**Directions for Writing A Lab Report**

1. **Introduction/Abstract**

* Thorough research on the topic is shown
* Explanation on how the research relates to experiment
* How the experiment will be conducted is briefly explained, along with the importance of this topic/experiment
* Written in third person

1. **Problem Statement/Hypothesis**

* Clearly identify the problem that the lab procedure should answer. How does the (independent variable) affect the (dependent variable)?
* Clearly identify the independent and dependent variables

Independent Variable = condition being changed by scientist

Dependent Variable = condition being measured (unknown)

* A hypothesis (if applicable) is an educated statement that answers the question you are studying
* It is your own prediction as to what will occur and why you think it will occur
* Make your hypothesis before you begin the experiment under investigation, it should be written as an “If…then…because” statement

1. **Materials**

* Include a list of materials and supplies used in the experiment
* Sizes, amounts and quantities should be included

1. **Procedure**

* In numbered or bulleted steps, list what is to be done in the correct sequence
* A procedure should be clear, complete and replicable
* Identify all constants and controls
* Include any drawings and/or diagrams as needed

1. **Results/Data**

* Any information collected while doing the procedure
* Includes measurements as well as observations
* Results should be recorded in tables. Data should be displayed in graphs (when appropriate)
* All tables and graphs should be titles, labels, metric units, ect.
* Refer to *Required Elements of a Graph/Table* handout

1. **Conclusion**

* The conclusion should be paragraph format.
* Restate purpose and discuss the hypothesis. (Was the hypothesis correct or incorrect?)
* Support or refute the conclusion by citing key data
* Validity Statement (second paragraph.)
* Identify uncontrolled variables that could have affected and created uncertainty in results.
* Discuss possible sources of error in experimental design and procedure.

*Note:*

*The lab report should always be written in 3rd person. Do not use “I”, “We” or “You.”*

*The overall appearance of your laboratory report should be neat.*

*Make sure you have all parts of the lab report completed before submitted it.*

*Be responsible! Keep your own record of data in case your lab partner is absent.*

*Submit your OWN lab report! The conclusion and validity statement should be yours alone. It is YOUR responsibility to finish labs that you do not finish during class time.*

Points will be deducted from the grade if there is replication amongst lab partners.

**Science Fair Lab Report Rubric**

**Name:**

**Lab Title:**

**Science Class:**

**Introduce the Experiment**

|  |  |  |
| --- | --- | --- |
| 4 | 4 | Background research is clearly shown. Experiment is introduced to explain the design and why it is important. |
| 3 | 3 | Background research is shown. Experimental design is explained. Importance may be missing. |
| 2 | 2 | Background research is very limited. Experimental design is explained. Importance is missing. |
| 1 | 1 | Background research is not shown. Experimental design is limited. Importance is missing. |

**Define the Problem**

|  |  |  |
| --- | --- | --- |
| 4 | 4 | Problem is stated correctly. Both independent and dependent variables are stated correctly. Hypothesis is correctly stated when applicable. |
| 3 | 3 | Problem is stated correctly. Only one variable is correctly stated. OR both variables are identified correctly. The problem is poorly stated. |
| 2 | 2 | Problem is poorly stated or missing. Dependent and independent variables are incorrectly identified or missing. |
| 1 | 1 | Problem is not stated. Dependent and independent variables are not identified. |

**Design the Experiment**

|  |  |  |
| --- | --- | --- |
| 4 | 4 | The procedure matches the stated problem. The procedure is clear, complete and replicable (easily repeated.) Variables are controlled. Materials are listed. |
| 3 | 3 | The procedure generally matches the stated problem. The procedures are generally complete. Control of variables is attempted. Minor modifications or clarifications may be needed. Some materials may be missing |
| 2 | 2 | The procedure does not match the stated problem. The procedure is incomplete or missing. All materials are missing |
| 1 | 1 | The procedure does not match the stated problem. The procedure is missing. All materials are missing. |

**Present and Analyze Data**

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| --- | --- | --- |
| 4 | 4 | Data are well organized and presented in an appropriate manner. This will include tables and graphs. |
| 3 | 3 | Data are organized and presented in an appropriate manner. Minor errors or omissions maybe present. |
| 2 | 2 | Data are poorly organized or presented in an inappropriate manner. Major omissions or errors may be present. Data may be missing. |
| 1 | 1 | No data is present |

**Draw Conclusions (2X)**

|  |  |  |
| --- | --- | --- |
| 4 | 4 | Conclusions are related to the stated problem and fully supported by the data. Validity of conclusions is thoroughly discussed. |
| 3 | 3 | Conclusions are generally related to the stated problem and supported by data. Minor errors in interpretation of results may be present. Discussion of validity is limited. |
| 2 | 2 | Conclusions are related to the stated problem and supported by data to a limited extent. Major errors in interpretation of results to the stated problem may be present. There is little or no discussion of validity of conclusions. Conclusions may be supported by data or may be missing entirely. |
| 1 | 1 | No conclusions are drawn. |

**Student (Pencil)/Teacher(Pen) Remarks**

|  |  |  |
| --- | --- | --- |
| **Excellent** | **Proficient** | **Unsatisfactory** |
| 24 pts. (100%) | 19 pts. (80%) | 14 pts. (58%) |
| 23 pts. (95%) | 18 pts. (75%) | 13 pts. (54%) |
| 22 pts. (92%) | 17 pts. (71%) | 12 pts. (50%) |
| 21 pts. (88%) | 16 pts. (67%) | 11 pts. (46%) |
| 20 pts. (83%) | 15 pts. (63%) | 10 pts. (42%) |

Score:\_\_\_\_\_\_\_\_\_\_\_/24 point.