



Littleport Community Primary School
Design Technology Long Term Plan
2025/2026

Our DT curriculum is designed to inspire children to draw on their own creativity and cross-curricular expertise in order to design, make and evaluate high quality products that solve real, relevant problems within a range of contexts and for specific audiences.

DT curriculum overview

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	My world and me	Free standing structures	Sliders	Levers and Linkages	Pneumatics	Celebrating culture and seasonality	Electrical Systems: Monitoring and control
Spring	Stories	Levers	Wheels and axles	Shell structures	Simple circuits and switches	Pulleys or gears	
Summer	Changing and growing	Where does food come from? Preparing fruit and vegetables	Templates and joining techniques	Healthy and varied diet	2D shape to 3D product	Frame structures	Combining different fabric shapes

National Curriculum Objectives:	Reception age children Communication and Language Use new vocabulary throughout the day Ask questions to find out more and check they understand Articulate their ideas and thoughts in well-formed sentences Connect one idea or action to another using a range of connectives Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen Use new vocabulary in different contexts Engage in non-fiction books Personal, social and emotional development Show resilience and perseverance in the face of challenge Think about the perspectives of others Personal hygiene Healthy eating Physical development Develop small motor skills so that they can use a range of tools competently, safely and confidently Use core muscle strength to achieve a good posture when sitting at a table or sitting on the floor Maths Select, rotate and manipulate shapes to develop spatial reasoning skills Compose and decompose shapes so that children recognise a shape can have other shapes within it Compare length, weight and capacity Understanding the world Explore the natural world around them Expressive arts and design Return to and build on previous learning, refining ideas and developing their ability to represent them Create collaboratively, sharing ideas, resources and skills.	• build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from	• apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products • understand and apply the principles of a healthy and varied diet • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
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Design	<u>Characteristics of Effective Learning relevant to DT</u> Playing and Exploring: children investigate and experience things and have a go - Realise that their actions have an effect on the world, so they want to keep repeating them. - Plan and think ahead about how they will explore or play with objects. - Guide their own thinking and actions by referring to visual aids or by talking to themselves while playing.	- design purposeful, functional, appealing products for themselves and other users based on design criteria - generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups - generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
Make	- Make independent choices - Bring own interests and fascinations into EYFS setting. - Respond to new experiences. Active learning: children concentrate and keep on trying if they encounter difficulties, and enjoy achievements. - Show goal directed behaviour - Begin to correct their mistakes themselves - Keep on trying when things are difficult Creative and thinking critically: children have and develop their own ideas, make links between ideas, and develop strategies for doing things.	- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] - select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately - select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
Evaluate	- Sort materials - Review their progress as they try to achieve their goal. - Check how well they're doing - Solve real problems. - Know more, so feel confident about coming up with own ideas. - Make more links between ideas - Concentrate on achieving something that's important to them.	- explore and evaluate a range of existing products - evaluate their ideas and products against design criteria	- investigate and analyse a range of existing products - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work - understand how key events and individuals in design and technology have helped shape the world

Each year, children should be building on and using previously taught skills whilst also learning new skills.

Year group	Term	Unit	Learning Objectives	Previous skills to revisit	New Skill	Problems to solve	Audience / Purpose?	Ideas for outcomes (please add any of your own that have been successful)
R	Reception age	My world and me.	Reception age children Communication and Language Use new vocabulary throughout the day Ask questions to find out more and check they understand Articulate their ideas and thoughts in well-formed sentences Connect one idea or action to another using a range of connectives Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen	Understand why questions. Use longer sentences of 4 to 6 words. Use talk to organise themselves and play. Select and use activities and resources with help. Make healthy choices about food and drink. Match developing physical skills to tasks and activities in setting. Choose the right resources to carry out their plan.	Using scissors to cut. Using tape or glue to join. Rolling, squashing, and shaping malleable material with hands. Begins to identify food items that are healthy / not healthy	In reception, much of the planning follows the children’s own interests with a focus on developing the ‘Characteristics for Effective Learning’. The audience and purpose for DT at this stage will be defined by the individual child through discussion with the EYFS staff.		Musical instruments (shakers, rattles, drums) Divas Junk modelling rockets, boats, Decorating biscuits
	Spring	Stories	to explain how things work and why they might happen Use new vocabulary in different contexts Engage in non-fiction books	Use one handed tools and equipment. Collaborate with others to manage large items. Use a comfortable grip with good control when using pens and pencils. Show a preference for a dominant hand.	Using scissors to cut recognisable shapes large and small. Using tape and glue to fix items together to create and			Hand and finger puppets Junk modelling houses for Three Little Pigs or Rapunzel’s tower
	Summer	Changing and growing	Personal, social and emotional development					

