# St Anne's CE Primary – DT

## Progression of Knowledge and Skills

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| | EYFS | YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 | YEAR 6 |
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| **Design** | *Select appropriate resources *Use gestures, talking and arrangements of materials and components to show design<br>* Use contexts set by the teacher and myself<br>*Use language of designing and making (join, build, shape, longer, shorter, heavier etc.) | * Have own ideas<br>* Explain what I want to do *Explain what my product is for, and how it will work<br>* Use pictures and words to plan, begin to use models<br>* Design a product for myself following design criteria<br>*Research similar existing products | *Have own ideas and plan what to do next<br>* Explain what I want to do and describe how I may do it<br>* Explain purpose of product, how it will work and how it will be suitable for the user<br>* Describe design using pictures, words, models, diagrams, begin to use ICT<br>* Design products for myself and others following design criteria<br>* Choose best tools and materials, and explain choices<br>* Use knowledge of existing products to produce ideas | *Begin to research others' needs<br>* Show design meets a range of requirements<br>* Describe purpose of product<br>* Follow a given design criteria<br>* Have at least one idea about how to create product<br>* Create a plan which shows order, equipment and tools<br>*describe design using an accurately labelled sketch and words<br>* Make design decisions<br>*Explain how product will work * make a prototype<br>* Begin to use computers to show design | * Use research for design ideas<br>* Show design meets a range of requirements and is fit for purpose<br>*Begin to create own design criteria<br>*Have at least one idea about how to create product and suggest improvements for design.<br>* Produce a plan and explain it to others<br>* Say how realistic plan is.<br>* Include an annotated sketch<br>* Make and explain design decisions considering availability of resources<br>*Explain how product will work<br>* Make a prototype<br>* Begin to use computers to show design. | *Use internet and questionnaires for research and design ideas<br>*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<br>*Create own design criteria<br>*Have a range of ideas<br>*Produce a logical, realistic plan and explain it to others.<br>*Use cross-sectional planning and annotated sketches<br>* Make design decisions considering time and resources.<br>*Clearly explain how parts of product will work.<br>*Model and refine design ideas by making prototypes and using pattern pieces.<br>*Use computer-aided designs | * Draw on market research to inform design<br>*Use research of user's individual needs, wants, requirements for design<br>*Identify features of design that will appeal to the intended user<br>*Create own design criteria and specification *Come up with innovative design ideas<br>*Follow and refine a logical plan<br>*Use annotated sketches, cross-sectional planning and exploded diagrams<br>*Make design decisions, considering, resources and cost<br>*Clearly explain how parts of design will work, and how they are fit for purpose<br>*Independently model and refine design ideas by making prototypes and using pattern pieces<br>*Use computer-aided designs |
| **Make** | *Construct with a purpose, using a variety of resources | *Explain what I'm making and why<br>*Consider what I | *Explain what I am making and why it fits the purpose | *Select suitable tools/equipment, explain choices; | *Select suitable tools and equipment, explain | *Use selected tools/equipment with good level of | *Use selected tools and equipment precisely |

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| | *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. | 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. | *Make suggestions as to what I need to do next. *Join materials and components together in different ways *Measure, mark out, cut and shape materials and components, with support *Describe which tools to use *Choose suitable materials and explain choices depending on characteristics *Use finishing techniques to make product look good *Work safely and hygienically. | 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. | choices in relation to required techniques and use accurately *Select appropriate materials, fit for purpose; explain choices * Work through plan in order. *Identify quality workmanship in products *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 | 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. | *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 |

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| | | | | | | | *Be resourceful with practical problems. |
| **Evaluate** | *Adapt work if necessary<br>*Dismantle, examine, talk about existing objects/structures<br>*Consider and manage some risks<br>*Practise some appropriate safety measures independently<br>*Talk about how things work<br>*Look at similarities and differences between existing objects / materials / tools<br>*Show an interest in technological toys<br>*Describe textures. | *Talk about my work, linking it to what I was asked to do<br>* Talk about existing products considering purpose, materials, how they work, audience, where they might be used<br>*Talk about existing products, and say what is and isn't good<br>* Talk about things that other people have made<br>*Begin to talk about what could make product better. | * Describe what went well, thinking about design criteria<br>* Talk about existing products considering purpose, materials, how they work, audience, where they might be used and express personal opinions<br>*Evaluate how good existing products are<br>*Talk about what I would do differently if I were to do it again and why. | * Look at design criteria while designing and making<br>*Use design criteria to evaluate finished product<br>* Say what I would change to make design better<br>*Begin to evaluate existing products, considering how well they have been made, materials, whether they work, how they have been made, fit for purpose<br>* Begin to understand by whom, when and where products were designed<br>* Learn about inventors, designers, engineers, chefs and manufacturers of ground-breaking products | *Refer to design criteria while designing and making<br>*Use criteria to evaluate product<br>* Begin to explain how I could improve original design<br>*Evaluate existing products, considering how well they've been made, materials, whether they work, how they have been made, fit for purpose<br>* Discuss by whom, when and where products were designed<br>* Research whether products can be recycled or reused<br>* Learn about inventors, designers, engineers, chefs and manufacturers of ground-breaking products | *Evaluate quality of design while designing and making<br>*Evaluate ideas and finished product against specification, considering purpose and appearance<br>*Test and evaluate final product<br>* Evaluate and discuss existing products, considering how well they've been made, materials, whether they work, how they have been made, fit for purpose<br>*Begin to evaluate how much products cost to make and how innovative they are<br>*Research how sustainable materials are<br>* Learn about inventors, designers, engineers, chefs and manufacturers of ground-breaking products. | *Evaluate quality of design while designing and making; is it fit for purpose?<br>* Keep checking design is best it can be.<br>*Evaluate ideas and finished product against specification, stating if it's fit for purpose<br>*Test and evaluate final product; explain what would improve it and the effect different resources may have had<br>*Complete thorough evaluations of existing products considering how well they've been made, materials, whether they work, how they've been made, fit for purpose<br>*Evaluate how much products cost to make and how innovative they are |

