

17+ Easy Ways to Boost Your Physics Lab Grades

A quick note to the reader...

Thank you for downloading this grade-boosting checklist!

So many students miss easy marks because they forget simple things on lab reports. When I was teaching, my heart broke a little bit with each missed grade.

Getting top lab grades doesn't require a good memory or even an amazing understanding of physics. All you need is time (so start early), persistence (ask your classmates and professor if you have questions), and attention to detail (use this checklist).

This list isn't a guarantee. Every prof is different, and ultimately you need to figure out what your prof demands for lab reports. That said, this list contains my best tips for boosting *your* physics lab grades. Give it a try, and email me to let me know how it goes!

If you have any questions or comments, I would love to hear them! You can email me at scott@redmondphysicstutoring.com.

Have fun with your labs, and good luck!

Scott

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For more grade boosting tips and tricks,
check out my website!



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INTRODUCTION

- Briefly describe background information and theory related to the lab.

HYPOTHESIS

Choose a simple hypothesis or a complicated one, depending on what your professor wants.

- Simple: state what you predict will happen.
- Complicated: refer to background theory to explain what the theory predicts.

PROCEDURE

If your prof has given you a detailed set of instructions, your report may not need the procedure

- Regardless, take pictures of your experiment and include at least one in your report.

RESULTS

- Always organize results into data tables, and include units (and uncertainty, if required) for each measurement.
- Before you leave the lab, make a backup copy (lazy tip: take a picture) of the results.

ANALYSIS & DISCUSSION

Organize your analysis using graphs and tables. Try to make it easy for your reader to see what you mean.

Graphs

- Give each graph a brief and descriptive title, and remember the title and units on each axis.
- Each graph should cover at least half a page. If you're drawing the graph by hand, use one page for each graph.
- Scale the graph so the plotted data covers at least $\frac{3}{4}$ of the area.
- For computer-generated graphs, use a scatter plot (x-y plot) instead of a line graph.
- Include a trend line that links the data points, and include the equation for the trend line on the graph.

Tables

- Make the table easy to read. Split large tables into small pieces, and repeat key data (e.g. run number) to make it easy for readers to cross reference between two tables.

Discussion Questions

- Write each question, exactly as given, on a separate line, followed by the answer to that question. Make it super easy for your reader to find these questions and answers.
- When your answer refers to a table or graph, include a copy of that table or graph on the same page so your reader doesn't have to search for it.

CONCLUSIONS

- Write the conclusions second-last, just before the abstract or summary.
- Do not mention any new information in the conclusions. Anything that's here must also be described earlier in the report.
- If possible, include equations based on **your** results. If your equations don't match the theory, briefly comment on that but be sure that these comments have already been described in more detail in a previous section.

ABSTRACT/SUMMARY

The abstract is a high level description of the experiment, results, and conclusions. It's easiest to write it last.

EVEN MORE GRADE BOOSTERS:

- Suggest specific improvements to the procedure and explain why you recommend them.
- Research more theory than necessary by looking for related topics. Comment on how the additional theory applies to your lab. Don't include anything that doesn't apply.
- While doing the lab, try something new. Write your hypothesis, procedure, and then document and analyze the results to form additional conclusions.