Course report 2022

Subject	Graphic Communication
Level	National 5

This report provides information on candidates' performance. Teachers, lecturers and assessors may find it useful when preparing candidates for future assessment. The report is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published assessment documents and marking instructions.

The statistics used in this report have been compiled before the completion of any appeals.

Grade boundary and statistical information

Statistical information: update on courses

Number of resulted entries in 2022	4945

Statistical information: performance of candidates

Distribution of course awards including grade boundaries

A	Percentage	26.1	Cumulative percentage	26.1	Number of candidates	1290	Minimum mark required	73
B	Percentage	26.0	Cumulative percentage	52.1	Number of candidates	1285	Minimum mark required	61
C	Percentage	23.7	Cumulative percentage	75.8	Number of candidates	1170	Minimum mark required	49
D	Percentage	15.3	Cumulative percentage	91.1	Number of candidates	760	Minimum mark required	37
No award	Percentage	8.9	Cumulative percentage	N/A	Number of candidates	440	Minimum mark required	N/A

You can read the general commentary on grade boundaries in appendix 1 of this report.

In this report:

- ‘most’ means greater than 70%
- ‘many’ means 50% to 69%
- ‘some’ means 25% to 49%
- ‘a few’ means less than 25%

You can find more statistical reports on the statistics page of SQA’s website.

Section 1: comments on the assessment

Question paper

The question paper proved accessible to most candidates and performed as expected.

The question paper assessed a sample of the following content from the course specification:

- computer-aided design techniques
- graphic items in specific situations
- manual and electronic methods of graphic communication
- spatial awareness
- use of colour, layout and presentation techniques

As part of the modifications to assessment for session 2021–22, 15 marks were removed from the question paper and it did not sample 'drawing standards, protocols and conventions'. The duration of the question paper was reduced from 2 hours to 1 hour and 30 minutes.

Assignment

The assignment took a similar approach to the previous, externally assessed, assignment in 2019.

It was clear from evidence that teachers and lecturers had invigilated the assignment to allow candidates to complete the work on their own. Most candidates completed the assignment task on no more than the eight single-sided pages of A3, as requested.

Section 2: comments on candidate performance

Areas that candidates performed well in

Question paper

Question 1(a)

Many candidates successfully explained at least one way in which the designer created either a simple or modern homepage.

Question 1(b)

Most candidates correctly described how depth and contrast were created.

Question 2(b)

Most candidates correctly calculated the minimum dimensions for both diameter A and length B.

Question 2(c)

Most candidates successfully described how to reduce the environmental impact of the packaging.

Question 3(b)

Most candidates correctly stated two input devices.

Question 3(c)

Most candidates correctly stated the names of each pictorial view.

Question 3(f)

Most candidates identified the correct sectional end elevation.

Question 3(g)

Most candidates successfully explained two reasons why sign two was more appropriate.

Question 4(b)

Most candidates correctly described one change that could be made to the graphic to reduce the amount of ink.

Question 4(c)

Most candidates correctly stated a suitable contrasting colour.

Question 4(d)

Most candidates correctly stated a suitable harmonising colour.

Question 4(f)(i)

Most candidates identified the correct surface development.

Question 4(f)(ii)

Most candidates identified the correct surface development.

Question 5(a)

Many candidates correctly stated the names of the 2D CAD tools.

Question 6(a)

Most candidates successfully described the use of line and unity.

Question 6(b)(i)

Most candidates correctly stated the font was sans serif.

Question 6(b)(ii)

Most candidates successfully explained the suitability of the font.

Question 6(d)

Most candidates identified the correct arrangements.

Question 6(e)

Most candidates correctly identified the four components on the sectional elevation.

Assignment

Task 1

For 1(a), most candidates were able to successfully 3D CAD model the components, create sectional views, and orientate them correctly.

For 1(b), most candidates were able to produce the views to the correct orientation. Most candidates were also able to produce an appropriate sectional view.

For 1(c), most candidates were able to produce an exploded view to the correct orientation, with no overlap of parts.

For 1(d), most candidates produced their drawings using third angle projection and included a suitable title block.

Task 2

For 2(a), most candidates showed a very good understanding of how to produce a rendered version of their speaker.

