



Design Technology

Progression of skills, knowledge and vocabulary

Skills							
	EYFS	Year 1	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
Designer studies							
Design Understanding contexts, users and purposes	Work within a story-based context. Explain what they are making and who it is for.	Across KS1: <ul style="list-style-type: none"> • Work confidently within a range of contexts, such as imaginary, story-based, home, schools, gardens, local community, • State what products they are designing and making • Describe what their products are • Say how they will work • Say how they will make them suitable for their intended users • Use simple design criteria 		Across KS2 pupils should: <ul style="list-style-type: none"> • work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment • describe the purpose of their products • indicate the design features of their products that will appeal to intended users • explain how particular parts of their products work 			
				In LKS2 pupils should also: <ul style="list-style-type: none"> • gather information about the needs and wants of individuals and groups • develop their own design criteria and use these to inform their ideas 	In UKS2 pupils should also: <ul style="list-style-type: none"> • carry out research, using surveys, interviews, questionnaires, and web-based resources • identify the needs, wants, preferences and values of individuals and groups • develop a simple design specification to guide their thinking 		
Design Generating, developing, modelling and communicating ideas	Use talk to clarify their thinking and ideas.	Across KS1: Across KS1 pupils should: <ul style="list-style-type: none"> • generate ideas by drawing on their own experiences • use knowledge of existing products to help come up with ideas • develop and communicate ideas by talking and drawing <ul style="list-style-type: none"> • model ideas by exploring materials, components, and construction kits and by making templates and mock-ups • use information and communication technology, where appropriate, to develop and communicate their ideas 		Across KS2 pupils should: <ul style="list-style-type: none"> • share and clarify ideas through discussion • model their ideas using prototypes and pattern pieces • use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas • use computer-aided design to develop and communicate their ideas 			
				In LKS2 pupils should also: <ul style="list-style-type: none"> • generate realistic ideas, focusing on the needs of the user 	In UKS2 pupils should also: <ul style="list-style-type: none"> • generate innovative ideas, drawing on research 		



			<ul style="list-style-type: none"> • make design decisions that take account of the availability of resources 	<ul style="list-style-type: none"> • make design decisions, taking account of constraints such as time, resources and cost
<u>Making and planning</u>	Have a purpose in mind when constructing. Select appropriate resources and adapts work where necessary. Select tools and techniques needed to shape, assemble and join materials they are using.	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> • plan by suggesting what to do next • select from a range of tools and equipment, explaining their choices • select from a range of materials and components according to their characteristics 	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> • select tools and equipment suitable for the task • explain their choice of tools and equipment in relation to the skills and techniques they will be using • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities 	
			<p>In LKS2 pupils should also:</p> <ul style="list-style-type: none"> • order the main stages of making 	<p>In UKS2 pupils should also:</p> <ul style="list-style-type: none"> • produce appropriate lists of tools, equipment, and materials that they need • formulate step-by-step plans as a guide to making
Make Practical skills and techniques	Manipulate materials to achieve a planned effect. Use simple tools and techniques competently and appropriately.	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> • follow procedures for safety and hygiene • use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design 	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> • follow procedures for safety and hygiene • use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components 	
			<p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> • measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy 	<p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> • accurately measure, mark out, cut and shape materials and components • accurately assemble, join and combine materials and components • accurately apply a range of finishing techniques, including those from art and design • use techniques that involve a number of steps • demonstrate resourcefulness when tackling practical problems



Evaluate Own ideas and products	Talk about what they have made. Say what they like about their product.	<p>Across KS1 pupils should:</p> <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 	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> • identify the strengths and areas for development in their ideas and products • consider the views of others, including intended users, to improve their work 	
Evaluate Existing products	Talk about what a product is and what it is made from. Say what they like about it.	<p>Across KS1 pupils should explore:</p> <ul style="list-style-type: none"> • what products are • who products are for • what products are for • how products work • how products are used • where products might be used • what materials products are made from • what they like and dislike about products 	<p>Across KS2 pupils should investigate and analyse:</p> <ul style="list-style-type: none"> • how well products have been designed • how well products have been made • why materials have been chosen • what methods of construction have been used • how well products work • how well products achieve their purposes <p>how well products meet user needs and wants</p>	<p>In UKS2 pupils should also:</p> <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
			<p>In LKS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> • who designed and made the products • where products were designed and made • when products were designed and made • whether products can be recycled or reused 	<p>In UKS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> • how much products cost to make • how innovative products are • how sustainable the materials in products are • what impact products have beyond their intended purpose



