



Bricknell Primary School

Design and Technology Medium term plan

The Design and Technology curriculum is structured into five **key concepts**:

- **Designing**
- **Making**
- **Evaluating**
- **Technical Knowledge**

Cooking and nutrition

Second order concepts:

These second order concepts will be explored and developed throughout the D&T curriculum as pupils move through the school:

- **Responsibility:** (working safely, how design can solve problems, choosing the right materials, responsibilities to customers to ensure quality / reliable products, healthy eating, quality ingredients)
- **Similarity and difference:** (making comparisons, noting differences and drawing conclusions)
- **Cause and consequence:** (identifying how things work, how an action can cause change/movement)
- **Significance:** (significant designers and designs, real world examples of effective and successful products)
- **Written and oral expression:** (Using terminology, evaluating, creating accurate designs, labelling and annotating, explaining processes, presenting)







DT Whole School Overview



	Autumn	Spring	Summer
Year 1	<p>Year 1 are making animal sock puppets to co-inside with their theme- Animal Kingdom.</p> <p>I can tell you where my food comes from (linked to science).</p>	<p>Cinderella’s mop– exploring materials and looking at suitable materials to make a mop based on absorbency. (Science link)</p>	<p>Year 1 are making moving story book– focus on mechanisms, sliders, wheels and levers.</p>
Year 2	<p>Build and construct the Houses of Parliament – linked to the Gunpowder Plot</p>		<p>Year 2 are using their knowledge of nutrition to make their own Healthy fruit smoothies.</p>
Year 3	<p>Year 3 are making Hull Fair rides linked to Science.</p>	<p>During their Stone Age History topic, Year 3 are comparing modern food to foods from the Stone Age.</p>	<p>As part of their Greek topic, Year 3 are designing and making a Greek inspired piece of clothing.</p>
Year 4	<p>During their World War 2 topic, Year 4 are creating healthy dishes for a Victory street party. (History link)</p> <p>Following research, Year 4 will design, make and evaluate models of Air Raid shelters.</p>	<p>Roman catapults using a mechanical element.</p>	<p>Year 4 will develop their wood work skills by completing a moving toy project.</p>
Year 5	<p>Year 5 are learning about food miles and will link their learning to Science. Year 5 will research how food is handled and packaged. They are designing their own food packaging using computer software.</p>	<p>Year 5 are using a CAD computer programme to design a structure.</p>	<p>Will further develop their woodwork skills by designing and making an Anglo Saxon house.</p>
Year 6	<p>Year 6 will complete a Mayan mask project and think of a way to display their pieces using electrical components and lighting.</p>	<p>Year 6 will use their knowledge of nutrition and healthy food to create simple healthy meals and snacks independently.</p> <p>Year 6 will use an ICT control programme.</p>	




As Designers in Year 1, we will learn...

	Autumn Term	Spring Term	Summer Term
	Animal Kingdom 	Once Upon a Time 	Magic, Mystery and Mayhem 
Prior Knowledge	I can select appropriate tools and materials, explaining my choices. I can use scissors safely and effectively. Sometimes I may need adult support.		
Key Vocabulary	Healthy, ingredients, fruit, vegetable, animal produce. Textiles, make, puppet, animals, sock, buttons, thread, wool, fabric, design, attach, glue, fix, show.	Design, evaluate, flexible, function, texture, soft, hard, strong, purpose, absorbent, effective, test, fix, materials, properties, model.	Levers, sliders, wheels, mechanisms, moving, push pull, left, right, up, down, tools.
Cooking and Nutrition	-I can tell you where my food comes from. (Linked to Science) Responsibility		
Design	-I am beginning to design products using pictures and words based on a design criteria. responsibility	-I am beginning to design products using pictures and words based on a design criteria. -I use pictures, words and models to convey what I want to design. Cinderella's mop project. Similarities and differences. Cause and consequence. Significance, written and oral expression. 	--I am beginning to design products using pictures and words based on a design criteria. -I use pictures, words and models to convey what I want to design. Children to also research and select suitable materials and designs to create moving scene. Moving story book pictures. Cause and consequence , responsibility
Make	I can use a range of materials to make a product, including construction materials, textiles and ingredients. responsibility	-I can choose appropriate resources and tools to make a product. -I can use a range of materials to make a product, including construction materials, textiles and Ingredients. responsibility	- I can choose appropriate resources and tools to make a product. -I can use a range of materials to make a product, including construction materials, textiles and ingredients. responsibility Cause and consequence
Evaluate	I can evaluate my design and product by saying how well they do the job they were designed for. Written and oral expression Similarity and difference	-I am beginning to explore and evaluate a range of existing products by evaluating the product against the purpose. Written and oral expression Similarity and difference	-I can evaluate my designs and products by saying how well they do the job they were designed for. Written and oral expression Similarity and difference
Technical Knowledge			-I can explore and use simple mechanisms in my products. Cause and consequence, responsibility.






