



Design and Technology Medium Term Planning

Year 3



Key Concept Overview

Key Concepts	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design 	<p>-I am beginning to design products using pictures and words based on a design criteria.</p> <p>-I use pictures, words and models to convey what I want to design.</p>	<p>-I use simple drawings and labels to record my ideas.</p> <p>-I design products that have a clear purpose based on my own design criteria.</p>	<p>-I can research similar products to develop my own design ideas.</p> <p>-I am able to develop a design through discussion and annotated sketches to add detail to my design.</p>	<p>-I generate and develop ideas using exploding diagrams and prototypes.</p> <p>-I use different ways to creatively record and present my designs to show they are fit for purpose.</p>	<p>-I can generate and develop ideas using pattern pieces and computer aided design.</p>	<p>-I generate and develop ideas using a variety of design techniques.</p> <p>-I justify my plans in a convincing way.</p> <p>-I use research and develop design criteria to design innovative functional and appealing products aimed at a specific group.</p>
Make 	<p>-I can choose appropriate re-sources and tools to make a product.</p> <p>-I can use a range of materials to make a product, including construction materials, textiles and ingredients.</p>	<p>-I can select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing.)</p> <p>-I use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the materials have been selected.</p>	<p>-I can choose a material for both its suitability and its appearance and explain why it has been selected.</p> <p>-I can think ahead about the order of my work, select tools needed for a given task and give reasons for my choices.</p>	<p>-I can choose and use appropriate tools from a wider range to perform practical tasks.</p> <p>-I can choose suitable materials from a wider range and explain its suitability.</p>	<p>-I use a range of appropriate tools competently.</p> <p>-I can join and combine a range of materials competently.</p>	<p>-I select and use specialist tools and equipment to perform practical tasks accurately.</p> <p>-I can select from and use a wider range of materials and components according to their functional qualities and aesthetic qualities.</p>
Evaluate 	<p>-I am beginning to explore and evaluate a range of existing products by evaluating the product against the purpose</p> <p>-I can evaluate my designs and products by saying how well they do the job they were designed for.</p>	<p>-I can explore and evaluate a range of existing products by looking at function and materials.</p> <p>-I can evaluate my ideas and products against set design criteria.</p>	<p>-I can investigate and analyse an existing product by identifying whether it is fit for purpose and how easy it is to use.</p> <p>-I can prove that my design meets some set criteria and evaluate how well it works.</p>	<p>-I can explain why certain materials were used to make existing products.</p> <p>-I can evaluate and suggest improvements for my design.</p>	<p>-I can evaluate appearance and function against original criteria.</p> <p>-I am able to justify decisions made during the design process.</p>	<p>-I can critically evaluate the quality of the design, manufacture and fitness for purpose by comparing existing products</p> <p>-I can evaluate my ideas and products against my own design criteria and consider the views of others to improve my work.</p>
Technical Knowledge 	<p>-I can explore and use simple mechanisms in my products.</p>	<p>-I can build structures, exploring how they can be made stronger, stiffer and more stable.</p>	<p>-I can apply my understanding of how to strengthen, stiffen and reinforce more complex structures.</p>	<p>-I am able to understand and use mechanical systems in my products.</p>	<p>-I can understand and use electrical systems in my products.</p>	<p>-I am able to control and model using an ICT control programme.</p>
Cooking and nutrition 	<p>I can tell you where my food comes from.</p>	<p>I can use a range of ingredients to prepare a healthy dish.</p>	<p>-I can make healthy eating choices from an understanding of a balanced diet.</p> <p>-I can use a range of ingredients to prepare a healthy dish, explain why the ingredients were chosen and the effects on the body.</p> <p>-I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading or kneading.</p>		<p>-I can explore a range of cooking techniques to produce a healthy balanced dish.</p> <p>-I can measure out ingredients accurately and use ratios to scale up or down a recipe.</p> <p>-I understand seasonality and know when and how a variety of ingredients are grown, reared, caught and processed.</p> <p>-I understand the importance of correct storage and handling of ingredients.</p>	

