

Design Technology Knowledge Progression Document

Features					
<ul style="list-style-type: none">• At EYFS the knowledge progression takes full account of the EYFS curriculum strands of:• Expressive art and design• At key stage 1 and 2, the knowledge progression takes full account of the national curriculum’s strands of:• <ul style="list-style-type: none">o Designingo Makingo Evaluating• Using technical knowledge• Food technology					
EYFS and National Curriculum Subject Content					
Expressive Arts and Design					
Strand	Creating with Materials Children at the expected level of development will: <ul style="list-style-type: none">- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;- Share their creations, explaining the process they have used;- Make use of props and materials when role playing characters in narratives and stories.		Being imaginative and expressive Children at the expected level of development will: <ul style="list-style-type: none">- Invent, adapt and recount narratives and stories with peers and their teacher;- Sing a range of well-known nursery rhymes and songs; -Perform songs, rhymes, poems and stories with others, and – when appropriate – try to move in time with music.		
EYFS	Explore different ways of joining (Glue) Make imaginative and complex small worlds with blocks and construction kits Use tools for a purpose (Scissors, paintbrush, different drawing tools) Develop their own ideas and the decide which materials to use to express them Explore different ways of joining materials together (Tape and Glue) Create collaboratively sharing ideas, resources and skills Create own props for role play/story re-telling Construct with different materials Return to and build on their previous learning, refining ideas and developing their ability to represent them Join different materials (Split pins and elastic bands) Explore different ways of joining materials; discuss which method works best for different materials				
Strand	Designing	Making	Evaluating	Technical knowledge	Food Technology
Key Stage 1	<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none">• Explore and evaluate a range of existing products.• Evaluate their ideas and products against design criteria.	<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none">• Use the basic principles of a healthy and varied diet to prepare dishes.• Understand where food comes from.

Key Stage 2	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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
Year 1	I care about me Food technology			The Toy maker Sliders, wheels and axles	
Substantive Knowledge	To know that food comes from plants or animals. To know that food can be cut, peeled and grated. To know that there are similar existing products relating to what is being made To know that a final product is linked to what has been asked.			To know there are ways to make a product stronger To know that sliders can be used to create movement To know that wheels and axels can be used to create movement .	
Disciplinary Knowledge	To be able to cut food safely To be able to use equipment to cut, peel and grate to prepare a simple dish To be able to make a simple plan before making To be able to use own ideas to make something			To be able to make their own products stronger To be able to use own ideas to design something To be able to describe how their own idea works To be able to design a product which moves To be able to explain to someone else how they want to make their product To be able to make a product which moves To be able to choose appropriate materials, components and tools To be able to use tools safely to cut, shape and join materials Know that tools / equipment can be used to cut, shape, join and finish. To be able to describe how something works To be able to explain what works well and not so well in the model they have made	
Oracy	fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients			slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used	
Year 2	Sow and Grow Structures			Passion for fashion Textiles	
Substantive Knowledge & Disciplinary Knowledge	Designing To know how to: <ul style="list-style-type: none"> • think of an idea and plan what to do next • produce labelled diagrams • <i>explain why they have chosen specific materials</i> Making To know how to: <ul style="list-style-type: none"> • choose tools and materials and explain why they have chosen them 			Designing To know how to: <ul style="list-style-type: none"> • think of an idea and plan what to do next • produce labelled diagrams • explain why they have chosen specific materials Know that products serve a purpose. Making To know how to: <ul style="list-style-type: none"> • choose tools and materials and explain why they have chosen them 	

