DT Curriculum Progression Document

DT Intent

Design and Technology prepares children to deal with tomorrow's rapidly changing world. It can be found in many of the objects children use each day and is a part of our children's immediate experiences. At Sandal Magna creativity is one of our Key Habits and we encourage children to use their imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. The subject encourages children to become autonomous and creative problem-solvers, both as individuals and as part of a team. Through talk, they are able to negotiate plans and explain their thinking. Our Design and Technology curriculum combines the teaching of subject specific vocabulary, skills, knowledge, and concepts to enable children to tackle real problems. As pupils progress through school they are encouraged to reflect on and evaluate present and past design and technology, its uses and its impacts. We aim to, wherever possible, link work to other disciplines such as mathematics, science, computing and art, to ensure children experience a rich curriculum. Our cross-curricular links enable unique talents to be embraced whilst promoting diversity and equality.

	Nursery	Reception
PSED	Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.	
PD	Use large-muscle movements to wave flags and streamers, paint and make marks. Choose the right resources to carry out their own plan. Use one-handed tools and equipment, for example, making snips in paper with scissors.	Progress towards a more fluent style of moving, with developing control and grace. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. Use a range of small tools, including scissors, paintbrushes and cutlery.
UW	Explore how things work.	
EAD	Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Create closed shapes with continuous lines, and begin to use these shapes to represent objects.	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. Create collaboratively, sharing ideas, resources and skills. 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.

	Year 1			Year 2		
Content	**Mechanisms –** sliders and levers.	**Structures –** freestanding structures.	**Food –** Preparing fruit and vegetables	**Mechanisms –** wheels and axles.	**Food –** preparing fruit and vegetables.	**Textiles –** templates and joining techniques.
Enquiry question	**How can I make a picture move?**	**What makes a structure strong?**	**What makes a snack healthy?**	**How do vehicles move?**	**Why is it important to eat healthy foods?**	**How do I get material to stay together to make a puppet?**

DT Curriculum Progression Document

Design	**Design a moving Christmas picture for parents.** Generate ideas for a moving picture based on a Christmas theme. Communicate ideas through drawing, talking and making paper mock ups.	**Design a new piece of playground equipment for school.** Generate ideas for a new piece of playground equipment – using design criteria. Communicate and plan ideas through talking, drawing and mock up designs.	**Design a fruit kebab for a class picnic.** Create design criteria as a class. Communicate ideas through talking and drawings.	**Design a vehicle that can transport a story character or an egg.** Create design criteria as a class. Communicate and plan ideas through talking, labelled drawings, and mock up designs.	**Design a fruit/vegetable smoothie for a company** Create design criteria. Communicate ideas through talking and labelled drawings.	**Design a puppet for children in EYFS to use.** Design a functional and appealing product for a chosen user based on simple design criteria. Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and where possible ICT.
Make	Plan by suggesting what to do next – what order to make the picture in. Select and use tools – explaining their choices – cut, shape and join card. Use simple finishing techniques.	Plan by suggesting what to do next. Select tools, skills and techniques and explain their choices. Select materials or construction kits to build their structures. Use simple finishing techniques to complete structures.	Use simple utensils and equipment for: peeling, cutting, slicing. Select fruit based on different characteristics.	Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement. Select from and use a range of materials and components. Select materials and components based on their characteristics.	Use simple utensils and equipment for: Cutting, slicing, grating, peeling, squeezing, blending. Select fruit and vegetables based on different characteristics.	Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. Select from and use textiles according to their characteristics.
Evaluate	**Prior to:** explore a range of existing books and products that use sliders and levers. **When complete:** Evaluate product based on design criteria and how well it works in relation to purpose.	**Prior to:** explore photos/actual freestanding structures – in school and local community. **When complete:** Evaluate product based on design criteria, purpose and user.	**Prior to:** Taste and evaluate different fruits – discover personal preferences. **When complete**: Evaluate fruit kebab against design criteria – use opinions from users that tried the kebabs to inform evaluation.	**Prior to:** Explore a range of toys with wheels, axles and axle holders. Evaluate a range of products with wheels and axles. **When complete:** throughout the project evaluate their ideas as they work. Evaluate final	**Prior to:** Taste and evaluate fruit and vegetables - discover personal preferences. **When complete:** Evaluate smoothie based on design criteria, use opinions of users that tried the smoothie.	**Prior to:** Explore and evaluate a range of textile products related to project being undertaken. **When complete:** Evaluate their ideas throughout the project. Evaluate final project against original design criteria.

