Research Plan (Sample)

A. Rational: The food industry has been adding additives to food such as vitamins and minerals to enhance the nutritional value of the food and to help individuals who have a low in-take of them. The importance of this research is to see if what labels claim on the content of Vitamin C in orange juice is true and not less with the addition of a calcium additive since some literary research has shown that calcium reduces Vitamin C in the body. The impact a study such as this would have on society is a greater awareness of the validity of nutritional labels.

B. Question: Does a calcium additive to orange juice change its concentration of' Vitamin C?

Or

Problem: To determine **if** added calcium decreases the concentration of Vitamin C in orange juice.

C. Hypothesis: **If** calcium is added to orange juice, **then** the concentration of Vitamin C will decrease.

D. Method: (Use **Future Tense** to describe the details of the method or procedure.)
Refer to *Intel Rules and Guidelines* at *www.societyforscience.org*. Click on "*Student Science"* and go to the "*Rules, Forms, and Resources"*. Click on "*Forms*" and then on the link for the "*Research Plan Instructions"*.

- May be written stepwise, in sections, or in phases.
- Detail the procedure and experimental design that **will be** used very clearly!
- May use diagrams or flow charts, etc.
- **STAY AWAY** from personal pronouns: "I will…We will…Next I will…etc."
- Measurements should be in metric. Include concentrations, quantities and major equipment.
- Remember the items needed if the study pertains to Human Subjects, Vertebrate Animals, Potentially Hazardous Biological Agents and if Hazardous Chemicals, Activities and Devices are involved. Refer to the handout on the Research Plan and the *Intel Rules and Guidelines Book.*
- **Include** a copy a questionnaire, survey, or test if part of the study.
- **Data Analysis**: Include this section after the methods describing the procedures that **will be used** to analyze the data that will be collected to answer the question or hypothesis. **USE** the **Future Tense**. **DO NOT** give results. **DO NOT** give a conclusion. The research plan states **WHAT WILL BE DONE**
- **Discussion of Results and Conclusion:** Discuss the data/results and conclusion that **CAN BE** drawn (future tense).

D. Bibliography: List at least **5** major references from literature review that are applicable to the experiment. The more resources, the better it is for your study.

- **Do not rely only** on Internet resources. Internet resources should be reliable.
  Also use science journals, books, magazines, newspapers, etc.
- Use a proper bibliography format (MLA or AP style or other format) for journals, books, magazines, newspapers and Internet resources.
- Be consistent with the format chosen. Should be alphabetized by authors' last name.

Note: For **Internet resources**, **DO NOT** just give a website!!! Indicate the Author, Title of article, [Online] website, date the article was **posted** or date the article was **retrieved** (downloaded).

(Date **Posted** Example):

Morano, David, "Experimental science projects: An introductory level guide," [Online] http:www.isd77.k12.mn.us/resources/cf/SciProjIntro.html, May 27, 1995.

(Date **Retrieved** Example):

Tindell, J., "Kids Guide to Science Projects," [Online] http:edweb.tusd.k12.az.us/jtindell/check.html., **Retrieved** Sept. 29, 2007.