Laboratory Report Format
9/10

Integrated Science 1-2 @RHS

- **A. Title:** Write a single informative sentence, specific to your experiment, stating the independent and dependent variables that were investigated. Use the *"The effect of (IV) on the (DV)?"* format.

B. Introduction/Purpose: In paragraph form, describe the background, rationale, and purpose of your experimental investigation. If appropriate for the assignment, incorporate and cite information from your literature review. Use the following questions to guide your writing of the introduction.
(one paragraph per bullet)

- What background information/prior knowledge supports the experiment?
- What is the experiment designed to test? Why is it important?
- Based on research, what are the predicted outcomes of the experiment? Explain.

- **C. Hypothesis:** A hypothesis is based on prior knowledge, background research and observations. In one or two sentences, state the anticipated effect of the independent variable on the dependent variable. Use the *"If…then…"* format. Be specific: A good hypothesis is one that can be clearly supported or refuted by your experiment.

- **D. Experimental Design (Materials and Procedures):** Describe how to set-up and conduct the experiment. Include a thorough description of the materials, procedures and methods of data collection. Provide sufficient detail to allow a reader to repeat the study.
  *1. In a numbered list, **list** all materials used.*
  *2. In a numbered list, in sequential order, **list** the experimental procedures.*
  *3. **List** the following: independent variable, levels/treatments of the independent variable, number of trials for each level, dependent variable(s), control and constants of the experiment.*

- **E. Data/Results:**
  Data Tables:
  Data tables must be well-organized, clearly labeled and complete with data, formulas and statistical calculations.
  Graphs:
  Graph(s) of the data must be in a format that appropriately represents the data (i.e. line, bar or pie graph). Graphs must be titled, and axes must be accurately scaled and labeled.

- **F. Discussion:** This is a written interpretation of the data/results for the experiment. The focus of the discussion is on the experimenter's understanding of the results, especially trends (patterns) and anomalies (unexpected results). The variables, constants and experimental design should be fully analyzed, complete with specific data and observations to support the analysis. **[one paragraph for each bullet point below]**

  • Describe the data collected for each IV level/treatment. Making references to actual data tables and graphs, describe how reliable you believe the data is.
  • Identify patterns (trends) and unexpected results (anomalies) in the data. Explain WHY you feel you got the results you did.
  • Compare your findings to other research (in class or literature) and propose explanations for discrepancies.
  • Make suggestions for design and/or procedural improvements, and make recommendations for further study.
  • If the lab includes analysis questions, answer those questions in this section.

- **G. Conclusion:** Briefly restate the purpose of the study and the major findings of the experiment. Reflect on the hypothesis, was it supported or refuted? Briefly explain why this may have been the case.

- **H. Bibliography/References Cited:** Follow the standard citation and bibliographical format of scientific writing to give credit to the author and/or publisher of the researched information.