Woodford Valley C of E Primary Academy – Design and Technology, progression of skills

	Lake Reception	Lower Woodford Year 1	Netton Year 2	End of KS expectations	Wilsford Year 3	Durnford Year 4	Upper Woodford Year 5	Salteron Year 6	End of KS expectations
	Autumn Term Included in provision – open ended resources **Supported by DATA Planning**	**Autumn Term** DT is included in continuous provision Brunell Day (Topic link) **Supported by DATA Planning – Freestanding structures**	**Autumn Term** DT day – Mars Rovers (Topic link) STEM related problem solving – how to stop a crash landing? (Topic link) **Supported by DATA Planning – Wheels and axels**		Shadow puppets (Science link) Design a game using a BBC micro:bit (Computing link) **Supported by DATA Planning – Electrical systems – simple programming and control**	**Autumn Term** **Food Technology** **Supported by DATA Planning - Food** Design and make a Poison Dart frog (Topic link) **Supported by DATA Planning – "D shape to 3D product**	**Autumn Term** **Food Technology** **Supported by DATA Planning - Food** Design a chocolate bar wrapper (Topic link)	**Autumn Term** **Food Technology** **Supported by DATA Planning - Food** Make a Christmas Tree using electrical systems (Science link) **Supported by DATA Planning – Electrical systems – monitoring and control**	
	Spring Term Included in provision – open ended resources **Supported by DATA Planning**	**Spring Term** Welly walk challenge - building an owl's nest using natural materials (Topic and Science link) Making bird feeders (Science link) Easter Cards with sliders (RE link) **Supported by DATA Planning – Mechanisms and sliders**	**Spring Term** Castles with moving drawbridges. (Topic link) Trebuchets (Topic link) Making bags to store the gold (Science link) **Supported by DATA Planning – Textiles, templates and joining techniques**		**Spring Term** **Food Technology** **Supported by DATA Planning - Food** Package and post a Pringle – product design. **Supported by DATA Planning – shell structures**	**Spring Term** Create a photo frame from recycled materials. (Topic link)	**Spring Term** Make a Tudor purse using CAD. (Topic link) **Supported by DATA Planning – Combining different fabric shapes**	**Spring Term** Pop up greetings card using paper engineering	
	Summer Term **Food Technology** **Supported by DATA Planning - Food**	**Summer Term** **Food Technology** **Supported by DATA Planning - Food** Tippy Tap Challenge – ways to transport water. (Global link)	**Summer Term** **Food Technology** **Supported by DATA Planning - Food** Create seagulls with moving parts. (Topic link) How to stop an ice lolly melting.		**Summer Term** Make a pneumatic dinosaur. (Topic link) **Supported by DATA Planning - Food** Making emergency shelters. (Topic link)	**Summer Term** Make a page from a moving picture book using sliders and other mechanisms. (Topic link) **Supported by DATA Planning – Levers and linkages**	**Summer Term** Design and build a model of a children's playground, exploring structures. **Supported by DATA Planning – Frame structures**	**Summer Term** Design and make a fete game – real life project which will be tested at the school fete. **Supported by DATA Planning – Mechanical systems**	

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		Design and make a weather recording instrument (Science link)	(Science link)		Recycled materials fashion Show (Environmental link)				
Design	*Select appropriate resources *Use gestures, talking and arrangements of materials and components to show design * Use contexts set by the teacher and myself *Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)	* Have own ideas * Explain what I want to do *Explain what my product is for, and how it will work * Use pictures and words to plan, begin to use models * Design a product for myself following design criteria *Research similar existing products	* Have own ideas and plan what to do next * Explain what I want to do and describe how I may do it * Explain purpose of product, how it will work and how it will be suitable for the user * Describe design using pictures, words, models, diagrams, begin to use ICT * Design products for myself and others following design criteria * Choose best tools and materials, and explain choices * Use knowledge of existing products to produce ideas	*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	*Begin to research others' needs * Show design meets a range of requirements * Describe purpose of product * Follow a given design criteria * Have at least one idea about how to create product * Create a plan which shows order, equipment and tools *Describe design using an accurately labelled sketch and words * Make design decisions *explain how product will work * Make a prototype * Begin to use computers to show design	* Use research for design ideas * Show design meets a range of requirements and is fit for purpose *Begin to create own design criteria *Have at least one idea about how to create product and suggest improvements for design. * Produce a plan and explain it to others *Say how realistic plan is. *Include an annotated sketch *Make and explain design decisions considering availability of resources *explain how product will work * Make a prototype *begin to use computers to show design.	*Use internet and questionnaires for research and design ideas *Take a user's view into account when designing * Begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose *create own design criteria * Have a range of ideas *produce a logical, realistic plan and explain it to others. *Use cross-sectional planning and annotated sketches * Make design decisions considering time and resources. *Clearly explain how parts of product will work. *Model and refine design ideas by making prototypes and using pattern pieces. *Use computer-aided designs	* Draw on market research to inform design * use research of user's individual needs, wants, requirements for design * Identify features of design that will appeal to the intended user * Create own design criteria and specification * come up with innovative design ideas *Follow and refine a logical plan. *Use annotated sketches, cross sectional planning and exploded diagrams * Make design decisions, considering, resources and cost * Clearly explain how parts of design will work, and how they are fit for purpose * Independently model and refine design ideas by making prototypes and using pattern pieces * Use computer-aided designs	*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

