GCSE
DESIGN AND TECHNOLOGY

8552/W: Paper 1
Report on the Examination

8552
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General Introduction to the November Series

This has been an unusual exam series in many ways. Entry patterns have been very different from those normally seen in the summer, and students had a very different experience in preparation for these exams. It is therefore more difficult to make meaningful comparisons between the range of student responses seen in this series and those seen in a normal summer series. The smaller entry also means that there is less evidence available for examiners to comment on.

In this report, senior examiners will summarise the performance of students in this series in a way that is as helpful as possible to teachers preparing future cohorts while taking into account the unusual circumstances and limited evidence available.

Overview of Entry

In this most unusual of years, 112 students elected to sit the examination as part of the November 2020 series. This was a considerably smaller entry than the entry in excess of 62,000 students in 2019.
Students on the whole attempted to answer the questions asked with precision and focus. Even though the entry was small, a few questions were not attempted, but no pattern in unattempted questions was evident.

Question A1 – A10- MCQs

A series of 10 multiple choice questions covering aspects of the core technical principles including multiple material and component areas. There was no evidence of any distractor being more popular than the correct response.

Question A11- metals and alloys

Students were able to identify specific named alloys and explain why metals were alloyed.

Question A12- composite materials used in packaging

Parts 12.1 and 12.2 were answered very well. Part 12.3 allowed students to gain at least mark for correct working even if the correct answer was not provided.

Question A13 – system diagram

The input and output process blocks were answered well with specific components given. The process block had poorer responses e.g. circuit and PCB.

Question B14 – commercial manufacturing process

Students used a mixture of sketches and notes to clarify their understanding across the available mark range.

Question B15 – sourcing materials/components

A well answered question.

Question B16- manufacturing

16.1 - Card was not accepted as a specific card as 'card' was provided in the question stem. In 16.2 and 16.3 marks were rewarded for evidence of correct working. If the answer arrived at in 16.2 was incorrect, students were rewarded for correct method in 16.3.

Question B17 – extended writing on responsible design

Students are to be commended on how many responses focused in on the required manufacture, use and disposal of products. Many responses correctly considered both atmospheric and oceanic forms of pollution. Clear examples were given to support answers.

Question B18 – scales of manufacture

Some responses confused mass manufacture with continuous manufacture and this depressed marks in the first part of the question.

Question C19 – companies.

A majority of responses considered the work of Dyson and Apple. Students were able to identify and discuss design features more successfully than manufacturing techniques where they were considered.

Question C20 – kettles

It was rather surprising to find several instances where students were unable to respond with clarity and detail as to how ergonomics influenced the design of the kettles. Previously, this has been a well understood concept. Both functionality and innovation were considered successfully across the available mark range.

Question C21 – investigation techniques

Students were able to provide responses on both investigation techniques across the available mark ranges, using specific examples.

Question C22 – designing a prototype toy

A really well answered question. Many students completed 22.1 and 22.2 either partially or fully correctly.

Question C23 – a specification

Some points provided were more questions, indicating a lack of understanding as to what a specification is. In some responses points given lacked sufficient detail for credit or were a repeat of an earlier point made. This also failed to gain credit.

Question C24- 3D bug box

Students in the vast majority of case were able to generate a 3D sketch of the bug box for 24.1. Some responses confused oblique and isometric drawing with perspective drawing and hence

were unable to access full marks. In part 24.2 to calculate the roof angle, a mixture of mathematical and graphic responses were seen and able to access full marks.

Question C25 – efficient material use and minimising waste

A limited number of responses missed the point of the question and incorrectly discussed environmental issues in saving materials.

Question C26 – forming materials

A large number of students were unable to produce high quality responses due to a lack of understanding as to what forming means in the context of the specification. For example, several responses incorrectly discussed the use of 'cheap' materials and 'scrap' materials to make prototypes.

Concluding Remarks

Centres are advised to ensure students understand the terms wastage, addition, deforming and reforming in the context and scenarios indicated in the specification.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the Results Statistics page of the AQA Website.