			Show resilience and perseverance in the face of challenge Think about the perspectives of others Personal hygiene Healthy eating Physical development Develop small motor skills so that they can use a range of tools competently, safely and confidently Use core muscle strength to achieve a good posture when sitting at a table or sitting on the floor Maths Select, rotate and manipulate shapes to develop spatial reasoning skills Compose and decompose shapes so that children recognise a shape can have other shapes within it Compare length, weight and capacity Understanding the world Explore the natural world around them Expressive arts and design Return to and build on previous learning, refining ideas and developing their ability to represent them	Talk about and explore 2D and 3D shape. Compare quantities using more than and fewer than. Understand position through words alone. Make comparisons between objects relating to size, weight and capacity and length. Select shapes appropriately and combine shapes to make new ones. Begin to describe a sequence of events e.g first, next etc. Use all of their senses in hands-on exploration of natural materials. Explore collections of materials with similar or different properties. Explore how things work. Explore different materials freely, to develop ideas about how to use them and what to make. Develop own ideas and decide which materials to use to express them. Join different materials and explore different textures.	decorate recognisable objects. Rolling, squashing, cutting, smoothing and shaping malleable material to produce recognisable shapes, objects. Adorning and decorating shapes using a range of materials (feathers, match sticks etc) Cutting, hammering, twisting, sawing		Junk modelling animals Picking and using items from the allotment to make soup (as a whole class)
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			Create collaboratively, sharing ideas, resources and skills.	Use drawings to represent ideas.				
1	Autumn	Free standing structures	Generate ideas. Develop, model and communicate ideas through talking, mock-ups and drawings. Select and use tools, skills and techniques, explaining their choices. Select new and reclaimed materials and construction kits to build structures. Evaluate own product by considering how well it works in relation to the purpose.		Know how to make freestanding structures stronger, stiffer and more stable.	Make free-standing structures strong and rigid.	Toys. Children for small world play. Additions to toy sets e.g. train set	Making bridges. Making buildings, creating a class city. Playground equipment for toys e.g. swings slides etc
	Spring	Levers	Explore range of existing books with levers. Generate and explain ideas. Develop, model and make mock-ups with card and paper. Select tools to use for cutting and joining paper and card. Evaluate how well your lever works in relation to purpose.		Explore and use levers. Understand that different mechanisms produce different types of movement.	Make an image move from one place to another.	Children, picture books. Parents / Carers	Pop-up pictures for picture book e.g. witch from <i>Rapunzel</i> , Baby Bear from <i>Whatever Next!</i> Moving Easter card: pop up bunny.
	Summer	Where does food come from? Preparing fruit and vegetables	Design a tasty looking product. Investigate fruit and vegetables.		Understand where a range of fruit and vegetables come from e.g. farmed or grown at	Improve our diets, make us want to eat a healthy snack.	Children	Fruit salad Salads Kebabs (fruit or vegetable)

			Communicate ideas through drawings and discussion. Use simple utensils to peel, cut, slice, squeeze, grate and chop safely. Select from a range of fruit and vegetables to create a tasty and cohesive product. Taste and evaluate product against purpose and audience.		home. Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eat-well plate.			Smoothies
2	Autumn	Sliders	Explore range of existing books/toys with sliders. Generate and explain ideas. Develop, model and make mock-ups with card and paper. Select tools to use for cutting and joining paper and card. Select tools to use for cutting and joining paper to make both sliders and levers (consolidating y1 objectives) Evaluate how well your slider works in relation to purpose.	Levers: • pivot • length of lever	Explore and use sliders and levers. Understand that different mechanisms produce different types of movement.	Make an image or images move from one place to another. Make two images move differently (using slider and lever)	Parents / carers. Children.	Pop-up Christmas card Moving pictures from familiar story Two moving parts in one picture?
	Spring	Wheels and axles	Explore and evaluate a range of products with wheels and axles. Generate own ideas for a moving, wheeled vehicle using own experiences.	• Joining by gluing, sticking • Strengthening, stiffening	Explore and use wheels, axles and axle holders. Distinguish between fixed	Make a static object move freely. Have a class race!	Children	Push / pull toys Vehicles Wind-powered car

