The King's (The Cathedral) School
Peterborough

A Family Achieving Excellence

DESIGN AND TECHNOLOGY: CURRICULUM OVERVIEW

KS3

AUTUMN | SPRING | SUMMER

Y07

PRODUCT #1			
DESIGN	MAKE	EVALUATE	KNOWLEDGE
TRINKET BOX			
6 ideas developed from research carried out iterated to 1 design.	Techniques for manufacturing with timbers, use of basic workshop tools.	Evaluation of ideas, materials, processes and final product	Hazards, risk, safety, equipment, timber groups, diary for making.

TEXTILES			
DESIGN	MAKE	EVALUATE	KNOWLEDGE
STORAGE CONTAINER			
3 ideas developed from research carried out	Techniques or quilting, applique, sublimation printing, Pencil case	Evaluation of ideas and final product	Safety, equipment, the sewing machine, fibres, yarns and fabrics

FOOD			
DESIGN	MAKE	EVALUATE	KNOWLEDGE
HEALTHY EATING PRODUCT			
N/A	Fruit salad, Pasta salad, Pizza Toast, Scones, Soup, Cauli Cheese Gingersnaps	Knowledge of products and Eatwell guide	Safety, Hygiene, Eatwell Guide 8 tips healthy eating, Budget, Shopping, Nutrients

PRODUCT #2			
DESIGN	MAKE	EVALUATE	KNOWLEDGE
CAD/CAM SLOTTING SOUVENIR			
Collecting UK tourist attraction inspiration. considering sustainability of resources. Intro to CAD – 2D design	Prototype design ideas in pulpboard, using 2D design to draw up final product, laser cutter to cut.	Evaluation of prototypes, iterative design development	Context, design brief, prototypes, modelling, material properties, sustainability

Y08

MOOD LIGHT			
4 ideas developed from research carried out, iterated to 1 final design. Iterative design process.	Design movement modelling, techniques with cutting, folding and fixing. Line bending and vac forming	Evaluation of ideas, materials, processes and final product	Hazards, risk, safety, equipment

CULTURE CUSHION			
4 ideas developed from research carried out	Cultural techniques – fabric and silk paint, sublimation and block printing, applique, tie-dye, embroidery, glue and foil	Evaluation throughout the project, peer feedback	Cultural textiles, how patterns are created

CARBOHYDRATES AND MEALS			
N/A	Vegetable bake, Sausage casserole Risotto, Tofu stir Fry, Sweet and Sour Chicken, Jam Buns, Fudge Cakes	Knowledge of budget How to cook meat safely How to	Weighing and measuring, safety, hygiene – raw meat, safe cooking, carbohydrates Protein, Fat, Staple foods

PEWTER BODY ADORNMENT			
Deciding target market, writing own brief using given context, creating design criteria using brief, iterative design	Prototyping ideas in paper and board, CAD/CAM to create die, pewter casting and finishing	Evaluation of context, product analysis, evaluation/development of design ideas	Customer profile, design brief and criteria, prototyping, metal properties, casting process, finishing's

Y09

SWEET DISPENSER			
Communication of design, Isometric and oblique drawing techniques.	Accurate making skills with workshop machines and hand tools. Preparing for and applying finishes.	Evaluation of ideas, materials, processes and final product Iterative design process to improve ideas and designs.	Hazards, risk, safety, materials and equipment used in the workshop. Mechanisms.

BE SAFE BE SEEN			
6 ideas developed for a chosen client from research	Independent making of a product that meets client's needs – drawing on skills from making in 7&8	Evaluation throughout the project, peer feedback	Modern and technical textile materials and techniques

MEAL PLANNING AND DIETARY NEEDS			
N/A	Bolognese, Chilli, curry, enchiladas Pasta Bake, muffins, soda Bread	Knowledge of dietary needs and how to evaluate nutritionally	Safety, hygiene food skills, bacteria and temperature control, sauces, raising agents dietary groups, Food labelling

