OCR
Oxford Cambridge and RSA

GCSE

Design and Technology: Graphics

General Certificate of Secondary Education **J303**

OCR Report to Centres June 2016

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This report on the examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the specification content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the examination.

OCR will not enter into any discussion or correspondence in connection with this report.

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OCR REPORT TO CENTRES

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Overview

The Standard of work presented for moderation this session has generally been very good, with the outcomes produced being suitable for the OCR D&T: Graphics Unit A531 Introduction to Designing & Making and Unit A533 Making Quality Products.

Most candidates had chosen one of the Themes and Starting Points from the specification. There were more cases seen where candidates had chosen a Theme but then adopted their own starting point. **Candidates need to be advised that they must adopt one of the Themes and its respective Starting Point outlined on page 47-48 of the specification.** Most centres used compliant graphic materials as outlined in the specification for D & T: Graphics, although there were a few centre's using materials such as acrylic which was thicker than the 1mm allowed. The compliant materials are outlined on page 13of the specification.

All centres need to provide the minimum of **two clear photographs** of the completed prototype product. Centres are asked to ensure that photographs are of a sufficient size and clarity to provide full detail of the prototype product. There were many centres whose candidates included photographs that were too small or of a poor quality which made the moderation more difficult. **Centres are asked to check the size and quality of photographs before sending work to the moderator.** Centres provided both hard copies of portfolios, portfolios scanned to disc and uploaded portfolios on the OCR Repository for moderation. Centres are reminded that only one of these methods can be used at any one time by the centre. There were a small number of centres who had entered for repository moderation but sent work to the moderator by post, it would be useful for centres to remember that repository entries should use the code A531**/01** or A533**/01** and postal moderation should use the entry code A531**/02** or A533**/02**.

The outcome of these units is a prototype product or quality product, and most candidates were able to complete this task successfully.

Most centres were successful in applying the marking criteria for this Unit. Centres are reminded to apply the mark scheme on a 'best fit' basis. For each of the assessment criteria, one of the descriptors provided in the marking grid, that most closely describes the quality of the work being marked, should be selected. Marks should be positive, rewarding achievement rather than penalising failure or omissions, but there must be clear evidence within the candidate's portfolio to justify the mark awarded. When teachers select the most appropriate mark within the descriptor, they should use the following guidance:

- Where the candidate's work convincingly meets the statement, the highest mark should be awarded
- Where the candidate's work adequately meets the statement, the most appropriate mark in the middle range should be awarded
- Where the candidate's work just meets the statement, the lowest mark should be awarded.

Centres are reminded that the OCR GCSE D & T: Graphics assessment scheme is based upon numerical values and not grades. Each value is related to a description of an activity undertaken by the candidate. **Evidence** to support the awarding of marks should be contained **within the design portfolio**. Centres are advised to take a more objective approach and **mark the portfolio on evidence** and not simply the candidate. It is very helpful if teachers complete the annotations box on the accompanying Coursework Cover Sheet which should be attached to each candidate folder.

The use of CAD/CAM was evident throughout almost all the candidates work submitted for moderation, although some centres used it more extensively than others. There was evidence of some excellent CAD design drawings in Isometric and Orthographic, utilising CAD software such as 2D Design and Photoshop. It is pleasing to see that candidates showed increased evidence of their understanding and ownership of design work generated and manufactured using this method, successful candidates explained using print screen and detailed annotations how they developed and used the software available to them to generate their designs. There was some evidence of prototype products being manufactured using CAM suddenly 'appearing' with no supporting evidence within the candidates design portfolio. Print screens provide evidence of the development of ideas using CAD/CAM and are evidence of modelling being undertaken by candidates. Candidates should also ensure that they explain using notes, print screens and photographs, the 'setting up' and processes involved in the making of their prototype/product using the CAD/CAM facilities available to them.

There was an increase seen in the use of writing frames, teachers need to take great care when making the distinction between guidance and prescription. Centres should avoid the over-reliance on writing frames for candidate's work. It is essential that candidates have the opportunity to show flair and creativity in the way they approach the various aspects of this unit. Writing frames can be a useful tool when supporting lower ability candidates but can stifle creativity and individuality, particularly in higher achieving candidates.

