



## LTP for Design and Technology 2021/22 detailing Knowledge, Skills and Progression



EYFS are not included in this LTP as they learn based on Development Matters and are assessed on the ELGs in June.

NC Objective	What are we learning in Willow Class?					
	Developing, planning & communicating ideas	Food/Nutrition	Textiles	Construction	Sheet materials	Evaluating
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.	Follow verbal instructions. Explain what they are making and which materials they are using and why. Name the tools they are using. Describe what they need to do next. Select materials from a limited range that will meet the design criteria. Select and name the tools needed to work with the materials. Use both pictures and words to explain their ideas. Look at existing products by searching the internet together.	Develop a food vocabulary using taste, smell, texture and feel. Group familiar food products e.g. fruit and vegetables. Cut food safely. Understand the need to be hygienic in the kitchen. Think of interesting ways to decorate their produce, such as cakes to make others want it.	Colour fabrics using a range of techniques e.g. fabric paints, printing, painting. Cut out shapes, which have been created by drawing round a template onto the fabric. Describe the texture of the fabric.	Make vehicles with construction kits, which contain free running wheels. Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. Attach wheels to a chassis using an axle Explain how they want to construct their product and why. Plan their construction.	Fold, tear and cut paper and card. Roll paper to create tubes. Cut along lines, straight and curved. Curl paper. Use a hole punch.	Say what they like and do not like about items they have made and attempt to say why. Talk about their designs as they develop and identify good and bad points. Explain how it works. Discuss what other people have made.
<b>Tier 2 vocabulary</b>	Planning, make.	Names of fruit and vegetables. Flesh, skin, peel, seed, ingredients, healthy, diet.	Fabric, pattern, join, decorate	Cut, tower, strong, weak, underneath, thick, thin, metal, wood, rectangle, circle, square, wheel,	Masking tape, hole punch, stapler, lines.	Planning, make.
<b>Tier 3 vocabulary</b>	Design, investigate, evaluate, purpose.	Sensory vocab: sticky, crunchy, sharp, crisp, sour.	Joining and finishing techniques, components, template, mark-out.	Join, fix, structure, framework, surface, edge, cuboid, cylinder, cube, pivot, axle, chassis	Join, fastening, curved, straight.	Design, investigate, evaluate, purpose.
PROGRESSION AND SEQUENCING-From EYFS						
	Constructing with a purpose in mind. Realising that tools can be used for a purpose.	Making: bird cakes Fruit kebabs Decorating biscuits.  Understanding that we should eat fruit and vegetables and drink water every day.	Threading. Sewing-over stitch with support.	Using various construction materials. Stacking blocks. Beginning to construct.	Using: Scissors to cut straight Stapler (with help) Hole punch without accuracy	Adapts work where necessary. Selects particular resources. Explain what they have made.



