



PLUME ACADEMY - LEARNING OVERVIEW

Year	10
Course	Design & Technology – Resistant Materials
Specification Number/Exam Board	8552 AQA
End of course assessment and weightings	50% NEA 50% Exam

Prior Learning

Learners will have covered a range of skills during KS3 such as Researching, Planning, Designing, Manufacturing and Evaluative skills. These skills would have resulted in the production of a finished product.

Curriculum Intent – What are the curriculum aims?

GCSE Design and Technology will prepare students to participate confidently and successfully in an increasingly technological world. Students will gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise. Design & Technology (Resistant Materials) allows students to study core technical and designing and making principles, including a broad range of design processes, materials techniques and equipment. They will also have the opportunity to study specialist technical principles in greater depth.

Curriculum Implementation – What will my child will be learning?

Term 1	Half Term 1	<i>Woodworkers Box: Wood joining methods, hand skills, understanding of working drawings, manufacturing experience, understanding and knowledge.</i>
	Half Term 2	Unit 1 Theory: the impact of new and emerging technology on industry and enterprise before moving on to look at the effect that industry can have on the environment. The influence that people, culture and society have on product development and vice versa are covered in the third lesson. Contemporary production techniques are then covered before a final lesson on planned obsolescence and informing design decisions
Term 2	Half Term 3	Desk Tidy/ Organiser: Laser cutting, 2D Design, Strip Heater, Line Bending.
	Half Term 4	Unit 2 Theory: Energy generation from finite and non-finite sources is argued in the initial lesson before looking at energy storage in the second lesson. Developments in modern and smart materials, and their properties are covered in the following two lessons. The unit progresses to cover composite materials and technical textiles including GRP, CRP and Kevlar. Electronic systems and mechanical devices are covered in the final lessons.
Term 3	Half Term 5	Casting: Heating up of metals, construction of mould, 2D Design, polishing.
	Half Term 6	Unit 3 Theory: The materials are covered through practical applications and with reference to the key material category in which they belong. The specific physical and working properties that best describe each material subcategory are identified and defined with reference to use and knowledge that will underpin practical designing and making activities. NEA – 1 ST June

Thermoforming, use of moulds. This includes development of a mini-folder to allow students the opportunity to practice the NEA coursework process.



Curriculum Impact – How will progress be assessed as I learn?

Students will be assessed with termly tests at the end of a unit of theory work. Feedback will be given on the student's work using Close the Gap comments as well as feedback from their tests. Students will prepare themselves for their NEA project which starts in June. Students must have sufficient direct supervision for the written element to ensure that the work submitted can be confidently authenticated as their own.

Super-Curricular Opportunities – Support and Extending Learning

Useful study resources	If a student is really passionate about this subject...	As a parent/carer, I can assist my child in this subject by:
<p>Technology Student - http://www.technologystudent.com/</p> <p>BBC Bitesize - https://www.bbc.co.uk/bitesize/subjects</p> <p>Seneca - https://www.senecalearning.com/</p> <p>Number Phile - https://www.numberphile.com/</p> <p>Fusion 360 - https://www.youtube.com/user/AutodeskFusion360</p> <p>Google Sketch up – https://www.sketchup.com/products/sketchup-for-web</p>	<p>Watch an episode of The Gadget Show https://www.channel5.com/show/the-gadget-show/</p> <p>Enter the Design Ventura Competition https://ventura.designmuseum.org/</p> <p>Design a display for a notable product or designer of interest.</p> <p>Visit the Olympic Stadium in Stratford and find out about its construction.</p> <p>Listen to the femmes of STEM podcast.</p>	<p><i>Topic – Toxicity Of Woods – www.hse.com</i></p> <p><i>Topic – The British Plastic Federation – Plastipedia – www.bpf.com</i></p> <p><i>Topic – Institute of Materials, Minerals & Mining – www.ion3.org</i></p> <p><i>Topic – How Forces Make Things Stick – www.explainthatstuff.com/adhesives.html</i></p>