

Design and Technology Subject Progression Document RWPA

	Developing, Planning and Communicating Design Ideas								
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6			
		Understandin	g Contexts, Users						
Know how to select materials from a limited range that will meet a simple design criteria e.g. shiny	Know how to draw on their own experience to help generate ideas and research conducted on design criteria.	Know how to generate design ideas by drawing on their own and other people's experiences.	Explain how existing products have been designed, made, what materials have been used and the construction techniques. Know how to sketch and annotate these to support analysis.	Know how to generate design ideas, considering the purposes and users for which they are designing- link with mathematics and science and art.	Know how to use research and develop their own design criteria to inform the design of innovative, functional, appealing products that are fit for user and purpose.	Know how to use research (including market research) to develop their own design criteria to inform the design of innovative, functional, appealing products that are fit for user and purpose.			
	Know about the development of existing products: Explain what they are for, how they work, what materials have been used.	Know about how existing products have been designed, made, what materials have been used and the construction techniques. Know how to draw and label existing products.	Know about relevant inventors, designers, engineers, chefs and manufacturers who have developed ground -breaking products (linked to areas of study -pneumatic systems and levers and linkages)	Know about relevant inventors, designers, engineers, manufacturers who have developed ground-breaking products. (linked to areas of study - textiles structures and electrical systems)	Know about relevant inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. (linked to areas of study - textiles structures and electrical systems) Cooking and nutrition (The Sustainable Chef-Attica Restaurant)	Know about relevant inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. (linked to areas of study/cam mechanisms pulley systems structures and electrical systems)			
	Know how to identify a target group for what they intend to design and make based on a design criteria.	Know how to develop their own ideas, from given starting points, using pictures and words to convey what they want to design and make.	Know how to identify a purpose/user and establish design criteria for a successful product.	Know how to identify a purpose/ user and establish design criteria for a successful product.	Know how to draw up a specification for their design (link with mathematics and science and art) Use results of investigations, information sources,	Know how to draw up a specification for their design (link with mathematics and science and art) Use market research to inform plans.			

					including ICT when developing design ideas.	
	 Ge	l nerating, Develop	l ing, Modelling and	Communicating id		
Begin to show accuracy when drawing a product they would like to make.	Start to suggest ideas and explain what they are going to do. Know how to develop their ideas through talk and simple drawings.	Know how to develop their ideas further through discussion, observation. Know how to make drawings with labelled parts and materials. Know how to annotate designs to explain intentions.	With growing confidence generate ideas for an product, considering its purpose and the user/s. Know how to make drawings with labels and annotations (materials, techniques, tools to be used) when designing.	Know how to make labelled drawings with annotations from different views showing specific features. Develop more than one design or adaptation of an initial design.	Know how to generate, develop and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams,	Know how to generate, develop and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, and presentations.
Explore ideas by rearranging materials. Describe simple models or drawings of ideas and intentions.	Make templates and mock-ups of their ideas in card and paper.	Make templates and mock-ups to model their ideas in card and paper or using ICT (if relevant).	Make templates and mock-ups to model their ideas in card and paper or using ICT (if relevant).	Start to generate, develop, model and communicate their ideas through use of prototypes, pattern pieces and CAD/Tinkercad. When designing, consider the ideas and views of others (including intended users) to improve their work.	Start to generate, develop, model and communicate their ideas through use of prototypes, pattern pieces and CAD/Tinkercad.	Generate, develop, model and communicate their ideas through use of prototypes, pattern pieces and CAD/Tinkercad.
Select and name the tools needed to work the materials e.g. scissors for paper. Explain what they are making and which materials they are using. Discuss their creations	Communicate with others about how they want to construct their product, describing models and labelled drawings of ideas and intentions (verbal plan). Select and name the appropriate materials and tools needed from a limited range	Begin to explain why they chose a certain material, taking into consideration design criteria. Select appropriate tools needed to work the material and use them safely. Explain how they intend	Start to order the main stages of making a product. Start to understand whether products can be recycled or reused and understand the importance of this. When planning, explain their choice of materials and	Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. Identify the strengths and areas for development in their ideas and products.	Use previous knowledge to select appropriate materials, tools and techniques. With growing confidence apply a range of finishing techniques, including those from art and design. Start to understand how much products cost	Use market research to inform plans Accurately apply a range of finishing techniques, including those from art and design. Plan the order of their work, choosing appropriate materials, tools and techniques.
as they progress, explaining the process they have used.	to join simple materials.	to join materials.	components according to function and aesthetics. Put together a step-by-step	When planning, consider the ideas and views of others (including intended	to make, how sustainable and innovative they are and	Suggest alternative methods of making, if the first attempts fail.

