Product Design

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Curriculum Intent: Students will learn through a variety of projects during KS3/4 and 5, how to use the technological principles of explore, create, and evaluate to solve problems. On this learning journey, these projects will also bestow upon them the technical knowledge required to be a Product Designer.

	Core Knowledge	Procedural Knowledge
Autumn Term 1	**Topics** • The 4 Ps of Sketching • Net Construction and Layout • Use of Thick and Thin Line Techniques	**Students will:** • Develop fundamental sketching skills, including isometric drawing techniques • Apply rendering methods to enhance visual communication • Learn and apply one-point and two-point perspective drawing • Understand and use crating techniques to structure drawings accurately • Practise the effective use of thick and thin lines to define form and detail
Autumn Term 2	**Topics** • Classification and Types of Wood • Properties and Characteristics of Timber • Categories and Properties of Thermo-Polymers • Use and Purpose of Templates and Jigs	**Students will:** • Safely and effectively use a range of hand tools and powered equipment, including the band facer and pillar drill • Employ templates and jigs to support accurate and repeatable manufacturing
Spring Term 1	**Topics:** • Temporary and Permanent Fixings • Writing and Designing to a Specification • Introduction to Iterative Design Processes • Mathematical Application: Area and Volume	**Students will:** • Work independently to develop solutions • Critically evaluate design decisions and outcomes • Apply appropriate mathematical formulae to solve design-related problems • Design with reference to a clear and justified specification
	The second half of the year is a repeat of content of the first three half terms with a rotation of a different group of students.	

Homework:
Homework is set on Class Charts for every six hours taught. Homework will comprise a presentation on The Positive Impact of Technology, revision for tests and a mid-way knowledge review

Assessment: Formative verbal and other feedback. Exploration grade (research). Create grade (making). Evaluation grade. Principles grade through a multiple-choice test that will include a maths and a written essay question. Presentation skills and content grade.
Links to Personal Development: Dexterity and hand skills. Self-evaluation of work. Presentation skills. Research/analytical skills
How is my knowledge further developed in Year 8? In Y8, students will learn the following through a sustainability project – Sustainable design, 6 Rs of sustainability, analysis of products and their environmental impact, materials properties, advancement of previous workshop skills and basic metal skills