Knowledge progression – Design and Technology – St. Luke's C of E Primary School

	Foundation 2	Year 1	Year 2	End of key stage 1 expectations	Year 3	Year 4	Year 5	Year 6	End of key stage 2 expectations
D E S I G N 	*To know how to select appropriate resources *To know how to use gestures, talking and arrangements of materials and components to show design * To know how to use contexts set by the teacher and myself *To know how to use language of designing and making (join, build, shape, longer, shorter, heavier etc.)	* To know how to create my own ideas * To know how to explain what I want to do * To know how to explain what my product is for, and how it will work * To know how to use pictures and words to plan, begin to use models *To know how to design a product for myself following design criteria *To know how to research similar existing products	* To know how to think of my own ideas and plan what to do next * To know how to explain what I want to do and describe how I may do it * To know how to explain purpose of product, how it will work and how it will be suitable for the user * To know how to describe my designs using pictures, words, models, diagrams, begin to use ICT in my designs. * To know how to design products for myself and others following design criteria * To know the best tools to use and materials, and explain choices * To know how to use knowledge of existing	*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, mockups and, where appropriate, information and communication technology	*To know how to research others' needs when designing * To know how to show that a design meets a range of requirements * To know how to describe purpose of product *To know how to follow a given design criteria *To have at least one idea about how to create product * To know how to create a plan which shows order, equipment and tools *To know how to describe a design using an accurately labelled sketch and words *To know how to make design decisions *To know how to explain how a product will work * To know how to make a prototype	* To know how to use research for design ideas * To know how make my design meet a range of requirements and is fit for purpose *To know to begin to create own design criteria *To know how to have at least one idea about how to create product and suggest improvements for design * To know how to produce a plan and explain it to others *To know how to say how realistic the plan is. *To know how to include an annotated sketch *To know how to make and explain design decisions considering availability of resources	*To know how to use internet and questionnaires for research and design ideas *To know how to take a user's view into account when designing * To begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose *To know how to create own design criteria * To have a range of ideas *To know how to produce a logical, realistic plan and explain it to others. *To know and use cross-sectional planning and annotated sketches *To know how to make design decisions considering time and resources. *To know how to clearly explain how	* To know how to draw on market research to inform design * To know and use research of user's individual needs, wants, requirements for design *To know how to identify features of design that will appeal to the intended user *To know how to create own design criteria and specification * To be able to come up with innovative design ideas *To know how to follow and refine a logical plan. *To be able to use annotated sketches, cross-sectional planning and complex diagrams *To know how to make design decisions, considering,	*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 designs

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			products to produce ideas		* To know how to use computers to show my designs	*To know how to explain how a product will work * To know how to make a prototype *To know how to use computers to show design.	parts of product will work. *To model and refine design ideas by making prototypes and using pattern pieces. *To know how to use computer-aided designs	resources and cost *To know how to clearly explain how parts of design will work, and how they are fit for purpose *To independently model and refine design ideas by making prototypes and using pattern pieces *To know how to use computer-aided designs	
C R E A T E 	*To know how to construct with a purpose, using a variety of resources *To be able to use simple tools and techniques *To know how to build / construct with a wide range of objects *To be able to select tools & techniques to shape, assemble and join *To know how to replicate structures with	*To know how to explain what I'm making and why *To consider what I need to do next *To know how to select tools/ equipment to cut, shape, join, finish and explain choices *To know how to measure, mark out, cut and shape, with support *To know how to choose suitable materials and explain choices	*To know how to explain what I am making and why it fits the purpose *To know how to make suggestions as to what I need to do next. *To be able to join materials/compone nt together in different ways *To know how to measure, mark out, cut and shape materials and components, with support.	*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	*To know how to select suitable tools/equipment, explain choices; begin to use them accurately * To know how to select appropriate materials, fit for purpose. *To be able to work through a plan in order *To consider how a good product will be *To begin to measure, mark out, cut and shape	*To know how to select suitable tools and equipment, explain choices in relation to required techniques and use accurately *To know how to select appropriate materials, fit for purpose; explain choices *To be able to work through a plan in order. *To know and realise if a product is going to be good quality	* To know how to use selected tools/equipment with good level of precision *To know how to produce suitable lists of tools, equipment/materials needed *To be able to select appropriate materials, fit for purpose; explain choices, considering functionality *To know how to create and follow	* To be able to use selected tools and equipment precisely *To know and produce suitable lists of tools, equipment, materials needed, considering constraints *To know and select appropriate materials, fit for purpose; explain choices, considering	*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

