Report Writing: Scientific (Brief)

A basic laboratory report structure should consist of the following sections:

- Title
- Introduction: concludes with an Aim/Hypothesis
- Materials & Methods: includes subjects/sample details, equipment, and a procedure
- Results
- Discussion: final paragraph should consist of a Conclusion

Title

Reports should have a clear and concise title that relates to the project. If there are multiple projects combined in the report, you must construct a title that encompasses all the projects.

Example: "Determination of Protein Content in Breakfast Cereals"

Introduction

The *Introduction* should present all background necessary to put the research into context and make it understandable. Any important concepts and definitions should be presented in this section. For example, if you are writing a report about the protein content of breakfast cereal, you will need to detail why protein is important and why we want to analyse this food component. You will also need to write about the techniques that can be used to analyse protein.

Aim/Hypothesis

The *Aim* is a short statement that describes the reason you are undertaking your practical experiment. In academic journal articles, the aim is usually the last paragraph of the introduction. Because the aim is your own idea, you do not need to include any references in this section. The aim is usually placed in the last paragraph of the introduction. However, you can present the aim as a separate section before the introduction if required - check your assessment instructions and requirements for the preferred format.

Materials & Methods

The *Materials & Methods* (sometimes referred to simply as *Methods*) should contain enough information that someone else could replicate your experiment exactly. Therefore, it needs an accurate description of all the subject or sample details, all the equipment used, as well as a detailed description of the method used.

Using a pre-existing method

If you used a method that is not your own design, reference the original method instead of writing out the whole method again. In this case, you will need to write down any changes that you have made to the original method. Because you will never use the exact sample as written in the original method, sample details must always be displayed. Samples, materials or equipment used in the experiment must be described in detail enough for someone to find that exact sample/reagent/piece of equipment.

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Results

The *Results* section should include all the information of what happened in the experiment. This includes the data obtained and any relevant observations. This section should include charts, diagrams, tables, graphs and could also include images. Key results should be emphasised in the body of the results section text, with references to the data in the tables and diagrams. Tables and diagrams should not be presented in a stand-alone format. When you refer to your own results, you need to indicate which table or figure you are getting the information from. You can do this by putting the table/figure number in brackets after the statement you make.

Discussion

The *Discussion* is where you draw upon previous research and the results you obtained to discuss your findings. To write a good discussion, you will need to have researched previous knowledge on the topic and then compare and contrast this with your own results.

Discussion questions

Sometimes your teaching staff provide you with additional questions to answer in your discussion. Include these where they best fit and create the most natural flow.

Conclusion

The *Conclusion* is a final paragraph of your discussion, where you take the key findings from your discussion and relate them back to your aim. The conclusion should be short and concise. It is not a place to discuss your results (this is addressed in the discussion).

Summarise the key points of your discussion in relation to your aim and include key results. For example, if your aim was to find out how much dietary fibre was in breakfast cereal, your conclusion should include your value of the fibre content of said breakfast cereal.

A conclusion should be a summary paragraph of around two to five sentences long, depending on the size of your research question.

References

A list of *References* must be included at the end of your report, listing all the sources you refer to in the body of your report. Check your unit description for your disciplines preferred referencing style.

Appendices

An *Appendix* is a section at the very end of your report that includes any relevant information that you did not include in the main body of your report. This could include raw data, calculations, drawings or photographs. The important thing to remember is to **keep it relevant**. If it does not add value to your report, you should not include it in the appendix.

Related helpsheets

- Report Writing: Scientific (Detailed)
- Report Writing: Tenses in Science
- Paragraph Structure

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