For 2(b), most candidates performed very well. Most thumbnails were clear and had the correct use of dominance identified.

For 2(c), most candidates produced the layout to the correct dimensions. Many were able to correctly identify design elements and/or principles used.

Task 3

For 3(a), many candidates displayed a good understanding of orthographic projection. This was a great improvement on previous years. Most candidates applied dimensions correctly and demonstrated a clear understanding of the application of third angle projection.

For 3(c), most candidates performed reasonably well in the pictorial sketching and rendering areas of this task.

Areas that candidates found demanding

Question paper

Question 1(b)(i)

Few candidates correctly described how alignment was created.

Question 2(a)

Few candidates achieved full marks for describing the use of 3D CAD modelling. Most candidates achieved between 0 and 3 marks.

Question 3(a)

Few candidates achieved 2 marks for correctly explaining the purpose of preliminary sketching; however, many candidates achieved 1 mark.

Question 3(d)

Few candidates correctly stated ‘align’ as the correct CAD constraint.

Question 3(e)

Few candidates correctly explained an advantage of a CAD library.

Question 4(a)

Some candidates correctly explained an advantage to the user, but very few correctly explained an advantage to the manufacturer.

Question 4(e)(ii)

Very few candidates were able to explain why primary colours were suitable for a school garden.

Question 5(c)

Few candidates correctly described any benefits of using 3D CAD models for manufacturing.

Question 5(e)

Very few candidates achieved full marks for describing the use of 3D CAD modelling techniques. Most candidates achieved 0 or 1 mark.

Assignment

Task 1

For 1(b), some candidates struggled to accurately assemble the speaker.

For 1(d), many candidates did not apply centre lines where they were required. Many candidates did not display dimensions following British Standards. Cutting planes overlapping drawings and poor projection of the sectional view was common. Some candidates did not label their drawing views or give each of the component drawings titles.

Task 2

For 2(c), most candidates did not produce a good quality desktop publishing (DTP) layout.

Many candidates did not justify the effect of their chosen design elements and/or principles on their layout.

Task 3

For 3(a), many candidates incorrectly applied hidden detail in their responses. Candidates' ability to produce sketches to good proportions still requires development.

For 3(b), some candidates did not show they understood how the parts would fit together and be shown as an assembly. Many candidates struggled when projecting the views from the elevation. Many candidates did not demonstrate knowledge of the relationship between the depth of a plan view and an end elevation. Many candidates did not produce the sketches of the elevation, end elevation, and plan in good proportions with each other.

Section 3: preparing candidates for future assessment

Question paper

For questions about describing 3D CAD modelling techniques, centres should continue to encourage candidates to support their responses with sketches. Although sketching is not a requirement for achieving marks, some candidates find it challenging to express their responses in writing.

Centres should ensure that candidates are using the correct terminology, as detailed in the course specification. This is particularly important when responding to 2D and 3D CAD modelling questions. For example, 'extrude-cut' is not an acceptable term in 3D CAD as it is software-specific and not included in the course specification. Instead, 'extrude-subtract' and 'subtract' are acceptable. There were noticeably fewer candidates using incorrect terminology this year compared to previous years.

'Use of colour, layout, and presentation techniques' continues to be a strong area for most candidates. More specifically, most candidates achieved high marks for design elements and principles questions. Candidates, however, continue to answer questions related to alignment poorly. Centres should ensure that candidates refer to the type of alignment used to align two separate elements in a layout.

Assignment

Task 1

Centres should ensure their templates are suitable and are set up correctly.

Many candidates produced orthographic views in a scale too small for the detail of the drawings to be seen. Candidates should produce their orthographic drawings to a suitable scale, large enough to show the detail in each view, and to enable them to clearly annotate all views.

Some candidates have manually overridden incorrect dimensions in task 1 to make incorrect models appear to be accurate. We discourage candidates from doing this as it is not good practice. If a candidate notices that they have not modelled a part correctly when they add dimensions, they should edit the part, not override the dimensions on the production drawings.

Some candidates produced assemblies that were not orientated with a vertical axis. We recommend that centres ensure candidates know how to set parts in assemblies to the correct orientation.

