Updated DT Long Term Plan Overview (Kapow DT) – September 2023/24

	A1	A2	SP1	SP2	SU1	SU2	Stand Alone
							lessons
R	During the Early Years	Foundation Stage (EYFS), children will be given	the opportunity to expl	ore colour, texture, sha	pe and form in two and	three dimensions.
	The children will have	access to a wide range of	of constructions, collage	e, painting and drawing a	activities, using appropr	iate tools and art mater	ials.
	The Early Years outcon	nes for Design Technolo	gy are taken from the f	ollowing areas of learning	ng:		
	 Physical Devel 	opment					
	 Understanding 	g the World					
	 Expressive Art 	s and Design		Γ	I	1	
1	Textiles: Puppets	Mechanisms:		Structures:	Food: Fruit &	Mechanisms:	
		Making a moving		Constructing a	Vegetables	Wheels and axles	
	To join fabrics	story book		windmill			
	together using				To identify if food is	To understand how	
	different methods	To explore making		To include individual	a fruit or vegetable	wheels move	
		mecnanisms		preferences and	Te identifyhove	To identify what	
	To use a template to	To docign a moving		requirements in my	no identify where	to identify what	
	uraw my design	story book		uesign	which parts we eat	turning	
	To join two fabrics	SLOTY DOOK		To make a stable	which parts we eat	turning	
	together accurately	To construct a		structure	To taste and	To design a moving	
		moving picture			compare fruits and	vehicle	
	To embellish my	0 P P P P		To assemble the	vegetables		
	, design using joining	To evaluate my		components of my		To build a moving	
	methods	finished product		structure	To make a fruit and	vehicle	
					vegetable smoothie		
				To evaluate my			
				project and adapt			
				my design			
	Knowledge	Knowledge		Knowledge	Knowledge	Knowledge	
	in the upe	in the the de		in the age	interned Be	in the upe	
	To know that 'joining	To know that a		To understand that	To understand the	To know that wheels	
	technique' means	mechanism is the		the shape of	difference between	need to be round to	
	connecting two	parts of an object		materials can be	fruits and	rotate and move.	
	pieces of material	that move together.		changed to improve	vegetables.		
	together.			the strength and		To understand that	
						for a wheel to move	

To know that there	To know that a slider	stiffness of	To understand that	it must be attached	
are various	mechanism moves	structures.	some foods typically	to a rotating axle.	
temporary methods	an object from side		known as vegetables		
of joining fabric by	to side.	To understand that	are actually fruits	To know that an axle	
using staples, glue or		cylinders are a	(e.g. cucumber).	moves within an axle	
pins.	To know that a slider	strong type of		holder which is fixed	
	mechanism has a	structure (and,	To know that a	to the vehicle or toy.	
To understand that	slider, slots, guides	therefore, they are	blender is a machine		
different techniques	and an object.	the main shape used	which mixes	To know that the	
for joining materials		for windmills and	ingredients together	frame of a vehicle	
can be used for	To know that bridges	lighthouses).	into a smooth liquid.	(chassis) needs to be	
different purposes.	and guides are bits			balanced.	
	of card that	To understand that	To know that a fruit		
To understand that a	purposefully restrict	axles are used in	has seeds and a	To know some real-	
template (or fabric	the movement of	structures and	vegetable does not.	life items that use	
pattern) is used to	the slider.	mechanisms to		wheels.	
cut out the same		make parts turn in a	To know that fruits		
shape multiple		circle.	grow on trees or		
times.			vines.		
		To begin to			
To know that		understand that	To know that		
drawing a design		different structures	vegetables can grow		
idea is useful to see		are used for	either above or		
how an idea will		different purposes.	below ground.		
look.					
		To know that a	To know that		
		structure is	vegetables can come		
		something that has	from different parts		
		been made and put	of the plant.		
		together.			
Skills	Skills	Skills	Skills	Skills	
	E datata ka di	La contra de c			
Using a template to	Explaining now to	Learning the	Designing smootnie	Designing a Venicle	
create a design for a	adapt mechanisms,	importance of a	carton packaging by-	that includes wheels,	
puppet.	using bridges or	ciear design criteria.	nand or on ICI	axies and axie	
			software.	holders, which will	

