

# Cop Lane C of E Primary School – Design and Technology Overview 2024-2025

	Autumn Term - Curriculum Focus		Spring Term - Curriculum Focus		Summer Term - Curriculum Focus	
			STEM Week – 7 <sup>th</sup> - 16 <sup>th</sup> March 2025			
EYFS	Learning to use the creative area/maker space. Design and make a vegetable soup as a class.	Making salt dough diva lamps.	Designing and making superhero costumes. Designing and making superhero vehicles using Lego remote controlled vehicles.	Construction kits – designing and making bridges for the Gingerbread Man. Designing and making a storytelling spoon puppet.		
PSED, UTW, Physical Development and Expressive Arts and Design skill development links	<u>Personal, Social and Emotional Development</u> <ul style="list-style-type: none"><li>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.</li></ul>			<u>Understanding the World</u> <ul style="list-style-type: none"><li>Explore how things work.</li></ul>		
	<u>Physical Development – Fine Motor Skills</u> <ul style="list-style-type: none"><li>Use large-muscle movements to wave flags and streamers, paint and make marks.</li><li>Choose the right resources to carry out their own plan.</li><li>Use one-handed tools and equipment, for example, making snips in paper with scissors</li><li>Progress towards a more fluent style of moving, with developing control and grace.</li><li>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</li><li>Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor</li><li>Use a range of small tools, including scissors, paintbrushes and cutlery</li></ul>			<u>Expressive Arts and Design – Creating with Materials</u> <ul style="list-style-type: none"><li>Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.</li><li>Explore different materials freely, in order to develop their ideas about how to use them and what to make.</li><li>Develop their own ideas and then decide which materials to use to express them.</li><li>Create closed shapes with continuous lines, and begin to use these shapes to represent objects.</li><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><li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li><li>Share their creations, explaining the process they have used.</li></ul>		
Key Vocabulary	Textures, make, create, explain, hold, stick, stay, design, pinch, mould, build, connect, construct, attach... Names of key tools - brush, pencil, glue, scissors, crayons, felt tips, chalk, glue gun Names of basic shapes - square, circle, star, triangle etc					
Y1	<b>Structures</b> – The children think about the different type of materials that could be recycled. They gather different materials, plan, design and create using the selection of skills below in order to create a robot structure.		<b>Mechanisms</b> – Fitting in with a cross curricular theme, the children re-create the Alice in Wonderland book using different sliders, levers and pop ups. They investigate the different types, plan and create an interactive book using the selection of skills.		<b>Textiles</b> – The children use their finalised Art and Design textiles piece to adapt and create a puppet of a minibeast, using the Design and Technology skills to modify the creation into a usable product.	
Skills	<b>Structures</b> <ul style="list-style-type: none"><li>To refer to materials tools and techniques using appropriate vocabulary.</li><li>To explore how to make structures stronger.</li><li>To investigate different techniques for stiffening a variety of materials.</li></ul>		<b>Mechanisms</b> <ul style="list-style-type: none"><li>To join appropriately for different materials and situations e.g. glue, tape.</li><li>To roll paper to create tubes.</li><li>To fold, tear and cut paper and card.</li><li>To cut along lines, straight and curved.</li></ul>		<b>Textiles</b> <ul style="list-style-type: none"><li>To start to use the appropriate vocabulary to refer to fabrics and tools.</li><li>To cut out shapes which have been created by drawing round a template onto the fabric.</li></ul>	

