



**Bredbury Green Primary School: Rationale Behind The Design and Technology Curriculum**

	<b>What we teach? (Minimum Requirement From NC)</b>	<b>Why we teach it now? (Rationale)</b>	<b>Key Vocabulary</b>
<b>Early Years</b>	<p><b>Creating with Materials</b></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> <li>Share their creations, explaining the process they have used</li> </ul> <p><b>Fine Motor Skills</b></p> <ul style="list-style-type: none"> <li>Use a range of small tools, including scissors, paintbrushes and cutlery</li> <li>Begin to show accuracy and care when drawing</li> </ul>	<p><b>Developing vocabulary in Nursery:</b> Build, make, join, design, senses, tools, predict, evaluate, safety, structure</p> <p><b>Developing vocabulary in Reception:</b> Texture, senses, taste, design, create, evaluate, materials, tools, safety, 2D, 3D, structure, safety, join, build, make, refine, hygiene, purpose, healthy, form, function</p>	
<b>Year 1</b> (when appropriate)	<p><b>STEM Science – Visitor to school</b> <b>POWER &amp; INFLUENCE</b></p> <ul style="list-style-type: none"> <li>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> <li>Explore mechanisms and their effects</li> <li>Use mechanisms to create a mechanical Ferris wheel</li> <li>Discuss how ICT has helped to make the product</li> </ul>	<ul style="list-style-type: none"> <li>Builds upon: In reception and nursery pupils learnt how to safely use a variety of materials, tools and techniques. Pupils shared their creations and used a range of small tools including scissors, paintbrushes and cutlery.</li> <li>Prepares for: In Y2 pupils will develop an understanding of mechanisms, structures and vocabulary. Pupils will build structures, exploring how they can be made stronger, stiffer and more stable. This also links to the study of the local area which explores the changing area e.g. horse and cart to cars and development of technology over time.</li> </ul>	Lever Pulley Mechanism Program Speed Rotation
<b>Year 1</b> <b>Spring</b>	<p><b>Jamaican food tasting</b> <b>SIGNIFICANCE &amp; APPRECIATION</b></p> <ul style="list-style-type: none"> <li>Understand where food comes from</li> <li>Taste a variety of food typically from Jamaica</li> <li>Make comparisons to food typically from England</li> <li>Identify why different types of foods come from different places</li> </ul>	<ul style="list-style-type: none"> <li>Prepares children for Year 2 Healthy eating focus and creation of smoothies, developing vocabulary</li> <li>Children will use Jamaican knowledge to compare other cultures in Y2-6</li> </ul>	Sweet Sour Salty Savoury Recipe Ingredients Ginger cake Exotic Hygiene
<b>Year 1</b> <b>Summer</b>	<p><b>Lowry structures</b> <b>STRUCTURES &amp; CAUSE AND EFFECT</b></p> <ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> <li>explore and evaluate a range of existing products</li> <li>Research buildings and evaluate existing structures</li> <li>Design a building to meet design criteria</li> <li>Consider materials and how to cut and join in different ways</li> </ul>	<ul style="list-style-type: none"> <li>Builds upon: Reception create rockets and children will continue their understanding of structures through the structures related to Lowry</li> <li>Prepares for: Year 2 study local area studies of buildings and understanding how to join simple structures will support understanding in Year 3 and 4 curriculum</li> </ul>	Sturdy Joint Structure Factory Terrace Material Design Research Evaluate Purpose
<b>Year 2</b> <b>Autumn</b>  (Forest School Link)	<p><b>Hedgehog microhabitat</b> <b>STRUCTURES &amp; INFLUENCE</b></p> <ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> <li>select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>select from and use a wide range of materials and components, including construction</li> </ul>	<ul style="list-style-type: none"> <li>Builds upon Year 1 where children design purposeful and functional products by selecting and using a wide range of materials to make a Lowry house.</li> <li>Prepares for Year 3 where children will design and make a scutum based on a design brief.</li> </ul>	Natural Man-made Research Camouflage Criteria Stability

	<p><b>materials, textiles and ingredients, according to their characteristics</b></p> <ul style="list-style-type: none"> <li>• evaluate their ideas and products against design criteria</li> <li>• Research, using ICT, hedgehog habitats and compare man-made and natural to create a design according to a set criteria</li> <li>• Create a microhabitat using a range of natural materials</li> <li>• Evaluate their creation and provide next steps</li> </ul>		
