

# BRUNSHAW PRIMARY SCHOOL



Inspiring children to be resilient and aspirational learners, within a positive and considerate community

## DT AUTUMN CURRICULUM OVERVIEW

### DESIGN

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<u>Structures</u>	<p>Tents:</p> <p>Learning the importance of a clear design criteria</p> <p>Including individual preferences and requirements in a design</p>		<p>Castles:</p> <p>Designing a castle with key features to appeal to a specific person/ purpose</p> <p>Drawing and labelling a castle design using 2D shapes, labelling: - the 3D shapes that will create the features - materials need and colours</p>		<p>Bridges:</p> <p>Designing a stable structure that is able to support weight</p> <p>Creating frame structure with focus on triangulation</p>	
<u>Mechanisms</u>		<p>Bathing Machines:</p> <p>Creating a class design criteria for a bathing machine.</p> <p>Designing a vehicle that includes wheels, axles and axle</p>	<p>Pneumatic Toys:</p> <p>Designing a toy which uses a pneumatic system</p> <p>Developing design criteria from a design brief</p>		<p>Pop-up Books:</p> <p>Designing a popup book which uses a mixture of structures and mechanisms</p>	

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		holders, which will allow the wheels to move  Creating clearly labelled drawings which illustrate movement	Generating ideas using thumbnail sketches and exploded diagrams  Learning that different types of drawings are used in design to explain ideas clearly		Naming each mechanism, input and output accurately  Storyboarding ideas for a book	
<a href="#"><u>Electrical Systems</u></a>				Torches:  Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas		Fairground Rides:  Designing a steady hand game - identifying and naming the components required  Drawing a design from three different perspectives  Generating ideas through sketching and discussion  Modelling ideas through prototypes

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<p><u>Cooking &amp; Nutrition</u></p>	<p>Fruit Iced lollies:  N/A</p>	<p>A balanced Diet:  Designing a healthy wrap based on a food combination which work well together</p>	<p>Eating Seasonally:  Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish</p>	<p>Adapting a Recipe:  Designing a biscuit within a given budget, drawing upon previous taste testing</p>	<p>What could be healthier?  Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients  Writing an amended method for a recipe to incorporate the relevant changes to ingredients  Designing appealing packaging to reflect a recipe</p>	<p>Come dine with me:  Writing a recipe, explaining the key steps, method and ingredients  Including facts and drawings from research undertaken</p>
<p><u>Textiles</u></p>		<p>Christmas Decorations:  Designing a Christmas decoration.</p>		<p>Fastenings:  Writing design criteria for a product, articulating decisions made</p>		<p>Waistcoats:  Designing a waistcoat in accordance to specification linked to set of design criteria to fit a specific theme</p>

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				Designing a personalised Book sleeve.		Annotating designs
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## MAKE

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<u>Structures</u>	<p>Tents:</p> <p>Making stable structures from card, tape and glue</p> <p>Following instructions to cut and assemble the supporting structure of a tent</p>		<p>Castles:</p> <p>Constructing a range of 3D geometric shapes using nets</p> <p>Creating special features for individual designs</p> <p>Making facades from a range of recycled materials</p>		<p>Bridges:</p> <p>Making a range of different shaped beam bridges</p> <p>Using triangles to create truss bridges that span a given distance and supports a load</p> <p>Building a wooden bridge structure</p> <p>Independently measuring and marking wood accurately</p> <p>Selecting appropriate tools and equipment for particular tasks</p> <p>Using the correct techniques to saws safely</p>	

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					Identifying where a structure needs reinforcement and using card corners for support
<u>Mechanisms</u>		<p>Bathing Machines:</p> <p>Following a design to create moving vehicles that use wheels and axles.</p> <p>Adapting mechanisms</p> <p>Selecting materials according to their characteristics</p> <p>Following a design brief</p>	<p>Pneumatic Toys:</p> <p>Creating a pneumatic system to create a desired motion</p> <p>Building secure housing for a pneumatic system</p> <p>Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy</p> <p>Selecting materials due to their functional and aesthetic characteristics</p>		<p>Pop-up Books:</p> <p>Following a design brief to make a pop-up book, neatly and with focus on accuracy</p> <p>Making mechanisms and/ or structures using sliders, pivots and folds to produce movement</p> <p>Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result</p>

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			Manipulating materials to create different effects by cutting, creasing, folding, weaving		
<u>Electrical Systems</u>				<p>Torches:</p> <p>Making a torch with a working electrical circuit and switch</p> <p>Using appropriate equipment to cut and attach materials</p> <p>Assembling a torch according to the design and success criteria</p>	<p>Fairground Rides:</p> <p>Making electromagnetic motors and tweaking the motor to improve its function</p> <p>Constructing a stable base for an electromagnetic game</p> <p>Accurately cutting, folding and assembling a net</p> <p>Decorating the base of the game to a high quality finish</p> <p>Making and testing a circuit</p>

