



Honors Science Project Experimental Design Information

1. Title of the Project

When developing the title of your project ask yourself the following questions:

- What are some of the most astounding facts you have discovered in your research?
- What pieces of information do you feel are essential to your title?

2. Problem

Throughout your project you will be trying to answer a question, solve a particular problem, or improve a design. Your problem must be narrowly focused and suggest how the answer will be investigated.

3. Hypothesis

Based on what you know to date, state a hypothesis regarding your project. A hypothesis is an educated guess about how things work. Your hypothesis must be testable and clearly stated in an acceptable format. It should predict the relationship between independent and dependent variables. Scientific reasoning must be used to clearly justify your hypothesis.

4. Variables and Controls

Correctly identify specific, measurable independent and dependent variables. Accurately identify all conditions to be held constant throughout the experiment.

5. Materials

Remember, you will need approvals for many substances and equipment you wish to work with, so your list needs to be as accurate as possible for your planned methodology at this point in time. Materials with sizes and quantities must be completely presented in vertical list format and should include all appropriate safety concerns.

6. Experimental Design

In great detail, explain how you propose to carry out your experiment. Use your rubric to make sure you cover all necessary requirements. Do not forget to include safety precautions in your design.

7. Bibliography

This is the same, as you will include in your *Literature Review*. At least 5 credible sources are cited using APA format.

Please have all items complete and word-processed by the due date on your Honors Science Project Calendar.

Use the Experimental Design Rubric to guide your through this process.