			plan which shows the order and also what materials, equipment and tools and processes they need.	users) to improve their work. When planning explain their choice of materials and components according to function and aesthetics. Produce a plan and explain it to others. Consider how to present their product in an interesting way.	the impact products have beyond their intended purpose. Produce a detailed step-by-step plan. Suggest some alternative plans and say what the good points and drawbacks are about each. Explain how their product will appeal to the intended audience.	Identify the strengths and areas for development in their ideas and products. Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. Convincingly justify their plan to someone else. Follow and refine their initial plan if necessary Show consideration to culture and society in a design. Explain how their product should be stored, justifying with reasons. Suggest ideas about how their product could be sold. Work within a given budget.
New Vocabulary	New Vocabulary	New Vocabulary	New Vocabulary	New Vocabulary	New Vocabulary	New Vocabulary
design model, tools draw, materials, join safely	existing products, planning, investigating, templates, mock-ups, evaluate, make, user, purpose, ideas, product,	annotate, design intentions, function,	prototype, annotated sketch, functional, innovative, function, components, aesthetics, appealing, construction techniques, equipment, processes generate ideas,	design brief, planning, annotated sketch, initial design, adaptation, intended users, finishing techniques CAD (Computer aided design)	model, communicate, design decisions, functionality, authentic, design specification, design brief, innovative, annotate, mock-up, prototype cross sectional /exploded diagrams, pattern pieces,	market research refine, culture, society, stored, sold, cost, budget

