



DT Long Term Planning

'Achieve Excellence'



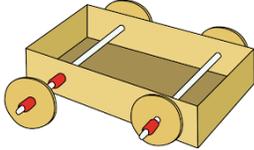
What does it mean to get better at DT at Wimboldsley?

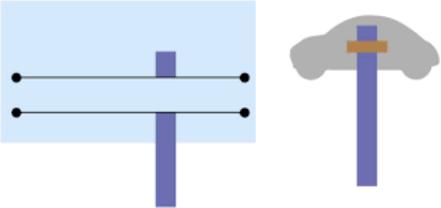
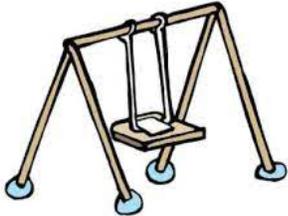
At Wimboldsley Community Primary School, to develop knowledge and understanding in Design and Technology, children learn to think creatively to solve problems and develop a natural curiosity alongside extending their understanding and skills base. We encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts. Our Key Strands include: Food and Nutrition, Structures, Moving Mechanisms, Textiles and Electrical Systems

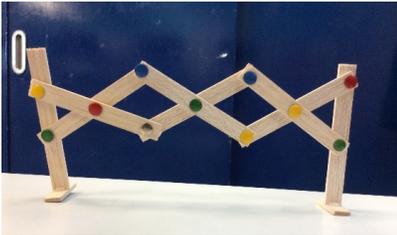
Our Key Strands include: **Food and Nutrition**, **Structures**, **Moving Mechanisms**, **Textiles** and **Electrical Systems**

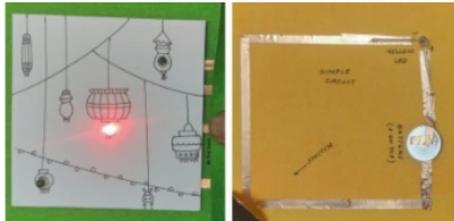
Substantive - I know that

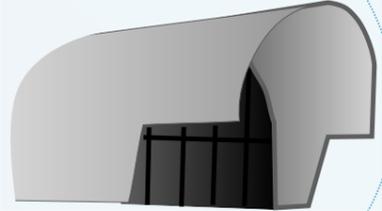
Disciplinary - I know how

	Autumn	Spring	Summer
<p>Reception</p> <p>Through Continuous Provision a lot of the aims are met.</p> <p>END POINTS:</p> <p>Key Concepts:</p>	<p><u>Construction/Structure</u></p> <p>Uses various construction materials e.g. Stacking blocks vertically and horizontally, joins duplo/lego</p> <p>Uses large and small construction (community play blocks, crates, planks and tyres, lego, mecano)</p> <p><u>Joins</u></p> <p>Uses split pins to make moving pictures using card e.g. Christmas card.</p>	<p><u>Using tools</u></p> <p>Use whisk and baking equipment safely.</p> <p>Use a juicer to extract juice.</p> <p><u>Food technology</u></p> <p>Observe changes in food when it is mixed and crushed.</p> <p>Prepare and make a jungle smoothie/ crocodile swamp pie.</p> <p>Recognise the importance of a healthy option.</p> <p>Know the importance of washing hands before preparing and making food.</p>	<p><u>Using tools and Joins</u></p> <p>To use scissors and joining materials (tape, hole punch, stapler etc) to make a mask to role play a storybook character.</p> <p><u>Creating with materials</u></p> <p>To make a cardboard mask prop to retell a story in role play</p> <p>To share features of their own work and the work of others that they like/dislike (evaluating)</p>
Vocabulary	Use, experiment, change, block, material, strong, weak, tall, short, long, narrow, wide, cut, build, move, join, construct	Food and equipment names, meal, snack, healthy, unhealthy diet, sweet, sour, crunchy, chewy, smooth, taste, texture, heat, warm, cold	Names of tools and materials used, create, paint, join, design, pattern, draw, tool, idea, improve.
Year 1	<p>Moving Mechanism Wheels and Axles</p> 	<p>Food and Nutrition Portable Snacks</p> 	<p>Structures Bridges</p> 
END POINTS:	<ul style="list-style-type: none"> → Explore products that have wheels and axles - toy cars, bikes and scooters. And identify components. → Practise creating different axles - straw, peg and cardboard triangles → Make vehicles out of 	<ul style="list-style-type: none"> → Identify ways to keep safe when handling food. → Explore a wide range of snacks that can be held in your hand. → Practise cutting, grating, peeling and spreading food choosing appropriate tools to complete this task. 	<ul style="list-style-type: none"> → Know the purpose of a bridge and identify some famous bridges around the world → Identify parts of a bridges eg - beam , girder columns and arches and different materials they are made from → Explore joining different materials

