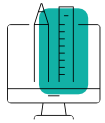
GCE Design & Technology

Unit: 9DT01



Pearson Edexcel

Topic: Design trolley

Full Portfolio

General Description The candidate has produced a very well presented reasonably succinct portfolio, consisting of 48 pages. The work is of a high standard, and we do, to some extent, see an iterative client led approach to the project. The work has a level of realty as it is based around an existing company and in general is approaching the higher levels of each of the assessment criteria.		**Centre Mark**	**Mod Mark**
Grid 1 Investigation **Evidence**	In this section we are expecting to see the candidates exploring a range of pertinent design possibilities that grow out of a clear conversation with a real client or a proven narrative with a target market that has a level of reality therefore mimicking commercial activity. The candidate does explore the work of the VARP organisation and looks at the client NWV's to some extent, but the work moves towards some kind of design trolley quite quickly. Slide 1 seems already to be focussed on luggage. This is a pity as the candidate did miss chances to explore the company in more detail looking at design spaces or staffing facilities workstations or storage. That said there is, on slide 2 a brief further exploration of the client and the organisation especially in terms of the work that they undertake and the client base. There is a statement of intent which we hope will be re-worked into a brief. The client interview does help a little. Slide 3. The submission is a high-level 2		Level 2
Grid 2 Analysis/Research **Evidence**	At this level, would expect candidates to have clearly identified focused research that it pertinent to their specific design problem that offers clarification or refinement of the needs. This type of research would then focus on the needs and lead into firm technical and measurable specification points. The initial research has some value in the sense it does try to pin down the needs of the client and the requirements to store and transport samples. It goes on to look at overall design possibilities that may shape the designs this is to be commended as an unusual approach. Slide 4. The anthropometrics seems to be a little textbook lacking a little focus, but the brief case measurement has some relevance, on slide 5 has some relevance. In the main body of the text on anthropometrics the candidate does make some judgements based on the 'found' data regarding the size of the product. On slide 6 the hand luggage assessments are of some interest There is some product analysis and materials and processes		Level 3

	analysis, but this is too textbook for example on slide 8 the materials are largely described, with little relevant analysis. You could argue clasps and castors is relevant. On slide 9. In slides 5 to 11 some of the research is very relevant but often the work is too descriptive, but it is underpinned with some client commentary. It is a pity that a further analysis of the products to be stored was not undertaken this could have helped in the specification and indeed perhaps provided opportunities to undertake some calculations. The 'above/below the line' e.g. slide 7 does provide some balance. The candidate may have benefited from a 'test' run to a VARP customer to examine issues e.g. transportation, carriage etc. The key here is , within the assessment criterion, the word perceptive, that is a little lacking. This is a high-level 3 performance. Slide 4-11.		
Grid 3 Specification **Evidence**	Candidates need to develop specification points that show clarity and are specific, realistic, technical, and measurable; these specification points should be justified from their research and from consultation with their client/user-group. This section is critical as it is referenced by many other sections. The spec does have some measurable elements but perhaps needs more in terms of the products it is storing; it does refer to them but lacks the detail required. Slide 12 in the design brief. Bullet points often help here as they tend to focus the candidates, but remember free prose is acceptable. We have quantitative references to size and weight in slides 12 and 13, some reference to an ongoing discussion with the client and references to environmental impact		Level 2
Grid 4 Design ideas **Evidence**	In this section candidates should be thinking like a commercial designer applying their knowledge of technical skills and materials and back it up with the research they have carried out previously, and any additional research. Annotation should illustrate the candidates' knowledge and understanding of technical elements such as materials, processes and techniques that are relevant to the identified design area. The ideas have some fluidity to them, and the work is of very good quality/clarity, indeed there are ten differing concepts, with some supporting technical annotation. The client needs to be more to the fore front and then further evidence that the research is being drawn upon. The evaluative commentary here is of limited help, but we must remember that at the heart of the qualification is the iterative approach, and so it appears that there is some client commentary in different colours in the annotation on slides 14 and 15 The initial design analysis does help somewhat in terms of the testing against the specification parameters but does not really deserve credit to be 'banked' for the review section.		Level 3

