

Design Technology Curriculum Overview



EYFS - Reception Adult Led Activities (please see EYFS Continuous Provision Plans for child initiated opportunities)

Unit of work	Sculptures	Textiles	Food
Link to our context	<p>Children will build a bridge for the Gingerbread Man to cross the river using a range of materials including junk and blocks.</p> <p>Children will plan and construct London Building Landmarks using a variety of different 3d boxes.</p>	Children will take part in Super Hero Day and design and create their own super hero mask and cape.	<p>Children will experience the cooking, serving and eating process in an Italian restaurant.</p> <p>Children will make their own sandwiches for a picnic.</p>
Essential knowledge	<ol style="list-style-type: none"> 1. Children will know that they can use a variety of materials to recreate something else. 2. Children will know that they can use tape and glue to attach different materials together. 3. Children will begin to understand how to keep themselves safe when constructing. 	<ol style="list-style-type: none"> 1. Children will know that different materials can be used for different creations. 2. Children will know how to describe the materials. 3. Children will learn how to decorate different materials / fabrics. 	<ol style="list-style-type: none"> 1. Children will know that different ingredients are put together to make simple dishes of food / meals. 2. Children will know different ways that food can be cooked. 3. Children will know how to make a simple sandwich using tools.
Vocabulary	Materials Junk Tape Glue Construct Safety	Fabric, Materials Colour Patterns Decorations Design	Restaurant Food Cooking Ingredients Cutting Spreading
Significant individuals	Thomas Telford – Menai Bridge		Jamie Oliver

Year 1

Unit of work	1) Transition unit – skills focus 2) Making a simple slider - MECHANISMS	Mechanisms: Sliders and levers	Food:
Link to our context	Classroom skills		Experience of tasting/touching/ smelling a range of fruit – outdoor picnic
Prior learning	Early experience of joining EYFS 3D shape investigations	Early experience of working with paper and card to make simple flaps. Experience of simple cutting using scissors	Snack time in EYFS
Core learning	Joining materials Working with 3D shapes Using templates Cutting and folding accurately Replicate the teacher demonstration by making a slider mechanism Learn what the design process means Communicate their design ideas through talk, drawings, labels Generate ideas based on a simple design criteria Explain what they like and dislike about a product	Explore a range of books that use sliders and levers Understand that sliders move in a straight line Understand levers move in a curve Select and use tools to cut, shape and join paper and card Use simple finishing techniques e.g. colour/paint the product	Taste and evaluate a range of fruit Understand basic food hygiene practices Demonstrate how to use a knife safely to cut fruit Select a range of fruit and blend to create a fruit dish
Vocabulary	Slider Pull push up down straight curve forwards backwards design	Lever Pivot	Healthy Slice/cut / grate Names of different fruits Sensory vocab e.g. sweet, sour, smooth
Resources	Books with sliders Teaching aid eg. Snail appearing from behind a stone	Books / products with levers Paper, card, scissors, masking tape, glue stick, PVA glue, Teaching aid – lever used to show a butterfly flying to the flower	A range of fruits, chopping boards, knives, aprons, bowls, cups,
Product for user for purpose Something Someone Some purpose	Illustrated object with a slider mechanism for children Eye patch Paper doll Board game - design	Pop up toy with a lever mechanism for children to play with	Fruit dish for a picnic for children to enjoy

Year 2

Unit of work	Autumn 2 Textiles – Wall hangings The Owl Who Was Afraid of the Dark	Spring Mechanisms - Wheels and Axles Fire Truck for Great Fire of London	Summer Structures – Freestanding structures The giant
Link to our context	Wirral Barn Owl Trust links – local	Use outdoors to explore vehicles	Trip to the play park to look at free standing structures
Prior learning	Experience of joining paper/card using glue and tape	Explore moving vehicles through play Use construction kits to assemble vehicles with moving wheels	Using construction kits to build walls, towers and frameworks Using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card Experience of different methods of joining card and paper.
Core learning	Explore a range of wall hangings Understand how to join fabrics using different techniques Use a template to mark out Use different finishing techniques e.g. stitching, sequins, buttons, fabric paint/crayons	Explore a range of wheeled products Understand the purpose of axle holders Understand the purpose of axles Select appropriately sized materials Use axle holders correctly Use axles correctly	Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings Select appropriate materials for their structure Know how to make structures stronger, stiffer and more stable.
	Communicate ideas through labelled drawings, templates and mock-ups Design a functional and appealing produce for a chosen user or purpose Explain what they like and dislike about a product and what they would change		
Vocabulary	Template Mark out Join	vehicle, wheel, axle, axle holder, chassis, body, cab	cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved
Resources	Felt, glue, stapler, a range of items for finishing e.g. buttons, fabric paint, sequins, wool	Cardboard boxes, cotton reels, dowel, plastic straws, card discs, MDF wheels,	Sticks Card String axles lolly sticks elastic bands
Product for user for purpose Something Someone Some purpose	Wall hanging to decorate Year 2 area to brighten the environment	Fire truck for children to play with to show the changes in vehicles since the Great Fire of London	A model of a freestanding piece of playground equipment for children to play with linked to the book