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NC Objective	What are we learning in Elm class?					
	Developing, planning & communicating ideas	Food	Textiles	Construction	Sheet materials	Evaluating
<p>Select from and use a range of tools and equipment to perform practical tasks.</p> <p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</p> <p>Evaluate explore and evaluate a range of existing products</p> <p>Evaluate their ideas and products against design criteria.</p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>Explore and use in their products.</p>	<p>Explore ideas by rearranging materials.</p> <p>Model ideas with kits, reclaimed materials.</p> <p>Select pictures to help develop ideas.</p> <p>Use pictures and words to convey what they want to design and make.</p> <p>Describe their models and drawings of ideas and intentions.</p> <p>Use kits/reclaimed materials to develop an idea.</p> <p>Use drawings to record ideas as they are developed.</p> <p>Discuss their work as it progresses.</p> <p>Add notes to drawings to help explanations and explain why they are the best.</p>	<p>Cut, grate, chop a range of ingredients.</p> <p>Work safely and hygienically</p> <p>Understand the need for a variety of foods in a diet, 5 main food groups.</p> <p>Measure and weigh food items, non-statutory measures e.g. spoons, cups.</p> <p>Research linking to all food coming from plants and animals.</p> <p>Food has to be farmed, grown or caught.</p>	<p>Join fabrics by using running stitch, glue, staples, over sewing, tape.</p> <p>Decorate fabrics with buttons, beads, sequins, braids, ribbons.</p> <p>Explain why they use a certain textile.</p>	<p>Join appropriately for different materials and situations e.g. glue, tape.</p> <p>Mark out materials to be cut using a template.</p> <p>Cut strip wood/dowel using hacksaw and bench hook.</p> <p>See glue gun used by an adult.</p> <p>Explain why they are using the construction material.</p> <p>Add movement to their models.</p>	<p>Create hinges.</p> <p>Use simple pop ups.</p> <p>Investigate strengthening sheet materials.</p> <p>Investigate joining temporary, fixed and moving.</p> <p>Fold and roll materials to make it stronger.</p>	<p>Talk about changes made during the making process</p> <p>Discuss how closely their finished products meet their design criteria and what they would improve next time.</p> <p>Evaluate existing products.</p>
<b>Tier 2 vocabulary</b>	Investigating, planning, designing.	Names of utensils. Flesh, skin, peel, seed, ingredients, healthy, diet.	Fabric, pattern, join, decorate	Cut, tower, strong, weak, underneath, thick, thin, metal, wood, rectangle, circle, square, wheel.	Fold, roll, materials.	Investigating, planning, designing.
<b>Tier 3 vocabulary</b>	Product, function, criteria, purpose.	Sensory vocab: sticky, crunchy, sharp, crisp, sour.	Joining and finishing techniques, components, template, mark-out.	Join, fix, structure, framework, surface, edge, cuboid, cylinder, cube, chassis, axle, names of tools.	Shaping, fixed, moving, mechanism, malleable.	Product, function, criteria, purpose.

**The class teacher will highlight this LTP as they add it into their MTP to ensure coverage.**

**Each topic will start with time spent discussing what has previously been learnt and how the current topic will build on previous learning.**

**Annual Enterprise week allows each class to become a business, researching and making a product to sell at the fete. All profits are then spent by then children.**



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NC Objective	What are we learning in Beech Class cycle A?					
	Developing, planning & communicating ideas	Food/Nutrition	Textiles	Construction/Electrical	Sheet materials	Evaluating
<p>Select from &amp; use a wider range of tools and equipment to perform practical tasks accurately.</p> <p>Investigate and analyse a range of existing products.</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>Understand and use mechanical systems in their products.</p> <p>Understand and use electrical systems in their products.</p>	<p>Investigate similar products to the one to be made to give starting points for a Design.</p> <p>Draw/sketch products to help analyse and understand how products are made.</p> <p>Think ahead about the order of their work and decide upon tools and materials.</p> <p>Demonstrate how their design meets a range of requirements.</p> <p>Put together a step by step plan, including equipment and tools needed.</p> <p>Plan their work using accurately labelled sketch and words.</p> <p>Discussing how realistic it is.</p>	<p>Make healthy eating choices from and understanding of a balanced diet.</p> <p>Understanding which food is grown, reared and caught in the UK and wider world.</p> <p>Using equipment safely to chop, mix and spread.</p>	<p>Understand seam allowance.</p> <p>Join fabrics using running stitch, over sewing, back stitch.</p> <p>Explore fastenings and recreate some e.g. sew on buttons and make loops.</p> <p>Prototype a product using J cloths.</p>	<p>Incorporate a circuit with a bulb or buzzer into a model including a mechanical component.</p> <p>Using a computer program to control the product.</p> <p>Create shell or frame structures.</p> <p>Strengthen frames with diagonal struts.</p> <p>Make structures more stable by giving them a wide base.</p>	<p>Cut slots.</p> <p>Cut internal shapes.</p> <p>Use lolly sticks/card to make levers and linkages.</p> <p>Join materials together.</p>	<p>Identify the strengths and weaknesses of their design ideas.</p> <p>Decide which design idea to develop.</p> <p>Consider the views of others, including intended users, to improve their work.</p> <p>Evaluate existing products including how and where and why they are made and the materials used.</p>
<b>Tier 2 vocabulary</b>	Label, design, planning.	Names of utensils.	Names of fabrics, zip, button, strength, weakness.	Length, width, breadth, capacity, marking out, joining, assemble, stiff, strong, font. Switch, diagram, battery, cable, wire.	Join, net, hard, stiff, weak, strong. Links.	Label, design, planning.
<b>Tier 3 vocabulary</b>	Prototype, innovative, annotated sketch	Texture, appearance, preference, greasy, savoury, edible, hygienic, processed, seasonal.	Fastening, finishing techniques, stitch, seam.	Shell structure, 3 dimensional, net, cube, prism, vertex, scoring, shaping, tabs, adhesives, accuracy, reduce, reuse, recycle, graphics. Input, output, electrical systems, circuits. Rotation, transmit. LED, conductor, crocodile clip, light dependent resistor, parallel circuit, components	Assemble, accuracy, scoring, assemble, laminating, tabs, mountain fold (upside down V)	Prototype, innovative, annotated sketch Function

