GCSE Examiners' Report

Design and Technology

GCSE

Summer 2024

Introduction

Our Principal examiners' report provides valuable feedback on the recent assessment series. It has been written by our Principal Examiners and Principal Moderators after the completion of marking and moderation, and details how candidates have performed in each component.

This report opens with a summary of candidates' performance, including the assessment objectives/skills/topics/themes being tested, and highlights the characteristics of successful performance and where performance could be improved. It then looks in detail at each unit, pinpointing aspects that proved challenging to some candidates and suggesting some reasons as to why that might be.[1]

The information found in this report provides valuable insight for practitioners to support their teaching and learning activity. We would also encourage practitioners to share this document – in its entirety or in part – with their learners to help with exam preparation, to understand how to avoid pitfalls and to add to their revision toolbox.

Further support

Document	Description	Link
Professional Learning / CPD	Eduqas offers an extensive programme of online and face-to-face Professional Learning events. Access interactive feedback, review example candidate responses, gain practical ideas for the classroom and put questions to our dedicated team by registering for one of our events here.	https://www.eduqas.co.uk/home/professional-learning/
Past papers	Access the bank of past papers for this qualification, including the most recent assessments. Please note that we do not make past papers available on the public website until 12 months after the examination.	Portal by WJEC or on the Eduqas subject page
Grade boundary information	Grade boundaries are the minimum number of marks needed to achieve each grade. For unitised specifications grade boundaries are expressed on a Uniform Mark Scale (UMS). UMS grade boundaries remain the same every year as the range of UMS mark percentages allocated to a particular grade does not change. UMS grade boundaries are published at overall subject and component level. For linear specifications, a single grade is awarded for the subject, rather than for each component that contributes towards the overall grade. Grade boundaries are published on results day.	For unitised specifications click here: Results and Grade Boundaries and PRS (eduqas.co.uk)

[1] ***Please note that where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.***

Exam Results Analysis	Eduqas provides information to examination centres via the WJEC Portal. This is restricted to centre staff only. Access is granted to centre staff by the Examinations Officer at the centre.	Portal by WJEC
Classroom Resources	Access our extensive range of FREE classroom resources, including blended learning materials, exam walk-throughs and knowledge organisers to support teaching and learning.	https://resources.eduqas.co.uk/
Bank of Professional Learning materials	Access our bank of Professional Learning materials from previous events from our secure website and additional pre-recorded materials available in the public domain.	Portal by WJEC or on the Eduqas subject page.
Become an examiner with WJEC.	We are always looking to recruit new examiners or moderators. These opportunities can provide you with valuable insight into the assessment process, enhance your skill set, increase your understanding of your subject and inform your teaching.	Become an Examiner | Eduqas

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Executive Summary

Component 1

This summer's exam saw a very high paper completion rate. There was, however, a noted rise in candidates attempting more than one Q6 this year. Natural and Manufactured Timbers was by far the most popular selected material Q6. Few candidates selected Thermoforming and Thermosetting Polymers, Metals or Electronic Systems. Many candidates are now accessing the extended answers questions well in Q6 and are able to demonstrate their broad knowledge and understanding of technical principles, in an articulate, justified way.

Mathematics questions are being tackled well by candidates and workings are now being included within the answers provided. However, the higher-level calculations, notably Q5(c) challenged candidates, many of whom chose the incorrect method to calculate the number of swing tags that could be cut from card sheets. It is highly recommended past paper calculations are frequently used within the classroom. Reference to Appendix A: Links to Mathematics in the specification would help ensure candidates are familiar with the variance of mathematic skills required to be successful in this paper.

Candidates are also finding it challenging to transfer knowledge and skills from their NEA to the examination paper. Reviewing the specification content of section 2.2 Design and Making Principles when testing candidates' knowledge in the classroom is also recommended. Knowledge of materials and their associated working properties has notably improved. Candidates were able to justify and support how or why the properties chosen were appropriate to the product(s) being discussed. Ensuring candidates understand the difference between material properties and characteristics is recommended as there is confusion in part, preventing some candidates from accessing the top range of marks. An improvement in knowledge of mechanical devices was seen in this year's paper.

