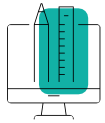
GCE Design & Technology

Unit: 9DT01



Pearson Edexcel

Topic: Shoe display

Full Portfolio

General Description The candidate produced a beautifully illustrated and creative portfolio of 52 pages. An initial impression of folder would suggest that this a high-level project in all assessment criteria, however, care must be taken to ensure the framework of the assessment criteria are met. The candidate has designed a display stand for a high-end training shoe in a retail environment.		**Centre Mark**	**Mod Mark**
Grid 1 Investigation **Evidence**	In this section a high-level assessment would be client focused. Offering a range of design possibilities triggered from issues/problems raised from the clients' needs and circumstances. Some exploration and analysis of the problem would be in evidence, and the candidate would justify the design routes they offer. Slide 3 shows a clear introduction to the client, with some prime research photographs of the store. The design brief looks a little premature, but this is triggered by a comment that the client has made in the interview on slide 4. Three initial design possibilities are shown, one of which has a close tie to the final outcome. At this stage the candidate could have explored analogous solutions, displays and artwork that are thought provoking of that could be adapted to the footwear industry. This is a real pity and very much a missed opportunity. This is an opportunity missed to access the highest level of assessment. Slides 4 and 5 are questionnaires and further investigation into the client and their customers. There is a diverse and justified range of investigation, however, the conclusion and the analysis are narrow and falls directly to the final outcome. The range of problems and focus of the design possibilities is in line with a level 2 assessment.		Level 2
Grid 2 Analysis/Research **Evidence**	In this section a high assessment would see a wide range of relevant and pertinent research that helps inform a succinct brief and specification. The initial block of research can be seen in slides 6-11. Some justification and planning of the research can be seen on slide 6. The sketches on this page give the project an iterative flavour, however these are a direct lift from the design pages seen later in the folder. Within these pages' ergonomics, product analysis, user mood boards and historic design styles are analysed. The candidate visited a variety of stores to gain access to a range of products, as		Level 4

	well as finding other items online. The analysis is solid, however some key points like dimensions, illumination, stability and weight considerations are missing. Material and manufacturing research is seen on slides 17-20. Often these are largely generic descriptive statements, however some evaluative statements about how they might be applied to the product are evidenced and the client has a response that adds little value to the justification. Specific research on magnets and levitation can be seen on slides 21 and 22, This is thorough and has a direct and obvious link to the candidate's design intention. The results of the trialling and testing takes this into a level 4 assessment. The process of manufacturing the test rig and the experimentation conclusions can be accredited in the modelling section.		
Grid 3 Specification **Evidence**	In this section the candidate should produce, a design brief and supported by the evidence found in their research to produce a comprehensive, realistic, technical and measurable specification that is related to the design proposal. A detailed justified specification can be found on slides 12 and 13. The client is involved within the specification and the points are justified, relating back to the client and the research. Within the qualitative data comments are specific tests that could be used during the progression of the design cycle, or evaluatively at the end of the project. The design brief has not been reworked from the one on slide 3. Many points are still valid, but prescriptive and narrow the range of initial design ideas, some development in this would have highlighted the value of the research and provided scope in design opportunities. The brief is a level 2 assessment, which balances the section at a low level 3.		Level 3
Grid 4 Design ideas **Evidence**	A high-level piece would contain a range of sophisticated ideas that reference historic and cultural influences. Manufacturing techniques and processes would be considered that lends itself to the proposed design outcome. There would be a range of well-presented ideas detailing potential sub assembly design. The initial design pages slide 15 and 16, the illustrations are crisp and follow the style of a commercial designer. A wide range of ideas are offered, with handwritten annotation alluding to types of material and some pointers to the manufacture. The notes are informative, but do not justify, or offer alternatives to the selection. Small inspiration images are placed on the page, which helps give a feeling of real time iterative design. The design which is finally chosen draws its visual reference from a basketball hoop.		Level 3

