St Pauls Primary school

DT Curriculum Progression document

DT Curriculum Overview Key Concepts: Textiles, Structures, Food Technology, Mechanisms, Electrical and Digital Technology			
	Autumn 2	Spring 2	Summer 2
Year 1	Homes (PlanBee) Structures	Moving Pictures (PlanBee) Mechanisms- Sliders and pulleys	Making a Healthy Snack (cereal bars) Food Technology
Year 2	Moving Vehicles (Plan Bee) Mechanisms- wheels and axels	Perfect Pizza (PlanBee) Food Technology	Puppets (PlanBee) Textiles
Year 3/4	Christmas Stockings (PlanBee) Textiles	Moving Monsters (PlanBee) Mechanisms- Levers and linkages	Mini Greenhouses (Planbee) Structures
Year 4/5	Building Bridges (PlanBee) Structures	Fashion and Textiles (PlanBee) Textiles	Seasonal Food Food Technology
Year 5/6	Alarms (PlanBee) Electrical Technology	Moving Toys (PlanBee) Mechanisms- cams	Unit 1 - Sensing (Programming – taught in Y5/6 computing) Digital Technology Unit 2- Chocolate Truffles Food Technology

EYFS relevant links:

Expressive Arts and Design - It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts.

ELG: Children at the expected level of development will: 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.

ELG fine motor skills - Children at the expected level of development will: Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases; Use a range of small tools, including scissors, paint brushes and cutlery; Begin to show accuracy and care when drawing.

Specific Strand: Textiles					
Year group	**Year 1**	**Year 2**	**Year 3/4**	**Year 4/5**	**Year 5/6**
Specific NC statements as interpreted to be covered linked to specific strand	NC statements for Y1	NC statements for Y2 Design purposeful, functional, appealing products for themselves and others based on design criteria. Generate, model, develop and communicate ideas through different modes, eg. Talking and drawing. Select form a range of tools to perform practical tasks. Explore/evaluate a range of existing products and evaluate their products against design criteria.	NC statements for Y3/4 Research and develop design criteria to inform the design of innovative, functional, appealing products. Select from and use a wide range of tools and equipment to perform practical tasks. Select materials or components according to their functional properties and aesthetic qualities. Investigate and analyse existing products. Evaluate their products against their design criteria.	NC statements for Y4/5 Research and develop design criteria to inform the design of innovative, functional, appealing products. Select from and use a wide range of tools and equipment to perform practical tasks. Select materials or components according to their functional properties and aesthetic qualities. Investigate and analyse existing products. Evaluate their products against their design criteria. Understand how key events and individuals in DT have helped shape the world. Consider the views of others to improve their work.	NC statements for Y5/6
Title of DT Unit		Puppets (PlanBee)	Christmas Stockings (PlanBee)	Fashion and Textiles (PlanBee)	
Which term is this taught in?		**Term 6**	**Term 2**	**Term 4**	
Essential Skills to be taught and learned – Design, Make, Evaluate		• I can cut out felt using a simple template. • I can stick pieces of felt together to make a finger puppet. • I can add pieces of felt and other materials to a finger puppet to create features, such as eyes, hats and mouths. • I can use running stitch to join two pieces of fabric together. • I can use overstitch to join two pieces of fabric together. • I can sew a button onto a piece of fabric. • I can design a glove puppet for a particular purpose. • I can follow a design to make a glove puppet by	• I can use pins to temporarily fasten two pieces of fabric together. • I can use running stick, back stitch, overstitch and zigzag stitch to join two pieces of fabric together. • I can hide the finishing knot. • I can sew a button, bead, sequin or pipe cleaner onto a piece of fabric. • I can embroider shapes and patterns into a piece of fabric. • I can use appliqué to add decoration to a piece of fabric. • I can design a Christmas stocking incorporating a range of decorative techniques.	• I can sew a basting stitch. • I can sew a whip stitch. • I can sew a hem. • I can sew back stitch. • I can sew an appliqué decoration. • I can use back stitch to embroider. • • I can design a drawstring bag, including the necessary pattern pieces. • I can use pattern pieces to measure, mark, cut and sew fabric. • I can sew design elements according to design criteria. • I can join two pieces of fabric by hand sewing, using an appropriate stitch. • I can evaluate my finished product against a set of design criteria	

