Course report 2023

Design and Manufacture Advanced Higher

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.

The statistics in the report were compiled before any appeals were completed.

Grade boundary and statistical information

Statistical information: update on courses

Number of resulted entries in 2022:   115

Number of resulted entries in 2023:   112

Statistical information: performance of candidates

Distribution of course awards including minimum mark to achieve each grade

A	Number of candidates	14	Percentage	12.5	Cumulative percentage	12.5	Minimum mark required	115
B	Number of candidates	20	Percentage	17.9	Cumulative percentage	30.4	Minimum mark required	95
C	Number of candidates	25	Percentage	22.3	Cumulative percentage	52.7	Minimum mark required	76
D	Number of candidates	24	Percentage	21.4	Cumulative percentage	74.1	Minimum mark required	56
No award	Number of candidates	29	Percentage	25.9	Cumulative percentage	100	Minimum mark required	N/A

Please note that rounding has not been applied 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 SQA's website.

Section 1: comments on the assessment

Question paper

The question paper followed the same format as the previous year.

Most questions performed as expected. However, question 3(c) was slightly more demanding than anticipated for some candidates, and the grade boundaries were adjusted to take account of this.

Assignment

The assignment followed the same format as the previous year, with the removal of the 'Manufacture a presentation model' section.

The 'Define a design opportunity' section was not carried out effectively by some candidates.

The grade boundaries were adjusted to take account of these issues.

Section 2: comments on candidate performance

Question paper

Some candidates demonstrated appropriate knowledge to answer questions across the whole paper. However, many were unable to answer the range of questions to the depth required at Advanced Higher level.

Question 1

Most candidates identified a commercial product(s) they had analysed. Some generalised about product(s) and were not able to give answers at an appropriate level for Advanced Higher.

1(a) Some candidates outlined features that enabled them to identify processes and explain their suitability.

1(b) Some candidates described how materials and assembly methods impacted on the environment and society. Some did not relate their answers to environment and society, and instead gave generic responses about materials and assembly.

1(c) Some candidates were able to describe how they evaluated the product(s). A few did not attempt the question.

1(d) Many candidates did not identify a suitable production system or were unable to discuss the suitability of the system(s). A few did not attempt the question.

Question 2

Some candidates identified a commercial product(s) they researched. Many generalised about products, for example 'cars', and were not able to give answers at an appropriate level for Advanced Higher.

2(a) Many candidates did not describe how changes in society had influenced the evolution of the product(s) identified, and simply described the evolution of products without relating them to changes in society.

2(b) Some candidates described key changes which occurred however, many were unable to give the detail required to attract marks at Advanced Higher level.

2(c) Many candidates were unable to describe the work of a designer or a company, although some were able to describe how they contributed to the evolution of products. A few did not attempt the question.

Question 3

3(a) Some candidates were able to explain the importance of defining a clear brief and specification.

3(b) Most candidates were able to discuss the issues that may have influenced the selection of materials for the Air Pocket.

3(c)   Some candidates were able to identify marketing techniques however, many did not explain why they would be suitable for reaching the target market.

Question 4
4(a)   Some candidates were able to discuss the benefits and drawbacks of different idea generation techniques however, many simply described idea generation techniques and did not provide enough detail to attract marks at Advanced Higher level.

4(b)   Some candidates were able to explain why each process was suitable for the Monofin.

4(c)   Some candidates were able to outline ways in which the safety of the Monofin could be quality assured, and some candidates also described ways in which the safety of the Monofin could be checked after manufacture, which helped to support their answer. Many candidate's responses were limited to describing ways in which the safety of the Monofin could be checked after manufacture, which restricted the marks they could attract.

Question 5
5(a)   Some candidates were able explain how technology push and market pull may have led to the development of the shoe.

5(b)   Some candidates were able to discuss the advantages of 3D printing the outer shoe. Many gave generic answers about 3D printing and some gave answers which were directed at the advantages of CAD.

5(c)   Some candidates were able to discuss the issues that may delay a product coming to the market, and some candidates were unable to discuss at the level required for Advanced Higher. A few did not attempt the question.

5(d)   Many candidates were unable to describe the potential risks for designers and manufacturers of launching a radical product. Some candidates were able to explain how the risks could be overcome. A few did not attempt the question.

