

St Giles' C of E Primary School DESIGN AND TECHNOLOGY Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
D & T contexts	Food and Nutrition: Designing and making healthy cupcakes for a tea party. Mechanisms: Moving caterpillars.	Mechanisms: Moving pictures. Structures: Making Olden Day London style houses. Food and Nutrition: Fruit salads/smoothies	Mechanisms: Wheeled vehicles linked to Castles. Textiles: Making hand puppets. Food and Nutrition: Healthy Pot Noodles.	Food and Nutrition: Healthy packed lunches. Textiles: Everest survival bag. Structures: Packaging for Greek artefact.	Food and Nutrition: Healthy biscuits. Mechanical systems: pop-up books/ boards (Geography link) Electrical systems: night lights/torches.	Structures: Designing and making a bird/ insect box, Electrical systems: switches/alarms board game. Food and Nutrition: baking bread (Linked to Harvest/ Christmas, sweet or savoury)	Textiles: Christmas Decorations. Mechanical systems: moving gears (electronic and mechanical movements) Food and Nutrition: Wartime/ seasonal soup.
Designing	<ul style="list-style-type: none"> * represent ideas orally or in picture form *make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. *develop their own ideas and then decide which materials to use to express them. *Create collaboratively, sharing ideas, resources and skills. 	<ul style="list-style-type: none"> * use knowledge of existing products to help come up with ideas, drawing on their own experiences * work within a range of contexts, such as imaginary, story- based, home, school, playgrounds, and the wider environment * design products that appeal to themselves * discuss their intended products and create drawings before making * say how their products will work *generate ideas by drawing on their own experiences *develop and communicate ideas by talking and drawing 	<ul style="list-style-type: none"> * design products with a user in mind * design according to simple design criteria * say how they will make their products suitable for their intended users * annotate diagrams of proposed designs * model ideas by exploring materials, components and construction kits and by making templates and mock-ups *plan by suggesting what to do next 	<ul style="list-style-type: none"> * gather information about the needs and wants of particular individuals and groups * design products with a clear user in mind * design according to a specific criteria * clearly annotate diagrams of proposed designs * use computing where appropriate, to develop and communicate their ideas *work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment 	<ul style="list-style-type: none"> * design a practical product * draw an expanded labelled diagram with some measurements * develop their own design criteria and use these to inform their ideas * make design decisions that take account of the availability of resources 	<ul style="list-style-type: none"> * design a product that takes into account another user's design criteria * design a product with specific ingredients or substitute appropriately * carry out research, using surveys, interviews, questionnaires and web-based resource * identify the needs, wants, preferences and values of particular individuals and groups * generate innovative ideas, drawing on research *use annotated sketches and cross-sectional drawings to develop and communicate their ideas 	<ul style="list-style-type: none"> * generate detailed designs and explain their choices * select appropriate materials and give reasons for their choices * develop a simple design specification to guide their thinking * make design decisions, taking account of constraints such as time, resources and cost *use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas
Making	<ul style="list-style-type: none"> *change and effect materials using simple tools with support Use one-handed tools and equipment, for example, making snips in paper with scissors. * select and use different materials for a variety of purposes. * Select and use activities and resources, with help when needed. • Choose the right resources to carry out their own plan. • develop their small motor skills so that they can use a range of tools competently, 	<ul style="list-style-type: none"> * begin to make their design using appropriate techniques * begin to build structures, exploring how they can be made stronger * use simple tools to effectively cut and shape materials needed for their products * choose materials and components they require from those provided * begin to assemble, join and combine materials and components together using a variety of temporary methods eg glues or masking tape 	<ul style="list-style-type: none"> * explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products * begin to use the correct vocabulary when naming and describing tools and materials * use saws to cut wooden components, taking into account safe and proper use * select the appropriate materials needed (at the design stage) * build structures, exploring how they can be made stronger, stiffer and more stable 	<ul style="list-style-type: none"> * select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components * explain their choice of tools and equipment in relation to the skills and techniques they will be using * use recycled materials to create structures to house a pneumatic system *to cut, join and incorporate a range of materials safely 	<ul style="list-style-type: none"> *measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques to make a mock-up of their design *practice different sewing techniques *make different mechanisms that work smoothly *begin to use finishing techniques