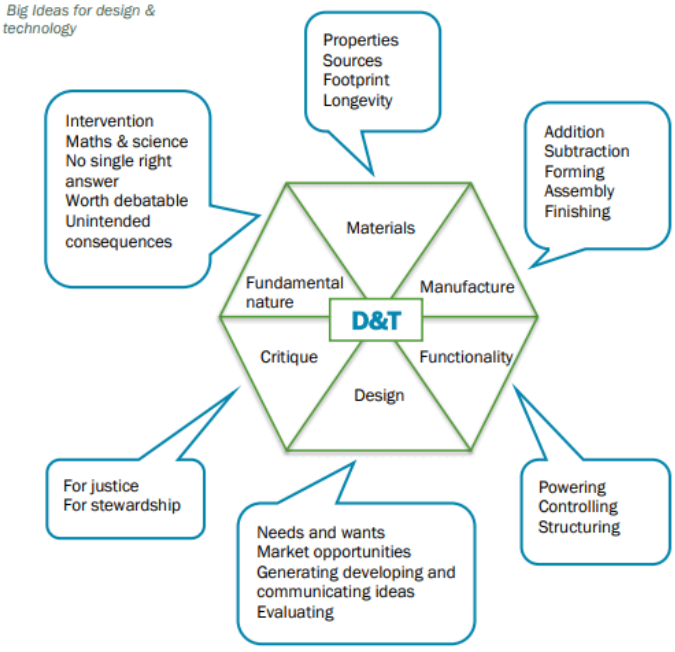


St. Sampson High School
Subject Curriculum Overview
The Design & Technology Department

Department	Design & Technology: Resistant Materials	HoD	CHS
Intent	<ul style="list-style-type: none"> · Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. · Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users. · Critique, evaluate and test their ideas and products and the work of others 		
Big Ideas	<p><i>Big Ideas for design & technology</i></p> 		
	<p style="text-align: center;">Key tier 2 and 3 vocabulary (Resistant Materials)</p> <p>Year 7 Hardwood / Softwood / Polymer / Plastic / High impact polystyrene (HIPs) / Thermoforming / Finite / Deciduous / Coniferous / Rendering / Perpendicular / Marking out / Accuracy / Try square / Tenon saw / Steel rule / Bench hook / Woodworking vice / Pillar drill / Chuck / Chuck guard / Twist drill bit / Machine vice / Belt sander / Vacuum former / Panel pins / Pin punch / Cross peen hammer / Template / Cork sanding block / Abrasive paper / Polyvinyl acetate adhesive (PVA) / Beeswax polish / Gerbil (Abrasive cutting wheel) / Health & Safety.</p> <p>Year 8 Plywood / Laminating / Veneer / Health & Safety / Coping saw / Woodworking vice / Pillar drill / Twist drill bit / Belt sander / Laser cutter /</p>		

				CAD/CAM / Accuracy / Marking out / Cork sanding block / Abrasive paper / Polyvinyl acetate (PVA) / Torque / Scroll saw / Beeswax polish / Stains / Former / Chuck / Chuck guard / Wood grain (long grain/short grain). <u>Year 9</u> Copper / Pine / Tin snips / Shearing / Junior hacksaw / Guillotine / Shear force / Gauntlets / Brazing hearth / Brazing torch / Propane / Annealing / Quench / Flux / Soldering / Silver solder / Pallion / Swarf / Burr / Punches / Planishing / Planishing hammer / Ball peen hammer / Cross-peen hammer / Anvil / Acid bath / Pickling / Sulphuric acid / Pillar dill / Chuck / Chuck guard / Forstner bit / Needle files / Files (grades: smooth/second cut/ bastard/rough. Profiles: round/half round/flat/ knife/square/3 square-triangular) / Abrafile / Metal fatigue and failure / Oxidisation / Lacquer / Beeswax polish / Health & Safety.		
Enrichment or Opportunities for out of class learning	KS3 Students are welcome to come and continue/extend their Resistant Materials work during the first half of lunch, on Tuesday or Thursday lunchtimes.					
Links to Rights Respecting School	<u>ARTICLE 12</u> Every child has a right to respect their views on matters that affect them, and for these views to be taken into consideration. <u>ARTICLE 13</u> Every child has the right to find out and distribute information and to express their ideas through talking, writing, art or any other form of expression. <u>ARTICLE 17</u> Every child has the right to find out information and material from a variety of media sources. <u>ARTICLE 31</u> Every child has the right to relax, play and take part in cultural and artistic activities.					
The key aspects of pupil achievement	Knowledge	Pupils should know the individual skills and techniques (& H&S) required to successfully create the end product.	Understanding	Pupils should understand when and how to apply these skills & techniques to achieve the desired end product.	Skills	Students should be able to demonstrate skills and techniques and employ them, safely, and independently

