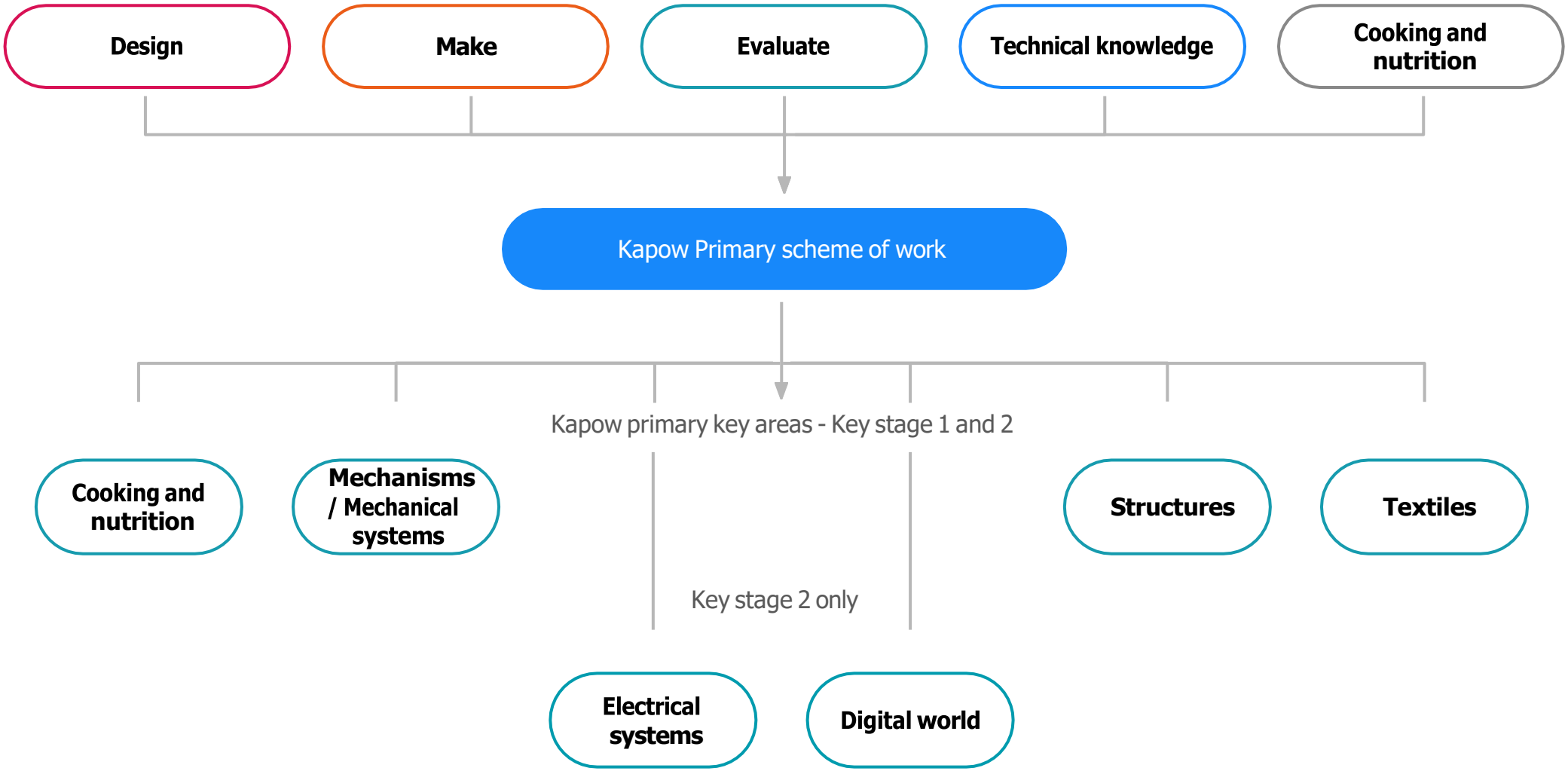
Design and technology

National curriculum mapping

Introduction

Kapow Primary offers full coverage of the KS1 and KS2 Design and technology curriculum and we have categorised our content into six areas, with five strands that run throughout:



Overview

	Cooking and nutrition	Mechanisms	Structures	Textiles	Electrical systems	Digital world
Aside from Electrical systems and Digital world, which are taught in KS2 only, each of these acts as the focus for a unit within each year group						
Year 1	Smoothie	Wheels and axles		Puppets		
Year 2	A balanced diet	Ferris wheels	Baby bear's chair			
Year 3	Eating seasonally			Cross stitch and appliqué		Electronic charm
Year 4	Adapting a recipe	Mechanical Cars			Torches	
Year 5	What could be healthier?		Bridges	Stuffed toys		
Year 6	Come dine with me		Playgrounds		Steady hand games	
The four strands (below) of the Design and technology curriculum run through each unit; with Cooking and nutrition as the focus of one unit per year						

