

# National Curriculum: Progression in Design Technology



GILES BROOK SCHOOL

## Designing, Creating and Evaluating skills

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food	<i>Making a fruit salad/fruit kebab - chopping, slicing, grating</i>	<i>Healthy soup</i>	<i>Healthy eating - Pizza (pizza fractions)</i>	<i>Anglo Saxon Feasts (diet and food sources available)</i>  <i>Fairground snacks - Nachos (Scream if You Want to Go Faster)</i>	<i>Bread - kneading process (Victorian)</i>  <i>Guacamole / Chocolate(Mayan)</i>	<i>Me! Me! Me! Impact of diet, nutrients on body</i>
Box modelling Construction kits	<i>Construction kits Box modeling</i>  <i>Joining paper in different ways Staple, fold, concertina, slits, levers</i>	<i>Box modelling 3D buildings Great Fire of London</i>			<i>Musical Instruments -range of joining (homework project) Theory &amp; evaluation lessons in class</i>	<i>Long boats - Vikings and Saxons</i>
Sewing	<i>Weaving - different types of fabrics</i>	<i>Super hero costumes designed and connected with basic stitches (running stitch)</i>		<i>Puppets - introduce different stitching</i>  *Links to 'All Creatures Great and Small'		<i>Cushions with hotel theme, range of stitches plus additional features and buttons? 2019/2020</i>
Mechanisms -wood/levers /electronics	<i>Moving pictures- Easter cards - levers</i>	<i>Wheels - simple fire engines Great Fire of London (cardboard box axle and wheels)</i>	<i>Mechanics - Make a catapult wooden frame</i>	<i>Electrical circuits to create movement/light</i>	<i>Cams and movement on wooden frame - Victorian Inventions</i>	
Design	<i>Concrete cows -clay</i>	<i>Superhero costumes Great Fire of London - buildings simple fire engines Great Fire of London</i>	<i>Roman Mosaics</i>	<i>Salt dough - Anglo Saxon brooches</i>  *Completed during Anglo-Saxon topic	<i>Mask Making- Mayans (Art)</i>	

<b>Design Overview</b>	<b>Pupils should be taught to:</b> <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 ICT</li> </ul>		<b>Pupils should be taught to:</b> <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>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul>			
<b>Design - Contexts, Use and Purposes</b>	<i>State the purpose of the design and the intended user</i> <i>Explore foods/materials to make designs and create fruit salads, clay cows, moving pictures, box modelling, weaving</i>	<i>State the purpose of the design and the intended user</i> <i>Explore materials, make templates and mockups to make - <b>superhero mask/cape, Great Fire of London houses</b></i>	<i>Gather information about the needs and wants of particular individuals and groups</i> <i>Develop a design criteria and use these to inform ideas</i> <i>Research designs</i>	<i>Gather information about the needs and wants of particular individuals and groups</i> <i>Develop a design criteria and use these to inform ideas</i> <i>Research designs</i> <b>*Market research with links to packaging and consumers - food for visiting a theme park</b>	<i>Carry out research, using surveys to identify the needs, wants, preferences and values of particular individuals and groups</i> <i>Develop a simple design specification to guide their thinking</i>	<i>Carry out research, using surveys, interviews, questionnaires and web-based resources</i> <i>Identify the needs, wants, preferences and values of particular individuals and groups</i> <i>Recognise when their products have to fulfil conflicting requirements</i>  <i>Make design decisions, taking account of constraints such as time resources and cost</i>
<b>Design - Ideas</b>	<i>Draw on experiences from stories</i> <b>Handa's Surprise, The Queen's Knickers, The Emperor's New Clothes</b>	<i>Draw on experiences from stories e.g.</i> <b>Superheroes and costumes, Great Fire of London, Florence Nightingale</b>	<i>Share and clarify ideas through discussion</i>  <i>Model their ideas using examples</i>  <i>Use annotated sketches and diagrams</i>  <i>Use computer-aided design</i>	<i>Share and clarify ideas through discussion</i>  <i>Model their ideas using prototypes and pattern pieces</i>  <i>Use annotated sketches, cross-sectional drawings and diagrams</i> <b>*Different designs for Anglo-Saxon jewellery (annotated)</b>	<i>Generate innovative ideas based on research</i>  <i>Make design decisions, taking account of constraints such as time and resources</i>  <i>Develop prototypes</i>	<i>Generate innovative ideas based on research</i>  <i>Make design decisions, taking account of constraints such as time and resources</i>  <i>Develop prototypes</i>