By age 11 students should		Knowledge	Of basic material properties (for each of the disciplines) and an awareness of basic H&S appropriate for each area.	Understanding	Understand the differences between the specialisms and have a grasp of/ experience of some of the basic subject specific vocabulary/terminology.	Skills The students should have some basic experiences of completing practical work within each of the disciplines.
KS3	Year 7		Year 8		Year 9	
Implement Rotation	Box project (woodworking and plastics). Introduction to the workshops, the use of materials, tools and equipment. Building student confidence and independence within the workshop environment. Students are introduced to the materials used during the project, their industrial applications and uses. Hand sketching design ideas through to forming a final design proposal.	Students are introduced to the use of specific hand tools and processes used, including the use of basic hand tools, machines and equipment, including thermoforming plastics using the vacuum former. Basic skills of measuring and marking out on materials, the use of millimeters and the importance of accuracy. Achieving a quality finish and the importance of a surface finish. Focus throughout on quality, accuracy and health & safety.	Picture frame project (woodworking). Students are introduced to the materials used during the project, their industrial applications and uses. Hand sketching design ideas through to forming a final design proposal. Students are introduced to the use of specific hand tools and processes used, including laminating timber. Development of hand skills, including the use of the coping saw and scroll saw.	To use specialist tools, techniques, processes, equipment and machinery precisely, safely and with skill to achieve high quality outcomes. Focus throughout on quality, accuracy and health & safety.	Tea light holder project (Metalworking and woodworking). Students study design history to inform their design ideas. Hand sketching design ideas using historical influences (design history). Card modelling/ development of concepts to form a final design proposal. Students are introduced to metalwork, the use of specific hand tools and processes, including heat treatments /processes using the brazing hearth (Annealing and Silver soldering).	Analyse the work of famous designers/periods of design history to develop and broaden their understanding and form the inspiration for their design ideas. Select from and use specialist tools, techniques, processes, equipment and machinery precisely, safely and with skill to achieve high quality outcomes. Focus throughout on quality, accuracy and health & safety.

Assessment	Half-way	End of Rotation	Half-way	End of Rotation	Half-way	End of Rotation
	Students in D&T @ KS3 complete rotations in 4 different D&T specialisms each academic year (approx.. 9 weeks – 1 double lesson a week). In each rotation the students are assessed at both the half-way point and terminally – resulting in 8 assessments per academic year. The school currently reports home 4 times a year. In the reporting home it is clear which reported nc level is attached to which specialism.					
KS4	Year 10			Year 11		
Intent	Art and Design (Graphics) offers the opportunity to communicate, to investigate, to experiment and to express ideas and feelings in visual and tactile form. It comprises a language which complements those of numeracy, literacy, scientific and factually-based subjects. It is concerned with the development and exploration of the complexities of visual perception and aesthetic experience. It also allows the development of strategies to solve design problems, to discriminate and make informed and considered judgements. Art and Design are separate, but essentially inter-related, activities with many overlaps. Problem-solving is common to both. Art and Design (Graphics) foster practical, technical, observational, analytical and manipulative skills, as well as being a vehicle for personal expression and imagination, perception and sensitivity, conceptual thinking. Theoretical, spiritual, philosophical and aesthetic consideration and decision-making are based upon direct experience.					
Implement Autumn	Introduction to GCSE OCR Art and Design: Three-Dimensional Design (J175) Specification	Introduction and experience of key skills, materials, machinery, processes. Recording the experiences in the skills booklet and working towards the expected style of GCSE coursework.	Portfolio (01) continued...			
Assessment						

Implement Spring	Component 1 (Portfolio) (60% / 120 marks)	Students produce a portfolio of practical work showing their personal response to a set starting point, brief, scenario or stimulus. The portfolio may be presented in appropriate formats for the specification title they are following and chosen area of study, including sketchbooks, digital presentations, mounted sheets, maquettes, prototypes, animated work, scale models or illustrated written work. The portfolio must provide evidence that the student has met all four assessment objectives.	Externally set task (Component 02) (40% / 80 marks)	Students respond to one of five themes, each with a range of written and visual starting points and stimuli. Students research, plan and develop ideas for their response to the option they have chosen, which they must then realise within the ten-hour supervised time period. DEADLINE:EASTER HOLIDAYS
Assessment	AO1 Develop ideas through investigations, demonstrating critical understanding of sources. AO2 Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.		AO1 Develop ideas through investigations, demonstrating critical understanding of sources. AO2 Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.	
Implement Summer			AO3 Record ideas, observations and insights relevant to intentions as work progresses.	
Assessment	AO3 Record ideas, observations and insights relevant to intentions as work progresses. AO4 Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.		AO4 Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.	Summer '21 Grade Descriptors Summer 21 Evidence

