KS3 Year 7: 2025-26

Overall Curriculum Intent for Design & Technology

The curriculum intent of Design & Technology is for pupils gain experience of a wide range of practical skills and processes through a multi-disciplinary approach, which develops resilience, reasoning and problem-solving skills. Creativity, imagination and technical understanding are combined to equip our pupils with essential life skills and a love of product design and manufacture. By the end of their five-year journey pupils will have a deep understanding of how a range of factors and stimuli effect how products are design, used, manufactured and disposed of. More important the short-, medium- and long-term impacts products have not just the user but the environment and world they live in. They will also develop their investigation, design, development manufacture and evaluation skills through a range of design, practical projects through the use of workshop equipment and CAD/CAM.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge Introduced	Key-Fob & Stand In this unit pupils will develop a range of design and manufacturing skills. These skills include drawing, prototyping and shaping materials, whilst doing so using the correct equipment safely and competently. These skills are transferable between technology areas and life skills for their future. Technical work covered will have a focus of these theory topics: **Theory Topics** Materials Tools/Equipment/Processes H&S / Signs & Symbols	Key-Fob & Stand The second part of the project will focus on edge treatment of plastics and cold forming of metals. Material origins will be introduced, and pupils learn practically about material properties with a view to inform their future design and manufacturing decisions. Technical work covered will have a focus of these theory topics: **Theory Topics** Materials Tools/Equipment/Processes H&S / Signs & Symbols	Healthy Cereal Design In this unit you will develop a range of hand design skills and packaging communication skills. These skills include using analysis, planning, 2D/3D drawing, development and improve initial designs, whilst doing so using user information to design a product. These skills are transferable between technology areas and life skills for their future. Technical work covered will have a focus of these theory topics: **Theory Topics** Analysing Products User Centered Design Understanding Layouts	Healthy Cereal Design Produce a developed final outcomes form planning and initial idea work form HT3. Remaining 3 weeks to include skills sessions on • Sketching • Drawing 2D/3D • Rendering Technical work covered will have a focus of these theory topics: **Theory Topics** Analysing Products User Centered Design Understanding Layouts	CAD/CAM Desk - Tidy In this unit pupils will develop a range of CAD and hand design skills and manufacture a product using CAM. These skills include using TechSoft 2D to accurately draw, edit and improve computer-based designs, whilst doing so using the correct software accurately and competently. It will be manufactured using the laser cutter equipment and finish the product by shaping/bending it. Technical work covered will have a focus of these theory topics: **Theory Topics** Design Specification CAD/CAM Grid Design	CAD – Comic Book Cover In this unit pupils will learn a second type of vector drawing and design software called affinity. This focuses on the artistic elements of the subject. They will be introduced to the basics of the software and product a comic book front cover. They will look at producing individual shapes using a variety of tools. Layering, fill colours and filter effects to be used produce an outcome. Technical work covered will have a focus of these theory topics: **Theory Topics** Primary Research CAD/CAM Layout
Key vocabulary/ concepts/ideas students must master	Client Template Prototyping Edge Treatment Hazard Tools/Equipment/Processes H&S / Signs & Symbols	Quality Assurance Quality Control Hazard Risk Prevention Threading Assembly	Analysis Design Brief Initial Ideas Target User Ghost Lines Market Influences Quality Assurance Modify Solution	Layout Rendering Assembly Scalability Development Analyse Gradient Sketch	Computer aided design Computer Aided Manufacture Computer Numerically Controlled Template Laser Cutter Line Bender Thermosetting Plastic Thermoforming Plastics	Analysis Layout Fill Node Modify Vector
Knowledge revisited	Introduction to tools, equipment and processes. This will be for majority new learning. This will feed HT5 & HT6.	Introduction to workshop skills and safety knowledge for manufacture products by hand. To be built upon in Y8, focusing on a different material (timber).	Building on KS2 basic design and model making skills. This will be largely limited and varied. Pupils should have some knowledge of healthy diets.	Building on KS2 basic design and model making skills. This will be largely limited and varied. Pupils should have some knowledge of healthy diets.	Introduction to CAD/CAM skills and safety knowledge for manufacture products using CNC machinery.	Introduction to CAD for graphic design. Previous vector software understanding form TS2D.
CEIAG Links/ Opportunities	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4

