

Design and Technology Progression Overview

	EYFS (reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Investigate and Evaluate	Asking questions about existing products. Exploring the designed and made world through the indoor and outdoor environment, and through roleplay.	<ul style="list-style-type: none"> Draw on their own experience, across a range of contexts, to help generate ideas for creation of products with a purpose. Begin to understand the development of existing products: What they are for, how they work, materials used. 	<ul style="list-style-type: none"> Start to generate ideas for a purposeful design by drawing on their own and other people's experiences 	<ul style="list-style-type: none"> Research existing products, and their designers, to understand how products have been designed, made and what materials have been used. Start to understand whether products can be recycled or reused Explore a range of initial ideas, make design decisions to develop a final product linked to user and purpose. 	<ul style="list-style-type: none"> Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at individuals or groups. Investigate and analyse a range of existing battery-powered products. 	<ul style="list-style-type: none"> Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. Investigate and evaluate a range of existing frame structures. Research key events and individuals relevant to frame structures. 	<ul style="list-style-type: none"> Carry out research, using surveys, interviews, questionnaires, and web-based resources to identify the needs, wants, preferences and values of individuals and groups
Focused tasks		<ul style="list-style-type: none"> Learn how to make a slider and lever. Know how structure can be made stronger, stiffer, and more stable. Learn how to name and use tools which grate, peel and cut food. 	<ul style="list-style-type: none"> Understand what an axle is and how to fix it so it rotates. Know ways of joining 2 pieces of given fabric including simple stitches. Learn how to name and choose tools which grate, peel, squeeze and cut food. 	<ul style="list-style-type: none"> Manipulate and create nets using construction kits and CAD Learn how to join fabric using 2 methods of stitching and their suitability for use with different types of fabric. Learn how to cut food safely with a knife (the bridge and claw). 	<ul style="list-style-type: none"> Learn how to join levers using a linkage. Understand how to control a component using computer control. Learn how to prepare food safely with including cutting, mixing, spreading, kneading, and baking. 	<ul style="list-style-type: none"> Learn how to join and strengthen a framework. Understand how to integrate sensors into a computer controlled electrical system. Learn how to measure, combine, and cook ingredients following a recipe. 	<ul style="list-style-type: none"> Learn to use pulley to alter the direction and speed of rotation. Use a software package to design a template/ pattern. Learn a new sewing stitch Develop confidence to measure, combine, and cook ingredients following a recipe.
Design	Designing by talking about what they intend to do, are doing and have done. Saying who and what their products are for. Drawing what they have made, with some children drawing their ideas before they make.	<ul style="list-style-type: none"> Develop, model and communicate their ideas through talking, mock-ups and drawings. Understand how to identify a target group for what they intend to design and make based on a given design criteria. Begin to develop their design ideas through discussion, observation, drawing and modelling. 	<ul style="list-style-type: none"> Develop their ideas through talk and drawings and label parts. Make templates and mock-ups of their ideas in card and paper or using ICT. Generate realistic ideas for an item, including design criteria; ensuring it is fit for purpose and meets the needs of the target group. Start to identify and order the key steps to make the product. Understand how to adapt a design, using self-generated criteria to meet the requirements of the target group. 	<ul style="list-style-type: none"> When planning, use labelled drawings to explain their choice of materials and components including function and aesthetics. Generate, develop, model, and communicate realistic ideas through discussion and annotated sketches and exploded diagrams. 	<ul style="list-style-type: none"> Make design decisions accounting for the availability, function, relevance, and aesthetic of materials. Plan stages of development including materials, equipment, and processes. Select from materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. Develop a simple design specification to guide the development of ideas and products, taking account of constraints including time, resources and cost. 	<ul style="list-style-type: none"> Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams. Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. Consider finishing techniques within design plan. 	<ul style="list-style-type: none"> Develop a simple design specification to guide their thinking Develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional or exploded diagrams, prototypes, pattern pieces. Produce appropriate lists of tools, equipment and materials, that they need independently. Make design decisions, taking account of constraints such as time, resources and cost.
Make	Opportunities to make their own choices and to discuss the reasons for these. Share their creations, explaining the process they have used they are creating.	<ul style="list-style-type: none"> Explore using tools safely to perform a specific technique e.g. cutting, shaping, joining, finishing. Assemble, join and combine materials and components together using a variety of methods. Know how structures and be made stronger, stiffer and more stable. Select from a range of tools, equipment and materials (such as construction kits) using correct vocabulary to name and describe them. Use simple finishing techniques suitable for the structure 	<ul style="list-style-type: none"> Select from a range of tools, equipment and materials, explaining their choices. Use a range of materials and components such as construction materials and kits to explore and use mechanisms in their products Measure, mark out, cut and shape materials and components Assemble, join and combine materials (including textiles) and components (link to Art – joining textiles) Build structures, exploring how they can be made stronger, stiffer and more stable. Use finishing techniques, including those from art and design 	<ul style="list-style-type: none"> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures, using a wider range of materials and components. Measure, mark out, cut and shape materials and components with some accuracy Assemble, join and combine materials and components with some accuracy Select suitable tools, equipment and materials, explaining their choices and how this relates to the task. use computer-aided design to model and communicate ideas. Apply a range of finishing techniques, including computer generated finishing techniques. 	<ul style="list-style-type: none"> Make own prototype Make annotated sketches from different views showing specific features. Select from and use tools and equipment to cut, shape, join and finish with some accuracy Apply a range of finishing techniques, including computer generated finishing techniques, with some accuracy. 	<ul style="list-style-type: none"> With growing confidence select appropriate materials, tools and techniques. With increasing accuracy, select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. Apply a range of finishing techniques, including computer generated finishing techniques, with growing confidence. 	<ul style="list-style-type: none"> Confidently and accurately select appropriate materials, tools and techniques. Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. Make own prototype/ pattern piece Apply a range of finishing techniques, including computer generated finishing techniques confidently and accurately.
Evaluate		<ul style="list-style-type: none"> talk about their design ideas and what they are making make simple judgements about their products and ideas against design criteria suggest how their products could be improved 	<ul style="list-style-type: none"> Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. 	<ul style="list-style-type: none"> Test and evaluate their own products against Design criteria and the intended user and purpose use their design criteria to evaluate their completed products 	<ul style="list-style-type: none"> Evaluate ideas and products against their own design criteria and identify the strengths and areas for improvement. refer to their design criteria as they design and make consider the views of others, including intended users, to improve their work 	<ul style="list-style-type: none"> critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development 	<ul style="list-style-type: none"> critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make evaluate their ideas and products against their original design specification carry out appropriate tests

