

**Website Exemplar**  
**GCE (A2) Resistant Materials**  
**Unit: 6RM04**  
**Topic: Piano Stool.**

Notes		
A	Research & analysis	<p>On page 1 a client interview takes place and this establishes a design brief, that of designing and making a piano stool suitable for sitting at when playing duets. Under 'Situation' some design needs are clarified and a design brief is developed.</p> <p>On page 2 under the title 'Analysis' a mind map is presented and despite much of the recorded information being generic to many products, the summary is selective in identifying relevant areas for research.</p> <p>Research into existing products on page 3 is superficial and fails to gather useful information on materials, construction techniques, processes and finishes, information that would have been useful when designing.</p> <p>Page 4 shows research into sitting positions which is of little use, but the student is able to elicit useful and relevant information from the anthropometric table.</p> <p>Research into hardwoods on page 5 is generic and of little relevance at this stage, as no design decisions regarding materials have yet been made.</p> <p>Research into mechanisms on pages 5 and 6 is more relevant, but no explanation of how or why these might be used in a design is offered.</p> <p>Apart from a brief initial interview, where general information was gathered, there is no further input by the client in this section.</p> <p>On page 16, the student has carried out research into techniques for forming curves in wood and used this to decide on the best way of achieving the shapes required in the final design proposal.</p> <p>The evidence presented on pages 1-6 is a good fit for the lower level of response statements in this assessment criterion, but the appropriate research carried out on page 16 lifts the achievement level.</p> <p>Mark range 3-4</p>
B	Product specification	<p>A specification is presented that includes some realistic and technical statements. Some statements are measurable and can be used to evaluate the final outcome, but not many are justified.</p> <p>Some points are developed from information gathered during research, but sustainability is not considered beyond one very superficial mention.</p> <p>Some specification points are based on research and analysis, but client feedback can only be considered to be implicit.</p> <p>Mark range 4-6</p>
C	Design	<p>An interesting range of design ideas is presented exploring the task creatively. The student works in a logical way and progression can be seen from idea to idea. Technical information accompanies designs and this becomes more detailed as design ideas progress. Annotation refers to research material and specification points and reference is made to mechanical devices for adjusting seat heights, construction details and laminating. Specific processes and techniques are mentioned, but materials are only considered generally, being named as wood and metal.</p>

		<p>Detailed client feedback is gathered, which results in uncertainty regarding which design best meets the specification and should be carried forward to the development stage. Page 14 shows modelling of preferred designs to test points of specification and this results in the selection of the design idea to be developed.</p> <p>Mark range 7-10</p>
C	Review	<p>Objective comments regarding design ideas are presented and some reference is made to specification points, but a significant number of points are missed. Extensive client feedback is gathered. Sustainability is not considered.</p> <p>Mark range 1-2</p>
C	Develop	<p>Although little paperwork is presented to illustrate development, significant work is done kinesthetically to move the selected design on. A former is constructed and a laminate is produced to test its resilience, strength and stability of shape. CAD is used to illustrate the final design proposal and realistic working drawings and a cutting list are shown. Page 22 also contains details of the final design proposal.</p> <p>Despite an unusual approach to some aspects of development, this section matches most of the requirements of the high mark band. The final design proposal shows how the design has been moved on from its original concept; it includes significant technical information and is modelled to test aspects of design and to show using CAD how the final outcome would look in the specified material. The final design proposal is evaluated objectively, but no client feedback is sought.</p> <p>Mark range 7-10</p>
C	Communicate	<p>The student has used a range of media including ICT and CAD expertly to convey enough information for a skilled third party to manufacture the product, although some details of construction are in short supply</p> <p>Mark range 4-6</p>
D	Planning	<p>The student has produced a plan for production showing stages of manufacture in the correct order for the scale of production, which is one-off, but these are somewhat undetailed.</p> <p>Time considerations are recorded in weeks with no indication of real time. Quality and safety checks are also recorded, but are repetitive and superficial.</p> <p>Mark range 1-3</p>
E	Making: use of tools and equipment	<p>The student evidences tools and equipment selection in planning and in photographs supporting the diary of making. Photographs illustrate high levels of accuracy and precision in using the selected tools and equipment, but no reference other than that mentioned superficially in planning is made of safety awareness and the supplied images do not show this either.</p> <p>Mark range 7-9</p>

E	Making: Quality	<p>The student has produced a very high quality outcome that fully matches the final design proposal and functions as designed. Selection of materials and processes is justified on page 22</p> <p>Mark range 11-16</p>
E	Making: complexity/level of demand	<p>The level of challenge in manufacturing this product is high, requiring a wide range of skills to produce a successful outcome. The student has demonstrated precision and accuracy in producing a high quality, fully functioning piece of work.</p> <p>Mark range 7-9</p>
F	Testing & evaluation	<p>A series of field trials is carried out and the performance of the finished product is set against specification points. Photographic images support the success of the product and comments made by the student are objective. Sustainability is mentioned briefly. Client feedback relates to some points of specification and considers performance. No modifications are suggested to improve performance or quality and no lifecycle analysis is included.</p> <p>Mark range 7-10</p>