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Make	*Construct with a purpose, using a variety of resources *Use simple tools and techniques *Build / construct with a wide range of objects *Select tools & techniques to shape, assemble and join *Replicate structures with 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	*Explain what I'm making and why *Consider what I need to do next *Select tools/equipment to cut, shape, join, finish and explain choices *Measure, mark out, cut and shape, with support *Choose suitable materials and explain choices *Try to use finishing techniques to make product look good *Work in a safe and hygienic manner	*Explain what I am making and why it fits the purpose *Make suggestions as to what I need to do next. *Join materials/components together in different ways *Measure, mark out, cut and shape materials and components, with support. *Describe which tools I'm using and why *Choose suitable materials and explain choices depending on characteristics. *Use finishing techniques to make product look good *Work safely and hygienically	*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 suitable tools/equipment, explain choices; begin to use them accurately * Select appropriate materials, fit for purpose. * Work through plan in order *Consider how good product will be * Begin to measure, mark out, cut and shape materials/components with some accuracy * Begin to assemble, join and combine materials and components with some accuracy * Begin to apply a range of finishing techniques with some accuracy	* Select suitable tools and equipment, explain choices in relation to required techniques and use accurately *Select appropriate materials, fit for purpose; explain choices * Work through plan in order. * Realise if product is going to be good quality * Measure, mark out, cut and shape materials/components with some accuracy *Assemble, join and combine materials and components with some accuracy *Apply a range of finishing techniques with some accuracy	* Use selected tools/equipment with good level of precision * Produce suitable lists of tools, equipment/materials needed *Select appropriate materials, fit for purpose; explain choices, considering functionality * create and follow detailed step by step plan * Explain how product will appeal to an audience * Mainly 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	* Use selected tools and equipment precisely *produce suitable lists of tools, equipment, materials needed, considering constraints * Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics * 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 * Accurately assemble, join and combine materials/components * Accurately apply a range of finishing techniques * Use techniques that involve a number of steps * Be resourceful with practical problems	*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

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Evaluate								
	*Adapt work if necessary *Dismantle, examine, talk about existing objects/structures *Consider and manage some risks *Practise some appropriate safety measures independently *Talk about how things work *Look at similarities and differences between existing objects / materials / tools *Show an interest in technological toys *Describe textures	*Talk about my work, linking it to what I was asked to do * Talk about existing products considering: use, materials, how they work, audience, where they might be used *Talk about existing products, and say what is and isn't good * Talk about things that other people have made *Begin to talk about what could make product better	* Describe what went well, thinking about design criteria * Talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion *Evaluate how good existing products are *Talk about what I would do differently if I were to do it again and why	*Explore and evaluate a range of existing products *Evaluate their ideas and products against design criteria	* Look at design criteria while designing and making *Use design criteria to evaluate finished product * say what I would change to make design better *Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose * Begin to understand by whom, when and where products were designed * Learn about some inventors/designers/ engineers/chefs/ manufacturers of groundbreaking products	*Refer to design criteria while designing and making *Use criteria to evaluate product * Begin to explain how I could improve original design *evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * 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	*Evaluate quality of design while designing and making *Evaluate ideas and finished product against specification, considering purpose and appearance. *Test and evaluate final product * Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * 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	*Evaluate quality of design while designing and making; is it fit for purpose? * Keep checking design is best it can be. *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 *Do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose *Evaluate how much products cost to make and how innovative they are *Research and discuss how sustainable materials are *consider the impact of products beyond their intended purpose *discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground breaking products	*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

