Year: 7 Subject: Resistant Materials	**Curriculum Intent:** Students will develop a firm understanding of the health and safety requirements needed for a workshop environment. Students will be introduced to a range of hand tools and basic machinery and will develop their precision through practice. Throughout their practical experience, they will learn about basic material properties and processes used in both school and industry. These skills and knowledge will be used and developed continually throughout their subject journey at Denbigh.	
	Term 1 *Key Rack and Maze Game*	
Topic Titles (in order of delivery)	1. Health and safety in the workshop 2. Tools and equipment identification 3. Origins of wood and plastic 4. Using 2D Design as a CAD package 5. Using basic hand tools 6. Reading/understanding technical drawings 7. Basic wood joints 8. Introduction of pillar drill 9. Understanding CAM (pros and cons) 10. Introduction of disc sander 11. Production plans 12. Methods of joining (drilling and tapping)	1. Manufacturing diaries 2. Tools and equipment usage 3. Assembly including permanent and temporary fixings 4. Finishes for wood 5. Enhancing materials 6. Accuracy and quality control 7. Marketing products 8. Packaging products 9. Testing and evaluating of products 10. Isometric drawing skills
Key knowledge / Retrieval topics	Health and safety Correct usage of tools/equipment	Understanding material properties Accuracy/quality control
Understanding / Sequence of delivery	• To enable students to conduct their practical activities safely, a knowledge of health and safety specific to the space they will be working in is imperative. • Following this, a knowledge of key materials and their properties to understand why they are working with the chosen materials to support their decision making and understand how they are appropriate for the specific product. • With this knowledge and experience they should be able to design a range of suitable designs based on analysis of products and knowledge of materials and processes. • These areas of knowledge should then support students moving forward to learning how to use appropriate tools and equipment safely and with the appropriate materials. • The final stage of the process is to evaluate their process and outcome to suggest how they might make improvements going forward and reflect upon their learning.	
Vocabulary	Resistant Materials Hardwoods Softwoods Manufactured boards Recyclable	Housing joint Chisel CAD/CAM CNC router Disc sander

	Renewable Tenon saw Try square Pillar drill	Drill and tap Smoothing plane Chamfer Quality control

Assessment

	Knowledge and understanding	Design solutions and food choice	Plan and prepare	Practical skills	Analyse and evaluate
3	Demonstrate relevant knowledge and understanding of principles and processes/ properties.	Produce straightforward solutions that meet the requirements of the problem in familiar and unfamiliar contexts.	Use simple scientific knowledge and mathematical skills to prepare products and select some appropriate materials and equipment.	Safely apply a range of skills, processes and techniques in the production of familiar products/ prototypes/ dishes.	Make straightforward comments about their work and the work of others using some appropriate language and some technical terms.
2	Demonstrate some relevant knowledge and understanding of principles and processes properties.	Produce basic solutions that meet some requirements of the problem in a familiar context using appropriate means to explain their ideas.	Use some simple scientific knowledge to plan and prepare a simple product including the use of basic mathematical skills.	Safely apply limited skills, processes and techniques in the production of familiar products/ prototypes/ dishes.	Make straightforward and obvious comments about their work and the work of others using everyday language and some technical terms.
1	Demonstrate limited knowledge and understanding of principles and processes/ properties.	Product limited solutions that meet some requirements of the problem in a familiar context using limited means to explain their ideas.	Use limited scientific knowledge to follow a plan effectively and use basic mathematical skill.	With support, safely apply limited skills, processes and techniques in the production of familiar product/ prototypes/ dishes.	Limited and straightforward comments about their work and the work of others.