**Citrus County Regional Science and Engineering Fair (RSEF)**

**Research Plan Template**

**Protocol Project – Hazardous Chemicals, Activities or Devices (HCADs)**

Any student wanting to participate in the Citrus RSEF must read and follow the International Science & Engineering Fair(ISEF) Rules, the State Science & Engineering Fair (SSEF) of Florida Rules, and the Citrus RSEF Rules. Read pages 19 – 21 in ISEF Rules and page 4 in FL SSEF Supplement for specific HCADs requirements

 All paperwork needs to be approved prior to any experimentation.

The entire process of the project should be documented in the student’s log-book – from the research of the topic to experimentation to conclusion and application.

The student should research the scientific topic they want to design an experiment on. Be sure to document all sources used to complete this plan. You will need it for the bibliography at the end.

**RATIONALE** (*Explain the reason you want to do this specific project. Include a brief synopsis of the background that supports why you choose this topic. Explain why this research is important scientifically and if applicable, explain any societal impact/application of your research.)*

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**HYPOTHESIS or ENGINEERING GOAL** *(Prediction of your outcome -or- What you are building or improving. How is this based on the rationale described above?)* You only do one of these.

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**PROCEDURE** *(Detail all procedures and experimental design including methods for data collection and all materials. Describe only components of your project. All measurements should be in metric units. BE SPECIFIC ON EVERYTHING) The research plan should include material, chemicals and apparatus used, a clear step by step procedure that can be followed, safety considerations, aseptic techniques and disposal. The plan should include a safety plan and must include a safety reference in the bibliography.*

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**RISK & SAFETY** *(Explain every aspect of the experiment that could be classified as a risk, and explain the precautions you will take to minimize all risks.)*

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**HAZARDOUS CHEMICALS** *(A proper risk assessment of chemicals must include review of*

*the following factors: Toxicity; Reactivity; Flammability and Corrosiveness)*

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**DATA ANALYSIS (***Describe the procedures you will use to analyze the data/results that answer research questions or hypothesis)*

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**DISCUSS OF RESULTS** *(What does the data need to illustrate to prove or dis-prove the hypothesis to determine the conclusion.)*

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**BIBLIOGRAPHY** *(List at least five (5) major references (e.g. science journal articles, books, internet sites) from your literature review. For all projects using chemicals, the bibliography MUST include an MSDS/SDS sheet reference. Include the ISEF Rules and SSEF of Florida Supplemental Rules, for a total of 7 references. Citation style should be in APA or MLA)*

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