

How to write a report for Physics 2.1: Practical Investigation

The following sections should be in the order presented here, with the possible exception of tables and graphs being included in an appendix at the end of the report.

Title:

The title should be a complete sentence that describes the purpose of the experiment. The title is usually in a larger size font and centred.

Author:

Your first and last name should be centred under the title.

Aim or purpose:

One or two sentences describing what you are trying to find out from the experiment and how you are going to do that.

Variables:

Define your independent, dependent, and main control variables

Results: (may be in appendix at end of report)

This section should include:

- Data table, including transformed data if relationship is non-linear. Do NOT include raw data, only averages
- Graph of original data
- Graph of transformed data if relationship is non-linear.

Tables and graphs should include title, labels, units, correct significant figures; graphs should have appropriate scale and take up at least half the page and have a line or curve of best fit.

Analysis of Data:

- Provide a 'proportionality' statement that describes the relationship between the y and x variables.
- Write the equation for the straight-line graph using the appropriate variables
- Use the slope of the straight-line graph to calculate the factor stated in your aim. (You must show your working)
- A conclusion statement that states the mathematical relationship between the y and x variables and incorporates the original equation given in the context of the experiment.

Discussion:

Discuss, explain, and justify the following points:

- Variables that required controlling (explain **why** they needed controlling and **how** you controlled them)
- The techniques you used to improve measurement accuracy (how did you reduce random and systematic error; why was this necessary)
- Difficulties encountered when making measurements, eg. Changes to original method, control of key variables, etc. (explain how you overcame these difficulties)
- Why there was a limit to the range of values you chose for the independent variable (upper and lower limit)
- Any unexpected results and/or outliers (suggest what might have caused these and what effect, if any, they may have had on the validity of the conclusion)
- Compare your investigation findings with physics theory
- (If applicable) Link back the theoretical relationship/equation to the context given in the experiment

Authenticity statement:

Copy and include the following statement

I, _____(your name)_____ declare that this report is independently produced and is solely my own work.

Appendix:

- Raw data (signed by teacher if official report)
- Tables and graphs if they are not in the body of the report.