Mechanical system calculations were accessed easily and the differences between a gear train and a pulley and belt drive were known if superficially, which in some cases did limit accessibility to full marks. Candidates continue to use the visuals in the paper to help devise appropriate responses to questions. Various and mixed responses to notes and sketches questions were seen and did highlight the need to practice these questions leading up to the exam. Marks were lost by candidates not reading the questions carefully which resulted in incorrect responses. However, some responses were outstanding and provided a range of sketches with informative and accurate annotated notes. Candidates showed a lack of knowledge of the less common technical/composite textiles listed in the specification emphasising the importance of teaching all of the amplification content. Although improved, practising banded and higher tariff questions is still encouraged to ensure answers provided are balanced and fully justified.

Component 2

The requirements of the non-examined task (NEA) are now well established in most centres. There was evidence of many high quality innovative and creative outcomes alongside well-organised portfolios. The number of centres examining through Eduqas continues to grow. Many of the issues outlined in this interim report have been raised previously. It is a concern that they have not been addressed by a significant number of centres. A major concern is the inaccuracy of applying the assessment criteria. Following moderation, whilst most centre marks were accepted as accurate, 77 centres (26%) had an adjustment applied to their marks. These centres were considered generous across the sample and assessment strands.

Despite Eduqas publishing exemplar projects on the secure website for the sole purpose of securing greater accuracy in assessment it is apparent these are not being used.
Within NEA submissions areas that require further improvement remain consistent with previous years. Research / investigation needs to be more focused. Too much time is spent on this section but does not necessarily support candidates' design thinking. User needs and wants are central to the design process, but choice of user is often unrealistic. Whilst some candidates develop meaningful specifications others are undeveloped with criteria that seemingly 'appears'. Measurable criteria need refining. Application of assessment in the first two strands is mostly fair.

An important characteristic of an iterative design process is the incremental development through modelling and testing of ideas through to a successful outcome. Whilst this is well established in some centres it remains underdeveloped in others. It should be clear how each model or test piece improves an idea. In many centres this is not the case. Application of the assessment criteria is often generously applied in this area.

Application of the assessment criteria for 'manufacturing a prototype' varied from mostly accurate and fair to over inflated and very generous. To justify awarding marks in bands 3 and 4, there must be high levels of accuracy and precision in all aspects of construction with attention paid to the quality of the finish. Many sophisticated and well-made outcomes were seen during the moderation week which met objectives, fully functioned and were worthy of being credited with marks in the top bands. This is an area that some centres need to reflect on and reconsider more carefully as they move forward with future cohorts.

The quality of summative evaluations varied but many were quite well written in the form of a critical appraisal, with the design brief, specification, views of users and reference to end testing fully considered. More robust specification criteria would better support candidates in this area particularly with end testing against measurable criteria. For most centres this area requires further consideration and development as it often appeared rushed, was incomplete or simply not included. Application of the assessment criteria is often generously applied in this area.

Areas for improvement	**Classroom resources**	**Brief description of resource**
Reading the question carefully particularly in AO3 Analyse and Evaluate high tariff questions and providing an answer that fully reflects the question.	Eduqas Educational Resources Website	Knowledge organisers and focus area specific blended learning resources.
Avoid presenting stock answers/prepared answers about particular topics as these do not answer extended questions fully.	Question Bank	Question Bank is a free tool which allows you to create practice question papers from thousands of WJEC past paper questions. Find the questions you need, add them to your paper and export your paper with accompanying mark scheme and examiner's comments as a PDF ready to use in the classroom.

Many candidates produce repetitive answers that duplicate the same point multiple time. This does not gain any additional credit.	Exam Walk Throughs	Aimed at learners, these materials offer practical hints and tips on how to effectively approach questions in examination papers and preparing for NEA.

DESIGN AND TECHNOLOGY

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Component 1 – Written Exam

Overview of the Component

The 2024 examination paper saw a very high attempt and completion rate. There were very few spoiled papers or scripts with whole blank questions. Centres are reminder to ensure that candidates read questions and instructions thoroughly as there were more rubric infringements this year, particularly candidates attempting more than one question 6. This wastes time, as the highest question total counts but the lower one is discounted. Natural and Manufactured Timbers was by far the most popular selected material Q6. Few candidates selected Thermoforming and Thermosetting Polymers, Metals or Electronic Systems. Many candidates are now accessing the extended answers questions well in Q6 and are able to demonstrate their broad knowledge and understanding of technical principles, in an articulate, justified way.

Mathematical calculation questions have improved, and a methodical approach is evident. However, the higher-level calculations, notably Q5(c) challenged candidates, many of whom chose the incorrect method to calculate the number of swing tags that could be cut from card sheets. It is highly recommended past paper calculations are frequently used within the classroom. Reference to Appendix A: Links to Mathematics in the specification would help ensure candidates are familiar with the variance of mathematic skills required to be successful in this paper.

