St. Peter's Church of England Primary School - Key Learning (NC) in Design and Technology

Key learning in DT (NC)	EYFS	Key Stage 1	Key Stage 2
	Progression of Knowledge and Skills		
Design		▪ 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	▪ 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
Make	Explore different materials freely, in order to develop their ideas about how to use them and what to make. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Create collaboratively, sharing ideas, resources and skills. Use a range of small tools, including scissors and paint brushes.	▪ Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] ▪ Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	▪ Select from and use a wider range of tools and equipment to perform practical tasks [for example, 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
Evaluate	Share their creations, explaining the processes used.	▪ Explore and evaluate a range of existing products ▪ Evaluate their ideas and products against design criteria	▪ 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
Technical knowledge		▪ Build structures, exploring how they can be made stronger, stiffer and more stable	▪ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

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		▪ Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	▪ Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] ▪ Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] ▪ Apply their understanding of computing to program, monitor and control their products.
Cooking and Nutrition		▪ Use the basic principles of a healthy and varied diet to prepare dishes ▪ Understand where food comes from.	▪ 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.

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School Themes:		EYFS	Key Stage 1	
			Year 1	**Year 2**
Skills	Design		▪ Use pictures and words to convey what they want to design/make. ▪ Propose more than one idea for their product. ▪ Use kits/reclaimed materials to develop more than one idea. ▪ Model ideas with kits, reclaimed materials. ▪ Select appropriate technique explaining: First… Next… Last…. ▪ Explore ideas by rearranging materials. ▪ Select pictures to help develop ideas. ▪ Use drawings to record ideas as they are developed. ▪ Add notes to drawings to help explanations. ▪ Describe their models and drawings of ideas and intentions.	
	Make		▪ Discuss their work as it progresses. ▪ Select materials from a limited range that will meet the design criteria. ▪ Select and name the tools needed to work the materials. ▪ Explain what they are making. ▪ Explain which materials they are using and why. ▪ Name the tools they are using. ▪ Describe what they need to do next.	
	Evaluate		▪ Explore existing products and investigate how they have been made. ▪ Decide how existing products do/do not achieve their purpose. ▪ Talk about their design as they develop and identify good and bad points. ▪ Note changes made during the making process as annotation to plans/drawings. ▪ Say what they like and do not like about items they have made and attempt to say why. ▪ Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.	

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		EYFS	Year 1	Year 2
Material	Food and Nutrition		**To be able to design, make and evaluate a fruit salad/fruit kebab for a stated purpose and stated user.** ▪ Develop a food vocabulary using taste, smell, texture and feel. ▪ Group familiar food products e.g. fruit and vegetables. ▪ Explain where food comes from. ▪ Cut, peel, grate, chop a range of ingredients ▪ Work safely and hygienically. ▪ Understand the need for a variety of foods in a diet. ▪ Measure and weigh food items, non-statutory measures e.g. spoons, cups. (Speak to school cook)	**To be able to design, make and evaluate a healthy seasonal salad using locally sourced ingredients for a stated purpose and stated user.** ▪ Develop a food vocabulary using taste, smell, texture and feel. ▪ Group familiar food products e.g. fruit and vegetables. ▪ Explain where food comes from. ▪ Cut, peel, grate, chop a range of ingredients ▪ Work safely and hygienically. ▪ Understand the need for a variety of foods in a diet. ▪ Measure and weigh food items, non-statutory measures e.g. spoons, cups. (Speak to school cook)
	Textiles			**To be able to design, make and evaluate a puppet for a stated purpose.** ▪ Cut out shapes which have been created by drawing round a template onto the fabric. ▪ Join fabrics by using e.g. running stitch, glue, staples, over sewing, tape. ▪ Decorate fabrics with attached items e.g. buttons, beads, sequins, braids, ribbons. ▪ Colour fabrics using a range of techniques e.g. fabric paints, printing, painting.
	Structures		**To be able to design, make and evaluate a Robot/Contemporary junk model) structure for a stated purpose.**	