Centres are reminded that there are a number of subject specific support systems in place to aid teachers in the delivery of this specification with written advice on coursework proposals and a subject specialist advisor.

Administration

Communication with Centres was good and most assessment material reached the moderators in plenty of time. A few centres failed to meet the assessment deadlines, or omitted sending the correct documentation and this greatly hindered the moderator's tasks. It was pleasing to see that centres completed the individual Controlled Assessment Cover Sheets for each candidate which is required for the moderation process to take place. Centres are reminded that moderators still need to receive the Centre Authentication form CSS160 along with the MS1.

Most centres provided clear evidence that internal moderation and standardisation had taken place. Centres are reminded to allow sufficient time to carry out effective internal standardisation prior to the submission of marks.

There were a few inaccuracies in Centre paperwork; transferring of marks from the coursework coversheet to the MS1 was incorrect in some cases. The provision of annotated controlled assessment cover sheets for individual candidates work was appreciated by moderators and aided the smooth running of the moderation process.

Centres are reminded that there is a full range of documentation, including downloadable forms and other subject specific support materials on OCR's website: www.ocr.org.uk

Content

Most portfolios were of between 15-20 pages of A3 or equivalent. There was a great deal of evidence of writing frames being used; often stifling the candidate's creativity and presentation, particularly higher achieving candidates. Candidates should be encouraged to take ownership of their controlled assessment and use teacher guidance as a support. Unit A531 and Unit A533 are controlled assessments that should each be completed in 20 hours, and it was apparent that most candidates had produced their portfolios within the allocated time. Guidance regarding editing, suitability of content and concise presentation is still required by some candidates. With such a tight time allowance it is essential that candidates are encouraged to edit their content and avoid duplication or irrelevant material.

Performance of Candidates

Candidates performed in line with previous assessment series for A531 and A533. There was clear evidence that the majority of candidates understood the tasks set and completed their controlled coursework following the controlled assessment objectives for each unit. It was noticed that candidates and centres were more successful in completing the A533 controlled assessment unit than A531. Centres would benefit from reading the guidance and training material prepared by OCR in relation to preparing the candidates for Unit A531.

Centres are advised to plan the amount of time that they allow candidates to spend on each of the assessment strands, the designing and making sections on both units should be allocated the majority of time allowed.

A531 INTRODUCTION TO DESIGNING & MAKING

CREATIVITY

It was very pleasing to see a continued improvement in the evidence presented for the Creativity strand. Candidates should identify and explain their theme and starting point. Successful candidates used a mixture of detailed notes/annotations and relevant images to explain their choice of theme, including relevant and detailed data/background research to support their choice. Using the 5WH's may be a useful framework for candidates to follow to allow them to fully explain their choice. From the Theme and starting point candidates can identify a maximum of two appropriate existing products to analyse. Successful candidates analysed two products that they had **primary** access to, it is difficult to fully analyse products from internet images/photographs alone and it would be beneficial for centres to advise candidates against this. Analysis of products should include analysis of the construction of the product, materials used, surface graphics and target audience. From this analysis they need to establish an understanding of the principles of **good design** and then identify **the trends** in the design of the existing products. From these findings they should demonstrate that they have an understanding of the **needs of the users**; questionnaires and the resulting analysis of this data can prove most useful here. With all this information to hand they should then produce a clear concise and precise design brief.

DESIGNING

Candidates should start this strand by analysing their design brief. They then need to produce a suitable and **detailed specification** for their prototype product. Candidates are advised to make clear links between their analysis of the design brief and the design specification.

The design specifications produced by candidates varied in content and detail. Some candidates produced simple lists that were vague and generic and which could well have applied to most prototype products. Other candidates provided unique detailed specifications that clearly applied to the prototype product they intended to make. A good design specification forms an essential checklist that will guide the candidate through this controlled assessment. To be awarded high marks candidates should ensure they include **dimensions or measureable** data in their specifications. If they are designing packaging for a CD, it is essential that they identify the dimensions of the CD itself so that they are able to produce a suitable package that is fit for purpose.