Year 2 Summer	<p><b>Healthy eating</b> <b>SIGNIFICANCE &amp; POWER</b></p> <ul style="list-style-type: none"> <li>• Use the basic principles of a healthy and varied diet to prepare dishes</li> <li>• select from and use a wide range of materials and components, including construction materials, textiles and <b>ingredients, according to their characteristics</b></li> <li>• Know the principles of a healthy and varied diet</li> <li>• Design a main and desert that reflect a healthy and varied diet</li> <li>• Prepare the main and desert designed for their peers</li> </ul>	<ul style="list-style-type: none"> <li>• Builds upon Year 1 where children explore food from other cultures and taste.</li> <li>• Prepares for Year 3 where children will create pizzas by applying the principles of healthy and varied document.</li> </ul>	<p>Healthy Unhealthy Diet Vegetables Fruit Salty/sweet/sour</p>
Year 2 (when appropriate) Spring	<p><b>STEM car – visitor to school</b> <b>STRUCTURES &amp; CAUSE AND EFFECT</b></p> <ul style="list-style-type: none"> <li>• Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> <li>• Explore mechanisms and their effects</li> <li>• Use mechanisms to create a mechanical car wheel</li> <li>• Discuss how ICT has helped to make the product</li> </ul>	<ul style="list-style-type: none"> <li>• Builds upon Year 1 where children explored and used levers and axels.</li> <li>• Prepares for Year 3 where children will explore existing products and how they were designed to fit purpose.</li> </ul>	<p>Coding Program Structure Mechanism Speed Rotation Debug Movement Wheel</p>
Year 3 Autumn	<p><b>Healthy eating – creating pizzas</b> <b>APPRECIATION &amp; CAUSE AND EFFECT</b></p> <ul style="list-style-type: none"> <li>• Understand and apply the principles of a healthy and varied diet</li> <li>• Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>• Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> <li>• Understand and apply the principles of a healthy and varied diet to their own savoury Pizza design</li> <li>• Consider seasonality of ingredients and food groups when designing</li> <li>• Make and evaluate savoury dish using appropriate vocabulary and considering next steps</li> </ul>	<ul style="list-style-type: none"> <li>• Link to Science Healthy eating and food groups</li> <li>• Link to History – Roman focus in Spring term Y3</li> <li>• Build upon knowledge from Year 2 on types of food and evaluation</li> <li>• Prepares for baking Egyptian bread in Year 3</li> </ul>	<p>Savoury Seasonal Food groups Ingredients Evaluation Duration Kneading Weighing Temperature Texture</p>
Year 3 Spring	<p><b>Roman army – Scutum</b> <b>STRUCTURES &amp; POWER</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• Research different structures and which ensure strength and stiffness</li> <li>• Design their own Scutum based upon existing criteria and discuss resources they would require</li> <li>• Develop their own Scutum and evaluate, referring to criteria and design</li> </ul>	<ul style="list-style-type: none"> <li>• Builds upon prior learning in Year 1 of materials and properties</li> <li>• Prepares for: Understanding materials and strength will support learning of Anglo Saxons in Year 4 and Vikings in Year 5.</li> </ul>	<p>Strength Stiffen Design Criteria Scutum Structure</p>
Year 3 Summer (Forest School Link)	<p><b>Stone Age Tool Making</b> <b>INFLUENCE &amp; SIGNIFICANCE</b></p> <ul style="list-style-type: none"> <li>• understand how key events and individuals in design and technology have helped shape the world</li> <li>• select from and use a wider range of tools and equipment to perform practical tasks</li> <li>• investigate and analyse a range of existing products</li> </ul>	<ul style="list-style-type: none"> <li>• Builds upon forces and materials learning in Spring term Y3</li> <li>• Prepares for building and using functional tools in forest school, namely building Anderson shelters in Year 6</li> </ul>	<p>Rotation Purpose Outcome Tread Force Material Investigate</p>

	<ul style="list-style-type: none"> <li>Explore and evaluate tools currently available for specific purposes</li> <li>Compare to tools from Stone Age</li> <li>Use tools competently and accurately for a specific purpose</li> </ul>		