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			▪ Explore how to make structures stronger. ▪ Investigate different techniques for stiffening a variety of materials. ▪ Test different methods of enabling structures to remain stable. ▪ Join appropriately for different materials and situations e.g. glue, tape. ▪ Mark out materials to be cut using a template. ▪ Use a glue gun with close supervision.	
	Mechanisms		**To be able to design, make and evaluate a moving (simple card levers) picture for a stated purpose and a stated user.** ▪ Join appropriately for different materials and situations e.g. glue, tape. ▪ Mark out materials to be cut using a template. ▪ Fold, tear and cut paper and card. ▪ Cut along lines, straight and curved. ▪ Use a hole punch. ▪ Insert paper fasteners for card. ▪ Experiment with levers and sliders to find different ways of making things move in a 2D plane.	**To be able to design, make and evaluate a wheeled vehicle (moon buggy) for a stated purpose and a stated user.** ▪ Join appropriately for different materials and situations e.g. glue, tape. ▪ Try out different axle fixings and their strengths and weaknesses. ▪ Make vehicles with construction kits which contain free running wheels. ▪ Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. ▪ Roll paper to create tubes. ▪ Cut dowel using hacksaw and bench hook. ▪ Attach wheels to a chassis using an axle.

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		Key Stage 2
Skills	Design	▪ Develop more than one design or adaptation of an initial design. ▪ Plan a sequence of actions to make a product. ▪ Record the plan by drawing using annotated sketches. ▪ Begin to use cross-sectional and exploded diagrams. ▪ Use prototypes to develop and share ideas. ▪ Think ahead about the order of their work and decide upon tools and materials. ▪ Propose realistic suggestions as to how they can achieve their design ideas. ▪ Consider aesthetic qualities of materials chosen. ▪ Use CAD where appropriate.
	Make	▪ Prepare pattern pieces as templates for their design. ▪ Cut slots. ▪ Cut internal shapes. ▪ Select from a range of tools for cutting shaping joining and finishing. ▪ Use tools with accuracy. ▪ Select from techniques for different parts of the process. ▪ Select from materials according to their functional properties. ▪ Plan the stages of the making process.

		▪ Use appropriate finishing techniques.	
	Evaluate	▪ Investigate similar products to the one to be made to give starting points for a design. ▪ Draw/sketch products to help analyse and understand how products are made. ▪ Research needs of user. ▪ Identify the strengths and weaknesses of their design ideas in relation to purpose/user. ▪ Decide which design idea to develop. ▪ Consider and explain how the finished product could be improved. ▪ Discuss how well the finished product meets the design criteria of the user. ▪ Investigate key events and individuals in Design and Technology.	
		Year 3	**Year 4**
Material	Food and Nutrition	**To be able to design, make and evaluate a healthy picnic for a stated user.** ▪ Develop sensory vocabulary/knowledge using, smell, taste, texture and feel. ▪ Analyse the taste, texture, smell and appearance of a range of foods (predominantly savoury). ▪ Follow instructions/recipes. ▪ Make healthy eating choices – use the *Eatwell plate.* Contact local dietician/school nurse. ▪ Join and combine a range of ingredients. ▪ Explore seasonality of vegetables and fruit. ▪ Find out which fruit and vegetables are grown in countries/continents studied in Geography. ▪ Develop understanding of how meat/fish are reared/caught.	
	Textiles		**To be able to design, make and evaluate a money container, which can hold more than one currency, for a journey to a European country.** ▪ Develop vocabulary for tools, materials and their properties. ▪ Understand seam allowance.