	materials / components *Discuss how to make an activity safe and hygienic *Record experiences by drawing, writing, voice recording *Understand different media can be combined for a purpose	*To know how to use finishing techniques to make a product look good *To know how to work in a safe and hygienic manner.	*To know how to describe which tools I'm using and why *To be able to choose suitable materials and explain choices depending on characteristics. *To know some finishing techniques to make product look good *To know how to work safely and hygienically	and ingredients, according to their characteristics	materials/components with some accuracy * To begin to assemble, join and combine materials and components with some accuracy * To begin to apply a range of finishing techniques with some accuracy.	*To know how to measure, mark out, cut and shape materials/components with some accuracy *To know how to assemble, join and combine materials and components with some accuracy *To know how to apply a range of finishing techniques with some accuracy.	detailed step by-step plan *Explain how product will appeal to an audience *To know how to accurately measure, mark out, cut and shape materials/components *Mainly accurately assemble, join and combine materials/components *Mainly accurately apply a range of finishing techniques *Use techniques that involve a small number of steps *Begin to be resourceful with practical problems	functionality and aesthetics *To know how to create, follow, and adapt detailed step-by-step plans *Explain how product will appeal to audience; make changes to improve quality *Accurately measure, mark out, cut and shape materials/components *To know how to accurately assemble, join and combine materials/components * To know how to accurately apply a range of finishing techniques * use techniques that involve a number of steps * be resourceful with practical problems	
E V A	*To know how to adapt work if necessary	*To know how to talk about my work,	* To know how to describe what went	*Explore and evaluate a range of existing	* To know how to look at design criteria while	*To know how to refer to design criteria while	*To know how to evaluate quality of	*To know how to evaluate the quality of a	*Investigate and analyse a range of existing products.

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L U A T E 	*To know how to dismantle, examine, talk about existing objects/structures *To know how to consider and manage some risks *To know how to practise some appropriate safety measures independently *To be able to talk about how things work *To look at similarities and differences between existing objects / materials / tools *To show an interest in technological toys *To know how to describe textures	linking it to what I was asked to do * To know how to talk about existing products considering: use, materials, how they work, audience, where they might be used *To know how to talk about existing products, and say what is and isn't good * To know how to talk about things that other people have made *begin to talk about what could make product better	well, thinking about design criteria * To be able to talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion *To know how evaluate how good existing products are *To know and explain about what I would do differently if I were to do it again and why	products *Evaluate their ideas and products against design criteria	designing and making *To know how to use design criteria to evaluate finished product * To be able to say what I would change to make a design better *To begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose *To know and begin to understand by whom, when and where products were designed * To know and learn about some inventors/ designers/ engineers/chefs/ manufacturers of ground-breaking products	designing and making *To know how to use criteria to evaluate product * To begin to explain how I could improve original design *To know how to evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * To be able to discuss by whom, when and where products were designed * research whether products can be recycled or reused * know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products	design while designing and making *To evaluate ideas and finished product against specification, considering purpose and appearance. *To know how to test and evaluate final product * To know how to evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * To begin to evaluate how much products cost to make and how innovative they are *research how sustainable materials are *talk about some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products	design while designing and making; is it fit for purpose? * keep checking design is best it can be. *To know how to evaluate ideas and finished product against specification, stating if it's fit for purpose *Test and evaluate final product; explain what would improve it and the effect different resources may have had thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose *To know how to evaluate how much products cost to make and how innovative they are	*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

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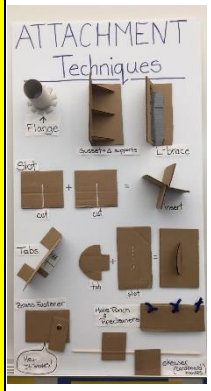
								*To be able to research and discuss how sustainable materials are *consider the impact of products beyond their intended purpose *To know and discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products	
Technical Knowledge – Materials and Structures		*To begin to measure and join materials, with some support *To know how to describe differences in materials *To know and suggest ways to make materials/products stronger	*To know how to measure materials *To know how to describe some different characteristics of materials *To know how to join materials in different ways *To know how to use joining, rolling or folding to make it stronger *use own ideas to try to make product stronger	*Build structures, exploring how they can be made stronger, stiffer and more stable 	*To know how to use appropriate materials *To know how to work accurately to make cuts and holes * To know how to join materials *To begin to make strong structures	*To know how to measure carefully to avoid mistakes *To know how to make products strong *To continue working on a product even if original didn't work *To know how to make a strong, stiff structure	*To know how to select materials carefully, considering intended use of product and appearance *To know how to explain how a product meets design criteria *To know how to measure accurately enough to ensure precision *To ensure product is strong and fit for purpose *To know how to reinforce and strengthen a 3D frame	*To know to select materials carefully, considering intended use of the product, the aesthetics and functionality. *To know how to explain how a product meets design criteria * To know how to reinforce and strengthen a 3D frame	*Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

