

Writing a Research Paper

The following format is recommended for organizing and writing the research paper:

Title Page: Project Title, Your Full Name & Date Submitted

Purpose/Question: What question will your project be trying to answer? Should be in the format of an If....then statement. (Example: Will changing the temperature of a honey cause it's viscosity to change?)

Variables, Constants and Control: You need to list your Manipulated variable (what you change), your Responding variable (what you measure that changes based on your change) , your constants (what must stay the same) and the control group (what you are comparing the experimental group to).

Research Section: Before you begin your experiment, even before you make your hypothesis you should find out as much as you can about the related topics and underlying scientific principles that will be involved in your project. The purpose of this section is to show that you understand the branch of science this topic falls under, the related science concepts and specific vocabulary. This is a retelling in your own words of what experts know about the topic. Keep track of the sources you use and include them in the works cited page. This section of the paper may be at least 3 to possibly 4 pages long.

Hypothesis: On this page the purpose of the project is stated. The purpose should include what you plan to do, the reason you chose the topic, and what you were hoping to learn. The hypothesis is a written statement that concerns your prediction as to how the manipulated variable will affect the responding variable.

Materials List/Procedures (Experimental Design): The material list should include everything you used to complete your project. The procedures should follow a step by step format. The procedures should be detailed and explain all safety protocols that were followed to protect the experimenter and the community. If chemicals are used discuss the safe handling and disposal of the chemicals. This section of the paper may be one to two pages long.

Data & Graphs: Once the experiment starts all possible data should be collected and recorded in the logbook. For the report, organize this data into charts, tables and graphs. Always the metric system and line graphs (whenever necessary.) This section of the paper may be one or more pages long, depending on the amount of data collected.

Conclusion: Follow a three-paragraph format to ensure the conclusion is thorough. The first paragraph is a discussion of the hypothesis and data. Restate the hypothesis and decide if the data supported this statement or did not support it. Retell the data using the numbers, and/or your analysis of the numbers such as the mean, median or mode. State your

inference concerning why the data turned out the way it did. The second paragraph discusses the problems or concerns you had during the experiment. Include new ideas that came to you that you might use as the basis of a science project in the future, or ways to change this idea to use in the future. The last paragraph states what you learned as the result of this project. Include any observations you made as to how this information can be applied to real life. This is one page.

Works Cited: Using MLA or APA style, document all books, magazines or electronic information sources that you used for your review of literature.