



Course Report 2014

Subject	Design and Manufacture
Level	National 5

The statistics used in this report have been compiled before the completion of any Post Results Services.

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 assessment and marking instructions for the examination.

Section 1: Comments on the Assessment

Component 1: Assignment

The Assignment for Design and Manufacture was allocated a total of 90 marks: design skills (45 marks) and practical skills (45 marks). Tasks for the Assignment were set by SQA, assessed by centres and subject to external verification by SQA. Candidates undertook one task selected from a bank of three.

All tasks performed well and allowed candidates to access full marks. All tasks also generated a wide range of responses and marks.

Component 2: Question paper

The question paper for Design and Manufacture consisted of two sections totalling 60 marks. Section 1 (24 marks) examined materials and manufacturing processes in a workshop setting. All of the questions in this section centred around one product. Section 2 (36 marks) examined knowledge and understanding of design issues and commercial manufacturing within a framework of 5 individual questions, each with a different focus.

The question paper performed well, though the level of demand was agreed as being slightly less than was expected and the grade boundaries were adjusted to reflect this.

Section 2: Comments on candidate performance

Component 1: Assignment

Design Skills

Most candidates produced good evidence in the Ideas stage. However, a significant number of candidates simply copied existing ideas. This was particularly true for the 'toy' task.

Candidates produced a mixed range of evidence in the Development stage. A number of candidates carried out very good exploration and review of their ideas, and demonstrated sound knowledge of design issues and materials & manufacturing. However, a number of candidates carried out little meaningful development, and their design proposal showed almost no change and contained no more detail than their original idea.

Candidates produced a mixed range of evidence for Communication. A number of candidates used excellent graphic and modelling techniques to advance and communicate their design proposal. However, a number of candidates demonstrated very limited communication skills through poor graphics and, often, no modelling. Candidates who demonstrated poor communication also tended to have carried out limited development.

Most candidates carried out effective Evaluations. Most candidates made good reference to the specification.

Practical Skills

Evidence submitted for Practical Skills was generally strong. Most candidates had designed and made items that were manageable and allowed them to demonstrate the skills being assessed. A few candidates designed projects that were too simple to allow demonstration of their practical skills. A few candidates overused CNC machines which, again, did not allow demonstration of their practical skills.

Component 2: Question paper

Candidate performance throughout the question paper was generally of a good standard. There were several areas of questioning that were answered very well by candidates. These included question 1, where performance throughout was mostly of a high standard.

There were some sections in question 1 that candidates found demanding (see section 4). Question 3 was also answered very well, which was particularly pleasing due to the topic of sustainability. Centres around Scotland are clearly carrying out effective learning and teaching strategies to cover this very important topic. Question 4(b), was also answered well, though this question was one of the less demanding areas of the question paper. This will be addressed in future years, where a similar style of question is included in the paper.

Questions 1(f)(ii), 5(a)(ii) and 5(c), relating to commercial manufacturing and associated issues, did not function as expected. Candidates' responses were repetitive and simplistic — eg *'cheap, quick, mass production'*. It was expected that candidates would respond with more in-depth answers, such as those contained in the marking instructions — eg for 5(c) *'reduction of workforce, leading to increased profit'*, or, *'images of the final design can be sent easily to other designers across the world'*. However, the simplistic responses were relevant and true, and therefore marks were awarded to candidates for each correct response. The grade boundary was altered slightly to take account of the repetitive nature of these responses across the paper. It should be noted that higher-attaining candidates gave a variety of responses, and repetition was mostly by lower attaining candidates.

Section 3: Areas in which candidates performed well

Component 1: Assignment

Ideas: Most candidates produced ideas relevant to the brief.

Communication: A number of candidates demonstrated excellent graphic and modelling techniques.

Evaluation: Most candidates carried out good evaluations, referencing the specification.

All sections of Practical Skills: Most candidates demonstrated good practical skills.

Component 2: Assignment

Question 1 (a) (i): Answered correctly by almost all candidates.

Question 1 (a) (ii): Answered correctly by almost all candidates.