	<ul style="list-style-type: none"> → construction sets → Design an animal moving vehicle → Identify type of axle to be used on the design → Create an animal moving toy by joining components in different ways → Evaluate final product <p>Final Product - Make a moving animal toy</p>	<ul style="list-style-type: none"> → Create a design of their portable snack selecting their ingredients and explaining their choices. → Make a snack by selecting the ingredients and tools they choose on their design. → Evaluate their product explaining what they liked and disliked.. <p>Final Product - Make a portable snack</p>	<ul style="list-style-type: none"> → using glue, sellotape, string and masking tape to identify which is the strongest → Create a simple design to communicate their ideas about a bridge and select appropriate materials and tools → Join material together to create a simple bridge made from a range of materials to hold a toy car over a span of 30cm → Evaluate final product against a design criteria <p>Final Product - Make a simple bridge</p>
<p>Vocabulary</p>	<p>Names of materials and equipment, wheel, axle, structure, slot, join, pull, push, up, down, straight, curve, forwards, backward.</p>	<p>Ingredient names, names of equipment, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, skin, seed, pip, core, slicing, peeling, cutting, squeezing, grate healthy diet.</p>	<p>Names of equipment and materials, bridge, girder, beam, slot, guide, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backward, measure, mark, test, strong, weak.</p>
<p>Year 2</p>	<p>Textiles Weaving.</p>  <p>Weaving - Year 2</p>	<p>Moving Mechanism Slider Mechanisms and levers</p> 	<p>Structures Frame structure</p> 
<p>END POINTS:</p>	<ul style="list-style-type: none"> → Explore what weaving is and how it is used to join materials together. → Practise weaving different materials- evaluating which are easier to weave and which are harder. → Explore different ways to weave appropriate materials together → Design a placemat using weaving techniques. → Make their final product 	<ul style="list-style-type: none"> → Look at everyday products that use slider mechanisms and discuss their purpose and components- slider rod, slot, etc → Identify products that use a simple lever mechanisms that use one pivot point- a litter picker and scissors → Practice making different types of slots for the slider rod to travel through. → Practice making a pivot point for a lever to move around. 	<ul style="list-style-type: none"> → Identify natural and man-made frame structures and their features → Experiment making different frame structures- cube, cuboid, triangular prisms and anchored frame. Discuss which 3D shapes would not be appropriate. → Identify the frame structures used in our local park and their properties- shape, materials and joins. → Design their frame structure making mocks-up to decide on appropriate materials and joins.

