

# Examiners' Report

## Summer 2010

Principal Learning

### Manufacturing and Product Design Level 1 Controlled Assessment

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## Contents

1.	Level 1 General Comments	1
2.	Level 1 Unit 3	2
3.	Level 1 Unit 4	3
4.	Statistics	5



# Manufacturing and Product Design

## Level 1 Introduction

This was the first series where all of the available units for the Level 1 Principal Learning in Manufacturing and Product Design were offered for moderation and award. This moderation series followed a limited window in January 2010, where Unit 1 was available for external assessment. Entries were only received for Unit 1, Unit 3 and Unit 4 in this series.

The delivery approaches adopted by centres ensured the learners experienced a style of learning appropriate to the Diploma.

For the internally assessed units, the majority of learners were able to perform to an appropriate standard with marks being gained across the whole range of learning outcomes.

In general, most aspects of administration for the internal units were good, with the correct samples being provided. In most cases, each learner and the tutor signed a Candidate Record Sheet (CRS), and centre marks were recorded correctly on the CRS. Further, most learner work was organised in such a manner that it was straightforward for the moderators to locate the evidence for each learning outcome, and the assignment briefs were often provided to assist in the moderation process. There was evidence of internal standardisation from most centres, but this sometimes resulted in moderators having to decide what the final agreed mark was.

There was some indication that the method of assessing work by using the 'best fit' principle was not clearly understood by centres. Reference to the assessment guidance in the specification should be noted, to ensure accurate marks are awarded. The Tutor Support Materials, available from the Edexcel website, are designed to help centres when setting assignments that are to be internally assessed and externally moderated.

Learner absence is likely to be a more serious problem for Level 1 learners than those on other levels. There was evidence of learners missing critical opportunities to complete assessment activities. Given the requirement for learners to be successful across a number of units, consideration should be given to the possibility of formulating strategies to help alleviate problems caused by learner absence.

## **Level 1 Unit 3: Introduction to Working Practices in Manufacturing**

There was evidence of centres taking learners to visit employers, in order to set the context of this unit in a realistic working environment. This enhances the learner experience and is a very useful technique.

### **Learning Outcome 1 (Marking Grid A)**

A range of styles of work were submitted for assessment. Where learners were provided with headings for a written report, the full range of marks were more frequently awarded. Diagrams were often a successful method of indicating the links between different departments.

The responsibilities of employers and employees tended not to be described particularly well. This was due to several factors, but only considering either the employer or employee was a common fault. In future series, centres may wish to provide learners with templates that have separate headings for employer and employee responsibilities.

### **Learning Outcome 2 (Marking Grid A)**

Most learners produced materials that referenced specific aspects of health and safety legislation, such as the need to wear goggles, rather than refer to the acts of law that require their use. This is something that should be addressed in future series. The need to refer to environmental laws was also frequently overlooked. In future series, centres may wish to make use of materials available from the HSE website to introduce learners to the range of laws applicable to different manufacturing businesses.

### **Learning Outcome 1 (Marking Grid B)**

The marking grid for this criterion is split into two parts, but centres frequently gave a combined mark for both sections. This practice should be avoided in future series.

Where learners reviewed their performance as a member of a team, moderators were clearly able to understand the grading decisions made by internal assessors. Some centres provided witness statements which again supported the marks awarded. Templates for witness statements are available from the Edexcel website.

There were a full range of marks awarded to learners. This supports the accuracy of teacher assessment, given the wide range of learner personalities and abilities that submitted evidence for this unit. In future series, centres may wish to encourage all learners to review their own performance.

## Level 1 Unit 4: Introduction to Product Design and Development

There was evidence of centres delivering this unit in a commercial context, which supports the ethos of the Diploma.

### Learning Outcome 1 (Marking Grid A)

This criterion requires learners to review the needs of a client brief. The range and depth of work a learner can produce is therefore directly related to the quality of the brief they are provided with. Where centres provided learners with a simplistic brief, the learners were not able to access the higher marks. Centres should ensure that the brief contains sufficient information to allow learners to produce work at mark band 3 level. In future series, centres may wish to provide learners with an electronic, editable version of the brief that will allow them to add their reviews directly underneath each of the key features.

### Learning Outcome 2 (Marking Grid A)

For this criterion, learners generally provided evidence that they had investigated a range of potential materials, but unfortunately they did not support this with reasons for choosing particular materials in their design proposals. Centres may consider applying a 'scoring' approach to the properties of range of materials. This would provide learners with a vehicle to select materials based on objective criteria.

### Learning Outcome 3 (Marking Grid A)

The specification provides a range of examples of issues that manufacturers could consider when designing a product. These would provide learners with a sound starting point to go on and produce the descriptions and outlines required for mark bands 2 and 3. In some cases, learners provided evidence that they had used CAD/CAM, but then missed the details that evidenced consideration of how they could be used. Without evidence of this stage high marks cannot be agreed by the moderator. In future series, centres may wish to encourage learners to consider several types of CAD and CAM and the opportunities they offer. For example, a 3D CAD program would help to communicate information about visual appearance, whereas a 2D program could link to a laser cutter.

### Learning Outcome 4 (Marking Grid A)

This criterion has 2 components; the first covers research and design, whilst the second covers the PDS and modifications to the design.

There was evidence of some learners undertaking market research surveys across a large number of potential clients. For the research component, centres would be advised to consider the balance between breadth and depth. In order to achieve mark band 3, learners need to plan and carry out a thorough research investigation. Asking 10 sets of questions will be sufficient at Level 1. In future series, centres may wish to limit the amount of times the same survey is performed. This would allow learners to consider other factors in more depth.

Learners are assessed on the designs they produce. When this unit is delivered in conjunction with Unit 6, Making a Product, care should be given to ensure the evidence provided is about the designs, not the artifacts produced.

For the second component of this criterion, care needs to be taken that individuals can clearly be linked to elements of design proposals. Where prototypes are produced to gather external feedback, this should be linked to modifications to the design proposal, not the prototype. In future series, centres may wish to provide

evidence of design proposals as separate pages, not as screen shots or photographs incorporated into pages containing text. Explicit evidence of the modifications to design proposals should also be included.

Based on the evidence of the work submitted for moderation, the Edexcel Manufacturing and Product Design Diploma (Principal Learning) appears to be providing Level 1 learners with a varied, accessible and rewarding learning experience.

## Statistics

### Level 1 Unit 3 Introduction to Working Practices in Manufacturing

	Max. Mark	A*	A	B	U
Raw boundary mark	60	52	37	23	0
Points Score	4	3	2	1	0

### Level 1 Unit 4 Introduction to Product Design and Development

	Max. Mark	A*	A	B	U
Raw boundary mark	60	51	36	22	0
Points Score	8	6	4	2	0

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