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						Incorporating a circuit into a base
<u>Cooking &amp; Nutrition</u>	<p>Fruit Iced lollies:</p> <p>Chopping fruit and vegetables safely to make an iced lolly</p> <p>Identifying if a food is a fruit or a vegetable</p> <p>Learning where and how fruits and vegetables grow</p>	<p>A balanced Diet:</p> <p>Slicing food safely using the bridge or claw grip</p> <p>Constructing a wrap that meets a design brief</p>	<p>Eating Seasonally:</p> <p>Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination</p> <p>Following the instructions within a recipe</p>	<p>Adapting a Recipe:</p> <p>Following a baking recipe</p> <p>Cooking safely, following basic hygiene rules</p> <p>Adapting a recipe</p>	<p>What could be healthier?</p> <p>Cutting and preparing vegetables safely</p> <p>Using equipment safely, including knives, hot pans and hobs</p> <p>Knowing how to avoid cross contamination</p> <p>Following a step by step method carefully to make a recipe</p>	<p>Come dine with me:</p> <p>Following a recipe, including using the correct quantities of each ingredient</p> <p>Adapting a recipe based on research</p> <p>Working to a given timescale</p> <p>Working safely and hygienically with independence</p>
<u>Textiles</u>		<p>Christmas Decorations:</p> <p>Selecting and cutting fabrics for sewing</p> <p>Decorating a Christmas decoration</p>		<p>Fastenings:</p> <p>Making and testing a paper template with accuracy and in keeping with the design criteria</p>		<p>Waistcoats:</p> <p>Using template pinning panels onto fabric</p> <p>Marking and cutting fabric accurately, in</p>

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		using fabric glue or running stitch		<p>Measuring, marking and cutting fabric using a paper template</p> <p>Selecting a stitch style to join fabric, working neatly sewing small neat stitches</p> <p>Incorporating fastening to a design</p>		<p>accordance with a design</p> <p>Sewing a strong running stitch, making small, neat stitches and following the edge</p> <p>Tying strong knots</p> <p>Decorating a waistcoat - attaching objects using thread and adding a secure fastening</p>
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## EVALUATION

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<u>Structures</u>	<p>Tents:</p> <p>Evaluating a tent according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't</p> <p>Suggest points for improvements</p>		<p>Castles:</p> <p>Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design</p> <p>Suggesting points for modification of the individual designs</p>		<p>Bridges:</p> <p>Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary</p> <p>Suggesting points for improvements for own bridges and those designed by others</p>	
<u>Mechanisms</u>		<p>Bathing Machines:</p> <p>Evaluating own designs against design criteria</p> <p>Using peer feedback to modify a final design</p>	<p>Pneumatic Toys:</p> <p>Using the views of others to improve designs</p> <p>Testing and modifying the outcome, suggesting improvements</p>		<p>Pop-up Books:</p> <p>Evaluating the work of others and receiving feedback on own work</p> <p>Suggesting points for improvement</p>	

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		Evaluating different designs  Testing and adapting a design				
<a href="#"><u>Electrical Systems</u></a>				Torches:  Evaluating electrical products  Testing and evaluating the success of a final product and taking inspiration from the work of peers		Fairground Rides:  Testing own and others finished games, identifying what went well and making suggestions for improvement
<a href="#"><u>Cooking &amp; Nutrition</u></a>	Fruit Iced lollies:  Tasting and evaluating different food combinations  Describing appearance, smell and taste	A balanced Diet:  Describing the taste, texture and smell of fruit and vegetables  Taste testing food combinations and final products	Eating Seasonally:  Establishing and using design criteria to help test and review dishes  Describing the benefits of seasonal fruits and vegetables	Adapting a Recipe:  Evaluating a recipe, considering: taste, smell, texture and appearance  Describing the impact of the budget on the selection of ingredients	What could be healthier?  Identifying the nutritional differences between different products and recipes  Identifying and describing healthy	Come dine with me:  Evaluating a recipe, considering: taste, smell, texture and origin of the food group  Taste testing and scoring final products

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	Suggesting information to be included on packaging	Describing the information that should be included on a label  Evaluating which grip was most effective	and the impact on the environment  Suggesting points for improvement when making a seasonal tart	Evaluating and comparing a range of products  Suggesting modifications	benefits of food groups	Suggesting and writing up points of improvements in productions  Evaluating health and safety in production to minimise cross contamination
<u>Textiles</u>		Christmas Decorations:  Troubleshooting scenarios posed by teacher  Evaluating the quality of the stitching on others' work  Discussing as a class, the success of their stitching against the success criteria  Identifying aspects of their peers' work		Fastenings:  Testing and evaluating an end product against the original design criteria  Deciding how many of the criteria should be met for the product to be considered successful  Suggesting modifications for improvement		Waistcoats:  Evaluating work continually as it is created

