

KS3 Design & Technology / Food Technology - Curriculum Overview

Curriculum Intent		
<p>In DT students use enquiry and decision-making skills to generate purposeful and meaningful design ideas for artifacts or dishes which can be created using tools, machines and/or equipment.</p> <p>DT is characterised by a design process approach. Investigate > Generate ideas > Develop ideas > Make a prototype > Test and Evaluate</p>		
How is this curriculum assessed at THA?	Cross Curricular Links	How this prepares students for their next stage of education/employment
<p>In KS3 projects, learning outcomes and success criteria are informed by the end of key stage descriptor as per the KS3 National Curriculum. This in turn has been developed into a grading rubric which describes what skills a students would typically demonstrate at their age. Student work is judged against that and a grade in the form of one of five letters that reflects whether they are below, at or above expected performance. Student portfolios have a topic specific rubric on the front cover which teacher use to arrive at a best fit grade. Since the y7&8 DT/FT curriculum is arranged as a 4- fold internal rotation, subsequent teachers use student's previous attainment for their next steps.</p>	<p>The Art departments delivers the DT Textiles topic in y7&8, ¼ of the school year for y7&8.</p> <p>Some y7&8 lessons are delivered by teachers from the Art & PE departments.</p>	<p>In DT, student will acquire skills and knowledge and attitudes which are referenced back to throughout their 5 year journey, in order to reinforce them and to broaden and deepen them to use in new context/projects. As such, an effective learning experience in KS3 DT provides the best foundation for success at GCSE DT.</p>
	Enrichment Opportunities	Resources/Materials to Support Learning
	<p>The department is exploring enrichment activities for KS3 or 2023-24, such as guest speakers/designers.</p>	<p>Created by department: PowerPoint presentation & booklet to do and record activities. The technician prepares materials. The FT teacher orders foodstuffs.</p>

	Rotation 1	Rotation 2	Rotation 3	Rotation 4
Year 7	DT Topic 1: Wriggle - Wobble toy	DT Topic 2: Let's make some noise - Make a Clacker	Textiles Topic: Tote bag	FT Topic: Welcome to the kitchen! – Introduction to Food Technology
	Key Knowledge: <ul style="list-style-type: none"> • Research, design and make a wooden toy with moving parts, inspired by animal skeletons. • Learn how design often copies nature. • Names of tools/machines • Hazards & precautions • Working with millimeters 	Key Knowledge: <ul style="list-style-type: none"> • Historical use for a rattle (football, nightwatchmen, Judaic folklore) • Names of tools/machines • Names of CAD tools. • Hazards & precautions 	Key Knowledge: <ul style="list-style-type: none"> • Research • Environmental impact of textiles/fashion • Use of symbols/logos/images • Textiles construction techniques • Hazards & precautions 	Key Knowledge: <ul style="list-style-type: none"> • Nutrition • Health & Safety • Food hygiene • Food provenance (International cuisines) • Economic Cooking • Range of technical cooking skills • Food science (e.g., raising agents)
	Key skills: Measuring & marking out Designing Sawing Drilling Filling Reflection/evaluation Working safely and considerately	Key Skills: Measuring and marking out Designing 2D model making Saving & uploading computer files Sawing, drilling, gluing Reflection/evaluation Extension: 2D CAD Working safely and considerately	Key Skills: Threading sewing machine Pattern cutting Generating design Applique Reflection/evaluation Working safely and considerately	Key Skills: Safe and hygienic practice within the kitchen Frying, baking, sauteing and boiling foods. Claw and bridge method for chopping/slicing. Accurate measuring of ingredients. Mixing and stirring. Understanding how to season food. Making a salad dressing. Taste testing Evaluation of skills proficiency Collaboration & taking responsibility.
	Assessment: Formative assessment: Verbal by teacher/peers Summative assessment: Skills assessed against the grading matrix. Knowledge through questioning. End of topic quiz	Assessment: Formative assessment: Verbal by teacher/peers Summative assessment: Skills assessed against the grading matrix. Knowledge through questioning. End of topic quiz	Assessment: Formative assessment: Verbal by teacher/peers Summative assessment: Skills assessed against the grading matrix. Knowledge through questioning. End of topic quiz	Assessment: Formative assessment: Verbal by teacher/peers Summative assessment: Skills assessed against the grading matrix. Knowledge through questioning. End of topic quiz
	DT Topic 1:	DT Topic 2:	Textiles Topic:	FT Topic:

