DT Rationale and National Curriculum Coverage

Wherever we look, evidence of design is all around us. From chairs to hospital equipment, from clothes to websites, from advertisements on the side of a bus to playground equipment, everything has been designed. This curriculum aims to inspire students to think about the important and integral role which design and the creation of designed products play in our society.

The curriculum is split into three different areas: 'cook', 'sew' and 'build'. It is designed so that children will complete a unit of work in these three across the Key Stage (KS1, LKS2, UKS2). In recognition of limited time and competing curriculum demands in the primary school setting, St John's Community Primary School have adapted their curriculum to ensure that D&T will be taught once a term as part of a five-hour block. Teachers can decide whether to teach this weekly, for example for 'sew' and 'build' units schools may wish to consider delivering the five hour block over a number of weeks if this suits timetabling in their setting; over a single day or two half days, for example 'Cook' units are split into two and a half sessions.

Two different 'aspects' of design are interwoven into the three areas of study: the environment and sustainability, and enterprise and innovation. These 'aspects' acknowledge enduring and contemporary concerns of modern design.

Each unit specifies the concepts and skills which the students are expected to learn over the course of a unit. These concepts and skills progress gradually throughout the course of the six years of study.

In 'cook' students learn to cook from recipes which gradually build basic culinary skills, culminating in year six with the creation of a mezze-style meal requiring the pupils to produce various small dishes. Whilst studying these practical skills they learn about concepts relating to food such as nutrition, seasonality, food production, transportation and food from different cultures. Each five hour block of work is split into two, two and a half-hour sessions. In each session the children cook from one recipe.

In 'sew' students practice using fabric and thread to learn basic sewing techniques to create objects which demonstrate embroidery, appliqué, weaving and plaiting. Concepts such as the properties and creation of different fabrics, fast fashion, industrialisation, waste, recycling and pollution are interwoven into these activities.

In 'build' students learn about the creation of structures and mechanical and electrical devices to create products such as cars, moving cards, toys and books. This culminates with year six learning to consider the user in real life, designing a water wall for children in reception. Once again, the practical process of de- signing and creating a product is interleaved with learning about concepts which have a bearing on what the students make. These concepts, for example force, motion and the properties of materials are often connected with those encountered in the science curriculum.

DT Rationale and National Curriculum Coverage

The sequence of lessons in the 'sew' and 'build' areas of study follow a structure to enable the students to become familiar with, understand and practice the process of design: research and investigate, design, make, use and evaluate. The planning for each unit of work specifies the product the children will make, the purpose and user of the product. This specification acknowledges the importance of purpose and user within in the design process. Throughout the course of the lessons the students explore existing products and their uses, generate ideas and designs by creating drawings and prototypes against criteria which they devise having considered purpose, function and appeal. Evaluation against these criteria concludes the process. Discussion is an important part of this process, as is consideration of the properties of potential materials and the choice of tools. Learning about fundamental concepts, skills, developments in history and understanding of the influence of key individuals in the field are interleaved into this process-driven structure. The students' understanding of key skills and concepts builds from year to year, assessing and cementing prior learning, and therefore the implementation of the curriculum in the given sequence is crucial.

The curriculum is designed to be delivered alongside the PKC art, science and history curricula, as parts of it directly relate to areas of knowledge which the pupils acquire in these subjects. Where a unit looks at concepts which are also addressed in these subjects, the design and technology unit is generally taught after units in these other disciplines. This allows the children to approach their study of design and technology with a degree of confidence and 'expertise' and to consolidate their knowledge by creating connections between the different disciplines. *It should be noted that the curriculum does not include the study of digital programming and computer aided design as these elements of design and technology, as specified in the National Curriculum, are covered in the computing curriculum. As digital programming and computer aided design are not covered by this curriculum it is advisable that they are covered in a school's computing curriculum in such a way that allows children to explore the design process, (investigating, designing, making and evaluating their own products) in the computing projects they undertake.* At St John's Community Primary School this is covered as part of the 'Computer Science' units of work in Purple Mask as well as in addition to wider stem activities at St Johns Community Primary School including participation in trips, visits from external providers.

It is expected that students' study will be recorded in whole class 'Topic Books or Art sketch books if appropriate. These should be viewed as working documents which evidence the design process and may include notes, annotated photographs, drawings, diagrams and photographs of prototypes and finished work, as well as students' evaluation of the projects which they undertake. This will ensure that teachers and pupils alike can easily identify progression in knowledge, process and application of skills.

It is recognised that the procurement and management of resources is a large part of delivering a design and technology curriculum. Every effort has been made to provide for activities which use economic or recycled resources. In addition, the sequence of units ensures that only two year-groups at a time are using the same set of resources so that the purchase of equipment is kept to a minimum.

In order to emphasise the importance of the user/consumer in the process of design there is provision each term for students to take part in an event to celebrate what they have made. This also creates the opportunity for students across different year groups to work together. At the end of the Autumn term a festive winter bake sale is suggested. At the end of the Spring and Summer terms a lunch for governors/PTA members and fashion show is proposed.