	<p>following their design.</p> <ul style="list-style-type: none"> → Evaluate their final product. Explaining the appropriateness of their design and the materials they choose to use. <p>Final Product- A placemat using weaving techniques</p>	<ul style="list-style-type: none"> → Design a greeting card that uses a slider mechanism and a lever. → Make their product to include one slider mechanism and one pivot point. → Evaluate their final product against a design criteria suggesting ways to improve their product. <p>Final Product- A greeting card using slider mechanisms and pivot point.</p>	<ul style="list-style-type: none"> → Make their frame structure using the materials and tools they need to use and explain their choices. → Evaluate their designs explaining how successful their choices were and if there prototype were to be made what they would improve <p>Final Product- Create a swing or climbing frame prototype for a park.</p>
Vocabulary	Equipment and materials used, joining and finishing techniques used, tools, fabrics and components, template, pattern, mark out, join, decorate, finish, weave, pattern, repeat, plait, style.	Slider, rod, slot, cutting, joining, shaping, finishing, fixed, moving, names of tools, equipment and materials used.	Names of materials and equipment used, frame, structure, 3D, cube, cuboid, anchored, strength, natural, man-made, join, properties, assemble, rigid, truss.
Year 3 CAD-	<p>Food and Nutrition Soup</p> 	<p>Moving Mechanisms Linked Levers (More than one pivot point)</p> 	<p>Structures Shell Structure- boats</p> 
END POINTS:	<ul style="list-style-type: none"> → Understand the importance of food hygiene and how to use cooking equipment safely. → Recognise the features of a soup- nutritional, cost effective, appearance etc. → Practise cutting skills- slicing, dicing, chopping, crushing peeling and grating. Understand when to use the claw grip and the bridge grip. → Explore/taste different soups- identifying the ingredients used to inform their design. → Design a nutritional soup carefully selecting the ingredients, explaining the process they will use to make 	<ul style="list-style-type: none"> → Identify what a linked lever is and their components- fulcrum, lever, fixed pivots, moving pivots and guide. → Identify everyday objects that use linked levers- scissor lift, train wheels, digger, etc. → Understand that a linked lever has an input and an output. Know that linked lever system is designed to change the direction of the force and movement- rotating, linear, oscillating, reciprocating → Design a linked lever safety barrier annotating the movement, materials and tools used. Create small prototypes to test their ideas. → Make a safety barrier applying 	<ul style="list-style-type: none"> → Identify man-made and natural shell structure recognising their purposes and features- shape, constructions. → Draw cross sections of a shell structure to show how natural and man-made shell structures get their strength. → Experiment with different ways to shape and join materials to create a shell structure- scoring, bending, flange, tab, slot, single/double foot fold. → Investigate the different styles of boats- evaluating their appearance, size and function. → Use research to inform your design using cross section diagrams to communicate ideas.

	<p>their soup.</p> <ul style="list-style-type: none"> → Make their soups using appropriate skills ensuring they meet the design criteria- appealing, nutritional, → Evaluate their soup and suggest how they can change it. Modify their recipe to reflect their evaluation. <p>Final Product- A soup that is nutrition, filling, cost effective and tasty</p>	<p>their knowledge of linked levers, selecting and using a wide range of tools appropriately for their task.</p> <ul style="list-style-type: none"> → Evaluate their ideas and products and take in the views of other people to inform the improvements they would like to make. <p>Final Product- A prototype of a safety barrier.</p>	<ul style="list-style-type: none"> → Make the shell structure following your design, making amendments where needed- annotating these on your design sheet. → Test your product to see if it meets the design criteria. → Evaluate the product and modify the product explaining any changes made. <p>Final Product- (Group piece) A shell structure boat that can carry mini people.</p>
Vocabulary	Names of food and equipment used, texture, preference, greasy, moist, cook, fresh, hygienic, healthy/varied diet, slice, chop, dice, peel, fry, boil, claw grip, bridge grip, measure, simmer, stir, snip	Names of materials and equipment used, pivot, fulcrum, linear, rotary, reciprocating, oscillating, fluency, design, annotate, evaluate.	Names of materials and equipment used, Variety, purpose, contain, conjunction, external, fluency, aspects, component parts, coordinates, assemble.
Year 4 CAD- END POINTS:	<p>Moving Mechanisms Pneumatic toys</p>  <p>Note: 2022 Autumn- Children to complete Shell structures</p>	<p>Electrical Systems Paper circuits</p> 	<p>Textiles Pencil Cases</p>  <p>Note 2023 Summer- Children to complete Pneumatic toys</p>
	<ul style="list-style-type: none"> → Understand how pneumatic systems work. → Explore everyday products that use pneumatics, explaining how the product works. → Design a toy that uses pneumatics to move. Create multiple designs to explore ideas. → Use exploded diagrams to communicate and develop one idea. → Select appropriate equipment and materials to build a 	<ul style="list-style-type: none"> → Explore what a paper circuit is and the materials used to create them → Investigate the different types of switches used for paper circuits- push switch and close page switch. → Product research. Look at cards available that light up and explore how they work. → Design a greeting card using paper circuits. Test different circuits during the design process. → Used exploded diagrams to create a design diagram to follow. 	<ul style="list-style-type: none"> → Investigate different styles and features of a pencil. Explain who the intended target audience is for the various pencil cases. → Practise a range of stitches to join two different pieces of material together- running, backstitch, whip stitch and blanket stitch. Evaluate the pros and cons of each stitch. → Experiment with different methods of attaching embellishments and fastenings to a pencil case- velcro, buttons, poppers, zip, etc. → Use the product research and

