

# St Lawrence Design and Technology overview

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food	<p>Eats a healthy range of foodstuffs and understand need for variety in food.</p> <p>Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.</p> <p>They know about similarities and differences between themselves and others, and among families, communities and traditions.</p> <p>Knows that other children have different likes and dislikes.</p>	<ul style="list-style-type: none"><li>• Cut, peel or grate ingredients safely and hygienically.</li><li>• Measure or weigh using measuring cups or electronic scales.</li><li>• Assemble or cook ingredients.</li></ul> <p>Use the basic principles of a healthy and varied diet to prepare dishes</p> <p>understand where food comes from</p>		<ul style="list-style-type: none"><li>• Prepare ingredients hygienically using appropriate utensils.</li><li>• Measure ingredients to the nearest gram accurately.</li><li>• Follow a recipe.</li><li>• Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).</li></ul> <p>Understand and apply the principles of a healthy and varied diet</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>		<ul style="list-style-type: none"><li>• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).</li><li>• Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.</li><li>• Demonstrate a range of baking and cooking techniques.</li><li>• Create and refine recipes, including ingredients, methods, cooking times and temperatures.</li></ul> <p>Understand and apply the principles of a healthy and varied diet</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>	
	<ul style="list-style-type: none"><li>• Learning about different food groups.</li><li>• Finding out what the different food groups provide for their health.</li><li>• Sorting out foods that are healthy and less healthy.</li><li>• Food tasting.</li><li>• Looking at likes and dislikes and recording on a graph.</li><li>• Learning what different foods are eaten at different festivals - Diwali, Hanukkah, Christmas.</li><li>• Autumn 1 - Marvellous me - Looking at different food groups/healthy foods - likes and dislikes.</li><li>• Autumn 2 - Festivals and Celebrations - Foods from different festivals - Diwali, Hanukkah, Christmas</li><li>• Spring 1 - Winter wonderland - looking at foods to eat when it is cold outside</li><li>• Summer 1 - Nature Explorers - Learning about where different foods come from</li></ul>	<ul style="list-style-type: none"><li>• Kitchen hygiene including washing hand properly and making sure all equipment is clean before starting</li><li>• Introduction to equipment to use when cutting, peeling and grating</li><li>• Practise skills of cutting, peeling and grating</li><li>• Measure ingredients using whole amounts of containers</li><li>• Gradually introduce to measured amounts such as teaspoons, cups etc</li><li>• Combine raw ingredients such as fruit and vegetables EG fruit kebabs, fruit 'smoothies' etc</li><li>• Sort food into the five food groups and know the names of the groups</li><li>• Know that we should eat at least five portions of fruit and vegetables everyday</li><li>• Know that all food comes from plants or animal</li><li>• Name some foods and where they come from</li><li>• Summer 1 - Gardener's World chn will be using raw ingredients, covering the highlighted items above to create a fruit salad or smoothie or vegetable soup.</li></ul>	<ul style="list-style-type: none"><li>• Recap kitchen hygiene including washing hand properly and making sure all equipment is clean before starting</li><li>• Recap of equipment names for cutting, peeling and grating</li><li>• Practise skills of cutting, peeling and grating with greater control and precision</li><li>• Measure ingredients using simple electronic scales to whole numbers such as 100, 200 etc</li><li>• Sort food into the five food groups on the eatwell plate</li><li>• Be able to explain why we need to eat five portions of fruit and vegetables everyday</li><li>• Know that all food has to be farmed, grown elsewhere (eg home) or caught</li><li>• Know where foods come from and can name some</li><li>• Autumn 2 - Fire! Fire! - Taste breads from around the world. Design and make a new loaf. Looking at flavours and shapes.</li></ul>	<ul style="list-style-type: none"><li>• Recap kitchen hygiene including washing hand properly and making sure all equipment is clean before starting</li><li>• Teach equipment names for mixing, cooking and cutting</li><li>• Practise skills of cutting, mixing, beating, folding, kneading and rolling with greater control and precision</li><li>• Recap measuring ingredients to the nearest 100g</li><li>• Simple step recipes to follow using pictures for each step</li><li>• Combine raw ingredients, moving to simple cooking using an oven or grill</li><li>• Notice the changes in ingredients when they have been cooked</li><li>• Talk about and describe changes that occur in foods when they are cooked</li><li>• Recap the eatwell plate and the five different food groups</li><li>• Learn that a healthy diet is made up from a variety and balance of different foods and drinks</li><li>• Learn that to be active and healthy, food is needed to provide energy for the body</li><li>• Learn about the foods that are grown and how they are grown</li><li>• Include information on root / non-root vegetables, fruit plants etc</li><li>• Spring 2 - Farming - chn will be learning about healthy eating recapping the eatwell plate. They will be learning</li></ul>		<ul style="list-style-type: none"><li>• Recap kitchen hygiene including washing hand properly and making sure all equipment is clean before starting</li><li>• Learn how to read food labels for ingredients and correct storage</li><li>• Learn what microorganisms are and the differences between good and bad ones</li><li>• Recap how to measure ingredients to nearest gram using electronic and non-electronic scales</li><li>• Begin to scale up and scale down ingredients so that the recipe can feed more/less eg double, triple, halve etc ingredients in a problem solving capacity</li><li>• Follow recipes where combining ingredients and cooking are the main tasks</li><li>• Recap how to turn on and off an oven</li><li>• Understand the need to warm up the oven before cooking</li><li>• Create and refine recipes, including ingredients, methods, cooking times and temperatures.</li><li>• Autumn 2: Children make recipes thinking about rationing in WW1 They have to think about scaling the ingredients to ensure there is enough for everyone in the class.</li><li>• They will need to think about food hygiene, measuring ingredients</li></ul>	<ul style="list-style-type: none"><li>• Recap kitchen hygiene including washing hand properly and making sure all equipment is clean before starting</li><li>• Learn about how we store different foods in different places eg vegetables in a cool, dry place, meat / dairy in the fridge, cooked and uncooked food etc</li><li>• Recap what microorganisms are and the differences between good and bad ones</li><li>• Learn how we can stop the spreading of harmful microorganisms</li><li>• Recap basics of using electronic and non-electronic measuring scales</li><li>• Recap scaling ingredients up and down to feed more / less</li><li>• Use ratio to problem solve the volume of the different ingredients that are required</li><li>• Follow recipes where combining ingredients and cooking are the main tasks</li><li>• Recap how to turn on and off an oven</li><li>• Understand the need to warm up the oven before cooking</li><li>• Create and refine recipes, including ingredients, methods, cooking times and temperatures.</li><li>• Recap that different foods contain different substances eg nutrients, water and fibre – that are needed for health</li><li>• Recap the foods that are grown, reared and caught in the UK, Europe and the wider world include pigs, chicken, cattle, fish Look at</li></ul>

