Course report 2024

National 5 Graphic Communication

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. You should read the report with the published assessment documents and marking instructions.

We compiled the statistics in this report before we completed the 2024 appeals process.

Grade boundary and statistical information

Statistical information: update on courses

Number of resulted entries in 2023: 5,151

Number of resulted entries in 2024: 5,177

Statistical information: performance of candidates

Distribution of course awards including minimum mark to achieve each grade

A	Number of candidates	892	Percentage	17.2	Cumulative percentage	17.2	Minimum mark required	82
B	Number of candidates	1194	Percentage	23.1	Cumulative percentage	40.3	Minimum mark required	69
C	Number of candidates	1271	Percentage	24.6	Cumulative percentage	64.8	Minimum mark required	56
D	Number of candidates	1014	Percentage	19.6	Cumulative percentage	84.4	Minimum mark required	43
No award	Number of candidates	806	Percentage	15.6	Cumulative percentage	100	Minimum mark required	N/A

We have not applied rounding to these statistics.

You can read the general commentary on grade boundaries in the appendix.

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 and information page of our website.

Section 1: comments on the assessment

Question paper

The question paper generally performed as expected; however, the level of demand in some questions was higher than intended.

Questions about CAD and drawing standards, conventions and protocols proved more demanding than expected. We adjusted the grade boundaries to take account of this.

Assignment

The assignment performed mostly as expected.

The level of demand in the sketching in task 3 was more challenging than intended. We adjusted the grade boundaries to compensate for this.

Section 2: comments on candidate performance

Areas that candidates performed well in

Question paper

Question 1(a)(i)	Many candidates correctly identified the end elevation from a choice of four.
Question 1(a)(ii)	Many candidates correctly identified the true shape from a choice of four.
Question 1(a)(iii)	Most candidates correctly identified the two correct surface developments from a choice of six.
Question 1(a)(iv)	Most candidates correctly identified the correct outer sleeve surface from a choice of four.
Question 1(b)(i)	Many candidates correctly stated the fold line as being the correct line type from the enlarged detail graphic.
Question 1(b)(iii)	Most candidates correctly stated the centre line as being the correct line type from the enlarged detail graphic.
Question 1(c)	Many candidates stated the correct scale used in the enlarged view.
Question 1(d)	Most candidates explained two ways the environmental friendliness of the packaging could be improved.
Question 2(b)	Most candidates described two examples of good practice applied to the exploded pictorial graphic.
Question 2(d)(ii)	Many candidates stated ‘mate’ as the correct 3D CAD constraint used at a stage of the assembly process.
Question 2(e)(i)	Most candidates described the 3D CAD modelling technique of sketching a circle on a face and extruding the circle.
Question 2(e)(ii)	Many candidates described the 3D CAD modelling technique of extruding a rectangle from the correct face and filleting the appropriate edge.
Question 2(g)	Many candidates explained the purpose of the square symbol on the linear dimension.
Question 2(h)(i to iv)	Many candidates correctly identified errors in the orthographic drawing provided.
Question 2(h)(v)	Most candidates stated the names of the 2D CAD tools: mirror, line and trim.
Question 3(c)	Most candidates explained a reason why sans serif fonts were suitable for the graphic.
Question 3(f)(i)	Most candidates stated ‘pie chart’ or ‘pie graph’ as the name of the graph.
Question 3(f)(ii)	Many candidates explained a reason why a pie chart or pie graph was appropriate to communicate the information.
Question 3(g)(i)	Most candidates stated ‘line graph’ as the name of the graph.
Question 3(g)(ii)	Many candidates explained a reason why a line graph was appropriate to communicate the information.
Question 3(h)(i)	Most candidates stated ‘bar graph’ for the name of the graph.
Question 4(c)(i)	Many candidates described how depth was used to enhance the layout provided.
Question 4(d)(i to v)	Most candidates calculated the correct sizes from the orthographic drawing.

Question 4(e) Most candidates correctly identified two pictorial drawings from a choice of six.

Assignment

Task 1

1(b) Most candidates orientated the views correctly and created sectional views with the cutting planes in the correct position. Most candidates produced their drawings using third-angle projection and included a suitable title block. Most candidates correctly applied centre lines to their component orthographic views.

Task 2

2(a) Most candidates produced a CAD-rendered pictorial illustration of the vacuum to a high standard, using the correct materials.

