



Curriculum Map For Design Technology Year 10

| YEAR 10 | Autumn 1 | Autumn 2 |
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| Topics | <p>Practice NEA - Non-Examined Assessment</p> <p>AO1 Section A - Identifying & Investigating Design Possibilities</p> <p>AO1 Section B - Producing a Design Brief & Specification; Summarising Research Produce a Design Brief and Write a Detailed Specification</p> | <p>New & Emerging Technologies</p> <p>AO1 Section A - Identifying & Investigating Design Possibilities</p> <p>AO1 Section B - Producing a Design Brief & Specification; Summarising Research Produce a Design Brief and Write a Detailed Specification</p> |
| Substantive Knowledge – The Knowledge Taught By The Teacher | <ul style="list-style-type: none"> • How to analyse a given context effectively. • Effective use of PowerPoint for presentation purposes. • Creation of a themed mood and justification of image selection. • To broaden knowledge of key designers. • Effective product analysis. • Developing personal drawing skills. • To broaden knowledge of materials and processes including use of plywood, tessellation, scaling, use of templates, cutting lists, band saw use (teacher only), hole saws, sanders, files, rasps and sandpaper. • To create a range of interesting and imaginative ideas with meaningful annotation which meets the needs of the chosen user. • Effective modelling of initial designs. | <ul style="list-style-type: none"> • Understanding industry and enterprise - investigation, primary and secondary data, ergonomics, and anthropometrics. • The importance of sustainability and the environment, appreciating and taking influence from the work of others. • Understanding the significance of people, culture, and society upon design. • Production techniques and systems. • Informing design decisions. • Developing personal drawing skills. • To broaden knowledge of materials and processes including use of plywood, tessellation, scaling, use of templates, cutting lists, band saw use (teacher only), hole saws, sanders, files, rasps and sandpaper. • To write an effective Design Brief and Specification. |
| Disciplinary Knowledge – How The Knowledge Will Be Developed & Applied | <ul style="list-style-type: none"> • Analysis of the work of others for external influences and inspiration. • Self-reflection and evaluation of research. • Self-reflection and evaluation of designs. • Responding to client feedback to meet their needs. • To understand how the work of key designers still influences our world today. | <ul style="list-style-type: none"> • Analysis of the work of others for external influences and inspiration. • Self-reflection and evaluation of research. • Self-reflection and evaluation of designs. • Responding to client feedback to meet their needs. • To understand how the work of key designers still influences our world today. |

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| Skills | <ul style="list-style-type: none"> • Effective use of PowerPoint for presentation purposes. • Focus of literacy skills to explain and justify all research and decisions made. • Problem solving. • Analysing existing products with the purpose of taking influence. • User profiling. • To develop individual drawing skills/style. | <ul style="list-style-type: none"> • Problem solving. • Analysing existing products with the purpose of taking influence. • User profiling. • To develop individual drawing skills/style. • To create a range of interesting and imaginative ideas with meaningful annotation. • To develop model making techniques. |
| Links To Prior Learning | <ul style="list-style-type: none"> • Combining workshop skills from Year 7, CAD skills from Year 8 and Design for a Focussed Client from Year 9 to develop the ability to design effectively for a client solving their problem. • Presentation skills. | <ul style="list-style-type: none"> • Combining workshop skills from Year 7, CAD skills from Year 8 and Design for a Focussed Client from Year 9 to develop the ability to design effectively for a client solving their problem. • Presentation skills. |
| Literacy/ Numeracy | <ul style="list-style-type: none"> • Literacy: research skills, analysing the work of others, being able to develop detailed design specification which has been concluded from research. • Numeracy: wide range of number, proportion and geometry skills. | <ul style="list-style-type: none"> • Literacy: research skills, analysing the work of others, being able to develop detailed design specification which has been concluded from research. • Numeracy: wide range of number, proportion and geometry skills. |
| Cross Curricular | <ul style="list-style-type: none"> • Sustainability of materials and lifecycle assessment. • English language when analysing and self-reflecting. • Researching based specifically around the needs of others with the intention of solving a real-life problem. | <ul style="list-style-type: none"> • The importance of sustainability and the environment. • Appreciating and taking influence from the work of others. • Understanding the significance of people, culture, and society upon design. |
| Assessment | <ul style="list-style-type: none"> • Continual teacher feedback of the practice NEA. | <ul style="list-style-type: none"> • End of unit test. • Continual teacher feedback of the practice NEA. |

