

Student name: _____
Outline/Research Plan

Student number: _____
Class/Grade: _____

Outline/Research Plan (15 points)

- I. **Introduction**
 - A. **Background Information/History**- background research on the history of similar experiments or inventions; it is typically presented in the Introduction of the scientific articles.
 - B. **Rationale:** write a brief summary (5 sentences minimum) of the information that discusses your research problem, explain why your research is important and how does it contribute to society. *This information is normally in the introduction of the articles that you used for your literature review homework. (from Research Plan)

- II. **Research:** (from Research Plan)
 - A. Research Question
 - B. Hypothesis
 - C. Independent and Dependent Variables
 - D. Goals of Research: (2-3 goals) (expand if necessary)
 - E. Expected Outcomes (extended version of the hypothesis- what you think will happen in your experiment) (2-3 sentences) (from Research Plan)

- III. **Procedures:** Write step-by-step requirements for the procedures of your experimental design or research.
 - A. EQUIPMENT/MATERIALS (NEW) (list materials needed)
 - B. Steps of the experiment (Minimum of 10 steps)
 - C. Risk and Safety: Identify any potential risks and safety precautions needed.

- IV. **RESULTS**
 - A. Measurements: How are you going to measure the changes you observe in the dependent variable? What tools will you use? What units will you use? How are you going to collect the data?
 - B. Data Analysis: Describe the procedure you will use to analyze your data/results (i.e. graphs, charts, excel, mathematical calculations, photography, video, etc.) (from Research Plan)

- V. Discussion (leave it blank for now)

- VI. Conclusion (leave it blank for now)
 - A. Blank
 - B. Future Directions

- VII. **Bibliography/References:** List the major references from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.
REFER TO BibMe.org for assistance; Microsoft Word also can help you format your sources.
Last name of author, initial first name, (year of publication) Title of article. *Name of Journal, website, etc. (in italics)* page numbers, URL

*Late submissions will incur penalties as stated in the course syllabus.