		sewing two pieces of fabric together and adding decorations. • I can evaluate my finished glove puppet by identifying what went well and what could be improved.	• I can use a template to cut out front and back pattern pieces. • I can follow a design to create a Christmas stocking. • I can evaluate the function and visual appeal of my finished Christmas stocking.		
Essential Knowledge – technical knowledge		• I can explore a variety of puppets, identifying and labelling their features.	• I can explain the difference between the function and visual appeal of a product. • I can evaluate the function and visual appeal of a variety of Christmas stockings. • I can identify a variety of decorative techniques that have been used to decorate Christmas stockings.	• I can explain the process of turning raw cotton into cloth. • I know that products that are woven together are called textiles. • I know that different textiles have different properties, and can match these to their purpose. • I can identify straight stitch, zigzag stitch, whip/blanket stitch, blind stitch, buttonhole stitch and overlock stitch on a variety of ready-made garments. • I can describe what the job of a fashion designer entails. • I know what a pattern piece is and why they are important when designing a garment.	
Key vocabulary to be covered, explained and remembered		Fabric, patterns, decorative, detail, running stitch, overstitch, textiles, design criteria, labels, evaluate.	Button, bead, pipe cleaner, sequin, zig zag stitch, applique, embroider, fasten, template, evaluate, alter, investigate, views, fit for purpose, functional.	Garment, straight stitch, zigzag stitch, whip/blanket stitch, blind stitch, buttonhole stitch and overlock, precision, designer, back stitch, woven, target market, measure, mark, cut, sew, hem.	
LOTC					

Specific Strand: Structures					
Year group	**Year 1**	**Year 2**	**Year 3/4**	**Year 4/5**	**Year 5/6**
Specific NC statements as interpreted to be covered linked to specific strand	NC statements for Y1 Design purposeful, functional, appealing products, for themselves and others, based on design criteria. Select from and use a range of tools and equipment to perform practical tasks. Evaluate their ideas and products against design criteria.	NC statements for Y2	NC statements for Y3/4 Research and develop design criteria to inform the design of innovative, functional, appealing products. Select from and use a wide range of tools and equipment to perform practical tasks. Select materials or components according to their functional properties and aesthetic qualities. Investigate and analyse existing products. Evaluate their products against their design criteria.	NC statements for Y4/5 Research and develop design criteria to inform the design of innovative, functional, appealing products. Select from and use a wide range of tools and equipment to perform practical tasks. Select materials or components according to their functional properties and aesthetic qualities. Investigate and analyse existing products. Evaluate their products against their design criteria. Understand how key events and individuals in DT have helped shape the world. Consider the views of others to improve their work.	NC statements for Y5/6
Title of DT Unit	Homes		Mini Greenhouses	Building Bridges	
Which term is this taught in?	**Term 2**		**Term 6**	**Term 2**	
Essential Skills to be taught and learned – Design, Make, Evaluate	• I can make changes to the design of a stable structure to make it fit for purpose. • I can explore a range of materials and evaluate the usefulness of their properties for a particular project. • I can explore how to make stable structures that hold a given object. • I can follow a design to make a stable structure. • I can evaluate my finished structure against a set of given criteria.		• I can explore a range of different greenhouses. • I can explain how the shape of a structure affects its stability. • I can use 3D nets to explore potential structures for a greenhouse, assessing their stability. • I can investigate ways of making a structure more stable, e.g. by inserting dowelling or adding triangles at the joins. • I can experiment with a range of materials to test which would be most appropriate for making the	• I can predict which beams will be strongest from their cross-section. • I can test the strength of different beam shapes using paper and card. • I can explain what a truss is and how trusses make bridges stronger. • I can build a truss bridge spanning a width of 40cm using paper straws. • I can use a fair test to evaluate the strength of my truss bridge. • I can explain how arches work to make bridges stronger. • I can test the arch heights to see which can bear the most load. • I can make an arch frame. • I can explain how suspension bridges use tension forces to work. • I can design, make and evaluate a prototype suspension bridge using a scale of 1:100 according to specific design criteria	

