KEY STAGE 3 – DESIGN TECHNOLOGY – CURRICULUM MAPPING
WADEBRIDGE SCHOOL
National Curriculum - Key stage 3 (Year 7/8)

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.
Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture], and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion].
Our provision for Design & Technology at Wadebridge School is developed from the statutory guidance in the National Curriculum (link below).

https://www.gov.uk/government/publications/national-curriculum-in-england-design-and-technology-programmes-of-study/national-curriculum-in-england-design-and-technology-programmes-of-study#:~:text=for%20example%2C%20microcontrollers%5D-,Cooking%20and%20nutrition,great%20expressions%20of%20human%20creativity.

When designing and making, pupils should be taught to:

Design

- use research and exploration, such as the study of **different cultures**, to identify and understand user needs
- **identify and solve their own design problems** and understand how to reformulate problems given to them
- **develop specifications** to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations
- use a variety of approaches [for example, biomimicry and user-centred design], to **generate creative ideas and avoid stereotypical responses**
  develop and **communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools (CAD)**

Make

- select from and use **specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture (CAM)**
- select from and use a wider, more **complex range of materials**, components and ingredients, considering their properties

Evaluate

- analyse the **work of past and present professionals** and others to develop and broaden their understanding
- **investigate new and emerging technologies**
- **test, evaluate and refine their ideas and products against a specification**, taking into account the views of intended users and other interested groups
- understand developments in **design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists**

Technical knowledge

- understand and use the **properties of materials** and the **performance of structural elements** to achieve functioning solutions
- understand how more **advanced mechanical systems** used in their products enable changes in movement and force
- understand how more **advanced electrical and electronic systems** can be powered and used in their products [for example, **circuits** with heat**, light**, sound and movement as inputs and outputs]
- Apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

- understand and apply the principles of nutrition and health
- cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
- become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]
- understand the source, seasonality and characteristics of a broad range of ingredients