Candidates are also finding it challenging to transfer knowledge and skills from their NEA to the examination paper. Reviewing the specification content of section 2.2 Design and Making Principles when testing candidates' knowledge in the classroom is also recommended. It is pleasing to report than knowledge of materials and their associated working properties has notably improved. Candidates were able to justify and support how or why the properties chosen were appropriate to the product(s) being discussed. Ensuring candidates understand the difference between material properties and characteristics is recommended as there is sometimes confusion here, preventing some candidates from accessing the top range of marks. There was also an improvement in knowledge of mechanical devices was seen in this year's paper.

Mathematical calculations for mechanical systems were accessible and the differences between a gear train and a pulley and belt drive were known, even if superficially, which in some cases did limit accessibility to full marks. Candidates continue to use the visuals in the paper to help devise appropriate responses to questions. Questions that require notes and sketches see various and mixed responses and highlight the need to practice these questions leading up to the exam. There were common 'issues' and marks were lost by candidates not reading the questions carefully which resulted in incorrect responses. However, some responses were outstanding and provided a range of sketches with informative and accurate annotated notes. Candidates showed a lack of knowledge of the less common technical/composite textiles listed in the specification emphasising the importance of teaching all of the amplification content. Although improved, practising banded and higher tariff questions is still encouraged to ensure answers provided are balanced and fully justified.

Comments on individual questions/sections

Question 1: Design and Technology and our world

Candidates are not fazed by the structure of the paper and are now very familiar with the impact of new and emerging technologies and how energy is generated and stored to power products.

(a) Candidates were able to read the pie chart presented and calculate the total percentage of non-renewable energy sources consumed. All working were shown. Very few found it difficult to give a reason why the UK needs to decrease its use of oil as an energy source.

(b) Candidates are very good at using the images of products to help answer questions posed. Many were confident in describing how photovoltaic cells work. Most candidates attempted to explain why products with small photovoltaic cells have not been popular with consumers and referenced the products pictured in the answers provided. Most candidates chose to highlight the size of the photovoltaic cells without supporting the reason why this example affects the popularity of these products with consumers. Developing answers has definitely improved over recent years but practice is still recommended.

Question 2: Materials technology

Candidates showed a lack of knowledge of the less common technical/composite textiles listed in the specification emphasising the importance of teaching all of the amplification content.

(a) Candidates were familiar with function of a breathable and waterproof membrane but found it difficult to draw, not realising that the membrane is a laminate material and not one that is made from separate layers or fabric.

(b) Few candidates knew with clarity, the function or benefit of geotextiles to the outdoor construction industry. Most used the picture provided to guess a response, referencing recycled materials and insultation qualities correctly but failed to discuss their response sufficiently to gain full marks.

Question 3: Electronic systems, programmable components and mechanical devices

A much-improved attempt rate in comparison to previous years.

(a) Mechanical system devices and calculations and are now easily identified and are well rehearsed. There was a good level of accuracy in these calculation questions albeit some candidates did confuse the driven pulley with the driver resulting in an incorrect velocity ratio.

(b) Differences between a simple gear train and a pulley and belt drive were only answered by identifying the visual differences, few managed to attain the four marks available. The mark scheme identifies detailed differences that could be used as a teaching resource.

(c) Young people are very familiar with downloading and streaming music via their mobile phone devices, but few could relate, with clarity, why this method of listening to music has increased in popularity. Developing/justifying factors identified to attain full marks needs further practice. Those who chose to define technology push and/or market pull were credited as understanding was clear.

Question 4: Materials

Knowledge of materials and their associated working properties has notably improved. Candidates were able to justify and support how or why the properties chosen were appropriate to the product(s) being discussed.

(a) A laminated board is formed by simply gluing veneers together. This was not as successfully answered as expected, perhaps candidates overthought the question? Using the marks available as a guide may help some identify the complexity, or not, of the question. A number of candidates identified 'colour; as a response to how the aesthetics of the puzzle could be improved, rather than suggesting 'paint', 'varnish' or 'wood stain'. A specific example was required to gain 1 mark.

(b) Generally, good responses to the properties of aluminium suited to the cuff bracelet were seen but most candidates didn't understand the effect of oxidation on unfinished aluminium citing it turned brown/orange.

