# Course report 2025

## Higher 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 with the published assessment documents and marking instructions.

We compiled the statistics in this report before we completed the 2025 appeals process.

# Grade boundary and statistical information

## Statistical information: update on courses

Number of resulted entries in 2024: 2,004

Number of resulted entries in 2025: 1,939

## Statistical information: performance of candidates

### Distribution of course awards including minimum mark to achieve each grade.

| Course award | Number of candidates | Percentage | Cumulative percentage | Minimum mark required |
|---|---|---|---|---|
| A | 285 | 14.7 | 14.7 | 119 |
| B | 395 | 20.4 | 35.1 | 101 |
| C | 467 | 24.1 | 59.2 | 84 |
| D | 438 | 22.6 | 81.7 | 66 |
| No award | 354 | 18.3 | 100 | Not applicable |

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 or equal to 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 as expected, with the mean mark increasing from previous years. Feedback from the marking team suggested there was appropriate range in course coverage, and the level of demand was fair in both sections. Overall, candidates were able to demonstrate knowledge and understanding for most questions. However, for some questions, some candidates did not give enough detail to attract marks at Higher level.

## Assignment

The assignment performed as expected. Each brief created a similar level of demand and provided good opportunities to generate marks in each section. Markers noted that the tasks generated a range of responses and marks from each of the briefs, as well as improvement in the ‘Use of modelling’ and ‘Demonstrating practical modelling skills’ sections. The theme did not perform as well as expected for some candidates, limiting creativity when generating initial ideas.

# Section 2: comments on candidate performance

## Areas that candidates performed well in

### Question paper

#### Question 1(a)

Many candidates answered this well, accurately explaining the suitability of the materials chosen for the products.

#### Question 1(b)

Many candidates answered this well, identifying three different manufacturing processes suitable for identified parts and explaining their suitability.

#### Question 1(c)

Most candidates answered this well, describing in depth how function had influenced the design of the products.

#### Question 1(d)

Many candidates answered this well, explaining the benefits and drawbacks of standard components.

#### Question 1(e)

Many candidates answered this well, explaining the benefits of physical modelling, which allowed them to attract marks.

#### Question 3(a)

Many candidates answered this well, demonstrating knowledge of one advantage and one disadvantage of an open brief.

### Question 3(b)

Most candidates answered this well, effectively outlining the types of information found in a design specification. Many candidates identified its purpose.

### Question 4(a)

Many candidates answered this well, accurately describing marketing techniques that could be used to ensure a successful launch of a product.

### Question 4(b)

Many candidates answered this well, demonstrating sound knowledge of the steps a company could take to prevent a decline in product sales.

### Question 5(c)

Many candidates answered this well, demonstrating knowledge of the advantages of using intellectual property rights (IPR) to protect products, rather than only stating different methods.

## Assignment

### Carrying out research into a given brief

Most candidates used more than one research technique, gathering a range of information including sizes, anthropometrics, and clarification on theme and function. Most candidates were awarded marks in the middle or upper band for this section.

### Producing a specification

Most candidates included information from both the research and the brief. Most specifications contained item dimensions, anthropometric data, size and cost constraints, functional needs, and aesthetic requirements. Most candidates were awarded marks in the middle or upper band for this section.

### Generating initial ideas

Many candidates accessed the full range of marks by demonstrating significant differences in aspects of their ideas, such as variations in function, appearance and arrangement of parts. Their graphics, models or annotations included enough detail to show how the design met the brief, for example, by indicating where items would be stored or how it operated, and the ideas were generally diverse and creative.

### Applying graphic techniques

Many candidates used a range of graphics to communicate effectively, including orthographic views, scale drawings, exploded views, hidden detail, sections, dimensioned sketches and component/mould details. Most candidates accessed at least half the available marks for this section.

### Producing a plan for commercial manufacture

Many candidates listed materials and processes in their parts table, along with overall product and component sizes, component details, and assembly information in either graphics or annotations. Those who refined these aspects during their development communicated greater component detail. Most candidates achieved marks in the middle or upper band for this section.

### Demonstrating practical modelling skills

There was an increase in the number of candidates who produced evidence for this section. Many candidates made a standard component that demonstrated their practical skills, allowing them to achieve at least half of the available marks for this section. Many candidates also produced accurate paper or card models that showed symmetry, repetition, proportion, spacing, assembly or complex forms. Many candidates achieved marks in the middle and upper bands for this section.

