



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
Early				<u>rks</u> - gift for Mother's Day	Structures - <u>Boats</u>		
Years	(5 lessons)		(6 lessons)		(6 lessons)		
	Structures <u>Junk Modelling</u> (6 lessons)						
Year 1	Textiles - Textiles: Pup	nnets	Structures - Cons	tructing a windmill	Cooking and Nutrition	n - <u>Fruit and Vegetables</u> - <u>Design</u>	
, ca. 1	(4 lessons)	<u>, 5015</u>	(3 lessons - omit le		a Smoothie and a car		
	(1.155551.5)		(.,	(4 lessons Omit lesso		
	Mechanisms - Wheels a	and axles	Mechanisms - Mak	ing a moving story book		•	
	(4 lessons)		(3 lessons - omit le				
Year 2	Structures - <u>Baby bear</u>	's chair	Mechanisms - <u>Mak</u>	ing a moving monster	Mechanisms Fairgrou	ınd wheel	
	(3 lessons - omit lesson	1)	(4 lessons)		(4 lessons)		
	· ·						
	Textiles - <u>Pouches</u>						
	(3 lessons - omit lesson 4)				Cooking and nutrition - <u>A balanced diet</u>		
					(4 lessons - omit lessons 3 and 4)		
Year 3	Cooking and nutrition -			titch and appliqué - <u>Egyptian collars</u>	Mechanical systems: Pneumatic toys		
	(4 lessons – omit lesson	s 1 and 3)	(4 lessons)		(3 lessons - omit less	on 1)	
			Digital World: Mic	robits (STEM week) Wearable	Structures - Constru	acting a castle	
			technology		(3 lessons - omit lesson 1)		
			(3 lessons - omit le	essons 1 and 6)			
Year 4	Electrical Systems - To	orches -Linked to Electricity		ns- <u>Making a slingshot car</u>	Structures - <u>Pavilions</u> (4 lessons)	<u>s</u>	
	topic		(4 lessons)	(4 lessons)			
	(3 lessons - omit lesson	1)					
					Cooking and nutrition - Adapting a recipe		
	Textiles- <u>Fastenings</u>				(4 lessons - omit less	sons 4 and 6)	
=	(3 lessons - omit lesson	/					
Year 5	Mechanical systems - Making a pop up book			Structures: <u>Bridges</u>		- <u>Developing a recipe</u>	
	(3 lessons - omit lesson 4)		(4 lessons)	(4 lessons)		n 1 and 5)	
			Digital world: Micr	robits (STEM week) - Monitoring	Electrical systems -	<u>Doodlers</u>	
			Devices		(3 lessons - omit less	on 4)	
			(4 lessons)				





У	'ear 6	Structures - <u>Playgrounds</u>	Electrical systems - Steady hand game	Cooking and nutrition - Come dine with me
		(3 lessons - omit lesson 4)	Linked to Science Electricity Unit	(4 lessons omit lessons 1 and 3)
			(3 lessons - omit lesson 1)	
		Textiles: Waistcoats	Digital World: Microbits (STEM week) - Navigating	Mechanical systems - <u>Automata toys</u> (4 lessons)
		(4 lessons)	the world (4 lessons - omit lesson 5)	





	Early Years						
Unit 1	Junk Modelling (5 lessons)	Unit 2	Soup (5 lessons)				
	Exploring materials through junk modelling, children develop their scissor skills and awareness of different materials and joining techniques. Children begin to make verbal plans and material choices before starting and problem solve while making their model.		Learning about vegetables and where they come from while preparing to make a soup. Children describe the taste of a range of vegetables and design a soup recipe as a class. They practise cutting skills and prepare the vegetables for their class soup before testing the final product.				
Unit 3	Bookmarks (6 lessons)	Unit 4	Boats (6 lessons)				
	Developing fine motor skills through a range of threading activities before moving on to use binka and a needle. Children design a bookmark, considering what to include and why and then follow their designs to complete their bookmarks.		Considering the properties of materials through water play, children discover which materials are waterproof and whether they float or sink. Children evaluate a variety of boats and use their new-found knowledge to design and make a boat that is waterproof and floats.				

