



External Assessment Report 2013

Subject(s)	Product Design
Level(s)	Intermediate 2

The statistics used in this report are pre-appeal.

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It 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 question papers and marking instructions for the examination.

Comments on candidate performance

General comments

The Course assessment of Intermediate 2 Product Design consists of two equally-weighted components:

- ◆ Question Paper- 50 marks
- ◆ Design Assignment - 50 marks

In both components of the assessment, candidate performance in 2013 was broadly similar to previous years.

Areas in which candidates performed well

Question paper

- ◆ Q1a) proved to be a gentle introduction, with most candidates scoring well.
- ◆ Q1c) produced a mixed response. Although candidates were asked for two reasons, many responded with only one, and therefore were unable to gain full marks.
- ◆ Q2b) would undoubtedly have been considered fairly straightforward by most candidates, and the majority attained all 3 of the available marks.
- ◆ Q3b) was answered well by the majority of candidates, although a significant minority responded with vague answers such as labour and materials.
- ◆ Q4i-v) Candidates coped well with parts (i) and (v) of this question, but a number tended to be a bit repetitive with either parts (ii) and (iii), or with parts (iii) and (iv). This was because both screen-size and battery life had some relevance to portability. Most candidates scored 4 or 5 out of 5.
- ◆ Q5a) was answered very well by virtually all candidates.
- ◆ Q6a) Candidates seem much more at ease with this topic (Intellectual Property Rights) than in any previous year. Most were awarded all 3 marks.

Design Assignment

The Design Assignment Guidance for candidates is available on SQA's website. It gives clear information regarding how the Design Assignment is marked.

Candidates performed best in Sections 1 and 3(c).

Section 1: Initial Ideas

Candidates tended to score 8, 9 or 10 out of 10 here. This is probably attributable to the general enthusiasm for a new activity, combined with a realisation that this task will be contributing to their final mark.

Candidates should be careful in this section, not to include too much detail. If candidates are too specific it makes it more difficult to expand upon their initial ideas and develop them at a later stage.

Section 3c) Communication of design proposal

Candidates tend to do well in this section, with work in this category regularly attracting 4 or 5 marks out of a possible 5.

Many candidates are able to enhance their work in this section with computer graphics and, provided the projection or viewpoint is chosen wisely, most candidates using CAG software score the full 5 marks.

Areas which candidates found demanding

Question paper

- ◆ Q1b) Historically, candidates have tended to get confused with these three aspects of ergonomics, and this year was no exception. This continues to be surprising as the format of this part has been virtually unchanged for ten years.
- ◆ Q1b) i) This part of the question requires the candidate to respond by linking a suitable human dimension to an appropriate part of the illustrated product. They should do this **twice**. A significant number only did this **once** and responses thus attracted only one mark.
- ◆ Q1b) ii) This part of the question requires the candidate to respond by linking a suitable human activity (usually a verb; lifting, pressing, twisting etc) to an appropriate aspect of the illustrated product. They should do this **twice**. Again, a significant number only did this **once** and responses thus attracted only one mark.
- ◆ Q1b) iii) Too many candidates responded with purely **aesthetic** comments about the product rather than **psychological**. Few of these aesthetic comments attracted a single mark, let alone two marks. The best responses were those which referred to some kind of sensory back-up. For example, '...the loading lever clicks into place, letting the user know that it is down properly etc.'
- ◆ Q2a) Bearing in mind that half of Unit 1 is devoted to Product Evaluation, this question was surprisingly poorly answered. Most candidates were able to name an appropriate evaluation technique (they were awarded one mark for this) but few were able to describe their chosen technique with any real degree of clarity. Even fewer were able to suggest how these results might have been displayed.
- ◆ Q3a) The manufacturing processes exemplified by items A, B and C proved to be familiar to **most** candidates, but a surprisingly high proportion had **virtually no idea** what visual features might be on each; some visual features, obviously learned on the course, were suggested, but **not** those that were relevant to the manufacturing process in question. Ordinarily, this style of question is well answered by candidates but, this year, the focus of the question was specifically on the visual features and this proved too much for some. Very few candidates were able to identify a visual feature for item D, the spindle moulded skirting board.
- ◆ Q5b) Some candidates gave a good response to this question, but a significant number simply listed three issues that would affect the bus shelter's life span. The question asked the candidates to describe; so one-word answers were insufficient.
- ◆ Q6b) Similar to Q5b), candidates were asked to describe when responding to this question. Again, simple statements were offered, such as BOGOF (buy one, get one free) which were insufficient to attract two marks.

Design Assignment

Candidates found Sections 2, 3(a) and 3(b) most demanding.

