PLUME ACADEMY - LEARNING OVERVIEW

Year	13
Course	Product Design
Specification Number/Exam Board	7552-AQA
Examination Papers and Weighting	50% Non-Examined Assessment – 50% Exam

Prior Learning

The Year 13 Product Design offers students the opportunity to build their designing and manufacturing skills through the completion of their NEA project. Students also explore the role of the Law and Health & safety has in the Design industry.

Curriculum Intent – What are the curriculum aims?

Teaching and learning is based on five sessions per week. The three components that make up the A-level qualification, Paper 1, Paper 2 and the non-exam assessment (NEA), should be allocated appropriate teaching sessions to reflect their weighting allocations: 50% NEA, 50% written exams. This scheme of work is structured to enable teachers to focus on content that will prepare students for assessment at the end of year 2.

Students should be expected to develop the following skills - Research and investigation into target user, existing products, materials, manufacturing methods, joining methods, design movements, iterative design processes, development of designs, manufacturing and modelling methods, review and evaluation skills.

Curriculum Implementation – What will my child will be learning?

Term 1	Half Term 1	NEA – Section C: Development of design proposals Design proposals should reflect on first concepts and take full account of the design brief and design specification. The aim should be that the development of their design proposal(s) leads to a prototype that can be manufactured by the student given their skills and experience. In developing their proposals the student will be expected to make constant reference to their design brief and design specification, to identify if further investigations are required and to carry these out. Design proposals can be demonstrated through a variety of different media, but whatever methods are chosen, they should be of a high quality befitting this level of qualification and show evidence of analysis and annotation (although these elements are not assessed in this assessment criteria). Modelling is seen as a key element of this assessment criteria, whether this be part modelling, practicing of manufacturing and finishing techniques, the production of scale models or material experimentation. There is also the expectation that students will produce working drawings, plans and patterns to enable successful prototype manufacturing to take place. The use of CAD is encouraged, but this should not be the only form of design communication that is used.
	Half Term 2	NEA – Section D: Development of design prototypes Design prototypes are just that, they need to be directly related to the

		design proposals and show consideration, at all stages, of how the design thinking continues to be developed and the prototype(s) refined. Given the level of this qualification it is expected that the student will demonstrate their practical skills to a high level using all of the potential resources, tools, machines and equipment at their disposal. During the development of their design prototype(s) the student should be encouraged to continue to experiment and adapt their design proposals as they progress. Constant testing and evaluation is expected to form part of this process. The use of CAM is encouraged, but this should not be the only form of manufacturing that is used.
Term 2	Half Term 3	NEA - Section E: Analysing and evaluating Students should be encouraged to be constantly analyzing their work and recording their thoughts in order to explain their thinking. Ongoing evaluation should be seen to be informing the decision making process, particularly being used to bring about modifications to design proposals and prototype development. Central to this is the close and regular involvement of the proposed client/user(s) making sure that the prototype is both fit for purpose and meets the requirements of the client/user(s) rather than just meeting those of the student.
	Half Term 4	Theory - Technical Principles, Unit 10 – Health & Safety and the Law This unit examines the use of national and international standards, government and EU directives and the role NGOs play in the protection and monitoring of the welfare of people and places. Students develop further awareness of the correct, safe use of tools in the workshop and in the industrial context. They explore the use of health and Safety requirements and regulations appropriate to the commercial environment.
Term 3	Half Term 5	Revision
	Half Term 6	

Curriculum Impact – How will my child be assessed and receive feedback?

Paper 1 – Technical principles - Written exam: 2 hours and 30 minutes
120 marks – 30% of A-level
Mixture of short answer and extended response.
Paper 2 - Designing and making principles - Written exam: 1 hour and 30 minutes
80 marks - 20% of A-level
Mixture of short answer and extended response questions.
Section A:
Product Analysis: 30 marks
Up to 6 short answer questions based on visual stimulus of product(s).
Section B:
Commercial manufacture: 50 marks
Mixture of short and extended response questions
% worth of question in relation to paper as a whole: 50%
NEA Yr 12
NEA Practical application of technical principles, designing and making principles.
Substantial design and make project.
100 marks.
Assessment Objectives (and weighting):50% of A level
4.5.1 Section A: Identify and investigate design possibilities (20 marks)
4.5.2 Section B: Producing a design brief and specification (10 marks)
4.5.3 Section C: Development of design proposal- (25 marks)
4.5.4 Section D: Development of design prototypes (25 marks)
4.5.5 Section E: Analysing and evaluating (20 marks)

Super-Curricular Opportunities – Supporting and Extending Learning

Useful study resources	If a student is really passionate about this subject they can...
Technology Student - http://www.technologystudent.com/ BBC Bitesize - https://www.bbc.co.uk/bitesize/subjects/zvg4d2p Seneca - https://www.senecalearning.com/ Number Phile - https://www.numberphile.com/ Engineer Guy - https://www.youtube.com/user/engineerguyvideo Fusion 360 - https://www.youtube.com/user/AutodeskFusion360	• *Topic – Non-Destructive Testing – www.trainingndt.com* • *Topic – Articles on Materials – www.azom.com* • *Topic – Starch Based Products – www.earthpac.co.nz/Earthpac* • *Topic – Toxicity Of Woods – www.hse* • *Topic – The British Plastic Federation – Plastipedia – www.bpf.com* • *Topic – Institute of Materials, Minerals & Mining – www.iom3.org* • *Topic – How Forces Make Things Stick – www.explainthatstuff.com/adhesives.html*