| YEAR 10 | Spring 1 | Spring 2 |
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| Topics | <p>Specialist Material Area - Timber</p> <p>A02 Section C - Design and Make Prototypes That Are Fit For Purpose; Generating Design Ideas; Drawing Skills and Methods of Communication; 2D and 3D Drawing Techniques</p> | <p>Materials & Their Working Properties</p> <p>A02 Section D - Design and Make Prototypes That Are Fit For Purpose; Develop Design Ideas; Develop and Evaluate Successful Prototypes</p> |
| Substantive Knowledge – The Knowledge Taught By The Teacher | <ul style="list-style-type: none"> • Understanding the sources and origins of timbers. • Working with timbers effectively. • Understanding commercial manufacturing. • To broaden knowledge of materials and processes including use of | <ul style="list-style-type: none"> • Understanding the source and origins of papers and boards. • Understanding the source and origins of metals and alloys. • Understanding the sources and origins of polymers. |

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| | <p>plywood, tessellation, scaling, use of templates, cutting lists, band saw use (teacher only), hole saws, sanders, files, rasps and sandpaper.</p> <ul style="list-style-type: none"> To create a range of interesting and imaginative ideas with meaningful annotation which meets the needs of the chosen user. Effective modelling of initial designs. | <ul style="list-style-type: none"> Understanding the sources and origins of textiles. Familiarisation with measurements and stock forms of the above 4 plus timber categories. Creating a suitable and effective final design following the iterative process of design/feedback/prototype/feedback/make. |
| Disciplinary Knowledge – How The Knowledge Will Be Developed & Applied | <ul style="list-style-type: none"> Self-reflection and evaluation of research. Self-reflection and evaluation of designs. Ensure knowledge of health and safety in the workshop. Responding to client feedback to meet their needs. Understand the impact of mixed materials on the environment materials compared to natural materials. Plan for the incorporation of CAD elements into handmade models. | <ul style="list-style-type: none"> Self-reflection and evaluation of research. Self-reflection and evaluation of designs. Ensure knowledge of health and safety in the workshop. Responding to client feedback to meet their needs. Understand the impact of mixed materials on the environment materials compared to natural materials. Plan for the incorporation of CAD elements into handmade models. |
| Skills | <ul style="list-style-type: none"> Effective and accurate card modelling. Effective and accurate styrofoam modelling. Problem solving. Visual communication of ideas. Ability to develop following feedback. Continued development of individual drawing skills/style. | <ul style="list-style-type: none"> Effective and accurate use of templates. Effective and accurate tessellation. Problem solving. Visual communication of ideas. Ability to develop following feedback. Continued development of workshop skills specifically with glues, files, rasps and drills. |
| Links To Prior Learning | <ul style="list-style-type: none"> Combining workshop skills from Year 7, CAD skills from Year 8 and design for a focussed client from Year 9 to develop the ability to design effectively for a client solving their problem. Presentation skills. Modelling quality prototypes reflecting designs. | <ul style="list-style-type: none"> Combining all skills from Years 7, 8 and 9. Tessellation. Use of workshop tools and equipment. Modelling quality prototypes reflecting designs. Manufacturing according to individual designs and plans. |
| Literacy/ Numeracy | <ul style="list-style-type: none"> Literacy: ongoing self-reflection and evaluation, the analysis and comprehension of feedback from others. Numeracy: wide range of number, proportion and geometry skills. | <ul style="list-style-type: none"> Literacy: ongoing self-reflection and evaluation, the analysis and comprehension of feedback from others. Numeracy: wide range of number, proportion and geometry skills. Using settings on tools and equipment to work within tolerances. |
| Cross Curricular | <ul style="list-style-type: none"> Sustainability of materials and lifecycle assessment English language when analysing and self-reflecting. | <ul style="list-style-type: none"> Sustainability of materials and lifecycle assessment of a broad range of materials such as wood, metal, plastic, textiles and papers/cards and the |

