Curriculum Map 2022-2023

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** **<u>Design Project Work</u>** **Children's Learning & Play Practice NEA:** • **Primary & Secondary Research** • **Ergonomics & Anthropometrics** • **Iterative Process** ***Prior knowledge from ks3 units: knowledge of the design cycle and the stages involved in researching; product analysis & mood boards.***	**<u>Theory Lessons</u>** **Unit 4 - Specialist Knowledge: Timbers** • **Sources & Environmental factors.** • **Properties & uses of timber** • **Conversion & Stock Forms** **<u>Design Project Work</u>** **Children's Learning & Play Practice NEA:** • **Client Analysis & Profile** • **Identifying design possibilities** • **How to write a design brief & specification** ***Prior knowledge from ks3 units: knowledge of the design cycle and the stages involved in researching; writing questionnaires & design specifications***	**<u>Theory Lessons</u>** **Unit 4 - Specialist Knowledge: Timbers** • **Working with timbers; joints, tools and processes used** • **Commercial processes** • **Tolerances and quality control** **<u>Design Project Work</u>** **Children's Learning & Play Practice NEA:** • **Learning about different design strategies used to produce innovative ideas.** • **Development and modelling techniques** • **Research the social & economic issues related to products** ***Prior knowledge from ks3 units: drawing and design skills.***	**<u>Theory Lessons</u>** **Unit 4 - Specialist Knowledge: Timbers** • **Wood finishes** • **Scales of production** • **End of unit 4 test** **<u>Design Project Work</u>** **Children's Learning & Play Practice NEA:** • **How to plan for manufacture** • **Materials research** • **Producing working drawings & cutting lists** ***Prior knowledge from ks3 units: knowledge of materials, joining methods and practical processes.***	**<u>Theory Lessons</u>** **Unit 5 - Specialist Knowledge: Polymers** • **Sources & Environmental factors.** • **Properties & uses** • **Stock Forms** • **Industrial Processes** **<u>Design Project Work</u>** **Children's Learning & Play Practice NEA:** • **The tools and processes used in manufacturing a final product** ***Prior knowledge from ks3 units: knowledge of materials, joining methods and practical processes.***	**<u>Theory Lessons</u>** **Unit 5 - Specialist Knowledge: Polymers** • **Selection of materials forces & stresses** • **End of unit 5 test** **<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.** ***Prior knowledge from ks3 units: evaluation & research skills.***
Skills **Recall of knowledge and skills will be interleaved**	• Recall techniques and how to apply theory knowledge to exam questions • Research & Investigation skills;	• Recall techniques and how to apply theory knowledge to exam questions • Research & Investigation skills;	• Recall techniques and how to apply theory knowledge to exam questions • Drawing skills using both 2D & 3D	• Recall techniques and how to apply theory knowledge to exam questions • Drawing skills using both 2D & 3D	• Recall techniques and how to apply theory knowledge to exam questions • Practical Skills, safe and skillful use of	• Recall techniques and how to apply theory knowledge to exam questions • How to structure evaluations

throughout the SOW	how to analyse and select useful information.	how to analyse and select useful information.	drawing techniques ● Research & Investigation skills; how to analyse and select useful information.	drawing techniques ● Research & Investigation skills; how to analyse and select useful information.	tools and processes	● Research & Investigation skills; how to analyse and select useful information.
Key Question	● What is the impact of new and emerging technology on the design & manufacturing industry? ● What is the iterative process and why is it so important?	● What is a life cycle assessment and why do designers need to use them? ● How does the brief and specification inform the design?	● What tools. Equipment and processes are used in the production of wooden products? ● What are the different design strategies and how are they used to produce innovative ideas?	● Why does the volume of a product influence the way it is made? ● Why is planning an essential part of the manufacturing process?	● Where do polymers come from, how are they produced? ● What is the impact of polymers on the environment? ● How do we use the laser cutter?	● 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	● Practicing extended writing through evaluation and how to structure an evaluation. ● Math skills assessed through the end of unit & year test.

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.	Trip & workshop at the Design Museum. 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	● 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	● 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	● 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?	

	A?	sketches in my answer?	C?			
Assessment	• Revision worksheets & practice exam questions (self & teacher assessment). • Assessment of design project work using the AQA NEA assessment criteria(self assessment).	• Mock exam - full 2hr paper (teacher assessment) • Assessment of design project work using the AQA NEA assessment criteria(self assessment).	• Revision worksheets & practice exam questions (self & teacher assessment). • Assessment of design project work using the AQA NEA assessment criteria(self assessment).	• Revision worksheets & practice exam questions (self & teacher assessment). • Assessment of design project work using the AQA NEA assessment criteria(self assessment).	• Revision worksheets & 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. .	