DT Whole School Overview





	Autumn		Spring		Summer	
Year 1	Textiles puppets	Food & Nutrition Fruit and Vegetables.	Mechanisms Moving storybook		Structures windmills	Mechanisms Wheels and axels
Year 2	Mechanisms Fairground wheels	Structures Victorian houses	Textiles Easter pouches		Mechanisms Moving monster	Food and nutrition Healthy wraps
Year 3	Mechanical systems Pneumatic toys		Food and nutrition Eating seasonally– vegetable tart		Textiles Cushions	Structures Constructing a castle
Year 4	Electrical systems torches	Textiles Book sleeve	Structures pavilions	Mechanical systems Slingshot chariot	Food and nutrition Adapting a recipe– biscuits *enterprise opportunity	
Year 5	Food and nutrition What could be healthier?	Electrical systems Electronic Christmas cards	Digital world Monitoring device		Structures Bridges	Mechanical systems Making a pop-up book.
Year 6	Structures playground	Mechanical systems Automata toys	Digital world Navigating the world		Food Come dine with me	Electrical systems Steady hand game


Year 3

Autumn

Mechanical systems: Pneumatic toys.

[Mechanical Systems: Pneumatic toys - Kapow Primary](#)

Prior Learning	Mechanisms —Year 1 wheels and axles, Year 2 Fairground wheels.				
Vocabulary	exploded-diagram, function, input, lever, linkage, mechanism, motion, net , output, pivot, pneumatic system, thumbnail sketch.				
End point	Children will have an understanding of pneumatic systems. They will have designed, made and evaluated their own pneumatic toy.				
Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources
Design Evaluate  	Significance Similarity and difference	lesson 1	OO: To be able to research similar products to develop my own design ideas. OO: To be able to investigate and analyse an existing product by identifying whether it is fit for purpose and how easy it is to use. LO: I understand what pneumatic systems are.	Recap prior learning (Year 2 mechanisms-fairground wheel.) KAPOW lesson 1: D&T KS2 Y3: Exploring pneumatics - Kapow Primary Children will learn about and discuss the meaning of ‘pneu’ and explore how pneumatic systems are made and used. Children to consider and discuss how effective the pneumatic systems are.	Simple pneumatic system prepared by teacher. Printed resources
Design 	Responsibility Written and oral expression	Lesson 2	OO: To be able to develop a design through discussion and annotated sketches to add detail to my design. LO: I can design a pneumatic toy.	Recap last lesson- what a pneumatic system is. Lesson 2- D&T KS2 Y3: Designing a pneumatic toy - Kapow Primary Children are to design a pneumatic toy for Year 1 children.	Videos on Kapow Printed resources
Make 	Responsibility Cause and consequence	Lesson 3 and lesson 4	OO: To be able to choose a material for both its suitability and its appearance and explain why it has been selected. To be able to think ahead about the order of my work, select tools needed for a given task and give reasons for my choices. LO:- I can make a pneumatic toy.	Review design ideas. Lesson 3- D&T KS2 Y3: Making pneumatic toys - Kapow Primary Lesson 4 D&T: Y3: Decorating and assembling my toy - Kapow Primary Children will make their own choices on materials and tools according to their design. Children to use their design to make their pneumatic toy focussing on the mechanism/ pneumatic feature then to assemble and finish toy.	Resources will depend on the children’s designs.