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			▪ Join fabrics using tacking, running stitch, over sewing, blanket stitch and back stitch. ▪ Prototype a product using J cloths. ▪ Use prototype to make pattern. ▪ Explore strengthening and stiffening of fabrics. ▪ Explore fastenings (inventors?) and recreate some. ▪ Sew on buttons and make loops. ▪ Use appropriate decoration techniques. (Talk to local craftworker/leather worker about skills etc)
	Structures	**To be able to design, make and evaluate a mini planter for the outdoor area.** ▪ Develop vocabulary related to the project. ▪ Create shell or frame structures. ▪ Strengthen frames with diagonal struts. ▪ Make structures more stable by giving them a wide base. ▪ Measure and mark square section, strip and dowel accurately to one centimetre	
	Mechanical and electrical systems and ICT	**To be able to design, make and evaluate a book which incorporates mechanical systems, (levers and linkages) retelling the story if the Iron Man for a younger child.** ▪ Develop vocabulary related to the project. ▪ Use mechanical systems such levers and linkages. ▪ Use lolly sticks/card to make levers and linkages. ▪ Use linkages to make movement larger or more varied	**To be able to design, make and evaluate an electronic quiz game for a younger child.** ▪ Use electrical systems such as switches, bulbs and buzzers. ▪ Develop vocabulary related to the project. ▪ Use ICT to control products.
		Year 5	**Year 6**
Skills	Design	▪ List tools needed before starting the activity. ▪ Plan the sequence of work e.g. using a storyboard. ▪ Record ideas using annotated diagrams. ▪ Use models, kits and drawings to help formulate design ideas. ▪ Combine modelling and drawing to refine ideas. ▪ Devise step by step plans which can be read / followed by someone else. ▪ Use exploded diagrams and cross-sectional diagrams to communicate ideas. ▪ Sketch and model alternative ideas.	

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		▪ Decide which design idea to develop.	
	Make	▪ Make prototypes. ▪ Develop one idea in depth. ▪ Use researched information to inform decisions. ▪ Produce detailed lists of ingredients / components / materials and tools. ▪ Use a computer to model ideas. ▪ Select from and use a wide range of tools. ▪ Cut accurately and safely to a marked line. ▪ Select from and use a wide range of materials. ▪ Use appropriate finishing techniques for the project. ▪ Refine their product – review and rework/improve.	
	Evaluate	▪ Research and evaluate existing products (including book and web-based research). ▪ Consider user and purpose. ▪ Identify the strengths and weaknesses of their design ideas. ▪ Give a report using correct technical vocabulary. ▪ Consider and explain how the finished product could be improved related to design criteria. ▪ Discuss how well the finished product meets the design criteria of the user. Test on the user! ▪ Understand how key people have influenced design.	
		Year 5	**Year 6**
Material	Food and Nutrition	**To be able to design, make and evaluate a simple meal for a festival celebration from a different culture.** ▪ Prepare food products taking into account the properties of ingredients and sensory characteristics. ▪ Weigh and measure using scales. ▪ Select and prepare foods for a particular purpose. ▪ Work safely and hygienically. ▪ Use a range of cooking techniques. ▪ Know where and how ingredients are grown and processed.	**To be able to design, make and evaluate a meal for a stated user.** ▪ Prepare food products taking into account the properties of ingredients and sensory characteristics. ▪ Weigh and measure using scales. ▪ Select and prepare foods for a particular purpose. ▪ Work safely and hygienically. ▪ Show awareness of a healthy diet (using the eatwell plate). ▪ Use a range of cooking techniques. ▪ Know where and how ingredients are grown and processed. ▪ Consider influence of chefs e.g. Jamie Oliver and school meals, Hugh Fearnley-Whittingstall and sustainable fishing etc.

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	Textiles		
	Structures		**To be able to design, make and evaluate a game for the Christmas Fair.** ▪ Use the correct terminology for tools, materials and processes. ▪ Use bradawl to mark hole positions. ▪ Use hand drill to drill tight and loose fit holes. ▪ Cut strip wood, dowel, square section wood accurately to 1mm. ▪ Join materials using appropriate methods. ▪ Build frameworks to support mechanisms. ▪ Stiffen and reinforce complex structures.
	Mechanical and Electrical Systems and ICT	**To be able to design, make and evaluate a moving vehicle for a stated purpose and a stated user.** ▪ Develop a technical vocabulary appropriate to the project. ▪ Use mechanical systems such as cams, pulleys and gears. ▪ Use electrical systems such as motors.	**To be able to design, make and evaluate a new souvenir to be sold in Morecambe/Eden Project Gift Shop.** ▪ Develop a technical vocabulary appropriate to the project. ▪ Use mechanical systems such as cams, pulleys and gears. ▪ Use electrical systems such as motors. ▪ Program, monitor and control using ICT. (Invite someone in from Tourist Information/Eden Project to help with design phase).