

## WRITEUP FORMAT FOR A SCIENTIFIC INVESTIGATION

*First develop the project plan, before you start on the investigation itself.  
This is the Introduction and Material & Methods (the 'What' and 'How')*

1. Introduction	<p>The 'Introduction' details the problem that you are exploring (including the hypothesis), explains why it is worth investigating, clearly states your purpose, and (in some cases) describes how your experiment fits in with previous research or experiments on the topic.</p> <p>You should include the scientific basis for your experiment here, including some references.</p>
2. Materials & Methods	<p>This section details the experimental variables (independent &amp; dependent variables – what you are varying and what you are measuring - and other variables that you will either have to eliminate or manage). It includes detailed descriptions of the materials and equipment used, and a narrative explaining how the experiment will be conducted.</p> <ul style="list-style-type: none"> <li>• Don't forget diagrams and photos.</li> <li>• The measure of a good 'Methods' section is that another student could replicate your experiment exactly.</li> <li>• Include your risk assessment in this section (what can go wrong, especially if there is anything that could be dangerous).</li> <li>• Also include the <u>timetable</u> for your whole investigation (with dates for the main milestones).</li> </ul>
<p><i>Now you are ready to do the investigation, measure the results, come to some conclusions and write up the report. Note that you have already done the first two sections of the report (Introduction and Materials &amp; Methods), so you can basically copy and paste those.</i></p>	
3. Results	<p>The 'Results' section summarises the key findings of your experiment. It will contain visual elements, such as Tables and Figures and some text in which you describe the findings presented in the visuals.</p> <p>Identify trends, patterns and relationships in your data, especially those which prove or disprove your hypothesis. This may involve some statistical analysis in some cases.</p> <p>Note: Your report will read much more clearly if you just put summary tables and graphs here – use an Appendix for detailed source data.</p>
4. Discussion	<p>In your 'Discussion' you will analyse and interpret the results from the previous section (the 'Why').</p> <p>You will need to explain what you have discovered and how it relates to the problem that you have been exploring.</p>

	You will explain the extent to which your results confirm or refute what you set out to do in the experiment. It's OK if your hypothesis turns out to be false – the purpose of an investigation is to end up with an evidence-based result that either proves or disproves something. Because you will usually have limited data, the results may also be uncertain, that is 'we still don't know' – that is OK as well.
5. Conclusion	A summary of what you have discovered. It may also identify other areas in which there are gaps in the knowledge, and in which further research may be needed. (Sometimes the Discussion and Conclusion sections are merged).
Appendix	Put your raw data and any calculations here. Otherwise it just clutters the Results section.
References and Acknowledgements	A complete list of the reference material you have used (books, articles, journals and web pages). This is also where you should acknowledge any assistance from mentors, teachers and others.

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## LOGBOOK

Typically an exercise book containing complete notes of your investigation from day 1 -

- What gave you the idea for your project
- How you planned and persisted with the task
- What you were thinking along the way
- What you did
- What you noticed or observed
- Who you consulted for information and feedback
- What went wrong and how you overcame the challenges

Think of it as a diary – it does not have to be neat and tidy.