By age 16 students should	Knowledge	<p>Learners are required to demonstrate the knowledge and understanding listed below through practical application of skills to realise personal intentions relevant to their chosen area(s) of Three-Dimensional Design.</p> <p>Learners are required to know and understand how sources inspire the development of their ideas.</p> <p>Reference should be made to the following:</p> <ul style="list-style-type: none"> • the work and approaches of three-dimensional designers from contemporary and/or historical contexts, periods, societies and cultures • contemporary and/or historical environments, situations or issues • other relevant sources researched by the learner in their chosen area(s) of three-dimensional design • the ways in which meanings, ideas and intentions can be communicated through visual and tactile language, using formal elements, including: <ul style="list-style-type: none"> ○ colour ○ line ○ form ○ tone ○ texture • the characteristics, properties and effects of using different media, materials, techniques and processes, and the ways in which they can be used in relation to learners' own creative 	Skills	<p>Learners are required to demonstrate the knowledge, skills and understanding as defined in the Art and Design Core Content section of this specification in the context of their chosen area(s) of Three-Dimensional Design.</p> <p>In addition, learners will be required to demonstrate skills in the following:</p> <ul style="list-style-type: none"> • develop ideas through investigations informed by selecting and critically analysing sources • apply an understanding of relevant Three-Dimensional Design practices in the creative and cultural industries to their work • refine their ideas as work progresses through researching, selecting, analysing, constructing and presenting artefact(s)/product(s)/personal outcome(s)
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		<p>intentions and chosen area(s) of Three-Dimensional Design.</p> <ul style="list-style-type: none"> • the different purposes, intentions and functions of three-dimensional design in a variety of contexts and as appropriate to learners' own work. 		<ul style="list-style-type: none"> • record their ideas, observations, insights and independent judgements, in ways that are appropriate to the Three-Dimensional Design title, such as cutting and constructing material in three-dimensions • use appropriate specialist vocabulary through either visual communication or written annotation, or both, within three-dimensional design • use visual language critically as appropriate to their own creative intentions and chosen area(s) of Three-Dimensional Design through effective and safe use of: <ul style="list-style-type: none"> ☐media ☐materials ☐techniques ☐processes ☐technologies • use drawing skills for different needs and
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				<p>purposes, appropriate to the area(s) of study used. Drawing may take the form of maquette, scale model(s) and computer-aided design using appropriate media and materials</p> <ul style="list-style-type: none"> • realise personal intentions in Three-Dimensional Design, through the sustained application of the three-dimensional design process.
BREAK DOWN OF KS4 COURSE DELIVERY				
Y10. SEPT. UNTIL CHRISTMAS	Basic Skills - SKILLS STICK Developing skills, knowledge and understanding of hand and machine tools, processes and materials through a range of different FPT's. Introduction to Coursework (Component 1) approach to famous designers research and increasing students knowledge/exposure to a greater range of famous designers via homeworks.			



SKILL STICK **21 Skills**
Twenty one key skills to learn and understand

WOOD	PLASTIC	METAL
☐ Dowel joint	☐ Press forming	☐ Pop rivet
☐ Finger joint	☐ Vacuum forming	☐ Silver soldering
☐ Housing joint	☐ Live hinge	☐ Tap & Die
☐ Lap joint	☐ Line bending	☐ Pewter casting
☐ Mortise & tenon	☐ Injection moulding	☐ Sand casting
☐ Wood turning	☐ Polypropylene	☐ Metal turning
☐ Laminating	☐ Bonding	☐ Forging

**Y10. CHRISTMAS
UNTIL END OF Y10**

Component I (60%) Coursework major project

A portfolio of practical work showing their personal response to either a centre- or learner-set starting point, brief, scenario or stimulus.

Learners must show they have:

- developed ideas through investigations and demonstrated critical understanding of sources from a given starting point
- produced material informed by context that is relevant to the development of their ideas
- refined work by exploring ideas, selecting and experimenting with media appropriate to their chosen specification title and area(s) of study
- recorded ideas, observations and insights relevant to intentions as work progresses
- presented a personal and meaningful response that realises intentions.