Section 2: Development towards a Design Proposal

This section seems to give candidates the most difficulty. Candidates are supposed to make alterations to one (or two) of their initial ideas, to let it gradually evolve into a final Design Proposal. They would be expected to change the shape and form of the concept, as well as make suggestions for alternative materials and methods of construction. The poorest Assignments showed virtually no evolution of the product from Initial Idea through to final Design Proposal.

Many Assignments made no reference to either the researched images or the anthropometric data that is included in the Design Assignment task published by SQA. This is given to assist candidates with the task, but also to give them the opportunity of gaining some reward for its appropriate use. It's all there for a reason, and it would not be inappropriate for teachers to give candidates some guidance that they should use this data.

Section 3a) Communication of ideas and development

This section gives candidates the opportunity to gain marks for communicating clearly. If the work flows, is easy to follow, and easy to read with high quality graphics, it is likely to score highly. Similarly, if it is unambiguous and lacking both confusion and contradiction it should do well.

Section 3b) Recording and justification of decisions taken

This section is done very well by some candidates and very poorly by others. Candidates are expected to give some justification for the statements they make. Candidates write things like: 'This **could** be made of **mild** steel as it doesn't rust'. Unfortunately this loses out in two ways:

- ◆ It is factually incorrect as mild steel does rust.
- ◆ The candidate isn't actually making a decision as they are saying that it **could** be made from mild steel, not that it **should** be or that it **must** be.

If they had written: 'This **should** be made from **stainless** steel as it doesn't rust', that would clearly score a mark.

Decisions have to be positive statements, not **could** be or **might** be or **may** be; and have to be factually correct. Do this, **clearly**, five times in order to score 5 marks.

Advice to centres for preparation of future candidates

General

This advice is given primarily for teachers who are new to the subject or are perhaps taking responsibility for the subject for the first time.

However, it is relevant to all teachers presenting candidates for Product Design at Intermediate 2 level.

Question Paper

Teachers should familiarise themselves with the relevant Marking Instructions, which are published annually on SQA's website.

The best possible preparation is to give candidates the opportunity to work through past papers. This could be a whole-class activity initially, with the teacher explaining the nuances of each question and what is expected as a response.

Thereafter, candidates should work through as many past papers as possible for practice and be given constructive feedback on their responses.

Design Assignment

This activity is 'set' by the SQA each year, completed in February, March, and part of April, and then externally marked.

Candidates choose **one** of the four Design Tasks available.

It is important that teachers do give some guidance to candidates regarding the structure of their Design Assignments; it is an eight-page document which needs appropriate emphasis to attract as many marks as possible.

It is similarly important that teachers do not give assistance to candidates concerning the specific content of this assignment. The work should be each candidate's own, without any undue input from external parties.

'Guidance for Candidates' is available for the Design Assignment, again from the SQA website. Candidates should be given a copy of this as it is imperative that they use it, to understand how to gain as many marks as possible. Amongst other things, the document includes 'range statements' which explain what is required for success in various aspects of the activity, thus guiding each candidate towards what specific content should be included.

There is no official time allocation published for the Design Assignment; between the publication date and the submission date each Centre has freedom to allocate whatever time it deems appropriate.

From the hundreds of Design Assignments over the years, it is apparent that those that are neat, clear and legible are perfectly capable of attaining marks in the high forties. Some candidates inadvertently obliterate huge chunks of text with a coloured pencil to make it stand out or look attractive. Unfortunately this frequently makes the text illegible and thus fails to attract any marks.

It is similarly apparent that it is not necessary to spend two or three months engaged in the task to score highly — two or three weeks is more appropriate. Something between 10 and 20 hours of class time would seem to be the norm in centres across Scotland. Centres going beyond this time allocation are unlikely to be further increasing their candidates' marks for this activity.

Indeed, candidates who only submit six or seven sheets of A3 paper, rather than the maximum of 8, sometimes score in the high forties, even 50/50 on occasion. Quality rather than quantity would seem to be best.

Statistical information: update on Courses

Intermediate 2

Number of resulted entries in 2012	1108
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Number of resulted entries in 2013	1090
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Statistical information: Performance of candidates

Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark 100				
A	43.1%	43.1%	470	73
B	26.1%	69.3%	285	63
C	16.4%	85.7%	179	53
D	3.6%	89.3%	39	48
No award	10.7%	100.0%	117	-

General commentary on grade boundaries

- ◆ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- ◆ Each year, SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- ◆ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.
- ◆ An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in, say, Higher Chemistry, this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related, as they do not contain identical questions.
- ◆ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.