GCE Design and Technology Resistant Materials (A2)

Exemplar Commentary 2

Title: Kayak Camera Mount.

Unit: 6RM04

Kayak camera mount	
A Research & analysis P1-6	The student carries out an analysis of the task using a bubble diagram, but this is more of an exercise in determining what needs to be included in the specification. Using the statements attached to sub sections such as form, function, user requirements etc. would form a strong specification, but evidence of analysis should include what the student needs to find out during research having determined design needs in consultation with a client. A client is identified and is consulted to evaluate research and analysis, when he should have been integral in these tasks. There is some client input, but this is limited and not influential in determining design needs. Research considers commercially available similar products and these are analysed using advantages and disadvantages, but does not look at materials in any depth, or consider manufacturing processes and mechanical details beyond methods of fixing that would be of help when producing design ideas. (Mark Rang 1-2)
B Product specification P7	The specification is appropriate and contains most statements that are realistic, technical and measurable, and most statements are justified. The specification is well organised under appropriate sub-headings and reflect some of the information gathered from research. The client has highlighted what they consider to be 'key points'. Sustainability of resources is considered superficially (Mark Range 4-6)
C Design P8-9	A range of initial design ideas is presented which are accompanied by technical information regarding materials, ABS and brass featuring strongly, and limited manufacturing information. Ideas are workable and realistic, but do not develop details of camera adjustment, a key requirement, very well. (Mark Range 4-6)
C Review P10-11	A formal review of design ideas is presented, which is set against specification statements but is subjective with no input, apart from a brief reference at the bottom of the pages, from the client. Where the statement 'met' is used, there is no reasoning to justify why this is the case. Sustainability is dealt

	with very briefly as 'met'. (Mark Range 1-2)
C Develop P12-19	Evidence is presented to show how the selected initial design is developed into a refined final design proposal that is different from the original design. Accompanying annotation includes only limited technical details of materials and processes that could be used during manufacture. Testing is carried out on Velcro to establish strength and water resistance, but these tests have limited value when contributing to design development. Modelling is carried out using 3D CAD to visualise the finished product in stainless steel and brass. A working drawing is produced but there are some suspect dimensions included e.g. '50.97' and '308.33'. It is acceptable for students to generate working drawings from 3D CAD sketches automatically, but it is expected that they will have some input to adjust unrealistic dimensions appropriately. The development of the final design proposal is evaluated, and client input is added summatively, when comments should have been considered 'during' development. (Mark Range 4-6)
C Communicate P8-19	A range of communication techniques is used with skill to convey enough information to allow a skilled third party to attempt the manufacture of then product. (Mark Range 4-6)
D Planning P20-22	A plan for production is presented which considers the main stages of manufacture in the correct sequence. The plan includes timing for processes, quality control checks and safety checks, which are justified. (Mark Range 4-6)
E Making: use of tools and equipment P20-22, 24-25	Photographic evidence, which is rather small, shows the student using a range of processes, tools and equipment with some good levels of skill and precision. Metal machining, heat joining of brass, screw threading and various hand processes are evidenced (Mark Range 4-6)
E Making: Quality P20-22, 24-25	A good quality outcome has been produced which matches the final design proposal and is fully functional. There is little justified choice of materials or processes, other than some superficial comments in planning and evaluation. However, the student must have had a good understanding of materials and processes in order to complete the product to a good standard, despite not offering justification of choice. (Mark Range 11-16)
E Making: complexity/level of demand P 20-22, 24-25	The complexity of task offers some challenge, demanding competent skills. The work produced demonstrates attention to detail and some accuracy when producing component parts. (Mark Range 4-6)

F Testing & evaluation P23-25	Photographic evidence of testing shows the product being used in field trials, but there is no explanation as to why or how field trials were being carried out. Evaluation is set against specification points. Comments are subjective and there is no reasoning to say why the specification point had or had not been met. Client feedback is brief, but relevant. (Mark Range 4-6)