

Science Lab Report Instructions

AP/IB Bio - H

1. Scientists use a standard report format to present the results and conclusions of their experiments. This permits easy reference and ensures the report is complete, accurate, and demonstrates use of the "Scientific Method". The objective in writing laboratory reports is to communicate your methods and conclusions as clearly and directly as possible. Follow these instructions. ***You will be graded on the content of your report and on your ability to follow these directions.***
2. The report itself will be in sections. Your teacher may require you to use roman numerals for each section. ***Do not place any information outside of its specified section.*** For example, do not place any data at the end of the report, after the conclusion.
3. Make a cover sheet or title page with title, name, class, period, and date. IB and Honors student use IB Title page. This is important for "Internal Assessment". IB and Honors students must refer to additional guidelines on web.
4. **Do not** use your Pre-Lab again in the Lab report. They are separate assignments.
5. **Write your own Lab Report.** Group work **does not** include the lab report. The entire report should be your creation. **Do not** share or copy electronic files. Do not copy other students' work.
6. Include a bibliography.

Lab Report form:

These are the sections you must have in a lab report. A lab report is written after the lab is completed. **Do not use Pre-lab in the lab report.**

I. Introduction: Write this section in your own words. This section gives background information from the text, teacher, and other sources. It gives the reader an understanding of underlying principles and content information of the laboratory. Make references to literature. Use quotes when citing statements directly. State the problem or research question. For example: "What is the effect of light on plant growth? **What are the dependent and independent variables?** For example: Light would be the independent variable. The measured growth of plants would be the dependent variable. **Describe any control variables.**

II. Purpose: State the purpose or purposes of the lab that was done. You may need more than one sentence. Refer to the title of the lab. Use any key terms, such as, characteristic property, boiling point, element, compound, etc. **State the hypothesis.** This will be in the form of a once sentence **prediction.** Make an "**...if, then...**" statement. If there is a chemical equation, write it out. For example: **If** group A of bean plants is exposed to light twice as long as group B, **then** group A will show more growth over the same amount of time as group B.

III. Materials: List and number the materials you actually used. List any and all materials. Do not list any materials not used, even if they were in the original pre-lab. For example:

1. Hot plate
2. Graduated Cylinder
3. 250 cm³ beaker
4. etc....

IV. Procedure: List and number all of the steps of the lab that were actually taken. Do not copy word for word from the lab manual or textbook. Make statements in the *past tense*. Be specific. Do not say "set up the equipment". State exactly what was done. For example:

1. Filled a 250-cm³ beaker with 100cm³ of water.
2. Placed 10 cm³ of HCl in a test tube.
3. Placed the test tube in the beaker.
4. etc...

V. Data: This is an important section that contains the results of your lab experiment. It will contain items such as, **Graphs, Drawings, Tables, Observations**, etc. Note: all tables with calculated numbers require sample calculations under the table. Make sure you label each type of data correctly and use **units**. For example:

1. Tables are labeled and named on the top. Start each lab with Table 1. Name the table.

Table 1. Volume of Sand

Volume of dry sand	35 cm ³
Volume of water	25 cm ³
Volume water and sand	75 cm ³
etc....	

Place sample calculations here.

2. Graphs are labeled on the **bottom**. **All graphs are to be done on graph paper, no exceptions. All graphs require a corresponding table, no exceptions.**

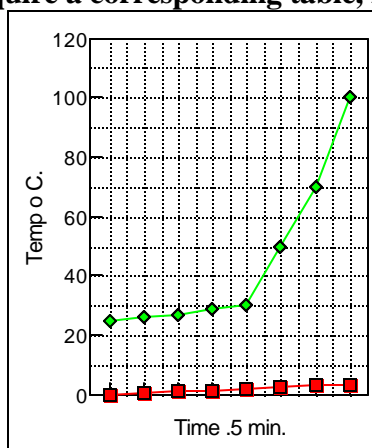


Figure 1. Heating Curve

VI. Questions: If there is a question section, place it here.

VII. Discussion and Conclusion: This is the final section and also very important. Write it in paragraph/essay form. Use more than one paragraph for each section if necessary.

- Discuss the **purpose** and goals of the experiment in relation to the **outcome**. Did the overall results (Data) of the lab accomplish the purpose? Write a clear conclusion, stating how the **experiment confirms or rejects the hypothesis**. Can you draw any conclusions from the results (Data) as to **cause and effect**? Discuss, evaluate, and explain your **Data**. Use examples. Discuss trends. Compare and contrast groups. Look for and discuss relationships between variables. Describe and discuss % deviation.

Explain graphs and figures. Use **important data (numbers)** from the data section to reinforce your statements.

- Use literature references. Compare results with literature values. Footnote and place references in bibliography.
- **Evaluate the methods and procedure.** Were there any errors?
- Make suggestions for **improvements** in the procedure, materials, or the experiment. Be as specific as possible.

Don'ts

Do not say that the purpose was accomplished and then say nothing substantially more. You must **include data** from the lab results to demonstrate that the purpose was accomplished.

Do not give the procedure again.

Do not list the data again. It was already listed in the data. Remember that you are supposed to **DISCUSS** the data.

Do not use the pre-lab in the Lab Report.

Do not copy from other students.