



Chief examiner's report

**T Level Technical Qualification
in Science (Level 3)
(603/6989/9)**

**Summer 2022 – Employer set project
(Laboratory Science)**

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Assessment dates: **16 – 20 May 2022**

This report contains information in relation to the externally assessed component provided by the chief examiner, with an emphasis on the standard of student work within this assessment.

The report is written for providers, with the aim of highlighting how students have performed generally, as well as any areas where further development or guidance which may be required to support preparation for future opportunities.

Key points:

- grade boundaries
- standard of student work
- evidence creation
- responses to the external assessment tasks
- administering the external assessment

It is important to note that students should not sit this external assessment until they have received the relevant teaching of the qualification in relation to this component.

Grade boundaries

Raw mark grade boundaries for the series are:

	Overall
Max	147
A*	132
A	117
B	100
C	84
D	68
E	52

Grade boundaries are the lowest mark with which a grade is achieved.

For further detail on how raw marks are converted to uniform marks (UMS), and the aggregation of the core component, please refer to the qualification specification.

Standard of student work

On the whole students performed well in the employer set project (ESP), with a number producing work which achieved high marks in some sections. Students who had been given the opportunity to complete a mock assessment had clearly learned from the process and tended to achieve higher marks, showing an

understanding of the assessment format and requirements. It was pleasing to see that the majority of students attempted all of the set tasks.

The use of pro-forma documentation is shared to help ensure students met the grading criteria and can respond efficiently, but where students did not use this document, they risked making avoidable mistakes. For example, in the literature review (task 1), some students who did not use this documentation did not indicate whether they were accepting or rejecting each source, causing marks to be lost. Another example of effective pro-forma use was in generating the risk assessment (task 2). Again, those students who did not utilise the template provided lost marks, particularly around the concept of prioritisation of risk. Overall, many students failed to complete this part of the risk assessment correctly throughout the cohort, even if using the pro-forma, indicating the concept of a risk assessment could be an area of future development for students.

A range of achievement was seen, with some students achieving high marks in some sections, particularly in the data analysis task (task 3). Where marks were lost in this task it was often a result of students failing to realise there was more than one tab of data available for analysis, and/or a failure to draw conclusions from any statistical analyses performed.

The most challenging task was the reflective evaluation (task 6), with many students describing their performance rather than explaining or evaluating it, leading to a loss of marks. Students must engage fully with their performance, indicating a range of areas that worked well, or which require development, and reflect on this in detail. Simply listing what they did, or what they did not do, is not an effective reflective evaluation.

Evidence creation

Evidence was provided in the form of word-processed documents, uploaded hand-written student work and video recordings.

Some providers had uploaded recordings where the sound or picture was absent or of poor quality (for example, very low sound levels). It is recommended that providers check that their recordings are suitable before submission.

Responses to the external assessment tasks

Task 1: Research a strategy

Generally, students performed well within this section, with most being able to produce a literature review which selected and rejected sources, with reasons for their decisions clearly evidenced. The highest performing students discussed bias and availability of quantitative data for selected sources-this was most commonly missed out in lower achieving responses. Most students demonstrated an ability to reference correctly using a recognised referencing technique, but there was still a minority who only provided a web link, or in some cases, no referencing at all. Most students quoted from the sources, with a minority who described the source in very general terms, losing marks.

Task 1: English, mathematics and digital skills

Students performed well in this aspect, with many using the appropriate professional tone in their writing.

Task 2: Plan a project

Many students struggled to produce a plan that allowed them to achieve high marks for this task. The most common reasons for this were that the plan did not make clear reference to sources selected in the literature review, had inappropriate timescales, or did not consider economic constraints. Nevertheless, most students were able to produce a basic plan which met the aims of the brief, giving some indication of resources required. Students who used the risk assessment pro-forma correctly achieved the highest marks; the majority of students did not understand risk prioritisation or failed to correctly evidence it, losing marks. Most students were able to articulate what data should be collected in their plan, but many omitted to state the mechanism for its collection. Responses that gained the highest marks were those in which several different types of data were identified, and their mechanism of collection described.

Task 2: English, mathematics and digital skills

Most students performed well; where marks were lost it was due to a lack of appropriate scientific terminology being used.

Task 3: Analysis of data

Most students achieved at least half marks for this task. Higher attaining responses included analyses of all the data provided, use of a suitable statistical analysis which was then used to inform conclusions drawn and a consideration of anomalies and limitations of the data sets provided. Some students carried out a statistical test but then failed to reference the outcomes of that test, nor use it to inform their conclusions, losing marks. It was noted that some students later realised there were several tabs of data provided but had only used one data set in their initial analysis. Providers should ensure students gain experience in manipulating data from multiple data sets presented on a spreadsheet to ensure this does not limit student achievement.

Task 3: English, mathematics and digital skills

Generally, students performed well in this aspect. A small minority failed to write anything in their report, instead presenting just numerical analyses, causing them to lose marks.

Task 4: Presentation of outcomes and conclusions

Many students produced a poster that achieved the highest marks. It was pleasing to see that students had taken time and care with their work, thinking about how to logically set out the information on the poster so that an audience could clearly access it. A range of styles of poster were seen, with some being produced entirely using digital software, others hand produced, whilst others used a mixture of both approaches. The best posters displayed highlights from the data analysis task, rather than simply copying over the same information. Some students added to their analysis by incorporating new tables, graphs or charts to enable a trend to be displayed, gaining higher marks. Colour was generally used effectively, with only a small minority of students adding irrelevant or merely decorative content to their posters. The verbal presentations were, on the whole, of excellent quality with all students attempting the task, and many displaying a very professional approach to the task. Where students lost marks, it was a result of reading directly from their poster rather than using it as a prompt for further expansion.

Task 4: English, mathematics and digital skills

Generally, students performed well in this aspect. Some students lost marks as they had not incorporated their statistical analyses into the poster despite having evidenced them in earlier tasks.

Task 5: Group discussion

Most students performed well in this task. It was pleasing to see students interacting with one another, displaying excellent communication and listening skills. Most students were able to articulate points to their peers and build on a group discussion which then informed the email task. A small minority of students struggled to engage verbally with the group discussion, preferring to nod in agreement with the others, losing marks. Emails were generally well written, providing clear responses to the concerns of the customer. The highest marks were achieved when a student's responses included data from their analyses to illustrate a solution.

Task 6: Reflective evaluation

A significant number of students struggled to achieve higher marks for this task. Many students were able to provide an account of the different tasks and indicate what had worked well and less well. Most were able to indicate some changes they would make. Marks were lost when no reasoning was provided for proposed changes and few students linked these to the aims of the project. A small minority of students were able to evaluate their performance in the different tasks and could demonstrate how any proposed changes might impact on other tasks in the ESP, gaining higher marks.

Task 6 – English, mathematics and digital skills

Students generally performed well in this aspect, although avoidable spelling, formatting, and grammatical errors meant many students could not achieve full marks.

Administering the external assessment

The external assessment is supervised and must be conducted in line with our [Regulations for the Conduct of External Assessment](#). Students may require additional pre-release material to complete the tasks. These must be provided to students in line with our regulations.

Students must be given the resources to carry out the tasks and these are highlighted within the [Qualification Specific Instructions Document](#) (QSID).