Ormiston Horizon Academy

CURRICULUM MAP FOR D&T

YEAR 10

Unit: Term 1a Practical Skills Mirror + Unit 4 By the end of this unit of learning all students will be able to: **Project –** To develop a range of practical and finishing skills by using a range of equipment, skills and techniques. To identify potential hazards and be aware of health and safety in all aspects of practical. **Theory** 1.8 The categorisation of the types, properties and structure of ferrous and non-ferrous metals 1.9 The categorisation of the types, properties and structure of papers and boards 1.10 The categorisation of the types, properties and structure of thermoforming and thermosetting polymers 1.11 The categorisation of the types, properties and structure of natural, synthetic, blended and mixed fibres, and woven, non-woven and knitted textiles 1.12 The categorisation of the types, properties and structure of natural and manufactured timbers 1.13 All design and technological practice takes place within contexts which inform outcomes -		**Practical** Vacuum Forming Polymer Component **Theory** Ferrous Non-Ferrous Thermoforming Thermosetting Softwood Hardwood Properties such as hardness, toughness and durability
		Check point – Passport – knowledge of skills and H&S End point – Evaluation of skills including H&S Unit 4 Test
		Knowledge Organiser
Unit: Term 1b Drawing Skills + Unit 5 By the end of this unit of learning all students will be able to: **Project** – Know ways to generate and communicate ideas. To develop drawing skills in a range of ways including technical drawing **Theory** 1.14 Investigate environmental, social and economic challenges when identifying opportunities and constraints that influence the processes of designing and making 1.15 Investigate and analyse the work of past and present professionals and companies in order to inform design 1.16 Use different design strategies to generate initial ideas and avoid design fixation 1.17 Develop, communicate, record and justify design ideas, applying suitable techniques		Isometric Crating Orthographic 2 Point Perspective Oblique Iteration Collaboration Systems Thinking Iconic Social Economic
		Check point: Isometric shapes End point: Isometric Camera Unit 5 Test
		Knowledge Organiser

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Unit: Term 2a, 2b and 3a Speaker Project and Unit 1-3 By the end of this unit of learning all students will be able to: **Project** Mini NEA practice project to understand the whole design and development process including iteration and CAD. **Theory** 1.1 The impact of new and emerging technologies 1.2 How the critical evaluation of new and emerging technologies informs design decisions; considering contemporary and potential future scenarios from different perspectives, such as ethics and the environment 1.3 How energy is generated and stored in order to choose and use appropriate sources to make products and power systems 1.4 Developments in modern and smart materials, composite materials and technical textile 1.5 The functions of mechanical devices used to produce different sorts of movements, including the changing of magnitude and the direction of forces 1.6 How electronic systems provide functionality to products and processes, including sensors and control devices to respond to a variety of inputs, and devices to produce a range of outputs 1.7 The use of programmable components to embed functionality into products in order to enhance and customise their operation		Client Profile Design Brief Specification Computer-aided Design Ethics Environment Smart Materials Linear Oscillating CAM Electronic Component
		Check point – Development End Point – Final Design (use of iteration) Unit Tests 1-3
		Knowledge Organiser
Unit: Term 3b NEA Investigate Section and Mock Paper 1 **NEA** 1.1a Identify the needs of the end user. 1.1b Outline a design problem from the context provided and identify a need for a product that could solve the problem. 1.1c Investigate existing products to inform the product specification for the prototype, from past and present designers. 1.1d Carry out a range of research strategies to gather relevant information, to inform the design specification for the prototype **Mock** – All Core content taught throughout the year (first 40 marks of paper)		Analyse Justify Contextual Challenge Research
		Check point – Design outline End Point – Mock Assessment
		Knowledge Organiser