YEAR 7 DT PROVISON:		PRODUCT DESIGN			FOOD AND NUTRITION / TEXTILES		
ASSESSMENT OBJECTIVES & DT PRINCIPLES	**PROJECT / CURRICULUM CONTENT (LINKED TO NC AND AO'S FROM KS4 PROGRESSION)**	**PD- DESIGNER WOODEN PICTURE FRAME**	**PD - CAD /CAM ACRYLIC CLOCK**	**PD -PCB / VAC FORM TORCH**	**TUTTI FRUITTI RECIPES**	**AL FRESCO RECIPES**	**TUTTI FRUITTI APRON**
AO1: IDENTIFY DESIGN POSSIBILITIES (RESEARCH)	***RESEARCH & INVESTIGATION: PRODUCT ANALYSIS / WORK OF OTHERS / PRODUCT DISSASEMBLY***	PRODUCT ANALYSIS WORK OF KEY DESIGNERS:	WORK OF OTHERS: Memphis PRODUCT ANALYSIS	PRODUCT DISSASEMBLY	LOCAL EATERY RESEARCH		PRODUCT DISSASEMBLY & PRODUCING SAMPLES
	USER NEEDS / TARGET AUDIENCE		DESIGNING FOR CLIENT	DESIGNING FOR ERGONOMICS	HEALTHY EATING RECIPES FOR TEENS	DESIGNING FOR A PIZZA COMPANY	DESINING FOR STUDENTS
	DESIGN SPECIFICATION / BRIEF	SPECIFICED IN PROJECT		SPECIFIED IN PROJECT	SPECIFIED IN PROJECT	SPECIFIED IN PROJECT	SPECIFIED IN PROJECT
	RESEARCH MATERIALS / PROCESSES	TIMBERS RESEARCH TASK	RESEARCH POLYMERS / CATEGORISATION?	PROCESS / SKILLS TASKS IN BOOKLET.			FIBRES AND FABRICS RESEARCH
	UNDERSTAND DIFFERENT CULTURES	KEY DESIGNERS / INFLUENCE	DESIGN MOVEMENTS		HEALTHY EATING & NUTRITION	FOOD AVAILABILTY & SEASONALITY	BLOCK PRINTING (LESSON ON INDIAN DESIGN)
AO2: DESIGN & MAKE PROTOYPES THAT ARE FIT FOR PURPOSE (DESIGN & MAKE)	***DESIGNING – CONCEPTS***	DESIGN IDEAS & FINAL DEVELOPMENT	DESIGN IDEAS & FINAL DEVELOPMENT	DESIGN IDEAS (SCRUFFITI) & ITERATIVE DEVELOPMENT	JAM TART DESIGN & PLANNING	HEALTHY LUNCH DESIGN PIZZA DESIGN	USE OF MANNEQUIN (CROQUIS)
	DESIGNING – PROJECTIONS	ORTHOGRAPHIC PROJECTION FINAL DESIGN	EXPLODED DRAWING / 3D PROJECTION	ORTHOGRAPHIC PROJECTION FINAL DESIGN			SURFACE / PATTERN DESIGN
	DESIGNING - CAD KEY SKILLS	CUSTOMISING FRAME – VECTORISIING	CAD SAMPLES – KEY SKILLS & TOOLS IN 2D DESIGN MPLES –				
	MODELLING / PROTOTYPING /SAMPLES / TESTING MATERIALS	WOOD JOINT	CAM MODELLING – USE OF LASER	ERGONOMIC MODELLING & TESTING			HEM SAMPLE BLOCK PRINT SAMPLE
	PROTOTYPE / FINAL PRODUCT	PINE MITER JOINTED PICTURE FRAME	INDIVIDUAL ACRYLIC CLOCK	VACUUM FORMED / PCB POCKET TORCH	RECIPES THROUGHOUT & FINAL ASSESSED SKILL DISH	RECIPES THROUGHOUT & FINAL ASSESSED SKILL DISH	CONSTRUCTED / EMBELLISHED APRON
	DEVELOPMENT – CAD	CUSTOMISING FRAME DETAILS (EXTENSION)	FINAL DESIGN – CAD DEVELOPMENT				
	CAM DEVELOPMENT & FINAL PRODUCT	CUSTOMISING FRAME DETAILS (EXTENSION)	USE OF LASER – CLOCK FINAL PRODUCT				
	MECHANICAL SYSTEMS						
	ELECTRONIC SYSTEMS			SOLDERING – PCB			
AO3: EVALUATION AND TESTING (EVALUATE)	***SOLVE DESIGN ISSUES THROUGHOUT***	PRACTICAL DEVELOPMENT – WOOD JOINTS & ASSEMBLY	PRACTICAL DEVELOPMENT- CAD / CAM	PRACTICAL DEVELOPMENT – MULTIPLE SKILLS	PROBLEM SOLVING RECIPES & FOLLOWING METHODS	PROBLEM SOLVING RECIPES & FOLLLOWING METHODS	SAMPLES, DESINING, TESTING & DEVELOPMENT
	TESTING & EVALUATION	EVALUATION OF BRIEF, PRACTICAL SKILLS & FINAL	EVALUATION OF WORK OF OTHERS, CAD /CAM & FINAL	EVALUTAION OF KEY PROCESS, ERGONOMICS & FINAL	THROUGHOUT PRACTICALS & IN KEY SKILL DISHES	THROUGHOUT PRACTICALS & IN KEY SKILL DISHES	THROUGHOUT – DESIGN / MAKE / EVALUATE FINAL
	TECHNICAL PRINCIPALS IN DESIGING & MAKING	THROUGHOUT ALL DESIGN TASKS & ASSESSED	THROUGHOUT ALL DESIGN TASKS & ASSESSED	THROUGHOUT ALL DESIGN TASKS & ASSESSED	USE OF VARIOUS SKILLS PROCESSES IN PRACTICALS	USE OF VARIOUS SKILLS PROCESSES IN PRACTICALS	SEWING MACHINE TEST, TEXTILE DESIGN.
	THEORETCIAL UNDERSTANDING OF MATERIALS & PROPERTIES.	TIMBERS RESEARCH, DNA, SUM IT UP & LITERACY TASKS.	MATERIALS RESEARCH, DNAS, SUM IT UP & KEY PROCESSES	PRODUCT DISSASEMBLY, PROCESS TASKS &			MATERIALS – FIBRES AND FABRICS
PRACTICAL SKILLS: Process & Techniques	***SPECIALIST TOOLS***	Hand tools: Tenon Saws, sanding machines, marking tools. Mitre saws.	2D design, Mercury Laser, assembly of mechanisms.	Hand tools & Sanding (MDF former)	Knives, ovens, food processors & blenders	Knives, ovens, food processors, frying & use of hob	Irons, sewing machines, needles, pins & stitch rippers.
	SPECIALIST TECHNIQUES	Marking out, use of hand tools & safe machinery use.	2D design: Shape tools, contour, boundary fill, line tool, copy, delete tools.	Soldering, vacuum forming, wasting & abrading, drilling and finishing.	Knife skills, use of ovens, hob, pastry, bread	Refining skills – knife use, independence in ovens / hob.	Sewing machine, construction, decorative & ironing.
	SPECIALIST PROCESSES	Sanding / abrading. Mitre Joints, Gluing & Assembly, Waxing & staining.	Use of CAD / CAM (2d Design). Adhesives (Tensol Cement)	As above & drawing / communication techniques	Frying, baking,		Hemming, pattern cutting, block printing.
	USE OF MATERIALS / INGREDIENTS	Pine, mixed materials, hardwood.	Acrylic.	HIPS, MDF former, PCB & key electronic components.	Various – according to recipes	Various - according to recipes	Woven materials, fabric paint, accurate sewing machine.
SKILLS BUILDER 8 KEY SKILLS Links to careers skills and building blocks across school wide curriculum	1. Listening (Listening to Teacher Demo / peer feedback / peer support / following instructions for H&S)	X	X	X	X	X	X
	2. Speaking (Explaining processes / Peer teaching)	X		X	X	X	X
	3. Problem solving (Design, making & practical tasks)		X	X	X	X	X
	4. Creativity (Diversity in design, designing for clients, pattern design, planning dishes)	X	X	X	X	X	X
	5. Staying Positive (resilience in al aspects)	X	X	X	X	X	X
	6. Aiming High (challenge in projects & tasks)	X	X	X	X	X	X
	7. Leadership (peer teaching, peer activities)	X	X	X	X	X	
	8. Teamwork (collaborative learning & activities)		X	X	X	X	X