			Discuss ideas and draw on own experiences of travel, playing with wheeled toys to consider what makes each move easily, freely. Select and use tools to cut and join. Select and use tools to join wheels to axles, allowing them to move. Select, use and join materials together to create a chassis, axle holders and wheels. Evaluate how well own wheeled vehicle works, do my wheels move freely?		and freely moving axles.			
	Summer	Templates and joining techniques	Explore how textiles can be joined e.g. stapled, glued, pinned, sewn. Design functional, appealing product. Generate, develop and model ideas through talking, drawing, templates, mock-ups and ICT. Select and use range of tools for marking out, cutting, joining and finishing. Select appropriate textiles according to their use e.g. binka for exbroidery, felt for puppetry etc Evaluate how product is suited to purpose e.g. is my bag strong enough to	n/a	Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.	Make a product that I can put something into (either to make it move or to carry something)	Children	Glove puppet Finger puppet Bag Clothes for toy / doll etc

			hold items? Is my puppet able to move appropriately?					
3	Autumn	Levers and Linkages	Investigate and analyse lever and linkage mechanisms within books and other products. Generate ideas and design criteria through discussion, focussing on needs of user. Create annotated sketches and prototypes to develop, model and communicate ideas. Select and use tools to cut and join levers and links to create moving pictures. Select and use tools to secure fixed and loose pivot levers and linkages. Evaluate own products against ideas, audience and purpose.	Levers • Output • Pivot • Length of lever to change load/movement	Understand and use lever and linkage mechanisms. Distinguish between fixed and loose pivots.	Use loose pivot and fixed pivot to make two moving parts (outputs) from one lever (input).	Children. Museum visitors?	Pop-up greetings cards. Information posters. Class display.
	Spring	Shell structures	Investigate range of existing shell structures. Investigate ways to strengthen materials through laminating, corrugating and ribbing. Use knowledge of existing shell structures to generate ideas for own products. Create models, annotated sketches and prototypes for own ideas.	Strengthening, stiffening material	Develop and use knowledge of how to construct strong, stiff shell structures. Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.	Make a 2D net into a strong, rigid 3D product. Don't let the egg break or melt (if it's chocolate).	Easter egg companies Adults Children / adults Food companies	Easter egg packaging (keep the egg safe!) Gift boxes Lunch boxes Packaging Mystery boxes

			Select and use appropriate tools for marking out, cutting and joining nets for own shell structure. Explain choice of materials according to aesthetics and function.					
	Summer	Healthy and varied diet	Carry out sensory investigations of ingredients and products. Generate ideas through discussion, based on appearance, taste, texture and aroma. Communicate ideas through annotated sketches, ICT. Plan own recipe in simple stages including list of utensils, list of ingredients and basic steps. Select and use appropriate utensils to prepare ingredients. Carry out evaluations based on own and others opinions of the product.		Know how to use appropriate equipment and utensils to prepare and combine food. Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught	Design a healthy, balanced, but filling meal for your lunch box.	Children	Sandwiches, wraps, rolls, pittas, salad snacks.
4	Autumn	Pneumatics	Investigate and analyse books, videos and products with pneumatic mechanisms. Generate realistic and appropriate ideas for own design discussion, focusing on the needs of the user. Use annotated sketches and prototypes to develop,	Levers, linkages: • Pivot • Input • Output	Understand and use pneumatic mechanisms.	Make a moving part using air pressure.	Key stage 2 children.	Rocket launchers Moving dinosaur / dragon / monster etc (opening mouth, moving arms and legs) Hungry Hippo game

