# Course report 2022

| | |
|---|---|
| Subject | Design and Manufacture |
| 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 | 4415 |
|---|---|

## Statistical information: performance of candidates

### Distribution of course awards including grade boundaries

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **A** | Percentage | 24.6 | Cumulative percentage | 24.6 | Number of candidates | 1085 | Minimum mark required | 122 |
| **B** | Percentage | 29.6 | Cumulative percentage | 54.2 | Number of candidates | 1305 | Minimum mark required | 101 |
| **C** | Percentage | 26.5 | Cumulative percentage | 80.7 | Number of candidates | 1170 | Minimum mark required | 81 |
| **D** | Percentage | 13.6 | Cumulative percentage | 94.3 | Number of candidates | 600 | Minimum mark required | 60 |
| **No award** | Percentage | 5.7 | Cumulative percentage | N/A | Number of candidates | 250 | 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

Overall, the course component performed in line with expectations. The question paper consisted of two sections totalling 80 marks, which is the same structure as previous years.

Most questions performed as expected, however some were more demanding than intended and grade boundaries were adjusted accordingly.

### Assignment — design

All tasks performed well and allowed candidates to access the full range of marks. Many candidates chose Brief 1 and few choose Brief 3. All tasks generated a wide range of responses and marks.

### Assignment — practical

This component performed as expected. All three tasks allowed candidates to demonstrate the practical skills required for this component. Almost all candidates completed all sections of the component.

# 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 softwoods. |
| Question 1(a)(ii) | Answered correctly by most candidates, showing a good knowledge of MDF. |
| Question 1(b)(i) | Answered well by most candidates, showing a clear understanding of how to mark out the position of dowel holes. |
| Question 1(c)(ii) | Answered well by most candidates, showing a clear understanding of how to hold the pieces of softwood together until the adhesive sets. |
| Question 1(d)(i) | Answered correctly by most candidates, showing a good knowledge of saws suitable for cutting acrylic. |
| Question 1(e)(i) | Answered correctly by most candidates, showing a good knowledge of hardwoods. |
| Question 2(b) | Answered well by most candidates, showing a clear understanding of the key stages of a questionnaire. |
| Question 7(c) | Answered well by most candidates, showing a clear understanding of the marketing techniques. |
| Question 9(a)(i) | Answered well by most candidates, showing a clear understanding of the metals and their properties. |
| Question 11(b) | Answered well by most candidates, showing a clear understanding of the environmental impact of materials. |

### Assignment — design

Specification: Many candidates were able to draw an appropriate number of points from the brief and given research to achieve full marks in this section.

Idea generation: Many candidates produced good evidence in generating ideas, producing a range of creative ideas, clearly aimed at the task.

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

Graphic techniques: Many candidates demonstrated a good level of skill in the use of graphic techniques, using graphic 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

Many candidates performed well in every section of the component. Very few candidates performed badly across all sections.

## Areas that candidates found demanding

### Question paper

| | |
|---|---|
| Question 1 (e)(ii) | Candidates were asked to describe '**four** stages in preparing the hardwood blank'. Many candidates found this demanding and struggled to generate descriptions/sketches that scored more than 2 marks. |
| Question 6(a) | Candidates were asked to describe 'how ergonomics may have influenced the design of the sun lounger'. Many candidates found this demanding and struggled to generate a description or sketches that scored more than 2 marks. |
| Question 7(a) | Candidates were asked for a description of 'technology push'. Many candidates were clearly unfamiliar with the term. |
| Question 7(b) | Candidates were asked for a description of 'market pull'. Many candidates were clearly unfamiliar with the term. |
| Question 9(b) | Candidates were asked to 'state two identifying features of rotational moulding'. Many candidates seemed unfamiliar with this process and could not name any suitable identifying features. |

### Assignment — design

Exploration: There has been an increase in the number of candidates exploring options for their design, allowing many candidates to access a higher mark than in previous years. However, some candidates are still demonstrating little to no consideration of alternatives or evolution of their proposal.

Modelling: There was an increase in modelling evidence. Many candidates earned marks for using modelling throughout the design process and gained additional marks in idea generation, exploration and refinement. Some candidates, however, did not produce any models, or simply produced models that did not help progress their design and were for communication purposes only.



 

# Section 3: preparing candidates for future assessment

### Question paper

Centres should ensure they are familiar with the relevant marking instructions, which are published with the specimen question paper, and annually on the past paper section of the SQA website. Candidates should have the opportunity to work through question papers that are similar in style. Candidate evidence and marking commentaries can be found on the SQA Understanding Standards website.

It is good practice for 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' and 'explain' are used as the command word, some degree of description or explanation is required.

The course specification contains a section on skills, knowledge and understanding for the course assessment. This section lists the areas that may be assessed in the question paper. We advise teachers and lecturers to familiarise themselves with the mandatory content to prepare candidates to respond to these areas of questioning.

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 question paper.

### Assignment — design

Candidates should be aware of the skills and knowledge being assessed in this component. Teachers and lecturers should give candidates access to all relevant documentation and allow 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. Examples of evidence with marking commentaries and the audio presentation can be found on the SQA Understanding Standards website.

Centres are reminded that assignments submitted must occupy a maximum of seven A3 sheets (or equivalent), including the research pro forma and the planning for manufacture pro forma. This information indicates the volume of evidence required for candidates to comfortably access the full range of marks available in assignments.

Centres should provide candidates' original work rather than photocopies, as this will provide the best quality to mark. If centres wish to keep a record of candidates' work in centre, they should retain photocopies. Teachers and lecturers should ensure all work submitted is candidates' own.

Advice on sections of the design component:

- The specification should contain all points drawn from the chosen brief and the research provided. Candidates are not required to carry out further research. Specification points based on candidates' own opinions will not generate marks.



 

- Ideas should be clearly aimed at the chosen brief. This can be communicated in the graphic, model or annotations. Generic shapes or objects with no clear function will not generate marks.
- When carrying out exploration of their design, candidates should clearly communicate the alternatives being considered through graphics, modelling or annotation, and communicate the positive or negative impact each option would have on their design moving forward.
- In order to fully refine their proposal, candidates should aim to meet their specification points and make decisions relating to the planning for manufacture pro forma: materials, dimensions, manufacturing techniques and assembly.
- Candidates should use a range of graphic and modelling techniques throughout the design process to generate ideas, explore options, refine the design and plan for manufacture.
- 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

Centres are reminded of the conditions of assessment and, in particular, the advice on 'reasonable assistance' for this component. Centres may direct candidates on the suitability of their proposal after they have completed their planning for manufacture pro forma. This may prevent candidates manufacturing proposals that do not allow them to demonstrate their skills or that are overly complex.



 

# 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.