Grid 5 Development **Evidence**	This section should show that the candidates using research and client opinions to justify developmental changes from their initial concepts. A high-end assessment could identify further research is needed in specific areas to help focus their design rational in achieving a sophisticated outcome. Initially it appears that the development of this product is limited and is of a low level, as the form of the product has changed very little from the original concept sketches. The conventional development pages are in slides 26,27 and 28 and look at three products rather a focus on one. Once again these are beautifully illustrated and have reference to materials and manufacture, some alternatives are offered and a level some justification of selection is evidenced. *'Flexible polycarbonate slides into curved diffuser slot' slide 27.* Client's feedback is also referenced on these slides. These slides alone would be a low level 2 submission. Development also takes place through slides 22 to 25. Slide 22 has been previously mentioned and is the test construction for the magnetic levitation, where the candidate concluded that the magnetic force is fixed, and weights added to a shoe would act as a balance. A model of the base in foam can be seen in slide 23, development towards a chosen material is sited here because of problems when cutting harder material, so the base changed from walnut to ash. Trialling a wood turned base on slide 24 can be seen as well as some test work with a centre lathe, and issues with drilling acrylic rings. All three proposals are submitted as a 3D print on slides 29 and 30. Detailing and slicing the outer ring into 9 component parts is completed in some detail on slide 32. In conclusion the development work outside of the sketch sheets takes the development to a strong level 3.		Level 3
Grid 6 Final Design **Evidence**	In this section the candidate should supply enough information and technical detail to allow the manufacture of the proposed to design to be completed by a third party. The candidate offers a reasonable detailed manufacturing flow chart slide 35. Additional detail of include timings are seen in the Gannt chart on the slide following. A detailed manufacturing specification can be seen, slide 37. Calculations on costings, slide 34. The base is manufactured by CNC cut from layers of laminated ash, the cost has been calculated using stock lengths and wastage has been considered. This is an aspect of a high-level assessment point. The general assembly drawing, slide 39, gives overall dimensions. The exact specifications and tolerances of the individual components are not available to enable third party manufacture.		Level 2

Grid 7 Review **Evidence throughout portfolio**	In this section the candidate should provide evidence of analysis of the product throughout the project. The analysis should include reflection from others and give balance and justification to design to decisions that have taken place. Client commentary is seen throughout the project. The candidate could have supported the assessment further by giving their reflection on the comments made by the client and using these as an iterative design trigger point. Alternatives are rarely discussed in the annotation on the sketch and development sheets. This should be an ongoing in-depth process, discussing pros and cons and offering a balance to the design solution.		Level 2
Grid 8 Communication **Evidence throughout portfolio**	The candidates should: Demonstrate a perceptive selection and accomplished use of traditional/manual graphical techniques to communicate design proposals. Demonstrate a perceptive selection and accomplished use of computer-aided design (CAD) techniques to communicate design proposals. Demonstrate a perceptive selection and accomplished use of written techniques to communicate design proposals. The candidates design intentions are made clear by the concise commercial standard sketches through the whole of the folder. Annotation relates to materials and technical aspects of the coursework. The testing and manufacture of the magnetic rig is indicative of the candidate's high level though process. Evidenced is a strong use of CAD. The sectioning of the outer ring, to enable manufacture was completed accurately, and the complex surface manipulation of the base unit justifies a high attainment grade.		Level 3
Grid 9 Tools and equipment **Evidence**	In this section candidates should demonstrate an accomplished use of tools, materials and processes. A high level of safety awareness should be demonstrated. The final product is complex and constructed to a high degree of accuracy using a variety of tools and equipment. As evidenced in the photo diary slides 41 -46. A CNC router was used to cut the complex base shape, the candidate prepared the material for this with additional skills of planning, biscuit jointing and glueing. High level demand of skills can be seen in the centre lathe work and some accreditation can also gained with the wood turning test pieces, slide 24. Basic 3D printing is considered a low-level skill, additional accreditation can be given when complex and accurate assembly of parts is achieved. The outer circle of the final piece falls into this category.		Level 3

	There is a concern re the consistency of health and safety and the failure to see the candidate using goggles when using equipment in the photographic evidence, despite being evidenced as a required piece of PPE, slide 40. Given some mid-level use of tools and a PPE omission, it is a level 3.		
Grid 10 Quality and Accuracy **Evidence**	In this section the candidate should demonstrate a high level of making skills, to produce a fully functioning protype, that meets the design specification. An iterative aspect of the manufacturing process might be seen here, where amending the manufacturing process could benefit either the making or the final product. The final product is evidenced with clear photographs on slide 47. The product clearly meets the brief and specification by displaying the shoe in an eye catching and interesting way. The protype is functioning and shows a high-quality finish. The making skills are varied and demonstrate a high level of demand. This is a complex assembly with a variety of material types, that have been brought together with a high degree of accuracy. It is unclear whether the 'basketball' hoops will fan out, or to what extent they will shield the shoe from display. It would have supported the centre assessment if this aspect was made clear in CAB.		Level 4
Grid 11 Test and Evaluate **Evidence**	In this section the candidate should produce evidence that demonstrates the protype meets the needs, wants and values of the client and the specification. For the highest assessment grade specific tests and checks that were alluded to in the specification would be carried out and commented upon. Evaluation can be seen on slides 47 to 52. Slide 47 is a comparison against the specification. Relevant points are stated here, but the evaluative comment is a tick to signify that the point was met. To meet a higher assessment further justification of how the product performs against these points would be needed. Slide 49, has the product in situ though there is some suspicion that these are photo shopped in. Client feedback is seen on this page, but is superficial, and the candidate's response to this would help justify their points of view. An example of this is in slide 50, the candidate highlights that there is a problem that the shoe does not rotate, and a fan is used to provide this action. If the fan was used as external testing/trialling an extension of this would be to see how it could be incorporated into the next iteration of the design.		Level 2

Total			A Grade