Question 6
6(a)   Some candidates were able to describe how physiology and psychology may have influenced the design of the 'The-O'. Many candidates were unable to relate their answers to the product or gave answers that were at an inappropriate level for Advanced Higher. A few did not attempt the question.

6(b)   Some candidates were able to describe the conflicts which may have arisen between ergonomics, performance and aesthetics during development. A few did not attempt the question.

6(c)   Most candidates were unable to outline features to be considered to ensure successful die-casting. A few did not attempt the question.

Assignment

Some candidates demonstrated a high level in all the skills across the assignment. Some candidates however, did not demonstrate the skills required at Advanced Higher level.

Defining a design opportunity

Some candidates defined a design opportunity effectively. Some candidates either did not identify an appropriate opportunity or carried out poor research which resulted in a poor definition of a design opportunity.

Generating initial ideas

Many candidates generated appropriate initial ideas. Many candidates achieved marks in the top two bands for this section, with many in the top band. A few candidates achieved marks in lower bands as they had not clearly defined the problem, leading to poor generation of initial ideas.

Exploring ideas

Some candidates demonstrated the ability to explore ideas towards a design proposal effectively. Some candidates carried out limited exploration and had limited consideration of alternatives.

Refining ideas

Some candidates demonstrated the ability to refine ideas towards a design proposal effectively. Many candidates demonstrated limited or partially effective refinement of ideas and had limited or partially effective detail to inform the plan for manufacture.

Applying graphic techniques

Most candidates demonstrated effective application of graphic techniques. Most candidates achieved marks in the top two bands for this section.

Applying modelling techniques

Some candidates demonstrated effective application of modelling techniques. Few candidates applied the range of techniques or used the model to inform decisions at the level required to gain marks in the top band.

Applying knowledge and understanding of design

Some candidates applied knowledge and understanding of design effectively. Few candidates applied the knowledge and understanding at the level required to gain marks in the top band.

Applying knowledge and understanding of materials, manufacture and assembly methods

Some candidates applied knowledge and understanding of materials, manufacturing and assembly methods effectively. Some candidates had limited knowledge and/or applied it in a limited way.

Producing a plan for commercial manufacture

Candidates generally did well in this section, with some candidates achieving marks in the top two bands.

Section 3: preparing candidates for future assessment

Question paper

The optionality in Section 1 will be removed for future sessions. It is therefore important that candidates undertake a product analysis **and** study the evolution of a product, in order to respond to Section 1 of the question paper effectively. Centres are advised to refer to the Advanced Higher SCQF level 7 freestanding units for support when delivering this area of the course.

For the product analysis, candidates must be able to clearly outline the features of the parts of the product(s) and identify the manufacturing processes. Many candidates gave vague responses to this question. Centres are advised to refer to the course support notes section of the Design and Manufacture Course Specification to support candidates in this part of the course.

Many candidates did not display the depth of knowledge required at Advanced Higher level across several areas and relied on their general knowledge. Candidates should be provided with the table from the course specification which details the knowledge and understanding which can be sampled in the question paper.

Assignment

Many candidates had difficulty generating appropriate evidence for the assignment as they chose a problem which was limited. Centres are encouraged to discuss ways of identifying suitable design opportunities with candidates, to help them choose suitable opportunities for their assignment.

Some candidates produced limited evidence in the exploring and refining sections of the assignments. Centres are encouraged to give candidates skill building tasks in these areas before they carry out the assignment.

Centres are reminded that the 'Manufacture a presentation model' section will be reinstated next session and candidates must be prepared for it.

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.

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 was developed to support learners and centres. This included modifications to course assessment, retained from the 2021–22 session. This support was designed to address the ongoing disruption to learning and teaching that young people have experienced as a result of the COVID-19 pandemic while recognising a lessening of the impact of disruption to learning and teaching as a result of the pandemic. The revision support that was available for the 2021–22 session was not offered to learners in 2022–23.

In addition, SQA adopted a sensitive approach to grading for National 5, Higher and Advanced Higher courses, to help ensure fairness for candidates while maintaining

standards. This is in recognition of the fact that those preparing for and sitting exams continue to do so in different circumstances from those who sat exams in 2019 and 2022.

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 2023 and the ongoing impact the disruption from the pandemic has had on learners. 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 the removal of revision support.

The grade boundaries used in 2023 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 2023 Awarding — Methodology Report.