				where food comes from - field to fork. Practical activities to include cutting of vegetables, food tasting, following a recipe to make a salad using skills learnt		<p>correctly and follow a recipe.</p> <ul style="list-style-type: none"> <li>The children will think about the impact of WW1 on food supplies and the fact that there wasn't as much available - link to topic of WW1</li> </ul>	<p>different techniques that are used across the world</p> <ul style="list-style-type: none"> <li>Recap food availability and some of the things that have an effect on this</li> <li>Recap how food is processed into ingredients that can be eaten or used in cooking and some of their uses</li> </ul> <ul style="list-style-type: none"> <li>Summer 1 - Health and Wellbeing - children will follow recipes to make healthy meals and will use ratio to help with proportion sizes.</li> </ul>
Materials	<ul style="list-style-type: none"> <li>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> <li>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li> <li>Create collaboratively, sharing ideas, resources and skills.</li> </ul>	<ul style="list-style-type: none"> <li>Cut materials safely using tools provided.</li> <li>Measure and mark out to the nearest centimetre.</li> <li>Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</li> <li>Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).</li> </ul>	<ul style="list-style-type: none"> <li>Cut materials accurately and safely by selecting appropriate tools. Cut to the nearest millimetre.</li> <li>Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).</li> <li>Select appropriate joining techniques.</li> </ul>		<ul style="list-style-type: none"> <li>Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).</li> <li>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).</li> </ul>		
	<p>Autumn 1 - Exploring different tools and how to use and handle them safely</p> <p>Autumn 2 - Making fireworks and decorations</p> <p>Throughout the year - building with different materials and testing what they can be used for</p>	Autumn 2 - Reach for the stars - Design and make a 3D spaceship	Summer 2 - Design and make a bridge using winding mechanisms		Spring 1 - Rainforests - to make shelter suitable for the rainforest	Summer 2- Ancient Greece Children will initially design a chariot using a cams mechanism. Evaluate the product when finished.	
Textiles	<ul style="list-style-type: none"> <li>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> <li>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li> <li>Create collaboratively, sharing ideas, resources and skills.</li> </ul>	<ul style="list-style-type: none"> <li>Shape textiles using templates.</li> <li>Join textiles using running stitch.</li> <li>Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).</li> </ul>		<ul style="list-style-type: none"> <li>Understand the need for a seam allowance.</li> <li>Join textiles with appropriate stitching.</li> <li>Select the most appropriate techniques to decorate textiles.</li> </ul>		<ul style="list-style-type: none"> <li>Create objects (such as a cushion) that employ a seam allowance.</li> <li>Join textiles using a sewing machine with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).</li> <li>Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).</li> </ul>	