YEAR 7 – OVERVIEW / SEQUENCE OF PROJECTS

YEAR 7 – all students in the first lesson to complete a baseline test assessing prior skills and knowledge. Work to be marked by teacher or peer assessed to determine final score. Currently year 7 students complete a range of projects (6 in total across all specialisms) spreading across material groups of timber and polymers, textiles and food. Projects are completed termly, with either a Product Design and Textiles, or Product Design and Food being taught simultaneously and split across single / double lessons.

Each project contains 3 assessments – one each half term, either set in class or as an extended homework. The third assessment is of the final product upon completion of the project.

	TERM 1		TERM 2		TERM 3	
	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	WEEK 1 BASE LINE / INTRO TO DT – health & safety / rules and routines					

MODULE 1 / TERM 1

PRODUCT DESIGN: HIPS Torch

- **DESIGN:**
  - Designing for function & ergonomics / anthropometrics.
  - Completion of annotated sketches and introduction in to orthographic projection.
  - Specification to consider user needs and function of final product.
- **MAKE /MODEL:**
  - Using card to model templates for shape of torch then used as a template for cutting.
  - MDF formers, use of hand tools and machines for cutting and sanding.
  - thermo treatments / drilling / gluing / cutting
  - Electronics – basic circuitry, soldering & components.
- **EVALUATE:**
  - Evaluation of final product against specification & processes used to manufacture product.
- **TECHNICAL KNOWLEGDE:**
  - **Plastics / Electronics focus**. Understanding categorisation of polymers and woods / manufactured boards, components in electronics.
  - **Recognition of Materials:** Polymers – thermo / thermoset plastics, manufactured boards (MDF)

ASSESSMENTS:

1. Design Development – Modelling & iterative design. (HT1)
2. Final Design – Orthographic Projection (HT2)
3. Final Product – HIPS torch with full circuit & casing. (End of Project)

TEXTILES: TUTTI FRUITTI APRON

- **DESIGN:**
  - Designing with parameters – calico apron with specific design & construction needs
  - Decorative design – designing to repeat patterns (surface design)

MAKE /MODEL:

