

Scoring Rubric for Investigative Labs

Experiment #: _____ Title: _____ Name: _____

Rating	I: Testable Hypothesis	II: Procedure	III: Data	IV: Calculations
Excellent 4	<ul style="list-style-type: none"> Hypothesis is a clear and concise statement Hypothesis is directly related to the problem Hypothesis is testable Hypothesis is in "If...then..." format 	<ul style="list-style-type: none"> All critical steps included Procedure contains enough detail to be replicated by another Procedure is clear and concise; does not sacrifice important details 	<ul style="list-style-type: none"> All quantitative data has correct units Data are clearly and logically organized (e.g. data table) Data are recorded to the appropriate precision for the device used (i.e. attention is paid to significant figures) Appropriate detail is present in qualitative observations 	<ul style="list-style-type: none"> Correct formulas are used All work is performed correctly and shown for calculations Correct units are present
Acceptable 3	<ul style="list-style-type: none"> Hypothesis is clear but wordy, or concise but vague Hypothesis does relate to the problem Hypothesis is testable Hypothesis is worded to include an if or a then statement, but not both 	<ul style="list-style-type: none"> Most of the critical steps are included. Procedure contains most of the details needed to be replicated by another Procedure is mostly clear and concise. Most important details are present 	<ul style="list-style-type: none"> Most quantitative data has correct units. Data are organized logically. Few or no errors in recorded data. Most details for qualitative observations are sufficient. 	<ul style="list-style-type: none"> Most formulas are correct Most of the work is performed correctly and shown for calculations Correct units are present
*Needs Some Improvement 2	<ul style="list-style-type: none"> Hypothesis is incomplete or vague and wordy Hypothesis may relate to a problem Hypothesis is not testable Hypothesis is worded to indicate a variable being tested 	<ul style="list-style-type: none"> Some critical steps are missing. Procedure is missing some of the detail needed to replicate Some of the procedure is unclear and/or wordy. 	<ul style="list-style-type: none"> Some errors in qualitative data are apparent. Some pieces of data are recorded in an unclear manner. Details for qualitative observations are missing some details or are irrelevant. 	<ul style="list-style-type: none"> Very few formulas are used correctly Very little work is performed correctly and shown for calculations Very few units are present
*Requires Significant Improvement 1	<ul style="list-style-type: none"> Hypothesis is missing or does not relate to the problem. Hypothesis is not testable Hypothesis does not indicate the variable being tested 	<ul style="list-style-type: none"> Most critical steps are missing Procedure lacks sufficient detail to be replicated Most of the procedure is unclear and wordy; important details are missing 	<ul style="list-style-type: none"> Units missing from quantitative data Data are unclear, not logically organized or illegible Data are recorded with little or no precision Qualitative observations are missing or without detail 	<ul style="list-style-type: none"> Incorrect formulas are applied or formulas are absent Work is not present or is grossly incorrect Units are absent or incorrect
Self-Assessment				

*Students scoring in this range for a domain are strongly encouraged to schedule a conference with the instructor.

Note: Labs submitted without self-assessments will not be accepted.

Scores for assigned questions

1	2	3	4	5	6
/	/	/	/	/	/

Final Score:

Rating	V: Analysis and Evaluation of Error	VI: Conclusion, Discussion and Recommendations	VII: Lab Protocols	VIII: Grammar, Mechanics and Form
Excellent 4	<ul style="list-style-type: none"> Appropriate type of graph is used All DSTP criteria are met Results are complete and clearly stated Appropriate discussion of discrepancies(errors) is present 	<ul style="list-style-type: none"> Complete explanation of hypotheses or objectives. Terminology is appropriate Effective evaluation and in-depth analysis of the concepts covered in lab Discussion is clearly connected to other content Recommendation for future study and improvement 	<ul style="list-style-type: none"> All equipment was used correctly and appropriate for the task The students worked effectively as a group and shared responsibilities equally There were no safety infractions 	<ul style="list-style-type: none"> No mistakes in spelling, grammar or punctuation Responses are legible and in complete sentences Submitted work is clean and in good condition Lab components are in the correct sequence
Acceptable 3	<ul style="list-style-type: none"> Graph used was correct type and correctly graphed. However, 1 label is missing or a label is incomplete (ex. title, x-axis, y-axis). Most of the DSTP criteria are met. Most of the results are included and stated clearly. Most if not all discrepancies are stated but not discussed in detail. 	<ul style="list-style-type: none"> Explanation of hypotheses adequate, mostly correct. Some terminology used correctly, but limited in scope. Evaluation, analysis, and connections satisfactory. Connections to purpose/objectives are present, but not complete. Recommendations satisfactory, but limited in application for improvement. 	<ul style="list-style-type: none"> Some equipment used was inappropriate for the task The group worked effectively, but more work was placed on one individual. There were no safety infractions 	<ul style="list-style-type: none"> There are few mistakes in spelling, grammar or punctuation Most responses are legible and in complete sentences Submitted work is clean and in good condition Lab components are in the correct sequence
*Needs Improvement 2	<ul style="list-style-type: none"> Graph is correct type and coordinates placed correctly, but 2 or more labels are missing or incorrect. Meets some of the DSTP criteria. A few of the most obvious results are included but are not written clearly enough to sufficiently support the conclusion. Discrepancies are mentioned but not discussed. 	<ul style="list-style-type: none"> Explanation of hypotheses there, but incomplete or has gaps. Some terminology used correctly, but not scientifically. Evaluation, analysis, and connections present but limited or partially correct. Connections to purpose/objectives are unclear. Recommendations minimal and/or vague as to use for improvement. 	<ul style="list-style-type: none"> Some equipment was damaged A student was ineffective as a member of a group; significantly more responsibility was placed on one individual than the other There were no safety infractions 	<ul style="list-style-type: none"> There are many mistakes in spelling, grammar or punctuation Responses are barely legible or some are incomplete sentences Submitted work slightly tattered, wrinkled and / or has torn or ragged edges One or two lab components are in the wrong sequence
*Requires Significant Improvement 1	<ul style="list-style-type: none"> Graph used is inappropriate for the data or is absent None or few DSTP criteria are met Results are absent No discrepancies are mentioned or discussed 	<ul style="list-style-type: none"> Explanation of hypothesis is missing or incomplete Terminology is inappropriate Evaluation, analysis and connections are missing, inadequate or inappropriate Connections to concepts are absent There is no recommendation for future study or improvement 	<ul style="list-style-type: none"> Multiple instances of damaged equipment Responsibility for completing lab tasks was placed solely on a single individual or group members quarreled There was a safety infraction <i>Severity of infraction may override this scoring rubric and result in removal from class and / or other appropriate disciplinary action.</i> 	<ul style="list-style-type: none"> Work shows significant errors in grammar, punctuation and / or spelling errors Responses are illegible and / or sentence fragments Lab is sloppy or disorganized; it appears that the lab was delivered to the teacher by being shot out of a cannon The components of the lab are in the incorrect order
Self-Assessment				

*Students scoring in this range for a criterion are strongly encouraged to schedule a conference with the instructor.

Note: Labs submitted without self-assessments will not be accepted.