

# Chief examiner's report

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

**Summer 2023 – Employer set project  
(Laboratory Science)**

## Chief examiner's report

### Summer 2023 – Employer set project (Laboratory Science)

Assessment dates: **15 – 26 May 2023**

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 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*	131
A	116
B	99
C	83
D	67
E	51

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

Overall, the standard of student work seen in this series was of a good quality, with students attempting all of the set tasks within the employer set project (ESP). Most providers had prepared students well for the ESP, with those students who had sat a mock ESP able to reflect on feedback given to them and use this to improve areas of weakness.

A range of achievement was seen within the component, with students achieving at all grades available.

Providers are encouraged to ensure students are familiar with the task requirements, use of pro-formas and Excel spreadsheets.

### Evidence creation

A range of responses to the tasks was seen, providers are encouraged to use the pro-formas for tasks 1, 2 and 6, as these facilitate responses that meet the grading criteria. Where students did not use these pro-formas, it was not uncommon to note that certain aspects of the task had been missed out.

A number of providers submitted video evidence that did not play, had no or very poor-quality sound. It is recommended that providers double check recordings prior to submission in order to ensure the quality of them.

Providers should encourage students to submit a scientific poster for task 4, rather than a printed report, PowerPoint presentation or similar.

Some providers facilitated identification of students in the group discussion by means of verbal introductions, or by students holding up a sheet of paper with their name on it. This practice was very helpful to examiners when viewing this evidence and awarding marks. Providers are asked to check that the correct video evidence for task 5 is submitted as there were a small number of cases where the group discussion did not include the student whose work was being examined.

### Responses to the external assessment tasks

#### Task 1: Research a strategy

Students generally performed well within this section. The majority of students were able to select and reject a range of sources and provide rationale for their choices. For some students, failing to discuss more than one or two sources limited the marks available for this task. Common errors within this task were the omission of a discussion around the presence or absence of quantitative data, and students not explaining how a source would be of use to them in subsequent tasks. Again, this limited the marks available for this section. Most students referenced sources correctly, but there were some who were unable to demonstrate referencing skills, limiting the marks available for this task.

#### Task 1: English, mathematics and digital skills

A common error was to write the literature review in the first person, and not use a more formal third person approach as would be appropriate.

#### Task 2: Plan a project

Some students found this section challenging because they were not familiar with methods used to stain and count cells. A common error was to have a limited description of data to be collected, with only some students able to suggest data other than white blood cell count (for example, medical history, lifestyle, age, gender). Generally, students performed well with the risk assessment task, but a failure to prioritise identified risks limited the marks available. Additionally, some students had listed generic risks and suggested vague approaches to their management, rather than being more specific: again, this limited the marks available for this section.

#### Task 2: English, mathematics and digital skills

Most students performed well in this area. Where students did not, it was most often due to a lack of technical terminology evidenced within the risk assessment.

#### Task 3: Analysis of data

Overall, students performed well on this task. Most were able to analyse the data, calculate mean and standard deviations, produce graphs or charts and draw conclusions about the effect of the 4 steroids on

white blood cell count. For some students, the lack of written conclusions from their data analysis limited the marks available for this task. Most students attempted some form of statistical analysis, with a t test being the most popular; however, many students appeared confused over how to correctly interpret the results of the t test, limiting the marks available for this task.

### **Task 3: English, mathematics and digital skills**

Generally, students performed well in this area. Some students found the production of a report challenging, producing work with very limited writing. Where students had included the results of their data analysis within the format of a written structured report, higher marks could be awarded.

### **Task 4: Presentation of outcomes and conclusions**

Generally, students performed well on this task, creating posters that were accessible to the audience. For some students, creating a Powerpoint presentation or using their written report as a poster limited the marks available. Presentation skills varied within the cohort, with a common error being the verbatim reading of the poster rather than attempting to present it. Some students included too much detail on their poster, with a large amount of writing, rather than a summary of the main points. Additionally, some students assigned the majority of the poster to the introduction, method and risk assessment, leaving only a small area of the poster for their graphs and charts – this limited the marks available for this task.

### **Task 4: English, mathematics and digital skills**

Generally, students performed well in this section, demonstrating their ability to use mathematics and digital skills to organise and present their data analysis.

### **Task 5: Group discussion**

Students performed well in this section, with almost every student demonstrating the ability to participate effectively in the group discussion. The most common error was not addressing both aspects of the patient's query in the email response: students would either describe how the white blood cell count would be achieved, or explain the effect of steroids on the body, but not both. This limited the marks available for this section.

### **Task 6: Reflective evaluation**

Generally, students performed less well in this section. A common error was to list changes that the student would make if attempting the tasks again, but not give reasons for these changes. Students who linked their performance across tasks were able to access higher marks than those who discussed the different tasks in isolation. Some students found this task challenging and simply listed what they had done for each task, omitting suggested changes to their performance: this limited the marks available for this section.

### **Task 6: English, mathematics and digital skills**

Generally, students performed well in this section.

## **Administering the external assessment**

The external assessment is invigilated 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 for Delivery](#) (QSID).