- Modelling / testing sewing machine – samples of sewing machine test & competency.
- Testing & modelling block printing
- Samples: Hem sample & block printing sample on calico
- Final make: Calico apron with construction techniques (hemming & pocket) and Decorative technique (block printing & surface pattern)

- **EVALUATE:**
  - Evaluation at key processes throughout project: Sewing machine test success / Hem sample / block printing sample
  - Evaluation of existing products in product analysis
  - Evaluation of design ideas & development
  - Evaluation of final product against specification & processes used to manufacture product.
- **TECHNICAL KNOWLEGDE:**
  - **Fibres and fabrics:** Natural and synthetic fibres
  - **Construction of fabrics:** knitted / woven / bonded

ASSESSMENTS:

1. Materials research – fibres and fabrics (HT1)
2. Final Design – Using a croquis to develop a design for clothing (HT2)
3. Final Product – Final apron, with full sewing / construction and decorative techniques included. (End of Project)

MODULE 2 / TERM 2

CAD /CAM: Memphis Clock Design

- **DESIGN:**
  - Designing within set parameters to understand use of materials and designer focus. Students create unique / individual products based on the design movement Memphis.
  - Design products using CAD – 2D design software.
- **MAKE /MODEL:**
  - Collaborative production: use of laser cutter, independent use of laser to manufacture final product.
  - Use of adhesives to assemble product & fix clock mechanism to product.
- **EVALUATE:**
  - Research and evaluate the work of key designers & Memphis era
  - Evaluate through making, production plans and logs to evaluate practical
  - Final evaluation of product.
- **TECHNICAL KNOWLEGDE:**
  - Use of CAD / CAM & scales of production
  - Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.
  - H&S in the workshop

ASSESSMENTS:
1. Design Movement research – Memphis (HT1)
2. Final Design – Exploded Diagrams and Isometric Projection (HT2)
3. Final Product – Acrylic clock, as per individual design CAD / CAM (End of Project)

FOOD 1 – TUTTI FRUITT RECIPES

- **DESIGN:**
  - Design & develop final skill assessment – Jam Tarts
  - Customise / design presentation of a range of set practical dishes / recipes
- **MAKE /MODEL:**
  - Follow methods to create / develop a range of recipes, supporting development of a range of basic skills and introduction to key techniques and processes in the kitchen.
- **EVALUATE:**
  - Evaluate throughout practicals, following key skills demonstrated by teacher and ensuring quality / as intended final outcome for each recipe
  - Evaluate the work of others in set research task – local eatery research
  - Evaluate final major skills dish – self and peer assessment / evaluation.
- **TECHNICAL KNOWLEGDE:**
  - Health and Safety in the kitchen
  - Food Hygiene and routines
  - Key terms and equipment

ASSESSMENTS:
1. Research – Local Eatery (HT1)
2. Recipe Development & planning – Jam Tarts (HT2)
3. Final Product / skills dish: Jam tarts – Pastry, batch production. (End of project)

MODULE 3 /

PRODUCT DESIGN: Designer Wood Picture Frame

- **DESIGN:**
  - Designing for user centred design – theme / user needs & wants and designer profile
  - Development of initial ideas, and to planning of final design.
  - Designing with parameters
- **MAKE /MODEL:**
  - Mitre frame – use of mitre saws, marking out tools and sanding to tolerance
  - Wood joints / practical focus introducing cutting / sanding / finishing processes.
  - Use of a range of hand tools, and machinery in the workshop
- **EVALUATE:**
  - Evaluation of design developments

- Evaluation / research into user needs (mood board and client profile)
- Designing & evaluation of initial ideas.

- **TECHNICAL KNOWLEGDE:**
  - Theory of wood joints (Practical)
  - Recognition of materials & sources – timbers / boards and polymers.
  - H&S in the workshop.
  - Final Design – fully annotated to recognise parts, joints, tools to use.
  - CAD / CAM extension to create acrylic designs to fix to frame for customization .