Design and Technology Progression Overview

Cooking and nutrition	Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell. Experience of cutting soft fruit and vegetables using appropriate utensils.	<ul style="list-style-type: none"> Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. Communicate these ideas through talk and drawing Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. Develop an awareness of basic food hygiene 	<ul style="list-style-type: none"> Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use appropriate utensils to prepare & combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. 	<ul style="list-style-type: none"> Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. Write a step-by-step recipe, including a ingredients, equipment, and utensils Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate, and present the food product appropriately for the intended user and purpose. 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. Understand how key chefs have influenced eating habits to promote varied and healthy diets. 		
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Tier 2 vocabulary	card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, cut, fold, join, fix, wall, tower, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder, fruit and vegetable- names. names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard	vehicle, wheel, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, joining and finishing techniques, decorate, finish, features, suitable, quality, function	three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, adhesives, joining, assemble, accuracy, material, stiff, reduce, reuse, recycle, corrugating, ribbing, laminating, decision, font, lettering, text, graphics, zip, button, strength, weakness, stiffening, investigate, label, aesthetics,	innovative, appealing, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, user, purpose, function, prototype, design criteria, innovative, appealing, design brief	frame structure, stiffen, strengthen, reinforce, triangulation, stability, temporary, permanent ingredients, healthy, varied, seasonality, utensils, source, savoury, shape, sprinkle, crumble	Diagram, annotated drawings, exploded diagrams, input, process, output design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief
Tier 3 vocabulary	slider, lever, pivot, slot, bridge/guide, structure, framework, free standing, design, make, evaluate, user, purpose, ideas, design criteria, product, function flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating, tasting, arranging, popular.	axle, axle holder, chassis, mechanism names of tools, equipment and materials used functional, fabrics and components template, pattern pieces, mark out, mock-up, design brief	marking out, scoring, shaping, tabs, names of fabrics, fastening, compartment, templates, stitch, seam, seam allowance, user, purpose, annotated sketch, pattern pieces	shell structure, prototype, lever, linkage, pivot, slot, bridge, guide, system, input, process, output, linear, rotary, oscillating, reciprocating, series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, system, input device, output device	Design specification, prototype, annotated sketch, innovation, research, functional reed switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), USB cable, wire, parallel circuit yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, gluten, dairy, allergy, intolerance, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out,	mechanical system, electrical system, pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, motor circuit, switch, circuit