DESIGN VENTURA			
Collaborative team design task following brief from external organisation	Collaborative making of a prototype using model-making materials	Individual evaluation of design brief, individual and team research findings	Design brief, primary and secondary research, sustainability, team roles

KS3

END OF YEAR

Y09 OPTION

PRODUCT #1			
DESIGN	MAKE	EVALUATE	KNOWLEDGE
[PROJECT NAME]			
4 ideas developed from research carried out, iterated to 1 final design. Iterative design process. Work of other designers.	CAD/CAM and workshop machines and hand tools. Laser cut, 3d print, modelling, timber materials.	Iterative design process, continuous improvement of designs through exploring and creating, with final conclusion	Designers and working from a theme. Accurate marking, cutting, assembly, abrasion and finishing.

TEXTILES			
DESIGN	MAKE	EVALUATE	KNOWLEDGE
RECYCLED BAG			
4 ideas developed from Morsbag case study and annotated. Techniques selected in relation to designs created.	Independent making of a product that meets client's needs – drawing on skills from making in 7&8	Evaluation throughout the project, peer feedback.	Recycling fact file, application of practical techniques from 7&8. Creative careers investigation.

FOOD			
DESIGN	MAKE	EVALUATE	KNOWLEDGE
Design and make a product suitable for a teenager			
N/A	Independent choice of snack products, aimed at a teen user	Nutritional evaluation and suggested improvements	A coming together of all the knowledge acquired in Y7 and 8 and applied to a practical outcome

PRODUCT #2			
DESIGN	MAKE	EVALUATE	KNOWLEDGE
THERMOSET CASTING			
Pen design and 3D modelling, 3D prototypes and OnShape	3D prototype, silicone and epoxy resin, moulds and formers	Iterative process for the development of the pen shape and the casting process	Casting, industrial manufacturing, thermosetting plastics, ergonomics

Y10

		AUTUMN		SPRING		SUMMER	
FOOD	EXAM	Macro nutrients - sources, excess and lack Food bacteria and food poisoning	Micronutrients – Sources, excess and lack Pastry and cake making investigations Faults in cake making and pastry making	Raising agents theory and investigations Sensory Evaluation, why we cook foods, Sauce making	Food commodities- Fruit and vegetables, soya, dairy, meat and fish and alternatives, Bread making	Revision for end of year exams	
	NEA					NEA 1 PRACTICE	NEA 2 PRACTICE
TEXTILES	EXAM	CORE TECHNICAL PRINCIPLES (CTP) – Materials and working properties, surface treatments and finishes, using and working with materials, tolerances	STP – Using and working with materials, selection of materials and components, communication of design ideas, prototype development	STP – Using and working with materials, selection of materials and components, communication of design ideas, prototype development	CTP – New and emerging technologies, energy and storage, mechanical devices STP – Ecological footprint, forces and stresses	Y10 Mocks	
	NEA	SKILL-BUILD – theory into practice – patchwork cushion with decorative techniques and edge finishes, tolerances	SKILL BUILD – theory into practice - pyjama project	Project continues until half-term	DMA – E-textiles	NEA LAUNCH	SECTION A Milestone (Identifying & investigating design possibilities)
PRODUCT	EXAM	CORE TECHNICAL PRINCIPLES (CTP) – Materials and working properties	CTP – Developments in new materials	CTP – New and emerging technologies	CTP - Energy generation and storage, Systems and mechanical devices	Y10 Mocks	Response to Mock results and recall
	NEA	SKILL-BUILDS: Lamp iterative design – practical application of materials theory		Mock NEA		NEA LAUNCH	SECTION A Milestone (Identifying & investigating design possibilities)