**Learn about a manufacturer who has been influential to our world and how it links to DT.**

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NC Objective	What are we learning in Oak Class cycle A?					
	Developing, planning & communicating ideas	Food	Textiles	Construction/Electrical	Sheet materials	Evaluating
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.	Investigate products/images to collect ideas. Sketch and model alternative ideas. Develop one idea in depth. Combine modelling and drawing to refine ideas. Plan the sequence of work using a storyboard. Record ideas using annotated diagrams. Use research to come up with a range of ideas, including user's view. Produce a detailed step by step plan, including alternative ideas and drawbacks about each.	Prepare food products taking into account the properties of ingredients and sensory characteristics. Select and prepare foods for a particular purpose. Taste a range of ingredients, food items to develop a sensory food vocabulary for use when designing. Weigh and measure using scales. How food is processed into ingredients that can be eaten or used in cooking. How foods can be substituted in cooking to change a recipe.	Create 3D products using pattern pieces and seam allowance. Understand pattern layout. Decorate textiles appropriately often before joining components. Pin and tack fabric. Use a range of joining techniques.	Use bradawl to mark hole positions. Use hand drill to drill tight and loose fit holes. Cut strip wood, dowel, square section wood accurately to 1mm. Join materials using appropriate methods. Incorporate motor and a switch into a model to make it more functional. Describe the methods of construction used.	Cut slots. Cut accurately and safely to a marked line. Join and combining materials with temporary, fixed or moving joinings.	Use the design criteria to inform their decisions about ways to proceed. Justify their decisions about materials and methods of construction. Reflect on their work using design criteria stating how well the design fits the needs of the user, aesthetically and usability. Identify what does and does not work in the product. Make suggestions as how their design could be improved.
<b>Tier 2 vocabulary</b>	Design decisions, user, purpose, research.	Wholemeal, unleavened, herbs, spices, whisk, beat, stir, crumble, source.	Template, right side, wrong side, pattern, names of textiles, pins, needles, thread	Stiffen, strengthen, frame structure, reinforce, join.	Fixed, join, slots, move.	Design decisions, user, purpose, research.
<b>Tier 3 vocabulary</b>	Functionality, authentic, specification, mock-up, cross-section, engineering	Fat, carbohydrate, protein, vitamins, minerals, allergy, gluten	Seam, wadding, reinforce, hem, fastenings	stability, temporary, permanent, triangulation.	Temporary, permanent, accurate.	Functionality, authentic, specification, mock-up.

