



Design and Technology Medium Term Planning

Year 1



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 resources 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


Autumn

Year 1

Textiles: puppets

[Textiles: Puppets - Kapow Primary](#)

Prior Learning		Can I use scissors safely and correctly? Do I know what different fabrics feel like?			
Vocabulary		Decorate, design, fabric, glue, model, hand puppet, safety pin, staple, stencil, template			
End Point		The children will have designed, made and evaluated an animal puppet. Using their chosen method of attaching.			
Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources
Make Design  	Responsibility Cause and consequence Significance Written and oral expression	Lesson 1 and 2 together.	OO: To be able to use a range of materials to make a product, including construction materials, textiles and ingredients. LO: I can join fabrics together. OO: I am beginning to design products using pictures and words based on a design criteria. LO: I can design an animal puppet.	New concept— introduce objects, tools and key vocab. Lesson 1 KS1, Y1, Design & Technology: Lesson: Joining Fabrics - Kapow Primary Children to explore and practise the skills they will need to make their product. Children to practise gluing stapling and pinning. Discussion—what are puppets? What are they used for? Look at some real life examples. Teacher to give design brief– we are going to make animal puppets ot help us tell a story. Lesson 2 KS1, Y1, Design & Technology, Lesson: Design a Puppet- Kapow Primary Children will design their animal puppet and label the materials they will need.	Felt Scissors Glue pva / hot glue Staplers Safety pins Printed resource
Make 	Responsibility Cause and consequence	Lesson 3 Lesson 4	OO: To be able to choose appropriate resources and tools to make a product. LO: I can make an animal puppet. OO: To be able to choose appropriate resources and tools to make a product LO: I can make an animal puppet.	Recap prior learning discuss new skills and key vocab. Children to review their designs. Lesson 3 KS1, Y1, Design & Technology, Lesson: Joining Puppets - Kapow Primary Focus on joining- Children join their pieces of fabric for their puppet, using their preferred technique of pinning, stapling or gluing. Lesson 4 KS1 Y1 D&T Lesson: Decorating Puppets - Kapow Primary Children to decorate their puppet to resemble their design. Teachers to take photographs for evidence.	As above. Additional resources depending on their children's designs.

Key Concept	Second order concept	Lesson sequence	Learning Objectives	Suggested teaching sequence	Resources
<p>Evaluate</p> 	<p>Similarities and differences</p> <p>Written and oral expression</p>	<p>Lesson 5</p>	<p>OO– To be able to evaluate my designs and products by saying how well they do the job they were designed for.</p> <p>LO- I can evaluate my puppet.</p>	<p>Children to test their puppets by using them for their desired purpose– story telling.</p> <p>Children to then evaluate their puppets and say:</p> <p>How well they did they were designed for.</p> <p>What they like and dislike.</p> <p>What they would change if they made the puppets again.</p>	<p>Evaluation in DT books. Multiple choice, sentence prompts.</p>


End of unit assessment quiz: [Assessment Resources and Quiz D&T KS1: Fruit and Vegetables \(kapowprimary.com\)](https://www.kapowprimary.com/resources/assessment-resources/assessment-resources-and-quiz-dt-ks1-fruit-and-vegetables/)

Autumn

Year 1

Cooking and nutrition: fruit and vegetables

[D&T Fruit and Vegetables KS1 Y1 - Kapow Primary](#)

Prior Learning						Can I identify different fruit and vegetables?
Vocabulary						Blender, carton, fruit, healthy, ingredients, peel, peeler, recipe, slice, smoothie, stencil, template, vegetable, above, below ground., tree
End point						Children will be able to say where fruit and vegetables are grown, they will be able to identify some fruits and use them to make a healthy fruit smoothie.
Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources	
Cooking and Nutrition 	Responsibility Similarity and difference Written and oral expression	Lesson 1 and lesson 2 together	OO– To be able to tell you where my food comes from. LO– I know where fruit and vegetables grow.	Recap prior knowledge. Lesson 1 KS1 Y1 Design & Technology, Lesson: Fruit or Vegetable? - Kapow Primary Lesson 2 D&T Lesson 2: Where fruit and vegetables grow KS1 Y1 - Kapow Primary Children to identify different fruit and vegetables and explore how / where they are grown and what makes them a fruit or a vegetable.	Some fruit and vegetables to handle	
	Responsibility Written and oral expression	Omit lesson 3 Lesson 4	OO– To be able to tell you where my food comes from. LO- I can make a fruit smoothie.	Recap last lesson Have a selection of fruit and vegetables ready. Lesson 4 KS1 Y1 Design & Technology, Lesson: Making SmoothiesKapow Primary Children to use their knowledge of fruit and vegetables to make healthy fruit smoothies. Children to discuss their choices.	fruit vegetables blender Cups	






