Curriculum Map 2023-2024

Subject: Product Design KS4

Year: YEAR 10

Year 10	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content: **Knowledge:**	**<u>Theory Lessons</u>** **Unit 1 - New 7 Emerging Technology** • **Industry e.g. automation** • **Enterprise e.g. crowdfunding** • **Social & environmental responsibility** • **Production Techniques** **Unit 2 - Energy, materials, systems and devices** • **Energy generation and storage** • **Modern, smart and composite materials** • **Mechanical devices** **<u>Design Project Work</u>** • **Developing Practical Workshop skills**	**<u>Theory Lessons</u>** **Unit 2 - Energy, materials, systems and devices** • **Systems Approach** • **Mechanical devices** • **Systems approach** **Unit 3 - Material Properties** • **Papers and Boards** • **Timbers and Boards** • **Metal and Allots** • **Polymers** • **Textiles** **<u>Design Project Work</u>** • **Developing Practical Workshop skills**	**<u>Theory Lessons</u>** **<u>Unit 4 -</u>** • **Forces and stresses** • **Improving function** • **6R's** • **Social + Economic impact** • **Scales of Production** **<u>Design Project Work</u>** • **Developing Practical Workshop skills**	**<u>Theory Lessons</u>** **Unit 5B - Specialist Knowledge: Timbers** • **Sources & Environmental factors.** • **Properties & uses** • **Stock Forms** • **Industrial Processes** • **End of unit 5 test** **Unit 5C- Specialist Knowledge: Polymers** • **Sources & Environmental factors.** • **Properties & uses** • **Stock Forms** • **Industrial Processes** **<u>Design Project Work</u>** • **Developing Practical Workshop skills**	**<u>Theory Lessons</u>** **Unit 6** • **Investigation, primary and secondary** • **Work of others** • **Designer research** • **Design Strategies** • **Design ideas and communication** • **Unit 6 test** **Unit 7** • **Material selection** • **Tolerances and Allowances** • **Material Management** **<u>Design Project Work</u>** • **Developing Practical Workshop skills**	**<u>Theory Lessons</u>** **Unit 7** • **Specialist tools** • **Surface treatments and finishes** • **End of unit 7 test** **Unit 8** **Technical Drawing** **<u>Design Project Work</u>** **Children's Learning & Play Practice NEA:** • **Evaluation & testing of products** **<u>Yr10 Mock Exams</u>** **Full 2hr paper assessing all areas of theory** **<u>GCSE NEA</u>** **Contexts for the NEA (Non-Examined Assessment) are released for students to research and review over the summer.**
Recall of knowledge and skills will be interleaved throughout the SOW	Recall lessons embedded in scheme; how to apply theory knowledge to exam questions	Recall lessons embedded in scheme; how to apply theory knowledge to exam questions	Recall lessons embedded in scheme; how to apply theory knowledge to exam questions	Recall lessons embedded in scheme; how to apply theory knowledge to exam questions	Recall lessons embedded in scheme; how to apply theory knowledge to exam questions	Recall lessons embedded in scheme; how to apply theory knowledge to exam questions

Key Question	• What is the impact of new and emerging technology on the design & manufacturing industry?	• How is sustainability aided by the use of new energy systems of generation and storage?	• What tools. Equipment and processes are used in the production of products?	• Why does the volume of a product influence the way it is made?	• Why is planning an essential part of the manufacturing process?	• How are materials selected for use? • What is the NEA and how does it effect my final grade?
Assessment	• Theory worksheets & practice exam questions (self & teacher assessment). • End of Unit Test (Teacher assessed) • Assessment of design project work using the AQA NEA assessment criteria(self & teacher assessment).	• Theory worksheets & practice exam questions (self & teacher assessment). • Assessment of design project work using the AQA NEA assessment criteria(self & teacher assessment).	• Theory worksheets & practice exam questions (self & teacher assessment). • Assessment of design project work using the AQA NEA assessment criteria(self & teacher assessment).	• Theory worksheets & practice exam questions (self & teacher assessment). • End of Unit Test (Teacher assessed) • Assessment of design project work using the AQA NEA assessment criteria(self & teacher assessment).	• Theory worksheets & practice exam questions (self & teacher assessment). • Assessment of design project work using the AQA NEA assessment criteria(self & teacher assessment).	• End of Unit Theory Test (Teacher assessed) • Yr10 full mock exam (teacher assessed) • Assessment of design project work using the AQA NEA assessment criteria(self & teacher assessment).
Literacy/numeracy/SMSC/Character	• Glossary of key words produced to help understand technical terms • How to analyse data and summarise in a paragraph using the PEEL structure. • Analysing data, bell curves and percentiles in anthropometric data.	• How to structure more extended exam questions • Analysis of questionnaire data, the types and production of a range of graphs. • Researching and understanding the needs and wants of a specific customer.	• Measuring & scale used in the production of models • Research into the social and economic impact their design • many have.	• Producing technical drawings to scale and with accurate measurements • Producing an accurate cutting list with the precise measurements of all materials required.	• Accurate measuring skills through practical work. • Calculation of quantities of materials and sizes through stock forms. • Geometry & trigonometry through calculating material sizes from stock forms • Tessellation	• Practising extended writing through evaluation and how to structure an evaluation. • Math skills assessed through the end of unit & year test.
Enrichment opportunities and futures	Trip to ThinkTank Museum Weekly NEA drop-in sessions to support coursework	External design competition timing TBC Weekly NEA drop-in sessions to support coursework.	External design competition timing TBC Weekly NEA drop-in sessions to support coursework.	Weekly NEA drop-in sessions to support coursework.	Weekly NEA drop-in sessions to support coursework.	Weekly NEA drop-in sessions to support coursework.

