St Augustine's School

Design and Technology Components and Composite

Reception	*Year 1*	*Year 2*	*Year 3*	*Year 4*	*Year 5*	*Year 6*
Early Learning Goal 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.	**National Curriculum Objectives:** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: **Design** § 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 **Make** § 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 **Evaluate** § explore and evaluate a range of existing products § evaluate their ideas and products against design criteria **Technical knowledge** § build structures, exploring how they can be made stronger, stiffer and more stable § explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.		**National Curriculum Objectives:** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: **Design** ♣ 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** ♣ 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** ♣ 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 ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ♣ understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] ♣ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] ♣ apply their understanding of computing to program, monitor and control their products. **Cooking and Nutrition** ♣ 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				
Developing, planning and communicating ideas.						
Make comments about what they have heard and ask questions to clarify their understanding;	**Can you draw on your own experience to help generate ideas?** **Can you suggest ideas and explain what you are going to do?** **Can you identify a target group for what you intend to design and make?** **Can you model your ideas in card and paper?** **Can you develop your design ideas applying findings from your earlier research?**	**What ideas can you draw from your own experience and other peoples?** **Can you develop your design ideas through discussion, observation , drawing and modelling?** **Can you identify a purpose for what you intend to design and make?** **Can you identify simple design criteria?** **Can you make simple drawings and label parts?**	**Can you generate ideas for an item, considering its purpose and the user/s?** **Can you identify a purpose and establish criteria for a successful product?** **Can you plan the order of their work before starting?** **Can you explore, develop and communicate design proposals by modelling ideas?** **Can you make drawings with labels when designing?**	**Can you generate ideas, considering the purposes for which you are designing?** **Can you make labelled drawings from different views showing specific features?** **Can you develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail?** **Can you evaluate products and identify criteria that can be used for your own designs?**	**Can you generate ideas through brainstorming and identify a purpose for your product?** **Can you draw up a specification for your design?** **Can you develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail?** **Can you use results of investigations, information sources, including ICT when developing design ideas?**	**Can you communicate your ideas through detailed labelled drawings?** **Can you develop a design specification?** **Can you explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways?** **Can you plan the order of your work, choosing appropriate materials, tools and techniques?**
Working with tools, equipment, materials and components to make quality products						
Can you use different tools? Can you use different materials? Can you use different ways of doing things? Can you experiment with colour, design, texture, form and function?	**Can you make your design using appropriate techniques?** **With help, can you measure, mark out, cut and shape a range of materials?** **Can you use tools *eg scissors and a hole punch* safely?** **Can you assemble, join and combine materials and components together?** e.g. glues or masking tape **Can you select and use appropriate fruit and vegetables, processes and tools?** **What do you need to do when handling basic food? What do you do to keep things and yourself clean and hygienic?** **What simple finishing techniques can you use to improve the appearance of your product?**	**What tools and materials do you need?**; **What are the special tools and materials called? Can you describe them?** **Can you measure, cut and score with some accuracy?** **Can you to use hand tools safely and appropriately?** **Can you assemble, join and combine materials in order to make a product?** **Can you cut, shape and join fabric to make a simple garment.** **Can you use basic sewing techniques?** **Can you follow safe procedures?** **What are the procedures for food safety and hygiene?** **Can you choose and use appropriate finishing techniques?**	**What tools and techniques would you need for making your product?** **Can you measure, mark out, cut, score and assemble components with more accuracy?** **Can you work safely and accurately with a range of simple tools?** **Can you think about your ideas as you make progress and be willing to change things if this helps them to improve your work?** **Can you measure, tape or pin, cut and join fabric with some accuracy?** **Can you demonstrate hygienic food preparation and storage?** **Can you use finishing techniques to strengthen and improve the appearance of your product using a range of equipment including ICT?**	**Can you select appropriate tools and techniques for making your product?** **Can you measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques?** **Can you join and combine materials and components accurately in temporary and permanent ways?** **Can you sew using a range of different stitches,** **Can you weave and knit?** **Can you measure, tape or pin, cut and join fabric with some accuracy?** **Can you use simple graphical communication techniques?**	**Can you select appropriate materials, tools and techniques to measure and mark out accurately?** **Can you use skills in using different tools and equipment safely and accurately?** **Can you weigh and measure accurately (time, dry ingredients, liquids)?** **What are the rules to apply for basic food hygiene and other safe practices? *e.g. hazards relating to the use of ovens*** **Can you cut and join with accuracy to ensure a good-quality finish to the product?**	**Can you select appropriate tools, materials, components and techniques?** **Can you assemble components to make working models?** **Can you use tools safely and accurately to construct products using permanent joining techniques?** **Can you make modifications as they go along?** **Can you pin, sew and stitch materials together?** **Can you create a product?** **Can you achieve a quality product?**

Evaluating processes and products						
Can you share you have made and tell me what you did? Can you use props and materials when role playing?	**Can you evaluate your product by talking about it? How well does it fit the challenge?** **Can you evaluate your products as they are developed, identifying strengths and possible changes you might make?** **Can you evaluate your product by asking questions about what you have made and how you have gone about it?**	**Can you evaluate against their design criteria?** **Can you evaluate your products as they are developed, identifying strengths and possible changes you might make?** **Can you talk about your ideas, saying what you like and dislike about them?**	**Can you evaluate your product against original design criteria? How well does it meet its intended purpose?** **Can you disassemble and evaluate familiar products?**	**Can you evaluate your work during and at the end of the assignment?** **Have you evaluated your products carrying out appropriate tests?**	**Can you evaluate a product against the original design specification?** **Can you evaluate it personally and seek evaluation from others?**	**Can you evaluate your products, identifying strengths and areas for development, and carrying out appropriate tests?** **Can you record your evaluations using drawings with labels?** **Can you evaluate against your original criteria and suggest ways that your product could be improved?**
Non-Negotiables –						
Composite Curriculum Goals						
Autumn *To use found materials in the natural environment to create a structure.* ***Summer*** *To create a fruit salad*	*Autumn* Plan and prepare a banquet. Design, build and evaluate a castle. *Summer* Minibeast sculptures.	***Autumn Term*** *Creating a simple board game. Creating a hand puppet.* ***Summer Term*** *Design, make and evaluate a monkey enrichment toy.*	***Autumn Term*** *Create a Stone Age dwelling (photo in Art & DT book)* ***Spring Term*** *Pizza making (photo in Art & DT book)* ***Summer Term*** *Create an item of clothing for yourself/puppet. (photo in Art & DT book)*	***Autumn Term*** *To sew a fabric Christmas ornament using different types of stitching.* ***Spring Term*** *Creating a boat that floats and conducting a fair test.* ***Summer term*** *To complete a technical drawing using labels and differing perspectives to show a closed electrical circuit.*	***Autumn Term*** *To produce a fabric Christmas decoration using different types of stitching.* ***Spring Term*** Designing and making a Mayan temple ***Summer Term*** *To design, make and evaluate a working model rocket.*	***Autumn*** *Ancient Egyptian weaving* ***Spring*** *Create a Greek feast* ***Summer*** *Create waterproof material*

Vocabulary		
planning, investigating design, evaluate, make, user, purpose, ideas, product, design criteria, function *joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish*	*evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations* *fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance*	*function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype* *seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,*
Visits/Visitors and websites		
Visitors	**Visits**	**Websites**
