Version

AQA

**General Certificate of Secondary Education
June 2011**

Design and Technology: **45602**
Resistant Materials

(Specification 4560)

Unit 2: Design and Making Practice

Report on the Examination

General

In the first year of submission of the controlled assessment unit for Design and Technology: Resistant Materials Technology, we are delighted to report on the successes in the ways in which candidates of all abilities have been able to respond. Almost without exception, candidates submitted completed products for assessment against the making criterion; our congratulations to teaching staff across the country and in our foreign centres, for inspiring candidates to achieve. Design work was submitted in either paper based folders or electronically as PowerPoint or pdf files, with all candidates able to respond, on all tasks, at a level appropriate to their ability.

All 12 design tasks proved popular, many candidates responding with very creative ideas. There were very few requests to contextualise the tasks, and in most of these cases, the brief suggested could be accommodated as merely 'focussing in' the design.

Some centres offered all 12 design tasks, whereas others limited choice. Even where only one task was undertaken by all the candidates from a centre, there were still opportunities for creativity and individuality.

Some centres did not make it clear which of the Controlled Assessment Tasks (CAT) candidates were using which made the process of moderation more difficult. It would be a benefit if all centres included the CAT at the start of the candidates' projects. This would help the moderator and also gives the candidate a clear focus for their work.

Criterion 1: Investigating the design context.

The majority of candidates investigated the design context appropriately, and some successfully used specific additional research as they developed their ideas. Some other candidates were too vague in their research, lacking focus, and including irrelevant material. At the extreme, pieces of wood were stuck into the folder. Relatively few candidates profiled their target market for the product being designed. Where the target market was profiled well, it often helped the candidate to focus the designing and evaluation, including seeking client opinion as the design progressed, not just of the made product.

 All candidates need to keep their research, brief, focussed and use it to directly influence their design ideas. This section attracts 8 marks out of 90; a number of candidates spent a disproportionate amount of time on this aspect of the task.

Criterion 2: Development of design proposals (including modelling)

Moderators were delighted to see a significant number of candidates were using a range of techniques to produce creative solutions to their design briefs. Photographs of other unrelated products or items from nature were used to inspire creativity, as well as 'scruffitti' and similar techniques. Most candidates conveyed initial ideas through sketches, although a small number successfully used Computer Aided Design (CAD) from the outset. Other candidates used modelling extensively, both to convey initial ideas and to develop ideas. Google sketch up is proving increasingly popular for CAD with candidates, possibly because of its user friendly approach and the fact that it is free to download. 2D Design was also popular, with an increasing number of users making use of the 3D facility with this programme. Coral Draw, which is used to produce designs for laser cutters was also popular. Where laser cutters were used, few candidates evidenced knowledge of settings for different materials; a screen dump is an easy way to achieve this.

For the manufacturing specification, moderators are looking for candidates to try to provide enough information for a competent third party to be able to make the product. This could be conveyed successfully through some sort of formal drawing/sketch/CAD with measurements, a cutting list and a plan of making. Other approaches can also convey the same information.

Criterion 3: Making

A huge variety of products of all shapes and sizes were seen. In the top mark band, work was excellent quality and demanding, or creative and demanding (or both).

Wood again proved the most popular material in which to work, but compared to the legacy specification, it was increasingly used in combination with other materials, particularly where there was access to CAD/ CAM equipment. Wood and wood based products were also being used in a very creative manner by many candidates, lamination of curved parts proving popular.

Plastics were the second most commonly family of materials, with acrylic dominant, particularly for laser cut work.

Metals were used by a larger number of candidates in the work seen than had been the case on the legacy specification.

Composite and smart materials are yet to feature in any quantity.
There was a significant increase in the number of candidates producing creative products, compared to the legacy specification.

Criterion 4: Testing and evaluation

There was a significant improvement to the way candidates tackled this element in comparison to the legacy specification. In the work of many candidates, there was evidence of useful testing of the product in its intended environment, target market feedback, and testing against the design criteria. There was also justification given for modifications to the design, together with suggestions for how the product would need to be modified for commercial production. The best scoring candidates were also evaluating their designs throughout the development process and seeking third party opinions of their designs.

Candidates, who did not score highly on this section, missed many aspects of the above paragraph, possibly through poor time management. All candidates should realise that, at 12 marks out of 90, this is a significant element of the controlled assessment work.

Criterion 5

Centres were generally accurate in their assessment for this criterion reflecting a good understanding of the requirements.

Conducting controlled assessment tasks.

Centres are reminded of the need to restrict feedback to candidates to generic feedback, i.e. feedback given to the whole group. The CATs and detailed guidance on conducting the controlled assessment can be downloaded from e-AQA on the secure area of the AQA website. If you have no access to e-AQA, register, or speak to your examinations officer. Whilst logged on to the site, you will also be able to access the very useful Enhanced Results Analysis (ERA) service, enabling you to analyse the performance of your candidates (once results are published).

Some centres have made use of scaffolding, frameworks, templates, etc to assist candidates in the production of their controlled assessment work. Whilst these prove useful in ensuring all candidates have some response to all assessment objectives, they can stifle the creativity of middle and higher ability candidates.

Centres are reminded that controlled assessment tasks will be reviewed and possibly amended for examination submission in 2013

Administration of assessments

It is evident that exemplar work produced by AQA had been used to assist assessments; the vast majority of centres were within tolerance with their marks.

Where centre assessment was inaccurate, it was usually most apparent in criteria 2 and 3.

The Candidate Record Form (CRF) was well used by many centres to explain the marks awarded. It was particularly useful to clarify if any help had been given to candidates e.g. routing, welding, setting up machines etc.

Most centres were prompt in the dispatch of marks and requested folders. A few centres did not realise that they need to send all folders where there were 20 candidates or less.

Many centres were very helpful in providing clear photographs of outcomes, thus avoiding the need for moderator visits.

Few centres sent narrated videos of outcomes, although a few candidates included videos as part of their evaluation of the product.

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