Most candidates used freehand sketching to illustrate their initial design ideas, and there were many excellent examples of fluid and creative freehand illustrative work although there were a few centres whose candidate portfolios contained no freehand design ideas at all. Centres should encourage all candidates to start their design section with freehand illustrations. Successful candidates generated and developed detailed ideas showing a wide range of various different styles, shapes and surface graphic solutions. These ideas were fully explained with

notes, referring back to the specification, target audience and design brief. Some candidates provided simple sketches, with limited styles, or pre-determined shapes that showed little detail or explanation to support the ideas. Most candidates clearly identified a chosen idea and fully explained their choice of idea, evaluating it against the specification and design brief.

To illustrate their chosen prototype design, successful candidates produced an orthographic or Isometric drawing and provided further details of the prototype, detailing its size, construction and materials to be used. However, a number of candidates failed to provide clear details of their proposed prototype at the end of the designing strand, an orthographic or isometric drawing should form an essential part of the designing strand.

Many candidates used ICT to present their detailed drawings and surface graphics. At this stage some candidates clearly used ICT to produce a final design for their prototype but failed to include in their portfolios the developmental work that they had undertaken using ICT. A series of print screens of the work they had undertaken would have seen them gain greater credit. Candidates must take ownership of their design work and if they have modified and edited an existing image or created their own image/surface graphics they must explain how they have done so, ensuring that they reference what software has been used and from where any existing imagery has been sourced from. There were many examples of excellent editing and manipulating of images but it was not always clear how the candidate had arrived at the final result.

For candidates to achieve high levels of competency marks for surface graphics they need to show that they have used sufficient rigour in creating the graphics and that they have adapted or developed the graphical images from the original idea concepts. If a candidate only takes the images without adapting them, i.e. 'cut and paste' using just original images from the internet then candidates are not demonstrating high levels of competency in producing the surface graphics.

Successful Candidates briefly analysed their design brief and drew conclusions from this work. This was then incorporated into a structured, detailed, bullet pointed design specification that incorporated dimensions or measurable data. Successful candidates presented their design ideas using pencil sketches to generate a range of free-flowing ideas that were then fully explained with annotation. They then explained, with reasons, their choice of prototype product. Candidates then produced a detailed scale drawing of the prototype product giving full details of possible materials, dimensions, likely construction methods and processes. Successful candidates also demonstrated how they had generated, developed and chosen suitable surface graphics. Candidates should communicate their designs using appropriate skills and techniques including ICT.

MAKING

Most candidates successfully produced a prototype product, although there were a number of centres where there was no evidence in the candidate portfolio that a final prototype had been made, yet high marks had been awarded. Most candidates appeared to have worked skilfully and safely to produce prototype products of reasonable to high quality.

Most candidates provided evidence of modelling in their portfolios. It is essential that all candidates include evidence of modelling in their portfolios in order to gain credit. Modelling evidence might include paper or card models, photographic images, and screenshots showing how their design, or part of it, was modelled and details of how the prototype could be modified and developed to be further improved.

Successful candidates investigated a range of suitable materials that could be used in the manufacture of their prototype, testing them for suitability and performance; this was often successfully incorporated into the modelling of the prototype where it provided a useful stepping stone for analysis and genuine development of the prototype. Further identification, selection and testing of suitable printing and manufacturing processes available to the candidate allowed candidates to access the high ability strand in the assessment criteria.

A wide range of suitable surface graphics were successfully applied to most prototype products, this was seen using both traditional rending methods and the extensive use of ICT.

Most candidates had chosen compliant materials for Graphics for their prototype products and had made sound choices of tools and equipment. Furthermore, all candidates had chosen and used facilities appropriate to Graphics.

TWO DIMENSIONAL SOLUTIONS

Centres need to understand that the Making assessment strand requires candidates to both make a prototype product from compliant materials and apply graphics to that prototype product. There is a danger that a 2-Dimensional outcome may require only limited making and this will make it difficult to apply the full range of marks when little making has taken place. For example, business cards, drink labels or paper/card inserts for plastic CD/DVD cases. In these cases there is very little making to assess, just the graphics that have been applied. Whereas, if a candidate produces a card CD/DVD case (box set type or a more complex card structure) and then applies graphics, both making elements can be assessed and the full range of marks applied.

