PHYSICS LABORATORY NOTEBOOK

PROCEDURES:

1) All entries must be orderly AND legible.
2) Errors should be crossed out with a single line. DO NOT ERASE OR USE WHITE OUT!
3) Number all pages in the lab book consecutively in the top corner. Use both sides of each page. Pages should NEVER be torn out.
4) Reserve the first 2 pages for the Table of Contents (TOC). List the lab title & page numbers in the TOC.
5) Begin each lab's work on a separate page. USE YOUR NOTEBOOK DURING LAB.

Left Page "work"	Right Page
(procedure, sketch, observations, notes, equipment identification and malfunction, calculations, anything that happens or changes during the lab).	title, date, partners, purpose, data table, graph(s), mathematical model, written statement, and final results

CONTENT FOR EACH LAB

- TOC update
- TITLE, DATE, PARTNERS (on top of 1st right-hand page of lab)
- PRELAB/POSTLAB NOTES: Take notes during pre-lab and post-lab discussion.
- OVERVIEW/PURPOSE
  - Summarize the purpose for doing the lab and give a very brief explanation of what you are doing.
  - List independent (IV), dependent (DV), and controlled (CV) variables. If the controlled variable is a known quantity, give the quantity ($mass_{car}$ = 234 g; car #4, etc)
- DRAWINGS/DIAGRAMS: Sketch your set-up (so you can recognize the lab at a glance).
- PROCEDURE
  - Try to get 10 different measurements with as large a range as possible.
  - Do 3-5 repetitions if time allows
- PERSONAL ACCOUNT/OBSERVATIONS: Record observations you make as the experiment proceeds (this is very important).
- DATA TABLES
  - Neat & Boxed; Easy to Read & Interpret
  - Labeled with variable names AND units **at the top of the column**
  - Include columns for ALL calculated data (show a sample calculation)
- GRAPH (full page or $\frac{1}{4}$ page sketch as directed, always use a ruler for drawing axes)
  - Titled & Labeled (variable symbols AND units)
  - Start graph axes at 0,0 and give numerical range for each axis
  - Shape analysis [linear, inverse or hyperbolic, parabolic (opening side, top or bottom)]
  - A statement describing the relationship between variables based on the shape
- MATHEMATICAL MODEL (all numbers in your model must have units unless they cancel)
  - Linear Regression stats: from "y=ax+b" list a, b, r^2 and r
  - YOUR Model: Use the variables under study (not x and y) and list any y-intercept.
- DISCUSSION: Discuss the meaning of your model.
  - What does the slope represent? (This usually involves unit analysis.)
  - What does the y-intercept represent? What does the area under the curve represent?
  - Is there a general model for this lab?

CONCLUSION & QUESTIONS: Describe the skills learned, the information learned and some future applications to real life situations.

- ERROR ANALYSIS: Experimental errors, their possible effects, and ways to reduce errors