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# GCSE

# DESIGN AND TECHNOLOGY

8552/C NEA

Report on the Examination

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## **General comments on the NEA**

The moderation team are delighted to report that they have again seen some stunning NEA work this year, despite the interruptions to education caused by the global pandemic. Candidates have responded well to all three contexts set. The majority of centres have been accurate or very accurate in their assessments of the candidates' work. Centres, staff and candidates are to be congratulated for this phenomenal achievement.

## **Selecting contexts**

Centres are able to offer one, two or all three contexts published for each year. For 2023, most centres offered all three. Where centres offered a single context, it was still possible to see very differing responses to the adopted context. A few centres allowed their candidates to explore all three contexts at the start of their folders, before choosing one to continue with. The work for the two contexts not adopted was given no credit by AQA. Only the work for the chosen context gains credit for marks.

## **Making assessments**

When making assessments of candidates' work it is worth reading the paragraph that precedes each section of assessment criteria. This paragraph gives useful information about the sort of content that is likely to be found for assessment for each section.

## **Section A Investigating the context**

Most candidates successfully carried out some analysis of the chosen contextual challenge. From this, and an investigation of client needs and wants, they were able to identify some design possibilities. By exploring these further, candidates were able to narrow this down to a single design possibility that was suitable to take forward in the time available for the NEA. Pupils investigated the work of others, and this was often successfully done through product analyses. It was important that this analysis work was then used to inform the candidate's own ideas. The potential impact on society was considered too. The best work was concise, relevant and investigation continued throughout the project, directly informing decisions. Design possibilities were well justified and understood.

A few centres allowed candidates to investigate all three contexts set by AQA for 2023, and this meant that the candidates spent more time on this section than was needed. They only gained marks for the context taken forward. For some, marks were restricted in this section because they did not consider a range of design possibilities before choosing one following further investigation. When investigating the work of others, candidates are not restricted to just the designers and companies named in the subject specification. Any designer's and company's work can be considered. However, this investigation needs to be relevant to the chosen context and design possibilities.

Candidates tended to show the weakest performance in this section where the work was highly structured and formulaic in its approach. Centres are reminded that templates and writing frames are specifically forbidden in the NEA. Please see section 4.4.3 of the subject specification.

Candidates also did not score very well when they appeared to complete initial investigation for no particular reason, ignoring their findings as they moved forward.

### **Section B Producing a design brief and specification**

The best candidates drew conclusions from their investigations, including their clients' needs and wants related to the context. These were brought together with a clear description of the design possibility identified. This was then detailed in a highly justified specification that fully informed the subsequent design stages.

Where the approach was less successful, the design brief was vague. It was sometimes difficult to work out what it was the candidate was setting out to design. A few candidates were still at this stage trying to carry forward more than one design possibility/scenario, diluting the focus of their work.

Many candidates were over reliant on ACCESSFM and other similar prompts. It may be that the candidates adopted this prompt because of having used it extensively during their DT education? Where this prompt was used, it often led to weaker, generic, non-specific specification points.

It is important that candidates refer back to their specification and brief throughout their designing, development and evaluation of their final prototype design.

### **Section C Generating design ideas**

Imaginative, creative and innovative ideas were generated by the highest scoring candidates. In the top mark band, their work typically had ideas that were different to the work of the majority of their peers, or demonstrated new ways of improving on existing solutions. Ongoing focused and relevant investigation enhanced the generation of ideas. There was extensive experimentation, and ideas were communicated very clearly. Top candidates used a wide range of techniques to communicate their ideas. A fully integrated approach to designing was adopted. Techniques such as orthographic and isometric sketching, 2 and 3D CAD, exploded sketches and drawings, cross sections, circuit development software, pattern development software etc were used in an integrated way.

Some candidates initially showed some imagination and creativity in their ideas, but unfortunately did not continue this creativity as the design developed.

Weaker responses often demonstrated design fixation, where it was evident that the final design was preconceived and little variation from that was shown. Concepts at this level were also often poorly communicated.

