DESIGN & TECHNOLOGY

End of EYFS Expectations
Learning within Design and Technology begins in the Early Years through 'Expressive Arts and Design'. This involves development of children's artistic and cultural awareness and supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe (Statutory Framework for the EYFS, 2021). Creating with Materials – 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.

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
Design Pupils should be taught to: • 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.	**Design** Pupils should be taught to: • 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 Pupils should be taught to: • 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.	**Make** Pupils should be taught to: • 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 Pupils should be taught to: • explore and evaluate a range of existing products;	**Evaluate** Pupils should be taught to: • investigate and analyse a range of existing products; • evaluate their ideas and products against their own design criteria and

• evaluate their ideas and products against design criteria.	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 Pupils should be taught to: • 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.	**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 Pupils should be taught to: • use the basic principles of a healthy and varied diet to prepare dishes; • understand where food comes from.	**Cooking and Nutrition** Pupils should be taught to: • 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.

CURRICULUM COVERAGE			
	AUTUMN	SPRING	SUMMER
Year 1	Minibeast Cupcakes Focus: Food African Masks Focus: Structures	Vehicle Cookies Focus: Food Wheels and axels – make a vehicle Focus: Mechanisms	Fruit Salad Focus: Food Alien's Underpants Sewing Focus: Textiles
Year 2	Christmas Biscuits Focus: Food Wooden Rafts Focus: Structures	Chocolate Mousse Focus: Food Moving Easter Card Focus: Mechanisms	Pancakes Focus: Food Hand Puppets Focus: Textiles
Year 3	Melting Snowpeople Biscuits Salt dough decorations Focus: Food Push/Pull Toys (skeletons) Focus: Mechanisms	Rock/Volcano Cakes Focus: Food Push/Pull Toys (shadow puppets/shadow puppet theatre) Focus: Mechanisms Cave Scenes/Papier Mache Axes Focus: Structures	Fruit Salsa/Yoghurt & Cinnamon Chips (healthy food) Focus: Food Weaving Rivers Focus: Textiles
Year 4	Focus: Structures Roman helmets Roman recipes Focus: Food	Water Cycle in shoe boxes Focus: structure/mechanism Syringe investigation Focus: hydraulics and pneumatics Easter Cooking – biscuits Focus: Food	Electrical Circuits Game Focus: circuits/switches mechanism Saxons Focus: textiles plaiting and weaving Iron Man Focus: sculpture Ice cream/lollies Focus: Food
Year 5	Bonfire Soup Focus: Food Drawstring bag Focus: Textiles	Empanadas Focus: Food Marble run Focus: Structures	Baking Bread Focus: Food (link to Science) Cam Toys Focus: Mechanisms
Year 6	Christmas WW2 treats Focus: Food Anderson shelters Focus: Mechanisms	Greek Food (protein balls) Focus: Food Greek temples Focus: Structures	Plan and make a family meal Focus: Food Greek jewellery Focus: Textiles

Features of our St. Martin's school life	Masterchef Competition – KS2					
	YEAR 1	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**YEAR 6**
Vocabulary	planning, investigating design, evaluate, make, user, purpose, ideas, product,	investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function	user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing	evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype
Developing. Planning & Evaluating	Think of ideas and with help, can put them into practice Know the features of familiar products Use pictures and words to describe what to do Talk about my own and others' work Describe how a product	Think of ideas and plan what to do next, based on own knowledge about materials and components Select the appropriate tools, techniques and materials, explaining choices Use models, pictures and words to describe designs Recognise what has gone	Generate ideas and recognise that designs have to meet a range of different needs Make realistic plans to achieve the aims Think ahead about the order of work, choosing appropriate tools, equipment, materials, components and techniques	Generate ideas by collecting and using information Take the views of users' into account when designing products Produce step-by-step plans Communicate alternative ideas using words, labelled sketches and models showing an awareness of design constraints	Use understanding of familiar products to help develop ideas Work from detailed plans, modifying them where appropriate Communicate ideas Evaluate products and use information sources to inform the design	Draw on and use various sources of information Clarify ideas through discussion, drawing and modelling Reflect on designs and develop them bearing in mind the way they will be used Test and evaluate products, showing an understanding

	works	well Suggest things for the future	Clarify ideas using labelled sketches and models to communicate design details Identify where evaluations have led to improvements in products	Reflect on designs and develop them bearing in mind the way they will be used Identify what is working well and what can be improved		of the situations where products will have to work Be aware that resources may be limited (budget, time, availability)
Vocabulary	fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients,		name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet		ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	
Food	Use knives safely to cut food (with help) Use a mixing bowl to prepare a mixture Make a food product Know that you have to wash hands and keep work surfaces clean when preparing food	Prepare food safely and hygienically and can describe what this means Describe the properties of the food ingredients: taste, smell, texture, and consistency Weigh or measure ingredients accurately Describe the food product using its properties Learn how to best store product for long-life and hygiene	Selects ingredients for food products Work in a safe and hygienic way Measure out ingredients by weight or quantity, using scales where appropriate Food product is presented to impress the intended user Describe the food product in terms of taste, texture, flavour and relate this to the intended purpose of the food	Food products use a selection of ingredients to meet an identified need (e.g. lunchtime snack, healthy sandwich, low gluten). Work in a safe and hygienic way Food is well presented and packaged using other DT skills Persuade others to take an interest in the product by using persuasive writing skills that describe the qualities of the product Understand that cooking alters the flavour and texture	Understand that some foods may not be eaten raw, as it is unsafe	Understand that cooking alters the flavour and texture of foods and use this knowledge when designing Use proportions and ratio to produce recipes of the food product, scaling up and down for different quantities

