

DESIGN & TECHNOLOGY: KS3 Progress Map

YEAR GROUP	TOPIC/ PROJECT/ DISCIPLINE	PRIOR SUBJECT KNOWLEDGE	SUBSTANTIVE KNOWLEDGE	ASSESSMENT	SKILLS/ TECHNIQUES	META SKILLS
YEAR 7	PRODUCT DESIGN: ICT PHONE HOLDER	➤ General use of ICT (Office Suite as a minimum).	➤ Digital file management ➤ ICT: how to use Coreldraw. ➤ Using the work of others as a starting point to creativity. ➤ Creating a laser pathway ➤ Knowledge of CNC machining ➤ Plastic-Forming ➤ Health & Safety ➤ Working to a specification ➤ How to produce a high quality product	➤ Technical ability to use the Bezier tool in Adobe Illustrator to create a CNC pathway to export to a laser-cutter.	➤ Creating folders; naming files ➤ Navigating the various areas of the software ➤ Using keyboard/ mouse short-cuts ➤ Shape tool; Bezier tool; virtual segment tool ➤ Manipulating Bezier nodes ➤ Weld/ trim and intersect ➤ Fill, outline, copy and paste ➤ Grouping, dimensioning ➤ Using the laser-cutter ➤ How to use a line bender ➤ Working to specific sizes (templates); fit for purpose	➤ Independent learning ➤ Selective decision-making ➤ Sensitivity to a design brief ➤ Working within a limited set of criteria ➤ Growth mindset; mastery through effort/ time.

	PRODUCT DESIGN: IN THE STYLE OF ALESSI	➤ Drawing skills ➤ Descriptive writing	➤ Concept of Product Design ➤ Design styles / intentions ➤ Product analysis ➤ Working to a specification ➤ Writing a specification ➤ Using the work of others as a starting point to creativity. ➤ Plastic-Forming ➤ Use of Jigs and templates ➤ Electronic Circuit Knowledge ➤ Health and Safety ➤ How to produce a high quality product	➤ Standard of practical work including safely and accurately working with hand tools and machines and finishing a specific material to a high standard.	➤ Workshop safety; safety signs; emergency stop buttons; hidden dangers; self-discipline ➤ Use of FAME as a scaffold to initial product analysis ➤ How to use a Vacuum Former ➤ How to use various machines including; Hegner Saw, Pillar drill, Soldering iron ➤ How to design a successful Vacuum Form mould ➤ Quality of finish ➤ Working Properties of MDF and HIPS ➤ Understand and be able to Identify polarity of electrical components ➤ Produce a viable working circuit and be able to identify and rectify faults ➤	➤ Selective decision-making ➤ Sensitivity to a design brief ➤ Working within a limited set of criteria ➤ Growth mindset; mastery through effort/ time. ➤ Self-management of risk
	TEXTILES: PENCIL CASE	➤ Drawing skills ➤ Basic cutting skills ➤ Basic hand stitching	➤ Why Textiles is important. ➤ Working from sources of inspiration. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Use of templates. ➤ Cutting of materials. ➤ Health & Safety ➤ Correct and safe use of machinery. ➤ Working to a specification ➤ How to produce a high quality product ➤ Evaluation skills.	➤ Development of Initial Ideas through to a final solution. Producing a successful final design for the pencil case which fulfils the design criteria.	➤ Understanding what Textiles is. ➤ Classroom safety; hidden dangers; self-discipline. ➤ Use of success criteria to inform design decisions. ➤ How to use various pieces of equipment including; cutting tools, iron, sewing machine. ➤ How to design a successful design. ➤ Quality of finish ➤ Safely operate the sewing machine. ➤ To produce a creative and viable product. ➤ To evaluate the final outcome objectively.	➤ Independent learning ➤ Selective decision-making ➤ Sensitivity to a design brief ➤ Working within a limited set of criteria. ➤ Growth mindset; mastery through effort/ time. ➤ Self-management of risk. ➤ Team work skills.
	FOOD:	➤ Basic food preparation knowledge	➤ Food Safety and hygiene ➤ Weighing and Measuring ➤ Kitchen Equipment ➤ Eatwell Guide	➤ Design a pasta salad that meets 3 specific success criteria.	➤ What is good food hygiene and safety? An introduction to safe food preparation, cooking and storage	➤ Independent learning ➤ Organisation ➤ Growth mindset; mastery through effort/ time