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	<ul style="list-style-type: none"> <li>To test different methods of enabling structures to remain stable.</li> <li>To join appropriately for different materials and situations e.g. glue, tape.</li> <li>To mark out materials to be cut using a template.</li> <li>To use a glue gun with close supervision</li> </ul>	<ul style="list-style-type: none"> <li>To use a hole punch.</li> <li>To insert paper fasteners for card.</li> <li>To experiment with levers and sliders to find different ways of making things move</li> </ul>	<ul style="list-style-type: none"> <li>To join fabrics by using e.g. running stitch, glue, staples, over sewing, tape.</li> <li>To decorate fabrics with attached items e.g. buttons, beads, sequins, braids, ribbons.</li> <li>To colour fabrics using a range of techniques e.g. fabric paints, printing, painting</li> </ul>
<b>Key Vocabulary</b>	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	slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards	joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish
<b>Y2</b>		<b>Food</b> – The children work, using their cross curricular learning, to design and create a fruit salad, inspired by 'The Farm Shop'.	<b>Mechanisms</b> – The children design and create a form of seaside vehicle, focussing on the purpose and design of the product being suitable for the seaside.
<b>Skills</b>		<p><b>Food</b></p> <ul style="list-style-type: none"> <li>To explain where food comes from.</li> <li>To cut, peel, grate, chop a range of ingredients</li> <li>To work safely and hygienically.</li> <li>To measure and weigh food items, non-statutory measures e.g. spoons, cups.</li> <li>To develop a food vocabulary using taste, smell, texture and feel.</li> <li>To understand the need for a variety of foods in a diet.</li> <li>To group familiar food products e.g. fruit and Vegetables</li> </ul>	<p><b>Mechanisms</b></p> <ul style="list-style-type: none"> <li>To use technical vocabulary when describing mechanisms, tools and materials they use.</li> <li>To try out different axle fixings and their strengths and weaknesses.</li> <li>To make vehicles with construction kits which contain free running wheels.</li> <li>To cut dowel using hacksaw and bench hook.</li> <li>To attach wheels to a chassis using an axle.</li> <li>To mark out materials to be cut using a template.</li> </ul>
<b>Key Vocabulary</b>		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,	vehicle, wheel, axle, axle holder, chassis, body, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used
<b>Ongoing Y1/Y2 Key learning and skills</b>	<p><b>Design</b></p> <ul style="list-style-type: none"> <li>To use pictures and words to convey what they want to design/make.</li> <li>To propose more than one idea for their product.</li> <li>To model ideas / make mock-ups with kits, reclaimed materials.</li> <li>To select appropriate technique explaining: First... Next... Last....</li> <li>To explore ideas by rearranging materials/ingredients.</li> <li>To select pictures to help develop ideas.</li> <li>To use drawings to record ideas as they are developed.</li> <li>To add notes to drawings to help explanations.</li> <li>To use ICT to communicate their ideas when appropriate (e.g. videos).</li> <li>To describe their models and drawings of ideas and intentions.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>To discuss their work as it progresses.</li> <li>To select materials/ingredients from a limited range that will meet the design criteria.</li> <li>To select and name the tools needed to work the materials/ingredients.</li> <li>To explain what they are making.</li> <li>To explain which materials/ingredients they are using and why.</li> </ul>		

