# Practical Investigation Reports

Science Inquiry Skills section of the subject outline specifies:

As specified in the subject outline, all practical report must include:

* introduction with relevant biological concepts, and either a hypothesis and variables, or an investigable question
* materials/apparatus
* method that outlines the method that was implemented
* identification and management of safety and/or ethical risks
* results including table(s) and/or graph(s)
* analysis of results, identifying trends, and linking results to concepts
* evaluation of method/procedure and data, and identifying sources of uncertainty
* conclusion, with justification.

**Stage 1:** The report should be a maximum of 1000 words if written, a maximum of 6 minutes if an oral presentation, or the equivalent if in multimodal form.

**Stage 2:** The report should be a maximum of 1500 words if written, a maximum of 10 minutes if an oral presentation, or the equivalent if in multimodal form.

Only the following sections of the report are included in the word count:

* introduction
* analysis of results
* evaluation of method/procedure
* conclusion.

Evidence of deconstruction (where applicable) should outline the deconstruction process, the method/procedure chosen as most appropriate, and a justification of the plan of action, to a maximum of 4 sides of an A4 page. This evidence must be attached to the practical report.

Frequently Asked Questions

Should the students include an Abstract?

* No.

In the evidence of ‘deconstruction of a problem and design of an investigation’, is the aim, hypothesis, and variables included in the word count?

* No. The word count relates to the individual report on investigation that is completed by the student.
* Evidence of deconstruction should outline the deconstruction process, the method/procedure chosen as most appropriate, and a justification of the plan of action, to a maximum of 4 sides of an A4 page.

This evidence must be attached to the practical report. The deconstruction of a problem leads to a design of a method, which includes the hypothesis, variables, and justification for the method. These may be in note form for the deconstruction component.

Where the hypothesis and variables are part of the deconstruction component they are not a part of the word count.

* The introduction to a practical report *is included* in the word count. It must include relevant science concepts, and either a hypothesis and variables, or an investigable question.

If the teacher supplies the method for the students to undertake a completion practical investigation, does the method need to be included in the report?

* The method must be included in the appropriate sequence in all practical reports so that it is clear what practical investigation undertaken and being reported on by the student involved. This may be re-written by the student or it may be a photocopy/copy-and-paste of the teacher’s method. It should *not* be at the end as an appendix.

If the method is of the student’s own design, and is in the ‘deconstruction and design’ section of the task, does the method need to be included in the report?

* The method must be included in the appropriate sequence in the practical report.

If the method is *identical* to the method in the ‘deconstruction and design’ section of the task, with no alterations as a result of feedback from the teacher, it may be a photocopy/copy and paste of the student’s method or it may be re-written by the student.

It should *not* be at the end as an appendix.

It is *not* included in the word count.

If the method has been *altered* as a result of feedback from the teacher or was designed by another student, the method actually used by the student must be included in the report. This should be in the appropriate sequence in the practical report.

This means that there will be the original method in the Deconstruct/design component as well as a similar, but updated, or different method in the report component of the task.

Is the method, provided by the teacher, included in the word count?

* Whether the method is part of the ‘deconstruct and design’ section of the task or a method provided by the teacher, it is excluded from the word count but must be included in the report.

Can results be graphed electronically or must they be hand-drawn?

* Either method of representing the data collected during a practical investigation is acceptable. Students must still use the accepted conventions of representing the data.

Do students need to discuss improvements?

* There is no longer a requirement for students to discuss improvements but they may still refer to them. It is expected that, in the evaluation of procedures, some improvements may be implicit.

For example, the students may refer to the fact that the sample size was small (analysis of procedure) and hence the results not as reliable as they would be with a larger sample size (effect on data) because the effect of random error is still significant.

In this case, it is implicit that a larger sample size would be an improvement.

Do the students need to discuss strengths and weaknesses?

* No.

The Science Inquiry Skills of the subject outline indicates that students:

* Identify sources of uncertainty, including:
* random and systematic errors
* uncontrolled factors.
* Evaluate reliability, accuracy, and validity of results, by discussing factors including:
* sample size
* precision
* random error
* systematic error
* uncontrolled factors.