

TOPIC

The subject of interest to be explored. This should be something of <u>student</u> interest and to which he/she relates.

BACKGROUND RESEARCH

Learning about the topic by reading books, newspapers, and magazines/journals OR by interviewing field experts. Information is formatted into a discussion paper of 3-5 pages in length. Formal research writing technique is required. Quotes or paraphrased information must be documented within the text using MLA format. Third person is also required (**NO I, we or you**).

PROBLEM

Specific problem to be investigated. State this in the form of a question. This may be substituted for a "purpose."

HYPOTHESIS

An educated guess presuming the outcome of the experiment. Follows the background research and definition of the problem. Predictions <u>must</u> be numerically based with independent and dependent variables identified.

PROCEDURE

Step by step instructions describing the entire experiment. Steps should be explained so that another person could <u>duplicate</u> the experiment. Any changes must be added as an addendum to the procedure. <u>Metric</u> measurements must be included.

MATERIALS

A complete list of everything used during the experiment including equipment, chemicals, and organisms.

Data Analysis

This is an extremely important part of Science Fair. Consider the following:

 What did the data prove or disprove, numerically according to the hypothesis?



- What fluctuations, standard deviations or variances occurred?
- How did the extraneous variables affect the data?
- What are the trends represented by the graph?
- How is the data related to scientific theory?
- How can numerical discrepancies be explained?