Year 8	Night light - Edge lit plastics	Steady hand game	Japanese Kites	Topic
	<p>Key Knowledge:</p> <ul style="list-style-type: none"> Recognise and draw fundamental electronic components & symbols Name a wood joint: lap joint Know the use of line colours in CAD to assign roles to the laser cutter Hazards and precautions when soldering. Know that acrylic plastic can transmit light from an LED 	<p>Key Knowledge:</p> <ul style="list-style-type: none"> Know the mission of a range of charities Recognise and draw further electronic components Know that acrylic plastic can be bend once heated and then sets. Name and describe MDF Vs Plywood Hazards & precautions 	<p>Key Knowledge:</p> <ul style="list-style-type: none"> Research Japanese kites Japanese culture Sewing vocabulary Kite construction vocab Typography Hazards & precaution 	<p>Key Knowledge:</p> <ul style="list-style-type: none"> Nutrition Health & Safety Food hygiene Food provenance (International cuisines) Economic Cooking Range of technical cooking skills Further food science (e.g., raising agents) Thickening agents and how to use them. Tenderising meats.
	<p>Key Skills:</p> <p>Researching existing products Measuring and marking out Designing 2D model making Draw an electronic circuit diagram Further 2D CAD Soldering Sawing Hot glue gun Reflection/evaluation Ext: computer simulation of elec. Circuit Working safely and considerately</p>	<p>Key Skills:</p> <p>Researching charities Hammering in nails Designing & refining Drilling Soldering Strip heating & line bending acrylic plastic Moulding a handle Screwing Using a hot glue gun Reflection/Evaluation Working safely and considerately</p>	<p>Key Skills:</p> <p>Making stencils Cutting stencils Marking out Apply registration marks Designing Silk screen printing Sewing machine skills Fixing Reflection/Evaluation Working safely and considerately</p>	<p>Key Skills:</p> <p>Safe and hygienic practice within the kitchen Working safely and considerately Frying, baking, grilling, grating, thickening, and creaming Tenderising tough and cheaper meats through cutting (against the grain, thinly). Learning diverse ways of using cooking tools and equipment. Ways of making a variety of sauces/dressings. Evaluation of skills proficiency Collaboration & taking responsibility.</p>
	<p>Assessment</p> <p>Formative assessment: Verbal by teacher/peers Summative: Skills assessed against the grading matrix. Knowledge through questioning. End of topic quiz</p>	<p>Assessment</p> <p>Formative assessment: Verbal by teacher/peers Summative: Skills assessed against the grading matrix. Knowledge through questioning. End of topic quiz</p>	<p>Assessment</p> <p>Formative assessment: Verbal by teacher/peers Summative: Skills assessed against the grading matrix. Knowledge through questioning. End of topic quiz</p>	<p>Assessment</p> <p>Formative assessment: Verbal by teacher/peers Summative: Skills assessed against the grading matrix. Knowledge through questioning. End of topic quiz</p>

Year 9 Design & Technology	Term 1: Three Part Mystery Puzzle	Term 2: Christmas votive & Cookie cutter	Term 3: Key fob & Pendant	Term 4: Whirligigs	Term 5: Cam Toy	Term 6: Electro Broach
	Key Knowledge: <ul style="list-style-type: none"> • Can recognise and name blister packaging • Recognise packaging symbols • Key vocabulary when vacuum forming • Names of tools in 3D CAD • Hazards & precautions 	Key Knowledge: <ul style="list-style-type: none"> • Know input parameters for online design tools. • Know how light can be used to shape the experience of an indoor environment • Further knowledge of 3D CAD software • Understanding of work flow from 3D design to object created by 3D printer • Understanding use of and limitations of rapid prototyping. 	Key Knowledge: <ul style="list-style-type: none"> • Can name 4 scale of production with typical examples. • Can describe the process of injection moulding, typical products and materials • Can describe the process of pewter casting • Hazards and Precautions 	Key Knowledge: <ul style="list-style-type: none"> • Can describe how aeolian wind generators produce electricity • Can say how these affect the natural environment • Can name a crank and follower • Hazards & precautions 	Key Knowledge: <ul style="list-style-type: none"> • Can name different cams and followers and explain their use. • Hazards & precautions 	Key Knowledge: <ul style="list-style-type: none"> • Can name different programmable boards (MicroBit, Raspberry Pi) • Can name function of programming commands • Can describe workflow from programming to working embedded circuit.
Key Skills: <p>Create a technical drawing compliant with drawing conventions Generate and select design ideas Create packaging artwork/develop PPT skills Use the vacuum former Use a craft knife safely Work with hardwood Use a paring chisel safely. Recreate product in 3D CAD Reflection/Evaluation Working safely and considerately.</p>	Key Skills: <p>Researching & evaluating existing products. Generating design ideas. Working with design constraints Use online design tools Download and import 3D design file. Modify design file in 2D CAD: Add decorations Use Rotation tool in 2D CAD Change file type. Laser cutting Creating a plausible 3D model Using slicing software.</p>	Key Skills: <p>Researching & evaluating existing products. Identify and research a user group. Generating design ideas Working with design constraints (Specification) Create a mould with 2D/3D CAD tools Do injection moulding (keyfob) & Pewter casting (pendant) safely.</p>	Key Skills: <p>Researching & evaluating historical products. Describe how whirligigs work, mechanically. Generate and refine design ideas. Shape given parts according to parameters. Use jigs to bend metal rods. Use a former to shape heated HIPS into a propellor. Select materials and decide on shaping</p>	Key Skills: <p>Identify and research a user group. Generate and refine design ideas targeted at users Shape given parts according to parameters. Select materials and decide on shaping techniques for creative elements. Reflection/Evaluation Working safely and considerately.</p>	Key Skills: <p>Design a visual pattern with a changing sequence Program a Microbit Create a casing to make the Microbit portable/wearable Reflection/Evaluation Working safely and considerately.</p>	