			structure of a mini greenhouse. • I can design a mini greenhouse using specific design criteria. • I can select appropriate tools and materials to make a mini greenhouse. • I can follow my design to make a mini greenhouse. • I can evaluate my finished mini greenhouse for stability, effectiveness and visual appeal.		
Essential Knowledge – technical knowledge	• I can identify the features of a home. • I know what the word 'stable' means. • I know some ways to make a structure more stable.		• I know what a greenhouse is and how they work. • I know how greenhouses are used today. • I know that the weight of the structure needs to be evenly spread on the base to make it secure. • I know that the wider a structure's base is, the more stable it will be.	• I know what beams and pillars are and how they are used in bridge construction. • I know what beams and pillars are and how they are used in bridge construction. • I can identify the three types of trusses commonly used in bridge design.	
Key vocabulary to be covered, explained and remembered	Stable, structure, home, features, model, evaluate, design, explore, cut join, make.		Explore, explain, structure, 3D nets, assessing, stability, doweling, join, criteria, base.	Test, trusses, construction, pillars, beams, plan, design, prototype, suspension, scale, mock up, purposeful, accuracy, arch, tension.	
LOTC	Look at different homes in the local area. Investigate and build some stable structures with play pod able to hold a specific weight (doll).		Investigate stable structure shapes – cube, cuboid, square based pyramid, triangular based pyramid, (sticks & bungee cords).	Make a bridge outside that you can walk across and it holds your weight and a car can go underneath it. Free standing bridges and supported bridges (use a tree).	

Specific Strand: Food Technology					
Year group	**Year 1**	**Year 2**	**Year 3/4**	**Year 4/5**	**Year 5/6**

Specific NC statements as interpreted to be covered linked to specific strand	NC statements for Y1 Understand where food comes from. Use the basic principles of a healthy and varied diet to prepare dishes.	NC statements for Y2 Understand where food comes from. Use the basic principles of a healthy and varied diet to prepare dishes. Evaluate their dish.	NC statements for Y3/4	NC statements for Y4/5 Understand and apply the principles of a healthy and varied diet. Understand seasonality and know where and how a variety of ingredients are grown, reared, caught, and processed. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Evaluate their dish – taste and presentation.	NC statements for Y5/6 Understand and apply the principles of a healthy and varied diet. Understand seasonality and know where and how a variety of ingredients are grown, reared, caught, and processed. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Evaluate their dish – taste and presentation.
Title of DT Unit	Healthy Snacks/Cereal Bars	Perfect Pizza		Seasonal food	Chocolate Truffles
Which term is this taught in?	Term 6	Term 4		Term 6	Term 6
Essential Skills to be taught and learned – Design, Make, Evaluate	• I can use a knife to cut some fruits and vegetables in different ways. • I can grate an apple and a carrot. • I can peel a banana, apple and cucumber.	• I can use the model of the balanced plate to evaluate how healthy different pizzas are. • I can explore different types of bread and evaluate which would work best for a pizza base. • I can design and make a healthy pizza following given criteria. • I can evaluate my finished pizza, saying what I think and feel about it.		• I can practise cooking skills including slicing, dicing, beating, whisking, folding, sieving, rolling and grating. • I can follow a recipe to make fairy cakes. • I can follow a recipe to make fruit tarts using seasonal fruit. • I can follow a recipe to make stuffed peppers. • I can use what I have learnt about seasonal food to design healthy meals and menus.	• To draw up a detailed specification for their design, working within a budget. • To produce detailed, cross-sectional sketched designs for their truffles, labelling key ingredients used. (4 designs) • To evaluate their initial ideas against the design specification and identify and explain any constraints e.g. cost • To plan and order the main stages of making their chosen design/recipe, listing ingredients, utensils and equipment they will need as well as