		<p>Cut out shapes which have been created by drawing round a template onto the fabric</p> <p>Join fabrics by using glue, staples, tape</p> <p>Practise running stitch using sewing cards and laces</p> <p>Decorate fabrics with buttons, beads, sequins, braids, ribbons by gluing them onto the fabric</p> <p>Spring 2- Dinosaurs. Design and make a dinosaur cushion. Children will practice cutting and joining skills and then apply to create their own cushion.</p>	<p>Colour fabrics using a range of techniques e.g. fabric paints, printing, painting</p> <p>Decorate fabrics with buttons, beads, sequins, braids, ribbons using sewing techniques</p> <p>Summer 1 - Going Wild.</p>		<p>Spring 2 - The Maya - chn to create a weaving bookmark - they will then add detail for decoration and join material to the back using appropriate stitches.</p> <p>Summer 1 - Victorians - to create a punch and judy puppet - cut out material using a pattern, join material together allowing for a seam allowance</p>	<p>Use a variety of different hand stitches, using needle and thread. Design different patterns for making a Viking/Anglo-Saxon money pouch, using a drawstring method, using materials .</p> <p>Spring 2 - Viking/Anglo-Saxon Children to design a motif using materials to sew onto the front of the money pouch. Use a hem on the money pouch</p>	<p>Create 3D products using seam allowance</p> <p>Join fabric with needle and thread to create base piece</p> <p>Use a variety of stitching techniques to apply decoration creating a visual and tactile effect</p> <p>Autumn 2 - Endurance - research, design and make mittens.</p>
Construction	<ul style="list-style-type: none"> <li>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> <li>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li> <li>Create collaboratively, sharing ideas, resources and skills.</li> </ul>	Use materials to practise screwing, gluing and nailing materials to attach materials together.		<ul style="list-style-type: none"> <li>Choose suitable techniques to construct products or to repair items.</li> <li>Strengthen materials using suitable techniques.</li> </ul>		<ul style="list-style-type: none"> <li>Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</li> </ul>	
	Throughout the year - Chn have access to a wide range of building/construction materials both inside and out. Questioning supports the chn to expand, develop and experiment with their ideas		Autumn 2 - Fire Fire - chn to attach materials together using appropriate methods	Summer 1 - Transport - when looking at bridges we are going to be constructing a bridge discussing all of the above and to include Mechanics (see below)		Summer 2- Ancient Greece Children will initially design a chariot using wood and a cams mechanism. Evaluate the product when finished.	Spring 2 - Extreme Earth - children research, design and build an earthquake proof building.
Mechanics		<ul style="list-style-type: none"> <li>Create products using levers, wheels and winding mechanisms.</li> </ul>		<ul style="list-style-type: none"> <li>Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).</li> </ul>		<ul style="list-style-type: none"> <li>Convert rotary motion to linear using cams.</li> <li>Use innovative combinations of electronics (or computing) and mechanics in product designs.</li> </ul>	
		Summer 2 - Wonderful water - chn to create pictures with moving parts, levers. (links to materials)	Summer 2 - Design and make a bridge using winding mechanisms.	Summer 1 - Transport - when looking at bridges we are looking at how we can make them lift using levers/winding mechanisms		Summer 2 - Ancient Greece. Children will initially design a chariot using wood and a cams mechanism.	
Electrics				<ul style="list-style-type: none"> <li>Create series and parallel circuits</li> </ul>		<ul style="list-style-type: none"> <li>Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).</li> <li>Write code to control and monitor models or products.</li> </ul>	
					This is being covered in Science as it lends itself well to the topic	Autumn 2- links to the topic of digital literacy, children will create a circuit and program a	