DT Rationale and National Curriculum Coverage

PKC Coverage	General Aims of the Design and Technology National Curriculum for KS1 and KS2
Creating a Product: Each unit is centered around creating a product which allows children to develop knowledge of concepts and skills which build their creative, technical and practical expertise.	• develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
Concepts and Skills: Each 'Build' and 'Sew' unit follows a structure which allows the children to investigate, make, design and evaluate a product for a particular user. In doing so they develop knowledge of concepts and skills related to the products they make.	• 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
The Process of Design: Each 'Build' and 'Sew' unit follows a structure which allows the children to investigate, make, design and evaluate a product.	• critique, evaluate and test their ideas and products and the work of others
Cooking and Nutrition: Across each Key Stage children develop their culinary skills and applying principles of nutrition when they cook.	• understand and apply the principles of nutrition and learn how to cook

DT Rationale and National Curriculum Coverage

General Aims of the National Curriculum for KS1 Covered by The PKC DT Curriculum
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 relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]

General Aims of the National Curriculum for Cooking and Nutrition Covered by The PKC DT Curriculum
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

DT Rationale and National Curriculum Coverage

National Curriculum for KS1	PKC DT Curriculum						
	Year 1				Year 2		
Pupils should be taught about:	Dips & Vegetables	Jam tarts / Mince Pies	Vehicles		Pizza	Pencil Cases	Moving Pictures
Design: design purposeful, functional, appealing products for themselves and other users based on design criteria			✓			✓	✓
Design: generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communi-cation technology			✓			✓	✓
Make: select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]	✓	✓	✓		✓	✓	✓
Make: select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	✓	✓	✓		✓	✓	✓
Evaluate: explore and evaluate a range of existing products			✓			✓	✓
Evaluate: evaluate their ideas and products against design criteria			✓			✓	✓
Technical knowledge: build structures, exploring how they can be made strong-er, stiffer and more stable			✓				✓
Technical knowledge: explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.			✓				✓
Cooking and nutrition: use the basic principles of a healthy and varied diet to prepare dishes	✓	✓			✓		
Cooking and nutrition: understand where food comes from	✓	✓			✓		

DT Rationale and National Curriculum Coverage

General Aims of the National Curriculum for KS2 Covered by The PKC DT Curriculum
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 relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

General Aims of the National Curriculum for Cooking and Nutrition Covered by The PKC DT Curriculum
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

DT Rationale and National Curriculum Coverage

National Curriculum for LKS2	PKC DT Curriculum						
	Year 3				Year 4		
Pupils should be taught about:	Key Rings / Decorations	Pop-Up Books	Pasta		Cushions	Moving Playgrounds	Ratatouille & Couscous
Design: use research and develop design criteria to inform the design of innovative, function-al, appealing products that are fit for purpose, aimed at particular individuals or groups	✓	✓			✓	✓	
Design: generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and **computer-aided design** ***[not covered by The PKC curriculum]***	✓	✓			✓	✓	
Make: select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	✓	✓	✓		✓	✓	✓
Make: select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic quali-ties	✓	✓	✓		✓	✓	✓
Evaluate: investigate and analyse a range of existing products	✓	✓			✓	✓	
Evaluate: evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	✓	✓			✓	✓	
Evaluate: understand how key events and individuals in design and technology have helped shape the world					✓	✓	
Technical knowledge: apply their understanding of how to strengthen, stiffen and reinforce more complex structures		✓				✓	
Technical knowledge: understand and use mechanical systems in their products [for exam-ple, gears, pulleys, cams, levers and linkages]		✓				✓	

DT Rationale and National Curriculum Coverage

National Curriculum for LKS2	PKC DT Curriculum						
	Year 3				Year 4		
Pupils should be taught about:	Key Rings / Decorations	Pop-Up Books	Pasta		Cushions	Moving Playgrounds	Ratatouille & Cous Cous
Technical knowledge: understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]						✓	
Technical knowledge: apply their understanding of computing to program, monitor and control their products	**Not covered by the PKC DT Curriculum** This will be covered as part of the schools Computing Curriculum in addition to wider stem activities at St Johns Community Primary School including participation in trips, visits from external providers.						
Cooking and nutrition: understand and apply the principles of a healthy and varied diet			✓				✓
Cooking and nutrition: prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques			✓				✓
Cooking and nutrition: understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.			✓				✓

DT Rationale and National Curriculum Coverage

National Curriculum for UKS2	PKC DT Curriculum						
	Year 5				Year 6		
Pupils should be taught about:	Cams Toys	Pitta Bread	Bags		Water Wall	Mezze	Electrical Toys
Design: use research and develop design criteria to inform the design of innovative, function-al, appealing products that are fit for purpose, aimed at particular individuals or groups	✓		✓		✓		✓
Design: generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and **computer-aided design** ***[not covered by The PKC curriculum]***	✓		✓		✓		✓
Make: select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	✓	✓	✓		✓	✓	✓
Make: select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic quali-ties	✓	✓	✓		✓	✓	✓
Evaluate: investigate and analyse a range of existing products	✓		✓		✓		✓
Evaluate: evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	✓		✓		✓		✓
Evaluate: understand how key events and individuals in design and technology have helped shape the world	✓		✓		✓		✓
Technical knowledge: apply their understanding of how to strengthen, stiffen and reinforce more complex structures	✓				✓		
Technical knowledge: understand and use mechanical systems in their products [for exam-ple, gears, pulleys, cams, levers and linkages]	✓				✓		

DT Rationale and National Curriculum Coverage

National Curriculum for UKS2	PKC DT Curriculum						
	Year 5				Year 6		
Pupils should be taught about:	Cams Toys	Pitta Bread	Bags		Water Wall	Mezze	Electrical Toys
Technical knowledge: understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]							✓
Technical knowledge: apply their understanding of computing to program, monitor and control their products	**Not covered by the PKC DT Curriculum** This will be covered as part of the schools Computing Curriculum in addition to wider stem activities at St Johns Community Primary School including participation in trips, visits from external providers.						
Cooking and nutrition: understand and apply the principles of a healthy and varied diet		✓				✓	
Cooking and nutrition: prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques		✓				✓	
Cooking and nutrition: understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.		✓				✓	