

Summer Science Assignment
PRSEF – Science Fair Preparation

If you plan to participate in the 2010 Pittsburgh Regional Science and Engineering Fair (PRSEF), it is strongly recommended that you do this summer assignment.

ROUGH timeline:

June – Search for a topic and do background research (your topic should interest you – you'll be working on it for a long time!)

Some good websites to begin your search:

<http://www.all-science-fair-projects.com/>

<http://www.sciencefair-projects.org/>

<http://www.terimore.com/>

http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml

July – Do some preliminary experiments based on the research that you have done.

August – You should have the Purpose, Hypothesis, and Materials section finished and the preliminary Procedure at least outlined.

September – In class, you will continue to polish your Procedure and complete your research plan and all forms.

October – You should be conducting your experiment, remember ALL forms must be complete before you begin your experiment.

November / December – Research should be FINISHED. You should be analyzing your data and beginning to form conclusions.

January – Writing your research paper

February – Turning in your final draft for check – submitting your student registration (we'll do this at school)

March – Completing your tri-fold board and preparing for Judging (practice answering questions, re-reading your research paper and making sure you are clear about your results and conclusions.

March 26 – The Science Fair!!!!!!!!!!!!!!

<http://www.scitechfestival.com/mainsf.asp>

Research plan outline on the next page:

**Woodland Hills Junior High School
PRSEF Research Plan (1A attachment)**

Name:

Project Title:

A. Question Being Addressed (Scientific Question)

B. Hypothesis / Problem / Engineering Goals

C. Materials List

D. Description in detail of method or procedures (Procedures – detail all procedures and experimental design to be used for data collection; Data Analysis – describe the procedures you will use to analyze the data that answers your research question or hypothesis)

E. Bibliography (FIVE major references – science journal articles, books, internet sites) BE CONSISTANT IN YOUR CITATIONS!!)

F. If your project involves:

1. Human subjects research (See instructions on p. 13 of the International Rules):

Detail all procedures, include what the participants are asked to do (see p. 13)

Describe Risk Assessment process and how risks will be minimized

- Include strategies used to protect privacy and confidentiality

Describe Study Sample/Human Subjects

- Number of human subjects and estimated demographics (may include information such as: age, male/female, cultural background breakdown, socio-economic status)

- Recruitment procedures (where and how subjects are recruited)

○ Procedures for obtaining informed consent must include statement about informing potential human subjects about voluntary nature of participation and right to withdraw at any time

Include survey or questionnaires if used, and critically evaluate the risk

- List and describe the measures (questionnaires, surveys) used and how you measure the variable of interest (behavioral

observations, time, length). Attach the questionnaire/survey

- Consider emotional stress and potential consequences

Describe any physical activities or procedures, if used, and critically evaluate the risks

- Type, duration of exercise or physical activity
- Ingestion method, amount, intervals, etc.

2. Vertebrate animal research (See instructions on p.17 of the International Rules):

Briefly discuss **POTENTIAL ALTERNATIVES** and present a detailed justification for use of vertebrate animals

Explain potential impact or contribution this research may have

Detail all procedures to be used

- Include methods used to minimize potential discomfort, distress, pain and injury to the animals during the course of experimentation

- Detailed chemical concentrations and drug dosages

Detail animal numbers, species, strain, sex, age, etc.

- Include justification of the numbers planned for the research

Describe housing and oversight of daily care

Discuss disposition of the animals at the termination of the study

3. Potentially Hazardous Biological Agents (See instructions on p.21 of the International Rules):

Describe Biosafety Level Assessment process and resultant BSL determination

Give source of agent, source of specific cell line, etc.

Detail safety precautions

Discuss methods of disposal

4. Hazardous Chemicals, Activities & Devices (See instructions on p.25 of the International Rules):

Describe Risk Assessment process and results

Detail chemical concentrations and drug dosages

Describe safety precautions and procedures to minimize risk

Discuss methods of disposal