

Aiskew, Leeming Bar

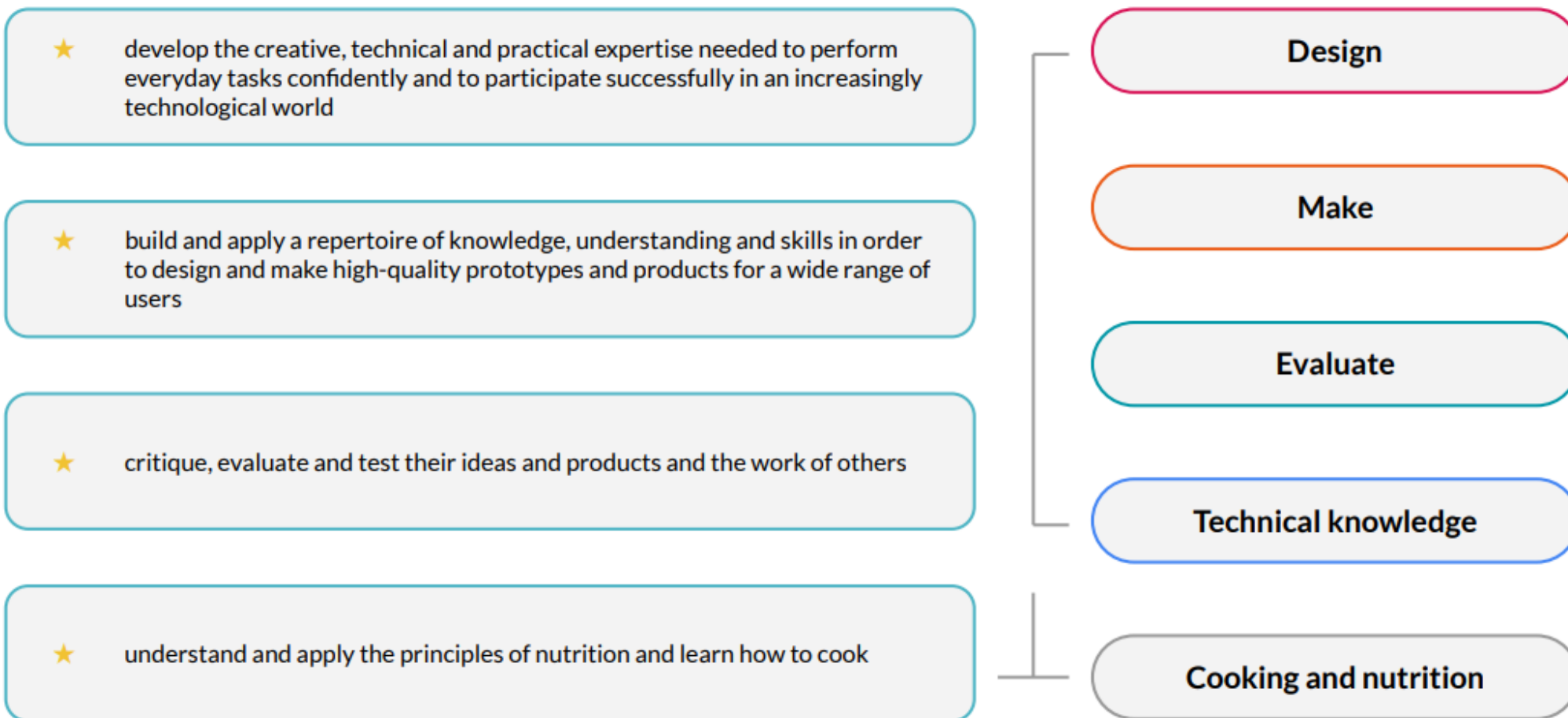
Church of England Primary School

*'Rooted in love and growing together
to become lifelong learners'*

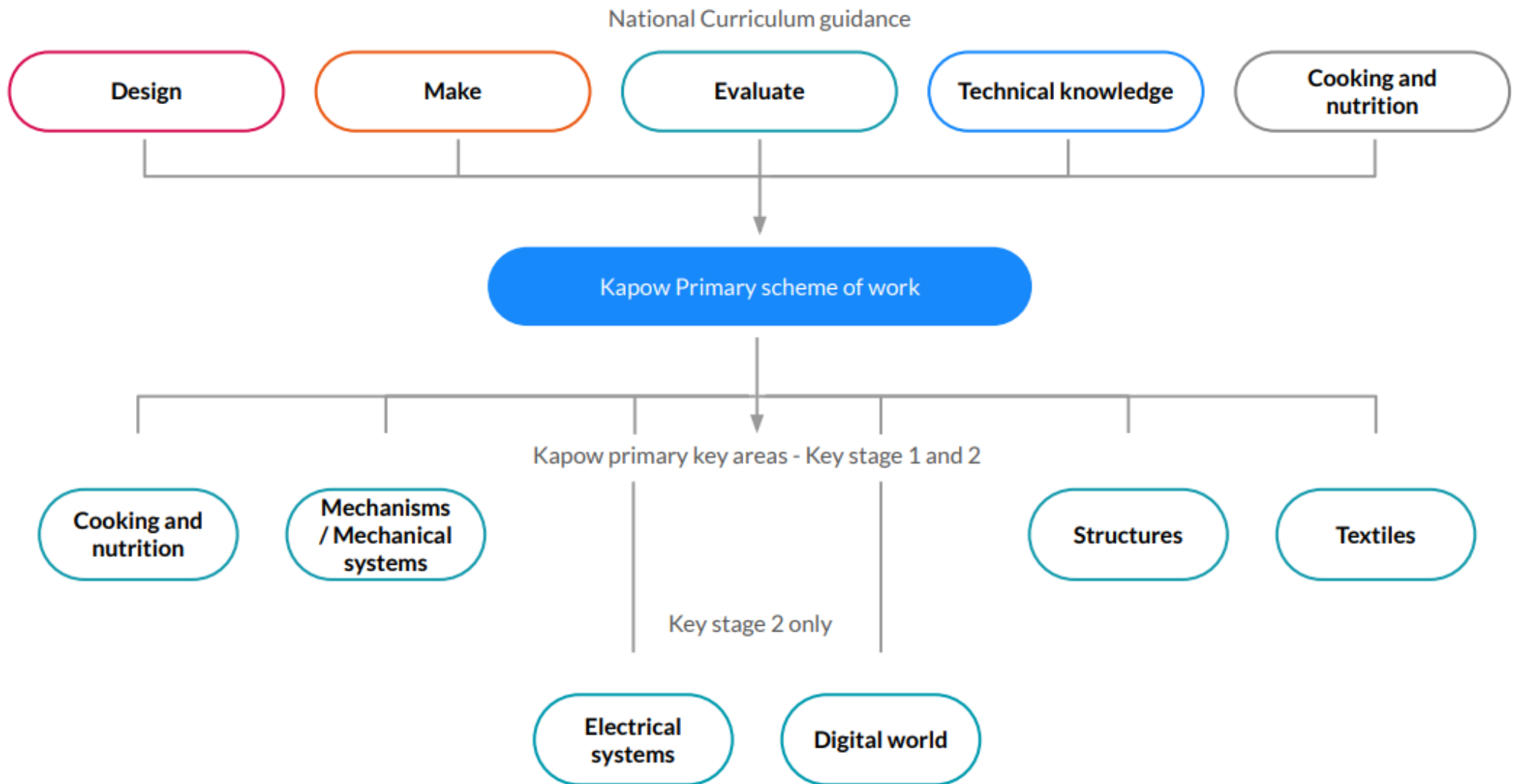
Design and technology - Alignment with the National Curriculum

The national curriculum Programme of study for Design and technology aims to ensure that all pupils:

There are five key strands which run throughout our scheme of work:



How the Design and technology scheme of work is organised



Each of the key areas link to the technical knowledge section of the Design and technology national curriculum or reinforces principles learnt through exploring various methods and techniques. From KS1 to KS2, the technical knowledge descriptors build upon/link to prior learning and/or introduce new learning.

	Structures	Mechanisms	Textiles	Electrical systems	Digital world	Cooking and nutrition
KS1	<p>Build structures such as windmills and chairs, exploring how they can be made stronger, stiffer and more stable.</p> <p>Recognise areas of weakness through trial and error.</p>	<p>Introduce and explore simple mechanisms, such as sliders, wheels and axles in their designs.</p> <p>Recognise where mechanisms such as these exist in toys and other familiar products.</p>	<p>Explore different methods of joining fabrics and experiment to determine the pros and cons of each technique.</p>			<p>Learn about the basic rules of a healthy and varied diet to create dishes.</p> <p>Understand where food comes from, for example plants and animals.</p>
KS2	<p>Continue to develop KS1 exploration skills, through more complex builds such as pavilion and bridge designs. Understand material selection and learn methods to reinforce structures.</p>	<p>Mechanical systems</p> <p>Extend pupils understanding of individual mechanisms, to form part of a functional system, for example: Automatas, that use a combination of cams, followers, axles/shaft, cranks and toppers.</p>	<p>Understand that fabric can be layered for effect, recognising the appearance and technique for different stitch and fastening types, including their:</p> <ul style="list-style-type: none"> • Strength. • Appropriate use. • Design. 	<p>KS2 only* Create functional electrical products that use series circuits, incorporating different components such as bulbs, LEDs, switches, buzzers and motors. Consider how the materials used in these products can:</p> <ul style="list-style-type: none"> • Protect the circuitry. • Reflect light. • Conduct electricity. • Insulate. 	<p>KS2 only* Learn how to develop an electronic product with processing capabilities.