If there is insufficient rigour and depth to work produced in the surface graphics of these 2D solutions then the prototype can only attain the basic ability strand for the **making**. In order to achieve higher marks for the surface graphics candidates are required to manipulate and develop these graphics, rather than a simple cut and paste solution.

It is essential that candidates include in their portfolio, identification, annotation and explanations that provide evidence that they have effectively solved technical problems as they had arisen during the making of the prototype product. This aspect of the assessment was often over marked by centres, with high marks awarded where little evidence was present in the portfolios, or was credited to the modelling section of the candidate's folder. Successful candidates used detailed notes (often in a table format) to identify technical issues that occurred during the making of the final prototype product and then used photographs and detailed notes to explain how they overcame the issues. To obtain higher marks candidates should demonstrate that they overcame **complex issues, independently**.

Almost all candidates had planned the making of their prototype product. There was good evidence of flow charts and table charts being used by candidates to plan carefully the stages in making their prototype product. This plan should always be **completed prior** to the actual making. Most candidates had then included a record or diary of the key stages in making the prototype product using notes, sketches and photographic images. To obtain high marks the notes must be comprehensive and detailed to explain the actual making process which may differ from the planned process. Many had highlighted difficulties and problems they had encountered and how they had overcome them.

Successful Candidates use modelling to identify problems and make appropriate modifications. They clearly assess the suitability of the prototype considering in detail the needs of the user. Candidates make appropriate choices of materials, tools and equipment. Successful candidates work skilfully and safely to produce a high quality prototype product suitable for the intended user which had surface graphics applied that demonstrate a high level of competency. Throughout their portfolio they assess and apply knowledge appropriate for Graphics.

Successful candidates clearly demonstrate their ability to solve problems effectively and efficiently as they arise. Successful candidates record the key stages in the creation of the prototype product providing comprehensive notes **and** visual evidence.

CRITICAL EVALUATION

Many candidates based their evaluation on their prototype product and specification. In many cases the modifications candidates outlined were improvements to the prototype product. **The Specification for Unit 531 clearly states that the evaluation should be of the <u>designing and making process</u>, there is no need to evaluate against the Specification**. Furthermore any modifications proposed by the candidate should be of ways to improve the designing and making process and not the prototype product. The record that candidates will have kept of the designing and making of the prototype (in the Making strand) together with the recording of any technical problems the candidate had overcome (also in the Making strand) should form the basis of their evaluation.

Moderators felt that some centres may well have run short of time and this could have further contributed to very limited evaluations in many portfolios.

Successful Candidates produce a critical and detailed evaluation that evaluated the processes that the candidate went through during the designing and making of their prototype product. Through reference to their planning and recording of the stages in making their prototype product they are able to reflect and suggest modifications to improve the modelling and prototyping processes.

QUALITY OF WRITTEN COMMUNICATION

Centres applied this mark fairly and accurately. Candidates should be encouraged to use appropriate specialist terms throughout their portfolio and organise their portfolio in a structured and logical manner, following the process of the mark scheme. There were many instances of paper based candidate portfolios being in a very disorganised state, candidate work produced using ICT (such as PowerPoint) were mostly in the correct order, It should be noted that up to 3 marks for quality of written communication can be given even if there is no written evaluation.

REFERENCES

Centres must ensure that candidates reference or acknowledge their sources within the portfolio. Quotations must also be clearly marked and a reference provided wherever possible. Candidates should reference software and images used where possible, particularly when explaining the manipulation and development of surface graphics in the designing section.

A533 MAKING QUALITY PRODUCTS

DESIGNING

Centres are reminded that there no assessment requirement to include extensive **research** material in the portfolio for Unit A533.

Candidates should start this strand by stating, analysing and exploring their design brief. Candidates do not need to include product analysis or extensive research in this Unit. It is sufficient to add a personal analysis of aspects of the theme that has inspired the candidate, the use of the 5Wh's framework may be useful here. They then need to produce a suitable detailed specification for their product. Candidates are advised to make clear links between their analysis of the design brief and the design specification.