Year 4 Spring	<p><b>Ancient Egyptian- Bake Ancient Egyptian bread</b> <b>CAUSE AND EFFECT &amp; APPRECIATION</b></p> <ul style="list-style-type: none"> <li>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> <li>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</li> <li>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>Develop awareness of a range of cooking techniques eg selecting and preparing ingredients, using utensils, being aware of taste, texture and smell to decide how to season dishes season dishes</li> <li>Understand seasonality and availability of ingredients in order to design their dish</li> <li>Evaluate their product and use tier 3 vocabulary to discuss next steps</li> </ul>	<ul style="list-style-type: none"> <li>Builds upon making healthy pizzas in Year 3 and science knowledge about healthy eating</li> <li>Prepares for making hummus in Year 5 – food linked with an ancient civilisation</li> </ul>	Utensils Texture Season Product Ingredients Preparing Evaluate Kneading Weighing Temperature Rise
Year 4 Summer	<p><b>Thomas Edison – Electrical components</b> <b>Make an electrical circuit linked to visit</b> <b>POWER &amp; STRUCTURE</b></p> <ul style="list-style-type: none"> <li>Investigate and analyse a range of existing products</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> <li>understand and use electrical systems in their products</li> <li>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</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> <li>select from and use a wider range of materials and components</li> <li>Investigate and analyse a range of existing products</li> <li>Research and develop design criteria to inform the design of an innovative functional product</li> <li>Create annotated sketches of their product</li> <li>Select from a wider range of components to create their electrical circuit</li> <li>Apply their understanding of computing to program, monitor and control their products</li> </ul>	<ul style="list-style-type: none"> <li>Linked to History – Significant individual and event that has had an impact on British history.</li> <li>Builds upon Year 4 Science – electricity, constructing a simple series of electrical circuits.</li> <li>Prepares for learning about electricity in Science in UKS2 and making a torch in DT in Y6</li> </ul>	Design criteria Product Annotate Components Circuit Investigate Electrical Appliances
Year 5 Spring	<p><b>Ancient Greeks – Hummus</b> <b>CAUSE AND EFFECT &amp; APPRECIATION</b></p> <ul style="list-style-type: none"> <li>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>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</li> <li>Investigate and analyse a range of existing products</li> </ul>	<ul style="list-style-type: none"> <li>In History, the children will be learning about the Ancient Greeks. In order to support the children to build connectivity between the ancient civilisation and the children’s experience of modern day Greek life, they will have the opportunity to taste and prepare Greek food.</li> <li>This will build upon their learning from Year 1, where children were tasting Jamaican food. It will also build upon the food technology units taught within KS2.</li> <li>This will prepare children for the KS3 objective: cook a repertoire of predominantly savoury dishes</li> </ul>	Savoury Techniques Prepare Cook Dishes Pestle Mortar Blend Rise Yeast

	<ul style="list-style-type: none"> <li>• Research and explore savoury Greek dishes</li> <li>• Build a working knowledge of how to produce savoury Greek dishes</li> <li>• Compare impact of different ingredients on the flavour outcomes of the hummus</li> </ul>	so that they are able to feed themselves and others a healthy and varied diet	
<b>Year 5</b>  <b>Summer</b>	<b>Viking Longships</b> <b>SIGNIFICANCE &amp; STRUCTURE</b> <ul style="list-style-type: none"> <li>• Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> <li>• Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• Design a Viking Longship through annotated sketches and exploded diagrams</li> <li>• Use knowledge of pulleys and levers from science to create a mechanical element in the design</li> <li>- Utilise tools to make the Viking Longship and evaluate their effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Builds upon: Children will have already practised some of the pre-requisite skills associated with carving in Year 4 through their printing of Anglo Saxon brooches in art.</li> <li>• Prepares for KS3 objective: understand and use the properties of materials and the performance of structural elements to achieve functioning solutions</li> </ul>	Carving Planning Finishing Joining Shaping Cutting