				<i>Use computer-aided design</i>		
<b>Making Overview</b>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>select from and use a range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing] - explaining why choices have been made</li> </ul> <p>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics -explaining why choices have been made</p>		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>select from and use a wider range of tools and equipment to perform practical tasks [e.g. cutting, shaping, joining and finishing], accurately</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> </ul>			
<b>Making- Planning</b>	<p><i>Select from a range of equipment - knives, graters, peelers, scissors, clay tools, split pins, lolly sticks,</i></p> <p><i>Select from a range of components - paper, card, sellotape, masking tape, staples, glue,</i></p> <p><i>Cut, shape, join and finish - templates, sellotape, masking tape, staples, glue</i></p>		<p><i>Select tools and equipment suitable for the task</i></p> <p><i>Select materials and components suitable for the task</i></p> <p><i>Order the main stages of making</i></p>		<p><i>Select tools, equipment, materials and components suitable for the task</i></p> <p><i>Explain their choice of tools and equipment in relation to the skills and techniques they will be using</i></p> <p><i>Explain their choice of materials and components according to functional properties and aesthetic qualities</i></p> <p><i>Order the main stages of making</i></p> <p><i>Produce detailed lists of tools, equipment and materials that they need</i></p>	
	<i>Verbal explanations regarding choices</i>	<i>Verbal explanations regarding choices with reasoning</i>	<i>Produce detailed lists of tools, equipment and materials that they need</i>	<i>Explain their choice of tools and equipment in relation to the skills and techniques they will be using</i>		
				<i>Produce lists of tools, equipment and materials that they need</i> <b><i>*Instruction/ 'you will need' list for salt-dough jewellery</i></b>		

<p><b>Making - Practical Skills and Techniques</b></p>	<p><i>Follow procedures for safety</i></p> <p><i>Mark out, cut out and shape materials and Components - <b>construction boxes</b></i></p> <p><i>Assemble, join and combine materials and components - <b>moving pictures, construction boxes</b></i></p> <p><i>Use simple fixing materials e.g. temporary – paper clips and tape - <b>moving pictures, construction boxes</b></i></p> <p><i>Use finishing techniques, including those from art and design - <b>painting concrete cows, decoration of moving pictures</b></i></p>	<p><i>Follow procedures for safety</i></p> <p><i>Use and make own templates - <b>Superhero costumes, Great Fire of London Buildings</b></i></p> <p><i>Measure, mark out, cut out and shape materials and components <b>Superhero costumes, Great Fire of London Buildings</b></i></p> <p><i>Assemble, join and combine materials and components <b>Superhero costumes, Great Fire of London Buildings</b></i></p> <p><i>Use simple fixing materials e.g. temporary – paper clips, tape and permanent – glue, staples <b>Great Fire of London Buildings</b></i></p> <p><i>Use finishing techniques, including those from art and design <b>Superhero costumes, Great Fire of London Buildings</b></i></p>	<p><i>Follow procedures for safety</i></p> <p><i>Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</i></p> <p><i>Measure, mark out, cut and shape materials and components with some accuracy</i></p> <p><i>Assemble, join and combine materials and components with some accuracy</i></p> <p><i>apply a range of finishing techniques, include those from art and design, with some accuracy</i></p>	<p><i>Follow procedures for safety</i></p> <p><i>Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</i></p> <p><i>Measure, mark out, cut and shape materials and components with some accuracy</i> <b>*Anglo-Saxon jewellery</b> <b>*3D boxes for nachos</b></p> <p><i>Assemble, join and combine materials and components with some accuracy</i></p> <p><i>Apply a range of finishing techniques, include those from art and design, with some accuracy</i></p>	<p><i>Follow procedures for safety</i></p> <p><i>Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</i></p> <p><i>Accurately measure to nearest mm, mark out, cut and shape materials and components</i></p> <p><i>Accurately assemble, join and combine materials/ Components</i></p> <p><i>Accurately apply a range of finishing techniques, including those from art and design</i></p> <p><i>Use techniques that involve a number of steps</i></p> <p><i>Demonstrate resourcefulness, e.g. make refinements</i></p>	<p><i>Follow procedures for safety</i></p> <p><i>Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</i></p> <p><i>Accurately measure to nearest mm, mark out, cut and shape materials and components</i></p> <p><i>Accurately assemble, join and combine materials/ Components</i></p> <p><i>Accurately apply a range of finishing techniques, including those from art and design</i></p> <p><i>Use techniques that involve a number of steps</i></p> <p><i>Demonstrate resourcefulness, e.g. make refinements</i></p>
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<b>Evaluating Overview</b>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• explore and evaluate a range of existing products</li> </ul> <p>Evaluate components used</p> <ul style="list-style-type: none"> <li>• evaluate their ideas and products against design criteria</li> </ul>		<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• understand how key events and individuals in design and technology have helped shape the world</li> </ul>	
<b>Evaluate - Own ideas and products</b>	<p><i>Talk about their design ideas, what they are making and their end product</i></p> <p><i>Suggest how their products could be improved</i></p>	<p><i>Make simple judgements about their products against their design criteria</i></p> <p><i>Suggest how their products could be improved</i></p> <p><i>Evaluate product and components used</i></p> <p><b>Superhero costumes, Great Fire of London Buildings</b></p>	<p><i>Identify the strengths and weaknesses of their ideas and products</i></p> <p><i>Consider the views of others to improve their work</i></p> <p><i>Refer back to their design criteria as they design and make</i></p> <p><i>Use their design criteria to evaluate their completed products</i></p> <p><i>Identify the strengths and weaknesses of their ideas and products</i></p>	<p><i>Identify the strengths and weaknesses of their ideas and products</i></p> <p><i>Consider the views of others, including intended users, to improve their work</i></p> <p><i>Refer back to their design criteria as they design and make</i></p> <p><i>Use their design criteria to evaluate their completed products</i></p> <p><i>Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</i></p> <p><i>Compare their ideas and products to their original design specification</i></p>
			<p><i>Consider the views of others to improve their work</i></p>	<p><i>Consider the views of others, including intended users, to improve their work</i></p>
<b>Evaluate Existing products</b>	<p><i>Investigate - what products are, who they are for, how they are made and what materials are used</i></p>	<p><i>Investigate - what products are, who they are for, how they are made and what materials are used</i></p> <p><b>Superhero costumes, Great Fire of London Buildings</b></p>	<p><i>Investigate - how well products have been designed, how well products have been made, why materials have been chosen, what methods of construction have been used, how well products work and how well products achieve their purposes</i></p>	<p><i>Investigate - how well products have been designed, how well products have been made, why materials have been chosen, what methods of construction have been used, how well products work, how well products achieve their purposes and how well products meet user needs and wants</i></p>