	INTRODUCTION TO FOOD & NUTRITION	➤ and or skills ➤ Basic hygiene and safety in the kitchen environment	➤ Product Development ➤ Practical Skills ➤ Food Evaluation	➤ Research using the Eatwell guide and imageboards ➤ Shop for the ingredients ➤ Produce the salad safely and hygienically in the food practical ➤ Evaluate against the success criteria ➤	➤ An understanding of how to select and use kitchen equipment appropriately and safely ➤ Developing and applying understanding of eatwell guide in designing new recipe ideas ➤ Gain understanding of following a recipe ➤ How to develop a basic recipe to meet the needs of a particular target group ➤ Gain practical skills ➤ Introduction to food sensory evaluation	➤ Team Work ➤ Time Management

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YEAR 8	PRODUCT DESIGN: ICT PAPER MECHANISMS	➤ Digital file management ➤ ICT: how to use Coreldraw. ➤ Using the work of others as a starting point to creativity. ➤ Health & Safety ➤ Working to a specification	➤ ICT: Coreldraw as a graphics package ➤ Concept of digital graphic design ➤ Iterative design process ➤ Health & safety ➤ Safe and skilful use of tools ➤ Working to a specification ➤ Digital printing	➤ Iterative design. ➤ Development of a product through the use of modelling. Being able to assess a piece of work and make working modifications to aid the successful development of a product.	➤ Fonts/ lettering styles; fills; line weight; transformations; importing and manipulation of images; advanced layering ➤ Safe and accurate use of craft knives; safety rulers; cutting mats. ➤ Prototyping; modelling; modifications ➤ Evaluation/ analysis ➤ Understanding of print margins/ page set-up	➤ Independent learning ➤ Selective decision-making ➤ Sensitivity to a design brief ➤ Working within a limited set of criteria ➤ Growth mindset; mastery through effort/ time. ➤ Time management/ working to deadlines ➤ Using feedback to improve work ➤ Self-management of risk
	PRODUCT DESIGN: SWEET DISPENSER	➤ Concept of Product Design ➤ Product analysis ➤ Working to a specification ➤ Writing a specification ➤ Using the work of others as a starting point to creativity. ➤ Use of Jigs and templates ➤ Health and Safety	➤ Understanding the iterative design process ➤ Target markets ➤ How to produce orthographic drawings ➤ Commercial standards ➤ British standards dimensioning	➤ Showing an understanding of how to produce a technical drawing using British Standards Conventions.	➤ Scale drawing ➤ Technical drawing ➤ Workshop safety; safety signs; emergency stop buttons; hidden dangers; self-discipline ➤ How to use various machines including; Hegner Saw, Pillar drill, Soldering iron ➤ Quality of finish ➤ Working Properties of MDF	➤ Independent learning ➤ Selective decision-making ➤ Sensitivity to the needs of others ➤ Working to specifications ➤ Growth mindset; mastery through effort/ time. ➤ Self-management of time and risks

