

Year 10 Curriculum Overview

Design and Technology

Autumn Term	
Golden Threads: Design, Make Drawing, Addition/Wastage tools and techniques, Design Ideas, Material Sources and origins, Marking out, Health and Safety, Equipment, Evaluation	Golden Threads: Design, Make, Evaluate CAD/CAM, Addition/Wastage tools and techniques, Design Ideas, Equipment, Testing and Evaluation
HT1 – Workshop Timbers – Cross Puzzle & Keepsake Box, • Read a technical drawing • Marking out accurately • Workshop hand tools • Workshop machine tools	HT2 – CAD/CAM – 2D Spinner and 3D Kinder Egg toy • 2D CAD 2D Design Tools (path, nodes, dimension, grid, arrays) • CAM laser cutter • 3D CAD Onshape (extrude, cut, revolve, shell, fillet, assembly) • 3D printer • Design idea to fit inside a kinder egg • Model and 3D print design idea
Theory Unit 1 New and Emerging Technologies • Industry and Enterprise • Sustainability and the Environment • People, Culture and Society • Production Techniques and Systems • Informing Design Decisions	Theory Unit 2 Energy and Systems • Energy Generation • Energy Storage

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Theory Unit 5b

Timber Based materials

- Sources and Origins
- Working with timbers
- Commercial Manufacturing

- Modern Materials
 - Smart Materials
 - Composite Materials and Technical Textiles
 - Systems Approach to Designing
 - Electronic Systems
 - Mechanical Devices
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Year 10 Curriculum Overview

Spring Term	
Golden Threads: Design, Make, Evaluate Drawing, Designers and Design Ideas, Material Sources and origins, Card modelling, Testing	Golden Threads: Make, Evaluate Addition/Wastage tools and techniques, Marking out, Health and Safety, Equipment, Environment, Evaluation
HT3 – Research and Ideas for Design Ventura project • Explore the design museum shop • Design to fit a design brief and specification • Card model of design idea Theory Unit 3 • Timbers • Polymers • Metals • Textiles • Papers/Boards	HT4 – Manufacture of Design Ventura project • Final Design Orthographic drawing • Manufacture plan • Health and Safety • Quality Control • Accurate manufacture • Quality of Finish Theory Unit 4 • Forces and Stresses • Improving Functionality • Ecological and social Footprint • The Six R's Scales of Production

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Summer Term	
Golden Threads: Make, Evaluate Addition/Wastage tools and techniques, Marking out, Health and Safety, Equipment, Evaluation	Golden Threads: Design Research, Drawing, Designers and Design Ideas
HT5 – Focused Practical Skills • Lamination • Line Bending • Vacuum Forming • Casting • Milling • Wood Joints	HT6 – GCSE NEA Research Section A and B • Explore context • Identify problems to solve • Client profile • Client interview • Product Analysis • Design Brief • Design Specification
Theory Unit 6 Designing Principles • Investigation, Primary Secondary Research • The Work of Others • Design strategies • Design Communication	Theory Unit 7 Making Principles • Selection of Materials and Components • Tolerances • Material Management • Tools, equipment and finishes • Surface Treatments and Finishes

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