	<ul style="list-style-type: none"> • join materials and components in different ways • measure materials to use in a model <p>Evaluating To know how to:</p> <ul style="list-style-type: none"> • explain what went well with their work and how they could improve it Know that there are strengths and weaknesses of products made. 	<ul style="list-style-type: none"> • join materials and components in different ways • measure materials to use in a model or structure • begin to consider finishing techniques Know that there is a purpose for what is being made. <p>Evaluating To know how to:</p> <ul style="list-style-type: none"> • explain what went well with their work and how they could improve it Know that there are strengths and weaknesses of products made. <p>Know that textiles can be cut and joined to make a product</p>
Oracy	cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder	fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing, technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance
Year 3	How my body works Food technology	How my body works Levers and Linkages
Substantive Knowledge & Disciplinary Knowledge	<p>To know how to:</p> <ul style="list-style-type: none"> • Be both hygienic and safe in the kitchen • Describe how food ingredients come together • Weigh out ingredients and follow a given recipe to create a dish • Talk about which food is healthy and which food is not • To know when food is ready for harvesting <p>Designing</p> <ul style="list-style-type: none"> • To prove that a design meets a set criterion • To design a product and make sure that it looks attractive <p>Making</p> <ul style="list-style-type: none"> • To follow a step-by-step plan, choosing the right equipment and materials <p>Evaluating</p> <ul style="list-style-type: none"> • To explain what changes they made, and why • To know that design can be changed to improve it the product were to be created again 	<p>Technical knowledge To know how to:</p> <ul style="list-style-type: none"> • Make cuts and holes accurately • Strengthen a product by stiffening a given part or reinforce a part of the structure • To Know that simple linkages can be used to create movement • To Know that textiles can be joined in different ways. <p>Designing</p> <ul style="list-style-type: none"> • To choose a material for both its suitability and its appearance <p>Making</p> <ul style="list-style-type: none"> • To select the most appropriate tools and techniques for a given task • Work accurately to measure cuts and make holes • To know that there are appropriate tools/materials chosen which are fit for purpose <p>Evaluating</p> <ul style="list-style-type: none"> • Explain how to improve a finished model • To know why a model has or has not been successful
Oracy	name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating
Year 4	Cracking the Earth's core Structures	Innovation station Electricity
Substantive Knowledge & Disciplinary Knowledge	<p>Know how to:</p> <ul style="list-style-type: none"> • Strengthen a product by stiffening a given part or reinforcing a part of the structure <p>Designing</p> <ul style="list-style-type: none"> • To know how to use ideas from other people when designing • To produce a plan and explain it • To communicate ideas in a range of ways, including by sketches and cross-sectional drawings which are annotated <p>Making</p> <ul style="list-style-type: none"> • To know which tools to use for a particular task and show knowledge of handling the tool <p>Evaluating</p> <ul style="list-style-type: none"> • To know how to evaluate and suggest improvements for designs • Evaluate products for both their purpose and appearance 	<p>Know how to:</p> <ul style="list-style-type: none"> • create simple electrical circuits and components e.g. bulbs, switches or buzzers that can be used to create functional products • Link scientific knowledge by using lights, switches, or buzzers • Use electrical systems (series or parallel) to enhance the quality of the product • Know that mistakes can be avoided by measuring carefully <p>Designing</p> <ul style="list-style-type: none"> • To persevere and adapt work when original ideas do not work • To know that a design can be based upon research <p>Making</p> <ul style="list-style-type: none"> • To know which material is likely to give the best outcome • To measure accurately <p>Evaluating</p> <ul style="list-style-type: none"> • To present a product in an interesting way <p>To know that existing products can be evaluated</p>

