


St Peter's Catholic Voluntary Academy - Progression of skills document: DT

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
<p>National Curriculum</p>	<p>From the Development Matters 2020:</p> <p>Physical Development: Progress towards a more fluent style of moving, with developing control and grace.</p> <p>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p> <p>Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.</p> <p>ELG: Use a range of small tools, including scissors,</p>	<p>Design (runs through all 4 strands) Pupils should be taught to: design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> <p>Make (runs through all 4 strands) Pupils should be taught to: select from and use a range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients,</p> <p>Evaluate (runs through all 4 strands) Pupils should be taught to: explore and evaluate a range of existing products evaluate their ideas and products against design criteria</p> <p>Technical knowledge (runs through all 4 strands) Pupils should be taught to: build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [e.g. levers, sliders, wheels and axles], in their products</p> <p>Cooking and nutrition (taught as a separate strand once per year) Pupils should be taught to: use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from</p>		<p>Design (runs through all 4 strands) Pupils should be taught to: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make (runs through all 4 strands) National Curriculum Pupils should be taught to: select from and use a wider range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate (runs through all 4 strands) Pupils should be taught to: investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world</p> <p>Technical knowledge (runs through all 4 strands) National Curriculum Pupils should be taught to: apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] understand and use electrical systems in their products [e.g. series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products</p> <p>Cooking and nutrition (taught as a separate strand once per year) National Curriculum Pupils should be taught to: understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</p>				

St Peter's Catholic Voluntary Academy - Progression of skills document: DT

	<p>paintbrushes and cutlery.</p>						
<p>Structures</p>	<p>Expressive Arts and Design Explore, use and refine a variety of artistic effects to express their ideas and feelings.</p> <p>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</p> <p>Create collaboratively, sharing ideas, resources and skills.</p> <p>ELG: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used.</p>	<ul style="list-style-type: none"> • Describing the purpose of the structure they are building - why do they exist in the world? • Learning the importance of a clear design criteria • Learning how to turn 2D nets into 3D structures • Learning that the shape of materials can be changed to improve the strength and stiffness of structures - why cylinders are strong. • Making stable structures from card, tape and glue • Evaluating the finished structure according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't • Suggest points for improvements 	<ul style="list-style-type: none"> • Learning about different types of structures, found in the natural world and in everyday objects • Identifying natural and man-made structures • Identifying when a structure is more or less stable than another • Knowing that shapes and structures with wide, flat bases or legs are the most stable • Understanding that the shape of a structure affects its strength - testing different shapes • Using the vocabulary: strength, stiffness and stability • Generating and communicating ideas using sketching and modelling • Building a strong and stiff structure by folding paper. Creating joints and structures from paper/card and tape • Evaluating the strength, stiffness and stability of own 	<ul style="list-style-type: none"> • Looking at buildings which have been built for different purposes and considering the way the construction fits the purpose. • Understanding the terminology of strut, tie, span, beam • Understanding the difference between frame and shell structure • Extending the knowledge of wide and flat based objects are more stable • Designing a building with key features to appeal to a specific person/ purpose • Constructing a range of 3D geometric shapes using nets • Making facades from a range of recycled materials • Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design 	<ul style="list-style-type: none"> • Building on and broadening knowledge of frame structures • Making a variety of free standing frame structures of different shapes and sizes • Reinforcing corners to strengthen a structure • Designing a stable structure for a specific function that is aesthetically pleasing and selecting materials to create a desired effect • Learning that architects consider light, shadow and patterns when designing • Applying frame and shell structure knowledge to a specific project • Considering effective and ineffective designs 	<ul style="list-style-type: none"> • Identifying arch and beam bridges and understanding the terms: compression and tension • Articulating the difference between beam, arch, truss and suspension bridges • Finding different ways to reinforce structures • Understanding how triangles can be used to reinforce bridges • • Exploring how to create a strong beam • Designing a stable structure that is able to support weight with focus on triangulation • measuring and marking wood accurately • Using the correct techniques to saw safely • Identifying where a structure needs reinforcement and using card corners for support • Suggesting points for improvements for own bridges and 	<ul style="list-style-type: none"> • Understanding man made and natural structures • Identifying the shell structure in everyday life (cars, aeroplanes, tins, cans) • Designing and making a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs • Drawing upon new and prior knowledge of structures • Using a range of materials and techniques learned in previous years to reinforce and add decoration to structures • Testing and adapting a design to improve it as it is developed • Improving a design plan based on peer evaluation