			inventors, designers,		sustainable, impact,	
			engineers, chefs,		intended	
			manufacturers		purpose/audience	
			develop, ground,			
			-breaking products,			
			stages, recycle, reuse. sensory, evaluations			
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					e quality products	
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Know how to create	Know how to make their	Know how to select	Select a wider range of	Select a wider range of	Use previous knowledge	Use knowledge and
their design using basic	design using	appropriate tools,	materials, tools and	materials, tools and	and understanding to	understanding of tools,
materials, tools and	appropriate materials,	materials and	techniques for making	techniques for making	select appropriate	materials, components
techniques.	tools and techniques.	techniques; use correct	their product i.e.	their product safely	materials, components,	and techniques to
1		vocabulary to name and	construction materials	i.e. construction	tools and	confidently select
		describe them.	and kits, food	materials and kits,	techniques e.g. cutting,	those appropriate to
			ingredients, mechanical	textiles and electrical	shaping, joining and	the Design and Make
			components.	components.	finishing, accurately.	Challenges.
	Explore using tools e.g.	Know how to join things	Explain their choice of	Know how to measure,	Select from and use a	Know how to cut and
Select appropriate	scissors and a hole	(materials/components)	tools and equipment in	mark out, cut and	wider range of materials	join with accuracy to
resources and tools for	punch safely.	together in different	relation to the skills and	shape a range of	and components,	ensure a good-quality
their building projects.		ways.	techniques they	materials, using	including	finish to the product
		,	intend to use.	appropriate tools,	construction materials,	
Explain what they are		With help measure, cut		equipment and	textiles and ingredients,	Know what is required
making and which	Select appropriate	and score with some	Know how to measure,	techniques.	according to their	to achieve a quality
materials they are	resources and tools for	accuracy.	mark out, cut, score and	·	functional properties	product.
using.	their building projects	•	assemble components	Measure carefully and	and	ľ
asg.		Know how to measure	with more accuracy.	show initiative to check	aesthetic qualities.	
		materials to use in a	•	so as not to make	·	Use a wide range of
Use simple technical	With help measure,	model or structure.	Know how to work safely	mistakes	Know how to measure	tools and equipment
vocabulary when	mark out, cut and shape		and		and mark out more	expertly,
appropriate.	a range of materials.		accurately with a range	Know how to join and	accurately to ensure	demonstrating safety
'' '		Know how to assemble,	of simple tools and	combine materials and	that everything	and accuracy.
l		join and combine	equipment.	components accurately	is precise.	
Select and name the	1	materials in order to	l.,, .	in temporary and	l	
tools needed to work	Use tools and	make a product.	Work accurately to	permanent ways.	With growing	
the materials e.g.	equipment safely.		make cuts and holes -		confidence cut and join	
scissors for paper.			e.g. to measure	Use a glue gun with	with accuracy to ensure	
			and then use equipment	close supervision (one	a good-quality	
Begin to use scissors			to cut.	to one)	finish to the product	
safely, to cut straight	 Begin to assemble, join				Namanatasta haw ta was	
and curved edges.	and combine materials				Demonstrate how to use skills in using different	
	and components				tools and equipment	
	together using a				safely and accurately.	
	variety of temporary				Juleiy und accurately.	
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Safely use a hole punch to punch holes. Explore using/ holding basic tools such as a saw or hammer safely.	methods e.g. glues or masking tape.				Use a glue gun with close supervision	
			Structures			
Start to build structures, joining components together.	Begin to build structures, explaining how they joined the materials	Build structures, exploring how they can be made stronger, stiffer and more stable.	Build more complex structures exploring how they can be made stable.	Apply knowledge and understanding of how to strengthen, stiffen and reinforce structures/ frameworks to create a product using card and square section wood.	Apply knowledge and understanding of how to strengthen, stiffen and reinforce structures to design and make more complex structures.	Know how to build, reinforce and strengthen a 3D framework. Know how to construct products using permanent joining techniques.
New Vocabulary cut, fold, join, fix structure, wall, tower, wood, plastic, metal	New Vocabulary base, top, underneath, side, edge, surface, corner, point, straight, curved, circle, triangle, square, rectangle,	New Vocabulary weak, stronger, thicker, thinner, framework, cuboid, cube, cylinder	New Vocabulary marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy,corrugating, ribbing, laminating,	New Vocabulary shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity	New Vocabulary frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent	
		Mechani	cal and Electrical	Systems		
Look at simple hinges, wheels and axles.	Explore and make simple lever and slider mechanisms.	Know how wheels and axles work and make a functioning product attaching working wheels and axles.	Know how mechanical systems such as levers and linkages and pneumatic systems create movement.	Know how simple electrical circuits and components can be used to create functional products.	Know about and explain how mechanical systems such as pulleys create movement.	Know about and explain how mechanical systems incorporating cams create movement. Know how to assemble
	Know how lever and slider mechanisms work.		Know how to create and use levers and linkages Know that mechanical systems have an input, process and output.	Build models incorporating circuits with buzzers and bulbs Know how to	Know how to build a model which incorporates a motor.	components to make working models. Know how to incorporate switches into models made to
	Know how to make a product which moves using a lever and a slider mechanism.		Know how pneumatic systems work.	incorporate switches into models made to turn them on and off	Know that mechanical and electrical systems have an input process and output.	turn them on and off Know that mechanical and electrical systems

New Vocabulary card, masking tape, joint, push, pull, up, down, pull, up, down				Know how to incorporate a pneumatic system in a product to add movement. Know how to make products which use mechanical components.	Know that electrical systems have an input, process and output. Know how to program a computer to monitor changes in the environment and control their products.	Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to control their products.	have an input process and output. Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. Know how to incorporate switches into models made to turn them on and off
T 1	join, push,	bridge/guide, straight, curve, forwards,	dowel, axle holder, chassis, body, cab mechanism winding mechanism, axle, dowel, pulley	input, process, output linear, rotary, oscillating, reciprocating, motion Mechanism: pneumatic system, components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight linear, rotary, oscillating, reciprocating, constraints, investigate	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	spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, Electrical Systems reed switch, (LDR), tilt switch, light emitting	reciprocating, hand drill, bradawl, frameworks, <u>Electrical Systems</u> control, program, system, input device, output device, series

