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Moderators' Report/ Principal Moderator Feedback

June 2011

GCSE Manufacturing

5MN02 Paper 01

Manufactured Products

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Unit 5MN02
Manufactured Products

Summer 2011 saw the first submission for this new specification, which includes the Controlled Assessment (CA) and Quality of Written Communication (QWC) requirements of most internally assessed elements of current qualifications. An extra assessment criterion was introduced (f) – monitor production – to allow marks to be awarded for checking and reporting on the production rate, compared to the planned timings.

The maximum score for Unit 5MN02 is now 50, and this unit carries 30% of the overall assessment weighting for the double award GCSE Manufacturing.

Administration

The vast majority of centres submitted the required portfolios before the deadline.

A number of EDI (cohort score printouts) were received unsigned and undated. A small number of Candidate Assessment Record Sheets were completed incorrectly. It is strongly recommended that all portfolios are checked for accuracy before being submitted for moderation, particularly the candidate name, number and marks for each assessment criterion.

Portfolios were received in a variety of shapes and sizes, but the preferred method for submitting any written work is to provide word processed work on A4 paper, in portrait mode, with each candidate's portfolio held together using a single treasury tag through the top left hand corner only. Any other form of presentation or packaging impedes the processes of moderation and awarding.

Where some drawings, or a few sketches, have to be done necessarily on A3 paper or CAD printouts, these can be folded in half and inserted in the correct place in the portfolios.

Some of the comments written under Unit 5MN01 were also reflected in Unit 5MN0 2, so centres are encouraged to read both as items have not been repeated.

Several centres make use of writing frames, but paper based ones have serious limitations. The high achievers always have more to write than will fit into each box, causing their QWC marks to suffer, whereas the weaker candidates write trying to fill the boxes, even if they are saying nothing of much relevance. A set of subheadings and a word processor proved to be more beneficial where used.

Assessment

Where witness testimonies were used, the most effective ones tended to say exactly what was observed. This allows effective determination of the final marks, making the moderation process quite straightforward. Many of the criteria in Unit 5MN02 require assessor judgements, with supporting evidence, about the level of independence or support which was witnessed. The most effective centres provided a summary of assessment considerations with each portfolio, although these would be better inserted in each criterion rather than at the front as a summary.

Many centres did not annotate the portfolios as they assessed them, to show a remote moderator why marks were awarded. Several portfolios lacked page numbers. This makes moderation very time consuming and usually means that a moderator has to re-assess the work.

Many centres made good use of photography, which is to be encouraged together with much more use of ICT. Word processing of portfolios, with import of images, provides the most effective results.

Some candidates had produced work of extremely high quality in the samples moderated, which is excellent news for a new qualification. Client briefs were clear and provided ample scope for candidates to respond to. Where candidates had been less successful, and where they had been assessed leniently, it was typically as a result of having been provided with materials at the start which were too brief, with production plans being insufficiently detailed for them to prepare a workable schedule for manufacture. A significant number of candidates appeared to have re-modelled the product rather than produce a manufacturing schedule.

Some centres asked their candidates to design a product, when there is no design in Unit 5MN02.

It is helpful to a remote moderator when centres include an overview of what they did at the centre, where this is not clear in the portfolios, along with a copy of the design specification and production plan which was given to candidates.

Page numbers and witness testimonies are essential in order to moderate this unit

Criteria (a) – 'working as part of an effective team'

Witness statements are essential for this assessment criterion, on which the assessor must record what each individual did within the team – whether they played a leading role, and how, or whether they helped to build an effective team, and how, or whether they just contributed to an effective team, and how. A remote moderator can only work from the evidence provided, and if this is minimal, so is the final score. Some included photographs, candidates kept logbooks, with teacher comments added, etc, all of which was very helpful and encouraging.
Most candidates included an evaluation of the performance of all members of the team, when only their individual performance is needed. Good examples included individual targets and the role they played. The better centres had teams divided with each team member manufacturing a particular component for a given product then coming together to assemble it at the end. Witness testimonies were sadly lacking in many cases, making it hard to justify the marks awarded by the centre. The majority of portfolios contained plenty of unnecessary teaching notes and research material about team theories and analysis, as well as giving unnecessary roles to candidates such as 'general manager' – instead of 'case maker' or 'financial manager' instead of 'electronic circuit constructor'. Centres are encouraged to make roles meaningful to the project.