DT Curriculum Progression Document

				project against design criteria.		
Technical Knowledge	Knowledge of sliders and levers and where they are used. Understand the difference between the two mechanisms. Know and use technical vocabulary.	Know how to make structures stronger, stiffer and more stable. Be able to explain the process they went through to make their structure strong. Know and use technical vocabulary.	Understand where fruit and vegetables come from. Knowledge of healthy and unhealthy food – what is a healthy plate? Use technical and sensory vocabulary in relation to food.	Explore and use wheels, axles and axle holders. Distinguish between fixed and freely moving axles. Know and use technical vocabulary relevant to the project.	Know how fruit and vegetables are grown and harvested. Understand and use basic principles of a healthy and varied diet. Use a blender with adult supervision. Understand the function of and why we use a blender. Use technical and sensory vocabulary in relation to food. Consumer awareness.	Understand how simple 3D textile products are made, using a template to make 2 identical shapes. Understand how to join fabrics using different techniques e.g. running stitch, gluing, over stitch. Explore different finishing techniques e.g. painting, fabric pens, sequins or buttons. Know and use technical vocabulary.
Terms/ Vocabulary	slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function.	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, design, make, evaluate, user, purpose, ideas, design criteria, product, function.	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, planning, investigating tasting, arranging, popular, design, evaluate, criteria.	vehicle, wheel, axle, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools, equipment and materials used, design, make, evaluate, purpose, user, criteria, functional.	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, planning, investigating tasting, arranging, popular, design, evaluate, criteria.	names of existing products, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function.
	Year 3			**Year 4**		

DT Curriculum Progression Document

Content	**Food –** healthy and varied diet.	**Structures-** shell structures.	**Textiles –** 2D shape to 3D product.	**Electrical Systems-** simple circuits and switches.	**Mechanical systems –** levers and linkages.	**Food –** healthy and varied diet.
Enquiry question	**How do I make a sandwich healthy?**	**What makes food packaging appealing?**	**How can I make a bag to hold objects?**	**How can I light up a room at night?**	**How can I make a card have a moving part to make it appealing?**	**How can you apply your knowledge of healthy eating to design your own recipe?**
Design	**Design a healthy sandwich for a child's lunchbox.** Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as supermarket websites, nutritional websites.	**Design food packaging for a supermarket.** Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product. Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas.	**Design a bag for teachers to use.** Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. Produce annotated sketches, prototypes, final product sketches and pattern pieces.	**Design a night light for a younger sibling or friend.** Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.	**Design a Mother's Day card or Easter card.** Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. Use annotated sketches and prototypes to develop, model and communicate ideas.	**Design a healthy soup for teachers at lunch time.** Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.
Make	Plan the main stages of a recipe, listing ingredients, utensils and equipment.	Plan the order of the main stages of making. Select and use appropriate tools and	Plan the main stages of making. Select and use a range of appropriate tools with	Order the main stages of making. Select from and use tools and equipment to cut,	Order the main stages of making. Select from and use appropriate tools with	Plan the main stages of a recipe, listing ingredients, utensils and equipment.

DT Curriculum Progression Document

	Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.	software to measure, mark out, cut, score, shape and assemble with some accuracy. Explain their choice of materials according to functional properties and aesthetic qualities. Use computer-generated finishing techniques suitable for the product they are creating.	some accuracy e.g. cutting, joining and finishing. Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.	shape, join and finish with some accuracy. Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.	some accuracy to cut, shape and join paper and card. Select from and use finishing techniques suitable for the product they are creating.	Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.
Evaluate	**Prior to:** Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. **When complete:** Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.	**Prior to:** Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. **When complete:** Test and evaluate their own products against design criteria and intended user and purpose.	**Prior to:** Investigate a range of 3D textile products relevant to the project. **When complete**: Test their product against original design criteria and with intended user. Take into account others views. Understand how a key event/individual has influenced the development of the chosen product/fabric.	**Prior to:** Investigate and analyse a range of battery-powered products. **When complete:** Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.	**Prior to:** Investigate and analyse books and, where available, other products with lever and linkage mechanisms. **When complete:** Evaluate their own products and ideas against criteria and user needs, as they design and make.	**Prior to:** Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. **When complete:** Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.
Technical Knowledge	Know how to use appropriate equipment and utensils to prepare and combine food.	Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.	Know how to strengthen, stiffen and reinforce existing fabrics.	Understand and use electrical systems in their products, such as series circuits incorporating	Understand and use lever and linkage mechanisms.	Know how to use appropriate equipment and utensils to prepare and combine food.

