

## The Chemistry Lab Report

Your lab report is a written summary of the results of your observations or experiments. It may be assigned as a “formal” or “informal” lab report format.

### Informal Lab Report

The exact requirements will vary from lab to lab, and will be indicated by your teacher. Often, it will be just a data table of your results with your calculations. However, like all written lab reports, it must be neat and orderly.

### Formal Lab Report

- This is a more complete written report, with expected sequence of text and format that must be followed.
- It is always written from the “third person” perspective – never use “I”, “we”, or “my”, for example, but use “they” or “the experimenters” for example.
- All calculations must be shown, including all units.
- When possible, start with a formula, and then rewrite the formula with the data inserted in the appropriate locations. Never assume the reader understands what you are calculating or why.
- Data must be represented in table form whenever possible, and the use of properly labeled graphs or diagrams when possible is encouraged.
- The formal report should be typed; however, calculation sections may be *neatly* hand written.

### Formal Lab Report Sections – all of *these except the heading* must be labeled

- 1) Heading: Title of the lab, your name, date, period, your lab partner’s names, on the top 2 or three 3 lines of the paper.
- 2) Purpose: A statement of the purpose of the experiment; usually 1 – 3 lines.
- 3) Procedure: rewrite the procedure from the lab handout using your own words, condensing but emphasizing important parts. Keep in step form, and keep sections to correlate with the handout procedure. Emphasize cautions and safety aspects.
- 4) Observations (when required): Should list both the cause and the effect, that is list what you did, and then what you saw, as well as the beginning and final appearance, i.e. “*Upon addition of the NaOH, the solution turned from red to blue*”, not just “*turned blue*”. They may be either written in sentence form or as listed as bulleted points.
- 5) Data: All data should be listed in table form whenever possible, and should include proper headings and appropriate units.
- 6) Data Analysis: this section has up to two subsections, which should also be labeled.
  - a) Calculations: As previously stated, you should start with a formula whenever possible, followed by the formula re-written with the data inserted as appropriate. ALL calculations should be shown – never assume the reader understands what you are doing or why. Be careful with your units – carry them through the calculations, and especially make sure your number answer includes the appropriate unit.
  - b) Graphs / Charts: Make sure that the graphs are labeled and all axes are appropriately labeled. There are pieces several graphing software, such as Graphical Analysis, that are available for your use on the school server, when necessary.

- 7) Conclusion: This is written in paragraph form. Draw conclusions based on your results. You should refer back to the initially stated purpose. You should include an interpretation of your observations and calculations, as well as a discussion of the significance of the relationships indicated by any graphs or charts you presented in your data analysis section. Any significant sources of error should be mentioned here, along with what specific effect they would have on the results. For example, don't just say "the results would be different", but be specific, such as "the calculated value would be larger".
- 8) Answers to additional questions: when assigned. Write the question or restate the question in the answer. Again, never assume the reader has seen the lab handout before.