The practical portfolio should be viewed as a whole and judgements regarding the extent to which all of the assessment objectives have been met should be made across the submission as a whole.

	<div> <p>OCR Art & Design (9-1) Three-Dimensional Design</p> <div> <div> <p>1 Mind map</p> <p>Starting points/ Themes/ Materials/ Processes/ Areas of focus/ Ideas/ Related items</p> <p>x1</p> </div> <div> <p>2 Mood board around theme</p> <p>Related images & words to your chosen theme</p> <p>x1</p> </div> <div> <p>3 Minor contextual studies</p> <p>6 Famous Designers/ Artists/ Architects/ etc. + Annotated tracing paper overlay</p> <p>x2</p> </div> <div> <p>4 Major contextual studies Pt1.</p> <p>In-depth study of one of your Famous designers. Images, notes, sketches</p> <p>x3</p> </div> <div> <p>5 Understanding your Designer's style</p> <p>Describe your Designer's style and break it down into key points (Shapes/Patterns/Colours/Materials/Processes/Etc)</p> <p>x3</p> </div> <div> <p>6 Major contextual studies Pt2. (Practical)</p> <p>Practical elements taking inspiration from your contextual study</p> <p>x3</p> </div> <div> <p>7 Existing products</p> <p>Looking into existing products related to your theme</p> <p>x1</p> </div> <div> <p>8 Photos & observational drawings</p> <p>Primary research into an area of interest. You will be using these to influence your designs</p> <p>x2-3</p> </div> <div> <p>9 Style board</p> <p>Bring together your favorite elements from boxes 4,5,6+7. Create a mood board of your work</p> <p>x1</p> </div> <div> <p>10 Initial ideas</p> <p>A range of design possibilities with sketches & detailed annotations</p> <p>x2-3</p> </div> <div> <p>11 Development</p> <p>Develop & improve the most promising 2 ideas. Annotated sketches. Card modelling & CAD modelling</p> <p>x2-3</p> </div> <div> <p>12 Final design proposal</p> <p>- Final design drawing - Working drawing - Cutting list</p> <p>x3</p> </div> <div> <p>* Final Product</p> <p>Make your final product</p> <p>YOU MUST TAKE PHOTOS OF THE STAGES OF MANUFACTURE!</p> </div> <div> <p>13 Record of the making</p> <p>Storyboard of the making. Photos & annotations</p> <p>x1</p> </div> <div> <p>14 Evaluation & Testing</p> <p>Test & Evaluate your finished final product. How did it go? Are you pleased with it? WWW & EBI</p> <p>x2</p> </div> </div> </div>
Y10 SUMMER EXAMS	To create 1 x Observational drawing page, 1x Design ideas page. Images. Annotated. Quality of Presentation.
Y10. CHRISTMAS UNTIL END OF Y10	Component 1 (60%) Coursework major project Cont.
MOCK EXAMS	Creating finished product/s.

<p>YII. JANUARY - FEBRUARY HALF-TERM</p>	<p>Externally Set Task (40%)</p> <p>For this component, the exam board set a 'paper' of stimuli from which students select one. The paper will give learners a choice of five themes, each with a choice of written and/or visual starting points or stimuli. From this paper, learners are expected to choose one option for which they will generate an appropriate personal response of one or more artefact(s)/product(s)/personal outcome(s) within a 10-hour supervised time period. The paper will also give the learner an opportunity to develop an extended response.</p> <p>Realising intentions supervised time period</p> <p>Learners will have up to 10 hours in which to independently realise their response(s) through the production of one or more artefact(s)/product(s)/personal outcome(s). Within the 10-hour supervised time period, learners are required to provide evidence of all assessment objectives in response to their chosen starting point or stimulus. The 10-hour supervised time period can be divided into a number of sessions and timetabled to suit the centre. Centres should ensure that short sessions are avoided. The 10-hour supervised time period should be conducted under formal examination conditions. All selected work produced for the component, including the research, planning and development work produced in the preparatory period must be submitted for assessment.</p>
<p>YII. FEB. HALF TERM UNTIL EASTER</p>	<p>Externally Set Task Cont.</p> <p>Initial Ideas, development of, creation of product component parts and finished product. Evaluation.</p>
<p>TERMINAL EXAM</p>	<p>Creation of FINISHED PRODUCT</p>
<p>THE EASTER HOLIDAYS IS THE DEADLINE FOR THE EXTERNALLY SET TASK</p>	