	Уе	ar 1	
Autumn 1	Fruit and Vegetables (4 lessons)	Autumn 2	Making a moving story book (4 lessons)
	Handle and explore fruits and vegetables and learn how to identify which category they fall into, before undertaking taste testing to establish chosen ingredients for a smoothie they will make, with accompanying packaging.		Experiment with sliders before planning and making three pages of a moving story book, based on a familiar story, drawing the page backgrounds, creating the moving parts and assembling it.
Spring 1	Constructing a windmill (4 lessons)	Spring 2	<u>Textiles: Puppets</u> (4 lessons)
	Design, decorate and build a windmill for a mouse (client) to live in, develop an understanding of different types of windmill, how they work and their key features. Look at real existing examples and the functions that they carry out.		Explore different ways of joining fabrics before creating hand puppets based upon characters from a well-known fairytale. Develop technical skills of cutting, glueing, stapling and pinning.





Summer 1	Wheels and axles (4 lessons)	Summer 2	★ Celebrate KS1's achievements in D&T, with a gallery of their
			products. Rotate the classes and ask them to provide feedback and ask
	Learn about the main components of a wheeled vehicle. Develop		questions to their peers
	understanding of how wheels, axles and axle holders work; problem-		★ Set an invention challenge with scrap and recycled materials. Provide
	solve why wheels won't rotate; to design and build their own vehicle		the pupils with a variety of textures and joining methods before
	designs.		sharing their ideas
			★ Extra-curricular trips. You could plan to take the pupils to see what
			happens in the world of production, material sourcing, invention and
			mechanisms
			★ As overflow time to complete units where other school events
			takeover or to provide more time for classes to complete projects

Key Stage 1 - National Curriculum Design and Technology Content	Kapow Primary's Design and	Kapow Primary Topics Key Stage 1 – Year 1					
	Technology Strands	<u>Making a</u> <u>moving story</u> <u>book</u>	<u>Constructing</u> <u>a windmill</u>	<u>Textiles:</u> <u>Puppets</u>	Wheels and axles	<u>Fruit and</u> <u>Vegetables</u>	
Design purposeful, functional, appealing products for themselves and other users based on design criteria.	Design	√	~	✓	√		
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology.	Design	✓	✓	✓	✓	√	
Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	Make	√	✓	✓	✓	✓	
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Make	√	√	✓	√	√	
Explore and evaluate a range of existing products.	Evaluate	✓	✓		✓		
Evaluate their ideas and products against design criteria	Evaluate	✓	✓	✓	✓	✓	
Build structures, exploring how they can be made stronger, stiffer and more stable.	Technical Knowledge		~				
Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Technical Knowledge	√	√		~		
Use basic principles of a healthy and varied diet to prepare dishes.	Design, Make, Evaluate						





Understand where food comes from.	Design, Make,			✓
	Evaluate			

	Уе	ar 2	
Autumn 1	Fairground wheel (4 lessons) Design and create a functional Ferris wheels, consider how the different components fit together so that the wheels rotate and the structure stands freely. Select appropriate materials and develop their cutting and joining skills.	Autumn 2	A balanced diet (4 lessons) Explore and learn what forms a balanced diet, pupils will taste test ingredient combinations from different food groups that will inform a wrap design of their choice which will include a healthy mix of protein, vegetables and dairy.
Spring 1	Making a moving monster (4 lessons) After learning the terms: pivot, lever and linkage, pupils design a monster that will move using a linkage mechanism. Pupils practise making linkages and experiment with various materials to bring their monsters to life.	Spring 2	Baby bear's chair (4 lessons) Using the tale of Goldilocks and the Three Bears as inspiration, pupils help Baby Bear by making him a brand new chair, exploring different shapes and materials. When designing the chair, they consider his needs and what he likes.
Summer 1	Pouches (4 lessons) Introduction to sewing. Pupils make their own template, accurately cut their fabric and sew a basic running stitch.	Summer 2	 ★ Celebrate KS1's achievements in D&T, with a gallery of their products. Rotate the classes and ask them to provide feedback and ask questions to their peers ★ Set an invention challenge with scrap and recycled materials. Provide the pupils with a variety of textures and joining methods before sharing their ideas ★ Extra-curricular trips. You could plan to take the pupils to see what happens in the world of production, material sourcing, invention and mechanisms ★ As overflow time to complete units where other school events takeover or to provide more time for classes to complete projects