		➤ How to produce a high quality, finished product ➤ How to use various machines including; Hegner Saw, Pillar drill ➤ Quality of finish ➤ Working Properties of MDF and HIPS				➤ Self-reflection ➤ Taking pride in your work
	TEXTILES: ANIMAL INSPIRED CUSHION	➤ Why Textiles is important. ➤ Working from sources of inspiration. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Use of templates. ➤ Cutting of materials. ➤ Health & Safety ➤ Correct and safe use of machinery. ➤ Working to a specification ➤ How to produce a high quality product ➤ Evaluation skills.	➤ To understand Fabric manipulation techniques. ➤ Applique. ➤ Tie Dye. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Use of templates. ➤ Cutting of materials. ➤ Health & Safety ➤ Correct and safe use of machinery. ➤ Working to a specification ➤ How to produce a high quality product ➤ Evaluation skills.	➤ Development of Initial Ideas through to a final solution. Producing a successful final design for the cushion which fulfils the design criteria.	➤ Classroom safety; hidden dangers; self-discipline. ➤ Use of success criteria to inform design decisions. ➤ How to use various pieces of equipment including; cutting tools, iron, sewing machine. ➤ How to design a successful cushion cover design. ➤ Quality of finish ➤ How to correctly thread up and safely operate the sewing machine. ➤ To produce a creative and viable product. ➤ To evaluate the final outcome objectively.	➤ Independent learning ➤ Selective decision-making ➤ Sensitivity to a design brief ➤ Working within a limited set of criteria. ➤ Growth mindset; mastery through effort/ time. ➤ Self-management of risk. ➤ Team work skills.
	FOOD : FAMILY MEALS	➤ Food Safety and hygiene ➤ Weighing and Measuring ➤ Kitchen Equipment ➤ Eatwell Guide ➤ Product Development ➤ Practical Skills ➤ Food Evaluation	➤ Development and preparation of healthy Family meals ➤ Diet and diet related disease ➤ Recipe Development ➤ 5 a Day and Its importance ➤ Seasonality	➤ Develop a Ragu Pasta Sauce to meet specific success criteria ➤ Shop for the ingredients ➤ Weigh/measure the ingredients ➤ Make a successful pasta	➤ Practical Recipe Development ➤ More advanced practical skills ➤ Developing aesthetic ability ➤ Introduction to macro and micronutrients in relation to the Eatwell Guide	➤ Independent learning ➤ Organisation ➤ Growth mindset; mastery through effort/ time ➤ Team Work ➤ Time Management ➤ Health and Wellbeing in

			➤ Introduction to nutrition	sauce safely and hygienically in the lesson ➤ Evaluate against the success criteria	➤ Making and Planning healthy, well balanced main meals using fresh ingredients ➤ Seasonality/Environmental Issues linked to Food	relation to diet and nutrition ➤ Cross Curricular links to Citizenship (Making informed choices as a consumer) & Geography (Seasonality and environmental issues)

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YEAR 9	PRODUCT DESIGN: MINI-SKILLS	➤ Workshop safety; safety signs; emergency stop buttons; hidden dangers; self-discipline ➤ How to use various machines including; Hegner Saw, Pillar drill, ➤ How to design a successful Vacuum Form mould ➤ Quality of finish	➤ Bottle-opener ➤ Working with Aluminium ➤ Health and Safety ➤ Milling Machine ➤ Pillar Drill (metal) ➤ Finishing ➤ Set dimensions (accuracy) ➤ Surfboard ➤ Lamination ➤ Working with natural timber ➤ Adhesives ➤ Timber conversion ➤ Finishes sanding/ filing ➤ Skateboard ➤ Bag-pressing ➤ Veneers ➤ Working with manufactured boards ➤ Adhesive ➤ Lamination ➤ Formers ➤ Acrylic Pebble ➤ Adhesives ➤ Lamination ➤ Finishing	➤ To be able to describe various processes regarding the working properties of woods, metals and plastics and to understand the use of various tools and methods of joining specific to each material area.	➤ Workshop safety ➤ Use of various machines including: Milling Pillar drill, Rotary/ belt sander, Bag Pressing, ➤ Appropriate use of adhesives including: PVA, Tensol Cement, Cross-linking PVA ➤ Hand tools inc; Files, ➤ Use of templates/ jigs/ formers ➤ Finishing techniques for wood, metals and plastics (Beeswax, T-cut, wet and dry, ➤ Lamination of woods and plastics	➤ Independent learning ➤ Selective decision-making ➤ Taking on board verbal audio and kinaesthetic instruction. ➤ Growth mindset; mastery through effort/ time. ➤ Time management/ working to deadlines ➤ Managing multiple practical outcomes and ensuring a high level of quality control ➤ Using verbal feedback to improve work ➤ Self-management of risk