### **Section D Developing design ideas**

The best responses again showed the use of a good variety of techniques to develop and refine ideas. A series of models were often produced, and in the best it was easy to see the 'journey' as the concept was refined and detailed. A combination of real and virtual development models was successfully used by many. Ongoing client feedback was a common feature of work at this level, as was comparison to the brief and specification. Often, photos or screenshots of development

models were printed, and then sketched on and annotated. Relevant ongoing investigation influenced and supported decision making on items like materials and components. The final prototype design was then presented in sufficient detail to allow for third party manufacture. Depending on the item designed this communication may have included measured drawings, control programs, circuit diagrams, patterns, cutting lists, parts and component lists and exploded drawings or sketches.

Where responses were weaker in this section, a common feature of many was a lack of experimentation and detailing. Some candidates moved with very limited refinement or detailing, straight from an initial idea through to a final design. In some cases, the final design was merely a redrawing of an initial design.

Another quite common issue was a lack of detail to the final design. It would be very difficult to make many of the final designs seen this year because of the lack of detail on such things as materials, sizes, joining techniques, components etc.

## **Section E Realising design ideas**

What are AQA looking for in a final prototype?

The DfE Definition:

*...a functioning design outcome. A final prototype could be a highly finished product, made as proof of concept prior to manufacture, or working scale models of a system where a full-size product would be impractical.*

AQA expectations for the final prototype:

- demonstrates high level of skill
  - elements showing a high quality finish
  - CAM may be a common feature
  - scale models where necessary, and if possible one part made full size to demonstrate construction/ finishes etc
- We are not expecting a perfect product but a good idea that has been executed well.

The 'working from home' context in particular led to quite a number of students realising their final design as a scale model. This is perfectly acceptable and appropriate to the size of the items designed, for example work desks. Depending on the choice of materials used, it may not always be possible to show high level making or finishing skills on the scale model. If one part of the final design can be made full size, then it might be easier to demonstrate high level making and finishing skills. It might also allow the student to select and use materials closest to the final manufacturing specification. A full size part constructed also allows a client to review the concept more thoroughly.

Some very high quality final prototypes were seen this year. The quality of some was exceptional, allowing marks from the top mark band. To help moderators to be able to confirm marks for this work, please include high quality photos, including close ups. These can be in the candidate's design folder or attached to the candidate record form. Support the photos with an explanation in the relevant space on the candidate record form.

Sometimes centres were less accurate in assessment of section E, where high marks had been awarded but there was clearly inaccurate construction/fabrication/assembly/machining. Care and

attention to detail such as preparing for a finish, or neatening, and application of a finish were other areas where some work was not of sufficient quality for the mark awarded.

## **Section F Analysing and evaluating**

In the best work, designing was iterative. Modifications and improvements to the designs were made, based on ongoing testing, analysis, evaluation and third party feedback. The client was involved in the process throughout. The final prototype was compared to the brief and specification to justify further modification proposals. It was tested in its intended environment.

Some candidates included little or no third party feedback, particularly of the initial designs and development of the concept. In some work, ongoing commentary was missing or merely descriptive rather than analytical. The comments were not showing how the next stage of design was being informed.

## **Quality of assessments by teachers**

As stated at the beginning of this report, the vast majority of centres were accurate or very accurate in their assessments. The key areas where some centres were too generous (in descending rank order) were as follows:-

- Section D: Developing design ideas. Typically some centres over-rewarded where the development was linear, rather than iterative, or it was completely lacking in detail. Missing detail for third party manufacture was also a shortcoming.
- Section E: Over-rewarding tended to occur where candidates had made a crude and/or poorly finished final prototype.
- Section A: Formulaic, teacher led investigations that did little to inform the designing that followed.
- Section B: A design brief that didn't inform on what was to be designed, and/or a generic/vague specification that could have been applied to any product.
- Section F: A lack of ongoing analysis, evaluation and third party feedback.

Section C was the most accurately marked section of the assessment criteria again this year.

### **Mark Ranges and Award of Grades**

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.

The mark boundaries for 2022 NEA were lower than mathematically adjusted 2019 boundaries, reflecting the interruptions to education, and the way it impacted on the quality of the work seen. At grade 7 and above there was very little impact on the standard or completeness of the work.