ASSESSMENTS:

1. Materials research – Sources and categorisation of timbers (HT1)
2. Final Design – Isometric projection & rendering communication techniques. (HT2)
3. Final Product –Pine picture frame based on the work of designer. (End of Project)

FOOD 2 – ALFRESCO RECIPES

- **DESIGN:**
  - Design and develop a children's pizza for a local pizza company
  - Customise / design presentation of a range of set practicals
- **MAKE /MODEL:**
  - Follow methods to create / develop a range of recipes, supporting refinement / mastery of skills from food 1 and confidence in using key equipment and processes independently.
- **EVALUATE:**
  - Evaluate throughout practicals, following key skills demonstrated by teacher and ensuring quality / as intended final outcome for each recipe
  - Evaluate the work of others in mood board & development of pizza design
  - Evaluate final major skills dish – self and peer assessment / evaluation
- **TECHNICAL KNOWLEGDE:**
  - Healthy eating & the Eatwell guide
  - Food origins and provenance
  - Food labelling (introduction)

ASSESSMENTS:

1. Design / research – Healthy Eating Flyer (HT1)
2. Recipe development & planning – Children's Pizza design (HT2)
3. Final Product / skills dish: Final Pizza (hand made dough and presentation as per design). (End of Project).

YEAR 8 DT PROVISON:		PRODUCT DESIGN / ARCHITECTURE			FOOD AND NUTRITION / TEXTILES		
ASSESSMENT OBJECTIVES & DT PRINCIPLES	**PROJECT / CURRICULUM CONTENT (LINKED TO NC AND AO'S FROM KS4 PROGRESSION)**	**PD- LEGO HERO!**	**PD – ACRYLIC NIGHT LIGHT**	**ARCHITECTURE / PD – RESCUE SHELTER**	**DELICIOUS RECIPES!**	**FOOD AROUND THE WORLD**	**LITERACY PATCHWORK CUSHION**
AO1: IDENTIFY DESIGN POSSIBILITIES (RESEARCH)	***RESEARCH & INVESTIGATION: PRODUCT ANALYSIS / WORK OF OTHERS / PRODUCT DISSASEMBLY***	PRODUCT DISSASEMBLY – EXISTING PRODUCT	WORK OF OTHERS – DESIGNER RESEARCH	RESEARCHIGN NATURAL DISASTERS & SUSTAINABLE DESIGN	WORK OF OTHERS – FAMOUS CHEF RESEARCH	WORK OF OTHERS – PRODUCERS / FAMERS IN FAIRTRADE	GENRE RESEARCH, REVISION OF KET MATERIALS
	USER NEEDS / TARGET AUDIENCE	DESIGNING FOR USER – LEGO HERO	DESIGNING FOR USER – CLIENT PROFILE & TASK ANALYSIS	DESIGNING FOR SPECIFIC BRIEF – USER NEEDS	HEALTHY EATING RECIPES	FOOD CULTURES & RELIGIONS	CLIENT PROFILE / DESIGNING FOR CLIENT
	DESIGN SPECIFICATION / BRIEF	WRITING A FULL SPECIFICATION USING ACCESS FMM	DESINING TO THE SET BRIEF	IDENTIFIED AND SET AS PROJECT BRIEF & SITUATION			DESIGNING TO PROJECT BRIEF
	RESEARCH MATERIALS		PROCESSES AND TECHNIQUES KNOWLEDGE				
	UNDERSTAND DIFFERENT CULTURES			WORLD WIDE DISASTERS / AREAS OF CONFILICT	SPECIALIST DIETS / FOODS	FOOD CULUTRES / RELIGIOUS DIETS	READING CULTURES & LOVE OF READING
AO2: DESIGN & MAKE PROTOYPES THAT ARE FIT FOR PURPOSE (DESIGN & MAKE)	***DESIGNING – CONCEPTS***	DESIGN CONCEPTS / IDEAS	DESIGN CONCEPTS & DEVELOPMENT	CONCEPT IDEAS – ARCHITECTURAL KEY DESIGNERS			DESIGNING A RANGE OF CONCEPTS
	DESIGNING – PROJECTIONS	DESIGNING FINAL PRODUCT & PARTS LIST	ISOMETRIC & ORTHOGRAPHIC PROJECTION – FINAL DESIGN	DRAWING LAYOUTS – BIRDS EYE & CAD PROJECTIONS			EXPLODED / CONSTRCUTION SKETCHES
	DESIGNING CAD KEY SKILLS	CAD CAM ELEMENTS (EXTENSION)	CAD DEVELOPMENT – 2D DESIGN: VECTORISING & CONTOUR	USE OF SKETCHUP – NEW SKILLS AND TOOLS – FOLLOW TUTORIAL			
	MODELLING / PROTOTYPING /SAMPLES / TESTING MATERIALS		MODELLING WITH CARD -TESTING SCALE AND PROPORTIONS	TESTING / DEVELOPING INTIAL FLOOR PANS	TESTING – FOOD SCIENCE – EGGS	TESTING – FOOD SCIENCE – BREAD – RASIING AGENTS	SAMPLES – APPLIQUE, PATCHWORK & HEMMING