(c) Many candidates could identify each polymer in terms of thermoforming or thermosetting, although the expectation was almost all candidates would know the differences and this was not the case. There were some excellently answered and structured discussions as to the properties of polypropylene and melamine formaldehyde. Few compared the two material properties however, justifications relating to the drinking cups were really well written. Ensuring candidates understand the difference between material properties and characteristics is recommended as there was confusion in part, preventing some candidates from accessing the top range of marks.

(d) Few candidates understood ISO sizing, many chose – incorrectly – to calculate the area of the packaging, using the dimensions given. Almost all recognised the logo, and many could describe the fluted structure of corrugate cardboard protects the drinking cup if dropped.

Question 5: Kit Products

(a) A high proportion of candidates were able to identify an appropriate target market for their selected kit product. Most were able to describe two problems that the target market selected would encounter during the construction of the kit although it is useful to note, not all problems related to the construction and emphasises the importance of reading the question carefully. Although a working drawing is a requirement of the NEA few candidates understood the information that would be provided, choosing to describe the products assembly instructions instead. It is useful to draw attention to 2.2 Designing and Making Principles of the specification and ensure this content is taught along with 2.1 Technical Principles.

(b) Systems thinking as a creative design strategy was not known, poor responses were provided. This highlights again the importance of covering the amplifications of 2.2 Designing and Making Principles. Candidates generally gave good responses to the benefits of user testing although most focused on gaining feedback to improve end product. Using the mark scheme where there is a broad range of examples provided may be a useful teacher resource.

(c) This higher-level mathematics calculation question challenged most candidates, many of whom chose the incorrect method to calculate the number of swing tags that could be cut from card sheets. It is highly recommended past paper calculations are frequently used within the classroom. Reference to Appendix A: Links to Mathematics in the specification would help ensure candidates are familiar with the variance of mathematic skills required to be fully successful in this paper.

Question 6: Electronic systems, programmable components and mechanical devices

Few candidates selected this topic area to answer.

(a) While most candidates could identify the cathode, only a few correctly recognised the gate on the thyristor circuit. There was a lack of understanding regarding the advantage of using a thyristor in a steady-hand game. Only a few candidates could identify the trigger action of the handle touching the wire to complete an electric circuit. Teaching candidates how electrons flow in a circuit and how the thyristor 'latch' works in simple terms is recommended. Most candidates could identify side/wire cutters, but some mistakenly labelled them as "pliers," showing the need for a better understanding. The responses to using notes and sketches to demonstrate how a resistor would be securely and precisely soldered onto a circuit board varied. Most candidates attempted the question. Some candidates produced precise sketches with logical annotations. It would be helpful to encourage candidates to practice sequential drawings with detailed annotations of constructional processes and to use technical terms when annotating.

(b) While most candidates calculated the length of one spacer, they didn't include the tool path allowance. Most candidates couldn't calculate the plastic length needed to manufacture 200 steady-hand game spacers. However, some candidates gained a mark for presenting the correct stages of their workings.

(c) Some candidates logically analysed the advantages of using a CNC machine to cut PCBs. They provided explicit and relevant examples, such as the machine's ability to carry out multiple functions like milling, drilling, and cutting. These responses demonstrated detailed knowledge and understanding of the operational procedures of a CNC machine. However, most candidates' answers demonstrated only partial knowledge and understanding, giving generic examples of automated manufacturing. It is recommended that the mark scheme be reviewed to help broaden candidates' understanding of the benefits and drawbacks of using CNC machinery in commercial manufacturing.

(d) Responses were broad and varied. Only a few candidates coherently demonstrated how designers could extend the life of electronic products, limiting their ability to be awarded maximum marks. Candidates should be taught the sustainability issues associated with using and disposing of electronic products. It is also recommended that the mark scheme be reviewed to help broaden the candidates' understanding of how the life of electronic products can be extended.

Question 6: Paper and Boards

An increase in the number of candidates selected this material option.

(a) Most candidates were able to provide examples of types of papers, boards and card and could identify an advantage of a surface finish but struggled to provide a reason to attain two marks. Almost all identified the craft/Stanley knife as equipment shown.

Problems arose with answering question (iv) whereby candidates focused on the marking and cutting out of the puzzle rather than just the frame; a consequence was few marks could be awarded. Reading questions carefully, and using this as an example, would benefit future candidates.