Key Stage 1 - National Curriculum Design and Technology Content	Kapow Primary's Design and	Kapow Primary Topics Key Stage 1 - Year 2					
	Technology Strands	<u>Making a</u> <u>moving</u> monster	Baby bear's chair	Pouches	<u>Fairground</u> <u>wheel</u>	A balanced diet	
Design purposeful, functional, appealing products for themselves and other users based on design criteria.	Design	√	√	~	√	~	
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock- ups and, where appropriate, information and communication technology.	Design	✓	✓	✓	√		
Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	Make	√	✓	✓	√		
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Make	√	√	√	√		
Explore and evaluate a range of existing products.	Evaluate	✓		✓	✓	✓	
Evaluate their ideas and products against design criteria	Evaluate	✓	✓	✓	✓	✓	
Build structures, exploring how they can be made stronger, stiffer and more stable.	Technical Knowledge		✓		√		
Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Technical Knowledge	√			√		
Use basic principles of a healthy and varied diet to prepare dishes.	Design, Make, Evaluate					√	





Understand where food comes from.	Design, Make,			✓
	Evaluate			

	Уе	ar 3	
Autumn 1	Egyptian collars (4 lessons)	Autumn 2	Mechanical systems: Pneumatic toys (4 lessons)
	Introduce two new skills to add to the pupils' repertoire: cross stitch and appliqué. Pupils apply their knowledge to the design, decoration and assembly of their own cushions or Egyptian collars.		Design and create a toy with a pneumatic system, learning how trapped air can be used to create a product with moving parts. Pupil are introduced to thumbnail sketches and exploded diagrams.
Spring 1	<u>Digital World: electronic charm</u> (4 lessons)	Spring 2	Eating seasonally (4 lessons)
	Design, code, make and promote a Micro:bit electronic charm to use in low-light conditions, developing their understanding of programming to monitor and control products to solve a design scenario.		Pupils discover when and where fruits and vegetables are grown and learn about seasonality in the UK. They look at the relationship between the colour of fruits and vegetables and their health benefits by making three dishes.
Summer 1	Constructing a castle (4 lessons)	Summer 2	★ Celebrate Year 3's achievements in D&T, with a gallery of their products. Rotate the classes and ask them to provide feedback and ask
	Learning about the features of a castle, pupils design and make one of their own. They will also be using configurations of handmade nets and recycled materials to make towers and turrets before constructing a stable base		questions to their peers * As overflow time to complete units where other school events takeover or to provide more time for classes to complete projects





Key Stage 2 - National Curriculum Design and Technology Content	Kapow Primary's Design and	Kapow Primary Topics Key Stage 2 – Year 3					
	Technology Strands	<u>Eating</u> <u>seasonally</u>	Constructing a castle	Egyptian collars	Mechanical systems: Pneumatic toys	<u>Digital World:</u> <u>electronic</u> <u>charm</u>	
Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.	Design		✓	✓	*	√	
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.	Design		√	√	√	√	
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	Make		√	√	√		





Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Make		√	√	√	
Investigate and analyse a range of existing products.	Evaluate		✓		✓	✓
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Evaluate		√	√	~	✓
Understand how key events and individuals in design and technology have helped shape the world.	Evaluate				~	✓
Apply their understanding of how to strengthen, stiffen and reinforce	Technical		✓			
more complex structures.	Knowledge					
Understand and use mechanical systems in their products [for example,	Technical					
gears, pulleys, cams, levers and linkages].	Knowledge					
Understand and use electrical systems in their products [for example,	Technical					✓
series circuits incorporating switches, bulbs, buzzers and motors].	Knowledge					
Apply their understanding of computing to program, monitor and control	Technical					
their products.	Knowledge					
Understand and apply principles of a healthy and varied diet.	Design, Make, Evaluate	√				
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.	Design, Make, Evaluate	√				
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	Design, Make, Evaluate	√				

	Year 4								
Autumn 1	<u>Torches</u> (4 lessons)	Autumn 2	Making a slingshot car (4 lessons)						
	Pupils apply their scientific understanding of electrical circuits to create a torch made from recycled and reclaimed materials and objects. They design and evaluate their product against set design criteria.		Transform lollipop sticks, wheels, dowel and straws into a moving car. Pupils use a glue gun to construct, make the launch mechanism, design and create the chassis of a vehicle using nets.						





Spring 1	Mindful moments timer (4 lessons)	Spring 2	Adapting a recipe (4 lessons)
	Design, program, prototype and brand a Micro:bit timer to a specified amount of minutes. Pupils carry out research and existing product analysis to determine how a programmable product could be personalised to their needs.		Work in groups to adapt a simple biscuit recipe, to create the tastiest biscuit ensuring that their creation comes within the given budget of overheads and costs of ingredients.
Summer 1	Pavilions (4 lessons)	Summer 2	<u>Fastenings</u> (4 lessons)
	Exploring pavilion structures, learning about what they are used for and investigate how to create strong and stable structures before designing and creating their own pavilions, complete with cladding.		Building upon their sewing skills from previous years, pupils design and create a book sleeve; exploring a variety of fastenings and selecting the most appropriate for their design based on strength and appropriate-use.





	Technology	<u>Pavilions</u>	Adapting a	<u>Fastenings</u>	<u>Making a</u>	Torches	Mindful
	Strands		recipe		<u>slingshot</u> <u>car</u>		moments timer
Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.	Design	~	√	✓	~	√	✓
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.	Design	~	√	√	~	√	
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	Make	~	√	√	✓	√	*
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Make	✓	*	✓	✓	✓	
Investigate and analyse a range of existing products.	Evaluate	✓	✓	✓	✓	✓	✓
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Evaluate	√	✓	✓	~	✓	✓
Understand how key events and individuals in design and technology have helped shape the world.	Evaluate				~	✓	
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Technical Knowledge	√					
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	Technical Knowledge				✓		
Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	Technical Knowledge					✓	
Apply their understanding of computing to program, monitor and control their products.	Technical Knowledge						✓
Understand and apply principles of a healthy and varied diet.	Design, Make, Evaluate						
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.	Design, Make, Evaluate		✓				
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	Design, Make, Evaluate						





		ar 5	
Autumn 1	Making a pop-up book (4 lessons)	Autumn 2	Stuffed Toys (4 lessons)
	Create a four-page pop-up story book design, incorporating a range of functional mechanisms that use levers, sliders, layers and spacers to give the illusion of movement through interaction.		Create a stuffed toy by applying skills learnt in previous units. Introduce blanket stitch.
Spring 1	Monitoring devices (4 lessons)	Spring 2	Bridges (4 lessons)
	Program a Micro: bit animal monitoring device that will alert the owner when the temperature is not optimal. Develop 3D CAD skills by learning how to navigate the Tinkercad interface and essential tools.		After learning about various types of bridges and exploring how the strength of structures can be affected by the shapes used, create their own bridge and test its durability - using woodworking tools and techniques.
Summer 1	<u>Doodlers</u> (4 lessons)	Summer 2	What could be healthier? (4 lessons)
	Explore series circuits further and introduce motors. Explore how the design cycle can be approached at a different starting point, by investigating an existing product, which uses a motor, to encourage pupils to problem-solve and work out how the product has been constructed, ready to develop their own.		Research and modify a traditional bolognese sauce recipe to make it healthier. Cook improved versions, creating appropriate packaging and learn about where the ingredients the importance of animal welfare when farming cattle.