	PROTOTYPE / FINAL PRODUCT	PINE LEGO HERO	THERMO FORMED / ELECTRONIC NIGHT LIGHT	FINAL PRODUCT – CAD SIMULATION RESCUE SHELTER	FINAL SKILL DISH – QUICHE	FINAL SKILL DISH – ARTISAN FOCCACIA	PATCHWORK / APPLIQUE CUSHION
	DEVELOPMENT – CAD	CAD / CAM EXTENSION	CAD DEVELOPMENT FOR TOP	GOOGLE SKETCH UP – INITIAL IDEAS TO FINAL SIMULATION			
	CAM DEVELOPMENT & FINAL PRODUCT	CAD CAM EXTENSION	USE OF LASER TO DEVELOP TOP FOR LIGHT – USE OF MACHINE	SUPERINPOSING CAD DRAWING INTO RENDERED BACKGROUND			
	MECHANICAL SYSTEMS	MOTION & MOVEMENT OF PRODUCT - DISSASEMBLY					
	ELECTRONIC SYSTEMS	-	SODERING, BASIC CIRCUITRY TO DEVELOP LED / SWITCH CIRCUIT				
AO3: EVALUATION AND TESTING (EVALUATE)	***SOLVE DESIGN ISSUES THROUGHOUT***	WORKING WITH ACCURACY & TOLERANCE	DEVELOPING A RANGE OF COMPONENTS FOR PRODUCT	DESIGNING USING NEW PRORGRAMS AND NEEDS OF USER	DEVELOPING VARIOUS RECIPES & FOLLOWING METHOD	DEVELOPING VARIOUS RECIPES & FOLLOWING METHOD	DESINGING FOR CLIENT & PRACTICAL DEVELOPMENT
	TESTING & EVALUATION	TESTING THROUGHOUT PROJECT – ITERATIVE & FINAL	TESTING / MODELLING EVALUATION OF FINAL PRODUCT.	CONSISTENT THROUGHOUT PROJECT & OF FINAL PRODUCT	TESTING FINAL PRODUCTS	TESTING FINAL PRODUCTS	TESTING SAMPES, FINAL EVALUATION OF CUSHION
	TECHNICAL PRINCIPALS IN DESIGING & MAKING	USE OF JIGS, DRILLING, WASTING & ABRADING	THERMO FORMING, METAL SHAPING, ELECTRONICS	ARCHITECTURAL & COMMUNICATION PRINCIPLES	PLANNING & DESIGNING FINAL RECIPE - QUICHE	PLANNING & DESIGNING FINAL RECIPE – ARTISAN FOCCACIA	DESIGNING FURNISHINGS – TEXTILE DESIGN
	THEORETCIAL UNDERSTANDING OF MATERIALS & PROPERTIES.	REVISON OF KEY MATERIALS, TIMBERS & TEXTILES.	REVISION OF KEY MATERIALS & TECHNICAL SKILLS				REVISION OF MATERIALS – fibres and fabrics
PRACTICAL SKILLS: Process & Techniques	***SPECIALIST TOOLS***	Drilling, sanding machines, hand tools, jigs, marking gauges & tools, fret saw	Soldering, 2d design, laser cutting, drilling metals, metal bender, line bender.	Google sketch up / photoshop	Use of ovens, hob, mastering knife skills & accuracy	Use of ovens, hob, mastering knife skills & accuracy	Irons, sewing machines, fabric shears, dye cutter
	SPECIALIST TECHNIQUES & PROCESSES	Use of jigs, marking out in tolerances, use of machinery	Soldering, metal forming / shaping, riveting, cad/cam, thermo forming	Architectural rendeinrg, cad simulation	Pastry development, working with eggs, baking & raising agents	Food science – bread Food science – meat Frying, marinating	Applique, patchwork, hemming, use of templates & dye cuts
	USE OF MATERIALS / INGREDIENTS	Pine, plywood, mdf, textiles	Acrylic, aluminium, circuitry	-	Various according to set practicals.	Various according to set practicals.	Polycotton, bonda web, felt
SKILLS BUILDER 8 KEY SKILLS Links to careers skills and building blocks across school wide curriculum	Listening (Listening to Teacher Demo / peer feedback / peer support / following instructions for H&S)	X	X	X	X	X	X
	Speaking (Explaining processes / Peer teaching)	X		X	X	X	X
	Problem solving (Design, making & practical tasks)	X	X	X	X	X	X
	Creativity (Diversity in design, designing for clients, pattern design, planning dishes)	X	X	X	X	X	X
	Staying Positive (resilience in all aspects)	X	X	X	X	X	X
	Aiming High (challenge in projects & tasks)	X	X	X	X	X	X
	Leadership (peer teaching, peer activities)	X	X	X	X	X	X
	Teamwork (collaborative learning & activities)	X	X	X	X	X	X