to strengthen and improve the appearance of their product including computing *order the main stages of 	<ul style="list-style-type: none"> *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 *use construction kits to make model structures and analyse strengths and weaknesses *gather, assemble and join structures safely and securely to make a product. *use a range of finishing techniques to strengthen and improve the appearance of their 	<ul style="list-style-type: none"> *make a working prototype to solve any problems prior to making the final product *make well finished attractive products that are fit for purpose *use a range of tools safely and accurately *with confidence, pin, sew and stitch materials together to create a well-designed finished product *demonstrate when to make modifications as they go along *formulate step-by-step plans as a guide to making *follow procedures for

	<p>safely and confidently.</p> <ul style="list-style-type: none"> *explore, use and refine a variety of artistic effects to express their ideas and feelings. • return to and build on their previous learning, refining ideas and developing their ability to represent them. • Use a range of small tools, including scissors, paintbrushes and cutlery. <p>*Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p>	<ul style="list-style-type: none"> * begin to use simple finishing techniques to improve the appearance of their product * use knives safely to chop food 	<ul style="list-style-type: none"> * demonstrate how to cut, shape and join fabric to make a simple product * use basic sewing techniques * start to choose and use appropriate finishing techniques * plan by suggesting what to do next 	<ul style="list-style-type: none"> *to start to think about their ideas as they make, progress and *be willing to change things if this helps them to improve their work *explain their choice of tools and equipment in relation to the skills and techniques they will be using *follow procedures for safety and hygiene 	<p>making</p> <ul style="list-style-type: none"> *follow procedures for safety and hygiene 	<p>product using a range of equipment including computing</p> <ul style="list-style-type: none"> *produce appropriate lists of tools, equipment and materials that they need *follow procedures for safety and hygiene *use techniques that involve several steps *know that a 3D textiles product can be made from a combination of fabric shapes 	<p>safety and hygiene</p> <ul style="list-style-type: none"> *demonstrate resourcefulness when tackling practical problems
Evaluating	<ul style="list-style-type: none"> *orally describe what they have made and its purpose * Explore how things work. • Share their creations, explaining the process they have used. 	<ul style="list-style-type: none"> *start to evaluate their product by discussing how well it works in relation to the purpose (design criteria) *when looking at existing products, can they explain what they like and dislike about products and why? *begin to evaluate their products as they are developed, identifying strengths and possible changes they might make 	<ul style="list-style-type: none"> *see features and properties of existing products and how they fulfil their intention *look at a range of existing products and explain what they like and dislike about them and why *use observations in their designs *start to evaluate their products as they are developed, identifying strengths and possible changes they might make *evaluate their work against their design criteria *with confidence, talk about their ideas, saying what they like and dislike about them 	<ul style="list-style-type: none"> * evaluate how well their system works in their own design *reflect on the combination of ingredients and how well these work together or satisfy the design criteria *begin to disassemble and evaluate familiar products and consider the views of others to improve them *evaluate the key designs of individuals in design and technology has helped shape the world 	<ul style="list-style-type: none"> *evaluate own product and suggest changes where changes could be made *ask another user to evaluate their product against success criteria *evaluate their products carrying out appropriate tests *start to evaluate their work both during and at the end of the project *to disassemble and evaluate familiar products and consider the views of others to improve them *evaluate the key designs of individuals in design and technology who have helped shape the world 	<ul style="list-style-type: none"> *use more complex mechanisms to make interesting products *reflect on other user's comments *evaluate their own designs suggesting changes that could be made next time *start to evaluate a product against the original design specification and by carrying out tests *evaluate their work both during and at the end of the project *begin to evaluate it personally and seek evaluation from others *evaluate inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products 	<ul style="list-style-type: none"> *evaluate critically and adapt where necessary *reflect on how technology has had an impact on designing and making products *evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests *evaluate their work both during and at the end of the project *record their evaluations through written explanation, drawings with labels