					the quantity of ingredients. • Select and use the most appropriate equipment and utensils to prepare and combine ingredients, as well accurately weighing ingredients. • Critically evaluate the success of the product throughout the making process, acting decisively to make changes to the recipe when necessary. • Evaluate the final product against the created design specification, critically reflecting on the sensory qualities of the product. • Critically evaluate the success of the product and reflect on the constraints of the design. • Suggest some detailed changes for the future and explain how these could be achieved. • Draw comparisons between their end product and commercial products they are familiar with (explored in the investigate stage).
Essential Knowledge – technical knowledge	• I can name a variety of fruits and vegetables.	• I can name a variety of pizza toppings.		• I can explain what the term 'seasonal food' means.	• Investigate a range of existing chocolate

	• I can use adjectives to describe the taste, smell and texture of a variety of fruits and vegetables. • I know that some fruits and vegetables need to be washed, cut, cored, peeled or grated before they can be eaten. • I understand basic food hygiene, e.g. washing hands, tying long hair back and keeping surfaces clean.	I can identify which food group a variety of pizza toppings belong to. • I can sort pizza toppings into groups based on different criteria, e.g. animal vs plant products. • I can explain why each of the food groups is important for a balanced diet.		• I know that different parts of the world have different seasonal food. • I can discuss the benefits and problems of unseasonal food being available in shops all year round. • I know that some foods, like wheat, are available all year round in the UK. • I can describe the cycle of wheat production in the UK. • I can distinguish between fruits that are grown in the UK and those that are grown abroad. • I know how food producers can speed up or slow down the ripening process to make fruits and vegetables available all year round. • I know some of the nutrients we get from fruits, vegetables. • I know some vegetarian options that provide the same nutrients as meat.	products – conduct taste tests and produce a sensory analysis for each product tasted. • To know the source of different staple • ingredients for chocolate products. • To investigate a range of dietary needs and allergies and how these can be accommodated in chocolate products. • To generate innovative ideas by carrying out research, using surveys, interviews, questionnaires and web-based resources.
Key vocabulary to be covered, explained and remembered	Fruit, vegetable, apple, cucumber, banana, grate, peel, knife, cut, hygiene.	Model, balanced, evaluate, healthy, chop, farmed, eat well guide, hygienic, nutritious, savoury and sweet, originate, diet, prepare, peel, portion.		slicing, dicing, beating, whisking, folding, sieving, rolling and grating, recipe, nutrients, seasonal, food producers, ripening, production.	Detailed specification, design, budget cross-section, truffles, innovative ideas, research, utensils, equipment, sensory analysis, allergies.
LOTC		Make a pizza on the campfire.			

Specific Strand: Mechanisms					
Year group	**Year 1**	**Year 2**	**Year 3/4**	**Year 4/5**	**Year 5/6**
Specific NC statements as interpreted to be covered linked to specific strand	NC statements for Y1 Design purposeful, functional, appealing products, for themselves and others, based on design criteria. Select from and use a range of tools and equipment to perform practical tasks. Evaluate their ideas and products against design criteria.	NC statements for Y2 Design purposeful, functional, appealing products for themselves and others based on design criteria. Generate, model, develop and communicate ideas through different modes, eg. Talking and drawing. Select form a range of tools to perform practical tasks. Explore/evaluate a range of existing products and	NC statements for Y3/4 Research and develop design criteria to inform the design of innovative, functional, appealing products. Select from and use a wide range of tools and equipment to perform practical tasks. Select materials or components according to their functional properties and aesthetic qualities. Investigate	NC statements for Y4/5	NC statements for Y5/6 Research and develop design criteria to inform the design of innovative, functional, appealing products. Select from and use a wide range of tools and equipment to perform practical tasks. Select materials or components according to their functional properties and aesthetic qualities. Investigate