D Design M Make E Evaluate TK Technical knowledge C&N Cooking and nutrition

National Curriculum by Kapow Primary's themes and topics

Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - **Year 1**				
				*Puppets	*Wheels and axles	*Fruit and vegetable smoothies
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**			✔	✔	

***Units that are included in the condensed curriculum**

Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - **Year 1**				
				*Puppets	*Wheels and axles	*Fruit and vegetable smoothies
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	**Cooking and nutrition**					✔
Understand where food comes from	**Cooking and nutrition**					✔

***Units that are included in the condensed curriculum**

Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - **Year 2**				
			*Baby bear's chair		*Ferris wheels	*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**		✔		✔	

***Units that are included in the condensed curriculum**

National Curriculum by Kapow Primary's themes and topics

Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - **Year 2**				
			*Baby bear's chair		*Ferris wheels	*A balanced diet
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	**Cooking and nutrition**					✔
Understand where food comes from	**Cooking and nutrition**					✔

***Units that are included in the condensed curriculum**

National Curriculum by Kapow Primary's themes and topics

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Lower key stage 2 - **Year 3**					
		*Eating seasonally		*Cross stitch and appliqué			*Electronic charm
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**			✔			✔

***Units that are included in the condensed curriculum**

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Lower key stage 2 - **Year 3**					
		*Eating seasonally			*Pneumatic toys		*Electronic charm
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	**Cooking and nutrition**	✔					
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques	**Cooking and nutrition**	✔					
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	**Cooking and nutrition**	✔					

***Units that are included in the condensed curriculum**

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Lower key stage 2 - **Year 4**					
		*Pavilions	*Adapting a recipe			*Torches	
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**	✔	✔			✔	

***Units that are included in the condensed curriculum**

National Curriculum by Kapow Primary's themes and topics

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Lower key stage 2 - **Year 4**					
		*Pavilions	*Adapting a recipe			*Torches	
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	**Cooking and nutrition**		✔				
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques	**Cooking and nutrition**		✔				
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	**Cooking and nutrition**		✔				

***Units that are included in the condensed curriculum**

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Upper key stage 2 - **Year 5**					
		*What could be healthier?	*Pop-up books	Stuffed toys			
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 wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	**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**		✔	✔			

***Units that are included in the condensed curriculum**

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Upper key stage 2 - **Year 5**					
		*What could be healthier?	*Pop-up books	Stuffed toys			
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	**Cooking and nutrition**	✔					
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques	**Cooking and nutrition**	✔					
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	**Cooking and nutrition**	✔					

***Units that are included in the condensed curriculum**

National Curriculum by Kapow Primary's themes and topics

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Upper key stage 2 - **Year 6**					
		*Come dine with me		*Steady hand game	*Playgrounds		
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 wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities	**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**			✔	✔		

***Units that are included in the condensed curriculum**

National Curriculum by Kapow Primary's themes and topics

Key Stage 2 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Upper key stage 2 - **Year 6**					
		*Come dine with me		*Steady hand game	*Playgrounds		
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	**Cooking and nutrition**	✔					
Prepare and cook variety of predominantly savoury dishes using a range of cooking techniques	**Cooking and nutrition**	✔					
Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed	**Cooking and nutrition**	✔					

***Units that are included in the condensed curriculum**

Cross-curricular links - Year 1

National curriculum subjects	Kapow Primary topics				
	*Fruit and vegetables	*Making a moving story book	*Constructing a windmill	*Puppets	*Wheels and axles
English		**Reading -** appreciating rhymes such as Humpty Dumpty		**Reading -** Listening to and answering questions about the main character's appearance in Little Red Riding Hood (or another story of your choice)	
Maths			Recognising 2D and 3D shapes, beginning to recognise how a net can make a 3D shape		Identifying lengths on their design, considering how wheels work
Science	**Thinking scientifically -** classifying fruit and vegetables **Animals, including humans -** learning about the importance of fruit and vegetables in the diet and food hygiene				
Art and design		Drawing the background of their design along with the moving parts			
Computing					Digitally painting a flag for their car (extension activity)
Geography			Learning about how windmills are used today to generate electricity (wind turbines)		

Cross-curricular links - Year 2

National curriculum subjects	Kapow Primary topics				
	*Fairground wheel	*A balanced diet	*Making a moving monster	*Baby bear's chair	*Pouches
English		**Reading** - reading a letter and summarising the key points		**Reading** - discussing the events from 'Goldilocks and the three bears'	
Maths	Talking about 3d shapes and naming them correctly	Using inequalities signs (<>) to compare sugar in drinks, using grams (g) to give weights	Recording a tally survey	Creating 3D shapes from playdough, Recording totals on a tally chart	
Science	Discussing the properties of materials when choosing materials for their fairground wheel	Discussing the senses that humans have, having an awareness of food hygiene		Interpreting the results of the tip-test	
Art and design			Sketching design ideas		Decorating the pouch using a range of materials
Computing	Practising drag and drop skills by creating an inspiration board (extension activity)				
Geography				Identifying natural and man-made structures	