2(b) Most candidates produced the DTP layout to the correct dimensions. Most candidates correctly identified their use of text flow along a path. Most candidates included an image from the data sheets, the extended text and the logo. Most candidates correctly identified their use of the design elements and principles. A few candidates provided full explanations of the effect they had on the layout, which was not required for the assignment task.

Task 3

3(a) Most candidates demonstrated a clear understanding of the application of third-angle projection.

3(c) Most candidates sketched the pictorial views to a good standard. Most candidates rendered their pictorial sketch to a fair standard, showing the appropriate material for each part.

Areas that candidates found demanding

Question paper

Question 1(e) Most candidates did not correctly explain two advantages of 3D printing the cookie cutter.

Question 2(a) Most candidates did not state the correct names for two 3D CAD illustration techniques.

Question 2(c) Many candidates did not describe a 360 degree revolve around an axis. Some candidates did not describe the use of subtract or extrude-subtract for the removal of the material.

Question 2(d)(i) Most candidates did not state ‘centre axis’ as the correct 3D CAD constraint used at a stage of the assembly process.

Question 2(f)(i and ii) Many candidates did not state the names of chain and parallel linear dimension types.

Question 3(a) Many candidates did not explain the effect the title had on the layout.

Question 3(b)(i and ii) Many candidates did not state the DTP techniques used in the layout.

Question 3(d) Most candidates did not describe four benefits of DTP software by referencing specific features in the layout.

Question 3(e)	Most candidates did not describe three additional features that could be added to an online publication.
Question 4(b)	Many candidates did not describe, using correct 3D CAD terms, the modelling process for the clip component.
Question 4(c)(iii)	Many candidates did not describe how alignment was used to enhance the layout.

Assignment

Task 1

1(a)	Many candidates did not orientate the sweeper component correctly. Some candidates did not include enough dimensions for manufacture.
1(b)	Many candidates did not assemble the components correctly.
1(c)	Many candidates did not apply centre lines to the assembly orthographic drawings. Many candidates did not display dimensions following British Standards. Many drawings had broken extension lines. Some candidates did not label their drawing views or give each of the component drawings a title.

Task 2

2(b)	Most candidates did not produce a high or excellent quality DTP layout.

Task 3

3(a)	Many candidates incorrectly applied hidden detail in their responses.
3(b)	Many candidates did not correctly sketch the orthographic views of the assembled parts of the charging station. Many candidates did not project the views from the elevation correctly. Many candidates did not demonstrate knowledge of the relationship between the depth of a plan view and an end elevation. Many candidates did not sketch these three related views to good proportions.
3(b) and 3(c)	A few candidates did not attempt these tasks.

Section 3: preparing candidates for future assessment

Question paper

Candidate responses about the design principle of alignment must be detailed. Candidates must describe the type of alignment between two separate elements to achieve a mark, for example left-hand alignment or central alignment. Responses that refer to two elements being aligned but do not describe the type of alignment do not achieve marks.

Teachers and lecturers should continue to reinforce the differences between the 'state', 'explain' and 'describe' questions that are common in the question paper. Candidates need to do more than simply state bullet-pointed responses for 'describe' questions.

Teachers and lecturers should also continue to encourage candidates to carefully read questions before responding.

Teachers and lecturers should reinforce the drawing standards, protocols and conventions topic in learning and teaching tasks to enable candidates to deepen their knowledge of specific terms and techniques.

Teachers and lecturers should ensure that candidates explicitly refer to the centre axis and provide the correct angle of revolution when responding to 3D CAD questions with a revolved feature. Candidates should understand that they achieve marks for identifying the correct axis and stating the correct angle of revolution.

Teachers and lecturers should aim to support candidates in understanding how to analyse an orthographic drawing and pick out key dimensions. In 3D CAD questions, candidates must state all the relevant dimensions for each stage of the process.

Teachers and lecturers should continue to ensure candidates are aware of the uses and advantages of 3D printing. Statements such as 'it is cheap' or 'it is quick' are incorrect. Candidates must have a deeper level of knowledge than this to achieve marks for questions relating to 3D printing.

Assignment

Task 1

When applying dimensions to the component parts, candidates must include enough dimensions to allow for manufacture. To identify if they have included enough dimensions, candidates should use the data sheets for guidance. If there is a dimension shown on the data sheet, candidates should include this dimension on their production drawings.