	PRODUCT DESIGN: CAD/CAM SOLIDWORKS	➤ Digital file management ➤ Understanding general ICT platforms along with short-cut keys and manipulation of virtual environments ➤ Using the work of others as a starting point to creativity. ➤ Knowledge of CNC machining ➤ Plastic-Forming ➤ Working to a specification ➤ How to produce a high quality product	➤ Understanding of the term CAD/CAM and how it relates to design within industry ➤ How to use an industry-standard solid-modelling platform to create product designs ready for rapid prototyping ➤ Rapid prototyping (3D printing) ➤ Working within constraints and producing designs to exact measurements and requirements ➤ Designing multiple parts ready for assembly ➤ Final render and presentation of finished product	➤ Demonstrate the use and understanding of 3D design software through a variety of exercises with increasing levels of difficulty. To use technical terminology when describing each process.	➤ Manipulation of a virtual, 3D environment ➤ Tools: extrude cut; revolve; sketch patterning; creating valid profiles; shape tools; Bezier tool; creating workplanes; dimensioning	
	TEXTILES Sunglasses case	➤ Decorative techniques learnt: hand embroidery, fabric crayons, fabric pens, applique, fabric manipulation, embellishments ➤ Working from sources of inspiration. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Use of templates. ➤ Cutting of materials. ➤ Health & Safety	➤ Researching different Textile Artists as a starting point to creativity. ➤ To understand the concept of repeat patterns and how to develop a workable outcome. ➤ Printing ➤ Use of printing techniques to create a fabric design for a Sunglasses case. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Health & Safety	➤ Development of Initial Ideas through to a final solution. Producing a successful final design for the case which fulfils the design criteria.	➤ Use of success criteria to inform design decisions. ➤ How to use various pieces of equipment including; cutting tools, iron, sewing machine, sublimation printer and heat press equipment. ➤ How to design a successful repeat pattern for a fabric design. ➤ How to produce a complex and feasible print. ➤ Quality of finish	➤ Creativity ➤ Independent learning ➤ Selective decision-making ➤ Sensitivity to a design brief ➤ Working within a limited set of criteria. ➤ Growth mindset; mastery through effort/ time. ➤ Self-management of risk. ➤ Teamwork skills.

		➤ Correct and safe use of machinery. ➤ Working to a specification ➤ How to produce a high-quality product ➤ Evaluation skills.	➤ Correct and safe use of machinery. ➤ Working to a specification ➤ How to produce a high-quality product ➤ Evaluation skills.		➤ How to correctly thread up and safely operate the sewing machine. ➤ To produce a creative and viable product. ➤ To evaluate the final outcome objectively. ➤	➤ Resilience - correctly mistakes. Improving designs.
	TEXTILES Makeup bag/tablet case project	➤ Decorative techniques learnt; Printing methods, hand embroidery, fabric crayons, fabric pens, applique, fabric manipulation, embellishments ➤ Working from sources of inspiration. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Use of templates. ➤ Cutting of materials. ➤ Health & Safety ➤ Correct and safe use of machinery. ➤ Working to a specification ➤ How to produce a high-quality product. ➤ Evaluation skills.	➤ Researching Embroidery artist as a starting point to creativity. ➤ To understand the correct process for sublimation printing, quilting and hand embroidery. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Health & Safety. ➤ Working to a specification ➤ How to produce a high-quality product ➤ Evaluation skills.	➤ Standard of practical work including safely and accurately working with hand skills and sewing machines and finishing a specific product to a high standard.	➤ Use of success criteria to inform design decisions. ➤ To learn different types of hand embroidery stitches. ➤ How to use various pieces of equipment including; cutting tools, iron, sewing machine, sublimation printer and heat press equipment. ➤ ➤ How to design a successful make-up bag/tablet case using hand embroidery, quilting and sublimation printing. ➤ To embellish with beads/sequins. ➤ Quality of finish ➤ To produce a creative and viable product. ➤ To evaluate the final outcome.	➤ Creativity ➤ Independent learning ➤ Selective decision-making ➤ Sensitivity to a design brief ➤ Growth mindset; mastery through effort/ time. ➤ Resilience - correctly mistakes. Improving designs.
	TEXTILES	➤ Decorative techniques carried out; Printing methods, hand embroidery, fabric	➤ Researching the Textile Artist Ruth Singer as a starting point to creativity.	➤ Standard of practical work including safely and accurately	➤ To learn new techniques including: ➤ Suffolk puffs ➤ Fabric flowers	➤ Creativity ➤ Independent learning