	Cutting fabric neatly	guides to control the		Including individual		allow the wheels to	
	with scissors.	movement.		preferences and	Chopping fruit and	move.	
				requirements in a	vegetables safely to		
	Using joining	Designing a moving		design.	make a smoothie.	Creating clearly	
	methods to decorate	story book for a		0		labelled drawings	
	a puppet.	, given audience.		Making stable	Identifying if a food	that illustrate	
		C		structures from card,	is a fruit or a	movement.	
	Sequencing steps for	Following a design to		tape and glue.	vegetable.	Adapting	
	construction.	create moving				mechanisms.	
		models that use		Learning how to turn	Learning where and		
	Reflecting on a	levers and sliders.		2D nets into 3D	how fruits and	Testing mechanisms,	
	finished product,			structures.	vegetables grow.	identifying what	
	explaining likes and	Testing a finished				stops wheels from	
	dislikes.	product, seeing		Following	Tasting and	turning, knowing	
		whether it moves as		instructions to cut	evaluating different	that a wheel needs	
		planned and if not,		and assemble the	food combinations.	an axle in order to	
		explaining why and		supporting structure		move.	
		how it can be fixed.		of a windmill.	Describing		
					appearance, smell		
		Reviewing the		Making functioning	and taste.		
		success of a product		turbines and axles			
		by testing it with its		which are assembled	Suggesting		
		intended audience.		into a main	information to be		
				supporting	included on		
				structure.	packaging.		
2	Mechanisms:		Structures: Baby	Food: A balanced	Mechanisms:	Textiles: Pouches	
	Moving monsters		Bear's chair	diet	Fairground wheel		
						To sew a running	
	To look at objects		To explore the	To know what makes	To explore wheel	stitch	
	and understand how		concept and	a balanced diet	mechanisms and		
	they move		features of		design a Ferris wheel	To join fabrics using	
			structures and the	To taste test food		a running stitch	
	I o look at objects		stability of different	combinations	To select		
	and understand how		shapes		appropriate	To decorate a punch	
	they move		.	To design a healthy	materials	using fabric glue or	
			To understand that	wrap		stitching	
			the shape of the				

To explore different	structure affects its	To make a healthy	To build and test a		
design options	strength	wrap	moving wheel		
To make a moving	To make a structure		To make and		
monster	according to a		evaluate a structure		
	design criteria		with a rotating		
	U		wheel		
	To produce a				
	finished structure				
	and evaluate its				
	strength. stiffness				
	and stability				
 Knowledge	Knowledge	Knowledge	Knowledge	Knowledge	
To know that	To know that shapes	To know that 'diet'	To know that	To know that sewing	
mechanisms are a	and structures with	means the food and	different materials	is a method of	
collection of moving	wide, flat bases or	drink that a person	have different	ioining fabric.	
parts that work	legs are the most	or animal usually	properties and are	,	
together as a	stable.	eats.	therefore suitable	To know that	
machine to produce			for different uses.	different stitches can	
movement.	To understand that	To understand what		be used when	
	the shape of a	makes a balanced	To know the	sewing.	
To know that there	structure affects its	diet.	features of a Ferris	0	
is always an input	strength.		wheel include the	To understand the	
and an output in a	U U	To know where to	wheel, frame, pods,	importance of tying	
mechanism.	To know that	find the nutritional	a base, an axle and	a knot after sewing	
	materials can be	information on	an axle holder.	the final stitch.	
To know that an	manipulated to	packaging.			
input is the energy	improve strength		To know that it is	To know that a	
that is used to start	and stiffness.	To know that the	important to test my	thimble can be used	
something working.		five main food	design as I go along	to protect my fingers	
0 0	To know that a	groups are:	so that I can solve	when sewing.	
To know that an	structure is	Carbohydrates, fruits	any problems that	5	
output is the	something which has	and vegetables,	may occur.		
movement that	been formed or	protein, dairy and			
happens as a result	made from parts.	foods high in fat and			
of the input.		sugar.			
		-			

To know that a lever	To know that a	To understand that I			
is something that	'stable' structure is	should eat a range of			
turns on a pivot.	one which is firmly	different foods from			
	fixed and unlikely to	each food group,			
To know that a	change or move.	and roughly how			
linkage mechanism	U	much of each food			
is made up of a	To know that a	group.			
series of levers	'strong' structure is	0			
	one which does not	To know that			
	break easily.	nutrients are			
		substances in food			
	To know that a 'stiff'	that all living things			
	structure or material	need to make			
	is one which does	energy, grow and			
	not bend easily.	develop.			
		To know that			
		'ingredients' means			
		the items in a			
		mixture or recipe.			
		To know that I			
		should only have a			
		, maximum of five			
		teaspoons of sugar a			
		day to stay healthy.			
		To know that many			
		, food and drinks we			
		do not expect to			
		contain sugar do; we			
		call these 'hidden			
		sugars'.			
Skills	Skills	Skills	Skills	Skills	
	Generating and	Designing a healthy	Selecting a suitable	Designing a pouch.	
	communicating	wrap based on a	linkage system to		