(b) The length of side A was calculated correctly with workings shown. Few were able to calculate the length of cardboard roll needed to manufacture 500 puzzles choosing an incorrect process. Practicing high level mathematics questions is recommended.

(c) Successful responses coherently analysed the advantages and disadvantages of laser cutting card. Less successful responses provided limited points or used short answers/bullet points which clearly limited analysis, description and/or explanation. Practicing analytical style questions using the assessment criteria of a Band 3 response may help candidates understand expectations of a five-mark response.

(d) Few candidates were able to discuss how designers can improve and extend the life of paper and boards. Too few points were given and there were limited evaluative comments, and with little structure, to meet the higher banded assessment criteria. As with (c) above sharing Band 3 assessment criteria with candidates as a self or peer assessment exercise would help the familiarity of these higher tariff question requirements.

Question 6: Natural and manufactured timber

By far the most popularly selected material option.

(a) Candidates easily identified a hardwood however a lot struggled to identify a suitable softwood, often selecting another hard wood or a manufactured board. Most candidates were able to describe a suitable advantage for using manmade boards, most did refer to the fact it was made from waste wood. A number of candidates could not state the correct name for a tenon saw as a piece of equipment used to cut out the squares of the chessboard. Explaining using words and sketches how the chessboard's top layer would be constructed provided a range of answers, with some candidates going above and beyond the mark scheme and gaining full marks. The weaker responses failed to think about all of the necessary stages of manufacture. Some candidates mentioned the possibility of using CAD/CAM to manufacture the top layer too.

(b) Most candidates were able to correctly calculate the length of the chessboard. Many were not able to calculate the total length of hardwood and softwood needed to manufacture 25 chessboards, they often struggled with adding in the saw allowance.

(c) Successful responses coherently analysed the advantages and disadvantages of using a laser cutter for cutting timbers and technical points were included. Most candidates managed to analyse both advantages and disadvantages in their responses, formulating a well-developed, logical chain of reasoning meeting Band 3 assessment criteria.

(d) Successful responses demonstrated a good level of technical knowledge when discussing how designers could improve and extend the life of wooden products. Most candidates within answer provided identified adding finishes and choosing a recycled or upcycled timber. Some responses were well-developed with substantiated judgements to meet Band 3 assessment criteria. Weaker responses made too fewer points or focused only on the end environmental factors surrounding the manufacture of timber products rather than extending their life, not providing a balanced or detailed response to the question posed.

Question 6: Ferrous and Non-Ferrous Metals
Very few candidates selected metals as their optional material.

(a) Candidates are familiar with the differences between ferrous and non-ferrous metals and could provide examples of both. Most understood and could define an alloy citing an improvement in working properties as the advantage of using but many failed to give an example of a property. Very few were able to identify a centre lathe as the machinery pictured. Explaining using words and sketches how a chess piece could be manufactured provided a range of responses, most were limited in detail and understanding, and many candidates mentioned incorrectly the use of CAD/CAM as a manufacturing process.

(b) Most candidates could calculate the length of the chessboard including the frame. Few were able to calculate the length of metal rod needed to manufacture 32 chess pieces choosing an incorrect calculation process. Practicing high level mathematics questions is recommended.

(c) Successful responses coherently analysed the advantages and disadvantages of CNC machining chess pieces. Less successful responses provided limited points or used short answers/bullet points which clearly limited analysis, description and/or explanation. Practicing analytical style questions using the assessment criteria of a Band 3 response may help candidates understand expectations of a five-mark response.

(d) Few candidates were able to discuss how designers can improve and extend the life of metal products. Too few points were given and there were limited evaluative comments, and with little structure, to meet the higher banded assessment criteria. As with (c) above sharing Band 3 assessment criteria with candidates as a self or peer assessment exercise would help the familiarity of these higher tariff question requirements.

Question 6: Thermosetting and thermoforming polymers
Very few candidates selected polymers as their optional material.

(a) Most candidates were able to name a thermoforming polymer correctly. A number of candidates were less clear of examples of thermosetting polymers. This reiterates the difficulty shown with question 4c(i). Reinforcing examples and differences of these two types of polymers in lessons is recommended. Increasing strength of a polymer when combining with fibres and resin was the most common, accurate response. Many candidates were able to identify a ‘file’ as the equipment pictured but few were able to be specific and name the type of file shown which was a requirement of the question.