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	<ul style="list-style-type: none"> <li>To name the tools they are using.</li> <li>To describe what they need to do next</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>To explore existing products and investigate how they have been made.</li> <li>To decide how existing products do/do not achieve their purpose.</li> <li>To talk about their design as they develop and identify good and bad points.</li> <li>To note changes made during the making process as annotation to plans/drawings.</li> <li>To say what they like and do not like about items they have made and attempt to say why.</li> <li>To discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.</li> </ul>		
Y3	<p><b>Structures</b>– The children look into creating a Roman Chariot for the purpose of testing the durability of a Roman Road, which is a cross curricular link to Science and History. They research the product and how it is created on a larger scale, using this to then create their own smaller version.</p>	<p><b>Food technology</b> – Based on their cross curricular ‘fruits and vegetables and healthy eating’ topic, the children design and create a fruit smoothie, with the purpose of creating the smoothie for children similar in age. They research into the smoothies that sell and why, looking into the types and tastes, then developing their designs from this.</p>	<p><b>Mechanical and Electrical Systems</b> – The children look into the design of a Viking longship and how these worked long ago. They use a computer aided design programme to support their design in creating a product which will have mechanical systems, and push their creation further by linking it up to an electrical system to ‘light the way’ on their ships.</p>
Skills	<p><b>Structures</b></p> <ul style="list-style-type: none"> <li>To develop vocabulary related to the project.</li> <li>To create shell or frame structures.</li> <li>To strengthen frames with diagonal struts.</li> <li>To make structures more stable by giving them a wide base.</li> <li>To measure and mark square section, strip and dowel accurately to 1cm</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>To follow instructions/recipes.</li> <li>To make healthy eating choices – use the Eatwell Plate</li> <li>To join and combine a range of ingredients.</li> <li>To explore seasonality of vegetables and fruit.</li> <li>To find out which fruit and vegetables are grown in countries/continents studied in Geography.</li> </ul>	<p><b>Mechanical and Electrical Systems and ICT (Computer Aided Design)</b></p> <ul style="list-style-type: none"> <li>To develop vocabulary related to the project.</li> <li>To use mechanical systems such as gears, pulleys, levers and linkages.</li> <li>To incorporate a circuit into a model/product.</li> <li>To use electrical systems such as switches bulbs and buzzers.</li> <li>To use ICT to program and control products.</li> <li>To use lolly sticks/card to make levers and linkages.</li> <li>To use linkages to make movement larger or more varied</li> <li>To use CAD where appropriate</li> </ul>
Key Vocabulary	<p>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, laminating, font, lettering, text, graphics, decision</p>	<p>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</p>	<p>mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating</p>
Y4		<p><b>Textiles</b> – The children use their finalised Art and Design textiles piece of an Anglo Saxon design, to adapt and create a purse or bag, using the Design and Technology skills to modify the creation into a usable product.</p>	<p><b>Food</b> – With cross curricular links to the Egyptians, the children use this knowledge to develop their understanding of the popular Egyptian food Koshari. They plan, design and create a final product of a traditional Koshari dish.</p>
Skills		<p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>To develop vocabulary for tools materials and their properties.</li> <li>To understand seam allowance.</li> <li>To join fabrics using running stitch, over sewing, blanket stitch.</li> <li>To use prototype to make pattern.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>To develop sensory vocabulary/knowledge using, smell, taste, texture and feel</li> <li>To analyse the taste, texture, smell and appearance of a range of foods (predominantly savoury).</li> <li>To prepare and cook using a range of cooking techniques.</li> </ul>

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Key Vocabulary		fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance	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
Ongoing Y3/Y4 Key learning and skills	<p><b>Design</b></p> <ul style="list-style-type: none"> <li>To develop more than one design or adaptation of an initial design.</li> <li>To plan a sequence of actions to make a product.</li> <li>To record the plan by drawing using annotated sketches.</li> <li>To begin to use cross-sectional and exploded diagrams.</li> <li>To use prototypes to develop and share ideas.</li> <li>To think ahead about the order of their work and decide upon tools and materials/ingredients.</li> <li>To propose realistic suggestions as to how they can achieve their design ideas.</li> <li>To consider aesthetic qualities of materials/ingredients chosen.</li> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>To prepare pattern pieces as templates for their design.</li> <li>To select from a range of tools for cutting shaping joining and finishing.</li> <li>To use tools with accuracy.</li> <li>To select from techniques for different parts of the process.</li> <li>To select from materials according to their functional properties.</li> <li>To plan the stages of the making process.</li> <li>To use appropriate finishing techniques.</li> </ul> <p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>To investigate similar products to the one to be made to give starting points for a design.</li> <li>To draw/sketch products to help analyse and understand how products are made.</li> <li>To research needs of user.</li> <li>To identify the strengths and weaknesses of their design ideas in relation to purpose/user.</li> <li>To decide which design idea to develop.</li> <li>To consider and explain how the finished product could be improved.</li> <li>To discuss how well the finished product meets the design criteria of the user.</li> <li>To investigate key individuals in Design and Technology.</li> </ul>		
Y5	<b>Mechanical and Electrical Systems and ICT (Programming)</b> – The children research about different vehicles which are used in space, linking to their cross curricular work. They design and create a form of transport to be used in space, ensuring to include gears or pulleys in their creation.	<b>Food</b> The children are tasked to design a menu or the opening ceremony of the very first Olympic Games. The children plan, design and create one component from the menu.	<b>Structures</b> – The children look into the structures of famous bridges, to further design and create a smaller version of a bridge structure over the Amazon river.
Skills	<b>Mechanical and Electrical Systems and ICT (Computer Aided Design)</b> <ul style="list-style-type: none"> <li>To develop a technical vocabulary appropriate to the project.</li> </ul>	<b>Food</b> <ul style="list-style-type: none"> <li>To prepare mostly savoury dishes using their own selection of ingredients, taking into account their nutritional properties and sensory characteristics.</li> </ul>	<b>Structures</b> <ul style="list-style-type: none"> <li>To use the correct terminology for tools materials and processes.</li> <li>To use bradawl to mark hole positions.</li> </ul>