Key Concept	Second order concept	Lesson sequence	Learning Objectives	Suggested teaching sequence	Resources
<p>Evaluate</p> 	<p>Responsibility Similarities and differences Written and oral expression.</p>	<p>Lesson 5</p>	<p>OO: To be able to prove that my design meets some set criteria and evaluate how well it works. LO: I can evaluate my pneumatic toy based on my design criteria.</p>	<p>Children to test and evaluate their product. Children to consider the following: Did my design and product meet the set criteria? How well does it work / Is my product fit for purpose? Did I make any changes to my design? How and why?</p>	<p>Written evaluation in DT books.</p>
<p>End of unit assessment quiz: Assessment Resources KS2 D&T: Mechanical systems: Pneumatic toys (kapowprimary.com)</p>					


Year 3

Spring

Cooking and nutrition: Eating Seasonally

[Food: Eating seasonally - Kapow Primary](#)

Prior Learning	Year 1 Fruit and vegetables, Year 2 A balanced diet.				
Vocabulary	climate, diet, ingredients, natural, fruit, vegetables. processed, reared, seasonal				
End point	Children will use their knowledge of healthy foods and seasonality to create a vegetable tart.				
Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources
Cooking and Nutrition 	Responsibility	Lesson 1	OO: I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading or kneading. LO: I can make Japanese inspired fruit skewers.	Lesson 1— KS2, Y3, DT, Lesson 1: Where in the world? - Kapow Primary Children to learn about and make Japanese inspired fruit skewers. Children to complete where in the world activity and map activity. Children to create fruit skewers— remember to use tools safely.	bananas watermelon strawberries lychees (fresh or tinned) plum sauce Wooden skewers chopping boards, knives, pastry brush, Optional pre-heated grill Printed activities.
	Similarity and difference	Lesson 2	OO: To be able to make healthy eating choices from an understanding of a balanced diet. LO: I can choose foods based on seasonality.	Lesson 2— KS2, Y3, DT, Lesson 2: British seasonal foods - Kapow Primary Children to consider the use of British seasonal foods. Children to learn how to make a crumble.	Kapow videos Printed activities

Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources
Cooking and Nutrition 	Responsibility Cause and consequence	Lesson 3	OO: to be able to use a range of ingredients to prepare a healthy dish, explain why the ingredients were chosen and the effects on the body. LO: I understand the health benefits of different vegetables based on their colour.	Lesson 3— KS2, Y3, DT, Lesson 3: Rainbow food - Kapow Primary Children will learn about the health benefits of different foods based on their colour. Research vegetables that they can put in a savoury tart along with other ingredients needed (do not need method at this point). Design the tart based on their knowledge of health benefits and flavours.	Computer / ipads for group research.
	Responsibility	Lesson 4	OO: To be able to use a range of ingredients to prepare a healthy dish, explain why the ingredients were chosen and the effects on the body. LO: I can make a healthy vegetable tart.	Lesson 4— KS2, Y3, DT, Lesson 4: Making tarts - Kapow Primary Children to make the tarts they designed in the last lesson.	




End of unit assessment quiz: [Assessment Resources and Quiz KS2 D&T: Food: Eating Seasonally \(kapowprimary.com\)](#)


Year 3

Summer

Structures: Constructing a castle

[D&T Structures: Constructing a castle KS2 - Kapow Primary](#)

Prior Learning	Year 1 constructing windmills, Year 2 Victorian houses.				
Vocabulary	2D shapes, 3D shapes, buildings, castle, design criteria, feature, net, recyclable, scoring, stable, strong, structure, tab, weak, reinforce, flag, façade. towers, turrets, battlements, moat, gatehouse, curtain walls, drawbridge, flag				
End point	By the end of the unit, the children will have researched, designed, made and evaluated their own model of a castle.				
Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources
Design 	Significance Similarity and difference	Lesson 1	OO– To be able to research similar products to develop my own design ideas. LO—I can research and describe the features of a castle.	Recap prior knowledge of structures. Lesson 1: D&T Lesson 1: Features of a Castle KS2 Y3 - Kapow Primary Features of a castle. Children consider ways they are strong. Children to learn about and discuss features of a castle. Introduce to key terminology related to castles and structures.	Printed resources 2d shapes.
	Written and oral expression	Lesson 2	OO– To be able to develop a design through discussion and annotated sketches to add detail to my design LO– I can design a castle model.	Lesson 2—Design D&T Structures: Constructing a castle KS2 - Kapow Primary Children to design their castle models.	Printed resources
Make Technical knowledge  	Responsibility Cause and consequence	Lesson 3 and lesson 4	OO- I can choose a material for both its suitability and its appearance and explain why it has been selected. OO- I can apply my understanding of how to strengthen, stiffen and reinforce more complex structures. LO– I can make a castle model.	Review designs. Lesson 3: D&T Lesson 3: Nets and Structures KS2 Y3 - Kapow Primary Lesson 4: D&T Lesson 4: Building a Castle KS2 Y3 - Kapow Primary Children construct their nets to make 3D shapes to use in the construction of their castles in Lesson 4. Take photographs for evidence.	Materials and tools to construct castle models .

