**REMSS: Sciences Self-Designed Experiment Formal Report Name(s):** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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|  | **EXCELLENT** | **GOOD** | **SATISFACTORY** | **NEEDS IMPROVEMENT** |
| Communication of the Report | Elements are relevant, in an organized manner, are clear and concise. Uses headings and subheadings to visually organize the material. | All required elements are organized and easy to understand. Uses headings and subheadings to visually organize the material. | Some irrelevant material and/or unclear communication of ideas. Format does not help visually organize the material. | Difficult to understand. Presentation of report is unclear. |
| Purpose/ Research Question | The purpose of the lab or the question to be answered during the lab is clearly identified, supported with reputable and specific research that has properly cited references and stated with personal interest or curiosity. | The purpose of the lab or the question to be answered during the lab is identified, supported by some research and/or stated in a somewhat unclear manner. References are cited inconsistently. | The purpose of the lab or the question to be answered during the lab is partially identified. Some research is done but may be irrelevant. No references cited. | The purpose of the lab or the question to be answered during the lab is erroneous or irrelevant. No research has been done. |
| Experimental Hypothesis | Hypothesis is stated in “If…then…because…” format and the predicted result is clear and reasonable supported by the background information provided. | Hypothesized relationship between the variables and the predicted results is reasonable based on general knowledge and observations. | Hypothesized relationship between the variables and the predicted results has been stated, but appears to be based on flawed logic. | No hypothesis has been stated or hypothesis is unrelated to research done. |
| Replicability of Procedure | Procedures appear to be replicable. Steps are outlined sequentially and are adequately detailed. All materials with specificity and setup used in the experiment are clearly and accurately described. | Procedures appear to be replicable. Steps are outlined and are adequately detailed. All materials and the setup used in the experiment are clearly and accurately described. | All steps are outlined, but there is not enough detail to replicate procedures. Most of the materials and the setup used in the experiment are accurately described. | Several steps are not outlined AND there is not enough detail to replicate procedures. Many materials are described inaccurately OR are not described at all |
| Experimental Design | Experimental design is a well-constructed test of the stated hypothesis. All variables (independent, dependent, controlled) are described. Independent variable is tested over a wide range. Procedural steps account for all controlled variables. | Experimental design is adequate to test the hypothesis with a few missing components. All variables (independent, dependent, controlled) are described. Independent variable is tested over a wide range. Procedural steps account for some controlled variables. | Experimental design is relevant to the hypothesis, but is not a complete test. All variables (independent, dependent, controlled) are listed. Independent variable is tested but not over a wide range. Procedural steps do not account for all controlled variables. | Experimental design is not relevant to the hypothesis. Some or all variables (independent, dependent, controlled) not listed. Independent variable is not tested. Procedural steps do not account for all controlled variables. |
| Data | Professional looking and accurate representation of the data (both raw and processed) in tables and/or graphs. Graphs and tables are labelled and titled. Measurement uncertainty/ relative error has been included. | Organization of the data in tables and/or graphs. Graphs and tables are labelled and titled. Some consideration of measurement uncertainty and impact of error. | Accurate representation of the data is in written form but no graphs or tables are presented. No measurement uncertainty or measurement error is included. | Data is poorly organized.  Inadequate quantitative data to answer research question. |
| Data Processing (calculations and graphs) | All types of calculations are shown and the results are correct and labelled appropriately.  Clear, accurate, detailed graph is included and make the experiment easier to understand. | Some calculations are shown and the results are correct and labelled appropriately.  Graph is included, is labelled neatly, slope has been calculated and is accurate. | Some calculations are shown and the results labelled appropriately.  Graph is included and is labelled. Equation of line if appropriate is not included. | No calculations are shown OR results are inaccurate or mislabelled.  Insufficient data processing done to answer the research question. |
| Analysis | Processed data (graph) is correctly interpreted so that a completely valid and detailed conclusion to the research question can be reached. | Processed data (graph) is correctly interpreted so that a completely valid conclusion to the research question can be reached. | Processed data (graph) is interpreted so that a limited conclusion to the research question can be reached. | Processed data (graph) is incorrectly or insufficiently interpreted. |
| Conclusion | Conclusion includes whether the findings supported the hypothesis, with the use of scientific theory, what was learned from the experiment. and some future applications to real life situations. | Conclusion includes whether the findings supported the hypothesis and what was learned from the experiment with some use of scientific theory. | Conclusion includes what was learned from the experiment without the use of related scientific theory. | Conclusion shows little effort and reflection OR is not supported by data. No mention of related scientific theory. |
| Self-Reflection | Experimental errors, their possible effects, and ways to reduce errors are discussed. Discussion of all methods that should be changed to improve your results. | Experimental errors and their possible effects are discussed. Description of most of the methods that should be changed to improve your results. | Experimental errors are mentioned. The methods that should be changed to improve your results are mentioned. | There is little to no discussion of errors. Little to no mention of improvements. |