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	<ul style="list-style-type: none"> <li>To use mechanical systems such as cams, pulleys and gears.</li> <li>To use electrical systems such as motors.</li> <li>To program, monitor and control products using ICT</li> </ul>	<ul style="list-style-type: none"> <li>To weigh and measure using scales.</li> <li>To know where and how ingredients are grown and processed</li> <li>To join and combine a widening range of ingredients.</li> </ul>	<ul style="list-style-type: none"> <li>To use hand drill to drill tight and loose fit holes.</li> <li>To cut strip wood, dowel, square section wood accurately to 1mm.</li> <li>To join materials using appropriate methods.</li> <li>To build frameworks to support mechanisms.</li> <li>To stiffen and reinforce complex structures</li> </ul>
<b>Key Vocabulary</b>	pulley, drive belt, gear, rotation, spindle, driver, follower, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output	ingredients, yeast, dough, bran, flour, wholemeal, 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
<b>Y6</b>	<b>Textiles</b> – The children will design, make do and mend a decoration with the purpose of fitting a festive theme and to be able to hang from a tree.		<b>Food</b> - The children will use their food technology skills to create a savoury meal inspired by the ingredients they would use in Stone Age Britain.
<b>Skills</b>	<p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>To use the correct vocabulary appropriate to the project.</li> <li>To create 3D products using patterns pieces and seam allowance.</li> <li>To understand pattern layout.</li> <li>To decorate textiles appropriately (often before joining components).</li> <li>To pin and tack fabric pieces together.</li> <li>To join fabrics using over sewing, back stitch, blanket stitch or machine stitching (closer supervision).</li> <li>To combine fabrics to create more useful properties.</li> <li>To make quality products</li> </ul>		<p><b>Food</b></p> <ul style="list-style-type: none"> <li>To select and prepare foods for a particular purpose.</li> <li>To develop understanding of a healthy diet (using the eatwell plate) and apply in their ingredient choices.</li> <li>To use a range of cooking techniques.</li> <li>To consider influence of recent chefs e.g. Jamie Oliver and school meals, Heston Blumentahal.</li> </ul>
<b>Key Vocabulary</b>	seam, seam allowance, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, fastenings,	seam, seam allowance, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, fastenings,	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
<b>Ongoing Y5/Y6 Key learning and skills</b>	<p><b>Design</b></p> <ul style="list-style-type: none"> <li>To list tools needed before starting the activity.</li> <li>To plan the sequence of work e.g. using a storyboard.</li> <li>To record ideas using annotated diagrams.</li> <li>To use models, kits and drawings to help formulate design ideas.</li> <li>To combine modelling and drawing to refine ideas.</li> <li>To devise step by step plans which can be read / followed by someone else.</li> <li>To use exploded diagrams and cross-sectional diagrams to communicate ideas.</li> <li>To sketch and model alternative ideas.</li> <li>To decide which design idea to develop.</li> </ul>		

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## Make

- To make prototypes.
- To develop one idea in depth.
- To use researched information to inform decisions.
- To produce detailed lists of ingredients / components / materials and tools.
- To select from and use a wide range of tools.
- To cut accurately and safely to a marked line.
- To select from and use a wide range of materials.
- To use appropriate finishing techniques for the project.
- To refine their product – review and rework/improve.

## Evaluate

- To research and evaluate existing products (including book and web based research).
- To consider user and purpose.
- To identify the strengths and weaknesses of their design ideas.
- To give a report using correct technical vocabulary.
- To consider and explain how the finished product could be improved related to design criteria.
- To discuss how well the finished product meets the design criteria of the user.
- To understand how key people have influenced design