Year 3

Unit of work	Textiles – 2D shape to 3D product	Food – Healthy and Varied Diet	Mechanical Systems - Levers	Structures – Shell structures
Link to our context		FOREST SCHOOL – STONEAGE SOUP COOKING OVER CAMPFIRE		
Prior learning	Joining fabric in simple ways by gluing and stitching Using simple patterns and templates for marking out Evaluating a range of textile products.	Understanding of healthy and balanced diet from previous year groups Experience of basic cutting techniques	Experience of using simple levers and sliders in Year 1	Experience of different joining, cutting and finishing techniques from KS1 Knowledge of 2D and 3D shapes from KS1 maths
Core learning	Explore a range of textile products with different stitches, joins, fabrics Create a paper pattern using 2D shapes Practise a range of joining techniques e.g. backstitch, over sew stitch, blanket stitch before deciding which one to use Choose fabric suitable for purpose and/or based on aesthetic quality Measure fabric accurately ensuring material for seam allowance Use applique techniques to decorate the product	Explore a range of seasonal vegetables available Cut vegetables using the bridge, mini-bridge and claw techniques Demonstrate how to use appropriate equipment and utensils to prepare and combine food Demonstrate how to cook safely over a fire	Explore a range of books with linkage and lever mechanisms Understand the impact of the input and output movements and adapt these based on the needs of the end product Accurately measure and mark out pieces before cutting Use fixed pivots and loose pivots	Explore a range of gift boxes, jewellery boxes, packaging etc including taking some apart Understand the importance of using sufficient tabs for assembling Understand how to stiffen/strengthen their shell structure Create a net for their product Practise a range of graphic techniques to achieve the desired appearance of their finished product
	Generate realistic ideas for an appealing, functional product fit for purpose and specific users Produce annotated sketches to communicate ideas Plan the main stages of the ‘making’ process for each product Evaluate the ongoing work and final product referring back to the design criteria			
Vocabulary	Stitch, seam allowance, applique	Nutrition Vitamins Utensils Bridge Mini-bridge Claw	Mechanism Linkage Fixed pivot/Loose pivot Linear Reciprocating Rotary Oscillating	Scoring Tabs Assemble Graphics Shape vocab: 3D, net, cube, cuboid, prism,
Resources	Scissors, needle, thread, glue, pins, a range of items for finishing e.g. fabric paint, applique pieces, threads	Range of vegetables, seasoning, chopping boards, knives, grater, apron, bowls and pan	Card, paper, masking tape, paper fasteners, glue, scissors	Card, adhesive tape, masking tape, PVA glue, pencils, rulers, scissors,
Product for user for purpose	Pencil Case for Year 3 children to keep school equipment in	Vegetable Soup for Y3 children to cook over a campfire at Forest School	Moving book on whales	Gift box for a museum or Egyptian tomb
Something Someone Some purpose				

Year 4

Unit of work	Mechanical systems - Pneumatics	Electrical systems – circuits and switches	Food – Healthy and Varied Diet
Link to our context			
Prior learning	Explored simple mechanisms, such as sliders and levers, and simple structures Learnt how materials can be joined to allow movement Joined and combined materials using simple tools and techniques	Experience of creating simple electrical circuits in Year 4 science	Understanding of healthy and balanced diet from previous year groups Experience of basic cutting techniques
Core learning	Use annotated sketches and prototypes to develop, model and communicate ideas. Order the main stages of making. Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons. Investigate and analyse books, videos and products with pneumatic mechanisms. Understand and use pneumatic mechanisms.	Investigate a range of battery powered products Make a variety of switches using simple classroom materials e.g. card, plastic, foil, paperclips and test these in a simple circuit Select from and use materials and components in order to make a case for the circuit Select from and use tools and equipment to cut, shape, join and finish the product with some accuracy	Identify the audience and gather opinions and ideas to help support brief Cut vegetables using the bridge, mini-bridge and claw techniques Demonstrate how to use appropriate equipment and utensils to prepare and combine food
	Use annotated drawings, exploded diagrams and prototypes to develop and model ideas Generate realistic ideas for an appealing, functional product fit for purpose and specific users Evaluate their products against the design criteria and identify the strengths and areas for improvement in their work		
Vocabulary	components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight	Bulb, wire, batteries, battery holders, foil, paper clips, switches, crocodile clips, scissors, glue, card	Taste, texture, sweet, savoury, blend, mix
Resources	5mm plastic tubing, sterile syringes, T-connectors, card, plastic sheet, PVA glue, masking tape, parcel tape, sticky pads	Prototype Circuit Conductor Insulator	Variety of Greek food and ingredients to make dips
Product for user for purpose Something Someone Some purpose	Moving toucan	Working model of a lighthouse with an electrical light in it	Flat bread and dips in a box for a class picnic

