

2023/ 2024	AUTUMN		SPRING		SUMMER	
	HT1	HT2	HT3	HT4	HT5	HT6
Y7	<p><b>Area of study</b> D&amp;T- Materials and their working properties</p> <p><b>Key concepts</b> Papers and Boards, Timbers, Metals and Alloys, Polymers &amp; Textiles</p> <p><b>Assessment method</b> Written Assessment</p>	<p><b>Area of study</b> D&amp;T- Core Programming</p> <p><b>Key concepts</b> Computing, Electronics, Intelligence, Inputs, Sensors, Outputs, Components, Programmable, Microcontrollers</p> <p><b>Assessment method</b> Evaluation of Final Program</p>	<p><b>Area of study</b> Engineering- Materials</p> <p><b>Key concepts</b> Material Properties, Metals and Alloys, Changing Material Properties, Polymers, Composites, Material Cost and Supply</p> <p><b>Assessment method</b> Written Assessment</p>	<p><b>Area of study</b> Engineering- Core Practical Skills</p> <p><b>Key concepts</b> Cutting Tools, Equipment and Processes, H&amp;S, Abrading Equipment, Adhesives and Glues, Automation, Mechanical Engineering</p> <p><b>Assessment method</b> Evaluation of Final Product</p>	<p><b>Area of study</b> Food Technology- Core Skills</p> <p><b>Key concepts</b> Hazards and Safety, Bacteria, Diets and Usage of Equipment</p> <p><b>Assessment method</b> Demonstration of Skills &amp; Knowledge</p>	<p><b>Area of study</b> 2D CAD- Techsoft V3</p> <p><b>Key concepts</b> Layout, Lines, Shapes, Contours, Bitmaps, Text, Grid, Attach and Clip/Crop</p> <p><b>Assessment method</b> Demonstration of Skills &amp; Knowledge</p>
Y8	<p><b>Area of study</b> D&amp;T- Designing &amp; Manufacturing</p> <p><b>Key concepts</b> Form, function, aesthetics, ergonomics, anthropometrics, design fixation, exploded drawing, iterative designing, user-centred design, collaborative design, destructive and non-destructive testing, manufacture</p> <p><b>Assessment method</b> Written Assessment</p>	<p><b>Area of study</b> D&amp;T- Developing Practical Skills</p> <p><b>Key concepts</b> Communication of Design Ideas, Manufacturing Preparation, 2D CAD &amp; CAM, Wasting, Abrading, Assembly and Evaluation</p> <p><b>Assessment method</b> Evaluation of Final Product</p>	<p><b>Area of study</b> Engineering- Manufacturing Processes</p> <p><b>Key concepts</b> Additive Manufacturing, Material Removal, Shaping, Forming, and Manipulation, Casting and Moulding, Joining and Assembly, Heat and Chemical Treatment and Surface Finishing</p> <p><b>Assessment method</b> Written Assessment</p>	<p><b>Area of study</b> Engineering- Developing Practical Skills (programming)</p> <p><b>Key concepts</b> Forces and Motion, Scientific Thinking, Application of Mathematics and Science for Engineering, Practical Enquiry, Designing, Interpretation and Programming</p> <p><b>Assessment method</b> Evaluation of Final Product</p>	<p><b>Area of study</b> Food Technology- Balanced Eating</p> <p><b>Key concepts</b> Health and Safety, GM Foods, Equipment, Healthy Eating, Cooker Usage and Following Methods</p> <p><b>Assessment method</b> Demonstration of Skills &amp; Knowledge</p>	<p><b>Area of study</b> Music</p> <p><b>Key concepts</b> Musical Elements Rhythm Improvisation Musical Styles Lyrical Structure Musical Structure</p> <p><b>Assessment method</b> Peer/Teacher assessed performance MU1, MU2, MU3, MU4, MU5, MU6</p>
Y9	<p><b>Area of study</b> D&amp;T- New and Emerging Technologies</p> <p><b>Key concepts</b> Emerging technology, robotics, crowd funding, virtual marketing, retail, co-operatives, fair trade, technology push, market pull, pollution, global warming, automation, CAD, CAM, FMS, JIT, lean manufacturing, planned obsolescence</p> <p><b>Assessment method</b> Written Assessment</p>	<p><b>Area of study</b> D&amp;T- Manufacture</p> <p><b>Key concepts</b> Prototyping, Development, Prototyping Analysis, On-going Research, Fixtures/Fixings, CAD Model, Materials Investigation, Materials and Cutting List, Manufacturing and Diary, Evaluation, Testing, Feedback</p> <p><b>Assessment method</b> Evaluation of Final Product</p>	<p><b>Area of study</b> Engineering- Impact of Modern Technologies</p> <p><b>Key concepts</b> New and Emerging Technologies, Impact on Society, Impact on the Environment, Engineering Industries</p> <p><b>Assessment method</b> Written Assessment</p>	<p><b>Area of study</b> Engineering- NEA Project</p> <p><b>Key concepts</b> Engineering Brief, Context Analysis, Mechanical Analysis, Electronics Research, Primary Research, Research Analysis, Specification, Ideas, Development and Final Idea</p> <p><b>Assessment method</b> RAG Data Sheet</p>	<p><b>Area of study</b> Food Technology- Creating Chefs</p> <p><b>Key concepts</b> Health and Safety, Food Poisoning, Meat Storage, Cooking Safety, Food Labelling, Cooker and Hob</p> <p><b>Assessment method</b> Demonstration of Skills &amp; Knowledge</p>	<p><b>Area of study</b> 3D CAD- Solidworks</p> <p><b>Key concepts</b> Assemblies, References, Patterns, Simulations, File Conversion and Surface Modelling</p> <p><b>Assessment method</b> Demonstration of Skills &amp; Knowledge</p>