Candidates were clear of the processes and tools needed to show how a sheet polymer could be bent for the phone stand. Good responses were provided in both sketches and annotated notes. Lower grade candidates made little attempt to answer this question. Most candidates test or model polymers during their NEA and so it may be useful for them to sketch and label key processes in preparation for the exam.

(b) Most candidates were able to correctly calculate the length of side A, although in incorrect responses, candidates forgot to allow for the width of the mobile phone as detailed in the stem of the question. Candidates are encouraged to read carefully the question to ensure they fully understand what is required, the stem of the question is equally as important as the question itself.
Few were able to calculate how many sheets would be needed to laser cut 84 phone stands choosing an incorrect calculation process. Practicing high level mathematics questions is recommended.

(c) Successful responses coherently analysed the advantages and disadvantages of laser cutting sheet polymers. Less successful responses provided limited points or used short answers/bullet points which clearly limited analysis, description and/or explanation. Practicing analytical style questions using the assessment criteria of a Band 3 response may help candidates understand expectations of a five-mark response.

(d) Few candidates were able to discuss how designers can improve and extend the life of polymer products. Too few points were given and there were limited evaluative comments, and with little structure, to meet the higher banded assessment criteria. As with (c) above sharing Band 3 assessment criteria with candidates as a self or peer assessment exercise would help the familiarity of these higher tariff question requirements.

Question 6: Fibres and Textiles
An increased number of candidates selected this material option.

(a) Almost all candidates were able to identify a synthetic and a natural fibre correctly. Most recognised blending fibres can improve the properties of an end material although some failed to give an appropriate example, such as more crease resistance, within response. Not all candidates could identify a rotary cutter/blade as the piece of equipment pictured although attempt rate was very high – candidates understood the purpose of the equipment but were unaware of its specific name. Candidates were able to use words and sketches well to show how two patchwork squares would be sewn together – clear sketches, good use of technical terminology and reference to finishing were included in responses, many being awarded full marks. Some candidates produced detailed, but inaccurate responses. Reading questions carefully, and using this question as an example, would benefit future candidates.

(b) Some candidates failed to include seam allowance when calculating the length of one patchwork square. Few were able to calculate the length of fabric needed to manufacture 400 cushions choosing an incorrect calculation process. Practicing high level mathematics questions, referring to Appendix B in specifications is recommended.

(c) Many responses provided a well-developed analysis of the advantages and disadvantages of laser cutting fabric. Precision, intricacy and speed were the most frequent advantages highlighted; cost and singed marks on natural fabrics were the most common disadvantages identified. Responses were articulate and well-structured meeting Band 3 assessment criteria.

(d) Candidates were able to discuss very well how textile products could be designed to lessen their impact on the environment. Answers included a range of examples that were well-developed and justified meeting Band 3 assessment criteria. To ensure candidates have a broader understanding of how the textile industry can be more sustainable, it is recommended the mark scheme is used when teaching this topic.

Summary of Key Points

- Candidates need to read questions carefully, repeatedly, if necessary, to ensure that the response includes answers to the question, rather than an 'all I know' response which tends to gain few marks.
- Answer only ONE question 6. These are time-consuming and answering more than one gains no additional marks.
- A methodical approach to maths calculations helps.
- Notes and sketches responses need to be practiced so that they do not come as a 'shock' in the examination.
- Higher tariff questions need robust, detailed and balanced responses, some require extended responses. Answers need to reflect the mark tariff.
- Questions are set in context – so reading the stem of the question, analysing images, pictures, photograph or diagrams and then reading the questions related to the context is critical.

DESIGN AND TECHNOLOGY

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Component 2 -NEA

Overview of the Component

The requirements of the non-examined task (NEA) are now well established in most centres that examine through Eduqas with numbers continuing to rise. Visiting moderation highlighted some administrative issues in some centres, understandable from new centres whilst they familiarise themselves with Eduqas requirements, but this was not exclusive to new centres.
There was much evidence of high quality innovative and creative outcomes alongside well-organised portfolios outlining the iterative design journey in all specialist routes. It was obvious these candidates had taken great pride and care with their NEA submissions and should be commended for their efforts. Equally evident were many disorganised portfolios and unfinished or partially finished outcomes. Time management was clearly an issue for many candidates.
Many of the concerns mentioned in this report have been raised in earlier reports. A significant concern is the inaccuracy of applying the assessment criteria. This is yet to be addressed in many centres.

