

Pre-AP Formal Lab Report Requirements

Title of Lab

Date (lab was performed)

Your name, Lab partner(s) name(s)

Objectives: *In your own words*, describe the purpose of the lab. DO NOT SIMPLY COPY THE OBJECTIVES FROM THE BOOKLET.

"The purpose of this lab was to...."

The necessary materials were _____ which was used to _____, were _____ which was used to _____, ..."

Data: This should be in the form of a **typed** data table(s).

Suspect Name	Substance	Formula	T _{max} (°C)	T _{min} (°C)	T _{max} – T _{min} (°C)	Cooling Rate Graph Match?
Boylan	Acetone					
Dado	Methanol					
Lestik	1-propanol					
Thomas	1-butanol					
Crime Scene	Unknown					N/A

Analysis: Answer all analysis questions. Number each question and answer with complete sentences. DO NOT COPY THE QUESTIONS.

1. Which of your four known sample molecules have polar bonds? Which molecules have a net dipole?"
2. Which of your four known compounds exhibit hydrogen bonding as a type of intermolecular force? Which do not?
3. London dispersion forces are a type of intermolecular force that occurs between all atoms and molecules whether they are polar or not. Which of your four known molecules exhibits the strongest London dispersion forces? Which molecule exhibits the weakest? How can you tell?
4. Order your four known samples from weakest to strongest intermolecular forces.
5. Which of the samples that you tested match the sample from the crime scene? How can you tell?
6. Why may the graphs of the crime scene accelerant and primary suspect's accelerant not match exactly?
7. Examine the boiling point graph on page 40 of your booklet. It shows hydrogen bonded to elements in the fourth, fifth, sixth, and seventh groups of the main block on the periodic table. Why is the boiling point of H₂O, HF, and NH₃ unusually high?
8. Examine the boiling point graph on page 40 of your booklet. Why doesn't CH₄ also have an unusually high boiling point?

Conclusion: This section is the most important part of your lab report, and should include ALL of the following:

- Thesis statement: intro to your paragraph that reminds the reader about the goal of the lab. (Hint: if you're stuck, you can choose to summarize your objectives here. Do not just copy them down again.)

The purpose of this lab was to

- Brief recap of lab procedure and data collection method. (DO NOT explain how to math. Just explain lab procedures.) NOT step-by-step: summarize in 2-4 sentences.

This was accomplished by...

- Explanation of your results. (Be specific: include data! But not all data. Summarize the highlights.) **Be sure to identify if you achieved the objectives you outlined in section 1.**

We found that...

- When applicable, identify how your results compare to the accepted value (**cite your calculated percent error**).

The temperature change for the sample from the crime scene was...

The temperature change for our matching suspect was...

This led to a percent error of...

- Reflection: identify what you learned from this lab, and how it connects to current Pre-AP chemistry content. How was the content you learned in this unit essential for understanding the lab?

In order to complete this report, it was necessary to understand that...

- Concluding statement: wrap up your conclusion! This is **different** from your reflection. Tell me the highlights of the lab.

References: If you've used any outside sources, create a reference list here. Follow formatting from your English class.

Grading Hints:

- Include the full heading (as shown at the top).
- Label all sections (objectives, analysis, etc).
- Write the **objectives** and **conclusions** sections in complete sentences.
- Use paragraphs (aka more than one) for the **conclusion** section.
- Do not capitalize chemicals names – they are NOT proper nouns (i.e. write “copper” not “Copper”).
- Use subscripts and superscripts when needed (i.e. write “Cr₂O₇²⁻” not “Cr2O7 2-“)
- Do not double-space: 1.5 or 1.15 spacing!

IF YOUR REPORT IS LESS THAN ONE PAGE LONG, THERE IS A VERY GOOD CHANCE THAT YOU HAVE NOT INCLUDED EVERYTHING YOU NEED TO INCLUDE.

Warning about Plagiarizing: Just because you worked in the same lab group as someone else does NOT mean you are allowed to have identical (or similarly-worded) sections of your lab report. The **ONLY** sections that are allowed to be the same across a lab group are data/calculations tables. **YOU WILL RECEIVE A ZERO FOR YOUR LAB REPORT IF YOUR REPORT COMES UP AS A SUSPICIOUSLY HIGH MATCH WITH ANOTHER STUDENT (even if you completed the lab first)**. Any work that is truly your own will show up as statistically different from all other students, and turnitin.com will show that!