End of unit assessment: [Assessment Resources and Quiz D&T KS1: Fruit and Vegetables \(kapowprimary.com\)](#)


Spring

Year 1

Mechanisms: moving story book

[Mechanisms: Making a moving story book - Kapow Primary](#)



Prior Learning Do I know that things move up, down and side to side?					
Vocabulary Assemble, design, evaluation, mechanism, model, sliders, stencil, target audience, template, test					
End Point Children will be able to design, make and evaluate a moving story book.					
Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources
Evaluate Technical knowledge  	Significance Cause and consequence Similarity and difference	Lesson 1	OO- I am beginning to explore and evaluate a range of existing products by evaluating the product against the purpose LO- I can say what makes a good moving story book. OO- I can use simple mechanisms in my product. LO- I can make a slider mechanism.	Prior knowledge—Check that the children know directions, up, down, side to side. Research different moving story books and discuss how they work and their purpose. Introduce different mechanisms—slider, lever, wheel. Lesson 1- KS1 Yr1 Design and Technology: Movement and Sliders- Kapow Primary Children to practise the skills needed to make a slider.	Card, Scissor, Printed resources, glue, pens, pencils
Design 	Written and oral expression	Lesson 2	OO- I am beginning to design products using pictures and words based on a design criteria. LO: I can design a moving story book page	Recap prior learning of mechanisms. Lesson 2- Lesson 2: Design - Kapow Primary Children to focus on designing 1 story book page. Children to label their designs.	Printed resources
Make Technical knowledge  	Responsibility Cause and consequence	Lesson 3	OO- To use a range of materials to make a product, including construction materials, textiles and ingredients. OO- I can use simple mechanisms in my product. LO- I can make a moving story book page using a simple mechanism.	Children to review their design and recap prior knowledge of mechanisms. Lesson 3 Lesson 3: Construction - Kapow Primary Referring to their design templates from Lesson 2, children make the various elements of their moving storybooks, including bridges and guides to restrict the movement of their sliders where necessary. Teachers to take photographs for evidence.	Resources depend on the children's designs.


Key Concept	Second order concept	Lesson sequence	Learning Objectives	Suggested teaching sequence	Resources
<p>Evaluate</p> 	<p>SIMILARITIES AND DIFFERENCE</p> <p>WRITTEN AND ORAL EXPRESSION</p>	<p>Lesson 4</p>	<p>OO- To be able to evaluate my designs and products by saying how well they do the job they were designed for.</p> <p>LO- I can evaluate my moving story book page.</p>	<p>Recap the last lesson</p> <p>Lesson 4: Testing and evaluation - Kapow Primary</p> <p>Children test their finished storybooks with their target audience of Reception children and evaluate their end result against the initial design criteria.</p> <p>I like...</p> <p>I dislike...</p> <p>I could make better...</p>	<p>Printed evaluation resource</p>
<p>End of unit assessment quiz: Assessment Resources and Quiz D&T KS1: Moving Storybook (kapowprimary.com)</p>					

Spring

Year 1

Structures: constructing windmills.

Prior Learning Can I make models that represent a structure from different materials?					
Vocabulary Client, design, evaluation, net, stable, strong, test, weak, windmill, client, design, evaluation, net, stable, strong, test, weak , make, construct.					
End point Children will design make and evaluate a windmill then present their evaluations to the rest of the class.					
Key Concept	Second order concept	Lesson Sequence	Learning Objectives	Suggested teaching sequence	Resources
Design 	Significance Written and oral expression Similarity and difference	Lesson 1	OO: I use pictures, words and models to convey what I want to design. LO: I can design a windmill.	Recap prior knowledge. Lesson 1 KS1 Yr 1 Design & Technology Lesson: Design a Windmill- Kapow Primary The children will learn what a windmill is and constructing a model windmill by reference to design criteria created for the client, Mouse, who lives in the windmill in Old Amsterdam. Nursery rhyme link: Windmill In Old Amsterdam - YouTube Children to label their design with the equipment they need.	Printed resources
Make 	Responsibility Causer and consequence	Lesson 2 Lesson 3	OO: To be able to use a range of materials to make a product, including construction materials, textiles and ingredients. LO: I can construct a windmill. OO: To be able to use a range of materials to make a product, including construction materials, textiles and ingredients. LO: I can construct a windmill.	Lesson 2 KS1, Y1, Design & Technology Lesson: Windmill Structure - Kapow Primary Having decorated their templates, pupils construct the main part of their structure, making sure that it stands freely and holds together. Lesson 3 KS1 Y 1 Design & Technology Lesson: Windmill Assembly - Kapow Primary Children complete their turbines, through careful cutting and folding, and attach them to their structure, testing its strength and stability. Teachers to take photographs for evidence.	Resources depend on the children's designs.