Following external moderation, most centre marks were accepted as accurate or at least considered fair. Some centres had an adjustment applied to their marks which brings all candidate marks in line with the national standard with marks reduced accordingly. Centres in receipt of an adjustment were considered generous across the sample and assessment strands. These centres consistently awarded marks from the wrong bands, where the evidence bore little resemblance to the descriptors within the selected bands. Closer scrutiny of the descriptors is required when assessing candidate work. 77 centres, nearly 26%, had negative adjustments applied to their marks. There were no positive adjustments made this year.
Eduqas provides exemplar NEA projects on the secure website with sole aim of supporting centres in securing greater accuracy in assessment. Centres are strongly advised to access this valuable resource to support standardisation of assessment and to avoid having adjustments applied to their marks in future. It is quite apparent these are still not being used in some centres. Centre reports provide feedback on the sample presented at moderation and will outline the accuracy of assessment in respective centres.
It is a requirement that internal standardisation between teachers and specialist areas takes place, where appropriate. In some centres this clearly had not taken place or was entirely ineffective.

NEA submissions should demonstrate an iterative process with a focus on a cyclic process of ‘think - test - evaluate - rethink’ in which possible design ideas are developed, tested and then refined against a clearly defined design specification. This is still under-developed in many centres.

It is important that candidates take responsibility for their work and that it represents their 'personal design journey'. This starts with finding a 'realistic' opportunity for design and ends with a fully functioning prototype that fully meets the needs, wants and values of the intended users. Some NEA submissions seemed teacher led, whilst others did not take an iterative approach. Teacher led approaches often impede design creativity and undermines the purpose of the non-examined task.

Comments on individual questions/sections

(a) Identifying and investigating design possibilities – 10 marks

This area was generally assessed fairly in most centres, although the relevance and quality of the work produced should reflect the mark awarded, not the quantity. Centres are advised to guide candidates in apportioning time according to the marks available - 10 marks available in this section equates to approximately 10% of candidate time. A lean and more focused approach is highly recommended.
An important consideration is the identification of opportunities for design which ultimately lead to the development of possible design briefs. Whilst candidates must have access to all three contextual challenges, it is their choice how many they choose to analyse. It is not acceptable for centres to make these decisions on behalf of their candidates, which is the case in some centres. Marks awarded in this section should reflect the range of opportunities/problems that have been identified. Where candidates have only focused on one problem or have a preconceived idea, a mark in a lower band is a better fit. Some candidates identified genuine and realistic problems which led to the creation of innovative solutions. This approach needs to be developed across all focus areas.
Research and investigation should reflect quality and relevance over quantity as this underpins the development of ideas and supports the development of a realistic and meaningful specification. The work of professionals or companies should only be considered where it is appropriate, as stated in the assessment criteria. Too often this is included as a means of 'padding out' the portfolio but has no further influence on design. Mood boards, if included, should also have a purpose rather than a collection of meaningless pictures.

User needs, wants and values run through all assessment strands and should be a key consideration throughout the iterative process. This was simply unrealistic, the use of celebrities for example in many submissions. Engaging with a real-life user or stakeholder is a far more effective means of understanding a problem. On-going dialogue with a genuine user for example is far more effective than conducting a generic questionnaire.

(b) Developing a design brief and specification – 10 marks

To justify awarding marks in the top bands, candidates are required to consider a range of problems and outline a few design briefs before focusing on one final brief, which should be arrived at following careful analysis of relevant and focused research. This approach was evident in some centres but not all. Some candidates had preconceived ideas of what they intended to make and did not explore other options. This narrows down their opportunities and marks that could potentially be awarded. This requires further consideration in some centres.
All criteria listed in the design specifications should come from a thorough analysis of research and investigation and some early testing and modelling of ideas. Some candidates however produce generic lists of attributes – a ‘wish list’ with little or no reference to the research and investigation. In some specifications, dimensions and cost for example simply ‘appear’ with no reference as to how these numeric values have been arrived at. A well-developed specification is an effective design tool which supports the evaluation of ideas as they develop. Few candidates use it in this way. A robust specification should also indicate how the finished product will be tested which is essential when evaluating the success of the outcome. Specifications need refining and further development in many centres.
Most centres assessed this strand fairly. However, some superficial and underdeveloped specifications were awarded high marks where marks in lower bands would have been more appropriate. Centres are advised to use the exemplar projects available on the secure website to gain a better understanding of the assessment criteria.