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		that they particularly like and why				
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## TECHNICAL KNOWLEDGE

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<u>Structures</u>	<p>Tents:</p> <p>Describing the purpose of structures</p> <p>Learning how to turn 2D nets into 3D structures</p> <p>Learning that the shape of materials can be changed to improve the strength and stiffness of structures</p> <p>Developing awareness of different structures for different purposes</p>		<p>Castles:</p> <p>Identifying features of a castle</p> <p>Identifying suitable materials to be selected and used for a castle, considering weight, compression, tension</p> <p>Extending the knowledge of wide and flat based objects are more stable</p> <p>Understanding the terminology of strut, tie, span, beam</p> <p>Understanding the difference between frame and shell structure</p>		<p>Bridges:</p> <p>Exploring how to create a strong beam</p> <p>Identifying arch and beam bridges and understanding the terms: compression and tension</p> <p>Identifying stronger and weaker structures</p> <p>Finding different ways to reinforce structures</p> <p>Understanding how triangles can be used to reinforce bridges</p> <p>Articulating the difference between beam, arch, truss and suspension bridges</p>	

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<p><u>Mechanisms</u></p>		<p>Bathing Machines:</p> <p>Learning that mechanisms are a collection of moving parts that work together in a machine</p> <p>Identifying mechanisms in everyday objects</p> <p>Exploring wheel mechanisms</p> <p>Learning how axels help wheels to move a vehicle</p>	<p>Pneumatic Toys:</p> <p>Understanding how pneumatic systems work</p> <p>Learning that mechanisms are a system of parts that work together to create motion</p> <p>Understanding that pneumatic systems can be used as part of a mechanism</p> <p>Learning that pneumatic systems force air over a distance to create movement</p>		<p>Pop-up Books:</p> <p>Knowing that an input is the motion used to start a mechanism</p> <p>Knowing that output is the motion that happens as a result of starting the input</p> <p>Knowing that mechanisms control movement</p> <p>Describing mechanisms that can be used to change one kind of motion into another</p>	
<p><u>Electrical Systems</u></p>				<p>Torches:</p> <p>Learning how electrical items work</p> <p>Identifying electrical products</p>		<p>Fairground Rides:</p> <p>Understanding how electromagnetic motors work</p>

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				<p>Learning what electrical conductors and insulators are</p> <p>Understanding that a battery contains stored electricity and can be used to power products</p> <p>Identifying the features of a torch</p> <p>Understanding how a torch works</p> <p>Articulating the positives and negatives about different torches</p>		<p>Learning that batteries contain acid, which can be dangerous if they leak</p> <p>Learning that when electricity enters a magnetic field it can make a motor</p>
<p><u><a href="#">Cooking &amp; Nutrition</a></u></p>	<p>Fruit Iced lollies:</p> <p>Understanding the difference between fruits and vegetables</p>	<p>A balanced Diet:</p> <p>Understanding what makes a balanced diet</p> <p>Knowing where to find the nutritional</p>	<p>Eating Seasonally:</p> <p>Learning that climate affects food growth</p>	<p>Adapting a Recipe:</p> <p>Understanding the impact of the cost and importance of budgeting while</p>	<p>What could be healthier?</p> <p>Understanding where food comes from - learning that beef is from cattle and how</p>	<p>Come dine with me:</p> <p>Learning how to research a recipe by ingredient</p>

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	Describing and grouping fruits by texture and taste	information on packaging  Knowing the five food groups	Working with cooking equipment safely and hygienically  Learning that imported foods travel from far away and this can negatively impact the environment  Learning that vegetables and fruit grow in certain seasons  Learning that each fruit and vegetable gives us nutritional benefits  Learning to use, store and clean a knife safely	planning ingredients for biscuits  Understanding the environmental impact on future product and cost of production	beef is reared and processed  Understanding what constitutes a balanced diet  Learning to adapt a recipe to make it healthier  Comparing two adapted recipes using a nutritional calculator and then identifying the healthier option	Recording the relevant ingredients and equipment needed for a recipe  Understanding the combinations of food that will complement one another  Understanding where food comes from, describing the process of 'Farm to Fork' for a given ingredient
<a href="#">Textiles</a>		Christmas Decorations:		Fastenings:  Understanding that there are different		Waistcoats:  Learning different decorative stitches

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		<p>Joining items using fabric glue or stitching</p> <p>Identifying benefits of these techniques</p> <p>Threading a needle</p> <p>Sewing running stitch, with evenly spaced, neat, even stitches to join fabric</p> <p>Neatly pinning and cutting fabric using a template</p>		<p>types of fastenings and what they are</p> <p>Articulating the benefits and disadvantages of different fastening types</p>		<p>Application and outcome of the individual technique</p> <p>Sewing accurately with even regularity of stitches</p>
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