	<ul style="list-style-type: none"> Explain how the original design has been improved 	
Oracy	shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision,	series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device
Year 5	Gods and Mortals Cams	Tides of Change Pulleys and gears
Substantive Knowledge	Technical knowledge <ul style="list-style-type: none"> To know that products need to be strong and fit for purpose by being precise To know that cams can be used to create movement To know that a 3D frame can be reinforced and strengthened. Designing <ul style="list-style-type: none"> To produce a detailed step by step plan Use exploded diagrams Know that design criteria can be developed Making <ul style="list-style-type: none"> To use a range of tools and equipment competently Make a product that relies on cams Evaluating <ul style="list-style-type: none"> To evaluate appearance and function against original criteria To know that the purpose and appearance of a product can be evaluated 	Technical knowledge <ul style="list-style-type: none"> To know that products need to be strong and fit for purpose by being precise To know that cams can be used to create movement To know that a 3D frame can be reinforced and strengthened. Designing <ul style="list-style-type: none"> To produce a detailed step by step plan Use exploded diagrams Know that design criteria can be developed Making <ul style="list-style-type: none"> To use a range of tools and equipment competently Make a product that relies on cams Evaluating <ul style="list-style-type: none"> To evaluate appearance and function against original criteria To know that the purpose and appearance of a product can be evaluated
Oracy	am, movement, linear motion, rotary motion, off-centre, crank handle, axle, frame	pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output
Year 6	How to mind your heart Food Technology	Light it up Electricity
Substantive Knowledge	To know how to: <ul style="list-style-type: none"> Prepare a meal by collecting the ingredients in the first place Know which seasons various foods are available for harvesting Adapt and aspect of a recipe Understand the difference between a savoury and sweet dish Know that the seasons affect the food available Designing <ul style="list-style-type: none"> To know how to use market research to inform plans and ideas Follow and refine original plans Making <ul style="list-style-type: none"> To know which tools to use for a specific practical task To know how to use tools safely Evaluating <ul style="list-style-type: none"> To know how to test and evaluate designed products To explain how products should be stored and give reasons 	Technical knowledge Know how to: <ul style="list-style-type: none"> Explore more complex electrical circuits and components, e.g. resistors or LEDs, to create functional products Use electrical systems correctly and accurately to enhance a given product e.g. using transistors or chips Designing <ul style="list-style-type: none"> To know that a design specification is used to guide thinking Making <ul style="list-style-type: none"> To know what tools and materials are used for Evaluating <ul style="list-style-type: none"> To know how to test and evaluate designed products
Oracy	ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble	reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing	<p>To know how to:</p> <ul style="list-style-type: none"> • use own ideas to design something • describe how their own idea Works • design a product which moves <p>explain to someone else how they want to make their product</p> <ul style="list-style-type: none"> • make a simple plan before making <p>Know that there are similar existing products relating to what is being made</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • think of an idea and plan what to do next • produce labelled diagrams • explain why they have chosen <p>specific materials</p> <p>Know that products serve a purpose.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • prove that a design meets a set criteria. • produce a step by step plan • design a product and make sure that it looks attractive • choose a material for both its suitability and its appearance <p>Know that a design must meet a range of requirements.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • use ideas from other people when designing • produce a plan and explain it • persevere and adapt work when original ideas do not work • communicate ideas in a range of ways, including by sketches and cross-sectional drawings which are annotated <p>Know that a design can be based upon research.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • come up with a range of ideas after collecting information from different sources • produce a detailed, step-bystep plan • use exploded diagrams <p>explain how a product will appeal to a specific audience</p> <ul style="list-style-type: none"> • design a product that requires pulleys or gears <p>Know that design criteria can be developed</p>	<p>To know how to:</p> <p>use market research to inform plans and ideas. follow and refine original plans</p> <p>justify planning in a convincing way</p> <p>show that culture and society is considered in plans and designs</p> <p>Know that a design specification is used to guide thinking.</p>
Making	<p>To know how to:</p> <ul style="list-style-type: none"> • use own ideas to make something • make a product which moves • choose appropriate materials, components and tools • use tools safely to cut, shape and join materials <p>Know that tools / equipment can be used to cut, shape, join and finish</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • choose tools and materials and explain why they have chosen them • join materials and components in different ways • measure materials to use in a model or structure • begin to consider finishing techniques <p>Know that there is a purpose for what is being made</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • follow a step-by-step plan, choosing the right equipment and materials • select the most appropriate tools and techniques for a given task • make a product which uses both electrical and mechanical components • work accurately to measure, make cuts and make holes <p>Know that there are appropriate tools / materials chosen which are fit for purpose.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • know which tools to use for a particular task and show knowledge of handling the tool • know which material is likely to give the best outcome • measure accurately <p>Know that there are explanations behind choosing the appropriate tools / materials</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • use a range of tools and equipment competently • make a prototype before making a final version • make a product that relies on pulleys or gears <p>Make a product that relies on cams</p> <p>Know that appropriate tools / materials are used with precision.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • know which tool to use for a specific practical task • know how to use any tool correctly and safely • know what each tool is used for • explain why a specific tool is best for a specific action <p>Know that functionality and aesthetics are considered when selecting the appropriate tools / material</p>
Evaluating	<p>To know how to:</p> <ul style="list-style-type: none"> • describe how something works • explain what works well and not so well in the model they have made <p>Know that a final product is linked to what has been asked.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • explain what went well with their work and how they could improve it <p>Know that there are strengths and weaknesses of products made</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • explain what changes they made and why • explain how to improve a finished model • know why a model has or has not been successful <p>Know that a design can be changed to improve</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • evaluate and suggest improvements for designs • evaluate products for both their purpose and appearance • explain how the original design has been improved • present a product in an interesting way <p>Know that existing products can be evaluated</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • suggest alternative plans; outlining the positive features and draw backs • evaluate appearance and function against original criteria <p>Know that the purpose and appearance of a product can be evaluated.</p>	<p>To know how to:</p> <p>know how to test and evaluate designed products</p> <ul style="list-style-type: none"> • explain how products should be stored and give reasons • evaluate product against clear criteria <p>Know that a product can be evaluated against the design specification</p>