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| | <ul style="list-style-type: none"> • Researching based specifically around the needs of others with the intention of solving a real-life problem. • Understanding the sources and origins of timbers and how our choices affect the planet and ecosystems. | <p>impact of their continued production and use on the planet.</p> |
| Assessment | <ul style="list-style-type: none"> • Continual teacher feedback of practice NEA. | <ul style="list-style-type: none"> • End of Unit Test. • Continual teacher feedback of practice NEA. |

| YEAR 10 | Summer 1 | Summer 2 |
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| | <p>Extended Time For Previous 2 Terms As Needed For Catch Up, Consolidation & Delayed Testing</p> <p>AO2 Section E - Design and Make Prototypes That Are Fit For Purpose; Realising Design Ideas</p> | <p>Extended Time For Previous 2 Terms As Needed For Catch Up, Consolidation and Delayed Testing</p> <p>AO3 Section F - Analyse and Evaluate</p> <p>Prototyping Skills Builder - Advancing Skills</p> <p>Start Real NEA - Non-Examined Assessment</p> |
| Substantive Knowledge – The Knowledge Taught By The Teacher | <ul style="list-style-type: none"> • Ensure secure knowledge of previous 2 terms work. • To continue to broaden knowledge of materials and processes including use of plywood, tessellation, scaling, use of templates, cutting lists, band saw use (teacher only), hole saws, sanders, files, rasps, sandpaper, glue. • To successfully solder a working circuit inclusive of speaker, LED and USB. • Understanding of the role components play in electronics such as resistors and capacitors. • Creating a suitable and effective final design following the iterative process of design/feedback/prototype/feedback/make. • Use of CAD packages to complete personalised components such as speaker grills and stylisation. | <ul style="list-style-type: none"> • Refine evaluating skills, specifically highlighting potential improvements and acting accordingly. • To continue to broaden knowledge of prototyping incorporating mechanisms, refining use of corrugated card for working prototypes. • Working to scale. • Prototyping with multi-materials and advanced materials such as steel and plastics. |
| Disciplinary Knowledge – How The Knowledge Will Be Applied | <ul style="list-style-type: none"> • Ongoing self-reflection of finishing techniques and suitability for the client. • Evaluate the effectiveness of a final outcome when compared to the specific needs of the client. • Additional research into potential finishes which could enhance the | <ul style="list-style-type: none"> • Analysis of the work of others for external influences and inspiration. • Self-reflection and evaluation of research. • Self-reflection and evaluation of analysis. |

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| | <p>outcome for potential commercial use bridging the gap between school and real life.</p> | <ul style="list-style-type: none"> • Responding to client feedback to meet their needs. • Consistently gather opinions of own work for reflection. • Use of a real client to ensure work is 'real life' scenario. |
| Skills | <ul style="list-style-type: none"> • Material management, marking out and planning. • Specialist tools and equipment, techniques and processes. • Health and Safety. • Surface treatments and finishes. • Making of Product. | <ul style="list-style-type: none"> • Effective use of PowerPoint for presentation purposes. • Focus of literacy skills to explain and justify all research and decisions made. • Problem solving. • Analysing existing products with the purpose of taking influence. • User profiling. |
| Links To Prior Learning | <ul style="list-style-type: none"> • Combining all skills from KS3. • Tessellation. • Use of workshop tools and equipment. • Modelling quality prototypes reflecting designs. • Manufacturing according to individual designs and plans. | <ul style="list-style-type: none"> • Combining all skills from KS3 and previous 2 terms. |
| Literacy/ Numeracy | <ul style="list-style-type: none"> • Literacy: ongoing self-reflection and evaluation, the analysis and comprehension of feedback from others. • Numeracy: accuracy of measuring and marking and use of scale and tessellation. Using settings on tools and equipment to work within tolerances. | <ul style="list-style-type: none"> • Literacy: research skills, analysing the work of others, being able to develop detailed design specification which has been concluded from research. • Numeracy: accuracy of measuring and marking and use of scale. |
| Cross Curricular | <ul style="list-style-type: none"> • Sustainability of materials and lifecycle assessment. • Understanding the sources and origins of timbers and how our choices affect the planet and ecosystems. • Sustainability of materials and lifecycle assessment of a broad range of materials such as wood, metal, plastic, textiles and papers/cards and the impact of their continued production and use on the planet. | <ul style="list-style-type: none"> • Sustainability of materials and lifecycle assessment. • English language when analysing and self-reflecting. • Researching based specifically around the needs of others with the intention of solving a real-life problem. |
| Assessment | <ul style="list-style-type: none"> • End of unit assessment test and ongoing marking against the specification for the NEA. | <ul style="list-style-type: none"> • Continual teacher feedback of the practice NEA. • End of year test covering theory from all units covered in Year 10. |