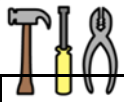
As Designers in Year 2, we will learn...

	Autumn Term	Spring Term	Summer Term
	Fire, Fear and Fury	Blue Planet 	Valiant Victorians
Prior Knowledge	Have a good understanding of where food comes from. Be able to group familiar food products eg fruit and vegetables. Be able to design and make simple models. Be able to reflect by saying what they like and dislike about their product. Be able to evaluate suitability of products they make.		
Key Vocabulary	Structure, tools, materials, strong, robust, sturdy, Secure, model, size, height. construct, build, strengthen. Design criteria. Similar. Height. Purpose.		Healthy, ingredients, fruit, chopping, safety, hygienic.
Cooking and Nutrition			Make healthy smoothies. -I can use a range of ingredients to prepare a healthy dish. Responsibility, written and oral expression.
Design	Victorian house structure.—Houses of Parliament linked to the gun powder plot. -I use simple drawings and labels to record my ideas. -I design products that have a clear purpose based on my own design criteria. Significance—real world examples. Responsibility—Cause and consequence— identify how the structure will be constructed. Written and oral explanation.		
Make	-I can select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] -I use a range of materials to make a product, including construction materials, textiles and ingredients and explain why the materials have been selected. Responsibility when constructing following design criteria.		
Evaluate	-I can explore and evaluate a range of existing products by looking at function and materials. -I can evaluate my ideas and products against set design criteria. Significance—exploring real life structures. Cause and consequence. Written and oral explanation.		
Technical Knowledge	I can build structures, exploring how they can be made stronger, stiffer and more stable. Responsibility. Cause and consequence		





As Designers in Year 3, we will learn...

	Autumn Term	Spring Term	Summer Term
	The Greatest Show 	The Land Before Time 	Games, Gods and Greeks 
Prior Knowledge	I can design, make and evaluate products with a clear purpose based on my own design criteria. I can select from a range of tools, equipment, and materials and explain why they have been selected.		
Key Vocabulary	Woodwork, clamp, dowel, attach, design criteria, materials. Stiffen, strong.	Nutrition, healthy eating, ingredients, Recipe.	Textiles, fabric, sewing, needle, thread, Greek clothing.
Cooking and Nutrition		<p>Compare modern and Stone Age food .</p> <ul style="list-style-type: none"> -I can make healthy eating choices from an understanding of a balanced diet -I can use a range of ingredients to prepare a healthy dish, explain why the ingredients were chosen and the effects on the body. -I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading or kneading. <p>Responsibility. Similarities and differences. Cause and consequence.</p>	
Design	<p>Make hull fair ride Link to science)</p> <ul style="list-style-type: none"> -I can research similar products to develop my own design ideas. -I am able to develop a design through discussion and annotated sketches to add detail to my designs. <p>Similarities differences. Significance.</p>		<p>Textiles— tbc something Greek.</p> <ul style="list-style-type: none"> -I can research similar products to develop my own design ideas. -I am able to develop a design through discussion and annotated sketches to add detail to my designs. <p>Similarities differences. Significance.</p>
Make	<ul style="list-style-type: none"> -I can choose a material for both its suitability and its appearance and explain why it has been selected. -I can think ahead about the order of my work, select tools needed for a given task and give reasons for my choices. <p>Responsibility. Cause and consequence</p>		<ul style="list-style-type: none"> -I can choose a material for both its suitability and its appearance and explain why it has been selected. -I can think ahead about the order of my work, select tools needed for a given task and give reasons for my choices. <p>Responsibility. Cause and consequence.</p>
Evaluate	<ul style="list-style-type: none"> -I can investigate and analyse an existing product by identifying whether it is fit for purpose and how easy it is to use. -I can prove that my design meets some set criteria and evaluate how well it works. <p>Significance, Similarity and difference. Written and oral expression.</p>		<ul style="list-style-type: none"> -I can investigate and analyse an existing product by identifying whether it is fit for purpose and how easy it is to use. -I can prove that my design meets some set criteria and evaluate how well it works. <p>Significance, Similarity and difference. Written and oral expression.</p>
Technical Knowledge	-I can apply my understanding of how to strengthen, stiffen and reinforce more complex structures.		-I can apply my understanding of how to strengthen, stiffen and reinforce more complex structures.






