



Design Technology Curriculum Overview 2023 - 24



Year Group	Autumn	Spring	Summer
Nursery	<p>I am special</p> <ul style="list-style-type: none"> ● Cooking with apples (apple crumble/pie) ● Mark making ● Using basic tools <p>Festivals and Celebrations</p> <ul style="list-style-type: none"> ● Exploring clay (Diva Lamps) ● Joining techniques/cutting skills (christmas cards) 	<p>Bears</p> <ul style="list-style-type: none"> ● Chinese new year - Stir fry. ● Mark making (forks to paint/textures) ● Making pancakes <p>Growing</p> <ul style="list-style-type: none"> ● Design a beanstalk. ● Explore painting techniques and tools. 	<p>Who's at the Zoo?</p> <ul style="list-style-type: none"> ● Use a range of junk materials and cutting skills to create a snake. <p>People who help us.</p> <ul style="list-style-type: none"> ● Plan and create a superhero using a range of vegetables (linked to Supertato) ● Use junk modelling to create an emergency vehicle.
<p>Reception</p> <p>EYFS Framework</p> <ul style="list-style-type: none"> - PD - EAaD 	<p>Ourselfs</p> <ul style="list-style-type: none"> ● Looking at food choices at lunchtime. ● Design, make and evaluate a house for Rosie <p>● Developing scissor skills</p> <p>Light and Dark</p> <ul style="list-style-type: none"> ● Make Diva lamps from dough ● Making 'owl vision' to compare with our eyesight. 	<p>Space</p> <ul style="list-style-type: none"> ● Chinese New year – cooking stir fry(using graters, knives, and hob. ● Investigating which material baby bear should make a helmet from ● Making sandwiches and healthy snack bar for a picnic with Baby Bear ● Design, make and evaluate a rocket. <p>Growing</p> <ul style="list-style-type: none"> ● Cooking pancakes ● Making butter in a jar. 	<p>Minibeasts</p> <ul style="list-style-type: none"> ● Making a ladybird from clay <p>Seaside</p> <ul style="list-style-type: none"> ● Making a healthy packed lunch ● Design, make and evaluate a boat
Year 1	<p>Mechanisms: Wheels and axles</p> <p>Big question: How can we make toys move?</p> <ul style="list-style-type: none"> ● How do wheels move? ● Fixing broken wheels ● Design a moving vehicle ● Construct a moving vehicle and evaluate against criteria <p>Key vocabulary: axle, axle holder, chassis, design, evaluation, fix, mechanic, mechanism, model, test, wheel.</p>	<p>Structures: Freestanding structures</p> <p>Big question: How can we make a strong and stable chair for baby bears?</p> <ul style="list-style-type: none"> ● Explore stability in different structures ● Explore how the shape of a structure affects its strength. ● Making baby bear's chair according to design criteria. ● Fixing and testing baby bear's chair <p>Key vocabulary: product, purpose, user, strong, structure, stable, evaluate, weak, improve, materials.</p>	<p>Food: balanced diet - Fruit and vegetables.</p> <p>Big question: How can we help reception children eat more fruit/vegetables?</p> <ul style="list-style-type: none"> ● Identify fruits and vegetables ● Describe where fruit and vegetables grow. ● Develop peeling and chopping skills ● Testing/selecting ingredients ● Making fruit kebabs. ● Designing appealing packaging (Computer software) <p>Key vocabulary: fruit, vegetable, healthy, ingredients, peel, peeler, recipe, slice, chop, template, net, stencil, packaging, appealing.</p>
Year 2	<p>Textiles: Templates and joining techniques</p> <p>Big question: How can I join two pieces of fabric together?</p> <ul style="list-style-type: none"> ● Research different types of puppets ● Generate and develop a range of ideas/designs. ● Develop joining techniques (running stitch) ● Make a felt puppet using joining techniques. ● Evaluate against design criteria. <p>Key vocabulary: accurate, fabric, knot, running stitch, sew, shape, template, stencil, needle, thread, thimble.</p>	<p>Food: Preparing fruit and vegetables</p> <p>Big question: How do I make my sandwiches healthier?</p> <ul style="list-style-type: none"> ● Research different types of sandwiches e.g. bread, spread, filling, appearance/shape. ● How can I ensure my sandwich is healthy – learning about a healthy 'balanced plate'. ● Design a healthy sandwich ● To learn about food preparations and hygiene when preparing food. ● Prepare, make and evaluate sandwiches against criteria. 	<p>Mechanisms: Sliders and levers</p> <p>Big question: How can I make pictures move?</p> <ul style="list-style-type: none"> ● Create a sliding mechanism ● Use levers to create a moving mechanism ● Investigate and create wheel mechanism ● Design a picture with a moving mechanism ● Make and evaluate a moving picture based on a design.