	<p>working pneumatic system.</p> <ul style="list-style-type: none"> → Assemble their pneumatic system within the housing to create the desired motion. → Evaluate a finished pneumatic toy that fulfils the design brief. <p>Final Product- A monster toy that uses pneumatics to move.</p>	<ul style="list-style-type: none"> → Create a greeting card selecting the appropriate materials to create a paper circuit. → Evaluate the final product against design criteria. <p>Final Product- A greeting card that lights up using paper circuits.</p>	<p>technical knowledge to design pencil cases for a chosen target audience.</p> <ul style="list-style-type: none"> → Select appropriate materials and tools to make a pencil case. → Evaluate the effectiveness of the product using feedback from the chosen target audience. <p>Final Product- A pencil case with a specific target audience</p>
Vocabulary	Names of materials and equipment used, pneumatic, compressed, pressure, hydraulic, piston, hollow cylinder, reciprocating, motion, exploded diagram, brief.	Names of equipment and materials used, paper circuit, electricity, product, research, output, design, exploded diagram, criteria.	Names of equipment and materials, stitching, back stitch, running stitch, whip stitch, blanket stitch, colour, fabric, fluency, attach, embellish, fastening, target audience.
Year 5/6 CAD- END POINTS:	<p>Food and Nutrition Bread</p> 	<p>Moving Mechanisms Pulleys and Gears</p> 	<p>Structures Arch Structure</p> 
	<ul style="list-style-type: none"> → Investigate different flavours and types of bread. Explain likes and dislikes and appropriateness of design for the consumer. → Practise different techniques (plaiting, rolling, weaving, kneading, rising, baking) to create the desired final product. → Use the product research and technical knowledge to design a bread, deciding on customer and purpose as well as flavours, shape and type of flour.. → Select appropriate materials and tools to make bread. → Evaluate the effectiveness of 	<ul style="list-style-type: none"> → Investigate the use of pulley and gear systems in everyday life. → Understand how a force acts upon an object to make it move, and that these mechanisms allow a smaller force to have a greater effect. → Use knowledge of pulleys and gears to design a system of mechanisms which allow a ski lift to travel and rotate around a system of pulleys and gears. → Use CAD to design and create the ski lift for the final design. → Build a pulley and gear system prototype using appropriate tools and materials to allow for strength and manoeuvrability of the product. 	<ul style="list-style-type: none"> → Investigate and analyse a range of existing products to see how arch structures are used in a variety of ways. → Explore how to reinforce a beam (structure) to improve its strength through the use of an arch. → Apply understanding of how to strengthen, stiffen and reinforce more complex structures using their knowledge of arches. → Design a classroom with an arch structure - use an exploded design to show the different components. → Choose and use a variety of materials and tools to build a classroom structure with an arch element to reinforce strength.. → Evaluate the effectiveness of the