<b>Year 6</b>  <b>Autumn</b>	<b>Mexico Farming Process</b> <b>SIGNIFICANCE &amp; STRUCTURE</b> <ul style="list-style-type: none"> <li>• Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> <li>• Understand that specific ingredients are sourced in specific places and why this impacts upon what can be made.</li> <li>• Compare and contrast ingredients from Mexico and Britain</li> <li>• Recognise and discuss a range of dishes made with these ingredients</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>• Builds upon: In Geography, children will be learning about the subsistence farming process in Mexico and how this allows Mexico to produce enough to keep its people well fed, based on the farming process in terraces.</li> <li>• Children will understand the difference between what is grown abroad and what can be grown in Britain. This will prepare them for their introduction to rationing and understanding how seasonality, variety and location would have been relevant to the Women's Land Army.</li> <li>• Based on their understanding with regards to subsistence farming in Mexico, children will build a wider awareness of available ingredients, selecting from those that would have been available during WW2.</li> <li>• Prepares for KS3 objective: understand the source, seasonality and characteristics of a broad range of ingredients.</li> </ul>	Seasonality Availability Shortage Production Variety Location Preparation
<b>Year 6</b>  <b>Spring</b>  <b>(Possible Forest Link)</b>	<b>Anderson Shelters</b> <b>CAUSE AND EFFECT &amp; INFLUENCE</b> <ul style="list-style-type: none"> <li>• 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</li> <li>• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• Understand how key events and individuals in design and technology have helped shape the world</li> <li>• Understand how Anderson Shelters were designed in order to build its strength and ability to protect people in WW2</li> <li>• Explore materials and select the ones most suited to the product</li> <li>• Evaluate final product</li> </ul> <b>Torch Making</b> <b>POWER</b> <ul style="list-style-type: none"> <li>• Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> </ul>	<ul style="list-style-type: none"> <li>• Builds upon: In Year 1, the children will have focused on making building using cardboard and this will be the beginning of building their awareness of creating a sturdy structure. They will have also built their own tools in forest school in Y4.</li> <li>• Prepares for KS3 objective: develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations</li> <li>• Builds upon learning in Science in KS2 – light and electricity</li> <li>• Prepares for KS3 objective: select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties</li> </ul>	Ingredients Components Aesthetic Functional Strengthen Stiffen Reinforce Complex Structures Protection Properties Circuit Electrical systems Products Series Circuits

	<ul style="list-style-type: none"> <li>• Show an awareness of the real life application of electrical systems within the time period of WW2</li> <li>• Use prior knowledge of electricity to support designs</li> <li>• Evaluate final product</li> </ul>		
<p><b>Year 6</b></p> <p><b>Summer</b></p>	<p><b>Propaganda Poster</b></p> <p><b>APPRECIATION</b></p> <ul style="list-style-type: none"> <li>• Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> <li>• Show an awareness of the design process behind the production of an effective propaganda poster</li> <li>• Understand how the design process builds and how different elements can communicate ideas</li> <li>• Use computer aided design to support</li> </ul>	<ul style="list-style-type: none"> <li>• Builds upon knowledge gained in art and history to understand the purpose of propaganda</li> <li>• Prepares for KS3 objectives: use research and exploration, such as the study of different cultures, to identify and understand user needs and ♣ develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools</li> </ul>	<p>Generate</p> <p>Develop</p> <p>Model</p> <p>Communicate</p> <p>Ideas</p> <p>Annotated</p> <p>Sketches</p> <p>Cross-sectional</p> <p>Exploded</p> <p>diagrams</p> <p>Prototypes</p> <p>Computer aided</p> <p>design</p>