	ideas using sketching	food combination	produce the desired	Selecting and cutting	
Creating a design	and modelling.	which works well	motions.	fabrics for sewing.	
criteria for a moving		together.			
monster as a class.	Learning about		Designing a wheel.	Decorating a pouch	
Designing a moving	different types of	Slicing food safely		using fabric glue or	
monster for a	structures, found in	using the bridge or	Selecting	running stitch.	
specific audience in	the natural world	claw grip.	appropriate		
accordance with a	and in everyday		materials based on	Threading a needle.	
design criteria.	objects.	Constructing a wrap	their properties.		
Making linkages		that meets a design		Sewing running	
using card for levers	Making a structure	brief.	Selecting materials	stitch, with evenly	
and split pins for	according to design		according to their	spaced, neat, even	
pivots.	criteria.	Describing the taste,	characteristics.	stitches to join	
Experimenting with		texture and smell of		fabric.	
linkages adjusting	Creating joints and	fruit and vegetables.	Following a design		
the widths, lengths	structures from		brief.	Neatly pinning and	
and thicknesses of	paper/card and	Taste testing food		cutting fabric using a	
card used.	tape.	combinations and	Evaluating different	template.	
Cutting and		final products.	designs.		
assembling	Building a strong and			Troubleshooting	
components neatly.	stiff structure by	Describing the	Testing and adapting	scenarios posed by	
Evaluating own	folding paper.	information that	a design.	teacher.	
designs against		should be included			
design criteria.	Exploring the	on a label.		Evaluating the	
Using peer feedback	features of			quality of the	
to modify a final	structures.	Evaluating which		stitching on others'	
design.		grip was most		work.	
	Comparing the	effective.			
	stability of different			Discussing as a class,	
	shapes.			the success of their	
				stitching against the	
	Testing the strength			success criteria.	
	of their own				
	structures.			Identifying aspects	
				of their peers' work	
	Identifying the			that they particularly	
	weakest part of a			like and why.	
	structure.				

			Evaluating the strength, stiffness and stability of their own structure.				
3	Food: Se To know that climate	e affects food growth	Structures: Cons To recognise how mu	structing a castle	Digital World: E To understand the i	lectronic charm mpact of the digital	Cross stitch & applique
	To understand the a seasonal foods	dvantages of eating grown in the UK	3D) are combined t stable s	o form a strong and tructure	revolution in the wo des	rld of (D&T) product ign	Exploring pneumatics
	To create a recipe nutritious using se	that is healthy and easonal vegetables	To design To constru	n a castle uct 3D nets	To write a program to panel after butto automatically initiate	initiate a flashing LED on press and/or e using the Micro:bit	Designing a pneumatic toy
	To safely follow a re	ecipe when cooking	To construct and eval	uate my final product	To create and decora the eCharm, us	ate a foam pouch for ing a template	
					TO design a display using CAD (compu software for an e	badge and/or stand iter-aided design) eCharm product	
	Know	ledge	Know	ledge	Know	ledge	
	To know that not all fr can be grown in the U	uits and vegetables K.	To understand that wi objects are more stabl	de and flat based e.	To understand that in is code that repeats so again until stopped.	programming a 'loop' mething again and	
	To know that climate a	affects food growth.	To understand the imp and stiffness in structu	portance of strength ures.	To know that a Micro:	pit is a pocket-sized,	
	certain seasons.	es and fruit grow in	flags, towers, battleme walls, moat, drawbridg	features of a castle: ents, turrets, curtain ge and gatehouse –	codeable computer. Writing a program to c	ontrol (button press)	
	To know that cooking known as a 'recipe'.	instructions are	and their purpose.		and/or monitor (sense a flashing LED algorith	light) that will initiate n.	
			I o know that a façade structure.	is the front of a			