YEAR 8

Students complete **3** projects within **DT PRODUCT DESIGN**, building upon prior experience in year 7, stretching their understanding of processes in the workshop, as well as developing a more detailed understanding of material properties, design processes & design history. As in year 7, projects across all specialisms are completed in parallel across 2 main areas – Product Design/ Architecture and Food / Textiles.

3 key assessments per project are completed – one per half term (Research / Designing) which are fully DIRt'd and feedback given using assessment criteria. The final assessment is based on the final product / skills dish at the end of each project.

	TERM 1		TERM 2		TERM 3	
	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2

MODULE 1 / TERM 1

PRODUCT DESIGN: Night Light (polymers)

- **DESIGN:**
  - Design a within parameters & to specific brief
  - Using CAD to develop customised 'top' for night light
- **MAKE /MODEL:**
  - Modelling using paper / block modelling & customising to tolerances
  - Planning & developing final design using modelling
  - Use of soldering / electronics to develop circuitry for product
  - Thermo forming processes – line bending of acrylic
  - Nets and 2D – 3D realisation
  - Metal shaping – forming aluminium
  - Fixings and components – rivets, screws
- **EVALUATE:**
  - Evaluate key processes throughout project
  - Modelling / Testing & evaluation of development
  - Self / peer assessment of design development
  - Self-assessment of final product
- **TECHNICAL KNOWLEGDE:**
  - Designer research – design history & key designer influences
  - Core technical skills – thermo forming, CAD CAM, Electronics
  - Core technical principles – modelling, designing to projections, categorisation of polymers

ASSESSMENTS:

1. Designer Research – Range of GCSE DT approved designers to choose from & inspire designs.

2. Final Proposal – Exploded Diagrams and Isometric Projection

3. Final Product – Acrylic CAD developed Night light & electronic components.

TEXTILES: Literacy focused patchwork cushion

- **DESIGN:**
  - Working for a set brief – designing and making a patchwork cushion for the schools LRC.
  - Literacy focus – ideas must be based on a key novel, book, or genre to inspire a 'love of reading'
  - Design to parameters – designs must include construction techniques and a range of decorative processes (patchwork, hemming, applique, and embroidery)
- **MAKE /MODEL:**
  - **Samples / modelling –** 2x applique (simple with felt & challenge with bonda web)
  - **Samples / modelling –** patchwork sample (right sides together, use of checker board colours)
  - Using techniques and processes to develop final product – focus on developing skills and use of sewing machine accuracy and competency from year 7
  - Recap (for some groups) on Sewing machine test
  - Use of hot tools. sewing machine, fabric shears, dye cutter and hand tools.