</p> <p>Apply Computing principles to program functions within a product including to control and monitor it.</p> <p>Understand how the history and evolution of product design lead to the on-going Digital revolution and the impact it is having in the world today</p>	<p>Understand and apply the principles of a healthy and varied diet to prepare and cook a variety of dishes using a range of cooking techniques and methods.</p> <p>Understand what is meant by seasonal foods.</p> <p>Know where and how ingredients are sourced.</p>

Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - Year 1				
		* Moving story books	* Windmills	* 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	✓	✓	✓	✓	

Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - Year 1				
		* Moving story books	* Windmills	* 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					✓

Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - Year 2				
		* Moving monsters	* Baby bear's chair	* Pouches	* 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	✓	✓	✓	✓	

Key Stage 1 - National curriculum Design and technology content	Kapow Primary's Design and technology strands	Kapow Primary topics Key stage 1 - Year 2				
		*Moving monsters	*Baby bear's chair	*Pouches	*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					✓

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	*Castles	*Cross stitch and appliqué	*Pneumatic toys		*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		✓	✓	✓		✓

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	*Castles	*Cross stitch and appliqué	*Pneumatic toys	Electric poster	*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	✓					

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	* Fastenings	* Slingshot cars	* 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	✓	✓	✓	✓	✓	

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	* Fastenings	* Slingshot cars	* 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		✓				

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		*Doodlers	*Bridges	*Monitoring devices
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		✓		✓	✓	✓

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		*Doodlers	*Bridges	*Monitoring devices
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	✓					

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	*Automata toys	*Steady hand game	*Playgrounds	*Navigating 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	✓	✓	✓	✓	✓	
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		✓	✓	✓	✓	

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	* Automata toys	* Steady hand game	* Playgrounds	* Navigating the world	
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	✓					