**Name:**
**Lab Partner:**
**Date:** [of data collection]

**[Title of Lab]**

**Introduction** [this will be a paragraph]

- Include any pertinent background information
- Clearly state the problem or purpose of the lab (the goals/objectives/why you did the lab)
- If there is a specific reaction(s), write the chemical equation set apart from the text of the intro. Ex:

$$Zn(s) + 2\ HCl(aq) \rightarrow ZnCl_2\ (aq) + H_2\ (g)$$

**Experimental** [this will be lists]

- **Materials**
  - All chemical substances used must be listed with name and formula and concentration, if known. Ex. 3M HCl, hydrochloric acid
  - Any non-standard lab equipment should be listed
  - You do NOT need to include ordinary lab equipment (beaker, burner, goggles, etc)
- **Procedure**
  - List the steps for what you did
  - Enough detail should be given that a person not familiar with your work could repeat the lab as you did

**Results (Data & Analysis)** [This will be data tables, graphs, and calculations]

- All original data must be recorded (anything you measured)
  - Organize in a table (column/row labels with sig figs and units)
  - If you average trials, average the final results, not the original data
- Graph (when a lab calls for it)
  - Neat and easy to read/interpret
  - Label axes and include units
  - Title that clearly states what the data is representing
- Calculations (show one sample calculation)
  - Write out the formula used
  - Plug in values with UNITS and solve with proper number of sig figs
  - Clearly indicate accepted values or accepted formulas (if known)
  - Calculate % error

**Conclusions** [this is always in paragraph form]

- The limitations of the lab should be pointed out and the results compared and contrasted with any other reports available (accepted values/formulas/laws)
- Discuss possible sources of error in detail and explain how the specific error could affect results (make it too high or too low or cancel out)
- Final summary statement. Discuss how the results relate to the goals/purpose of the lab (from your intro) and any conclusions that may be drawn from the lab.
- If any specific questions are assigned, make sure to restate the question in your answer.

The format for the overall notebook is on the other side!

# Laboratory Notebook Format

Careful recording of experimental observations and results will be encouraged and enforced. You are encouraged to develop a style of notebook that is both convenient for yourself and intelligible to others.

There are some features of the format that are dictated by universal convention, while others are largely a matter of personal taste. There is an inevitable tendency to make temporary records or to trust your memory, presumably to make the final copy look neater, but this is a bad habit and should be avoided. Those aspects of the format for recording data that must be observed are all related to the idea that **the notebook should be a permanent, documented, and primary record of laboratory observations.**

- The notebook must be a bound notebook (**quadrille/graph ruled**) with **pages numbered in advance** and never torn out. Only write on the **front sides** of the notebook pages. All entries must be in **ink** and **clearly dated** and the **experiment clearly identified**.

- All data must be recorded directly in the notebook at the time you make the observation. You should never use scratch paper since this may be lost or may lead to incorrect transcriptions of data.

- Data/Graphs collected electronically and printed by computer and be placed in lab notebook

- **No entry should ever be erased or obliterated**. Correct an entry by simply crossing out the incorrect entry and entering a brief explanatory note for the change.

- Since your notebook is a primary record, you should never copy data into it from another source without clear acknowledgment of that source.

- **Calculations are to be carried out in your notebook** so they will become a part of the permanent record. Units must always be included in calculation.

- **Reserve the first few pages** of your notebook for a Table of Contents, compiled as you work, so you can more easily retrieve the information, as you need it.

- Your **NAME (first and last)** must be clearly visible on the front cover of your notebook.

The format for Lab Reports is on the other side!