Abbreviated Report | Exploring Gas Laws

Start Assignment

Due Friday by 11:59pm **Points** 15 **Submitting** a file upload
File Types doc, docx, and pdf

The post-lab assignment for this experiment is an abbreviated technical report that includes *Methods*, *Data and Results*, *and Conclusions* sections. Use the **abbreviated report template (https://gatech.instructure.com/courses/334258/files/42101025?wrap=1)** to complete the report.

All tables, figures, and writing should meet the minimum expectations described in the **Guidelines for Post-lab Assignments (https://gatech.instructure.com/courses/334258/pages/guidelines-for-post-lab-assignments)** .

Methods

Follow the guidelines in the report template to complete the methods section.

Data and Results

To complete *Data and Results*, create tables and figures from your data analysis following the guidelines in the template.

- Tables with data organized by each test conducted (amounts of reactants, V, P, T, n, etc)
- A summary table incorporating the class wide results organized by relationship (P with T, V with n, etc.)
- Graphs representing individual relationships (either with real data or generic model of observations)
- Some description of error/variation in class measurements – did results between groups conflict?

Conclusions

A *Conclusions* section summarizes the most important results and their implications. In this report, you will focus on the explanation of your model. Follow the guidelines in the template to complete this section.

- Explain: The goal of this conclusion is to explain gas behavior on a macroscopic level based on particle-level movement and to incorporate the class results to build this explanation.
  - Model 1: You should support your explanation with the model you drew during class and discuss it within your explanation.
  - Model 2: Your generated gas behavior formula that incorporates all the individual relationships into an integrated complex relationship should be included here.

- Evidence: Refer to the specific results obtained in the experiment by your group and other groups as you discuss.
- Additional prompts: The prompts below can help to frame the discussion here. This should incorporate any background knowledge you used in your thought process and model development with your team or the class.
  - You may wish to answer all the individual research questions here to provide clear logic for your integrated models.
  - Did the identity of the gas examined influence results?
  - What factors limited your ability to collect accurate data?
  - What unexpected or ambiguous results occurred and how might they affect your model and explanation?

Save the report as a PDF file and upload it here to complete this assignment. Do not upload your data workup spreadsheet.

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Criteria	Ratings				Pts
Experimental Methods	**2 pts** **Full Marks** Readable and organized Procedure could be replicated	**1 pts** **Partial** Lacks one of the criteria Example: missing details or disorganized description of activities		**0 pts** **No Marks**	2 pts
Data/ Observations	**2 pts** **Full Marks** Tables and/or figures of data are present and have an appropriate caption Values have units and labels	**1 pts** **Partial** Lacks one of the criteria Example: figures are missing captions or data are missing units or labels		**0 pts** **No Marks**	2 pts
Analysis/ Results	**2 pts** **Full Marks** Sample calculations are provided accurately, with the formula used and variables/values are labeled and have units Tables and/or figures with analyzed data are present and have an appropriate caption	**1 pts** **Partial** Lacks one of the criteria Example: Did not include sample calculations or did not provide analyzed data		**0 pts** **No Marks**	2 pts
Explanation	**2 pts** **Full Marks** The research questions are individually answered Gas particle behavior is described to explain macroscopic observations	**1 pts** **Partial Credit** One of the two criteria is met.		**0 pts** **No Marks**	2 pts
Evidence	**3 pts** **Full Marks** Multiple relationships observed are used to support claim Specific results are included Analyzed/ interpreted results are included	**2 pts** **Partial** Lacks one of the criteria Example: only one piece of evidence is used, data are reported without analysis of their meaning, or specific results are not included	**1 pts** **Partial** Meets only one of the criteria	**0 pts** **No Marks**	3 pts
Models	**4 pts** **Full Marks** Both models are present Models are described for clarity Models are connected to the explanation clearly Models align with results Conflicting	**3 pts** **Partial** Lacks one of the criteria	**2 pts** **Partial** Lacks two of the criteria	**1 pts** **Partial** Meets only one of the criteria	**0 pts** **No Marks**	4 pts

Criteria	Ratings	Pts
	results or limitations to the data and/or models are discussed	Total Points: 15