



## Junior Academy of Science Guidelines for Written Research Paper

First you must do an experimental science investigation. Keep a careful record of everything you do and all your results. Then write your paper.

**PLEASE NOTE: Some of the formatting requirements have been changed so that they are similar to those of the *New Mexico Journal of Science* (NMJoS) since some of the student papers will be eligible for publication in the Journal.**

Technical papers differ from other literary papers in their composition. The following characteristics distinguish science research papers: the abstract; captioned text divided into sections; author-date citations; and a list of references. Papers should be submitted as typed or electronic documents, preferably as Microsoft WORD documents, single spaced throughout, paginated, left aligned and with one-inch margins. A Times New Roman 12-point font is strongly preferred. Limit papers to 4,500 words, excluding Cover page, Title page, Abstract, captions on Figures, Tables, Graphs, and Images, Acknowledgements, Reference section and any Appendices.

**General Format:** Your paper should include the following: Cover Page, Title Page, Abstract, Main Body, Acknowledgments and References. The body of the manuscript should be continuous, text should be left justified, single spaced and if printed should be double sided. Page numbers should appear centered in the bottom margin. Except for the Acknowledgments which should follow the body of the paper, the paper should be written in third person. Tables, figures and images should be in place, clearly labeled and captioned.

**Cover Page:** Title of paper, student's name, grade, school name, school address, student's home address and email address; and the name and address of the teacher or sponsor who endorses the paper.

**Title page:** The title should be centered, fully CAPITALIZED and at the top of the page. Under this line should be the name of the author also centered. The email address of the student and the school should appear at the bottom of this page.

**ABSTRACT:** This should appear on the title page under the student's name. The word ABSTRACT should be CAPITALIZED and centered. The abstract is a brief summary of the content of your paper in 200 words or less. In one or no more than two paragraphs, define the problem, describe the methods you used in your project, summarize the results, and state the conclusions.

**Body of Paper:** The body of the paper is composed of four main sections; Introduction; Methods; Results; and Discussion or Conclusions. Section headings should be centered and fully CAPITALIZED. Subsection headings such as Background, Materials, etc. should be left justified with an initial capital and on their own line.

**INTRODUCTION:** Describe the background for your work; state the problem or questions, and the goals. In describing the work or conclusions of others credit is given by the use of author-date reference citations (Allen, 2013). The complete reference is listed in the References section.

**METHODS:** Summarize what was done, what materials were used, and what instruments were used. Describe the work so someone else could duplicate it.

**RESULTS:** Describe the results obtained, mathematical work or design project. Do not include your raw data in the body of the paper, raw data should be included in the Appendices. Analyze your data, then present them in the form of graphs, tables, or descriptions. Do not draw conclusions in the Results section, reserve that for the Discussion section.

**DISCUSSION:** Describe your conclusions (even the obvious ones) and, if appropriate, discuss suggestions or implications for further work.

**ACKNOWLEDGEMENTS:** Thank individuals who have helped you in any way with your project.

**REFERENCES:** This is the place where you list the complete information about the references you cited in the body of the paper alphabetically by first author. Use initials rather than given names for authors. Cite all references in the text by author and date in chronological (not alphabetical) order. Literature citations in the body of your paper should be in parentheses and contain only the author's last name and the date; for multiple authors include the last name of the first author, et al., and the date. If the author's name is used in the text then just the date in parentheses is sufficient. For example: (Monod, 1949) (Neidhardt et al., 1990) or Monod (1949). If the citation is to a specific page add the page number. Multiple citations should appear in increasing order (Smith 2006, Jones, 2009). Publications by the same author in the same year should be written as (Smith 2000a, 2000b)

- For scientific papers: Monod, J. 1949. The growth of bacterial cultures. *Annu. Rev. Microbiol.* 3:371-394.
- For a book: Neidhardt, F.C, Ingraham, J.L. and. Schaechter, M. 1990. *Physiology of the Bacterial Cell*. Sinauer Associates, Sunderland, MA.
- For a newspaper article: McKay, D. 2000. Arsenic: how much is safe? *Albuquerque Journal*. July 30, 2000, p. A1.
- For a web site: National Research Council. 1999. Arsenic in drinking water. Subcommittee on Arsenic in Drinking Water. <http://www4.nationalacademies.org/news.nsf/isbn/030906337?OpenDocument>.
- For a personal communication: Sanchez, R. 1993. City of Socorro, Water Utilities Division, Socorro, NM. Personal communication.

**Glossary:** Define new terms in the body of your paper and don't include a glossary.