

## Inquiry Work Sample

This lab will serve two purposes. 1) It will be assessed using the Oregon Department of Education's Inquiry Scoring Guide and be recorded as your work sample, and 2) it will be assessed as your stoichiometry lab grade. You may receive only minimal help from any teacher. You may discuss your work with other students, but you must each do your own work, including the actual laboratory setup and collection of data. You should collect data and background information in your lab book, but the final report will be word processed or neatly handwritten and submitted as an electronic document or hard copy on 8 X 11.5 " paper.

Due date: NO LATER than Friday, April 20, regardless of the day you have class.

SCORING: See the state rubric for Inquiry Work Samples, attached. Note that labs, as you have learned to write them this year from our criteria sheets, already follow the scoring guide.

Your classroom grade will be based on our usual lab scoring criteria:

- MSDS (when possible) Safety
- Introduction with problem, background, terms written in paragraphs, what you will do and expect to find and how you will know that you have found it, and a hypothesis.
- Materials
- Procedure
- Data table and data that is accurate and precise (sig figs)
- Analysis of data including presentation of data in a meaningful format
- Calculations written in 3 steps using units and sig figs
- Analysis of *experimental* error
- Conclusion that restates the problem, states the solution, and makes a concluding statement.
- Complete citations for reference material used (APA preferred)
- Formatting

You may choose any one of the following 3 questions to investigate:

1. What year did the composition of a penny change?
2. What is the thickness of a sheet of commercial aluminum foil?
3. Given 6.00 grams of an unknown solid figure out a way to identify the solid. The solid will be one of the following: barium carbonate, calcium carbonate, lithium carbonate, potassium carbonate, sodium carbonate, strontium carbonate.

Develop a plan to collect data to answer your question. While you may, for some questions, be able to score a 5-6 on each section of the state scoring rubric, you will receive no higher than a C unless you use stoichiometry as part of your data to at least support your conclusion. You should include:

- Balanced equations
- Determination of actual yield
- Composition stoichiometry
- Theoretical and percent yield