Criteria (b) – 'produce a schedule for manufacture'

Gantt charts and flow charts were the favourite tool, here, and some were very effectively produced. Many, though, only used them to indicate the timings of each part of the project, with no real detail about what needed doing at what stage, etc, with the best schedules being usable by a third party, without reference to any of the team or specifications.
The best approaches were witnessed in portfolios where the production plan and product specification which they had been given were annotated to identify processes, materials, skills needed, hazards, etc – a real working document, which was then summarised in an effective schedule for manufacture.
Some candidates submitted more designs for this criterion, for which their assessor had incorrectly awarded them marks.

Criteria (c) – 'prepare and use materials'

Again, witness statements are essential, to record the level of guidance provided as each candidate prepared relevant materials and components and the skill level with which they used tools, safely. Many were asked to complete risk assessments, and some included numerous pages of this, attracting almost no marks. Others used logbooks effectively, and with most candidates having a

mobile phone/camera on their person, they have the tools to help record the evidence. Alternatively, a set of cheap digital cameras can be purchased. COSHH assessments were made use of, with variable effectiveness. Some photographs of the use of equipment without wearing proper PPE were also seen, which tends not to gain many marks.

Criteria (d) – 'prepare and use tools, equipment and machinery'

As with criteria (c) – witness statements, photographs, logbooks, etc, were all used effectively by some candidates, but many centres submitted portfolios which contained little evidence of how much guidance was provided.

Some candidates included numerous pages of downloads from tools suppliers, with prices, comparisons of the cost of sets of tools, etc –however this gained no marks because it was not relevant information.
Risk assessments can be mentioned, here, but more beneficial contents included evidence of safe use of equipment and tools, photographs and witness statements.

Criteria (e) – 'manufacture products to meet requirements'

Where the requirements were unknown or not clearly presented to the candidates, where the assessor had not provided product specifications and detailed production plans, performance for this criterion did not address the assessment grid. Witness statements about the level of performance are essential, here, as well as photographic evidence – and there were some good examples seen at moderation. The use of ICT to import and type around the images help to provide some excellent evidence. Some candidates did this, and their teachers/assessors annotated it and confirmed the work as being a true reflection of occurrences.

Criteria (f) – 'monitor production'

Many centres had interpreted this to mean quality control, which is criteria (g) 'use quality control techniques', but (f) is about monitoring the rate of production and timing of each element/activity – did it take longer than planned, or was less time needed? Were the correct number of team members working together, or was the work not shared out evenly? There is no penalty for finding something wrong within the original planning, but there are marks to be gained for detecting it and suggesting and making improvements 'in order to maintain production'.

The better portfolios contained progress monitoring and/or logging charts which worked well enabling candidates to collect progress data throughout the manufacturing processes.

Criteria (g) – ‘use quality control techniques’

Some very thorough work was seen in some portfolios, across the range of sectors and a range of products, including: inspecting the product or components manufactured at each stage of production, checking that ingredients were weighed accurately enough, needle tension was satisfactory, drills were sharp and cuts were neat and straight, dimensions were being worked to, within allowed tolerances, etc – everything required to make sure the products are of acceptable standard.

Some included analysis of the collected data, albeit small scale, with ongoing corrections applied to reduce errors and discuss any variance in detail, explaining how to prevent such problems recurring. This section provides an opportunity to gain marks if good explanations are forthcoming, using real data, to explain what went wrong.

Criteria (h) – ‘modify production plan and schedule for manufacture’

Without the initial material being provided by the teacher assessor, a product specification and a detailed production plan, the schedule of manufacture becomes an unknown quantity, and criteria (h) requires the original plan as much as criteria (b) did. Without a good production plan being provided, a good schedule cannot be created.

Some candidates provided very detailed description of their collected quality data, explaining what it told them, and decide how to improve if they were to do it again, modifying the schedule appropriately. Some candidates went on to test their ideas and did it again, which is not necessary, but helped create even better evidence that their corrections/improvements were valid and effective.

From the portfolios which were moderated, the indication was that most candidates had modified their product and suggested changes to it or its design, instead of changing and re-drafting their schedule in the light of manufacturing activities and the quality data collected during manufacturing.

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