		Use basic sewing techniques. Join fabric using a running stitch, glue and tape		Know how to sew using a range of different stitches (back stitch, oversewing, blanket stitch,running stitch Know how to create and use a simple pattern to cut out pieces of fabric for a textile product. Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy.	With confidence, demonstrate how to pin, sew and stitch materials together to create a full size textile product Know how to create and use more complex patterns to cut out pieces of fabric for a textile product. Create a textile product. Create a textile product, applying their previous knowledge and skills and using a range of materials and sewing techniques.				
				embroidery to decorate a product Make a fastening using a button or press stud.	Combine fabrics to make a high quality product for a purpose.				
New Vocabulary join, decorate, needle, fabrics. thread		New Vocabulary components, template/ pattern pieces, mark out, join, decorate, finish		New Vocabulary names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, seam, seam allowance	New Vocabulary wadding, reinforce, right side, wrong side, hem, fastenings used,				
	Iterative Process (making, evaluating, refining and improving)								
	Attempt to make their model stronger if it needs to be.	Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work.	Try alternative ways of fixing something if the first attempt is not successful.	Persevere with their product even though their original idea might not have worked.	Demonstrate motivation/ perseverance to refine and improve their products.	Demonstrate an ability to make modifications while working through the design process.			
		F	inishing Techniqu	es					

Explore, colour, design, texture, form and function.	Begin to use simple finishing techniques to improve the appearance of their product.	Start to choose and use appropriate finishing techniques based on their own ideas.	Make choices of material both for its appearance and qualities Attempt to make sure that their product looks attractive	Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.	Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.	Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT
			ng Processes and	Products		
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Discuss their work as it progresses. Say what they like and do not like about items they have made and	When looking at existing products explain what they like and dislike about the products and begin to explain why.	Look at a range of existing products. Explain what they like and dislike about the products and say why.	Begin to disassemble and evaluate familiar products and consider the views of others to improve them.	Be able to disassemble and evaluate familiar products and consider the views of others to improve them.	Start to evaluate a product against the original design specification and by carrying out tests.	Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests.
attempt to say why.	Know how to evaluate their product by discussing how well it works in relation to the purpose (design criteria).	Evaluate their work against their design criteria.	Know how to evaluate their product against original design criteria e.g. how well it meets its intended purpose.	Know how to evaluate their work both during and at the end of the Design and Make Challenge.	Know how to evaluate their work both during and at the end of the assignment.	Know how to evaluate their work both during and at the end of the assignment.
Begin to talk about their designs as they develop and identify good and bad points. Start to talk about changes made during the making process. Discuss how closely their finished products meet their design criteria.	Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make next time.	Start to evaluate their own products as they are developed, identifying what went well and possible changes they might make next time. Talk about their ideas with increasing confidence.	Know how to suggest some improvements and say what was good and not so good about their original design. Begin to evaluate how the key designs of individuals in design and technology have helped shape the world.	Evaluate their products carrying out appropriate tests. Suggest some improvements and say what was good and not so good about their original design. Begin to explain how they can improve their original designs. Evaluate their product, thinking of both appearance and the way it functions. Evaluate how the key designs of individuals in design and technology	Begin to seek evaluation from others. Evaluate appearance and function against original criteria. Evaluate how the key designs of individuals in design and technology have helped shape the world.	Seek evaluation from others. Record their evaluations using drawings with labels and annotations. Evaluate against their original criteria and suggest ways that their product could be improved. Evaluate how the key designs of individuals in design and technology have helped shape the world.

