

Explanation/Points to Consider Regarding Honors Project Formal Lab Report

- I will happily review any student's lab report with them to explain why they received the score they did.
- Ideally, these lab reports would have been graded before the final exam. However, the lab and its associated content are not taught until shortly after the quarter ends.
 - The lab was performed on April 5, 2019. The due date was set for April 26, 2019 to give the students ample time to put in the work for an assignment that counted 85 formal points.
 - Many of these labs were 5 – 6 pages long and there were other assignments (including tests and quizzes) that needed to be graded at the same time.
- It is true that the students received little direct guidance from me regarding this lab report. However, it is the expectation of an honors level class that there will be independent work and that students are expected to form connections between what was learned in class and experiments.
 - A document very clearly outlining the expectations of the lab report was uploaded to the website and shown to the students shortly after the experiment was complete. Here is a [link](#) to that [document](#).
- With many lab reports, points were lost for not following directions.
- Students will complete this sort of report for every single lab they do in college. While teaching content, the teachers are also trying to prepare students to be successful in life beyond high school.
- I know that many students will be disappointed with their grade on the report, but clear instructions were given and the report was graded as objectively as possible using the following [rubric](#).
- One of the places on the report where many students was in the error analysis section. This is an aspect of experiments (especially in the math-based physical sciences) that students struggle with as it involves using critical thinking skills and analyzing their own behavior.
 - There were many opportunities for error in this experiment, some of which I list below so that you and the student can understand the expectations when it comes to error analysis.
 - Some students did identify these errors, but most did not discuss how their results would have been affected.
 - Flask was not clean and dry to start with. (Again, some students had the right idea and identified this as an error source, but their discussion of how it affected their results was lacking.)
 - Some sodium carbonate never went into the flask during the transfer from the weighing paper to the flask. (It was spilled or left stuck to the paper.)
 - Adding too much or too little HCl. Again, most students who identified this error did not discuss how their calculations would have been affected.
 - Along with adding too much or too little HCl, the idea that some students had that not all of the sodium carbonate reacted. This error was given partial credit even though students were told in the lab procedure when to stop adding HCl to the flask. (It was not an exact measurement. Instead, students were told what to look for to know that all sodium carbonate was reacted.)
 - Some of the product could have spilled when it was still dissolved in water.
 - One of the largest sources of error was not boiling off all of the water. Like before, if a student did identify this error, the discussion regarding their calculations was lacking.
 - When students were boiling off the water, as the water went away, the salt that was left began to heat up and pop. Some of these "pops" of salt could have escaped from the flask, which would have caused the yield of NaCl to be less.

Please consider these as you review his or her lab with your child.

Thank you,

Christa Duncan