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Technical Knowledge		*Begin to measure and join materials, with some support *Describe differences in materials *Suggest ways to make material/product stronger *Measure, cut and join to make a product, with some support *Begin to use levers or slides	*Measure materials *Describe some different characteristics of materials *Join materials in different ways *Use joining, rolling or folding to make it stronger *Use own ideas to try to make product stronger *Choose suitable textiles *Begin to understand how to use wheels and axles *Measure textiles *Join textiles together to make a product, and explain how I did it *Carefully cut textiles to produce accurate pieces *Explain choices of textile *Understand that a 3D textile structure can be made from two identical fabric shapes.	*Use appropriate materials *Work accurately to make cuts and holes * Join materials *begin to make strong structure *Select appropriate tools / techniques *Alter product after checking, to make it better *Begin to try new/different ideas *use simple lever and linkages to create movement join different textiles in different ways *Choose textiles considering appearance and functionality *Begin to understand that a simple fabric shape can be used to make a 3D textiles project	*Use appropriate materials *Work accurately to make cuts and holes * Join materials *Begin to make strong structures *Select appropriate tools / techniques *Alter product after checking, to make it better *Begin to try new/different ideas *Use simple lever and linkages to create movement *Join different textiles in different ways *Choose textiles considering appearance and functionality *Begin to understand that a simple fabric shape can be used to make a 3D textiles project * use pneumatics to create movement	*Measure carefully to avoid mistakes *Attempt to make product strong *Continue working on product even if original didn't work *Make a strong, stiff structure *Select most appropriate tools / techniques *Explain alterations to product after checking it *Grow in confidence about trying new / different ideas. *Use levers and linkages to create movement *Think about user when choosing textiles *Think about how to make product strong * Begin to devise a template *Explain how to join things in a different way *Begin to understand that a single 3D textiles project can be made from a combination of fabric shapes.	*Select materials carefully, considering intended use of the product, the aesthetics and functionality. *Explain how product meets design criteria *Refine product after testing, considering aesthetics, functionality and purpose *Be confident to try new / different ideas *Think about user's wants/needs and aesthetics when choosing textiles *Make product attractive and strong *Make a prototype *Use a range of joining techniques *Think about how product might be sold *Think carefully about what would improve product	*Select materials carefully, considering intended use of the product, the aesthetics and functionality. *Explain how product meets design criteria *Refine product after testing, considering aesthetics, functionality and purpose *Be confident to try new / different ideas * Create movement *Make product attractive and strong *Make a prototype *Use a range of joining techniques *Think about how product might be sold *T carefully about what would improve product	*Begin to measure and join materials, with some support *Describe differences in materials *Suggest ways to make material/product stronger *Begin to use levers or slides *Measure, cut and join textiles to make a product, with some support *Choose suitable textiles
	*Begin to understand some food preparation tools, techniques and processes. *Begin to use scissors to cut. *Practise stirring, mixing, pouring, blending and sifting *Measuring with help *Cracking and beating an egg with help *Discuss how to make an activity safe and hygienic *Understand the need for variety in food *Talk about where ingredients come from – link to school garden	*Describe textures *Wash hands & clean surfaces *Think of interesting ways to decorate food *Name basic equipment and ingredients *Say where some foods come from, (i.e. plant or animal) *Describe differences between some food groups (i.e. sweet, vegetable etc.) *Discuss how fruit and vegetables are healthy *Cut, peel and grate safely, with support *Begin to follow instructions * Understand that some ingredients are seasonal -	*Explain hygiene and keep a hygienic kitchen *describe properties of ingredients and importance of varied diet *Say where food comes from (animal, underground etc.) – link to school garden *Describe how food is farmed, home-grown, caught *draw Eat Well Plate; explain there are groups of food *Describe "five a day" *Cut, peel and grate with increasing confidence	*Use the basic principles of a healthy and varied diet to prepare dishes *Understand where food comes from.	*Carefully select ingredients *Use equipment safely *make product look attractive *think about how to grow plants to use in cooking *Begin to understand food comes from UK and wider world *Describe how healthy diet= variety/balance of food/drinks *Explain how food and drink are needed for active/healthy bodies. *Prepare and cook some dishes safely and hygienically *Grow in confidence using some of the following techniques: peeling, chopping using the bridge technique, slicing, grating, mixing, spreading, kneading and baking	*Explain how to be safe/hygienic *Think about presenting product in interesting/ attractive ways *understand ingredients can be fresh, pre-cooked or processed *Begin to understand about food being grown, reared or caught in the UK or wider world *Describe eat well plate and how a healthy diet=variety / balance of food and drinks *Explain importance of food and drink for active, healthy bodies *Prepare and cook some dishes safely and hygienically *Use some of the following techniques: peeling, grating, mixing, spreading, kneading and baking *Confidently use the bridge technique to chop *Safely use a sharp knife to chop and slice	*Explain how to be safe / hygienic and follow own guidelines *Present product well – it should be interesting, attractive, fit for purpose *Begin to understand seasonality of foods *Understand food can be grown, reared or caught in the UK and the wider world *Describe how recipes can be adapted to change appearance, taste, texture, aroma *Explain how there are different substances in food / drink needed for health *Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source * Use range of techniques such as peeling, chopping,	*Understand a recipe can be adapted by adding / substituting ingredients *Explain seasonality of foods *Learn about food processing methods *Name some types of food that are grown, reared or caught in the UK or wider world *Adapt recipes to change appearance, taste, texture or aroma. *Describe some of the different substances in food and drink, and how they can affect health *Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source. *Use a range of techniques confidently such as peeling,	*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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Technical Knowledge – Food Technology							slicing, grating, mixing, spreading, kneading and baking. *Use the hob safely *Work independently when possible	chopping, slicing, grating, mixing, spreading, kneading and baking. *Work independently *Recognise and collect the equipment and ingredients needed	