	Fabric manipulation project	crayons, fabric pens, applique, fabric manipulation, embellishments ➤ Working from sources of inspiration. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Use of templates. ➤ Cutting of materials. ➤ Health & Safety ➤ Correct and safe use of machinery. ➤ Working to a specification ➤ How to produce a high-quality product. ➤ Evaluation skills.	➤ To understand how the artists have worked and recreated their work using similar techniques. ➤ Ability to generate design ideas. ➤ Working creatively. ➤ Health & Safety ➤ Correct and safe use of machinery. ➤ Evaluation skills.	working with hand skills and sewing machines and finishing a specific product to a high standard.	➤ Ruffles ➤ Slip stitching ➤ Quality of finish ➤ How to correctly thread up and safely operate the sewing machine. ➤ To evaluate the final outcome	➤ Selective decision-making ➤ Growth mindset; mastery through effort/ time. ➤ Self-management of risk. ➤ Resilience - correctly mistakes. Improving designs.
	FOOD: MASTERCHEF	➤ Food Hygiene and Safety ➤ Knife Skills ➤ Basic development of recipes ➤ Kitchen Equipment ➤ Introduction to the Eatwell Guide ➤ Sensory Evaluation ➤ Product Analysis ➤ Product Evaluation ➤ Basic cooking processes — Sauce making —	➤ Preparing and developing healthy main meals ➤ Vegetable Cuts ➤ Food Safety, hygiene and Food Poisoning ➤ Roux Method of sauce making ➤ Making fresh pasta ➤ Cooking multicultural meals ➤ Making Different types of Pastry ➤ Food Presentation ➤ Making cakes and bakes using different methods ➤ Cake Decoration	➤ Develop a basic sausage roll recipe ➤ Shop for the ingredients ➤ Weigh/measure the ingredients ➤ Make a successful developed sausage roll safely and hygienically in the lesson ➤ Evaluate your success	➤ High level Practical Development Skills; Peeling, chopping, dicing, foaming, saut é ing, binding, rubbing in, reducing, shaping, proving, baking, cake decoration ➤ Understanding Food Labelling Information ➤ Introduction to nutrition and science of food ➤ Development of functional qualities of ingredients ➤ Making and planning healthy, well balanced	➤ Independent learning ➤ Organisation ➤ Growth mindset; mastery through effort/ time ➤ Team Work ➤ Time Management ➤ Health and Wellbeing ➤ Cross Curricular links to Citizenship and maths (Portioning and Costing)

		Bechamel, preparing vegetables, shaping and forming, saut é ing, reducing, boiling, baking, creaming, rubbing in, making bread	➤ Introduction to Food and Nutrition ➤ Introduction to Hospitality & Catering ➤ Energy Balance ➤ Food Packaging Digestive System		main meals using fresh ingredients ➤ Costing and portioning of ingredients ➤ Developing aesthetic ability	
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