Some candidates did not demonstrate knowledge of creating an exploded isometric view in the correct orientation. Centres should address this during learning and teaching.

Most candidates are still finding it challenging to apply British Standards, in particular correctly using centre lines, cutting planes, and applying dimensions. Producing views at an appropriate scale would help candidates with these areas.

Task 2

Some candidates fully annotated their thumbnails, detailing how they used a range of design elements and/or principles. For this year's assignment, it was only necessary to identify the correct use of dominance. When identifying a design element and/or principle in the thumbnails, candidates do not need to describe how it is to be used.

The quality of DTP work produced by candidates was poor. The skills of creating quality DTP layouts need to be developed. Candidates did not demonstrate an understanding of how to apply the design elements and principles to a high quality in a DTP layout. Teachers and lecturers should support candidates to creatively use the design elements and/or principles to help improve performance in this area of the assignment.

Task 3

Teachers and lecturers should remind candidates not to use drawing boards and equipment. Almost all candidates have followed this instruction from the assignment assessment task. However, there were some examples of candidates using drawing boards and/or drawing equipment or measuring during the sketching task.

If candidates use digital sketching methods, centres must ensure that candidates do not use shape tools as these are the equivalent of using drawing equipment. Similarly, candidates must not use software that creates 3D models and converts them to 2D sketches. This is because the assignment is assessing the skill of sketching.

Most candidates found the application of hidden detail in their orthographic sketching challenging. Teachers and lecturers should support candidates to understand how to apply hidden detail in orthographic sketches.

Candidates continue to find sketching in good proportions challenging. Teachers and lecturers should support candidates to understand how to sketch views in good proportions.

Appendix 1: general commentary on grade boundaries

SQA's main aim when setting grade boundaries is to be fair to candidates across all subjects and levels and maintain comparable standards across the years, even as arrangements evolve and change.

For most National Courses, SQA aims to set examinations and other external assessments and create marking instructions that allow:

- a competent candidate to score a minimum of 50% of the available marks (the notional grade C boundary)
- a well-prepared, very competent candidate to score at least 70% of the available marks (the notional grade A boundary)

It is very challenging to get the standard on target every year, in every subject at every level. Therefore, SQA holds a grade boundary meeting for each course to bring together all the information available (statistical and qualitative) and to make final decisions on grade boundaries based on this information. Members of SQA's Executive Management Team normally chair these meetings.

Principal assessors utilise their subject expertise to evaluate the performance of the assessment and propose suitable grade boundaries based on the full range of evidence. SQA can adjust the grade boundaries as a result of the discussion at these meetings. This allows the pass rate to be unaffected in circumstances where there is evidence that the question paper or other assessment has been more, or less, difficult than usual.

- The grade boundaries can be adjusted downwards if there is evidence that the question paper or other assessment has been more difficult than usual.
- The grade boundaries can be adjusted upwards if there is evidence that the question paper or other assessment has been less difficult than usual.
- Where levels of difficulty are comparable to previous years, similar grade boundaries are maintained.

Grade boundaries from question papers in the same subject at the same level tend to be marginally different year on year. This is because the specific questions, and the mix of questions, are different and this has an impact on candidate performance.

This year, a package of support measures including assessment modifications and revision support, was introduced to support candidates as they returned to formal national exams and other forms of external assessment. This was designed to address the ongoing disruption to learning and teaching that young people have experienced as a result of the COVID-19 pandemic. In addition, SQA adopted a more generous approach to grading for National 5, Higher and Advanced Higher courses than it would do in a normal exam year, to help ensure fairness for candidates while maintaining standards. This is in recognition of the fact that those preparing for and sitting exams have done so in very different circumstances from those who sat exams in 2019.

The key difference this year is that decisions about where the grade boundaries have been set have also been influenced, where necessary and where appropriate, by the unique circumstances in 2022. On a course-by-course basis, SQA has determined grade boundaries in a way that is fair to candidates, taking into account how the assessment (exams and coursework) has functioned and the impact of assessment modifications and revision support.

The grade boundaries used in 2022 relate to the specific experience of this year's cohort and should not be used by centres if these assessments are used in the future for exam preparation.

For full details of the approach please refer to the National Qualifications 2022 Awarding — Methodology Report.