The end points are sequenced in 2-year blocks (Yr1/2, Yr3/4, Yr5/6) so can be taught in any order within those blocks to maximise links with other areas of the curriculum. There should be a Food unit every year.

End points						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Design, make and evaluate a purposeful product with wheels and axles. Attach axils to a vehicle so that they move freely with securely fixed wheels.	Design, make and evaluate a purposeful product incorporating sliders and levers. Use a slider or lever to create a simple mechanism which moves from side to side or up and down incorporating a fixed or loose pivot.	Design, make and evaluate a purposeful shell structure. Develop and use knowledge of nets of 3D shapes to construct strong, stiff shell structures. Use CAD to improve the accuracy and appearance of products.	Design, make and evaluate a purposeful product incorporating levers and linkages. Use a linkage to join two or more pivoted levers to create a moving mechanism.	Design, make and evaluate a purposeful, strong and stable 3D framed structure. Understand how to use a range of joining techniques appropriate to the materials and structure.	Design, make and evaluate a purposeful mechanical system using pulleys or gears. Explore combinations of gears and pulleys to create working moving models.
POAP	Mechanisms – sliders and levers	Mechanisms – wheels and axles	Structures – shell structures (including computer aided design - CAD)	Mechanical systems – levers and linkages	Structures – frame structures	Mechanical systems – pulleys or gears
	Design, make and evaluate a purposeful free standing structure. Develop techniques to ensure that the finished product is strong, stiff and stable.	Design, make and evaluate a purposeful product using joined fabric shapes. Create and use templates to cut fabric. Join two pieces of fabric using the most appropriate technique, including simple stitches.		Design, make and evaluate a purposeful electrical system incorporating switches. Use knowledge of electrical systems, such as series circuits to incorporate switches, bulbs and buzzers. Apply their understanding of computing to program and control their products.	Design, make and evaluate a purposeful product using joined fabric shapes. Develop stitches to include more than one type for joining and embellishment and include a means of fastening eg Velcro, ties and buttons.	
POAP	Structures – freestanding structures	Textiles – templates and joining techniques	Textiles – 2D shape to 3D product	Electrical systems – simple circuits and switches	Electrical systems: more complex switches and circuits, including programming, monitoring and control	Textiles – combining different fabric shapes including computer-aided design
	Design, make and evaluate a food product for a specific purpose involving basic food preparation eg peeling, cutting, grating. Demonstrate an awareness of basic food hygiene.		Design, make and evaluate a food product which is healthy, using appropriate equipment and utensils to prepare and combine food. Demonstrate an understanding of a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.		Design, make and evaluate a food product which celebrates culture or seasonality. Demonstrate knowledge of how to use utensils (including heat sources) to prepare and cook food. Understand about seasonality in relation to food products and the source of different food products.	
POAP	Food – preparing fruit and vegetables		Food – healthy varied diet		Food – celebrating culture and seasonality	