			it if the product were to be created again			
Technical knowledge	<p>To know how to:</p> <ul style="list-style-type: none"> • Make their own model stronger <p>Know that there are ways to make a product stronger</p> <p>Know that sliders can be used to create movement</p> <p>To know that wheels and axels can be used to create movement.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • make a model stronger and more stable • use wheels and axles, when appropriate to do so <p>Know that materials can be measured.</p> <p>Know that textiles can be cut and joined to make a product.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • make cuts and holes can be made accurately. • strengthen a product by stiffening a given part or reinforce a part of the structure <p>Know that simple linkages can be used to create movement.</p> <p>Know that textiles can be joined in different ways.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • strengthen a product by stiffening a given part or reinforce a part of the structure • create simple electrical circuits and components, e.g. bulbs, switches or buzzers, can be used to create functional products • link scientific knowledge by using lights, switches or buzzers • use electrical systems (series or parallel) to enhance the quality of the product <p>Know that mistakes can be avoided by measuring carefully.</p>	<p>To know how to:</p> <ul style="list-style-type: none"> • link scientific knowledge to design by using pulleys or gears <p>Know that products need to be strong and fit for purpose by being precise.</p> <p>Know that cams can be used to create movement.</p> <p>Know that a 3D frame can be reinforced and strengthened</p> <p>Know that pulleys and gears can be used to create movement.</p>	<p>To know how to:</p> <p>explore more complex electrical circuits and components, e.g. resistors or LEDs, to create functional products</p> <p>use electrical systems correctly and accurately to enhance a given product, e.g. using transistors or chips</p> <p>Know that a 3D textiles product can be made by joining a combination of fabric shapes</p> <p>Know that user and aesthetics are considered when choosing and joining textiles.</p>
Food Technology	<p>To know how to:</p> <ul style="list-style-type: none"> • cut food safely • be hygienic by washing hands • use equipment to cut, peel and grate to prepare a simple dish • Know that food comes from plants or animals. <p>Know that with support, food can be cut, peeled and grated.</p>		<p>To know how to:</p> <ul style="list-style-type: none"> • be both hygienic and safe in the kitchen • describe how food ingredients come together • weigh out ingredients and follow a given recipe to create a dish • can talk about which food is healthy and which food is not • know when food is ready for harvesting <p>Know that food comes from the UK or wider world.</p> <p>Know that food is grown, reared and caught in the UK, Europe and wider world.</p>			<p>To know how to:</p> <ul style="list-style-type: none"> • prepare a meal by collecting the ingredients in the first place know which season various foods are available for harvesting • adapt an aspect of a recipe • understand the difference between a savoury and sweet dish <p>Know that the seasons affect the food available.</p> <p>Know that recipes can be adapted to change appearance, taste, texture and aroma.</p> <p>Know that different preparation techniques are used depending on the food type.</p>

			Know that there are a wide range of food preparation techniques.			
--	--	--	------------------------------------------------------------------	--	--	--