As Designers in Year 4, we will learn...


	Autumn Term	Spring Term	Summer Term
	As the Bomb Drops 	Settlements	Egypt and the Shang Dynasty 
Prior Knowledge	I can research similar products, develop my own design through discussion and annotated sketches. I can prove it meets set criteria. I can choose material for suitability and appearance, thinking ahead about the order of my work, giving reasons for tools selected.		
Key Vocabulary	Anderson shelters, Morrison shelters Structure, Strength, Purpose	Mechanical system, structure. Healthy eating, ingredients. Human body.	Pyramid Prototype
Cooking and Nutrition	WW2 cooking.—Street party. -I can use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading or kneading. -I can use a range of ingredients to prepare a healthy dish, explain why the ingredients were chosen and the effects on the body -responsibility, significance, written and oral expression, cause and consequence, written and oral expression.	Science—link healthy eating with science digestive system. -I can make healthy eating choices from an understanding of a balanced diet, -I can use a range of ingredients to prepare a healthy dish, explain why the ingredients were chosen and the effects on the body. -responsibility, significance, written and oral expression	
Design	WW2 Air raid shelters. -I generate and develop ideas using exploded diagrams and prototypes. -I use different ways to creatively record and present my designs to show they are fit for purpose. Significance, Cause and consequence.	Romans—catapults Must include mechanical system.—KAPOW. -I generate and develop ideas using exploded diagrams and prototypes. -I use different ways to creatively record and present my designs to show they are fit for purpose. Significance, cause and consequence.	TBC- Possible— moving toy. -I generate and develop ideas using exploded diagrams and prototypes. -I use different ways to creatively record and present my designs to show they are fit for purpose. Significance, Cause and consequence.
Make	-I can choose and use appropriate tools from a wider range to perform practical tasks. -I can choose suitable materials from a wider range and explain its suitability. Responsibility Cause and consequence	-I can choose and use appropriate tools from a wider range to perform practical tasks. -I can choose suitable materials from a wider range and explain its suitability. Responsibility, cause and consequence	-I can choose and use appropriate tools from a wider range to perform practical tasks. -I can choose suitable materials from a wider range and explain its suitability. Responsibility, cause and consequence
Evaluate	-I can explain why certain materials were used to make existing products. -I can evaluate and suggest improvements for my design. Similarity and difference Written and oral expression	-I can explain why certain materials were used to make existing products. -I can evaluate and suggest improvements for my design. Similarity and difference Written and oral expression	-I can explain why certain materials were used to make existing products. -I can evaluate and suggest improvements for my design. Similarity and difference Written and oral expression
Technical Knowledge		-I am able to understand and use mechanical systems in my products	



Designers in Year 5, we will learn...

