

# Hawker College – Physics - Writing a Lab Report

## Aim

Say what you are trying to find out (e.g. “To measure the wavelength of a red laser”)  
Do not include reasons or theory.

## Hypothesis

This is a statement about the expected result, which can be tested by carrying out the method (e.g. “The extension of the spring will be proportional to the applied force”).  
When carrying out a known procedure to measure a known value the hypothesis would not really be needed. It would be redundant to say “Pi will be about 3.14.”

## Introduction/Background

Present the theory behind your investigation. You will need to carry out research to do this.

## Method

List the equipment you used. Describe what you did using third person impersonal (e.g. “A spring was hung from a retort stand. A mass was attached to the end of the spring.”)  
Using dot-points is a clear and concise way of writing this section. Include labelled diagrams.

## Results

Table 1: Voltage and electric current across a resistor

Include units in column headings.

Trial	Voltage (V)	Electric current (mA)
1	2.4	423
2	2.3	425
3	2.5	427
4	2.4	428
5	2.4	426
Mean	$2.4 \pm 0.1$	$426 \pm 3$

Rule rows and columns to make data in tables clear.

Each table should have a title.

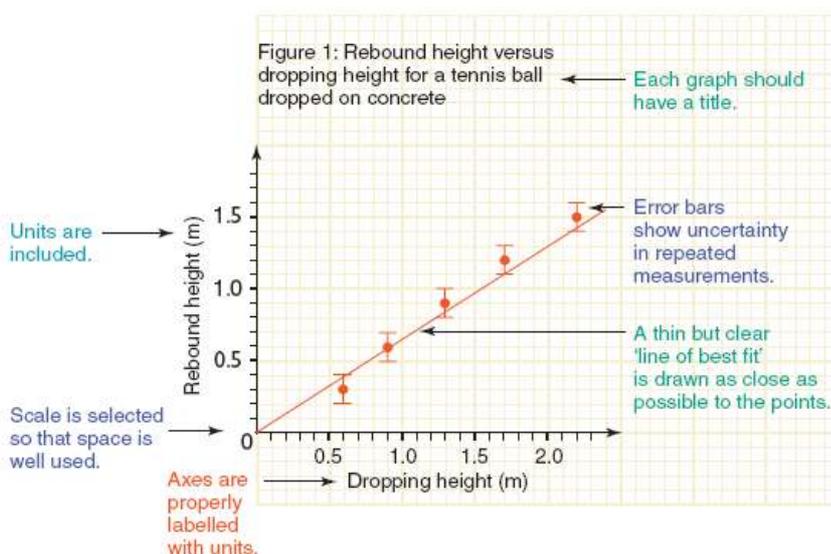
Include clear headings.

Units are not needed in the body of the table as they are in the headings.

Include uncertainties for repeated measurements.

Include mean value of repeated measurements.

Present any measurements or observations you took. Observations could be presented as photographs if appropriate. Provide tables with titles and column headings including units of measurement. Include the uncertainties in your results.



A sub section called **Analysis of Results** could be used to present calculations, sample calculations, graphs, error calculations or other processing of results.

## **Discussion**

The reasons for writing a discussion are to help others understand your investigation and to explain how your results have led to your conclusion.

You could

- Restate your Aim
- Give a brief summary of your Method
- Explain what your results show and point out important or interesting results
- Point out sources of error and their effect on your results
- Compare your findings with those of others or with theoretical results
- Describe any problems with your Method and suggest improvements
- Answer any questions your teacher has asked
- Explain how your results led to your conclusion

## **Conclusion**

State what you found out, it should be clearly related to your Aim. Do not provide reasons or background information. Keep it concise.

(e.g. "The resonant frequency of the wine glass was  $1.00 \pm 0.05 \times 10^3$  Hz.")

## **Bibliography**

List your sources of information in alphabetical order using the Harvard standard format (Ask the Library if you are not sure)

**Reference:** Some material copied from Lofts, G. et al, *Jacaranda Physics 1 2<sup>nd</sup> Edition*, 2004, John Wiley and Sons Australia