Cross-curricular links - Year 3

National curriculum subjects	Kapow Primary topics					
	*Cross-stitch and appliqué Cushions or Egyptian collars	Electric poster	*Pneumatic toys	*Electronic charm	*Eating seasonally	*Castles
English				**Reading -** considering language on sales displays and how it persuades us to buy the product	**Reading -** following the instructions in a recipe	
Maths	Choosing a 2D shape for their cushion, using knowledge of length to leave correct space for stuffing, seam and running stitch length			Drawing and manipulating 2D shapes, working with nets of 3D shapes (extension activity)		Identifying and naming 2D and 3D shapes in castle structures, drawing 2D shapes, constructing nets to make 3D shapes
Science		**Electricity (Y4) -** building a simple circuit and identifying components of a circuit				
Art and design	Designing a theme for their applique shapes (maybe around another topic)		Decorating their pneumatic toys with embellishments			
Computing				Learning about the history of Computers and how they have developed over time into smart wearables today, writing a programme to enable an LED to flash on a button press, using CAD software to design		Using powerpoint to create their own net (extension activity)
Geography			Discussing how electricity can be made using wind and sea power		Knowing what climate is and that it affects food growth, reading information from a map of the world, knowing the environmental impact of importing food	
History	Learning about Egyptian collars (If you choose the Egyptian collars theme for this unit)	Creating posters that give information about Ancient Rome		Learning about the Digital revolution and the history of computers		Learning about the features of castles and their purpose
RSE/PSHE					Considering food hygiene, knowing that fruit and vegetables give us nutritional benefits	

Cross-curricular links - Year 4

National curriculum subjects	Kapow Primary topics					
	*Torches	*Making a slingshot car	Mindful moments timer	*Adapting a recipe	*Pavilions	*Fastenings
English				**Spoken language -** giving a brief pitch for their biscuit recipe		
Maths		Using nets to create 3D shapes, measuring accurately	Creating a 3D structure using a net	Completing a budget, considering profit margins, using nets to create 3D packages	Building 3D shapes to test the strength of different structures	
Science	**Electricity -** Identifying electrical products, conductors and insulators, building a simple series circuit with a switch	**Forces -** understanding the concept of air resistance (Y5) when designing their car				
Art and design		Decorating the panels of the chassis	Decorating their mindful moments timer case		Creating textural effects with materials to clad their structure	
Computing			Programming a micro:bit to function as a timer, debugging code, using software to create logos			Taking photographs of fastenings they find
Geography		Considering eco-friendly ways of powering cars				
History	Learning about life before electricity	Considering life before the motor car				
RSE/PSHE	Identifying electrical hazards		Sharing ways to be mindful and how this helps us to look after our mental health	Following basic food hygiene		

Cross-curricular links - Year 5

National curriculum subjects	Kapow Primary topics					
	*Pop-up books	*Doodlers	*Monitoring devices	*What could be healthier?	*Bridges	Stuffed toys
English	Adding captions to their pop-up books to suit the audience	**Writing -** writing instructions on how to make a Doodler				
Maths					Measuring wood accurately to the nearest mm, draw 45° angles	
Science		**Electricity -**Exploring electrical circuit, identifying and naming components, working investigatively and drawing conclusions	**Animals, including humans -** finding out about the needs of animals		Using investigative methods to test the strength of a range of bridges, considering properties of materials	
Art and design	Drawing components for their pop-up books			Designing a label for their bolognaise		
Computing			Using search engines to research animals, programming and debugging an animal monitor, using CAD skills to create virtual models	Using search engines to research variations of a recipe		
Geography			Considering how we can use the six Rs of sustainability to develop more sustainable habits			
History			Learning about how thermometers have developed, learning about the history behind plastic use			
RSE/PSHE			Considering our shared responsibilities for protecting the environment	Considering the rights of animals and the ethical issues behind cattle farming, understanding what makes a balanced diet, reading nutritional values and deciding which recipe is healthier		

Cross-curricular links - Year 6

National curriculum subjects	Kapow Primary topics					
	*Navigating the world	*Come dine with me	*Playgrounds	Waistcoats	*Steady hand game	*Automata toys
English	**Reading -** finding key points in a clients letter to create design criteria **Spoken language -** presenting a pitch about their product					
Maths			Measuring accurately to the nearest mm		Using net templates to create the base of their game	Measuring accurately to the nearest mm
Science	Considering materials and their functional properties	Recognising the impact of diet on our bodies			Drawing circuit diagrams, naming components and their functions	
Art and design			Creating textural effects with materials to clad their structure		Exploring one line drawings	
Computing	Programming a compass (all), pedometer and a light/thermometer (extension), using CAD skills to produce a virtual model				Recapping rules for safe online searching	
Geography	Considering sustainability in design					
History						Learning about Victorian toys
RSE/PSHE		Considering different dishes from other cultures, developing awareness of healthy eating, following basic food hygiene				

Version history

This page shows recent updates to the document.

Date	Update
26.07.22	Cross curricular links added p.16-p.21
19.08.22	Alternative theme DT: Egyptian collars added