# Areas that candidates found demanding

## Question paper

### Question 2(c)

Some candidates demonstrated the ability to describe an evaluation technique that would be suitable for the product provided. However, many candidates did not show the required depth of knowledge of the technique to access full marks.

### Question 5(a)

Many candidates did not demonstrate either knowledge across all three areas of ergonomics, or the breadth and depth required to attract marks at Higher. When referencing anthropometrics in their descriptions, candidates should be clear on the part of the body interacting with the part of the product. Additionally, simple statements regarding ease of use for physiology will not attract marks without reference to the prevention/reduction of stress or strain.

### Question 5(b)

Many candidates answered this poorly, giving a statement of what market pull is instead of describing how market pull has influenced the design of products.

### Question 6(a)

Many candidates answered this poorly. Most candidates did not demonstrate a deeper knowledge and understanding of material identification. They gave methods of identification with limited or no explanation. Candidates should include the information gained from the methods of identification to show the knowledge required to attract further marks.

Candidates should specify the materials (wood/metal/plastics) in their description. Candidate responses suggested little or no practical material identification had been carried out during learning and teaching.

### Question 6(c)

Some candidates answered this poorly, demonstrating a limited knowledge of Gantt charts and just-in-time (JIT).

### Question 7

Many candidates struggled to access marks in the top two bands for this question. Most candidates were able to demonstrate general evidence of knowledge, however, many gave a response that did not show the deeper knowledge and understanding that is required to attract further marks.

## Assignment

### Exploring ideas

Candidate performance in this section showed some improvement, however, exploration remained a challenging section for some candidates, who produced limited or superficial options with little consideration of user interaction or functional/aesthetic variety. Additionally, the use of SCAMPER often restricted the depth of exploration. Candidates who performed well in this section tended to thoroughly explore multiple aspects, with ongoing consideration of the impact and effectiveness of their options for the client and user.

### Refining ideas

Although many candidates achieved in the middle band for this section, a few candidates accessed marks in the top band. Markers noted that candidates who demonstrated limited skill in exploring ideas were often then limited in their refinement decisions, which meant they were unable to access marks in the top band. Most candidates demonstrated decisions on manufacturing materials, processes and basic assembly, but only a few considered detailed component features or refinement of design issues. Evidence was often simplistic, with few or repetitive parts or processes. Some candidates used their brief and specification to refine a range of design aspects such as usability, functionality or theme alignment, which allowed them to attract further marks in this section.

### Applying knowledge and understanding of materials, manufacturing and assembly processes

Many candidates demonstrated limited skills in selecting final materials, processes and assembly methods. Some demonstrated a narrow range of knowledge in this section, particularly when designs involved simple wooden boards and assembly. Some candidates did not explore or demonstrate any knowledge of plastic or metal materials, or processes or part details for assembly. A few candidates included knowledge only in the planning for manufacture pro forma, which does not attract marks for this section as it is the final proposal. Development work should be evidenced in the assignment before this stage.

### Applying knowledge and understanding of design

Most candidates showed initial understanding of functional aspects, however, candidates who produced limited exploration or refinement had fewer opportunities to apply and demonstrate broader design knowledge for this section. Some annotations described or labelled sketches without showing knowledge used for development, and some candidates did not apply knowledge from their brief, research and specification, such as proposal size, storage needs, specific functions, complexity or ease of use. Candidates who continually considered the needs of the client or user tended to access the full range of marks in this section.

### Applying modelling techniques

Some candidates did not attract marks for their use of modelling during the exploration and refinement stages, as it was unclear why and how the models were being used. Some candidates did not communicate the purpose of their models, what was tested, what was learned or what changes were made. Some candidates made standard components for modelling skills but did not use them during exploration or refinement, therefore missing opportunities to access further marks.

# Section 3: preparing candidates for future assessment

## Question paper

Centres should use the materials on SQA's Understanding Standards website (for example, question paper commentaries and the question paper webinar) and past question papers and marking instructions when preparing candidates for the examination.