Key Concept	Second order concept	Lesson sequence	Learning Objectives	Suggested teaching sequence	Resources
<p>Evaluate</p> 	Written and oral expression	Lesson 5	<p>OO- I can prove that my design meets some set criteria and evaluate how well it works.</p> <p>LO- I can evaluate the effectiveness of my structure based on my design criteria.</p>	Children to evaluate their castle models.	
<p>End of unit assessment quiz: Assessment Resources and Quiz KS2 D&T: Constructing a Castle (kapowprimary.com)</p>					

Year 3

Summer



Textiles: cushions



[Textiles: Cushions - Kapow Primary](#)

Prior Learning	Year 1 Puppets, Year 2 Pouches. Can I thread a needle? Can I form different stitches? Can I use a template?
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Vocabulary	Accurate, Applique, Cross-stitch, Cushion , Decorate, Detail, Fabric, Patch, Running-stitch, Seam, Stencil, Stuffing, Target audience, Target customer, Template.
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End point	The children will practise a new sewing skill then design, make and evaluate their own cushion using cross stitch and appliques.
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Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources
Make 	Responsibility Cause and consequence	Lesson 1	OO: I can think ahead about the order of my work, select tools needed for a given task and give reasons for my choices. LO: I can practise using cross stiches and applying appliques.	Recap prior knowledge of textiles skills. Lesson 1 KS2 Y3: DT: Cross-stitch and Appliqué - Lesson Plan - Kapow Primary Introduce new concept. Children to practise using the skills they will need to create a cushion in this unit.	Felt Needles Thread Scissors Pencils Printed activity
Design 	Oral and written explanation Significance	Lesson 2	OO: I am able to develop a design through discussion and annotated sketches to add detail to my design. LO: I can design a cushion and its template.	Lesson 2 KS2 Y3: D&T Lesson 2: Cushion design - Kapow Primary Children to research different cushion designs. To design their cushion (Simple Greek inspired design).	Printed activity

Key Concept	Second order concept	Lesson sequence	Learning Objectives	Suggested teaching sequence	Resources
Make 	Responsibility Cause and consequence	Lesson 3 and lesson 4	OO: To be able to choose a material for both its suitability and its appearance and explain why it has been selected and to be able to think ahead about the order of my work, select tools needed for a given task and give reasons for my choices. LO: I can make a cushion using cross stitching and appliques.	Lesson 3: KS2 Y3: D&T Lesson 3: Decorating My Cushion - Kapow Primary Using appliqué and cross-stitch, pupils decorate their cushions in accordance with their designs. Lesson 4: KS2, Y3: DT, Lesson 4: Assembling my cushion- Kapow Primary Children complete their cushions, sewing the edges, stuffing them and using the decorative pieces of materials from lesson 3.	Felt Needles Thread Scissors Pencils Other resources depending on the children's
Evaluate 	Similarity and difference	Lesson 5	OO:-I can prove that my design meets some set criteria and evaluate how well it works. LO: I can evaluate my cushion based on my design criteria.	Children to test and evaluate their product. Children to consider the following: Did my design and product meet the set criteria? How well does it work / Is my product fit for purpose? Did I make any changes to my product? How and why?	Evaluation to go in DT books.

End of unit assessment quiz: [Assessment Resources and Quiz KS2 D&T: Textiles: Cushions \(kapowprimary.com\)](#)