



Course report 2024

National 5 Design and Manufacture

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 in conjunction 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: 4,260

Number of resulted entries in 2024: 4,120

Statistical information: performance of candidates

Distribution of course awards including minimum mark to achieve each grade

A	Number of candidates	1,103	Percentage	26.8	Cumulative percentage	26.8	Minimum mark required	126
B	Number of candidates	987	Percentage	24.0	Cumulative percentage	50.7	Minimum mark required	108
C	Number of candidates	979	Percentage	23.8	Cumulative percentage	74.5	Minimum mark required	90
D	Number of candidates	620	Percentage	15.0	Cumulative percentage	89.5	Minimum mark required	72
No award	Number of candidates	431	Percentage	10.5	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 statistical reports on the [statistics and information](#) page of our website.

Section 1: comments on the assessment

Question paper

The question paper performed largely as expected. Some questions were less demanding than anticipated, however, the overall performance was in line with expectations. Questions 5(b), 7(b) and 8(a) were less demanding than anticipated.

Assignment — design

The assignment — design performed as expected. However, the grade boundaries were adjusted as part of established awarding procedures due to the requirement to carry out research, which was re-introduced this year. All three tasks allowed candidates to access the full range of marks available. Most candidates chose brief 1 or brief 3, with fewer choosing brief 2. All tasks generated a wide range of responses and marks.

Assignment — practical

The assignment — practical is marked by teachers and lecturers in centres, and verified by SQA visiting verifiers.

The assignment — practical performed as expected and gave candidates the opportunity to demonstrate the skills, knowledge and understanding they gained in the course. The tasks generated a wide range of candidate evidence. Most of the assignments that were verified had been fully completed by candidates.

Most centres' assessment judgements were valid. A few centres were severe or lenient with their assessment judgements, which they addressed during visiting verification.

Section 2: comments on candidate performance

Areas that candidates performed well in

Question paper

Question 1(a)(i)

Answered correctly by most candidates, showing a good knowledge of manufactured boards.

Question 1(c)(ii)

Answered well by most candidates, showing a good knowledge of drill bits.

Question 1(c)(iii)

Answered well by most candidates, showing a clear understanding of safety checks on the pillar drill.

Question 1(d)(i)

Answered correctly by most candidates, showing a good knowledge of hardwoods.

Question 1(e)(iii)

Answered well by most candidates, showing a clear understanding of the benefits of using paint as a finish.

Question 2

Answered well by most candidates, showing a clear understanding of the features of the ring light that could be evaluated by carrying out a user trip.

Question 3(b)

Answered well by most candidates, showing a good knowledge of idea generation techniques.

Question 4(a)(ii)

Answered correctly by most candidates, showing a clear understanding of why a designer would use an exploded view in the design process.

Question 7(a)

Answered well by most candidates, showing a good knowledge of marketing techniques.

Question 7(b)

Answered well by most candidates, showing a good knowledge of people who influence design and their roles.

Question 8(a)(i)

Answered well by most candidates, showing a good knowledge of why stainless steel was a suitable material for the splashback.

Question 9

Answered correctly by most candidates, showing a clear understanding of how designers and manufacturers could reduce the impact of their products on the environment.

Assignment — design

Idea generation

Many candidates produced good evidence in generating ideas, producing a range of creative ideas clearly aimed at their chosen task.

Exploration

Many candidates demonstrated an appropriate level of skill in exploration of their design. A range of methods was used, such as SCAMPER, exploration of individual components and exploration of the design in its entirety.

Refinement

Many candidates produced good evidence of refinement, with most concentrating on the refinement towards manufacture, for example, dimensions, materials, manufacturing techniques and assembly.

Graphic techniques

Many candidates demonstrated a good level of skill in the use of graphic techniques, using a range of techniques appropriate to the stage of the design process.

Planning for manufacture

Most candidates produced good evidence across all three areas of the pro forma.

Assignment — practical

This year's candidates provided a good range of evidence in response to the three design briefs. Many candidates produced work that demonstrated high levels of practical skills across all sections.

Many candidates produced very strong evidence of creative solutions.

Areas that candidates found demanding

Question paper

Question 1(b)(ii)

Candidates were asked to outline 'two ways to ensure the mortises were cut to the correct depth'. Most candidates referred to checking with a metric rule or a completed tenon. The

correct responses were marking the depth on the mortise chisel or setting the depth stop on the mortising machine.

Question 1(b)(iii)

Candidates were asked to name 'an alternative woodwork joint for the softwood frame'. Many candidates named a 'lap joint' but this was incorrect as the softwood frame protruded at both ends.

Question 1(d)(ii)

Candidates were asked to name 'a turning process carried out to reduce the diameter of the handle'. Many candidates appeared to be unfamiliar with this process and did not gain a mark here.

Question 1(d)(iii)

Candidates were asked to name 'the tool used to check the diameter of the handle'. Many candidates referred to 'callipers' in their response, which did not attract marks. To access the marks for this question, candidates were required to specify the type of calliper that would be more appropriate. In this case, the appropriate response was 'outside callipers'.

Question 1(e)(i)

Candidates were asked to describe 'how to mark out the rounded corners, with reference to workshop tools'. Responses suggested that many candidates were unfamiliar with marking out on metal and were unable to gain marks here.

Question 1(f)

Candidates were asked to describe '**two** ways of ensuring a good quality thread is cut, with reference to workshop tools'. Most candidates did not gain marks here, often confusing the process of creating the internal thread with that of an external thread.

Question 4(a)(i)

Candidates were asked to outline '**two** reasons why a designer would use a **rendered pictorial** in the design process'. Many candidates referenced generic reasons for the use of graphics without specifically considering a rendered pictorial.