	Autumn Term	Spring Term	Summer Term
	Around the World 	Reach for the Stars 	Looking back, going forward 
Prior Knowledge	I can use a range of ingredients to prepare a healthy dish and explain the effects of the body. I can generate and develop ideas using exploded diagrams and prototypes. I can understand and use mechanical systems in my products.		
Key Vocabulary	Seasonal fruit and vegetables, packaging, food hygiene, storage, safety.	Computer aided design.	Woodwork, saw, clamp, accurate, measurement, design criteria. Similarities, realistic, purpose, suitable materials, design process.
Cooking and Nutrition	Food technology- linked with food miles—(Link to Geography) Packaging for food —link to computing) -I understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. -I understand the importance of correct storage and handling of ingredients. Responsibility, Cause and consequence , Written and oral expression		
Design		CAD programme on KAPOW. -I can generate and develop ideas using pattern pieces and computer aided design. Responsibility Similarities and differences Written and oral expression significance Electrical component project TBC	Anglo Saxon houses. —woodwork. -I can generate and develop ideas using pattern pieces and computer aided design. Responsibility Significance - research Similarities and differences
Make	-	-I use a range of appropriate tools competently. -I can join and combine a range of materials competently. Responsibility, cause and consequence	-I use a range of appropriate tools competently. -I can join and combine a range of materials competently. Responsibility, cause and consequence
Evaluate		-I can evaluate appearance and function against original criteria. -I am able to justify decisions made during the design process. Cause and consequence, Written and oral expression Similarities and differences.	-I can evaluate appearance and function against original criteria. -I am able to justify decisions made during the design process. Cause and consequence, Written and oral expression, similarities and differences
Technical Knowledge		-I can understand and use electrical systems in my products.	

s Designers in Year 6, we will learn...

	Autumn Term	Spring Term	Summer Term
	Invasion, injustice and invention	Our Incredible Earth 	Lights ,Camera, Action!
Prior Knowledge	I can generate and develop ideas using pattern pieces and computer aided design. I can understand and use electrical systems in my products. I can evaluate appearance and function against original criteria, and I can join and combine a range of materials competently.		
Key Vocabulary	Materials. Mask, purpose. Electrical component, significance, research, research.	Healthy. Ratio, ingredients, hygienic. Design criteria, tools, measurements, accurate.	
Cooking and Nutrition		Cooking simple healthy meal. -I can explore a range of cooking techniques to produce a healthy balanced dish. -I can measure out ingredients accurately and use ratios to scale up or scale down a recipe. Responsibility	
Design	Mayan Mask project -I generate and develop ideas using a variety of design techniques. -I justify my plans in a convincing way. -I use research and develop design criteria to design innovative functional and appealing products aimed at a specific group. Responsibility, Similarities differences, Significance, Written and oral expression	TBC—ICT focus– KAPOW -I generate and develop ideas using a variety of design techniques. -I justify my plans in a convincing way. -I use research and develop design criteria to design innovative functional and appealing products aimed at a specific group. Responsibility, Similarities differences, significance written and oral expression	
Make	-I select and use specialist tools and equipment to perform practical tasks accurately. -I can select from and use a wider range of materials and components according to their functional qualities and aesthetic qualities. Responsibility , cause and consequence	-I select and use specialist tools and equipment to perform practical tasks accurately. -I can select from and use a wider range of materials and components according to their functional qualities and aesthetic qualities. Responsibility, cause and consequence	
Evaluate	-I can critically evaluate the quality of the design, manufacture and fitness for purpose by comparing existing products. -I can evaluate my ideas and products against my own design criteria and consider the views of others to improve my work. Significance , Written and oral expression, similarities and differences	-I can critically evaluate the quality of the design, manufacture and fitness for purpose by comparing existing products. -I can evaluate my ideas and products against my own design criteria and consider the views of others to improve my work. Significance , Cause and consequence. Written and oral expression, similarities and differences/	
Technical Knowledge		-I am able to control an model using an ICT control programme. Cause and consequence	