Key Stage 2 - National Curriculum Design and Technology Content	Kapow Primary's Design and	Kapow Primary Topics Key Stage 2 - Year 5							
	Technology	<u>What</u>	Making a pop-up book	Stuffed	Doodlers	Bridges	Monitoring		
	Strands	<u>could be</u>		Toys			<u>devices</u>		
		<u>healthier?</u>							
Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.	Design	✓	√	√	\	√	✓		
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.	Design	~	√	✓		√	√		
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	Make	~	√	√	*	√			
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Make		✓	~		✓			
Investigate and analyse a range of existing products.	Evaluate	✓	✓	✓	✓	✓			
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Evaluate	~	✓	~	✓	√	√		
Understand how key events and individuals in design and technology have helped shape the world.	Evaluate	~					√		
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Technical Knowledge				√	√	√		
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	Technical Knowledge		√						
Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	Technical Knowledge				√				
Apply their understanding of computing to program, monitor and control their products.	Technical Knowledge	✓					✓		
Understand and apply principles of a healthy and varied diet.	Design, Make, Evaluate	√							
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.	Design, Make, Evaluate	✓							





	easonality, and know where and how a variety of ingredients ared, caught and processed.	Design, Make Evaluate	,	√					
		<u>Year</u>	⁻ 6						
Autumn 1	Navigating the world (5 lessons)		Autumn	2	Come dine with me (4 lessons)				
	Program a navigation tool to produce a multifunctional device trekkers. Combine 3D virtual objects to form a complete preconcept in 3D computer-aided design modelling software.				Research and prepare a three-course meal and taste-test and score their food. Research the journey of their main ingredient from 'farm fork' or write a favourite recipe.				
Spring 1	Playgrounds (4 lessons)		Spring 2	2	Waistcoats (4 lessons)				
	Design and create a model for a new playground featuring five apparatus, made from three different structures. Using a footprint as the base, practise visualising objects in plan view and get creative including natural features.				Select fabrics, use templates, pin, decorate and stitch materials together to create a waistcoat for a person or purpose of their choosing. Create or use a pattern template to fit a desired person or item (e.g. teddy bear).				
Summer 1	Steady hand game (4 lessons)		Summer	2	<u>Automata toys</u> (4 lessons)				
	Design and create a steady hand game, use nets to create the and apply knowledge of electrical circuits to build an operat with a buzzer that completes the circuit when the handle me contact with the wire.	ional circuit			Use woodworking skills, pupils construct an automata; measuring and cutting their materials, assembling the frame, choosing cams and designing the characters that sit on the followers to form an interactive shop display.				





Key Stage 2 - National Curriculum Design and Technology Content	Kapow Primary's Design and	Kapow Primary Topics Key Stage 2 – Year 6							
	Technology	Come dine	Automata	Steady	Playgrounds	Navigating	Waistcoats		
	Strands	with me	toys	hand game		the world			
Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.	Design	√	*	<i></i>	√	✓	✓		
Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.	Design	*	√	√	√	✓	✓		
Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	Make	*	✓	✓	✓	✓	✓		
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	Make	√		√	√		✓		
Investigate and analyse a range of existing products.	Evaluate		✓	✓	✓		✓		
Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Evaluate	√	~	~	√	√	√		
Understand how key events and individuals in design and technology have helped shape the world.	Evaluate		√	√					
Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	Technical Knowledge				√				
Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	Technical Knowledge		✓						
Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	Technical Knowledge			~					
Apply their understanding of computing to program, monitor and control their products.	Technical Knowledge					✓			
Understand and apply principles of a healthy and varied diet.	Design, Make, Evaluate	√							
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques.	Design, Make, Evaluate	√							
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	Design, Make, Evaluate	√							