					light board to flash up an e-safety message.	
To design, make, evaluate and improve	<ul style="list-style-type: none"><li>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li><li>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li><li>Create collaboratively, sharing ideas, resources and skills.</li></ul>	<ul style="list-style-type: none"><li>Design products that have a clear purpose and an intended user.</li><li>Make products, refining the design as work progresses.</li></ul>	Design with purpose by identifying opportunities to design.  Make products by working efficiently (such as by carefully selecting materials).  Refine work and techniques as work progresses, continually evaluating the product design		<ul style="list-style-type: none"><li>Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).</li><li>Make products through stages of prototypes, making continual refinements.</li><li>Ensure products have a high quality finish, using art skills where appropriate.</li><li>Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.</li></ul>	
	Throughout the year - Chn have access to a wide range of building/construction materials both inside and out. Questioning supports the chn to expand, develop and experiment with their ideas	<ul style="list-style-type: none"><li>Explore objects and designs to identify likes and dislikes of the designs.</li><li>Suggest improvements to existing designs.</li><li>Explore how products have been created.</li></ul>	<ul style="list-style-type: none"><li>Improve upon existing designs, giving reasons for choices.</li><li>Disassemble products to understand how they work.</li></ul>		<ul style="list-style-type: none"><li>Create innovative designs that improve upon existing products.</li><li>Evaluate the design of products so as to suggest improvements to the user experience.</li></ul>	
To take inspiration from design throughout history		Nadia Hussain - Food - Summer 1		Brunel - Transport - Summer 1 Jimmy Doherty - Spring 2	Charles Mackintosh - Spring 1	

## Sticky Knowledge

Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>To know that food belong to different groups</li> <li>To know about foods from different religions related to festivals</li> <li>To safety handle and use the scissors effectively</li> </ul>	<ul style="list-style-type: none"> <li>Use own ideas to design something and describe how their own idea works</li> <li>Know how to design a product which moves</li> <li>Know how to explain to someone else how they want to make their product and make a simple plan before making</li> <li>Know how to choose appropriate resources and tools</li> <li>Know how to explain what went well with their work</li> <li>Know how and why we cut food safely</li> </ul>	<ul style="list-style-type: none"> <li>Know how to choose appropriate resources and tools</li> <li>Know how to explain what went well with their work</li> <li>Know how to make a model stronger and more stable</li> <li>Know how to use wheels and axles, when appropriate to do so</li> <li>Know how to weigh ingredients to use in a recipe</li> <li>Know what ingredients are used when making a salad</li> <li>Know why we eat food from the different food groups</li> <li>Know the different food groups</li> </ul>	<ul style="list-style-type: none"> <li>know how to be both hygienic and safe when using food</li> <li>know what a healthy diet consists of</li> <li>know when food is ready for harvesting and about seasonality</li> <li>know how to reinforce a part of a structure for strength and stability</li> <li>explain how to improve a finished model</li> <li>know why a model has, or has not, been successful</li> </ul>	<ul style="list-style-type: none"> <li>know which tools to use for particular tasks and how to handle them safely</li> <li>know which material to use to give the best outcome</li> <li>know how to evaluate designs and be able to suggest improvements</li> <li>know how to produce a plan, include annotated drawings and sketches</li> <li>know about ideas from from other designers</li> </ul>	<ul style="list-style-type: none"> <li>know how to cook safely, thinking about hygiene and food nutrition</li> <li>know how to use tools in the kitchen and measure out ingredients accurately</li> <li>know how to follow a recipe successfully to make a dish</li> <li>know how to evaluate designs and be able to suggest improvements</li> <li>know how to use a needle and thread and be able to join two pieces of material together securely</li> </ul>	<ul style="list-style-type: none"> <li>know how to carry out effective research to inform plans and ideas</li> <li>know which materials to use based off their design</li> <li>know which tool to use for a specific practical task</li> <li>know how to use any tool correctly and safely</li> <li>know how to evaluate against criteria</li> <li>know how and why a made product might need strengthening, stiffening or reinforcing</li> <li>know how to follow recipes where combining ingredients and cooking are the main tasks</li> </ul>