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		<p>Key vocabulary: alternative, diet, balanced, healthy, ingredients, nutrients, refrigerator, substitute, filling, bread.</p>	<p>Key vocabulary: Slider, lever, input, linear motion, linkage, mechanism, motion, output, pivot, rotary motion.</p>
<p>Year 3</p>	<p>Shell Structures: Gift Boxes Big question: How can I use design analysis to create an appealing product for a target audience?</p> <ul style="list-style-type: none"> ● Task analysis of different objects ● Product analysis of different gift boxes (3D shapes). ● Generate design specification ● Generate design ideas. ● decorate and construct gift boxes using nets. ● Evaluation against design specification. <p>Key vocabulary: function, shape, form, colour, 2D, 3D, gift box, design, key features, net, scoring, shape stable, stiff, strong, structure, tab</p>	<p>Mechanisms: pneumatic toy Big question: How can air produce movement?</p> <ul style="list-style-type: none"> ● Exploring pneumatics ● Generate design specification ● Designing a pneumatic toy ● Making a pneumatic toy and decorating a pneumatic toy ● Evaluation against design specification <p>Key vocabulary: Mechanism, Lever, Pivot, Linkage system, Pneumatic system, Input, Output, Component, Mechanism, Thumbnail sketch, Research, Adapt, Properties, Reinforce, Motion,</p>	<p>CAD: Design a minecraft avatar Big question: How can a computer programme be used in designing a product?</p> <ul style="list-style-type: none"> ● Intro to TinkerCAD – basic CAD skills. ● 2D drawing of initial ideas. ● Designing in CAD – working with shapes. ● Designing in CAD – Building an avatar. ● Evaluation of final design – presentation to class. <p>Key vocabulary: Computer aided design, avatar, dimension, edge, face, handle, modify, object, perspective, work plane, viewpoint, tools.</p>
<p>Year 4</p>	<p>Textiles: 2d shapes to 3d products. Big question: How can I join 2D shapes to make a 3D product?</p> <ul style="list-style-type: none"> ● Investigate a range of christmas decoration - Task analysis – develop design specification. ● Learn to sew a variety of stitches. ● Gather ideas and design a hanging decoration using design specification. ● Construct decoration using design and basic stitches. ● Decorate products using embellishments/finishing techniques. ● Evaluate the finished product against design specification. <ul style="list-style-type: none"> ● Key vocabulary: accurate, fabric, knot, running stitch, sew, shape, template, stencil, needle, thread, thimble. 	<p>Food: Adapting a recipe to meet a design brief. Big question: How can I adapt a recipe to meet a design brief?</p> <ul style="list-style-type: none"> ● Evaluate existing sandwich products ● Learn to make basic biscuits ● Select ingredients and follow a budget ● Food preparation/hygiene – baking ● Market research – make, decorate and test a prototype biscuit. ● Evaluation. <p>Key vocabulary: adapt, budget, equipment, evaluation, flavour, ingredients, method, quantity, recipe, sieving, rubbing method, target audience, target customer, template</p>	<p>.Electronic systems: simple circuits and switches Big question: How can I make a sign light up?</p> <ul style="list-style-type: none"> ● Investigate and analyse illuminated signs. ● Learn how LEDs may be used instead of traditional bulbs in series circuits. ● Develop ideas for a decorative illuminated sign. ● Select and use tools and equipment to make an enclosure of a decorative illuminated sign. ● Construct a working circuit with one or more lights to fit inside an illuminated sign. ● Evaluation of prototype. <p>Key vocabulary: battery, circuit, component, conductor, copper, design, design criteria, function, LED, insulator, parallel circuit, series circuit, switch, target audience, test.</p>