The design specifications produced by candidates varied in content and detail. Many were of mid ability band and contained vague statements such as 'must be the right size.' Students should justify each specification point and include dimensions or measureable data to improve the quality of specifications. If a candidate is producing a package they must ensure that they have measured the dimensions of the proposed **contents** so that they can design and make a functional product. Centres should advise candidates producing an **Architectural model** to develop their specification for the **Architectural model** rather than the actual building. Candidates may want to include some details of the actual building but the specification must detail the requirements needed for the model of the building.

Some candidates did provide uniquely detailed and individual specifications that clearly applied to the product they intended to make. A good specification forms an essential checklist that will guide the candidate through this controlled assessment.

Most candidates used freehand sketching to illustrate their initial design ideas, there were some excellent examples of very fluid and creative designs, although many centres were awarding high marks for one or two simple design ideas that were not developed or explored. Enhancement techniques were rarely used. Candidates should be encouraged to present ideas using a wide range of techniques to demonstrate their graphic skills. Techniques such as using thick and thin line technique, marker pen rendering, pencil crayons, fine liners, perspective and isometric drawing should be widely encouraged. Some candidates generated and developed detailed ideas showing a range of various styles, shapes and surface graphics solutions, which were fully explained with annotation whilst others provided little explanation of their ideas. Most candidates identified a chosen idea but a few failed to explain their choice of design solution or evaluated the design against the specification.

To illustrate their chosen final design successful candidates produced an orthographic drawing and provided further details of the product; its construction and materials to be used, although it was noticed that many candidates failed to include important details such as dimensions or surface graphics on the final design. Many candidates used ICT to a very high standard to present their detailed drawings and surface graphics; this was very pleasing to see and should be encouraged by all centres. At this stage some candidates explained, using print screens and detailed notes, how they generated their surface graphics using ICT, centres should encourage all candidates to take responsibility for, and explain how they have created or manipulated their surface graphics.

Successful Candidates briefly analysed their design brief and drew conclusions from this work. This was then incorporated into a structured, detailed, bullet pointed design specification that included dimensions or measurable data. Successful candidates presented their design ideas using pencil sketches to generate a wide range of different, free-flowing ideas which were then fully explained with annotation. They then explained fully, with reasons, their choice of final product design. Candidates then produced a detailed scale drawing of the product giving full details of dimensions, possible materials, likely construction methods and processes, and of surface graphics. Candidates should communicate their designs using appropriate skills and techniques including ICT.

MAKING

Most candidates successfully produced a suitable product. Overall, this was the most successful aspect of the work seen. Most candidates appeared to have worked skilfully and safely to produce products of reasonable to high quality.

Planning consisted of a flow chart or table for most students. A detailed plan in a table format that shows each stage of the planned making, health & safety, tools, equipment and processes usually allows candidates to cover all the areas needed to meet the assessment strands.

It was disappointing to see that many candidates provided little evidence of modelling and testing in their portfolios. Modelling and testing is an important aspect in the development of the final product and must have taken place to determine whether the design selected for manufacture is suitable in terms of materials and construction methods. It is essential that candidates include evidence of modelling and testing in their portfolios in order to gain credit. Modelling evidence might include paper/card modelling, testing of printing, CAD/CAM modelling, material testing, tools and equipment selection. This can be presented as physical evidence in the portfolio, photographic images, or screenshots showing how their design was modelled and should also suggest modifications needed to prepare the final product for manufacture.

Surface graphics were successfully applied to most products seen using both traditional rending methods and the extensive use of ICT. If there is insufficient rigour and depth to work produced for the surface graphics then the product can only attain the basic ability strand for the **making**. In order to achieve higher marks candidates needed to show clear evidence that they had manipulated and developed their surface graphics rather than using simple cut and paste solutions in their application of these images for their final product. Candidates producing architectural models must ensure they apply suitable surface graphics that allow them to demonstrate high competency to be awarded high marks, centres should encourage candidates to think carefully about how they create and apply surface graphics to architectural models.

Most candidates had chosen compliant materials for Graphics for their products and had made sound choices of tools and equipment. Furthermore, all candidates had chosen and used facilities appropriate to Graphics.