Question 8(b)

Candidates were asked to state '**two** features that would identify that the cutlery tray has been vacuum formed'. Responses suggested that most candidates were unfamiliar with the features of vacuum forming so did not gain marks here.

Assignment — design

Research and specification

Some candidates were able to produce valid research using a range of research techniques where they looked at a range of design issues. However, many candidates produced

personal opinion-based research, or research that did not allow them to produce a detailed specification.

Knowledge of design

Where limited research was conducted at the start of the task, this led to a less detailed specification for many candidates. This resulted in less consideration of design issues from these candidates.

Knowledge of materials and manufacture

Many candidates showed a limited range of knowledge of materials and manufacture, with many making decisions without reasoning, and instead simply labelling or inferring basic knowledge through graphic techniques.

Modelling

A few candidates failed to produce any models, and some produced overly simple models without additional detail or annotation to clarify their purpose; these models attracted little to no marks.

Assignment — practical

Candidates demonstrated a wide range of ability across all assessable skills. This year's evidence suggests that candidates did not find any of the areas of the assignment — practical more demanding than the others.

Some candidates limited their opportunity to demonstrate their practical skills because they developed very simple design proposals.

Section 3: preparing candidates for future assessment

Question paper

Teachers and lecturers should use the materials on SQA's website when preparing candidates for the question paper; for example, the specimen question paper, past question papers and marking instructions.

Candidates should work through question papers that are similar in style to the National 5 question paper. Teachers and lecturers could talk through the marking instructions with candidates as they complete each question. Candidates can use answering techniques to ensure their responses gain marks. Candidates can practise these to prepare for the final exam.

It is good practice to encourage candidates to respond in sentence format rather than single-word responses. Single-word answers can attract marks where the command word is 'name' or 'state', but where 'outline', 'describe' or 'explain' are used as the command word, some degree of description or explanation is expected.

The examining team continued with the strategy to ensure that low-level unqualified responses such as 'quick', 'easy' and 'cheap' are not awarded marks for almost all questions. This is to ensure candidates who showed the appropriate level of understanding of the topics and can qualify their responses are differentiated from those candidates who simply stated the low-level unqualified response.

The course specification contains a table with the skills, knowledge and understanding for the course assessment. This table contains the areas of the course that will be sampled in the question paper. Teachers and lecturers should share this table with candidates so they are familiar with these areas before the exam.

The course specification includes an appendix containing course support notes. This contains suggested activities and approaches to develop knowledge and understanding that would benefit candidates in their preparation for the exam.

Assignment — design

Candidates should be aware of the skills and knowledge being assessed in this component through the learning and teaching throughout the course. Teachers and lecturers should give candidates access to all relevant task documentation, allowing them to clarify any issues or concerns they may have before starting the assessment. It is good practice to share exemplification materials with candidates before they attempt the course assessment task.

Teachers and lecturers should ensure all work submitted is the candidate's own. Teachers and lecturers should work with their centre's support department to ensure they are meeting candidates' additional support needs within the assessment conditions.

The assignment must be carried out without interruption by periods of learning and teaching. Teachers and lecturers should ensure that candidates are fully prepared and have the necessary skills before starting the assignment.

Advice on sections of the design component:

- ◆ Research should be relevant to the chosen brief and carried out using a range of valid research techniques. Candidates should research a range of design issues relating to their chosen task. Responses that only state the candidate's opinions will not attract marks. No marks are awarded for the use of idea generation techniques. Where candidates choose to include research images relating to the theme, they must analyse these images and identify specific aesthetic characteristics that will influence their design.
- ◆ The specification should contain points drawn from the chosen brief and a range of valid points drawn from the candidate's own research. The specification should be detailed, including information that will allow effective refinement later in the design process. Specification points based on the candidate's own opinions will not generate marks.
- ◆ Ideas should be clearly aimed at the chosen brief. These can be communicated through graphics, models or annotations. Basic shapes with no clear function will not attract marks. Copies of existing products will not attract marks. Candidates should aim to have a range of ideas, with clear differences.
- ◆ When carrying out exploration, candidates should clearly communicate the alternatives being considered through graphics, modelling or annotation, as well as communicating the opportunities or drawbacks each option will have on their design.
- ◆ When refining their final proposal, candidates should communicate how their final design will meet their specification and areas relating to manufacture. For example, materials, dimensions, manufacturing techniques and assembly. These decisions will allow greater knowledge of design and manufacture to be demonstrated.
- ◆ Candidates should use their specification to help generate evidence of design knowledge. Researching a range of design issues and/or lifting information from the brief will provide a range of areas to consider throughout the design process. Exploration of these design issues will allow candidates to show a wider, more in-depth knowledge of design. Candidates may demonstrate their knowledge of design through annotations, graphics or modelling.
- ◆ Candidates should demonstrate their knowledge of materials and manufacturing by exploring alternative materials, processes, assembly methods and finishes. Candidates may demonstrate their knowledge of materials and manufacturing through supporting annotations, graphics or modelling.
- ◆ Candidates should use a range of graphic and modelling techniques throughout the design process to generate ideas, explore alternatives, and refine their design to meet the specification and aid manufacture. When modelling, candidates should clearly communicate the purpose and outcome of the model. Modelling used only to communicate the overall look of the proposal is less likely to gain marks in the upper bands.
- ◆ Candidates should ensure the information on their planning for manufacture pro forma is clear, links across the three sections and communicates the information required to manufacture their final design.

Assignment — practical

Teachers and lecturers should remind candidates of the importance of designing a proposal with a level of complexity that allows them to demonstrate their practical skills.

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](#).