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| | | | | | | | *Research and discuss how sustainable materials are<br>*Consider the impact of products beyond their intended purpose<br>* Learn about inventors, designers, engineers, chefs and manufacturers of ground-breaking products. |
| **Technical knowledge – Materials /structures** | | *Begin to measure and join materials, with some support<br>*Describe differences in materials<br>*Suggest ways to make material/product stronger. | *Measure materials<br>*Describe some different characteristics of materials<br>*Join materials in different ways<br>*Use joining, rolling or folding to make it stronger<br>*Use own ideas to try to make product stronger. | *Use appropriate materials<br>*Work accurately to make cuts and holes<br>*Join materials<br>*Begin to make strong structures. | *Measure carefully to avoid mistakes<br>*Attempt to make product strong<br>*Continue working on product even if original didn't work<br>*Make a strong, stiff structure. | *Select materials carefully, considering intended use of product and appearance<br>*Explain how product meets design criteria<br>*Measure accurately enough to ensure precision<br>*Ensure product is strong and fit for purpose<br>*Begin to reinforce and strengthen a 3D frame. | *Select materials carefully, considering intended use of the product, the aesthetics and functionality<br>*Explain how product meets design criteria<br>* Reinforce and strengthen a 3D frame. |
| **Technical knowledge - Mechanisms** | | *Begin to use levers or slides. | *Use levers or slides<br>*Begin to understand how to use wheels and axles. | *Select appropriate tools / techniques<br>*Alter product after checking, to make it better | *Select most appropriate tools / techniques | *Refine product after testing<br>*Grow in confidence about trying new / different ideas | *Refine product after testing, considering aesthetics, functionality and |

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| | | | | *Begin to try new/different ideas *Use simple lever and linkages to create movement. | *Explain alterations to product after checking it *Grow in confidence about trying new / different ideas. *Use levers and linkages to create movement *Use pneumatics to create movement. | *Begin to use cams, pulleys or gears to create movement. | purpose *Incorporate hydraulics and pneumatics *Be confident to try new / different ideas *Use cams, pulleys and gears to create movement. |
| **Technical knowledge - Textiles** | | *Measure, cut and join textiles to make a product, with some support *Choose suitable textiles. | *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. | *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. | *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 *Understand that a simple fabric shape can be used to make a 3D textiles project. | *Think about user and aesthetics when choosing textiles *Use own template * Think about how to make product strong and look better *Think of a range of ways to join things *Begin to understand that a single 3D textiles project can be made from a combination of fabric shapes. | *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 *Understand that a single 3D textiles project can be made from a combination of fabric shapes. |
| **Technical knowledge – Food and nutrition** | *Begin to understand some food preparation tools, techniques and processes *Practise stirring, | *Describe textures *Wash hands & clean surfaces *Think of interesting ways to decorate food | *Explain hygiene and how to keep a kitchen hygienic *Describe properties of ingredients and importance of varied diet | *Carefully select ingredients *Use equipment safely *Make product look attractive | *Explain how to be safe/hygienic *Think about presenting product in interesting/ attractive ways *Understand | *Explain how to be safe / hygienic and follow own guidelines *Present product well - interesting, | *Understand a recipe can be adapted by adding / substituting ingredients *Explain seasonality of foods |

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| | mixing, pouring, blending<br>*Discuss how to make an activity safe and hygienic<br>*Discuss use of senses<br>*Understand need for variety in food<br>*Begin to understand that eating well contributes to good health. | *Say where some foods come from, (i.e. plant or animal)<br>*Describe differences between some food groups (i.e. sweet, vegetable etc.)<br>*Discuss how fruit and vegetables are healthy<br>*Cut, peel and grate safely, with support. | *Say where food comes from (animal, underground etc.)<br>*Describe how food is farmed, home-grown, caught<br>*Draw eat well plate; explain there are groups of food<br>*Describe "five a day."<br>*Cut, peel and grate with increasing confidence | *Think about how to grow plants to use in cooking<br>*Begin to understand food comes from UK and wider world<br>*Describe how healthy diet= variety/balance of food/drinks<br>*Explain how food and drink are needed for active/healthy bodies.<br>*Prepare and cook some dishes safely and hygienically<br>*Grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | ingredients can be fresh, pre-cooked or processed *Begin to understand about food being grown, reared or caught in the UK or wider world<br>*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<br>*Prepare and cook some dishes safely and hygienically<br>*Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | attractive, fit for purpose<br>*Begin to understand seasonality of foods<br>*Understand food can be grown, reared or caught in the UK and the wider world<br>*Describe how recipes can be adapted to change appearance, taste, texture, aroma<br>*Explain how there are different substances in food / drink needed for health<br>*Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source<br>* Use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | *Learn about food processing methods<br>*name some types of food that are grown, reared or caught in the UK or wider world<br>*Adapt recipes to change appearance, taste, texture or aroma.<br>*Describe some of the different substances in food and drink, and how they can affect health<br>*Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source.<br>*Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. |
| **Technical knowledge – Electrical systems** | | | | *Use simple circuit in product | *Use number of components in circuit | *Incorporate switch into product<br>*Confidently use | *Use different types of circuit in product |

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| | | | | *Learn about how to program a computer to control product. | *Program a computer to control product. | number of components in circuit<br>*Begin to be able to program a computer to monitor changes in environment and control product. | * Think of ways in which adding a circuit would improve product<br>* Program a computer to monitor changes in environment and control product. |