It is essential that candidates include in their portfolio, identification, annotation and explanations that provide evidence that they have effectively solved technical problems as they had arisen during the making of the product. This aspect of the assessment was often over marked by centres, with high marks awarded where little evidence was **present** in the portfolios, or was credited to the modelling section of the candidate's folder. Successful candidates used detailed notes (often in a table format) to identify technical issues that occurred during the making of the final prototype product and then used photographs and detailed notes to explain how they overcame the issues. To obtain higher marks candidates should demonstrate that they overcame **complex issues, independently**.

Most candidates had included a record of the key stages in making their product using notes, sketches and photographic images. A photographic record with detailed annotations or even a scrapbook diary that is completed in each lesson would be useful in completing this section. Centres are reminded that for all aspects of the making process evidence must be provided in the portfolio and to achieve high marks the candidate must present comprehensive notes and photographs, this should cover the whole process involved in the making of the final product.

Successful Candidates use modelling and testing to identify problems and make appropriate modifications. They provide a clear plan of how they **intend** to make their product. They clearly assess the suitability of the product considering in detail the needs of the user. Candidates make appropriate choices of materials, tools and equipment. Successful candidates work skilfully and safely to produce a high quality product suitable for the intended user which has surface graphics applied that demonstrate a high level of competency and creativity. Throughout their folder they assess and apply knowledge appropriate for Graphics. Successful candidates clearly demonstrate their ability to solve problems effectively and efficiently as they arise. Successful candidates record, in detail, the key stages in the designing and making of the product providing comprehensive notes and visual evidence.

CRITICAL EVALUATION

All candidates based their evaluation on their product and specification. Few candidates carried out detailed testing and were able to draw conclusions and propose modifications to the product. Most testing was superficial; questioning their peers on the suitability of the final product – this is only useful if the peer group forms part of the target audience. Moderators felt that centres may well have run short of time and this could have further contributed to very limited evaluations in many portfolios.

Successful Candidates produce a critical evaluation that evaluates the product in detail against the specification, evaluating and justifying any changes that were made to the final product. They undertake detailed testing such as interviewing the target audience or placing and evaluating the product in situ, and then draw conclusions that lead to modifications that will improve the product. Suggested modifications included detailed notes, diagrams, annotated photographs or designs.

QUALITY OF WRITTEN COMMUNICATION

Centres applied this mark fairly and accurately. Candidates should be encouraged to use appropriate specialist terms throughout their portfolio and organise their portfolio in a structured and logical manner, following the process of the mark scheme. There were many instances of paper based candidate portfolios being in a very disorganised state, candidate work produced using ICT (such as PowerPoint) were mostly in the correct order, It should be noted that up to 3 marks for quality of written communication can be given even if there is no written evaluation.

REFERENCES

Centres must ensure that candidates reference or acknowledge their sources within the portfolio. Quotations must also be clearly marked and a reference provided wherever possible. Candidates should reference software and images used where possible, particularly when explaining the manipulation and development of surface graphics in the designing section.

A535 Sustainability and technical aspects of designing and making

General comments

The paper performed generally as anticipated and was generally appropriate to all levels of ability. Most candidates attempted the majority of the questions. The paper was accessible to all candidates. There was no evidence to suggest that candidates did not have enough time to complete the questions.

There was a wide range or responses from the cohort which spanned the full ability range. Responses from the candidates were generally encouraging and demonstrated a good understanding of the technical aspects of designing, making and sustainability.

The quality of sketching on the designing questions was good on the whole. The quality of drawing on the graphical questions using grids was slightly better than previous years. Many candidates are now using a ruler for these questions.

The quality of written communication was extremely variable. On the whole, the quality and levels of response were generally lower than previous year, particularly Question 16f where many candidates scored level 1. The quality of handwriting across all papers showed an improvement over previous years although there were still some scripts where it was extremely difficult or impossible to make sense of some candidate responses.

It was noticeable that many candidates lost marks on some of the questions by giving multiple answers. For example, on questions where candidates were asked to state **one** tool or item of equipment, many gave two answers. Often one of the answers was correct, while the other was incorrect. Where two answers are given, unless they are both correct the mark is not awarded. Centres are advised to make sure candidates are aware of this and read the questions carefully.

Comments on individual questions

Question No. 1
This was generally well answered with the majority of candidates giving the correct response.

Question No. 2
This was generally well answered with the majority of candidates giving the correct response.