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<p>Year 5</p>	<p>Mechanisms: Mechanical toys (Cams) Big question: How can I make my toy move?</p> <ul style="list-style-type: none"> ● Research – what are moving toys? ● What are cams and how do they make a toy move? ● Identify purpose and user and generate design specification. ● Generate and evaluate a range of design ideas. ● Make and evaluate a prototype selection from a range of equipment and tools. ● Evaluate final product against design specification. <p>Key vocabulary: diagram, automata, axle, cam, component, dowel, exploded diagram, finish, follower, frame, function, linkage, mark out, measure, mechanism, model, movement.</p>	<p>Structures: building bridges Big question: How does the shape and structure of a bridge affect its strength and flexibility?</p> <ul style="list-style-type: none"> ● Investigate how forces affect bridges. ● Investigate how to reinforce different structures. ● Generate and select from a range of bridge designs. ● Construct bridges using strengthening and stiffening techniques. Budgeting for materials. ● Test and evaluate bridges. <p>Key vocabulary: abutment, accurate, arch, beam, compression, forces, tension, reinforce, triangulation, suspension, structure, truss, test, budget, join, measure, evaluation.</p>	<p>Food: Seasonality Big question: How does eating seasonal foods impact the environment?</p> <ul style="list-style-type: none"> ● Learn how food is grown on farms. ● Learn about how food is grown, caught, reared and processed. ● Learn what seasonality is. ● Learn how to plan for a seasonal dish, develop designs for a seasonal (summer) tart including considering environmental impact of food transportation. ● Prepare and ‘cook’ seasonal ‘summer’ tart and evaluate against design specification. <p>Key vocabulary: climate, exported, imported, nationality, nutrients, recipe, seasonal food, seasons, temperature, transport, carbon footprint, food miles.</p>
<p>Year 6</p>	<p>Electronics: Electronic systems/programmable components. Big question: How can I use programmable components to create a modern warning system?</p> <ul style="list-style-type: none"> ● What are programmable components? ● What are Micro-bits and how are they used? ● Generate design specification – considering user and purpose of the warning system. ● Generate design ideas – exploded diagrams. ● Make and evaluate warning system incorporating programmable components (Micro-Bits) ● Evaluate final product against design specification. <p>Key vocabulary: Series circuit, parallel circuit, input device, output device, control box, micro-bit, timed system, monitoring and system, micro-switch, LED, switch.</p>	<p>Food: celebrating culture and seasonality Big question: How can I adapt a traditional dish to make it healthier?</p> <ul style="list-style-type: none"> ● Learn to identify where in the world a range of ingredients come from. Recap food miles/seasonality and environmental impact of transporting food over large distances. ● Describe the process of beef production. ● Research a traditional recipe and make changes to it. ● Add nutritional value to a recipe by selecting ingredients. ● Prepare and cook a version of bolognese sauce <p>Key vocabulary: beef, reared, processed, ethical, diet, ingredients, supermarket, farm, balanced</p>	<p>Textiles: Upcycling. Big question: How can I make something new from something old?</p> <ul style="list-style-type: none"> ● Learn about the properties and uses of a range of fabrics. ● Investigate natural and synthetic factices and how their uses changed fashion. ● Learn about the importance of recycling and reusing fabric. ● Explore, practise and use a range of sewing and joining techniques. ● Design a small fabric cushion or toy using design specifications. ● Use a variety of joining and finishing techniques to make a fabric bag using recycled materials. ● Evaluate products against design specification and identify strengths and how weaknesses could be improved. <p>Key vocabulary: Upcycle, applique, embroidery, fast fashion, upcycle, joining techniques, fastening, user, product, design specification, embellishment, decorations, appealing, innovate.</p>



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