				have helped shape the world.		Justify why they selected specific materials and components
New Vocabulary	New Vocabulary existing products, evaluate, user, purpose, product, strengths, changes	New Vocabulary function, improve	New Vocabulary disassemble, views, intended purpose, original design/criteria improvements	New Vocabulary appropriate tests, appearance, function	New Vocabulary design specification	New Vocabulary areas for development, justify
		Co	oking and Nutrit	ion		
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Begin to develop a food vocabulary using taste, smell, texture and feel.	Begin to understand that all food comes from plants or animals.	Know that all food comes from plants or animals.	Know that food is grown (such as tomatoes, wheat and potatoes), reared	Know that food is grown (such as tomatoes, wheat and potatoes), reared (such	Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs,	Know and explain how ingredients were grown, reared and caught.
Explore familiar food products e.g. fruit and vegetables.	Explore common food sources (e.g. from plants or animals) Start to understand	Develop understanding of where different foods come from (e.g. foods which are farmed, grown	(such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.	as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.	chickens and cattle) and caught (such as fish) in theUK, Europe and the wider world.	Know that seasons may affect the food available. Know and explain how
Stir, spread, knead and shape a range of food	how to name and sort foods into the five groups in (e.g. use the 'The Eatwell Guide')	elsewhere (e.g. home) or caught) and also food from native to different countries.	Understand how to prepare and cook a variety of dishes including experience of	Know how to prepare and cook a variety of predominantly savoury dishes, including	Start to understand that seasons may affect the food available.	food is processed into ingredients that can be eaten or used in cooking.
and ingredients. Begin to work safely and hygienically.	Know that everyone should eat at least five portions of fruit and vegetables every day (check current quidelines!)	Know how to name and sort foods into the five groups in (e.g. use 'The Eatwell Guide')	using a heat source. Begin to understand how to use a range of techniques such as peeling, chopping, slicing,	experience of using a heat source. Know how to use a range of techniques such as peeling,	Know how food is processed into ingredients that can be eaten or used in cooking.	Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including
Start to think about the need for a variety of foods in a diet. Understand the importance of healthy food choices.	Know how to prepare simple dishes safely and hygienically, without using a heat source.	Know that everyone should eat at least five portions of fruit and vegetables every day (check current guidelines!)	grating, mixing, spreading, kneading and baking. Know how a healthy diet is made up from a variety and balance of	chopping, slicing, grating, mixing, spreading, kneading and baking. Know how to measure and weigh ingredients	Know how to prepare and cook a variety of predominantly savoury dishes including the use of a heat source. Demonstrate increasing confidence in how to use	the use of a heat source. Know and demonstrate how to use a range of techniques such as peeling, chopping, slicing, grating, mixing,
Know how to measure and weigh food items using non-statutory measures e.g. spoons, cups.	Know how to use techniques such as cutting, peeling and grating. Know how to measure and weigh food items	Recognise the need for a variety of food in a diet. Demonstrate how to prepare simple dishes	different food and drink. Begin to know that to be active and healthy, food and drink are needed to	appropriately. Know about and explain why a healthy, varied diet is important. Know that to be active and healthy, food and	a range of techniques such as peeling, chopping, slicing, grating, mixing,	spreading, kneading and baking. Know that different food and drink contain different substances

New Vocabo	ulary	Know and demonstrate how to use techniques such as cutting, peeling and grating. Make dishes from other countries (if relevant to learning theme).	energy foods) Be able to identify foods which come from the UK and other countries in the world. New Vocabulary	healthy, high energy foods. Know what to do to be hygienic and safe. Become familiar with some of the processes that foods go through to preserve them/make them more appealing.	Evaluate a meal and consider if they contribute towards a balanced diet. Know that different food and drink contain different substances (nutrients, water and fibre) that are needed for health. Know what times of year particular foods are eaten in. Know what to do to be hygienic and safe. Know how to appropriate tools and equipment, weighing and measuring with scales.	Know how to use appropriate tools and equipment, weighing and measuring with scales. Plan a healthy and affordable diet.
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		ingredients, spice, herbs t protein, vitamins, nutrient varied, gluten, dairy, aller, source, seasonality, utens stir, pour, mix, rubbing in, shape, sprinkle, crumble	s, nutrition, healthy, gy, intolerance, savoury, ils, combine, fold, knead,	