Question No. 3
This was generally well answered with the vast majority of candidates giving the correct response.

Question No. 4
This was answered incorrectly by most candidates. Clearly this is not a commonly encountered logo for many students.

Question No. 5
This question had many different responses from the 4 alternatives given. Approximately 50% of candidates got this question correct.

Question No. 6
This question was answered correctly by approximately two thirds of candidates.

Question No. 7
This question was answered correctly by approximately 50% of candidates. Common incorrect responses were low VOC inks

Question No. 8
This question was answered incorrectly by approximately two thirds of candidates. Photochromic ink was a common incorrect answer.

Question No. 9
This was generally well answered, with a high proportion of candidates giving the correct answer.

Question No. 10
This was answered correctly by around 50% of candidates. Many almost correct responses such as 'global' or 'globally' were seen.

Question No. 11
This was well answered with the vast majority of candidates giving the correct response.

Question No. 12
This was well answered with the vast majority of candidates giving the correct response.

Question No.13
This was generally well answered with the majority of candidates giving the correct response.

Question No. 14
This was well answered with the vast majority of candidates giving the correct response.

Question No. 15
This was well answered with the vast majority of candidates giving the correct response.

Question No. 16a
The majority of candidates gave reasons why the activity pack would appeal to children and achieved both marks. Some candidates gave very similar or repeat answers and as a result only managed to achieve one mark on this question.

Question No. 16b
There were a wide range of responses to this question but only around 20% of candidates gained all four marks. Many candidates gave repeat answers or answers that did not relate to the design or manufacture of the activity pack.

Question No. 16c
This was well answered with the majority of candidates giving a correct response. The most common incorrect answers were answers relating to the product being easier to store.

Question No. 16di
Only a small proportion of candidates gave the correct answer. Many candidates gave 'die cutting' as a response. Whilst die cutting is used to create perforations in card, it is also used to cut card.

Question No. 16dii
The majority of candidates answered this incorrectly. Only a small proportion of candidates achieved both marks. Many incorrect answers related to the pieces being able to be put back into the card and put away easily rather than the lack of scissors and/or parental assistance being required.

Question No. 16e
The majority of candidates achieved at least 2 of the 4 marks available on this question, but only around 10% gained full marks. Many candidates drew development (nets) of the box shown in the question but failed to show how it would be put together to form a background. Many candidate responses showed a 3D background scene but did not make it clear how this was created from the box. The quality of sketching was generally very good and improved on previous years.

Question No. 16f
This was only answered well by a very small proportion of candidates. The vast majority of responses were Level 1 and gained only 1 or 2 marks. Many candidates mis-understood the question or the term 'digital technology' and did not actually answer the question. Many candidate responses related to environmental issues associated with pollution caused during printing and the subsequent effects. Many candidates focused on 3D printers and their benefits compared to normal printers. Other common response themes were the benefits of CAD compared to drawing by hand, descriptions of different traditional printing techniques such as lithography and flexography or general benefits of using computer software.

There was less evidence of candidates using bullet points or lists than in previous sessions but some candidates' handwriting was still very difficult to decipher.

Question No. 17a
The majority of candidates correctly completed the shoe box development (net) and achieved all 5 marks. Only a handful of candidates achieved no marks. The quality of drawing varied, with the best responses being when candidates had used a straight edge to draw accurate lines. Many candidates drew parts incorrectly because of errors when counting the number of dots on the grid.

Question No. 17bi
This was well answered with the vast majority of candidates giving a correct response. The most common incorrect answers were 'square' or 'trapezium'.

Question No. 17bii
This was well answered with the vast majority of candidates ticking the correct response. A significant number of candidates ticked two boxes and as a result achieved no marks.

Question No. 17c
The majority of candidates achieved at least 1 mark on this question by stating that the manufacturer would need the permission from the owner to use the image. However, only around 25% of candidates were able to give a further issue such as needing to pay for the use, or legal action if used without permission.

Question No. 17di
A wide range of responses were given for this question. Only a small proportion (approximately 20%) of candidates was able to correctly name a suitable printing method.

Question No. 17dii
There were a wide range of responses to this question but only a very small minority of candidates answered this correctly. Common incorrect answers were answers relating to checking whether the training shoes would fit in the box, or checking the spelling on the box.