		evaluate their products against design criteria.	and analyse existing products. Evaluate their products against their design criteria.		and analyse existing products. Evaluate their products against their design criteria.
Title of DT Unit	Moving Pictures	Moving Vehicle	Moving Monsters		Moving Toys
Which term is this taught in?	**Term 4**	**Term 2**	**Term 4**		**Term 4**
Essential Skills to be taught and learned – Design, Make, Evaluate	• I can design a picture with a moving mechanism. • I can follow my design to create a moving picture. • I can think about the appropriate materials to use and how to work safely and carefully. • I can share and demonstrate how my moving pictures work. • I can evaluate my own moving pictures.	• I can explore different ways of using axles, chassis and wheels to create a moving base. • I can design a vehicle with wheels, axles and chassis, as well as a body. • I can follow a design to make a moving vehicle. • I can evaluate my finished moving vehicle.	• I can draw, annotate and describe my own designs. • I can create their moving monster toys. • I can evaluate both my process and my finished product.		• I can use previously learnt knowledge to design a moving toy with a cam mechanism. • I can think about who the toy is for, what shape the cam will be, the structure, decoration and materials needed to construct it. • I can refer to my designs from the previous lesson to create moving toys. • I can demonstrate my finished moving toys, then evaluate both its process and the finished product.
Essential Knowledge – technical knowledge	• I can find out what a moving mechanism is • and how to create one. • I can focus on slider mechanisms, recognising different types and how they work. • I can find out what levers and pivots are and how to create this mechanism • I can be challenged to make this particular	• I can investigate a range of vehicles, identifying and labelling their features. • I know what an axle is. • I know what a chassis is.	• I can think of objects that use air to make them work, then examine, sketch, label and/or describe a variety of these kinds of objects. • I can learn about simple pneumatic systems. • I can make a variety of simple pneumatic systems according to given instructions		• I can think of and investigate different moving toys. They will learn about cam mechanisms and explore different toys that use them. • I can explore and investigate different types of cam mechanisms and think about the shapes. • I can test different shaped cams to see how they affect the

	mechanism using a template, strips of card and some paper fasteners. • I can find out what a wheel mechanism is and how to create one.		using basic equipment. • I can begin to develop ideas about the use of pneumatic systems in a moving monster toy/ model.		linear movement of the follower. • I can explore materials and investigate different ways of strengthening moving toy structures.
Key vocabulary to be covered, explained and remembered	**Mechanism, slider, levers, pivots, fasteners**	**vehicle, wheels, axles, chassis**	**annotate, sketch, label, describe, pneumatic systems**		**mechanism, cam, structure, strengthening, movement, decoration, construct**
LOTC					

Specific Strand: Electrical and Digital Technology						
Year group	**Year 1**	**Year 2**	**Year 3/4**	**Year 4/5**	**Year 5/6**	**Year 5/6**
Specific NC statements as interpreted to be covered linked to specific strand					NC statements for Y5/6 Research and develop design criteria to inform the design of innovative, functional, appealing products. Select from and use a wide range of tools and equipment to perform practical tasks. Select materials or components according to their functional properties and aesthetic qualities. Investigate and analyse existing products. Evaluate their products against their design criteria.	
Title of DT Unit					**Electrical- Alarms**	**Digital- Sensing**
Which term is this taught in?					**Term 6**	**Linked to Physical Computing** **See NCCE Year 6 Unit 6 for skills and knowledge**
Essential Skills to be taught and learned – Design, Make, Evaluate					• I can draw and annotate an alarm system design for a purpose of their choosing. • I can create designs and make model alarm systems for a purpose. • I can evaluate my own design process and finished product according to a number of given, and agreed upon, criteria.	
Essential Knowledge – technical knowledge					• I can look at a variety of alarm systems and consider their uses. • I can discuss and agree upon appropriate alarms for a range of scenarios, or answer questions about a variety of alarm systems.	

					• I can consider ways in which different switches may be used to control an electrical circuit. • I can investigate creating working circuits with a variety of switches, or try to create circuits according to given diagrams.	
Key vocabulary to be covered, explained and remembered					**annotate, alarm, electrical circuit, switches, diagrams, product, purpose, criteria**	
LOTC						