KS3 Year 8: 2025-26

Overall Curriculum Intent for Design & Technology

The curriculum intent of Design & Technology is for pupils gain experience of a wide range of practical skills and processes through a multi-disciplinary approach, which develops resilience, reasoning and problem-solving skills. Creativity, imagination and technical understanding are combined to equip our pupils with essential life skills and a love of product design and manufacture. By the end of their five-year journey pupils will have a deep understanding of how a range of factors and stimuli effect how products are design, used, manufactured and disposed of. More important the short-, medium- and long-term impacts products have not just the user but the environment and world they live in. They will also develop their investigation, design, development manufacture and evaluation skills through a range of design, practical projects through the use of workshop equipment and CAD/CAM.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge Introduced	Bookend – Workshop Practical - Marking Out - Wasting In this unit pupils will be learning hands on practical skills along with drawing in different styles. Pupils need to be able to work accurately and precisely to produce a final outcome. Pupils will be introduced to a range f marking our and wasting equipment to produce finger joints. Technical work covered will have a focus of these theory topics: **Theory Topics** Health & Safety Hand Tools & Equipment Manufacturing Processes	Bookend – Workshop Practical - Edge Treatment - Assembly In this unit pupils will quality assure their timber joints and aim to assemble their final product. Additionally, they will have the opportunity to understand and apply surface finishes. Additional they will be introduced to multi directional isometric drawings. Pupils will link a product to promote literacy through the decoration of pyrography. Technical work covered will have a focus of these theory topics: **Theory Topics** Power Tools & Equipment Manufacturing Process Isometric Darwing	CAM – Jewellery Design - TS2D Skills In this unit skills will include using TechSoft 2D to accurately draw, edit and improve computer-based designs using the software accurately and competently. The practical element will include using a heat press and Pewter Casting a jewellery piece safely. These skills are transferable between technology areas and life skills for their future. Technical work covered will have a focus of these theory topics: **Theory Topics** Cultural Design CAD/CAM – TS2D	CAD - Jewellery manufacture & - SolidWorks Skills In practical element will include using a heat press and Pewter Casting a jewellery piece safely. These skills are transferable between technology areas and life skills for their future. Within this unit pupils be introduced to the basic of SolidWorks 3D design where they will learn to draw, extrude base and cut and dimension, to produce accurate CAD files with an aim to create more complex components and products in the future. Technical work covered will have a focus of these theory topics: **Theory Topics** CAD/CAM – SolidWorks Casting	Festival & T-Shirt Design - Planning & Initial Ideas In this unit pupils will develop a range of hand design skills to design and manufacture a t-shirt and packaging product. These skills include accurately drawing and improving designs using a range of techniques accurately and competently. Technical work covered will have a focus of these theory topics: **Theory Topics** Graphic Identity Rendering	Festival & T-Shirt Design - Development & Manufacture Produce developed final outcomes form planning and initial idea work form HT1. Remaining 3 weeks to include skills sessions on • Environmental • 6 R's • Responsibility Technical work covered will have a focus of these theory topics: **Theory Topics** Layout development Image Transfer
Key vocabulary/ concepts/ideas students must master	Timbers Softwoods / Hardwoods MDF Plywood H&S	Steel Rule Hazards Tenon saw Try square Bench vice	CAD / CAM / CNC Mould Pewter Quality Assurance Quality Control	Extruded Dimension Simulation Stress Testing	Adapt Accurate Analyse	Adapt Accurate Analyse
Knowledge revisited	Introduction to tools, equipment and processes. This will be for majority new learning. This will feed HT5 & HT6.	Building on H&S, technical and independent skills from the Y7 practical project.	Building on… Reviewing the learning from…	Pupils have completed introduction SolidWorks in Y8 CAD, jewellery project.	Reviewing knowledge learnt in HT1, focusing on user centred design for packaging and promotion for multi-user design considerations.	Reviewing knowledge learnt in HT1, focusing on user centred design for packaging and promotion for multi-user design considerations.
CEIAG Links/ Opportunities	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4

