

Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

No evidence (0 points)	Approaches goal (1 point)	Meets goal (2 points)	Exceeds goal (3 points)
1. <b>Hypothesis generation:</b> Generates a clearly stated hypothesis that is interesting and derives logically from background information.			
0	1	2	3
2. <b>Experimental design:</b> Designs an experiment that will test the hypothesis effectively, using quantitative data and appropriate controls.			
0	1	2	3
3. <b>Accuracy and Precision:</b> Demonstrates the ability to make accurate measurements to appropriate precision and to judge the reasonableness of the results.			
0	1	2	3
4. <b>Calculations:</b> Can manipulate data as needed using mathematics and mathematical conversions.			
0	1	2	3
5. <b>Analysis:</b> Summarizes data effectively and accurately, draws appropriate conclusions and evaluates their strength.			
0	1	2	3
6. <b>Laboratory Report:</b> Communicates conclusions in a complete, clear, and organized way.			
0	1	2	3

**Scoring Guidelines:**

- **No evidence** (0 pts): There is no evidence of achieving this goal. Either the necessary work or information was absent, or if present, of such poor quality that it is not clear that any attempt was made towards achieving this goal.
- **Approaches goal** (1 pt): The work was performed in a manner consistent with the goal, but it is unclear, partially incorrect, or implies or reflects misunderstandings.
- **Meets goal** (2 pts): The work was performed with no substantial errors or misunderstanding and contributes to a satisfactory experimental test, but may be simplistic, literal or descriptive rather than showing strong analysis, integration, sophistication or rigor.
- **Exceeds goal** (3 pts): Performs the task at the level one would expect of an experienced researcher. The information is presented without errors or misunderstanding, in a comprehensive and integrated fashion, and demonstrates sophisticated and rigorous analysis.

\*\*\*To receive an A on a project, I would expect scores of 2 or 3 in all categories. Note that the numerical scale covers a range that essentially goes from “completely incapable” to “PhD level researcher”. You don’t have to be a PhD level researcher to get an A. In other words, I don’t put the raw scores on my grade sheet -- all 2’s is not 12 out of 18, it corresponds to someone who is meeting all the goals and is thus sufficient for an A or B.