Key Concept	Second order concept	Lesson sequence	Learning objectives	Suggested teaching sequence	Resources
<p>Evaluate</p> 	<p>Similarity and difference</p> <p>Written and oral expression</p>	<p>Lesson 4</p>	<p>OO: To be able to evaluate my designs and products by saying how well they do the job they were designed for.</p> <p>LO: I can evaluate my windmill structure.</p>	<p>Lesson 4 KS1 Yr 1 Design & Technology Lesson: Test and Evaluate - Kapow Primary</p> <p>Children evaluate their windmills to check it would be a suitable home for the mouse.</p> <p>Is it stable?</p> <p>Does it fall over?</p> <p>Is it big enough?</p> <p>What could they make better?</p> <p>Evaluation to be delivered as a presentation to the rest of the class, children to work in groups and consider each others' designs.</p>	
<p>End of unit assessment quiz: Assessment Resources and Quiz D&T KS1: Fruit and Vegetables (kapowprimary.com)</p>					



Summer

Year 1

Mechanisms: wheels and axels

[Mechanisms: Wheels and axles - Kapow Primary](#)

Prior Learning	Do I know that curved surfaces roll? Do I know how a toy car moves?				
Vocabulary	Axle, axle holder, chassis, design, evaluation, fix, mechanic, mechanism, model, test, wheel				
End point	Children will design, make, test and evaluate their own moving vehicle.				
Key Concept	Second order concept	Lesson Se-quence	Learning Objectives	Suggested teaching sequence	Resources
Technical knowledge Evaluate  	Similarities and difference Significance Written and oral expression	Lesson 1 Lesson 2	OO: To be able to use a simple mechanism in my product. LO: I know how wheels move. OO: I am beginning to explore and evaluate a range of existing products by evaluating the product against the purpose. LO: I can identify what is wrong with the broken wheels.	Recap prior knowledge. What do you know about wheels? Lesson 1- KS1, Y1, Design, Technology, Lesson: How wheels move - Kapow Primary Children learn about wheels and should be introduced to new vocab. Lesson 2: KS1, Y1, Design, & Tech, Lesson: Fixing Broken Wheels - Kapow Primary Children see examples of wheels that do not work and use their problem-solving skills to diagnose the issue.	Printed resources
Design 	Responsibility Cause and consequence Written and oral expression	Lesson 3	OO: I am beginning to design products using pictures and words based on a design criteria. LO: I can design a vehicle.	Recap prior learning. Lesson 3 KS1, Y1, DT, Lesson 3: Designing a vehicle - Kapow Primary Design brief: Winnie's broom has broken so she needs a vehicle to travel in. Can you design an make a vehicle with wheels for Winnie and Wilbur? Work with a partner to design a vehicle. Both to draw and label.	Printed resources

Key Concept	Second order concept	Lesson sequence	Learning Objectives	Suggested teaching sequence	Resources
Make 	Cause and consequence	Lesson 4	OO: To be able to choose appropriate resources and tools to make a product. LO: I can make a vehicle for Winnie and Wilbur.	Recap prior learning. Lesson 4 Lesson 4: Making a Car- Kapow Primary Children to build and test their vehicles. Teachers to take photographs for evidence.	Resources listed in design.
Evaluate 	Similarity and difference Written and oral expression	Lesson 5	OO: To be able to evaluate my designs and products by saying how well they do the job they were designed for. LO: I can evaluate my vehicle.	Recap prior learning. Children to recount the testing of their vehicles. Re-test vehicles if needed. Think about how well they move, how fast the move. Children to evaluate how well their vehicle works. Children to say what they could do to make their vehicle better. Write evaluations in DT books.	

End of unit assessment quiz: [Assessment Resources and Quiz D&T KS1: Fruit and Vegetables \(kapowprimary.com\)](#)