Question 1 (c) (i): Surface finish benefits are clearly well known to the candidates.

Question 1 (a) (i): The preparation of wooden surfaces was answered correctly by most candidates.

Question 1 (f) (i): Answered correctly by almost all candidates.

Question 3: This question was answered well by most candidates. The topic of sustainability is a current and extremely important area of questioning for this course and it was refreshing to see such varied and mostly correct responses from candidates.

Question 4 (b): This question was answered very well by almost all candidates, however it was deemed to have been slightly less demanding than was anticipated, with simple and sometimes vague responses being awarded marks. This area of questioning will no doubt arise in future years, due to its significant part of the course structure, however it will be altered to ensure it meets a sufficient level of demand.

Section 4: Areas which candidates found demanding

Component 1: Assignment

Development of ideas: A number of candidates carried out very superficial development.

Component 2: Assignment

Question 1(d)(i): Most candidates found this question demanding. There were a significant number of candidates who responded with answers relating to safety of the user. This is understandable given that the question states '*rounded corners*'. However, in the context of vacuum forming and the features of a wooden pattern, it should be understood that the question is not asking about safety of the user.

Question 1(d)(ii): Most candidates found this question demanding. Candidates responded with answers relating to use of the plastic tray and its removal from the wooden box. The context of '*features of a wooden pattern*' should have ensured candidates responded with reference to '*removal from the mould*' or '*to ensure the plastic can be separated from the mould easily*'.

Question 1(e)(i): Some candidates found this question demanding. There was a high incidence of vague responses to this question, making it difficult to award marks. This style of question will be altered in future years to ensure it is accessible to all candidates.

Question 1(e)(ii): Some candidates found this question demanding. As with Question 1(e)(i), there was a high incidence of vague responses to this question, making it difficult to award marks.

It should be noted that the mandatory course content has been sampled to produce an appropriate question paper, and all areas of questioning that are sampled are from that

content. It is understood that when asking specific questions about specific workshop processes, a range of responses will be awarded marks due to the diverse nature of learning and teaching approaches used. However, this style of questioning will be altered in future years to ensure it is accessible to all candidates.

Section 5: Advice to centres for preparation of future candidates

Component 1: Assignment

Candidates should be made aware of the skills and knowledge that are being assessed in this component.

Practical Skills

Candidates need to be aware that their proposal will have to allow them to demonstrate their practical skills. A very simple proposal may have to be altered to allow them to do this. A proposal which is mainly CNC-cut will not allow them to demonstrate their practical skills. Overuse of templates will restrict the number of marks awarded for measuring and marking out.

Design Skills

Candidates should be prepared with the skills to allow them to develop design proposals. Candidates should be made aware that appropriate graphics and/or modelling should be used. Fully detailed and rendered graphics are time-consuming and are not required throughout the folio.

Component 2: Question paper

Teachers should ensure they are familiar with the relevant Marking Instructions, which are published annually on SQA's website. With this being the first live question paper, it may be difficult to draw comparisons with papers from previous years, but it should be noted that the question paper for this year is similar in layout to the specimen paper and that trend should continue.

The best possible preparation for the question paper is to give candidates the opportunity to work through question papers that are similar in style. Teachers would be best placed to talk through the marking instructions with candidates as they complete each question. There are specific tactics that can be employed by candidates to ensure their responses attract marks. These can be practiced to ensure candidates are fully prepared for the final examination.

The Course Assessment Specification has a section entitled '*Further mandatory information on Course coverage*'. This section gives all the available areas of sampling for the question paper. Centres could use some time prior to the examination to prepare candidates to respond to these areas of questioning. This would be of specific use where candidates have not fully experienced the content during their course.

Statistical information: update on Courses

Number of resulted entries in 2013	0
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Number of resulted entries in 2014	4135
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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 150				
A	46.5%	46.5%	1924	105
B	27.2%	73.7%	1123	91
C	16.9%	90.5%	697	77
D	4.0%	94.6%	166	70
No award	5.4%	-	225	-