KS3 Year 9: 2025-26

Overall Curriculum Intent for Design & Technology

The curriculum intent of Design & Technology is for pupils gain experience of a wide range of practical skills and processes through a multi-disciplinary approach, which develops resilience, reasoning and problem-solving skills. Creativity, imagination and technical understanding are combined to equip our pupils with essential life skills and a love of product design and manufacture. By the end of their five-year journey pupils will have a deep understanding of how a range of factors and stimuli effect how products are design, used, manufactured and disposed of. More important the short-, medium- and long-term impacts products have not just the user but the environment and world they live in. They will also develop their investigation, design, development manufacture and evaluation skills through a range of design, practical projects through the use of workshop equipment and CAD/CAM.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge Introduced	Project: Land Rover Project CAD- SolidWorks In this unit pupils will produce advanced CAD component drawings using SolidWorks. Pupils will draw the individual components of a Land Rover in separate part files and then assembly them for a presentation view. Pupils will understand how products can develop and tested through virtual prototyping and the benefits form doing this before manufacturing physical products and prototypes. Technical work covered will have a focus of these theory topics: **Theory Topics** CAD – SolidWorks Component Darwing Technical Drawing	Project: Land Rover Project CAD- SolidWorks In this unit pupils will produce advanced CAD component drawings using SolidWorks. Pupils will draw the individual components of a Land Rover in separate part files and then assembly them for a presentation view. Pupils will understand how products can develop and tested through virtual prototyping and the benefits form doing this before manufacturing physical products and prototypes. Technical work covered will have a focus of these theory topics: **Theory Topics** Assembly drawing Exploded Drawing CAD Rendering	Project: Electronics Light Circuit Task Rotation: The following cycle will last 4 lessons before rotating. **Soldering** Pupils will follow a circuit diagram to solder together a pre-designed circuit for a project. **Research** Pupils will read through environmental and technical resources to understand the background of the products materials and components. **Drawing** Producing technical drawings of outcome in different styles. Technical work covered will have a focus of these theory topics: **Theory Topics** Soldering Sustainability Drawing Styles	Project: Electronics Light Circuit Task Rotation: The following cycle will last 4 lessons before rotating. **Soldering** Pupils will follow a circuit diagram to solder together a pre-designed circuit for a project. **Research** Pupils will read through environmental and technical resources to understand the background of the products materials and components. **Drawing** Producing technical drawings of outcome in different styles. Technical work covered will have a focus of these theory topics: **Theory Topics** Soldering Sustainability Drawing Styles	Project: Light Casing Design Task A **Design** **Prototyping & Modelling** In this unit pupils will design a moonlight. This will start with design ideas for the casing before modelling out of card for prototyping and development. Task B **CAD/CAM** Pupils will use TS2D to produce laser cut files for the light cover which then is to be laser cut. Technical work covered will have a focus of these theory topics: **Theory Topics** Designing Principles Material use Construction Methods	Project: Light Casing Manufacture Task A **Marking & Manufacture** From the previous card model, pupils will create the casing in pine. Marking out and wasting using a range of hand tools and workshop machinery. Task B **CAD/CAM** Pupils will use TS2D to produce laser cut files for the light cover which then is to be laser cut. Technical work covered will have a focus of these theory topics: **Theory Topics** Soldering Sustainability Drawing Styles
Key vocabulary/ concepts/ideas students must master	Part Drawing Extruded (Boss/Base & Cut) Smart Dimension	Virtual Prototype Exploded View Assembly View Rendering	Components Quality Assurance Quality Control Development	Components Quality Assurance Quality Control Development	Initial Ideas Development Prototyping Vector Darwing	Design Realisation Making Out Wasting Assembly
Knowledge revisited	Building on existing knowledgeable form materials sources and origins during practical projects.	Building on existing knowledgeable form materials sources and origins during practical projects.	Building on material understanding form Y8 CAD. Using TS2D to produce an outcome.	Building on component production and selection. Material usage and waste.	Revisiting skills from Y8 woodwork for drawing and modelling. Also returning to Y7 CAD for TS2D skills and laser cutting processes.	Revisiting skills form Y8 woodwork for marking out and wasting. Also returning to Y7 CAD for TS2D skills and laser cutting processes.
CEIAG Links/ Opportunities	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4	Graphic Designer Product Designer CAD Designer Construction & Engineering Gatsby BM: 2/3/4