	To know that imported food is food that has been brought into the country.	To understand that a castle needed to be strong and stable to withstand enemy attack.		
	Skills	Skills	Skills	
	Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish.	Designing a castle with key features to appeal to a specific person/purpose. Drawing and labelling a castle design using	Problem solving by suggesting potential features on a Micro:bit and justifying my ideas.	
	Knowing how to prepare themselves and a workspace to cook safely in learning the	2D shapes.	Developing design ideas for a technology pouch.	
	basic rules to avoid food contamination.	on CAD software.	Drawing and manipulating 2D shapes, using computer-aided design, to produce a point	
	Following the instructions within a recipe. Establishing and using design criteria to help test and review dishes.	Constructing a range of 3D geometric shapes using nets.	of sale badge. Using a template when cutting and	
	Describing the benefits of seasonal fruits	Creating special features for individual designs.	assembling the pouch.	
	and vegetables and the impact on the environment.	Making facades from a range of recycled materials.	Following a list of design requirements. Selecting and using the appropriate tools	
	Suggesting points for improvement when making a seasonal tart.	Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original	and equipment for cutting, joining, shaping and decorating a foam pouch.	
		design.	Applying functional features such as using foam to create soft buttons.	
		Suggesting points for modification of the individual designs.	Analysing and evaluating an existing product.	
			Identifying the key features of a pouch.	
4	Textiles: Fastenings	Mechanical Systems: Making a slingshot car	Electrical Systems: Torches	Following a recipe

To identify and evaluate different types of fastenings To design a product to meet design criteria To make and test a paper template	To build a car chassis To design a shape that reduces air resistance To make a model based on a chosen design	To learn about electrical items and how they work To analyse and evaluate electrical products To design a product to fit a set of specific	
To assemble a book jacket	To assemble and test my completed product	To make and evaluate a torch	
Knowledge	Knowledge	Knowledge	
To know that a fastening is something that holds two pieces of material together. To know that different fastening types are useful for different purposes. To know that creating a mock-up (prototype) of their design is useful for checking ideas and proportions.	To understand that all moving things have kinetic energy. To understand that kinetic energy is the energy that something (object/person) has by being in motion. To know that air resistance is the level of drag on an object as it is forced through the air. To understand that the shape of a moving object will affect how it moves due to air resistance.	To understand that electrical conductors are materials which electricity can pass through To understand that electrical insulators are materials which electricity cannot pass through. To know that a battery contains stored electricity that can be used to power products. To know that an electrical circuit must be complete for electricity to flow. To know that a switch can be used to complete and break an electrical circuit.	
Skills	Skills	Skills	
Writing design criteria for a product, articulating decisions made. Designing a personalised book sleeve.	Designing a shape that reduces air resistance. Drawing a net to create a structure from.	Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.	
	Choosing shapes that increase or decrease speed as a result of air resistance.	Making a torch with a working electrical circuit and switch.	

			· · · · · · · · · · · · · · · · · · ·	
	Making and testing a paper template	Personalising a design.	Using appropriate equipment to cut and	
	with accuracy and in keeping with the		attach materials.	
	design criteria.	Measuring, marking, cutting and assembling		
		with increasing accuracy.	Assembling a torch according to the design	
	Measuring, marking and cutting fabric		and success criteria.	
	using a paper template.	Making a model based on a chosen design.		
			Evaluating electrical products.	
	Selecting a stitch style to join fabric.	Evaluating the speed of a final product		
		based on: the effect of shape on speed and	Testing and evaluating the success of a final	
	Sewing neatly using small regular	the accuracy of workmanship on	product.	
	stitches	performance		
	Strones.			
	Incorporating a fastening to a design			
	meet portaining a rasterning to a design.			
	Testing and evaluating an end product			
	against the original design criteria			
-	Floatricel Systeme: Deedlore	Machanical Systems: Dan un haak	Food: What could be boolthior?	
5	Electrical Systems: Doodlers	Mechanical Systems: Pop-up book	Food: What could be heartmen?	
	To understand how motors are used in	To decign a non un book	To understand where feed comes from	
	alostrical products	To design a pop-up book	To understand where tood comes from	
	electrical products	To follow my design brief to make my non	To understand the term (healthu)	
	To investigate an existing product to	To follow my design bher to make my pop-	To understand the term healthy	
	dotorming the factors that affect the	up book	To adapt a traditional regina	
	products form and function	To use layers and spacers to sover the	To adapt a traditional recipe	
	products form and function	To use layers and spacers to cover the	To complete a food product	
	To put findings from research into practice	working of mechanisms	To complete a lood product	
	to develop an improved product	To croate a high quality product quitable for		
	to develop an improved product	To create a high quality product suitable for		
	To dovelop a DIV kit for another individual	a larget user		
	to accomble their product			
		Ku av da da a	Ka suda das	
	Knowledge	Knowledge	Knowledge	
	To be available to a section of the Market Market	To be see that we should use that the		
	To know that, in a series circuit, electricity	To know that mechanisms control	To understand where meat comes from –	
	only nows in one direction.	movement.	learning that beet is from cattle and now	
	To be according to an inclusion of the second	To support the state of the sta	beet is reared and processed, including key	
	I O KNOW WNEN THERE IS A DREAK IN A SERIES	To understand that mechanisms can be	weitare issues.	
	circuit, all components turn off.	used to change one kind of motion into		
		another.		