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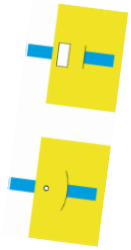
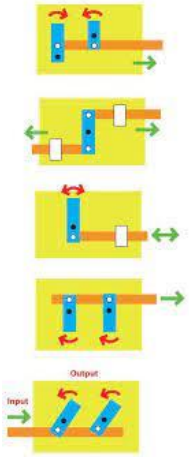
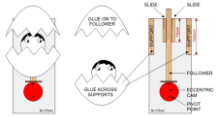
Technical Knowledge - Mechanisms		*To begin to design, create and use levers or slides	*To use levers or slides in my designs *To know and understand how to use wheels and axles on my designs	*Explore and use mechanisms (e.g, levers, sliders, wheels and axles), in their products.	To know and select appropriate tools / techniques *To know how to alter product after checking, to make it better *To know how to use simple lever and linkages to create movement in my designs 	*To know how to select most appropriate tools / techniques *To explain alterations to product after checking it *To grow in confidence about trying new / different ideas. *To know how to use levers and linkages to create movement *To know how to use pneumatics to create movement 	*To know how to refine products after testing *To grow in confidence about trying new / different ideas *To know how to use cams, pulleys or gears to create movement 	*To refine products after testing, considering aesthetics, functionality and purpose *To know to incorporate hydraulics and pneumatics To be confident to try new / different ideas *To know how to use cams, pulleys and gears to create movement 	*Understand and use mechanical systems in their products (e.g, gears, pulleys, cams, levers and linkages) 
Technical Knowledge – Textiles		*To know how to measure, cut and join textiles to make a product, with some support *To be able to choose suitable textiles for a particular purpose	*To know how to measure textiles *join textiles together to make a product, and explain how I did it *To know how to carefully cut textiles to produce accurate pieces		*To know how to join different textiles in different ways *To know how to choose textiles considering appearance and functionality To know and begin to understand that a simple fabric	*To know and think about the user when choosing textiles *To know and think about how to make product strong * To begin to devise a template *To explain how to join things in a different way	*To be able to think about the user and aesthetics when choosing textiles *To know how to use own template *To think about how to make product strong and look better *To be able to think of a range of ways to	*To think about user's wants/needs and aesthetics when choosing textiles *To know how to make a product attractive and strong *To know how to make a prototype	

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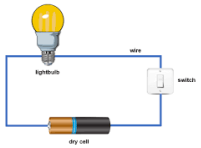
			*To know how to explain choices of textile *To know and understand that a 3D textile structure can be made from two identical fabric shapes.		shape can be used to make a 3D textiles project	*To understand that a simple fabric shape can be used to make a 3D textiles project	join materials together *To begin to understand that a single 3D textiles project can be made from a combination of fabric shapes.	*To use a range of joining techniques *To think about how a product might be sold *To think carefully about what would improve product *To understand that a single 3D textiles project can be made from a combination of fabric shapes.	
Technical Knowledge – Food and Nutrition 	*To know about food preparation, tools, techniques and processes *To know how to practise stirring, mixing, pouring, blending *To know how to discuss about making an activity safe and hygienic *To know how to use my senses when cooking. *To understand the need for variety in food *To understand that eating well contributes to good health	*To know how to describe textures *To know the importance of washing hands & clean surfaces *To be able to think of interesting ways to decorate food *To know where some foods come from, (i.e. plant or animal) *To know how to describe differences between some food groups (i.e. sweet, vegetable etc.) *To be able to discuss how fruit and vegetables are healthy *To know how to cut, peel and grate safely,	*To know to how to explain hygiene and keep a hygienic kitchen/work space *To know how to describe properties of ingredients and importance of varied diet *To know where food comes from (animal, underground etc.) *To know how to describe how food is farmed, home-grown, caught *To know how to draw an eat well plate; explain there are groups of food *To know how to describe what "five a day" means	*Use the basic principles of a healthy and varied diet to prepare dishes *Understand where food comes from. 	*To know how to carefully select ingredients *To know how to use equipment safely *To know how to make product look attractive *To think about how to grow plants and how to use them in cooking *To begin to understand that food comes from the UK and the wider world *To know how to describe a healthy diet= variety/balance of food/drinks	*To know how to be safe/hygienic and to be able to explain this to others *To think about presenting product in interesting/ attractive ways *To know and understand ingredients can be fresh, pre-cooked or processed *To know and understand about food being grown, reared or caught in the UK or wider world *To know how to describe the eat well plate and how a healthy	*To know and explain how to be safe / hygienic and follow own guidelines *To know how to present a product well - interesting, attractive and fit for purpose *To know and understand seasonality of foods *To understand food can be grown, reared or caught in the UK and the wider world *To know that recipes can be adapted to change appearance, taste, texture, aroma *To know how to explain how there are different substances	*To know and understand how a recipe can be adapted by adding / substituting ingredients *To know and explain seasonality of foods *To know and learn about food processing methods *To know how to name some types of food that are grown, reared or caught in the UK or wider world *To know how to adapt recipes to change	*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. 