St Peter's Catholic Voluntary Academy - Progression of skills document: DT

			structure	<ul style="list-style-type: none"> • Suggesting points for modification of the individual designs 		those designed by others	
Topic suggestions		Windmills	Baby bear's chair	Castles	Pavilions	Bridges	Playgrounds
Mechanisms		<ul style="list-style-type: none"> • How levers and sliders can convert movement from one type to another • Using the vocabulary: up, down, left, right, vertical and horizontal to describe movement • Designing and making a moving picture or book for a given audience • Creating clearly labelled drawings which illustrate movement • Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed • Reviewing the success of a product by testing it with its intended audience 	<ul style="list-style-type: none"> • Learning that mechanisms are a collection of moving parts that work together in a machine • Learning that there is an input and output in a mechanism • Learning that a lever is something that turns on a pivot • Experimenting with linkages using card for levers and split pins for pivots - selecting suitable materials • Designing a moving monster for a specific audience • Selecting a suitable linkage system to produce the desired motions 	<ul style="list-style-type: none"> • Understanding how pneumatic systems work • Learning that different types of drawings are used in design to explain ideas clearly • Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy • Building secure housing for a pneumatic system • Testing and modifying the outcome, suggesting improvements 	<ul style="list-style-type: none"> • Learning that all moving things have kinetic energy • Understanding that kinetic energy is the energy that something (object person) has by being in motion • Designing a shape that reduces air resistance • Drawing a net to create a structure from • Choosing shapes that increase or decrease speed as a result of air resistance • Measuring, marking, cutting and assembling with increasing accuracy • Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance 	<ul style="list-style-type: none"> • Knowing that an input is the motion used to start a mechanism • Knowing that output is the motion that happens as a result of starting the input • Describing mechanisms that can be used to change one kind of motion into another • Designing a pop up page or book which uses a mixture of structures and mechanisms • Making mechanisms and/ or structures using sliders, pivots and folds to produce movement • Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result • Evaluating the work of others and receiving feedback on own work • 	<ul style="list-style-type: none"> • Understanding how linkages change the direction of a force • Exploring cams, learning that different shaped cams produce different follower movements • Design for an automata toy based on a choice of cam to create a desired movement • Making things move at the same time • Measuring, marking and cutting components accurately using a ruler and cutting tools • Assembling components accurately to make a stable frame • Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles • Applying points of

St Peter's Catholic Voluntary Academy - Progression of skills document: DT

						Suggesting points for improvement	improvements after evaluation • Describing changes they would make/do if they were to do the project again
Topic suggestions		Moving storybook	Moving monsters	Pneumatic toys	Slingshot cars	Pop up books	Automata toys
Mechanisms		<ul style="list-style-type: none"> • Identifying what mechanism makes a toy or vehicle roll forwards • Designing and making a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move • knowing that a wheel needs an axle in order to move • Testing mechanisms, identifying what stops wheels from turning, 	<ul style="list-style-type: none"> • Exploring wheel mechanisms in contexts other than vehicles • Designing and making a wheel mechanism to create a desired effect • Using peer feedback to modify a final design 	N/A	N/A	N/A	N/A
Topic suggestions		Wheels and axles	Ferris wheels	N/A	N/A	N/A	N/A
Food and nutrition		<ul style="list-style-type: none"> • Identifying if a food is a fruit or a vegetable • Learning where and how fruits and vegetables grow • Describing and grouping fruits by texture and taste • Tasting and evaluating different food combinations 	<ul style="list-style-type: none"> • Understanding what makes a balanced diet • Knowing where to find the nutritional information on packaging • Designing and making a healthy wrap based on a food combination which work well together 	<ul style="list-style-type: none"> • Learning that climate affects food growth • Describing the benefits of seasonal fruits and vegetables • Learning that imported foods travel from far away and this can negatively impact the environment 	<ul style="list-style-type: none"> • Understanding the impact of the cost and importance of budgeting while planning ingredients for biscuits • Evaluating and comparing a range of products • Designing a biscuit within a given budget, drawing upon previous taste 	<ul style="list-style-type: none"> • Learning that beef is from cattle and how beef is reared and processed • Understanding what constitutes a balanced diet • Learning to adapt a recipe to make it healthier • Adapting a traditional recipe, 	<ul style="list-style-type: none"> • Learning how to research a recipe by ingredient • Understanding the combinations of food that will complement one another • Writing a recipe, explaining the key steps, method and ingredients including facts and drawing from research