**Learn about an engineer who has been influential to our world and how it links to DT.**

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	<b>Developing, planning &amp; communicating ideas</b>	<b>Food</b>	<b>Textiles</b>	<b>Construction</b>	<b>Sheet materials</b>	<b>Evaluating</b>
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.	Plan a sequence of actions to make a product. Record the plan by drawing (labelled sketches) or writing using an ICT program. Develop more than one design or adaptation of an initial design. Propose realistic suggestions as to how they can achieve their design ideas. Add notes to drawings to help explanations. Take others ideas into account.	Join and combine a range of ingredients e.g. snack foods. Work safely and hygienically. Measure and weigh ingredients appropriately.	Use appropriate decoration techniques e.g. appliqué(glued or simple stitches). Create a simple pattern. Understand the need for patterns. Devise a template.	Prototype frame and shell structures. Measure and mark square selection, strip and dowel accordingly to 1cm. Use glue gun with close supervision (one to one).	Use linkages to make movement larger or more varied. Use and explore complex pop ups. Create nets. Explain how they could join things in different ways.	Consider and explain how the finished product could be improved. Is it successful? Discuss how well the finished product meets the design criteria and how well it meets the needs of the user. Peer evaluation.
<b>Tier 2 vocabulary</b>	Design brief, user, appealing.	Ingredients, dough, yeast, equipment, utensils, grown.	Names of fabrics, zip, button, strength, weakness.	Length, width, breadth, capacity, marking out, joining, assemble, stiff, strong, font.	Join, net, hard, stiff, weak, strong. Links.	Label, design, planning.
<b>Tier 3 vocabulary</b>	Sensory evaluations, annotate sketch, innovative, prototype.	Techniques, moist, reared, edible, harvested, processed, varied.	Fastening, finishing techniques, stitch, seam.	Shell structure, 3 dimensional, net, cube, prism, vertex, scoring, shaping, tabs, adhesives, accuracy, reduce, reuse, recycle, graphics.	Assemble, accuracy, scoring, assemble, laminating, tabs.	Prototype, innovative, annotated sketch

**Learn about an inventor who has been influential to our world and how it links to DT**

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NC Objective	What are we learning in Oak Class cycle B?					
	Developing, planning & communicating ideas	Food	Textiles	Construction	Sheet materials	Evaluating
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Understand how key events and individuals in design and technology have helped shape the world. Apply their understanding of computing to program, monitor and control their products.	Use models, kits and drawings to help formulate design ideas. Make prototypes. Research information to inform decisions, using questionnaires, interviews and web based resources. Draw plans, which can be read/ followed by someone else. Give a report using correct technical vocabulary. Work within time restraints. Consider culture and society in plans. Draw cross sectional drawings and exploded diagrams.	Cut and shape ingredients using appropriate tools and equipment learnt previously. Join and combine food ingredients appropriately e.g. beating, rubbing in. Understand how seasons affect what food is available.	Join fabrics using over sewing, back stitch, blanket stitch or machine stitching (closer supervision), Combine fabrics to create more useful properties. Make quality products.	Control a model using an ICT control programme. Use a clamp to make an up and down mechanism. Build frameworks using a range of materials e.g. wood, card corrugated plastic to support mechanisms, Use glue gun with close supervision.	Use craft knife, cutting mat and safety ruler under one to one supervision Ensure work is precise and accurate. Hide joints to improve product.	Use the design criteria to inform their decisions about ways to proceed. Justify their decisions about materials and methods of construction. Reflect on their work using design criteria, stating how well the design fits the needs of the user. Identify what does and does not work in the product, inc whether different resources could improve the product. Evaluate how sustainable the products are.
<b>Tier 2 vocabulary</b>	Design decisions, user, purpose, research.	Wholemeal, unleavened, herbs, spices, whisk, beat, stir, crumble, source.	Template, right side, wrong side, pattern, names of textiles, pins, needles, thread	Stiffen, strengthen, frame structure, reinforce, join.	Fixed, join, slots, move.	Design decisions, user, purpose, research.
<b>Tier 3 vocabulary</b>	Functionality, authentic, specification, mock-up, ergonomics, orthographic (drawing from front, end and aerial)	Fat, carbohydrate, protein, vitamins, minerals, allergy, gluten.	Seam, wadding, reinforce, hem, fastenings	stability, temporary, permanent, triangulation.	Temporary, permanent, accurate.	Functionality, authentic, specification, mock-up.

