



General Certificate of Secondary Education

Design and Technology: Resistant Materials Technology 45601

Unit 1: Written Paper

Report on the Examination

2010 examination – June series

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This is the first year that this course has been examined. A detailed analysis of the level of candidate responses is available to centres if they refer to the Enhanced Results Analysis (ERA) system that can be achieved via e-AQA. It is recommended that centres look at this as it may prove valuable in terms of identifying issues which could inform future course planning/revision programmes.

Administration

It is pleasing to note that the majority of centres complied with AQA's instructions relating to the collation, packaging and dispatching of scripts.

A significant number of candidates contravened the regulations with regard to the use of the colour of ink employed to record their answer. Black ink or black ball-point pen should be used for written answers and pencils and coloured pencils should be used for drawings.

General

There was substantial evidence of the use of the preliminary material by centres when preparing their candidates for the examination.

The use of the preliminary material is intended to give the candidates 'ownership' of their paper. It allows them to produce real and valid responses based on work done in the weeks before the examination. Where centres had made good use of the preliminary material their candidates invariably went on to produce good quality designs. Centres and/or candidates who failed to take advantage of the preliminary material generally found themselves disadvantaged.

Teachers should emphasise good examination techniques to their candidates. In particular, the need to read and re-read each question carefully before attempting it. They should also be taught to use any 'spare' time at the end of the examination to carefully go through both the questions and their answers.

Question 1

This question was well answered. Many candidates gained full marks by producing three relevant specification points for a child's educational toy that improves hand-eye co-ordination, and subsequently expanding their answers to provide suitable explanations. Candidates lost marks by repeating answers or by repeating information that was given in the design brief.

Question 2

It was clearly evident that the majority of candidates had worked with the preliminary material.

The majority of candidates produced five design ideas for a child's educational toy that improves hand-eye co-ordination. The more able candidates produced five significantly different ideas that display creativity, flair and originality. Weaker candidates' ideas were obvious and simplistic.

Question 3

Quality of notes

Candidates were able to gain full marks by providing detailed notes on the development of their design regarding its function, the materials, and the construction methods they would use to manufacture their idea. Weaker candidates simply labelled their sketch.

Quality of sketching

The standard of sketching varied. More able candidates were able to produce a pictorial view of their idea. Weaker candidates had simple 2D representations.

Sizes

The majority of candidates gained high marks for correctly inserting three realistic dimensions.

Question 4

Many candidates simply listed features of their design without making any value judgements, or simply stated that their design fulfilled the design requirements, making no further comment. Teachers should ensure that their candidates are aware that marks are only awarded where an analytical point has been fully explained.

Question 5

(a)(i) The majority of candidates correctly identified the tool as a G Clamp/Cramp. Candidates lost marks where a specific process was not correctly identified. Simply stating 'to hold things together' was not considered a detailed enough response for the awarding of a mark.

(a)(ii) Most candidates correctly identified the tool as a Hacksaw. Candidates lost marks where a specific process was not correctly identified. Candidates also lost marks by giving an incorrect process e.g. 'sawing wood'.

(a) (iii) Only a few candidates correctly identified the tool as a plane. A 'metal punch' was frequently given as an incorrect answer. Again, candidates lost marks where a specific process was not correctly identified.

(b) This question was well answered. The majority of candidates gained high marks by correctly identifying a hazard that could occur when using the disc sander and then improved their mark by correctly identifying a precaution that should be taken. Candidates lost marks for repeating answers already given.

Question 6

Stage 1

The majority of candidates were able to gain two of the four marks available by giving details of how they would mark out the kitchen roll holder. Few candidates achieved full marks by addressing the issue of the kitchen roll having to be being batch produced.

Stage 2

Most candidates were able to gain two of the four marks available by giving details of how they would cut and shape the kitchen roll holder. Few candidates achieved full marks by addressing the issue of the kitchen roll having to be being batch produced. Candidates who chose to use CAM to manufacture their kitchen roll holder tended to give simplistic answers.

Stage 3

Again, the majority of candidates were able to gain 2 of the 4 marks available by giving details of how they would bend or join the kitchen roll holder. Fewer candidates achieved full marks by addressing the issue of the kitchen roll having to be being batch produced.

Stage 4

This part of the question was answered well with many candidates giving correct details of how to apply a relevant finish to the kitchen roll holder.

Stage 5

Candidates provided a variety of ways in which to produce the 'kitchen roll' text. Many candidates correctly chose to engrave the text by a laser cutter.

Question 7

Teachers and candidates are reminded that only **specific** materials will be awarded marks on this paper.

(a)(i) Nest of tables

The majority of candidates correctly named a specific type of solid wood from which the nest of tables was likely to have been made from. 'Oak' was the most common correct response.

Incorrect responses included 'pine'.

Reference to its 'appearance' and 'strength' were generally given as correct reasons for their choice.

(a) (ii) Ring

Almost all of the candidates correctly indentified the ring as being made from gold.

Reference to the materials 'appearance' and 'durability' were generally given as correct reasons for their choice.

(a)(iii) Food storage boxes

A number of candidates failed to gain a mark by incorrectly naming 'acrylic' as a suitable plastic from which the food storage boxes. Reference to it being 'waterproof' and 'easy to clean' were generally given as correct reasons for their choice.

(a)(iv) Tennis racket

Many candidates correctly identified that the tennis racket was made from carbon fibre.

Reference to its 'strength' and 'lightness' were the most common correct reasons given.

- (b) The majority of candidates gained some marks for discussing the environmental impact of using wood to manufacture products. Few candidates provided sufficient detail to gain full marks. Teachers and candidates should note that the number of lines provided is a clue to the amount of detail required in an answer.

Question 8

This was the least well answered question on the paper. The term 'market pull, technology push' was not understood by the majority of candidates. Candidates gained some marks by producing superficial responses but very few gained over half marks. This question also examined the candidates' Quality of Written Communication. This varied considerably. Teachers and candidates are reminded of the need for good English, particularly in this question.

Question 9

- (a) Candidates gained marks for describing some of the marking out procedure. More able candidates went on to provide detailed answers correctly naming the tools and equipment that would be used.
- (b) The candidates' knowledge of the term 'tolerance' when applied to the manufacturing of components was lacking. Few candidates gained marks on this question. Many incorrectly referred to 'taking your time' and 'being patient'
- (c) Most candidates gained some marks on this question. Candidates correctly identified that quality control was related to reliability and high standards.

Question 10

- (a) (i) to (v) This section of the question was well answered. Many candidates correctly identified four ergonomic features of the buggy. Reference to the 'handle', 'the wheels' and the 'seat' were among the most common correct responses. Many went on to provide correct details of their chosen ergonomic feature.
- (b) (i) Most candidates correctly identified the 'brake' and the 'wheel' as being mechanisms used on the buggy.
- (b) (ii) The quality of the drawing of the candidates' chosen mechanism varied considerably. High marks were awarded for detailed drawings that were clearly labelled.
- (b) (iii) Many candidates gained some marks by providing details of the function of their chosen mechanism. Many went on to provide detailed descriptions and gained full marks.

Mark Ranges and Award of Grades

Please see the following link:

<http://www.aqa.org.uk/over/stat.html>