			Product has been cooked or chilled to change the nature of the raw ingredients	of foods		
Vocabulary	joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish		fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance		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,	
Textiles	Describe textiles by the way they feel Make a product from textiles Measure, mark out and cut fabric Join fabrics using glue Ensure work is neat and tidy Know how textiles can be used to make products Alter a textile to make it stronger.	Use accurate measurements in cm Use scissors precisely when cutting out Join textiles using glue, staples, tying or a simple stitch Make a textile product that has a good finish and can do the job it was made for Know that textiles have different properties: feel, insulation, texture and waterproof Select the appropriate textile so that it does the job it is supposed to do	Select the appropriate textile(s) for the product Use sharp scissors accurately to cut textiles Know that the texture and other properties of materials affect choices Designs improve as work progresses Combine materials to add strength or visual appeal	Textile work incorporates the views of intended users' and for the purpose Use art textiles skills such as stitching to help create a product that is sturdy and fit for purpose Textile products include structural changes, such as plaiting or weaving to create new products such as rope, belts, bracelets etc	Combine art skills to add colour and texture to work Mark out using own patterns and templates Join textiles using art skills of stitching, embroidering and plaiting to make a durable and desirable product	Products have an awareness of commercial appeal Experiment with a range of materials until the one with the right mix of affordability, appeal and appropriateness for the job is found
Vocabulary	slider, lever, pivot, slot, bridge/guide, card, masking tape, paper	vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining,	mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating, series circuit, fault, connection, toggle switch,		pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams,	

	fastener, join, pull, push, up, down, straight, curve, forwards, backwards	shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used	push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device		mechanical system, electrical system, input, process, output, reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit	
Mechanisms	Make a product that moves using a turning mechanism (e.g. wheels, winding) or a lever or a hinge (to make a movement) Cut materials using scissors Describe the properties of the materials used Explore how moving objects work Look at wheels, axels, turning mechanisms, hinges and simple levers	Make a product that uses movement The materials used are just right for the job and this helps the product to work well Use a number of materials and join them so they are strong Use art skills to add design or detail to the product Know that the product needs to be made from materials that are suitable for the job	Select the most appropriate techniques and tools to make the product Come up with solutions to problems as they happen Make a product that uses both electrical and mechanical components Products have a good finish so that a user will find it both useful and attractive Know the application of mechanisms to create movement Combine a number of components well in the product Use simple circuits to either illuminate or create motion	Choose components that can be controlled by switches or by ICT equipment Products are improved after testing Products are well finished in a way that would appeal to users Explored mechanical movement using hydraulics and pneumatics	Products are well finished using a range of art and other finishing techniques	Use science skills (resistance, batteries in series or parallel, variable resistance to dim lights or control speed) to alter the way the electrical products behave Use precise electrical connections. Use other DT skills to create housings for the mechanical components

Vocabulary	cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder		shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision,		frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent	
Structures	Make a structure Describe the materials used to make the structure Measure and mark out the materials needed for the structure Finish off work so it looks neat and tidy Find out how to make materials for the structure stronger by folding, joining or rolling	Create structures which use materials that are strong Measure and mark out materials with care and use safe ways of cutting it, including using a junior hacksaw. Use a range of joins Know how to make structures stronger by folding joining or by shape (columns, triangles)	Use the most appropriate mouldable material suitable for the purpose of the product Shape the product carefully, using techniques and tools that lead to a high quality finish Use art skills to apply texture or design to the product Describe the qualities of the material and say why it will be the most suitable choice Use scoring and folding to shape materials accurately Make cuts (scissors, snips, saw) accurately Make holes (punch, drill) accurately	Use suitable mouldable materials selected for the purpose of the product Product is fit for purpose and improve it in response to a user's point of view Apply a high quality finish (e.g. using carving, paint, glaze, varnish or other finishes) Use both hands and other tools to mould materials into very accurate shapes that will do the intended job well Know that the product may need further improvement as the material changes as it dries or when it is heated (e.g. kiln or oven) Measure using mm, and then use scoring and folding to shape materials accurately with a focus on precision	Select materials based on the final finished product's use Make very careful and precise measurements so that joins, holes and openings are in exactly the right place Ensure that edges are finished by sometimes adding other materials (e.g. edging strips)	Products have a high degree of precision and do the intended job well (e.g. a handle on a cup is designed to be an insulator) Products are carefully finished to add extra appeal. This sometimes includes the addition of other materials (e.g. container for a wax candle) Measure and select materials with cost and workability in mind Products are well received by intended users Hide some joints for aesthetic effect

			Methods of working are precise so that products have a high quality finish Join materials to make products using both permanent and temporary fastenings	Make cuts (scissors, snips, saw) accurately and reject pieces that are not accurate and improve technique Make holes (punch, drill) accurately Methods of working are precise so that products have a high quality finish Joins are strong and stable giving extra strength to the products Some joins are flexible to allow for dismantling or folding		