Preparation for the question paper should include practising examination techniques and producing acceptable responses to questions. Many candidates are not describing or explaining their answers in sufficient detail for a question paper at the level required for Higher. Candidates will struggle to produce extended answers in the question paper if they have not been used to doing this in class. Enabling candidates to learn through practical activities may enhance their knowledge for these types of questions.

Teachers and lecturers should encourage candidates to discuss and debate to acquire a technical vocabulary that will help them produce acceptable responses in the question paper.

In addition, candidates should consider the mark allocation for individual questions when producing their response. A 4-mark question generally means they must either provide four different correct statements or give an extended response to achieve full marks.

The course specification, which is available on the subject page of our website, contains a section called 'Skills, knowledge and understanding' for the course assessment. This section lists the available areas of sampling for the question paper. Teachers and lecturers are advised to familiarise themselves with this content to prepare candidates to respond to these areas of questioning.

# Assignment

Centres should remind candidates that their assignments must be presented on a maximum of 12 A3 sheets (or equivalent). This also includes the four pro formas: ‘research’, ‘research and specification’, ‘planning for commercial manufacture’ and ‘practical modelling skills’. Centres should also ensure that candidates are aware that if typing their written evidence on a digital device, the size of the text should be big enough for the marker to read.

### Selecting a brief

Centres should guide candidates to select the best brief to suit their skill and that allows them to be creative and produce the evidence required. Centres should discuss the pros and cons of each task and ensure that candidates understand the breadth and depth of skills they need to demonstrate, and how they might do this, before making a final decision on their brief. Centres could consider the following points to discuss with candidates:

- What do you think might be easy or challenging about this brief?
- What research will you carry out? Will that information help you make decisions when developing a unique solution?
- How could your ideas differ from existing solutions? How can you be creative with the function or aesthetic aspects of the brief?
- What opportunities could you find for modelling?
- What kind of things will you need to sketch for this brief? Does this suit your graphic ability?
- How might you incorporate knowledge of materials and processes from the Higher course?
- What are the sub-problems for this brief that you could explore and refine?

### Planning for manufacture

Centres should ensure they provide all candidates with the ‘planning for commercial manufacture’ pro forma. Candidates should be aware that the plan must fit on this single page and include materials and processes from the course, details of the overall assembly and individual components of their design.

Overly simplistic parts do not allow for an appropriate level of detail at Higher. Centres should prepare candidates by providing opportunities to look at the manufacturing and assembly features of component parts to help candidates improve the level of detail in their own parts. Centres should remind candidates that no material and manufacture knowledge is awarded marks if presented only on the 'planning for commercial manufacture' pro forma page. All knowledge and understanding of design, and materials, manufacturing and assembly processes must be recorded in the main body of the assignment to access marks available in those sections.

**Carrying out research into a given brief**

Centres can prepare candidates using Understanding Standards exemplification materials, particularly the format shown in the research sections provided by SQA in 2022 and 2023, as a guideline before they begin their assignment. Exemplification can be found on the SQA secure site, and past assignment tasks can be found using the past paper search function on the SQA website. Any images should have conclusions drawn from them and be provided by or discussed with the client to be valid and access marks in this section. The information gathered from questionnaires and interviews should be meaningful and useful to make decisions about the proposal. Candidates should select specific sizes and provide reasons for the selection when gathering anthropometric data. Candidates should avoid product comparisons and existing products as these often do not allow them to access marks in this section.

**Producing a specification**

Centres can prepare candidates by reminding them that specifications should be written as 'it must' statements. They should also advise candidates to include the actual specifics, such as sizes or colours, in their written specification point.

**Generating initial ideas**

Candidates should select idea generation techniques appropriate to their strengths and the brief. Using good theme-related images or models can help candidates generate creative and diverse ideas.

**Exploring ideas**

There are resources on the Understanding Standards website to support centres and candidates in this section. These include candidate exemplification and commentaries of highly effective exploration, and skill builders to recognise exploration pathways and generate meaningful exploration. Effective exploration increases the opportunity to attract more marks across knowledge, graphics and modelling. Centres should prepare candidates during the learning and teaching of the course to use their brief and specification to identify aspects to explore their proposal.

Exploration is likely to include functional requirements, user interaction, ergonomics and theme integration, use of standard components, size or cost limitations, materials, manufacturing, and assembly options. The use of modelling can be a good way for candidates to quickly explore options such as sizes, orientation or configurations.