	• **EVALUATE:** - Evaluating samples / processes - Self-assessment of design research – impact on design ideas - Self and Peer assessment of design development - Self-assessment of final product. • **TECHNICAL KNOWLEGDE:** - Decorative techniques – applique / embroidery / dye cutting - Construction techniques – hemming, patchwork, templates - H&S of using textiles equipment safely - Fibres and fabrics (revision) from year 7 to design using a range of materials – polycotton (woven) felt (bonded) **ASSESSMENTS:** **1. Design research – Genre Research to inform designing.** **2. Final Design – Patchwork Cushion design development.** **3. Final Product – Patchwork cushion as per final design.**		
MODULE 2 / TERM 2		**PRODUCT DESIGN: Lego Hero!** • **DESIGN:** - Designing for client / user - Designing for specific brief – Lego Hero! - Design using different projections and using high level communication techniques to develop final proposal for manufacture. • **MAKE /MODEL:** - Using a range of tools and processes to develop components for main Lego hero - Drilling, wasting and abrading, marking out, use of templates and jigs, finishing processes and customisation. • **EVALUATE:** - Evaluation of design ideas – final development - Evaluate existing products in product disassembly - Self-assessment – design ideas - Self-assessment – manufacturing processes - Self-assessment & evaluation – final product - • **TECHNICAL KNOWLEGDE:** - Motions and movements – reciprocal, oscillating, etc. - Core Skills – manufacturing processes & use of tools - Communication of design ideas – use of drawing techniques and projections. **ASSESSMENTS:** **1. Product Disassembly – double page of disassembly of existing products** **2. Design Development – Iterative design, concepts and final proposal.** **3. Final Product – Functional and customised as per design – Lego Hero toy.** **FOOD 1 – Delicious! Recipes** • **DESIGN:** - Design final quiche – customising for own dietary requirements & flavour combinations - Develop set recipes throughout practicals – customising dishes • **MAKE /MODEL:** - Time planning – shortcrust pastry (for final quiche skills dish) - Making range of dishes as per set practicals – customisation & development - Final practical – quiche skills dish • **EVALUATE:** - Evaluate recipes & practicals throughout - Self-assessment – famous chef research - Self-assessment – special diets research - Final skills dish – evaluation against success criteria • **TECHNICAL KNOWLEGDE:** - Recap H&S rules and kitchen routines	

		- Eatwell guide (revision from year 7) - Work of others – famous chefs - Energy & Nutrients - Food labelling & Adverse reactions to food **ASSESSMENTS:** **1. Work of others – Famous Chef Research / case study** **2. Specialist Diets Research** **3. Final Product / Skills Dish - Quiche**	
MODULE 3 / TERM 3			**ARCHITECTURE / PD: Rescue Shelter** • **DESIGN:** - Develop core graphics / designing skills with architecture emphasis - Use of standardised components / BSI design rules to develop designs for specific brief - Designing for users – architectural design for rescue shelter - Designing to scale • **MAKE /MODEL:** - Development of skills in using CAD simulation to communicate designs - Use of tools / processes in Google SketchUp to develop initial concept into final design - Rendering using CAD to develop realistic designs. • **EVALUATE:** - Designing – evaluating the needs of the user & creating effective design proposals - Evaluation of systems and building developments to support design ideas - Evaluating the needs of users to develop a functioning environment for those displaced by natural disaster. • **TECHNICAL KNOWLEGDE:** - CAD skill development on Google Sketch up - Communication techniques – designing architecturally **ASSESSMENTS:** **1. Natural Disasters Research** **2. Final Design – use of architectural and key designing tools** **3. Final Product – CAD developed simulation of final rescue shelter using Google SketchUp.** **FOOD 2: Food Around the World** • **DESIGN:** - Design final artisan focaccia – customising for own dietary requirements & flavour combinations. Emphasis on presentation of toppings. - Develop set recipes throughout practicals – customising dishes • **MAKE /MODEL:** - Time planning / food science – bread making - Making range of dishes as per set practicals – customisation & development - Final practical – quiche skills dish • **EVALUATE:** - Evaluate recipes & practicals throughout - Self-assessment – Fair trade – impact on food production - Self-assessment – food from around the world - Final skills dish – evaluation against success criteria • **TECHNICAL KNOWLEGDE:** - Food science – Meat - Food science – Bread - Food provenance & food miles - Fairtrade - Religious diets **ASSESSMENTS:** **1. Fairtrade Poster**

			2. Food around the World Case study 3. Final Product / Skills Dish – Artisan Focaccia Bread

YEAR 7 OVERVIEW OF PROJECTS:

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