St Peter's Catholic Voluntary Academy - Progression of skills document: DT

		<ul style="list-style-type: none"> • Chopping fruit and vegetables safely to make a smoothie • Suggesting information to be included on packaging 	<ul style="list-style-type: none"> • Slicing food safely using the bridge or claw grip • Describing the information that should be included on a label 	<ul style="list-style-type: none"> • Learning that each fruit and vegetable gives us nutritional benefits • Creating a healthy and nutritious recipe using seasonal ingredients, considering the taste, texture, smell and appearance of the dish • Working with cooking equipment safely and hygienically • Learning the basic rules to avoid food contamination • Suggesting points for improvement 	<p>testing</p> <ul style="list-style-type: none"> • Describing the impact of the budget on the selection of ingredients • Following and adapting a baking recipe • Cooking safely, following basic hygiene rules • Evaluating a recipe, considering: taste, smell, texture and appearance, suggesting modifications 	<p>understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients</p> <ul style="list-style-type: none"> • Writing an amended method for a recipe to incorporate the relevant changes to ingredients • Using equipment safely, including knives • Knowing how to avoid cross contamination • Designing appealing packaging to reflect a recipe 	<p>undertaken</p> <ul style="list-style-type: none"> • Understanding where food comes from, describing the process of 'Farm to Fork' for a given ingredient • Working to a given timescale • Working safely and hygienically with independence • Taste testing and scoring final products
Topic suggestions		Smoothie	Balanced diet	Eating seasonally	Adapting a recipe	What could be healthier?	Come dine with me
Textiles		<ul style="list-style-type: none"> • Learning different ways in which to join fabrics together: pinning, stapling, gluing • Cutting fabric neatly with scissors • Using a template to create a design for a puppet (could be part of a cross curricular topic) • Using joining methods to decorate a puppet • Sequencing steps for construction • Reflecting on a finished 	<ul style="list-style-type: none"> • Joining items using fabric glue or stitching and identifying the benefits of these techniques • Threading a needle • Sewing running stitch, with evenly spaced, neat, even stitches to join fabric • Neatly pinning and cutting fabric using a template • Identifying aspects of their peers' work 	<ul style="list-style-type: none"> • Designing and making a template from an existing object and applying individual design criteria • Tying knots with greater independence • Sewing cross stitch and appliqué • Understanding the need to count the thread on a piece of even weave fabric in each direction to create uniform size and appearance 	<ul style="list-style-type: none"> • Understanding that there are different types of fabric fastenings and what they are • Articulating the benefits and disadvantages of different fastening types • Designing a fabric object which requires a fastening - choosing the fastening which is suitable for the object • Mocking up and 	<ul style="list-style-type: none"> • Designing a stuffed object considering the main component shapes required and creating an appropriate template • Measuring, marking and cutting fabric accurately and independently • Applying blanket stitch so the space between the stitches are even and regular and end product and giving point for further improvements 	<ul style="list-style-type: none"> • Designing garment in accordance to specification linked to set of design criteria to fit a specific theme • Using template pinning panels onto fabric • Sewing a strong running stitch, making small, neat stitches and following the edge • Learning different decorative stitches • Decorating the

St Peter's Catholic Voluntary Academy - Progression of skills document: DT

Topic suggestions		product, explaining likes and dislikes - use the puppets to tell a story.	that they particularly like and why	<ul style="list-style-type: none"> • Understanding that fabrics can be layered for effect • Completing design ideas with stuffing and sewing the edges • Evaluating an end product and thinking of other ways in which to create similar items 	<p>testing a paper template with accuracy and in keeping with the design criteria</p> <ul style="list-style-type: none"> • Measuring, marking and cutting fabric using a paper template • Selecting a stitch style to join fabric, working neatly sewing small neat stitches • Testing and evaluating an end product against the original design criteria - deciding how many of the criteria should be met for the product to be considered successful - suggesting modifications for improvement 	<ul style="list-style-type: none"> • Using applique to attach pieces of fabric decoration • Testing and evaluating 	<p>garment - attaching objects using thread and adding a secure fastening</p> <ul style="list-style-type: none"> • Evaluating work continually as it is created
		Puppets (Kapow)	Pouches (Kapow)	Cushions	Fastenings	Stuffed toys	Waistcoats