Roehampton Church Schools Progression of skills in Design Technology

	EYFS	Year 1 (Swings, T**abbed clothes,** clay pots, simple salads, **Superheroes**)	Year 2 (Houses, **Moon Buggy**, African masks, **Healthy Snacks**)	End of Key Stage Expectations	Year 3 (**Puppets**, Caribbean foods, farming calendar, Levers, **Iron Man Structure**)	Year 4 (**Ur tiles & counters**, products that shaped the world, balloon minibeasts, **farming, veg dishes, cooking techniques for potatoes**)	Year 5 (**Anglo Saxon purse**, pulley, **cooking techniques**, Eiffel Tower)	Year 6 (**Benin jewellery**, **Electric circuit games**, programming adventure, moving animal toy, seasonality, computer aided designs)	End of Key Stage Expectations
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 products 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 if appropriate *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 for house, moon buggy and African mask	*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	*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 puppet and Iron Man prototypes	* show design meets a range of requirements and is fit for purpose *begin to create own design criteria * produce a plan and explain it to others *say how realistic plan is. *include an annotated sketch *explain how product will work * make a clay Royal Game of Ur tile and counter prototype	*use internet and questionnaires for research and design ideas *take a user's view into account when designing *create own design criteria *produce a logical, realistic plan and explain it to others. *use cross-sectional planning and annotated sketches *clearly explain how parts of a product will work. *model and refine design ideas by making Anglo Saxon purse and Eiffel tower prototypes and using pattern pieces. *begin to look at computer-aided designs on Tinker card	* draw on market research to inform design * identify features of design that will appeal to the intended user * create own design criteria and specification *follow and refine a logical plan. *use annotated sketches, cross-sectional planning and exploded diagrams for Benin jewellery designs * clearly explain how parts of design will work, and how they are fit for purpose * use computer-aided designs to plan own design (Tinker card)	*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	*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 *use scissors to cut materials *use sellotape, masking tape glue for joining components *try to use finishing techniques to make product look good	*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. *use scissors, Stanley knife (with support) to cut materials *use sellotape, masking tape, glue and glue gun (with support) for joining components *describe which tools I'm using and why *know when Stanley knife is more useful than scissors *choose suitable materials and explain choices depending on characteristics. *use finishing techniques to make product look good	*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 * 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 *use sewing techniques and strengthening techniques	* select suitable tools and equipment, explain choices in relation to required techniques and use accurately * 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 using wire clay cutter 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 with practical problem	* 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 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

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	*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 ground breaking products (particularly regarding types of puppeteers and puppets)	*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 (particularly products to do with On the move – traffic lights, cats eyes, electric motor cars)	*evaluate ideas and finished product against specification, considering purpose and appearance. *test and evaluate final product * begin to evaluate how much products cost to make and how innovative they are *talk about some key inventors/designers/ engineers/ chefs/manufacturers of ground breaking products (Pulleys and Archimedes)	*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 *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	*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 – materials/structures		*begin to measure and join materials, with some support (swing and stand for a teddy) *describe differences in materials *suggest ways to make material/product stronger (stand)	*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	*Build structures, exploring how they can be made stronger, stiffer and more stable	*use appropriate materials *work accurately to make cuts and holes * join materials *begin to make strong structures *know names of types of techniques to make structures stronger	*measure carefully to avoid mistakes *attempt to make product strong *continue working on product even if original didn't work	*explain how product meets design criteria *measure accurately enough to ensure precision *ensure product is strong and fit for purpose *make a structure strong and begin to reinforce and strengthen a 3D frame	*select materials carefully, considering intended use of the product, the aesthetics and functionality. *explain how product meets design criteria	*Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
TECHNICAL KNOWLEDGE - mechanisms		*use sliders to make a superhero pop out of a hat	*begin to understand how to use wheels and axles when making moon buggy *use pneumatics to make moon buggy move	*Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	*know what levers are *explore how a simple lever can be used to move heavy stuff. *use a simple lever to create movement	*explain alterations to product after checking it *grow in confidence about trying new / different ideas. *discuss how Ancient Sumerians would have used levers to move materials to build cities *know what pneumatics are *use pneumatics to create movement – balloon minibeasts	*know what pulleys are *use pulleys to create movement	*know what cams are and the different types available and how the change the movement *use cams to create a moving animal toy	*Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
TECHNICAL KNOWLEDGE - textiles		*measure, cut and join textiles to make a product, with some support *choose suitable textiles			*join different textiles in different ways *understand that a 3D textile structure can be made from two identical fabric shapes *join identical pieces of fabric to make a 3D shape using simple techniques		*think about user and aesthetics when choosing textiles *use own template *use of a range of ways to join things	*make product attractive and strong *think about how product might be sold	

TECHNICAL KNOWLEDGE – food and nutrition		*describe textures of different salad products *wash hands & clean surfaces *think of interesting ways to present salads *discuss how fruit and vegetables are healthy *cut, peel and grate safely, with support *work in a safe and hygienic manner	*explain hygiene and keep a hygienic kitchen *describe properties of ingredients and importance of varied diet *say where food comes from (animals, plants, sea.) *know where in the world some of the main sources of food comes from *explain there are groups of food *describe "five a day" *cut, peel and grate with increasing confidence *Prepare a variety of healthy snacks eg smoothies, salads with cheese or chicken or fish *Use cutting, peeling, slicing and grating to prepare foods *work safely and hygienically	*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 *know typical foods that grow in the Caribbean *understand the vegetable and fruit farming calendar in the Caribbean *prepare and cook some dishes safely and hygienically *grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing.	*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 *know types of food produced on a farm and what they can go on to make *begin to understand seasonality - understanding how farming crops change according to the farming calendar and seasons *prepare and cook some dishes safely and hygienically *use some of the following techniques: peeling, chopping, slicing, grating, mixing *use the skill of frying and boiling to prepare foods and know the difference	*explain how to be safe / hygienic and follow own guidelines *describe how recipes can be adapted to change appearance, taste, texture, aroma *explain how there are different substances in food / drink needed for health *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 *understand the hygiene regime needed for chopping boards *discuss the difference between some of the basic cooking techniques: boiling, roasting, frying, sautéing, simmering *prepare and cook potatoes safely and hygienically including, where appropriate, using the cooking techniques listed above	*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 *explain the term seasonality and know when different fruit and vegetables are in season in the UK *taste and evaluate seasonal foods and recognise that sometimes we need to try a new food a few times to find out if we like it. *explain the importance of protein in our diet *know how to correctly store and handle meat and fish. *prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source. *use a range of techniques	*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.

							* use range of techniques such as peeling, chopping, slicing, grating,	confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	
TECHNICAL KNOWLEDGE – electrical systems						In science project *use simple circuit *use number of components in circuit *use switches and buzzers		*incorporate switch, motor, buzzer into a product *confidently use number of components in circuit *begin to be able to program a computer to monitor changes in environment and control product *use different types of circuit in product * think of ways in which adding a circuit would improve product	*Understand and use electrical systems in their products [for example, series circuits

Expressive Arts and Design ELG: Creating with Materials 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; - Make use of props and materials when role playing characters in narratives and stories.

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.