Question No. 17e
This was well answered with the vast majority of candidates ticking the correct response.

Question No. 17f
This question was generally well answered and the majority of candidates scored both marks. The most common type of chart was a column or bar chart.

Question No. 18a
Only a small proportion of candidates achieved both marks on this question. Many candidates clearly have no knowledge of thick and thin line technique and there were a high proportion of candidates who gave 'no response' to the question. Many candidates achieved one mark for drawing the outside perimeter of the card in thick line but failed to correctly draw the rest of the parts.

Question 18b
Only a small proportion of candidates gave correct responses. 'Box fold' and 'step' were two of the most common incorrect answers.

Question 18c
This question was generally well answered with the majority of candidates achieving both marks. 'Sphere' was a common incorrect response for the cylinder and 'pyramid' was often given instead of cone.

Question 18d
There were a wide range of responses to this question. Most candidates understood that the rocket needed to be rotated and enlarged and achieved at least 2 of the 4 marks available. Many candidates failed to mention the dragging or repositioning of the rocket onto the card.

Question No. 18e
There were some excellent responses to this question and candidates are clearly learning to look at the points given in the specification to ensure they achieve marks on these design questions. As a result, the majority of candidates achieved at least three of the six marks available. Many candidates showed a card with a hand, an appropriate message or graphic design and a push-pull tab but many failed to show any kind of mechanism. Many candidates showed mechanisms that would produce a sideways hand movement but not oscillating or mechanisms that would not actually work because pivots were not shown correctly. Very few candidates achieved all 6 marks. The quality of graphical communication varied but most candidates produced clear, freehand sketches and appropriate notes to communicate their designs clearly.

Question 19a
The majority of candidates were able to correctly complete the front view of the menu holder and achieve at least 1 mark on this question. However, the range of responses for the plan view varied considerably with only around 30% of candidates achieving all 4 marks. Many candidates drew the plan view correctly but rotated by 90°. A common error was drawing the outline of the plan view too big or small because candidates had miscounted the number of dots on the grid. The quality of drawing varied, with the best responses being when candidates had used a straight edge to draw accurate lines.

Question 19b
Few candidates were able to answer this correctly. Only around 20% achieved the mark. Many candidates gave incorrect responses such as 'cheap' or 'strong'. Many candidates gave responses such as 'easy to bend' which was in the stem of the question and therefore achieved no marks.

Question 19c
Only around 30% of candidates achieved both marks on this question. The majority of candidates identified a suitable tool for cutting the plastic with 'laser cutter' being the most common response. However, only around 30% of candidates gave an appropriate tool for bending the plastic to shape. Many candidates gave more than one answer in each box and if one of these was incorrect they did not achieve the mark. Centres are advised to make sure candidates read the question carefully and only give **one** tool if that is what the question asks for.

Question No. 19di
This question was generally well answered with the majority of candidates achieving 1 mark. A common incorrect answer was 'sharp corners on the plastic sheet'.

Question No. 19dii
Whilst, many candidates were able to correctly identify a possible risk in the previous part of the question (19di), fewer candidates were able to state how this risk could be minimised. 'Stand well back' was a common incorrect answer.

Question No. 19e
There was a wide range of responses to this question, with most candidates showing some knowledge of the concept of life cycle and achieving at least 1 mark. However, most candidates tended to focus heavily on the manufacturing stage alone or on the end stages i.e. usage and recycling. Many candidates gave very detailed descriptions of one or two stages in the process but failed to mention any of the others. The extraction of raw materials such as crude oil for the manufacture of the plastic was rarely mentioned by many candidates but transportation of the finished product did feature in a significant number of candidates' responses. Many candidates focused on describing the environmental impacts of manufacturing, transportation and disposal of the menu holder rather than the life cycle itself.

Some candidates gave the stages of the life cycle as a form of list rather than a structured description and this meant they lost out on some of the marks available. Centres are advised to make sure candidates understand that this type of question requires a structured answer demonstrating accurate use or spelling, punctuation and grammar if they are to achieve high marks.

Overall, this was generally answered much better than the other written communication question (16f) with a much higher proportion of candidates achieving level 3 responses.

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