YEAR 11	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content ***Knowledge***	**<u>Theory Lessons</u>** **Revision:** • **Unit 1** • **Unit 2** • **Unit 3** **<u>NEA</u>** **Students select a context and through the design process, produce their own product.** • **Investigation & Research** • **Design Brief** • **Specification**	**<u>Theory Lessons</u>** **Revision:** • **Unit 4: Timbers** • **Unit 5: Polymers** • **Mock exam technique** **<u>NEA</u>** **Students select a context and through the design process, produce their own product.** • **Design Ideas** • **Design Development & Modelling**	**<u>Theory Lessons</u>** **Revision:** • **Unit 6: Design & Make Theory** • **Technical Drawing** **<u>NEA</u>** **Students select a context and through the design process, produce their own product.** • **Planning for manufacture** • **Materials research** • **Producing working drawings & cutting lists**	**<u>Theory Lessons</u>** **Revision:** • **Students & Teachers to identify areas of weakness and review the theory units again** **<u>NEA</u>** **Students select a context and through the design process, produce their own product.** • **Manufacture of products** • **Final Evaluation**	**<u>Theory Lessons</u>** **Revision:** • **Feedback from mocks. Revision dependent on feedback.** **<u>NEA</u>** **Final NEA deadline - 1st week after Easter Holidays.**	
Skills **Recall of knowledge and skills will be interleaved throughout the SOW**	• Recall techniques and how to apply theory knowledge to exam questions • Research & Investigation skills; how to analyse and select useful information.	• Recall techniques and how to apply theory knowledge to exam questions • Drawing & design skills	• Recall techniques and how to apply theory knowledge to exam questions • Drawing skills using both 2D & 3D drawing techniques • Planning skills	• Recall techniques and how to apply theory knowledge to exam questions • Practical Skills, safe and skillful use of tools and processes	• Recall techniques and how to apply theory knowledge to exam questions • Exam technique	.
Key Question	• How does Section A look on the exam, what is the content, and how do I make the most of it? • How much is section A worth? • What revision techniques should I be using for Section A?	• How does Section B look on the exam, what is the content, and how do I make the most of it? • How much is section B worth? • What do I need to do if a question asks me to use notes and sketches in my answer?	• How does Section C look on the exam, what is the content, and how do I make the most of it? • How much is section C worth? • What revision techniques should I be using for Section C?	• What areas of revision should I focus on? • What revision techniques should I be using?	• What areas of revision should I focus on? • What revision techniques should I be using?	
Assessment	• Revision worksheets	• Mock exam - full 2hr	• Revision worksheets	• Revision worksheets	• Revision worksheets	

	& practice exam questions (self & teacher assessment). ● Assessment of design project work using the AQA NEA assessment criteria(self assessment).	paper (teacher assessment) ● Assessment of design project work using the AQA NEA assessment criteria(self assessment).	& practice exam questions (self & teacher assessment). ● Assessment of design project work using the AQA NEA assessment criteria(self assessment).	& practice exam questions (self & teacher assessment). ● Assessment of design project work using the AQA NEA assessment criteria(self assessment).	& practice exam questions (self & teacher assessment). ● Final teacher assessment of NEA then sent to be externally moderated.	
Literacy/numeracy/SMSC/Character	● Use of key technical vocabulary supported by glossaries ● Raised awareness of SMSC issues through research into potential clients and products.	● Exam technique; how to structure 10 mark questions.	● Maths revision through design & make theory covering, handling data, graphs, geometry, trigonometry , measuring, area, volume, scale & ratio.	● Use of key technical vocabulary supported by glossaries ● Exam technique; paragraph structure	● Use of key technical vocabulary supported by glossaries ● Exam technique; paragraph structure	
Enrichment opportunities and futures	Weekly NEA drop-in sessions to support coursework.	Weekly NEA drop-in sessions to support coursework.	Weekly NEA drop-in sessions to support coursework.	Weekly NEA drop-in sessions to support coursework.	Weekly revision sessions after school. .	