Technical Knowledge	<ul style="list-style-type: none"> *know that different materials might be needed for different tasks. *Explore different materials freely, in order to develop their ideas about how to use them and what to make. 	<ul style="list-style-type: none"> *build structures and discuss how they can be made better (more stable) *make a simple moving mechanism *know how freestanding structures can be made stronger, stiffer and more stable 	<ul style="list-style-type: none"> *explore ways to make structure stiffer, stronger and more stable *produce a range of different moving mechanisms including: levers, pivots, rotary motion, wheels and axles) *know about the simple working characteristics of materials and 	<ul style="list-style-type: none"> *apply their understanding to strengthen their design * how to use learning from mathematics and science to help design and make products that work * that materials have both functional properties and aesthetic qualities *that mechanical and electrical systems have an 	<ul style="list-style-type: none"> *know about the qualities of different textiles and how to fasten these together *use a variety of mechanical mechanisms to create movement *know how an electrical circuit can be incorporated into a working design *know how to use a 	<ul style="list-style-type: none"> *how mechanical systems such as cams or pulleys or gears create movement *explore ways outdoor structures can be reinforced using what is in the vicinity *know about combining ingredients and the different processes to make bread 	<ul style="list-style-type: none"> *know how to use a variety of mechanical and electrical systems in their designs and products *use coding to create a programme to incorporate into design *know about different joints and ways to strengthen join *the correct technical

			<p>components</p> <ul style="list-style-type: none"> *use the correct technical vocabulary for the projects they are undertaking 	<p>input, process and output</p> <ul style="list-style-type: none"> *the correct technical vocabulary for the projects they are undertaking 	<p>program to make a light go on/off</p> <ul style="list-style-type: none"> *the correct technical vocabulary for the projects they are undertaking • how mechanical systems such as levers and linkages or pneumatic systems create movement 	<p>*the correct technical vocabulary for the projects they are undertaking</p> <ul style="list-style-type: none"> *how more complex electrical circuits and components can be used to create functional products 	<p>vocabulary for the projects they are undertaking</p>
Cooking and Nutrition	<ul style="list-style-type: none"> *understand the need for a healthy diet *give an example of healthy / unhealthy food 	<ul style="list-style-type: none"> *know about healthy diets *begin to prepare food, for example a fruit salad *name and sort foods into the five groups on 'The Eatwell plate' *know that everyone should eat at least five portions of fruit and vegetables every day *know that all food comes from plants or animals *that food ingredients should be combined according to their sensory characteristics 	<ul style="list-style-type: none"> *design a healthy meal using scientific knowledge *know about where food comes from *cook a range of simple foods such as sandwiches *know that food has to be farmed, grown elsewhere (eg home) or caught *know how to prepare simple dishes safely and hygienically, without using a heat source *demonstrate how to use techniques such as cutting, and peeling 	<ul style="list-style-type: none"> *know food can be fresh, pre-cooked and processed *know and be aware of different food groups *make a healthy lunch snack *know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world *know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eatwell plate' 	<ul style="list-style-type: none"> *know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source *know how to use a range of techniques such as peeling, chopping, slicing, and grating *know that to be active and healthy, food and drink are needed to provide energy for the body *that food ingredients can be fresh, pre-cooked and processed. 	<ul style="list-style-type: none"> *know how food is processed *know a recipe can be adapted depending on seasons *use a range of techniques to prepare and cook bread product *know that seasons may affect the food available *know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking *know that recipes can be adapted to change the appearance, taste, texture and aroma 	<ul style="list-style-type: none"> *prepare and make a whole meal using selected ingredients *know about other conditions that may affect food availability *know how food is processed into ingredients that can be eaten or used in cooking *know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health
Enrichment:	<ol style="list-style-type: none"> Parents into school talk to the children about their jobs. Forest school links, designing and making natural items. 	<ol style="list-style-type: none"> Visit from the School Cook to discuss food preparation and hygiene within the school kitchen and how this can be linked to Food and Nutrition in D&T. Seaside Trip /Llandudno to see a Punch and Judy show on the seafront. Shrewsbury Town trip looking at the Tudor buildings, wooden features, black and white timber fronted houses, shops etc. 	<ol style="list-style-type: none"> Enginuity Iron Bridge Visit local supermarket looking at where food comes from, how it stored and preserved to keep fresh for longer. Seek out local businesses to come in and talk to the children regarding what they do as part of their role in designing and making things. 	<ol style="list-style-type: none"> STEM ambassadors linked to Science and Technology. Visit to Attingham Park – World War II experience day including a kitchen experience and tasting Lord Woolton Pie. Link to visit to Shrewsbury Flaxmill or other Victorian aged town. 			