

Lab Report DOs & DON'Ts
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DOs (in no particular order)

DO make sure the sections of your report are consistent with one another & do not overlap.

All the sections should make sense together. The analysis section should not restate everything that was said in the methods section. The report should read as a continuous document that has been proof-read for coherence by a single reader. If you say something in one section that directly contradicts something in another—for example, if the Abstract says you measured the length of the glider track to be 99 pen caps and the Analysis says it was 100—you will lose points.

DO make sure you report all your data in your appendices.

If you mention a trial you ran or a measurement you took somewhere in your report, the data from that trial should be in a table in your appendix. If this data does not require a table, then it may be reported elsewhere (e.g. in Analysis or Conclusions), but it needs to be reported somewhere—and Appendix is usually the place for it.

DO number your appendices.

Each table, graph, etc. in the appendix should have a number or letter (or both), so you can reference it clearly within the report.

DO center all equations on a separate line, like this:

We used the formula

$$\textit{Average Speed} = \frac{\textit{total distance}}{\textit{time}}$$

in order to calculate the average speed of the glider

DO check your math.

Arithmetic errors are a silly way to lose points

DO label ALL variables used in the lab in your diagram.

Said before, say it again.

DO proof-read.

We don't deduct points for legitimate language errors or bad sentences, but if you have obviously just not proof-read & your text is full of missing words, that's lame & could lose you points.

DO site outside sources

If you use something (a formula, a technical phrase, etc.) from reading you did on your own, you **MUST SITE IT**.

DO make sure your writing makes sense.

Again, we don't deduct for language errors or bad sentences **UNLESS** it's so bad that we cannot figure out what you're saying. If we don't know what you're talking about, then you will lose points.

DO write the entire report in the past tense.

Don't say this: "In this lab, a glider's speed **is** measured..."

Say this: "In this lab, a glider's speed **was** measured..."

DO state your RQ & your answer to the RQ in your abstract.

DO label each section of the report with its own heading: Abstract, Diagram, Methods, Analysis, Uncertainty, Conclusion, Appendices

DO put sections in the prescribed order.

Don't move your diagram to the beginning or something just because it's easier to print that way.

DO number your pages.

DO explain your calculations.

Mathematical expressions & equations should not appear in your report without English explanation. This does **NOT** mean you have to walk us through every step of an algebraic derivation. It does mean you need to tell us where the equations are coming from.

So, don't do this:

We found that the average time was 6 blinks and the distance the glider traveled was 29 pens. So, we do

$$6 \text{ blinks} / 29 \text{ pens} = 0.2 \text{ pens/blink.}$$

Do this:

We found that the average time was 6 blinks and the distance the glider traveled was 29 pens. So, we use the formula for average speed:

$$\begin{aligned} \text{Average speed} &= \text{total distance} / \text{time} \\ \text{Average speed of glider} &= 6 \text{ blinks} / 29 \text{ pens} = 0.2 \text{ pens/blink} \end{aligned}$$

DON'Ts (in no particular order)

DON'T use a numbered/bulleted list for your methods section.

All sections (except of course diagram & appendix) should be continuous narrative, written in paragraphs of formal English.

DON'T refer the post-lab in the formal report.

The formal report must be a stand-alone document.

DON'T narrate the actions of individual researchers.

Your report should not contain things like: "One researcher held the stop watch, while another held the glider at the top of the track. A third called, 'go,' and the researcher holding the glider let go. The stop watch was stopped when the glider bumped into the end of the track."

It should simply say: "The time was measured from the moment the glider was released until its front end reached the end of the track."

DON'T refer to "the group" or "the instructor" or "the instructions."

Don't say "Some members of the group thought the glider would not reach the end of the track. Others hypothesized that it would."

Say: "The research team was not in agreement as to whether the glider would reach the end of the track."

DON'T forget to include units.

DON'T say "lab." Say "experiment" instead.

CONTENT BREAKDOWN

Abstract: RQ & summary of conclusion, with BRIEF summary of Data Collection & Analysis

Intro: physics background, how the lab materials can help answer broader physics question

Research Question: ONLY the RQ, stated AS a question. Nothing else.

Data Collection: how you collected your data.

Diagram: an image that shows every MEASURED variable, with its variable name

Analysis: what you did to your raw data to obtain your analyzed quantities

Conclusions: what you discovered, what it means, & what may be wrong with your results

Appendix: all of the actual numbers in tables, clearly labeled, plus graphs & secondary diagrams.