		Exporting from STL to G-code. Reflection/Evaluation Working safely and considerately	Remove flashing and polish surface of pewter casting Reflection/Evaluation Working safely and considerately.	techniques for creative elements (jolly character) Reflection/Evaluation Working safely and considerately.		
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Year 9	Term 1: <u>Carbohydrates</u>	Term 2: <u>Proteins</u>	Term 3: <u>Vegetables</u>	Term 4: <u>Cooking for a clientele</u>	Term 5: <u>Breads & pastry</u>	Term 6: <u>Cooking for specific needs</u>
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Food Technology	Key Knowledge:	Key Knowledge:	Key Knowledge:	Key Knowledge:	Key Knowledge:	Key Knowledge:
	<ul style="list-style-type: none"> • Learning about staple foods. • The role of carbohydrates in the diet. • Different types of carbohydrates and where they come from. • Function and working properties of sugar and starches. • Working pasta and sauces. 	<ul style="list-style-type: none"> • Learn which food contain protein and why the biological values are important. • The role of protein within a diet. • Learn about plant-based sources of protein and animal-based sources of protein. • The effect heat has on protein as you cook them. 	<ul style="list-style-type: none"> • Learning about vegetables and how they're grown • How vegetables are processed. • How vegetables are distributed using logistics. • Looking at regional vegetables, provenance and origin. • Various ways to cook vegetables • Looking at different cuisines that focus on vegetables; e.g., Indian cuisine – vegetarian diet. 	<ul style="list-style-type: none"> • Learning to construct a balanced two course meal. • Availability of seasonal produce • Costs of produce • Plating up options. 	<ul style="list-style-type: none"> • Leaving/raising agents • Fats & oils • Sugars and salt • Aromas • Herbs & spices • Decorations • Proofing • Provenance of grains and agriculture methods • Commercial production 	<ul style="list-style-type: none"> • Learning to construct a balanced three course meal for people with specific dietary requirements • Range of dietary requirement (medical, ethical, cultural/religious)
	Key Skills:	Key Skills:	Key Skills:	Key Skills:	Key skills:	Key skills:
	<ul style="list-style-type: none"> • Working with carbs • Boiling, frying, baking foods. • Food hygiene. 	<ul style="list-style-type: none"> • How to cut different meats. • How to process meat with bones. • How to cook meats in a way to maximise protein content. • Frying. • Food hygiene. 	<ul style="list-style-type: none"> • Different ways of cooking vegetables • How to clean and prepare specific vegetables for cooking. • Indian cuisine/cooking techniques 	<ul style="list-style-type: none"> • Research 2 course meal menus from the UK and beyond. • Identify & select a clientele • Use nutritional values to propose a balanced menu 	<ul style="list-style-type: none"> • Kneading • Resting, • Proofing • contamination prevention • Bake rolls & decorate • Focacia • Cheese twists 	<ul style="list-style-type: none"> • Describe people with specific dietary needs. • Research 3 course meal menus from the UK and beyond. • Adapt recipes to suit specific dietary needs. • Use nutritional values to propose a balanced menu