Skills vocabulary	make, design, user, idea, product	planning, investigating design, evaluate, make, user, purpose, ideas, product,	investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function	user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing	evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype
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Knowledge							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Technical Knowledge Making products work	Name some materials. Name some existing products.	Across KS1 pupils should know: <ul style="list-style-type: none"> • about the simple working characteristics of materials and components • the correct vocabulary for the projects they are undertaking 		Across KS2 pupils should know: <ul style="list-style-type: none"> • how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics • that mechanical and electrical systems have an input, process and output • the correct technical vocabulary for the projects they are undertaking 			
Mechanisms	Name a wheel and some common vehicles.	Wheels and axles <ul style="list-style-type: none"> • Movements of simple mechanisms 	Slides and levers <ul style="list-style-type: none"> • Movements of simple mechanisms 	Lever & Linkages <ul style="list-style-type: none"> • How mechanical systems such as levers and linkages or pneumatic systems create movement 		Gears and pulleys <ul style="list-style-type: none"> • how mechanical systems such as cams or pulleys or gears create movement 	
Vocabulary		vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used	slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards	mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating		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	



Structures	Name some simple structures.	Structures <ul style="list-style-type: none"> • how freestanding structures can be made stronger, stiffer and more stable 			Shell <ul style="list-style-type: none"> • how to make strong, stiff shell structures 	3D structures <ul style="list-style-type: none"> • how to reinforce and strengthen a 3D framework 	
Vocabulary		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			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,	frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent	
Textiles	Name some 2d and 3d shapes. Name some fabrics.		2 identical shapes <ul style="list-style-type: none"> • that a 3-D textiles product can be assembled from two identical fabric shapes 	Single fabric shapes <ul style="list-style-type: none"> • that a single fabric shape can be used to make a 3D textiles product 			Combination of fabric shapes <ul style="list-style-type: none"> • that a 3D textiles product can be made from a combination of fabric shapes
Vocabulary			joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish	fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance			seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,



Electrical circuits	Be able to talk about electricity and where they might use it.				Simple circuits <ul style="list-style-type: none"> • how simple electrical circuits and components can be used to create functional products 		Complex circuits <ul style="list-style-type: none"> • how more complex electrical circuits and components can be used to create functional products
Vocabulary					Understand and use electrical systems in their products linked to science coverage. <ul style="list-style-type: none"> • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project. 		Understand and use electrical systems in their products linked to science coverage. <ul style="list-style-type: none"> • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project.
Food	Know about basic foods and have some knowledge of where they come from.	That all food comes from plants or animals that food has to be farmed, grown elsewhere (e.g. home) or caught <ul style="list-style-type: none"> • how to name and sort foods into the five groups in The eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source how to use techniques such as cutting and peeling	That all food comes from plants or animals that food has to be farmed, grown elsewhere (e.g. home) or caught <ul style="list-style-type: none"> • how to name and sort foods into the five groups in The eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source how to use techniques such as cutting, peeling and grating	<ul style="list-style-type: none"> • that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically 	<ul style="list-style-type: none"> • that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically 	that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world <ul style="list-style-type: none"> • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking • how to prepare and cook a 	that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world <ul style="list-style-type: none"> • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking • how to prepare and cook a variety of



				<p>including, where appropriate, the use of a heat source</p> <ul style="list-style-type: none">• how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking• that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate	<p>including, where appropriate, the use of a heat source</p> <ul style="list-style-type: none">• how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking• that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate	<p>variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</p> <ul style="list-style-type: none">• how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking• that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate• that recipes can be adapted to change the appearance, taste, texture and aroma	<p>predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</p> <ul style="list-style-type: none">• how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking• that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate• that different food and drink contain different substances – nutrients, water and fibre – that are needed for health
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Vocabulary		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,	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	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	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	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 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	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 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
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