To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. To know a motorised product is one which uses a motor to function.	To understand how to use sliders, pivots and folds to create paper-based mechanisms. To know that a design brief is a description of what I am going to design and make. To know that designers often want to hide mechanisms to make a product more aesthetically pleasing	To know that I can adapt a recipe to make it healthier by substituting ingredients. To know that I can use a nutritional calculator to see how healthy a food option is. To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.	
Skills	Skills	Skills	
 Identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. Developing design criteria based on findings from investigating existing products. Developing design criteria that clarifies the target user. Altering a product's form and function by 	Designing a pop-up book which uses a mixture of structures and mechanisms. Naming each mechanism, input and output accurately. Storyboarding ideas for a book. Following a design brief to make a pop up book, neatly and with focus on accuracy. Making mechanisms and/or structures using	Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. Writing an amended method for a recipe to incorporate the relevant changes to ingredients. Designing appealing packaging to reflect a recipe.	
 Antering a product storm and function by tinkering with its configuration. Making a functional series circuit, incorporating a motor. Constructing a product with consideration for the design criteria. 	sliders, pivots and folds to produce movement. Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result. Evaluating the work of others and receiving feedback on own work	Cutting and preparing recipes safely. Using equipment safely, including knives, hot pans and hobs. Knowing how to avoid cross-contamination. Following a step-by-step method carefully to make a recipe	

	Breaking down the construction process into steps so that others can make the product. Carry out a product analysis to look at the purpose of a product along with its strengths and weaknesses. Determining which parts of a product affect its function and which parts affect its form. Analysing whether changes in configuration positively or negatively affect an existing product. Peer evaluating a set of instructions to build a product.	Suggesting points for improvement.	Identifying the nutritional differences between different products and recipes. Identifying and describing healthy benefits of food groups.	
;	Structures: Playgrounds	Textiles: Waistcoats	Digital World: Navigating the World	
	To design a playground with a variety of structures To build a range of structures To create the surrounding landscape	To design a waistcoat To mark and cut fabric according to a design To assemble a waistcoat To decorate your waistcoat	To write a design brief and criteria based on a client request. To write a program to include multiple functions as part of a navigation device. To develop a sustainable product concept. To develop 3D CAD skills to produce a virtual model. To present a pitch to 'sell' the product to a specified client.	
	Knowledge	Knowledge	Knowledge	
	To know that structures can be strengthened by manipulating materials and shapes.	To understand that it is important to design clothing with the client/target customer in mind.	To know that accelerometers can detect movement.	

To understand what a 'footprint plan' is. To understand that in the real world, design can impact users in positive and negative ways. To know that a prototype is a cheap model to test a design idea.	To know that using a template (or clothing pattern) helps to accurately mark out a design on fabric. To understand the importance of consistently sized stitches.	To understand that sensors can be useful in products as they mean the product can function without human input. To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request. To know that 'multifunctional' means an	
		object or product has more than one function. To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.	
Skills	Skills	Skills	
Designing a playground featuring a variety of different structures, giving consideration to how the structures will be used.	Designing a waistcoat in accordance with a specification and design criteria to fit a specific theme.	Writing a design brief from information submitted by a client.	
Considering effective and ineffective designs.	Annotating designs.	Developing design criteria to fulfil the client's request.	
Building a range of play apparatus structures drawing upon new and prior knowledge of structures.	Using a template when pinning panels onto fabric.	Developing a product idea through annotated sketches.	
Measuring, marking and cutting wood to create a range of structures.	Marking and cutting fabric accurately, in accordance with a design.	Placing and manoeuvring 3D objects, using CAD.	
Using a range of materials to reinforce and add decoration to structures.	Sewing a strong running stitch, making small, neat stitches and following the edge.	Changing the properties of, or combine one or more 3D objects, using CAD.	
Improving a design plan based on peer evaluation.	Tying strong knots. Decorating a waistcoat – attaching objects using thread and adding a secure fastening.	Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo).	
Testing and adapting a design to improve it as it is developed.	Learning different decorative stitches.		

Identifying what makes a successful	Sewing accurately with even regularity of	Explaining material choices and why they were chosen as part of a product concept.	
structure.	stitches.	Programming an N,E, S,W cardinal compass.	
	Evaluating work continually as it is created.		
		Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool.	
		Developing an awareness of sustainable design.	
		Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch.	
		Demonstrating a functional program as part of a product concept.	

Please refer to the relevant unit on the Kapow website for further information on planning & assessments.