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| **Complete this research plan template and submit this plan** **with Forms 1, 1A and 1B.****Please Note:**  **Additional information and forms must be included with the research plan if the project involves humans (Form 4), vertebrates (5A or 5B), hazardous chemicals, activities or devices (HCADs) (Form 3) or potentially hazardous biological agents (PHBAs) (Form 6A). Other forms my also be required, depending on the nature and location of research. Please check with your teacher to make sure all appropriate forms are submitted to obtain approval. Please refer to the “Research Plan-Project Summary Instructions” for detailed guidelines.** |
| **Student Name:**  | **Grade:**  |
| **School:** | **Teacher:** | **Year:**  |
| **Rationale: Include a brief synopsis of the background that supports your research problem. Why is this research important, and what (if any) societal impact might it have?**  |
| **Question/Problem:** |
| **List appropriate variables if they apply to this project.**Independent (manipulated) variable:Dependent (outcome) variable:Controlled variables:Control group: |
| **Engineering Goal/Expected Outcome/Hypothesis:** |
| **Materials: List all materials and tools to be used in experiment, including construction, set-up or data collection/analysis. Attach additional pages as needed.** |

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| **Procedures: Detail all procedures (list format) and experimental design to be used for data collection. If you use a kit or any type of ready-to-use or assemble system, the procedures MUST be detailed here. Safety and disposal procedures should be INTEGRATED into the procedures. Attach additional pages as needed.** |

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| **Data Analysis: Describe the procedures you WILL use to analyze the data/results that answer research questions or hypotheses. Attach additional pages as needed.** |
| **Bibliography: (APA Format) List at least five (5) major references (e.g. science journal articles, books, internet sites) from your literature review. Human, vertebrate, and PHBA studies must include one of the ISEF suggested references on pp 21-23 of the ISEF Rulebook. All bibliographies must include the ISEF rulebook. Attach additional pages as needed.** |

Note: The research plan should NOT include experimental data, results, or conclusions.