EXPERIMENTAL DESIGN B CHECKLIST

See General Rules, Eye Protection & other Policies on www.soinc.org as they apply to every event.

2027 Experimental Design Division B Checklist

(Note: The maximum points available for each task are shown. Consider using the electronic checklist on www.soinc.org)

Shaded cells are included only at the State/National levels.

Part I. Design and Construction of the Experiment (51 pts)

A. Statement of the Problem (2 pts)

2 1 0	Statement addresses the experiment including variables (not a yes/no question)

B. Hypothesis (6 pts)

2 1 0	Statement predicts a relationship between the IV & DV
2 1 0	Statement gives specific direction to the prediction
2 1 0	A rationale is given for the hypothesis

C. Variables (15 pts)

a. Independent (IV) and Dependent (DV) Variables

3 2 1 0	IV correctly identified and operationally defined
3 2 1 0	Levels of IV given
3 2 1 0	DV correctly identified and operationally defined

b. Controlled Variables (CV)

2 1 0	1st CV correctly identified and relevant
2 1 0	2nd CV correctly identified and relevant
2 1 0	3rd CV correctly identified and relevant

D. Materials (4 pts)

2 1 0	All materials used are listed and quantified
2 1 0	No unused or extra materials are listed

E. Procedure and Set-Up Diagrams (13 pts)

2 1 0	Procedure is presented in list form
2 1 0	Procedure is in a logical sequence
2 1 0	Steps for repeated trials are included
2 1 0	Multiple diagrams of setup are provided
2 1 0	All diagrams are appropriately labeled
3 2 1 0	Procedure detailed enough to repeat experiment accurately

F. Qualitative Observations (6 pts)

2 1 0	Observations about set-up provided
2 1 0	Observations about the procedure provided
2 1 0	Observations about the results provided

G. Quantitative Data - Data Table (5 pts)

3 2 1 0	All raw data provided with units and labels
2 1 0	Condensed data table with only the data to be graphed is provided, one sample calculation per derived variable

Part II. Data, Analysis, and Conclusions (55/67 pts)

H. Graph (12 pts)

4 3 2 1 0	Appropriate graph is provided
4 3 2 1 0	Graph properly titled and labeled
4 3 2 1 0	Appropriate scale and units included

I. Statistics (9/11 pts)

3 2 1 0	Statistics of Central Tendency used
2 1 0	One example calculation is given for each statistic with units, done on level of IV
2 1 0	Statistics of variation are included
2 1 0	One example calculation is given for each statistic with units, done on level of IV
2 1 0	Two additional accurately calculated statistics included

J. Possible Experimental Errors (6 pts)

3 2 1 0	1st specific error is identified & effect on results discussed
3 2 1 0	2nd specific error is identified & effect on results discussed

K. Analysis of Claim/Evidence/Reason (CER) (12/18 pts)

2 1 0	Data trend claim completed logically
2 1 0	Data trend evidence completed logically
2 1 0	Data trend reasoning completed logically
2 1 0	Outliers claim completed logically
2 1 0	Outliers evidence completed logically
2 1 0	Outliers reasoning completed logically
2 1 0	Variation claim completed logically
2 1 0	Variation evidence completed logically
2 1 0	Variation reasoning completed logically

L. Conclusion (8 pts)

2 1 0	Hypothesis is restated
2 1 0	Hypothesis claim completed logically
2 1 0	Hypothesis evidence completed logically
2 1 0	Hypothesis reasoning completed logically

M. Applications and Recommendations for Further Use (8/12 pts)

4 3 2 1 0	Suggestions to improve experiment with rationale provided
4 3 2 1 0	Suggestions for practical applications of experiment provided
4 3 2 1 0	Suggestions for future experiments are provided

# of 4s	# of 3s	# of 2s	# of 1s	# of 4s	# of 3s	# of 2s	# of 1s

Team Name

Team Number

Tiebreakers in Order:
K: CER
E: Procedure
C: Variables
G: Data Table
H: Graph

Multipliers:
0.95 Non Clean Up
Up to 0.75 - Off Topic
0.25 - Non Lab/Fake/Falsified Data

Total Score

Multiplier

Final Score

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