		with support, when cooking.	*To know how to cut, peel and grate with increasing confidence. 		*To know how to explain how food and drink are needed for active/healthy bodies. *To know how to prepare and cook some dishes safely and hygienically *To grow in confidence when using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	diet=variety / balance of food and drinks *To know and explain the importance of food and drink for active, healthy bodies *To know how to prepare and cook some dishes safely and hygienically *To know how to use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	in food / drink needed for health *To know how to prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source * To know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	appearance, taste, texture or aroma. *To know how to describe some of the different substances in food and drink, and how they can affect health *To know how to prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of a heat source. *To know how to use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	
Technical Knowledge – Electrical systems					*To know how to use simple circuits in product *To know how to how to program a computer to control product.	*To know how to use number of components in circuit *To know how to program a computer to control product.	*To know how to incorporate switches into product *To know how to confidently use a number of components in circuit *To know how to be able to program a computer to monitor	*To know how to use different types of circuit in product * To be able to think of ways in which adding a circuit would improve product	*To understand and use electrical systems in their products (e.g. example, series

							changes in environment and control product	* To know how to program a computer to monitor changes in environment and control product	circuits) 

DESIGN TECHNOLOGY: VOCABULARY MAP

	Design and Develop	Making	Product	Evaluation
EYFS	• Plan • Draw • Ideas • Design	• Make • Build • Combine • Join • Shape • Tools	• Complete • Product • Final	• Change • Like • Dislike • Next time • Better • Worse • Different • Instead

DESIGN TECHNOLOGY: VOCABULARY MAP

	Design	Technical Knowledge & Making	Cooking and Nutrition	Evaluate
KS1	• Plan • Prepare • Design • Materials • Ideas • Use • Model • Development • Market Research • Survey • Template	• Fast • Slow • Faster • Slower • Up • Down • Turn • Wind up • Design • Draw • Sketch • Tools • Fix • Glue • Attach • Features • Brick • Wood • Stone • Cloth • Metal • Foam • Felt • Paper • Tissue • Newspaper • Cardboard • String • Wool • Clay • Scissors • Glue • Tape • Cut • Stick • Decorate	• Healthy • Unhealthy • Source • Fruit • Vegetables • Clean • Safe • Dirty • Unsafe • Amount • Ingredients • Recipe • Weight • Nutrients • Vegetarian • Dietary requirements	• Change • Improve • Prefer • Useful • Unsuccessful • Future • Progress • modify • Alter • Adapt • Original • Finished article • Evaluate • Graphics
KS2	• Plan • Organise • Prototype • Initial ideas • Criteria • Diagrams • Labels • Annotate • Brief • Product • Consumer • Customer • Target audience • Purpose • Application • Constraints • Client	• Materials • Mould • Liquid • Solid • Form • Shape • Adhesive • Lattice • Mass-produce • Hand-made • Packaging • Presentation • Machine made • Dimensions • Durable	• Healthy • Unhealthy • Balanced • Vitamins • Disease • Nutrition • Healthy eating • Hygiene • Diet • Cross contamination • Grams • Storage • Presentation • Taste • Texture • Flavour • Disinfect • Bacteria	• Assess • Edit • Improve • Alter • Outcome • Develop • Test • Analyse • Effective • Fit for purpose • Design criteria • Alternatives • Models • Quality • Function • Functionality