Mercyhurst Preparatory School Science Lab Report
Form and Content

Scientists use a standard lab report format (with some variation) to ensure a "complete package" of information. Your lab report is an objective account of the experimental procedure, the results, and their meaning. Although most lab procedures are performed as group activities, all data processing, analysis and conclusions **must be an individual effort**. *The Mercyhurst Preparatory School Honor Code will be strictly enforced in this regard.* The following represents the Mercyhurst Science Department format. Each instructor may make specific modifications to suit the lab at hand and her/his specific requirements.

I. TITLE: A clear, concise *statement* of the *aim* of the investigation is is given.

II. **BACKGROUND:** Knowledge necessary for the reader to better understand the reasoning behind the experiment is provided. Important terms are defined, chemical equations are written, essential formulas, and relevant concepts are explained, and lecture material or other research is related to the purpose of the upcoming experiment. Results or conclusion should not be reported at this time.

III. **PURPOSE and/or HYPOTHESIS**: The aim of the experiment is expressed in ***one complete sentence***.

IV. MATERIALS: Materials used are listed in columns (not numbered).

V. PROCEDURE: A clear account of how the experiment was performed is given in detail sufficient enough to accurately repeat the experiment. Each step of the sequence should be identified by a number. Special procedures or safety precautions are noted. A diagram of special apparatus is often included.

VI. RESULTS: This section forms the basis for analysis and conclusions and <u>may</u> include the following <u>when relevant</u> to the investigation:

A. *Observations*: any sensory observation such as color and/or color change; odor and/or odor change, temperature and/or temperature change, formation of a gas, liquid or solid, behavior of organisms, biological illustrations of specimens, slides, etc.,
B. *Data*: measurements in data table form and graphs. Numbers are used to refer to appropriate figures, i.e., Table 1 or Graph 1
C. *Calculations*: needed to construct data tables and/or graphs, calculation of percent error or other statistical analysis if appropriate for investigation. Record all numbers with correct significant digits.
D. *Original record*: chromatography paper strips, acceleration tapes, spectroscopy printouts, etc.

VII. ANALYSIS: Explain significance of all results in regard to the stated purpose of the investigation and relevant concepts. If data tables and graphs are included, they **must** be discussed. Use the numbers to refer to appropriate figures. The validity of the results is evaluated, percent error discussed and possible sources of error given. Ways to improve or expand the experiments are suggested. ANALYZE!!

VIII. CONCLUSION: A ***concise*** summary of the actual results and accuracy in regard to stated objectives is provided.

GENERAL FORMAT

1. All writing should be in complete sentences.
2. Use blue or black ink only if hand written; or word processor with standard one-inch margins, 1.5 spacing and 12 font.
3. Sections of the report should be identified by Roman numerals.
4. Section titles are placed to the right of the margin line.
5. One empty line is left between sections.
6. **No personal pronouns should be used**.
7. Additional writing also begins at the left margin.
8. Be concise. Avoid rambling sentences that have little content.
9. Do not make personal comments or observations to the teacher in the body of the report.
10. **Always edit your work for spelling, punctuation, and sentence structure.**
11. **Correct mistakes by neatly crossing out or with white-out.**
12. ***The appearance and quality of the work are important and are <u>often a factor in the grade.</u>***

SPECIAL REQUIREMENTS

Title: The title should be a concise, relevant statement, **not** a question. Avoid cute or clever titles. Use proper capitalization in the title. The first and all following are capitalized except for articles and prepositions.

Results:

●Make specific quantitative statements about observations.

-- Example: "The temperature increased 4ºC." rather than "The temperature increased."

●Measurements and calculations must include an abbreviation of the proper unit of measure. These abbreviations are not followed by a period.
Example: 100. 5 g (for 100.5 grams)

●All data tables and graphs have numbers and titles.

Analysis:

●Sentences should be written in past tense and passive voice.
Example: "*Mass of the object was measured*." Rather than "*I measured mass*."

●Check to be sure the proper number of significant digits has been reported here as as well as in the calculations.

Reference to specimens:

When writing the name of an organism, use the scientific name: *genus and species*. The genus is capitalized; the species is not. The genus may be abbreviated by a capital letter followed by a period. Scientific names are in Latin and must be underlined or italicized. If the common name will be used put in parentheses after the first use of the scientific name in the body of the report.
Example: *Lumbricus terrestris* (the earthworm) is a common invertebrate.