	<p>the product using feedback from the taste test. Evaluate how the product could be improved further next time.</p> <p>Final product - Bread Roll.</p>	<p>→ Evaluate the product against the design criteria and feedback.</p> <p>Final product - A Ski-lift with pulley/gear mechanism.</p>	<p>product and decide how the prototype could be improved when made into a full product.</p> <p>Final product - A Classroom structure with arch element.</p>
Vocabulary	<p>Names of materials and ingredients, weighing, sieving, measuring, kneading, rising, dough, crust, fluency, texture, taste, shaping, weave, knot, seasoning, evaluate.</p>	<p>Names of materials and equipment, circumference, mechanism, mechanical advantage, physicist, gear train, interlock, mitre gear, manoeuvrability.</p>	<p>Names of equipment and materials, perfected, ellipse, parabola, concrete construction, stability, keystone, voussoir, impost, pier.</p>
Year 5/6 CAD-	<p>Textiles- Slippers</p> 	<p>Moving Mechanisms- Cam Toys</p> 	<p>Electrical Systems Ferris Wheels/Fairground rides</p> 
END POINTS:	<ul style="list-style-type: none"> → Investigate different styles, materials and features of a pair of slippers. Choose an intended target audience for the various slippers. → Dissect a range of slippers to understand the different components. → Practise a range of stitches (overcast, blanket, back) to join two different pieces of material together, including how to create a hem. Evaluate the pros and cons of each stitch. → Experiment with different methods of attaching embellishments and fastenings - how to sew buttons and sequins using the appropriate stitching.. 	<ul style="list-style-type: none"> → Evaluate the use of cams in everyday products. → Understand that materials have both functional properties and aesthetic qualities, and that materials can be combined to create more useful characteristics. → Know that mechanical systems have an input, process and output. → Design a toy using their knowledge of cams, with their target audience in mind.. → Apply their understanding of how to strengthen, stiffen and reinforce a 3D framework → Build a working toy with a cams mechanism, choosing from a wide range of materials and tools. → Evaluate the usefulness of the cams toy with the target audience (EYFS/KS1) and make decisions 	<ul style="list-style-type: none"> → Explain that mechanical and electrical systems have an input, process and output. → Create an electric circuit and understand how the circuit creates an output. → Explain and use more complex electrical systems to design a functional product - motorised carousel/roundabout. → Use the correct technical vocabulary to explain the design of the electronic toy. → Choose from a wide range of materials and tools to construct a motorised carousel/roundabout. → Evaluate the product and then adjust design accordingly to ensure the design and build of the product is successful.

	<ul style="list-style-type: none"> → Use the product research and technical knowledge to design a pair of slippers - children to choose their own target audience. → Select from a wide range of materials and tools to make a pair of slippers.. → Evaluate the effectiveness of the product using feedback from the chosen target audience. <p>Final Product- A pair of slippers for a target audience.</p>	<p>on how the product could be improved.</p> <ul style="list-style-type: none"> → Deconstruct and rebuild product with appropriate changes to ensure the product is successful. <p>Final design - Cam Toy</p>	Final design - Motorised carousel.
Vocabulary	Names of materials and equipment, sole, insole, durable, flexible, comfort, overcast, blanket stitch, back stitch, hem, embellishment, fastening, effectiveness, audience.	Names of materials and equipment, linear, reciprocating, vice versa, dwell, eccentric circle, crank, cam shaft.	Names of materials and tools, rotary, propeller, combined, prototype, chassis, axis, motorised, carousel, system, electronic, output, mechanical.

<p>KS2</p> <p>National Curriculum strand:</p> <p><i>'apply their understanding of computing to program, monitor and control their products'</i></p>	<p>W Drumming monkey + mo... Year 5/6 workshop details</p> <p>W Lion workshop + motion ... Year 3/4 workshop details</p>	Vocabulary	
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