

Experimental Design Rubric for B/C 2010

1. Statement of problem (2 Points)
 - Not a yes/no question
 - Independent and dependent variables included
 - Problem is clearly testable
 - Response is written in a clear and concise Manner
2. Hypothesis (4 points)
 - Statement predicts a relationship or trend
 - Statement gives specific direction to the predictions(s): A stand is taken.
 - Prediction includes both independent and dependent variables
 - A rationale is given for the hypothesis.
3. Variables
 - Independent Variable (IV) (3 Points)
 - IV correctly identified
 - IV operationally defined
 - At least three levels of IV given
 - Dependent Variable (DV) (3 points)
 - (2) DV correctly identified
 - DV operationally defined
 - Controlled Variables (CV) (4 points)
 - One CV correctly identified
 - Two CVs correctly identified
 - Three CVs correctly identified
 - Four CVs correctly identified
4. Experimental Control: (Standard of Comparison-SOC) (2 points)
 - SOC correctly identified
 - The SOC makes logical sense for the experiment
 - Reason given for selection of SOC
5. Materials (3 points)
 - All materials used are listed
 - All materials used are listed properly (no extras)
 - Materials listed separately from procedure
6. Procedure: Including Diagrams (6 points)
 - Procedure well organized
 - Procedure is in a logical sequence
 - (2) Enough information is given so another could repeat procedure
 - Diagrams used
 - Repeated trials
7. Qualitative Observations (4 points)
 - Observations about results given
 - Observations about procedure/deviations
 - Observations about results/experiment not directly relating to DV
 - Observations given throughout the course of the experiment.
8. Quantitative Data - Data Table (6 points)
 - All raw data is given
 - All data has units
 - Condensed table with most important data included
 - Table(s) labeled properly
 - Example calculations are given
 - All data reported using correct significant figures C Division only**
9. Graph(s) (6 points)
 - Appropriate type of graph used
 - Graph has title
 - Graph labeled properly (axes/series)
 - Units included
 - Appropriate scale used
10. Statistics B Division – 2 points
 - Average, median or mode (2 points)
 - Division C + 4 more points
 - Measure of central tendency
 - Measure of variation
 - Regression analysis
 - Other appropriate statistic used
11. Analysis and interpretation of data (4 points)
 - All statements must be supported by the data.**
 - All data discussed and interpreted
 - Unusual data points commented on
 - Trends in data explained and interpreted
 - Enough detail is given to understand data
12. Possible Experimental Errors (3 points)
 - Possible reasons for errors are given
 - Important info about data collection given
 - Effect errors had on data discussed
13. Conclusion (4 points)
 - Hypothesis is evaluated according to data
 - Hypothesis is re-stated
 - Reasons** to accept/reject hypothesis given
 - All statements are supported by the data
14. Applications and Recommendations for Further Use (4 points)
 - Suggestions for improvement of specific experiment are given
 - Suggestion for other ways to look at hypothesis given
 - Suggestions for future experiments given
 - Practical application(s) of experiment given