Candidates should not manually override incorrect dimensions in their work to make models appear accurate. This 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.

Selecting a suitable scale for each component is part of the assessment criteria for applying British Standards. 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. Candidates can display one component on a single page if this shows it to a larger scale that clearly shows the details in each part.

Teachers and lecturers should spend time ensuring candidates know what is meant by correct orientation of views in task 1 of the assignment.

Teachers and lecturers should ensure that candidates are prepared to use the three assembly techniques included in the National 5 course specification (centre axis, mate and align).

Candidates can find it challenging to apply British Standards. Teachers and lecturers could help candidates develop their knowledge of applying British Standards to drawings. Candidates could practise applying dimensions to their drawings and centre lines to assembly views. Drawings should not have overlapping dimensions or broken extension lines.

Task 2

Candidates can be asked to apply materials, edit textures and apply lighting styles when producing 3D CAD illustrations. Candidates should be able to apply these settings during the assignment.

Candidates should not submit evidence unless specified in the assignment tasks. This will help them to manage their time. Candidates can explore various layout ideas if they wish to, but they should be mindful of how much time they spend on work that will not be assessed, for example detailed thumbnail layouts for a DTP layout. Teachers and lecturers should remind candidates that only evidence for the tasks in the assignment will be assessed. Candidates should use the 8 hours available to complete the assignment tasks.

Teachers and lecturers should remind candidates that they only have to identify design elements or principles or DTP features. They should not spend time giving descriptions. Good practice for this part of the assignment would be to write or type the name of the design element or principle in the area surrounding the DTP layout, then draw a line from it to clearly indicate the area(s) of the layout they are identifying.

When identifying contrast and/or unity, it is good practice for candidates to point towards two or more areas of their layout to make it very clear which areas are in contrast or unity.

Teachers and lecturers should support candidates to creatively use the design elements and/or principles in preparation for this area of the assignment. Candidates should be able to demonstrate an understanding of how to apply the design elements and principles to a high quality in a DTP layout.

Task 3

Teachers and lecturers should remind candidates not to use drawing boards and equipment during task 3, as this approach will result in 0 marks being awarded across the task. Most candidates follow this instruction from the assignment assessment task.

If candidates use electronic sketching software, they are only allowed to use a straight edge. No other tools are allowed. For example, they must not use shape tools as this approach simulates using vector graphics. Similarly, candidates must not use software that creates 3D models and converts them to 2D sketches. This is because the assignment assesses the skill of sketching.

Candidates can find sketching challenging. Teachers and lecturers should ensure that candidates:

- are prepared to show the elevation of the component parts and the assembly orthographic sketches in the direction indicated on the data sheets
- understand how to apply hidden detail in orthographic sketches
- understand how to sketch views in good proportions
- develop skills in sketching assembled orthographic views

The tasks in the assignment each have a suggested time. Teachers and lecturers should discuss the suggested times and the importance of time management with candidates. Candidates should be able to manage their time effectively enough to attempt all parts of task 3.

Some candidates can find time prompts useful to help keep them on track to finish the assignment within the 8-hour period. Teachers and lecturers can give candidates timekeeping reminders as they work through the assignment.

Appendix: 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.

Every year, we evaluate the performance of our assessments in a fair way, while ensuring standards are maintained so that our qualifications remain credible. To do this, we measure evidence of candidates' knowledge and skills against the national standard.

During the pandemic, we modified National Qualifications course assessments, for example we removed elements of coursework. We kept these modifications in place until the 2022–23 session. The education community agreed that retaining the modifications for longer than this could have a detrimental impact on learning and progression to the next stage of education, employment or training. After discussions with candidates, teachers, lecturers, parents, carers and others, we returned to full course assessment for the 2023–24 session.

SQA's approach to awarding was announced in March 2024 and explained that any impact on candidates completing coursework for the first time, as part of their SQA assessments, would be considered in our grading decisions and incorporated into our well-established

grading processes. This provides fairness and safeguards for candidates and helps to provide assurances across the wider education community as we return to established awarding.

Our approach to awarding is broadly aligned to other nations of the UK that have returned to normal grading arrangements.

For full details of the approach, please refer to the National Qualifications 2024 Awarding — Methodology Report.