Project Report Guidelines

Each project requires a Project Report of no more than five pages plus an appendix of no more than two extra pages for the references and bibliography (see the Format section below for further details).

The report is the first thing that your judges will see, so it is worth taking care of the preparation. The report might not have been part of the project when it was presented at your regional fair, but it is an important component at the Canada Wide Science Fair. In the very best project reports, the judges will expect to see that "the project report and logbook are informative, clearly written, and the bibliography [and/or references] extends beyond web-based articles" (Youth Science Canada, 2014).

When writing your report, consider who will be reading it and why. The judges are expert in their own fields and have professional backgrounds, but they are not as familiar with your work as you are. It is up to you to explain your project clearly, so that your readers can understand what you have done and why.

This report should summarise your project using a scientific writing style. This is a difficult balancing act: you should aim to convey your ideas and exactly what you did as concisely as possible, but with enough detail that the description is unambiguous (Heard, 2016). Because this is difficult to do, any writing project includes an editing phase: your first version of the report should not be the final version. Allow enough time to write *and* edit the report. Most importantly, make sure that you read the report after you have written it (tip: read it aloud). You will catch many mistakes that way. If possible, get someone else, who is less familiar with your work, to read the report too. They will be able to tell you where a description is unclear or where some detail is missing. When you have finished editing the report, you should upload the final version online in PDF format, as part of the registration process. The submitted report will be evaluated using anti-plagiarism software.

Contents

A complete Project Report includes the following subtitles and sections. The five-page limit applies to sections 1-5. Sections 6 and/or 7 may be up to two additional pages, for a maximum total of seven.

1. **Introduction:** a description of the background to your experiment, innovation or study. What measurements or inventions by other people have laid the groundwork for your project? Where did you get the idea? What need are you addressing or what question are you trying to answer? The Introduction should include the specific objectives of the project. For example, if your project tested a hypothesis or if there were design criteria, you would describe them here. If an earlier version of the project was submitted in a previous year, you should describe it and highlight the changes and additional work done.

2. **Procedure:** a brief outline of the materials and methods used, which might include methods of data/information gathering in a study or construction of prototypes in an innovation, for example.
3. **Results or Observations:** a summary of the results of the experiment, innovation or study. Graphs, diagrams and charts may be included in your report, but not the raw data or observations.
4. **Conclusions:** an explanation of what can be concluded from the results of your project and why it is important.
5. **Acknowledgements:** recognition of those individuals, institutions and businesses that provided significant assistance in the form of guidance, materials, financial support and/or facilities for this work.
6. **References:** detailed references are mandatory for any specific literature referred to in the text of the report. Key sources used in the development of the project must be referred to in the text and listed in the References appendix. Author, title, source publication, volume, date and page numbers must be given for each reference, where available. Any use of quotations from references must be clearly identified in the report as well as the source being listed in the References appendix. It is recommended that senior projects format their references using APA format, which is commonly used in the scientific literature (Paiz *et al.*, 2018). Junior and intermediate projects may use APA format too. The references at the end of this article are in APA format.
7. **Bibliography** (if necessary)**:** a list of all significant sources consulted, but not specifically referred to in the report (books, articles, audio-visuals, documents, web sites with dates of access, interviews, etc.).

Format

- The format of the report will be a maximum of five letter-sized (8.5 x 11 inches) pages as a PDF file, to include sections 1-5 above.
- An appendix of an additional two pages is allowed, containing the References and Bibliography (sections 6 & 7). Any additional material will be discarded and will not be distributed to judges.
- Text must be in 12-point Times, Arial or equivalent type, double-spaced with margins of 2.5 cm (1 inch) all around.
- Page 1 must have the project title and finalist name(s) at the top.
- A footer in 8-point type is required on each page containing the date, finalist name(s) and project title as well as the page number. Here is an example of the footer:

  "16 April 2018 - Jane Doe: The Generic Project - Page 1 of 5"

Composition

As is the case with manuscripts submitted for publication in the scientific literature, project reports must be written in good, grammatical English. The following all contribute to the acceptability of the report:

- composition style,
- appropriate vocabulary,
- correct verb tense use,
- agreement of verbs and their subject nouns in number,
- and correct punctuation.

Indeed, lack of attention to these writing requirements for project reports may result in *the downgrading of the project*.

Units

Respectable scientific work for international consumption is recorded using Système international (SI) units (www.bipm.org/en/publications/si-brochure), which must be used throughout. Correct abbreviations for units must be used.

Measurements and uncertainty

Most physical measurements have uncertainty. Students should be aware of the concepts of accuracy, precision and uncertainty in measurements, and the methods scientists use to represent them *e.g.* (Bell, 2001). In senior projects, data are expected to have the appropriate number of significant figures, and graphs should have corresponding error bars. Junior and intermediate projects may have as sophisticated a treatment of uncertainty as the finalists' experience allows.

Graphs, charts and maps

Captions, labels on axes and legends must be accurate and legible.

In conclusion

The ability to communicate scientific work clearly and succinctly is an important skill; therefore, the five-page limit (for sections 1-5) is strictly adhered to, regardless of the type or complexity of the project.

It is strongly recommended that someone from your regional organization check each project report for length, clarity, completeness and compliance with the formatting requirements.

A copy of the Project Report is provided to each CWSF judge before he/she sees the project or interviews the finalist(s). *Remember, not only does the report account for 10% of the project evaluation, it is the first encounter a judge has with the project. A concise, well-written report that is free of spelling and grammatical errors makes a good first impression.*

Saving the report as a PDF

The Project Report is submitted electronically as part of the online CWSF registration process. It must first be saved as a Portable Document Format (PDF) file, which preserves the appearance of your document regardless of which computer it is viewed on.

Please note: PDF is the only acceptable format for Project Reports.
PDF documents can be made from any document created in Microsoft Word, Works, Publisher, WordPerfect, Pages or any other application you would use to write a report. There are many different ways to create a PDF file from your report document. Here are a few:

- Use the "Save As…" option in Microsoft Word

- Open the document and select Print > Save as PDF on any Macintosh computer running MacOS.
- Download the free CutePDF Writer (Windows only) and use it to convert your file.
- Go to Adobe and click "Try it for Free" to sign up and create up to five Adobe PDF files for free.
- Enter "convert to PDF" into your favourite search engine. You'll find several other free offers for online conversion services.
- Get a local computer expert to do it for you. Your region should be able to help you with this process.

Bell, S. A. (2001). A beginner's guide to uncertainty of measurement. *Measurement Good Practice Guide No. 11 (Issue 2).* London UK: National Physical Laboratory. Retrieved from http://www.npl.co.uk/publications/a-beginners-guide-to-uncertainty-in-measurement.

Paiz, J. M., Angeli, E., Wagner, J., Lawrick, E., Moore, K., Anderson, M., Soderlund, L., Brizee, A., Keck, R. (2018). APA Formatting and Style Guide. *OWL Purdue Online Writing Lab*. Retrieved from https://owl.english.purdue.edu/owl/resource/560/1/

Heard, S. B. (2016). *The Scientist's Guide to Writing*. Princeton, NJ: Princeton University Press.

Youth Science Canada. (2014). Excellence Awards – Judging Rubric. *Canada-Wide Science Fair*. Retrieved from http://cwsf.youthscience.ca/excellence-awards-judging-rubric