(c) Generating and developing design ideas – 30 marks

Centres where the iterative process in fully understood outcomes were generally more successful,
creative and imaginative, functioned as intended and generally met the needs and wants of users. Candidates in these centres had comprehensively modelled, tested and refined their ideas. This included practical modelling and testing of processes, techniques and finishes including handling proposed materials. This approach supports development, the incremental development of ideas was clear. High marks are fully justified here. Candidates gain much more from a 'hands on' approach and most enjoy the practical aspect of this subject. The best way to gain an understanding of materials and processes is to work with them! This however was not the case in many centres
where candidates were over rewarded with little evidence of development. A few sketches with a few CAD models for example are not indicative of an iterative design process. In Fashion and Textiles, a toile, a few seam constructions and /or a decorative technique, often completed as a class activity is not iterative either. This limited approach better reflects the descriptors and marks in the lower assessment bands.

Alongside the development of ideas, all technical details that relate to materials, dimensions, finishes and production techniques should be considered. This still requires further development in many centres, across all focus areas.

Every aspect of a candidate's design journey should be recorded. Design should be focused, relevant and well-documented with clear evidence of analysis and evaluation of ideas, test pieces and models as ideas progress towards a final solution. It should be clear how candidates arrive at the final prototype stage. In many NEA submissions this journey was unclear.

Application of the assessment criteria for this section varied from mostly fair to over inflated and generous. Centres are reminded to carefully consider the assessment descriptors when applying marks and consult the exemplar NEAs for standardisation purposes when assessing work in future.

(d) Manufacturing a prototype – 30 marks

Candidates are required to present a pre-emptive logical sequence for the manufacture of their prototype in sufficient detail that a third person could make the same product. It should also include a defined timeline as stated in the assessment criteria, health and safety considerations, constraints and reference to end testing. Please note a pictorial diary of manufacture is not required. There is no reference to this in the assessment criteria. Overall manufacturing sequences still need refining.

Many well-made and sophisticated fully functioning outcomes were seen during moderation week. These outcomes which met objectives were worthy of being credited with marks in the top bands.
Modern manufacturing techniques such as 3D printing are increasingly being used alongside more traditional methods, although Fashion and Textiles candidates are yet to fully embrace new technology.
Overall, the skills demonstrated, and the quality and accuracy of outcomes varied quite considerably. Several outcomes in all focus areas were presented in a partial or incomplete state.
It is acknowledged however that this cohort have had less experience in the workshop than in previous years. A growing concern is that non-specialist staff are delivering this course which can be limiting for candidates.

Assessment in this strand varied from accurate and fair to over inflated and very generous; high marks were often awarded where the assessment descriptor in at least the band or two bands below would have been a better fit. There must be high levels of accuracy and precision in all aspects of construction, with attention paid to the quality of the finish to justify awarding marks in bands 3 and 4. It is apparent that some centres do not have a thorough understanding of the precise criteria needed to award marks in the top bands.

(e) Analysing and evaluating design decisions and prototypes – 20 marks
On-going analysis and evaluation of ideas and design decisions can be credited in this assessment strand. In a minority of centres, this was overlooked simply because the candidate had not submitted a summative evaluation. The opportunity to award marks here should reflect the quality of the iterative process.

The quality of summative evaluation varied quite considerably. This section is worth 20% of the overall mark therefore a substantial body of work is required to secure marks in the top band. Marks awarded were often generously applied in this assessment strand. Quite often summative evaluations were presented as a brief reflection of the specification criteria alongside superficial references to testing, modifications and improvements - indicative of the descriptors in bands 1 or 2 yet often generously awarded with marks in higher bands. To justify awarding marks in the top bands summative evaluations should be presented as a critical appraisal, with the design brief, specification, views of users and reference to end testing fully considered. More robust specification criteria would better support candidates in this area, particularly with end testing against measurable criteria.

For most centres this area requires further consideration and development as it often appeared rushed, was incomplete or simply not included. Centres are advised to apportion time accordingly to this assessment strand, particularly as up to 20 marks are potentially available here.

Summary of key points
- Greater accuracy in applying the assessment criteria. Banded assessment descriptors determine the correct band where the most appropriate mark should be awarded.
- Understanding the problem is critical if a successful outcome is to be realised.
- A user-centred approach is required.
- Design specifications must include objective and realistic measurable criteria that can be used to drive design development and to test outcomes.
- Modelling and testing of concepts, alongside on-going analysis and evaluation underpins the iterative process.
- Manufacturing skills need further development and refinement with greater attention paid to the quality of the finish.

Supporting you

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