NOTES	<b>SKILLS FOR LIFE/ FUTURE LEARNING AND EMPLOYMENT</b>
	Skills for Life: Creativity, Problem Solving, Critical Analysis, Iterative Development, Thinking Skills, Collaborative Approaches, Self-awareness, Critical Thinking, Decision Making, Effective Communication, Empathy, Resilience, Time Management, Working Under Pressure, Digital Literacy, Technological Skills, Health and Safety, Focus, Methodical Thinking, Presentation, Leadership, Flexibility and Adaptability
	Future Learning- A Level Product Design/3D Design, T Level STEM, Apprenticeships in all Product, Engineering, Architecture fields, Employment Opportunities- Product Design, Engineering (all categories), Architecture, Fashion Design, Chef, CAD (all related career paths)

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Y10	<p><b>Area of study</b> Unit 6-Identifying, Investigating Design Possibilities &amp; Design Brief/Specification <b>Key concepts</b> Mindmap, Task Analysis, Target Market Profile, Primary Research, Product Evaluation, SMSC Impacts, Design Possibilities, Design Brief/Specification</p> <p><b>Assessment method</b> RAG data sheet against Specification</p>	<p><b>Area of study</b> Unit 1- New and Emerging Technologies Generating Design Ideas <b>Key concepts</b> Industry &amp; Enterprise, Sustainability &amp; the Environment, People, Culture &amp; Society, Production Techniques/ Systems Informing Design decisions Effective Generation of Design Ideas <b>Assessment method</b> RAG data sheet against Specification &amp;Written Assessment</p>	<p><b>Area of study</b> Unit 2- Energy, Materials, Systems &amp; Devices Generating/Developing Design Ideas <b>Key concepts</b> Energy Generation/Storage, Modern Materials, Smart Materials, Composite Materials, Systems/Electronic Approach to Designing/Processing, Mechanical Devices Developmental Designs and Prototypes <b>Assessment method</b> RAG data sheet against Specification &amp;Written Assessment</p>	<p><b>Area of study</b> Unit 3- Materials &amp; Working Properties Realising Design Ideas <b>Key concepts</b> Papers and Boards, Timbers, Metals and Alloys, Polymers, Textiles Material Preparation Material Cutting (Including CAM) Enhancing Aesthetics <b>Assessment method</b> RAG data sheet against Specification &amp;Written Assessment</p>	<p><b>Area of study</b> Unit 4- Common Specialist Principles Realising Design Ideas <b>Key concepts</b> Forces and Stresses, Improving Functionality, Ecological and Social Footprint, The Six 6's, Scales of Production Effective Assembly of Parts Finishing Methods <b>Assessment method</b> RAG data sheet against Specification &amp;Written Assessment</p>	<p><b>Area of study</b> Unit 5B- Timber Based Materials Analysing and Evaluating <b>Key concepts</b> Sources and Origins, Working with Timbers, Commercial Manufacturing Evaluation against Brief/Specification Product Testing and Client/User Feedback Future Improvements <b>Assessment method</b> RAG data sheet against Specification &amp;Written Assessment</p>
	Y11	<p><b>Area of study</b> Unit 5D- Polymers Identifying, Investigating Design Possibilities &amp; Design Brief/Specification <b>Key concepts</b> Mindmap, Task Analysis, Target Market Profile, Primary Research, Product Evaluation, SMSC Impacts, Design Possibilities, Design Brief/Specification <b>Assessment method</b> RAG data, Specification, Written Assessment</p>	<p><b>Area of study</b> Generating Design Ideas Developing Design Ideas <b>Key concepts</b> Ideation, Logo/Brand, Packaging Prototyping, Development, Prototyping Analysis, Ongoing Research, CAD Model, Materials Investigation  <b>Assessment method</b> RAG data sheet against Specification</p>	<p><b>Area of study</b> Realising Design Ideas <b>Key concepts</b> Materials and Cutting Lists Manufacturing Diary Manufacturing Development  <b>Assessment method</b> RAG data sheet against Specification</p>	<p><b>Area of study</b> Realising Design Ideas Analysing and Evaluating <b>Key concepts</b> Quality Control Tolerances Commercial Viability Assembly Finishing <b>Assessment method</b> RAG data sheet against Specification</p>	<p><b>Area of study</b> Revisiting all theory Units <b>Key concepts</b> Complete and reflect on past papers  <b>Assessment method</b> Self-reflection and teacher feedback on specific topic areas to develop fill gaps in knowledge</p>

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	<p>Future Learning- Degrees and Apprenticeships within Product, Engineering, Architecture fields</p> <p>Employment Opportunities- Product Design, Engineering (all categories), Architecture, Fashion Design, Chef, CAD (all related career paths)</p>