Year 5

Unit of work	Mechanical systems – Cams	Mechanical Systems: Pulleys or Gears	Textiles – Using Computer Aided Design in textiles
Link to our context			
Prior learning	Experience of axles, axle holders and wheels that are fixed or free moving. Basic understanding of different types of movement. Experience of cutting and joining techniques with a range of materials including card, plastic and wood. An understanding of how to strengthen and stiffen structures	Experience of axles, axle holders and wheels from Year 2	Experience of stitching, joining and finishing techniques in textiles Experience of making and using textiles pattern pieces Experience of simple computer-aided design applications.
Core learning	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. Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Understand that mechanical systems have an input, process and an output. Understand how cams can be used to produce different types of movement and change the direction of movement	Investigate, analyse and evaluate existing products or toys that incorporate gear or pulley systems Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement Using construction kits, investigate combinations of different sized pulleys and/or gears to learn about direction and speed of rotation Demonstrate the accurate use of tools and equipment including building a working circuit Accurately measure and mark out pieces of wood Safely use a hacksaw and bench hook to cut the wood to the correct length Use a range of decorative finishing techniques to ensure a well finished product	Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design Produce detailed lists of equipment and fabrics relevant to their tasks 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 Investigate and analyse textile products linked to their final product.
	Generate ideas through research and use this to develop a design brief and criteria for a specific purpose Use explanations (written and verbal), annotated drawings or exploded diagrams, prototypes and information communication technology to develop and communicate ideas Evaluate the end product with reference to the design brief, taking into account the views of others when deciding on improvements		
Vocabulary	cam, snail cam, off-centre cam, peg cam, pear shaped cam follower, axle, shaft, crank, handle, housing, framework rotation, rotary motion, oscillating motion, reciprocating motion	Pulley Gear Drive belt	computer aided design (CAD), computer aided manufacture (CAM)font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip design brief, design criteria, design decisions, innovative, prototype seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper
Resources	MDF, card or wooden wheels, plastic or wooden cams, dowel, card boxes, PVA glue, masking tape, double-sided tape, square section wood, card, corrugated plastic, finishing media	square sectioned wood, bench hooks, junior hacksaws, glass paper, construction kits, batteries, battery holders, wires, crocodile clips, motors, switches, pulleys or gears of different sizes	Ipads, XXX software, Fabric, needles and threads

Product for user for purpose Something Someone Some purpose	An advertisement board for Frank Russell to advertise Annie's trip down Niagra Falls.	A Viking which has a pulley to raise the sail	A Mayan tunic for a doll
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Year 6

Unit of work	Textiles – Combining different fabric shapes	Structures – Frame structures	Food - Celebrating Culture and Seasonality
Link to our context			
Prior learning	Experience of basic stitching, joining textiles and finishing techniques from Year 2/3 Experience of making and using simple pattern pieces from Year 3	Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials Basic understanding about what structures are, and how they can be made, stronger, stiffer and more stable	Knowledge and understanding of food hygiene, nutrition and healthy eating Experience of using equipment and utensils safely
Core learning	Investigate, analyse and evaluate a range of existing products that combine fabric shapes, including disassembling a product Research work by designers and their impact on fabrics and products Pin patterns onto fabric to ensure limited wastage Demonstrate sewing techniques of how to tack, sew curved edges, how to start and finish off a row of stitches	Investigate a range of frame structures including researching key events and individuals related to their frame structure Use web-based research and make annotated drawings of a range of frame structures Experiment with a range of materials e.g. paper tubes, plastic straws, wood etc. making a small scale model of their structure Produce a detailed step by step plan including tools and materials Use diagonals to reinforce square frameworks Competently shape and join construction materials to make a framework	Research key chefs and how they have promoted seasonality, local produce and healthy eating Carry out sensory evaluations of a variety of existing food products Follow a basic recipe Measure out ingredients Demonstrate how to combine the ingredients Experiment with a range of tastes for the product before deciding which is the most appropriate
	Generate ideas through research, using first hand and secondary sources, and use this to develop a design brief and criteria for a specific purpose Use explanations (written and verbal), annotated drawings or exploded diagrams, prototypes and information communication technology to develop and communicate ideas Evaluate the end product with reference to the design brief, taking into account the views of others when deciding on improvements		
Vocabulary	Specification, Tacking, wadding	Triangulation Stability Reinforce	Knead, dough, roll, season, texture
Resources	Selection of textiles, pins, needles, thread, measuring tape, scissors, pinking shears, paper, range of fastenings, range of finishing materials	Card, paper straws, newspaper, PVA glue, scissors	Different types of bread Ingredients for making bread Ingredients for seasoning bread
Product for user for purpose Something Someone Some purpose	Mobile phone case	Model Anderson shelter	Bread roll for a picnic