	This is a low level 3. Slides 14-17		
Grid 5 Development **Evidence**	If candidates are to be awarded marks from the highest level, candidates should demonstrate the application of an iterative approach to design development. This is informed by the application of knowledge of materials and the needs, wants and values of the client/end user along with the use of modelling to test design thinking. We do see some detail development such as handle shape and latching slide 19 and the sub assembly design for the handle fixing slide 20 but it is a little lacking in detailed design development, and we should be looking for real client narrative that is 'honing' the final design. This again can be found in the annotation in slides 18, 19 and 20. The whole thing is elevated somewhat by the trialling and modelling undertaken. The modelling does allow the candidate to explore the issues and therefore this is developmental, and the product is moved on e.g. the green text in slide 25. We do see some client commentary which does provide a critique of the design, and the CAD does also help in terms of a return to client visual. We do see a little more research into materials and vintage luggage. Slide 27. **Evidence found on.** Slides18,19,20 further trialing and modelling is seen on slides 22 and 25. Further research is seen on slide 27. Overall, the development is a low level 3.		Level 3
Grid 6 Final Design **Evidence**	In this section we are looking for the candidates to be making some final refinements and then presenting a detailed final design solution that enabled third party manufacture to take place. The candidates should then produce a manufacturing specification that details the technical information needed for manufacture. There is a lot of work in this section, but it omits detail, for example size and proportion of the joining surfaces fundamentally the question is do we see enough detail to enable third party manufacture, the flow charts are largely irrelevant, but the CAD does help with an overview. The candidate did try to set out the operations needed to manufacture each part. They have also looked at potential tolerances and indeed planned for wastage in terms of the tessellation. This is especially true of slide 40 in the manufacture evidence. We do see some unedited dimensions on the drawings, but overall, the candidate has shown some detail and therefore this is a low level 3 submission. **Evidence is found on.** Slides 23, 24 and then slides 28 to 34 plus slide 40.		Level 3

Grid 7 Review **Evidence**	This section is where the candidates must undertake an intellectual analysis of the work they have undertaken so far; the commentary must be analytical and evaluative it must not be simply descriptive. In the best cases there should be strength and weakness analysis that provides balance and should consider all factors such as materials, processes, techniques and have reference to feedback. The review takes place within the development section and has a limited summative evaluation, slide 21 this is to be commended. However the candidate also undertakes a review of final design on slide 35 which has some strength weakness analysis providing some balance. We do see client commentary in red text slides 18 to 26 and the candidate has tried to undertake a balanced evaluation. This is a level 3 submission **Evidence found on.** Slides 18 to 26, plus slide 35.		Level 3
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. All of these strands need to be evidenced and be effective but also perceptive, if for instance the best communication method is a sectional view and the candidate recognizes this. That is perceptive. All three elements for this assessment criterion are present the written commentary is helpful, and the sketching has real fluidity, the CAD work is helpful in visualising the overall look of the product and so therefore this is a Level 3 submission. .		Level 3
Grid 9 Tools and equipment **Evidence**	In this section the candidates are expected to demonstrate an accomplished and sophisticated selection and use of tools and equipment which shows and in depth understanding of the materials being used and a justification of their use. The selection of the processes will ensure that the manufacture of the prototype is sound, and the outcome is dimensionally accurate. This is a very well thought out planned and put together project however it is somewhat reliant on the laser cutter, but it certainly has some level of sophistication, there is an accomplished level of the use tools, equipment and techniques which should allow access to the top-level assessment criterion. It just has and over reliance on one or two techniques. The candidate missed opportunities to undertake processes to look at latches and locking mechanisms for example. This is a low level 4 submission.		Level 4

	Evidence found on Slides 41 to 44 The use of a photographic diary here cannot be underestimated.		
Grid 10 Quality and Accuracy **Evidence**	This section should be characterised by demonstrating high level making skills that evidence accuracy leading to a quality artefact that is fully functioning prototype that meets the end user needs identified in the specification. We should also see candidates not being afraid to consult with the interested parties and amend the design during the manufacturing The work here has some quality and accuracy it is well put together it has some complexity in terms of the hinging of the drawers and the storage of the products. Overall, the level of finish is very good and so the work is commensurate with a top-level performance. **Evidence found on.** Slides 41 to 44		Level 4
Grid 11 Test and Evaluate **Evidence**	In this section we are looking for the candidate's ability to discern the difference between testing and evaluating. The notion of testing implies putting the product into service and considering its success, especially in terms of the specification and the clients' needs wants and values, whereas in the evaluation phase we are looking for a critical review including strengths and weaknesses which will then give a balanced conclusion supported by all of the analysis undertaken. The candidate understands the difference between testing and evaluating they put the product into service it may have been interesting to see the product being used in a design consultation and perhaps a little more with it out and about in the real world, for example on public transport. That said the candidate does return to client and discuss the outcomes and there are some meaningful client commentaries. Slide 45, 46. It does lack a little balance, but we do see improvements which mimic the iterative design process. There are some interested stakeholder opinions, but they are a little flimsy and really require further evaluative analysis. The specification is used to good effect and so overall this is a level 3 submission. **Evidence found on.** Slides 44 to 48		Level 3
Total			A Grade