**Learn about a designer who has been influential to our world and how it links to DT**

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Class teachers will highlight the following assessment criteria in their assessment spreadsheet document.

Yr Gp	Progression/ Assessment Criteria – Non Negotiables for DT
<b>1</b>	I can use my own ideas to make something.
	I can explain to someone else how I want to make my product.
	I can use different tools and equipment with safety & accuracy (scissors etc)
	I can describe how something works.
	I can build a product that moves.
	I can build a structure that is strong.
	I can explain which foods are healthy.
	I can explain how to be safe and hygienic in the kitchen.
	I can use fabric in my designs.

Yr Gp	Progression/ Assessment Criteria – Non Negotiables for DT
<b>2</b>	I can think of an idea and plan what to do next.
	I can communicate my ideas through my drawings.
	I can use different tools and equipment with safety & accuracy (hacksaw etc)
	I can mark out something using a template.
	I can build a product that has hinges.
	I can explain how I have made my product strong and the methods that I have used.
	I can name at least 3 food groups needed for a healthy diet.
	I can explain whether food comes from an animal, plant or somewhere else.
	I can use running stitch to hold two pieces of fabric together.

Yr Gp	Progression/ Assessment Criteria – Non Negotiables for DT
<b>3/ 4 a</b>	I can investigate similar products to the one I intend to design for ideas.
	I can put together a step by step plan
	I can make levers and linkages.
	I can incorporate a circuit with a bulb or buzzer.
	I can use a computer program to control a product.
	I can create a shell or frame and make sure it is stable using ideas like struts.
	I can use equipment to chop, mix and spread food.
	I understand which food is caught, reared and grown in the UK and the wider world.
	I can sew using a running stitch, over sewing and back stitch.



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Yr Gp	Progression/ Assessment Criteria – Non Negotiables for DT
<b>3/ 4 b</b>	I can use a computing program to plan a product.
	I can explain how I would improve my product next time.
	I can make pop ups in a product.
	I can use a glue gun with supervision.
	I can measure, mark and cut dowel or other wood accurately to make a model.
	I can present a product in an interesting way.
	I can measure and weigh ingredients carefully.
	I can combine a range of ingredients to make a snack.
	I can add decoration to fabric to improve its appearance.

Yr Gp	Progression/ Assessment Criteria – Non Negotiables for DT
<b>5 / 6 a</b>	I can sketch alternatives ideas.
	I can plan a sequence of work using a storyboard.
	I can combine materials that have temporary, fixed or moving joinings.
	I can use a range of tools such as bradawls with care and accuracy.
	I can incorporate a motor and switch into a model to make it more functional.
	I can describe the methods of construction used.
	I can prepare similar dishes changing to ingredients slightly to see the difference in taste.
	I can follow a recipe using scales to weigh the ingredients out.
	I can pin and tack fabric using arrange of joining techniques.

Yr Gp	Progression/ Assessment Criteria – Non Negotiables for DT
<b>5 / 6 b</b>	I can make a prototype.
	I can evaluate how sustainable the products are.
	I can use a craft knife and cutting mat safely and accurately.
	I can use a glue gun with supervision.
	I can use a clamp to make and up/down mechanism.
	I can use a computer program in my designs/ control.
	I understand how seasons affect what food is available.
	I can use new methods such as beating and rubbing in to produce something to eat.
	I can make and evaluate a quality product.