**Refining ideas**

Effective refinement requires decisions on the design and manufacture of the proposal. Centres can prepare candidates to include more detail in their work by providing opportunities to disassemble products to improve their knowledge of part and assembly features of commercial processes. Centres should remind candidates that use of the standard component provides an opportunity to inform decisions on how components could be designed to attach to them.

Marks for refinement are not awarded to evidence on the ‘planning for commercial manufacture’ pro forma. Candidates must carry out refinement before the proposal is finalised on this page, and they must evidence it throughout the development of their proposal. Design refinement can be evidenced in a range of ways, such as working out sizes or functional aspects, selecting anthropometric data, using information gained from models, or making decisions on cost or aesthetics.

### Applying knowledge and understanding of design

Centres should provide opportunities for candidates to practise effective annotation during class tasks. There are resources and skill builder activities available on the Understanding Standards website to help candidates with this skill. A few candidates submitted text-based assignments in which most of the text was unnecessary or repetitive. Annotations should be purposeful, concise and clearly linked to design decisions.

To demonstrate better knowledge and understanding of design, candidates could explore aspects from the specification, including understanding of the functions, the user's interaction, using ergonomics or other size constraints, cost, standard components, and aesthetic requirements, as appropriate.

### Applying knowledge and understanding of materials, manufacturing and assembly processes

Centres should provide opportunities for the candidate to disassemble and examine components and their features during the learning and teaching of the course, so they can include appropriate part detail in their own design work.

Listing and labelling alone will only allow candidates to access marks in the bottom band. Candidates who score well typically apply knowledge during their exploration and refinement to compare or select appropriate materials, processes and assembly methods for their components. Candidates in the upper bands also consider the features of components such as incorporating features of die cast, or injection moulded parts or their moulds.

### Using graphics

Centres can prepare candidates during the course by setting tasks that encourage the use of graphic techniques. This may include quick conceptual sketches, 2D and 3D exploded views, hidden detail, detailed component views, scale drawings, dimensioned sketches, recognised pictorial and orthographic sketches. This could be done as a study of simple component parts, their manufacturing features and

assembly details to help candidates build confidence in visualising and communicating technical information effectively.

**Applying modelling techniques**

Centres should provide candidates with the opportunity to ‘use’ models for a range of different purposes and ensure candidates can record what they have learned from the model.

When using models to generate ideas, candidates can add detail to simple abstract 3D forms, which can help them to access marks available in this section. Candidates can make and experiment with how they could use the standard component, test stability or use models when they have difficulty sketching an idea. It is important that candidates accurately record what they are learning from each model and design change. CAD modelling generally attracts some marks for communicating or working out sizes.

Candidates who used models effectively can access marks in the generating ideas, knowledge, exploration and refinement sections by recording and acting on the information they have gained through the use of their models. Pictures of the models must be placed in the body of the assignment as and when they are produced, with relevant annotations. Marks will not be awarded for this section for any models only on the ‘practical modelling skills’ pro forma.

**Demonstrating practical modelling skills**

Centres can prepare candidates by using SQA Understanding Standards materials and ensuring that they provide all candidates with the ‘practical modelling skills’ pro forma.

It is likely that candidates will generate evidence automatically as they explore and refine their proposal, and they should include pictures of any models used during their assignment that demonstrate detail or skill. Candidates should consider making one of the standard components as these can help them attract marks in this section. Alternatively, candidates may choose to ‘mock up’ part of their solution.

Candidates can make models using quick materials such as card or foam, or more robust workshop materials such as MDF or acrylic. Accuracy and detail can be demonstrated in form, shape, assembly, repetition, spacing and proportion. The skill required to work with each material and form is considered.

CAD or CAM models do not attract marks in this section and no marks are awarded for knowledge or use of modelling on this page. Pictures on the pro forma must be clear and of an appropriate size to ensure the detail of the models can be seen. A steel rule can be used to communicate scale or proportion. There is no need to annotate this page.

# Appendix: general commentary on grade boundaries

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

For most National Courses, we aim 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, we hold 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 our 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. We 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.

For full details of the approach, please refer to the Awarding and Grading for National Courses Policy.