			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. Select from and use finishing techniques suitable for the product they are creating. Evaluate their own products and ideas against criteria and user needs, as they design and make.					
	Spring	Simple circuits and switches	Investigate and evaluate a range of existing battery operated products. Gather information about needs and wants to develop purposeful, targeted design criteria for product. Generate, develop and communicate ideas through discussion, annotated notes, exploded diagrams, sketches and cross-sectional drawings. Plan making in order of stages. Select and use tools to cut, shape, join and finish. Select and use constructional and	Joining techniques	Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzer	Incorporate a functioning electrical circuit into another product e.g. toy, robot	Younger or older children. Younger children.	Beat the buzzer game  Flashing light / siren on toy vehicle Motorised Art bot. 

			electronic materials according to their function and aesthetic qualities. Evaluate own work against own criteria (audience and purpose) and identify strengths and areas for development.					
	Summer	2D shape to 3D product	Investigate a range of 3-D textile products. Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. Produce annotated sketches, prototypes, final product sketches and pattern pieces. Plan the main stages of making. Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. Test their product against the original design criteria and with the intended user. Take into account others' views. Understand how a	Basic running stitch Joining using Velcro, stapling, fabric glue	Know how to strengthen, stiffen and reinforce existing fabrics. Understand how to securely join two pieces of fabric together. Understand the need for patterns and seam allowances.	Make something to keep your things safely inside.	Adult, older children. Older children.	Purse / wallet. Pencil case.

			key event/individual has influenced the development of the chosen product and/or fabric.					
5	Autumn	Celebrating culture and seasonality	Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. Write a step-by-step recipe, including a list of ingredients, equipment and utensils. Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.		Know how to use utensils and equipment including heat sources to prepare and cook food. Understand about seasonality in relation to food products and the source of different food products	Make a product suitable for dietary/religious needs of consumers.	Classmates. Local groups / Care home residents / guests to party etc.	Bread Pizza Savoury scones.

			Make, decorate and present the food product appropriately for the intended user and purpose. Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.					
	Spring	Pulleys or gears	Investigate famous manufacturing and engineering companies relevant to the project. Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. Develop a simple design specification to guide their thinking. Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. Select from and use a range of tools and	Levers: • Input • Output • Moving pivot point to change load Axels: • Fixed or loose	Understand that mechanical and electrical systems have an input, process and an output. Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.	Design a moving part that uses minimum input, but generates maximum output.	Building trade. Children.	Crane for hoisting heavy goods. Fairground ride e.g. carousel. Wind or watermill. Lifting bridge Moving chariot??

			equipment to make products that that are accurately assembled and well finished. Compare the final product to the original design specification. Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. Consider the views of others to improve their work					
	Summer	Frame structures	Investigate and evaluate a range of existing frame structures. Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. Formulate a clear plan, including a step-by-step	Joining Nets	Understand how to strengthen, stiffen and reinforce 3-D frameworks.	To make a strong, safe structure for children to use.	Whole school.	New school Trim Trail. Tree House. Bird hides for Forest School. Shelters.

			list of what needs to be done and lists of resources to be used. Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. Use finishing and decorative techniques suitable for the product they are designing and making. Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.					
	Autumn	More complex switch or circuits	Develop a design specification for a functional product that responds automatically to changes in the environment. Generate, develop and communicate ideas through discussion, annotated sketches and pictorial representations of electrical circuits or circuit diagrams. Formulate a step-by-step plan to guide making, listing tools, equipment,		Understand and use electrical systems in their products. Understand the use of computer control systems in products. Apply their understanding of computing to program, monitor and control their products.	Ensure that output is directly linked to changes in environment.	Museum? Vehicle owner Children Parents	Burglar alarm. Bike / vehicle alarm. Alarmed money box. Alarmed cookie jar Automatic light.

			materials and components. Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. Create and modify a computer control program to enable their electrical product to respond to changes in the environment. Continually evaluate and modify the working features of the product to match the initial design specification. Test the system to demonstrate its effectiveness for the intended user and purpose.					
	Spring	NO DT						
	Summer	Combining different fabric types	Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and	Previous skills Joining fabrics Adding fasteners e.g. buttons, poppers	New Skills Applique Embroidery Designing fabric: Tie die	Problems to solve Applique Tie dye for background? Investigate natural dyes?	Audience / Purpose Themselves: to make a wall hanging	Ideas for outcomes Wall hanging: to represent time at LCPS – e.g. with date that they're leaving 2024 and or heron symbol etc.

			equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Fabrics can be strengthened, stiffened and reinforced where appropriate.			Embroidery: cross stitch, chain stitch		
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