



GCSE

DESIGN AND TECHNOLOGY

8552/CE: Non-exam assessment
Report on the Examination

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General comments on the NEA

The moderation team are delighted to report that they have seen some stunning NEA work this year, despite all the difficulties of the global pandemic. Students have responded well to all three contexts set. The majority of centres have been accurate in their assessments of the students' work. Centres, staff and students are to be congratulated for this phenomenal achievement.

Selecting contexts

Centres are able to offer one, two or all three of the contexts published for each year. For 2022, 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 students to explore all three contexts at the beginning of their folders, before choosing one to continue with. The work for the two contexts not adopted was not given credit by AQA. Only the work for the chosen context gains credit for marks.

When making assessments of students work it is important to read the paragraph that precedes each section of assessment criteria. This paragraph gives useful information about the type of content that is likely to produce the assessment evidence for each section.

Section A: Investigating the context

Most students 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, students 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 completed as a product analysis. It was important that this analysis was then used to inform the student's own ideas. The potential impact on society was also considered. The best work was concise and relevant, and investigation continued throughout the project, directly informing decisions. Design possibilities were well justified and understood.

Some centres allowed students to investigate all three contexts set by AQA for 2022, and this meant that the students 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, students are not restricted to the designers and companies named in the subject specification. Any designer's and company's work can be considered. This investigation needs to be relevant to the chosen context and design possibilities, not treated as an additional activity that is then ignored.

Students 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. Students also did not score well when they appeared to complete initial investigation for the sake of it, and then completely ignore their findings as they moved forward.

Section B: Producing a design brief and specification

The most successful students drew conclusions from their investigations including their client's 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 student was setting out to design. A few students were still at this stage trying to carry forward more than one design possibility/scenario, diluting the focus of the work. Many students were over reliant on ACCESSFM and other similar prompts. It is assumed that the students adopted this prompt because of having used it extensively during their DT education, not because it had been given out as a template by the centre. Where this prompt was used, it often led to weaker, generic, non-specific specification points.

It is important that students refer 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 students. 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. On-going focused and relevant investigation enhanced the generation of ideas. There was extensive experimentation, and ideas were communicated very clearly. Top students 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.

Some students initially showed some imagination and creativity in their ideas, but then failed to 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 often poorly communicated.

Section D: Developing design ideas

The best student 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. On-going 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 on-going investigation influenced and supported decision making of 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, parts and component lists and exploded drawings or sketches.

Where student responses were weaker in this section, a common feature of many was a lack of experimentation and detailing. Some students moved with very limited refinement or detailing, straight from an initial idea through to a final design. At its weakest, the final design was merely a redrawing of an initial design, lacking evidence of design iteration.

Another quite common weakness, perhaps more so this year than in 2019, 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

For 2022 (and 2021) the need to make a final design prototype was removed, and the marks for this section were changed from 20 to 10. This was to alleviate the disruption to the students' education caused by Covid 19, and consequent lack of practical facilities. However, students were still required to demonstrate prototype intentions, so communication of these through drawings, models and CAD simulations was very important. Students were still required to demonstrate their understanding of making skills. There were two ways they could achieve this. If they made a normal final prototype, as they would have done in 2019, then they were automatically showing an understanding of making skills. If time did not permit, then a very detailed plan for making of the final prototype would demonstrate the understanding. Both of these routes were successfully used by students.

In some centres, students made a final model rather than a final prototype. Typically these models were simple and crudely made. They were sometimes fine for demonstrating the prototype intentions to clients, but did not demonstrate their understanding of making processes. Sometimes a supporting plan for making was for the crude model, not for a reasonably accurate final prototype. Again, this did not allow the full potential for demonstrating the understanding of processes involved in making.

Centres are reminded that for 2023, the expectation is a return to the original 20-mark assessment criteria for section E, so a final design prototype will be needed.

What is a prototype?

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. DfE

AQA expectations for 2023 onwards:

- demonstrates high level of skill
- elements showing a high-quality finish
- CAM maybe a common feature
- scale models where necessary, and if possible one part made full size to demonstrate finishes etc

We are not expecting a perfect product but a good idea that has been executed well.

Section F: Analysing and evaluating

This section was also reduced in marks for 2022 (and 2021), from 20 to 15 marks. It was expected that ongoing analysing and evaluation of ideas and development would take place. There was no expectation to test a final **made** prototype, but it was expected that students should find ways of testing final prototype design intentions. This was successfully carried out by the many students. Designing was iterative, with modifications and improvements to the designs being made based on analysis, evaluation and third-party feedback throughout. The final prototype intentions were also compared to the brief and specification to justify further modification proposals.

Some students included little or no third-party feedback, particularly of the initial designs and development of the concept. AQA appreciates that it was sometimes difficult to engage with a potential client during the pandemic, although some students used ingenious ways to get round this. Some used Zoom and other platforms to discuss design ideas and developments, including sharing screens to demonstrate CAD models. Another student was seen to be sharing designs with a client via WhatsApp and using the comments to have a discussion. Screenshots of this were included in the design folder, and analytical commentary added beside the screenshot. AQA also advised that where a client was difficult to find, an adult who could give constructive advice on the designs would be useful. If using a parent or older sibling, they were encouraged to role play, to avoid merely congratulatory comments.

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 completely lacking in detail.
- Section E: Over-rewarding tended to occur where students had made a very crude final prototype, or a plan for making was lacking in detail.
- Section A: Formulaic, teacher led investigations that did little to inform the designing that followed.
- Section B: A design brief that didn't inform what was to be designed, and/or a generic vague specification that could have been applied to any product.
- Section E: A lack of ongoing analysis, evaluation and third-party feedback.

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

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 of the work.