not heated.” Not, “The solutions in the control treatment weren’t heated.” “Designs such as ours...”, not “Designs like ours...”)?