Y11

		AUTUMN		SPRING		SUMMER
FOOD	EXAM		MOCKS			PUBLIC EXAMINATIONS
	NEA	NEA 1	NEA 1 and revision for mocks NEA 2	NEA 2		PUBLIC EXAMINATIONS
TEXTILES	EXAM	DESIGNING AND MAKING PRINCIPLES (DMP)	SPECIALIST TECHNICAL PRINCIPLES (STP)	Revision – CTP, STP, DMP	Revision – CTP, STP, DMP	PUBLIC EXAMINATIONS
	NEA	SECTION B Milestone (Brief and Specification)	SECTION C and D Milestones (Generating and developing design ideas)	SECTION E and F Milestones (Realising, analysing and evaluating)		PUBLIC EXAMINATIONS
PRODUCT	EXAM	DESIGNING AND MAKING PRINCIPLES (DMP)	SPECIALIST TECHNICAL PRINCIPLES (STP)	Revision – CTP, STP, DMP	Revision – CTP, STP, DMP	PUBLIC EXAMINATIONS
	NEA	SECTION B Milestone (Brief and Specification)	SECTION C and D Milestones (Generating and developing design ideas)	SECTION E and F Milestones (Realising, analysing and evaluating)		PUBLIC EXAMINATIONS

Y12

		AUTUMN		SPRING		SUMMER	
TEXTILES	EXAM	TECHNICAL PRINCIPLES (TP) – Materials and their applications, performance and characteristics of materials	TP – Methods of joining and using components, enhancement of materials, finishes	CTP – Modern industrial and commercial practice, digital design and manufacture, health and safety, protecting design and intellectual property, international standards, marketing, energy, QA&QC, environmental issues, care and maintenance of fabrics DMP – Design theory, socioeconomic influences, responsible design, fashion cycles	CTP – Design and manufacturing, maintenance, repair and disposal, feasibility studies, inclusive design	KSAS	
	NEA	Denim is a versatile fabric project – putting theory into practice, investigating	Denim is a versatile fabric project – putting theory into practice – developing ideas	Denim is a versatile fabric project – putting theory into practice -making	NEA LAUNCH – AO1	NEA – AO2	
PRODUCT	EXAM	TECHNICAL PRINCIPLES (TP) – Materials and their applications	TP – Manufacturing techniques	Digital design and manufacture, The requirements for p. design & development, Modern industrial and commercial practice, Health and safety	Protecting designs and intellectual property, Feasibility studies, Enterprise and marketing in the development of products, Design communication, Design for manufacturing, maintenance, repair and disposal	TP Recall	
	NEA	SKILL-BUILDS (SB): Lamp iterative design – practical application of materials theory	SB – Individual iteration of Design and Technology sign		NEA LAUNCH		SECTION A Milestone (Identifying and investigating design possibilities)

Y13		AUTUMN		SPRING		SUMMER
TEXTILES	EXAM	TECHNICAL PRINCIPLES (TP) – Materials and their applications, performance characteristics. Recall, exam question practice.	TP -Methods of joining and use of components, Enhancement of materials, The requirements for textile and fashion design and development, Design communication, DESIGNING AND MAKING PRINCIPLES (DMP) - Design methods, processes and theory, critical analysis and evaluation. Responsible, feasible design, accuracy, quality control. Recall, exam question practice.	TP - Modern industrial and commercial practice, Digital design and manufacture, quality assurance, Health and safety, DMP - Design for manufacture and project management, equipment and processes, Critical analysis and evaluation. Recall, exam question practice.	Y13 MOCKS Revision, exam prep, exam practice	PUBLIC EXAMINATIONS
	NEA	SECTION B Milestone (Producing a design brief and specification)	SECTION C Milestone (Development of design proposal(s))	SECTION D and E Milestones (Development of design prototypes, analysing and evaluating)		PUBLIC EXAMINATIONS
PRODUCT	EXAM	TECHNICAL PRINCIPLES (TP) – recall and gap-filling	DESIGNING AND MAKING PRINCIPLES (DMP) - Design methods, processes and theory, critical analysis and evaluation, responsible design, tech. and culture, tools, equipment and processes, accuracy	DMP - Design for manufacture, national and international standards in product design	Y13 MOCKS Revision, exam prep, exam practice	PUBLIC EXAMINATIONS
	NEA	SECTION B Milestone (Producing a design brief and specification)	SECTION C Milestone (Development of design proposal(s))	SECTION D and E Milestones (Development of design prototypes, analysing and evaluating)		PUBLIC EXAMINATIONS