DT Curriculum Progression Document

	Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Know and use relevant technical and sensory vocabulary appropriately.	Develop and use knowledge of how to construct strong, stiff shell structures. Know and use technical vocabulary relevant to the project.	Understand how to securely join two pieces of fabric together. Understand the need for patterns and seam allowances. Know and use technical vocabulary relevant to the project.	switches, bulbs and buzzers. Apply their understanding of computing to program and control their products. Know and use technical vocabulary relevant to the project.	Distinguish between fixed and loose pivots. Know and use technical vocabulary relevant to the project.	Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. Use a heat source with adult supervision. Know and use relevant technical and sensory vocabulary appropriately
Cooking and nutrition	See separate Food Technology progression skills document.					See separate Food Technology progression skills document.
Terms/ Vocabulary	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, planning, design criteria, purpose, user, annotated sketch, sensory evaluations.	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, evaluating, design brief design criteria, innovative, prototype.	fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces.	series circuit, fault, connection, toggle switch, 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, user, purpose, function, prototype, design criteria, innovative, appealing, design brief.	mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output, linear, rotary, oscillating, reciprocating, user, purpose, function, prototype, design criteria, innovative, appealing, design brief.	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, planning, design criteria, purpose, user, annotated sketch, sensory evaluations.

DT Curriculum Progression Document

	Year 5			Year 6		
Content	**Food –** celebrating culture and seasonality.	**Structures-** frame structures.	**Mechanical systems –** pulleys or gears.	**Textiles –** Using computer-aided design (CAD) in textiles	**Food –** celebrating culture and seasonality.	**Electrical systems –** complex switches and circuits.
Enquiry question	**What food was eaten in Ancient Greece?**	**What materials would be suitable for a bug house outside?**	**What makes a successful children's toy?**	**How do computers help with the textile design process?**	**What was the effect of food rationing on recipes in WW2?**	**How can I make a board game with component parts?**
Design	**Design a bread based product for a Greek feast.** Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.	**Design a bug house for an outdoor area.** Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.	**Design a new toy vehicle for a toy shop.** Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. Develop a simple design specification to guide their thinking. Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.	**Design a pair of waterproof shoes/ slippers.** Generate innovative ideas through research including surveys, interviews and questionnaires. Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design. Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.	**Design a cake based on WW2 rations.** Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.	**Design an electrical board game. (group work)** Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost. Generate and develop innovative ideas and share and clarify these through discussion. Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.
Make	Write a step-by-step recipe, including a list of ingredients,	Formulate a clear plan, including a step-by-step list of what needs to be	Produce detailed lists of tools, equipment and materials.	Produce detailed lists of equipment and fabrics relevant to their tasks.	Write a step-by-step recipe, including a list of ingredients,	Formulate a step-by-step plan to guide making, listing tools, equipment,

DT Curriculum Progression Document

	equipment and utensils. Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose.	done and lists of resources to be used. Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. Use finishing and decorative techniques suitable for the product they are designing and making.	Formulate step-by-step plans and, if appropriate, allocate tasks within a team. Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.	Formulate step-by-step plans and, if appropriate, allocate tasks within a team. Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.	equipment and utensils. Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose.	materials and components. Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.
Evaluate	**Prior to:** Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. **When complete:** Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.	**Prior to:** Investigate and evaluate a range of existing frame structures. Research key events and individuals relevant to frame structures. **When complete:** Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.	**Prior to:** Investigate famous manufacturing and engineering companies relevant to the project. **When complete:** Compare the final product to the original design specification. Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work.	**Prior to:** Investigate and analyse textile products linked to their final product. **When complete:** Compare the final product to the original design specification. Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work.	**Prior to:** Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. **When complete:** Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.	**Prior to:** Investigate famous inventors who developed ground-breaking electrical systems and components. **When complete:** Continually evaluate and modify the working features of the product to match the initial design specification. Test the system to demonstrate its effectiveness for the intended user and purpose.

DT Curriculum Progression Document

Technical Knowledge	Know how to use utensils and equipment including heat sources to prepare and cook food. Understand about seasonality in relation to food products and the source of different food products. Know and use relevant technical and sensory vocabulary.	Understand how to strengthen, stiffen and reinforce 3-D frameworks. Understand the properties of different materials and use this to make informed decisions. Know and use technical vocabulary relevant to the project.	Understand that mechanical and electrical systems have an input, process and an output. Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. Know and use technical vocabulary relevant to the project.	A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. Fabrics can be strengthened, stiffened and reinforced where appropriate.	Know how to use utensils and equipment including heat sources to prepare and cook food. Understand about seasonality in relation to food products and the source of different food products. Know and use relevant technical and sensory vocabulary.	Understand and use electrical systems in their products. Apply their understanding of computing to program, monitor and control their products. Know and use technical vocabulary relevant to the project.
Cooking and nutrition	See separate Food Technology progression skills document.				See separate Food Technology progression skills document.	
Terms/ Vocabulary	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.	frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional.	pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output, design decisions, functionality, innovation, authentic, user, purpose,	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, iron transfer paper, design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype.	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.	series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart, function, innovative, design specification, design brief, user, purpose.

DT Curriculum Progression Document

	design specification, innovative, research, evaluate, design brief.		design specification, design brief.		design specification, innovative, research, evaluate, design brief.	