			<i>Identify great designers and their work</i>	<i>Identify great designers and their work</i>	<i>Identify great designers and their work and use research of designers to influence work</i>	<i>Identify great designers and their work and use research of designers to influence work</i>
<b>Technical Knowledge Overview</b>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>• explore and use mechanisms [e.g. levers, Sliders, wheels and axles], in their products</li> </ul>		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>• understand and use electrical systems in their products [e.g. series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>• apply their understanding of computing to program, monitor and control their products</li> </ul>			
<b>Technical Knowledge - Making products work</b>	<p><i>Construction kit model making - Understand how freestanding structures can be made stronger, stiffer and more stable</i></p> <p><i>Understand about the simple working characteristics of materials and components</i></p> <p><i>Understand about the movement of simple mechanisms including levers, sliders (Year 1)</i></p>	<p><i>Model making - art and design and construction kits - Understand how freestanding structures can be made stronger, stiffer and more stable</i></p> <p><i>Understand about the simple working characteristics of materials and components</i></p> <p><i>Understand about the movement of simple mechanisms including wheels and axles (Year 2)</i></p> <p><i>Know the correct technical vocabulary for the projects they are undertaking</i></p>	<p><i>Understand how levers and linkages or pneumatic systems create movement</i></p> <p><i>Understand how to program a computer to control their products</i></p> <p><i>Know how to make strong, stiff shell structures</i></p>	<p><i>Understand how simple electrical circuits and components can be used to create functional products</i></p> <p><i>Know that a single fabric shape can be used to make a 3D textiles product</i></p> <p><b>*Links to Art re: making own felt</b></p>	<p><i>Understand how cams, pulleys and gears create Movement</i></p> <p><i>Know how to reinforce/strengthen a 3D framework</i></p> <p><i>Know that a 3D textiles product can be made from a combination of fabric shapes</i></p>	<p><i>Understand how more complex electrical circuits and components can be used to create functional products</i></p> <p><i>Understand how to program a computer to monitor changes in the environment / control their products</i></p>

<b>Cooking and Nutrition Overview</b>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• use the basic principles of a healthy and varied diet to prepare dishes</li> <li>• understand where food comes from</li> </ul>		<b>Pupils should be taught to:</b> <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> </ul>			
<b>Cooking and Nutrition - where food comes from</b>	<i>Know where foods come from - <b>underground, trees, fields etc</b></i>	<i>Know where foods come from - <b>underground, trees, fields, manufactured.</b></i>	Know that food is grown ( <b>such as tomatoes, wheat and potatoes</b> ), reared ( <b>such as pigs, chickens and cattle</b> ) and caught ( <b>such as fish</b> ) in the UK, Europe and the wider world	Know that seasons may affect the food available	Understand how food is processed into ingredients that can be eaten or used in cooking	
<b>Food Preparation, cooking and Nutrition</b>	<p><i>Use appropriate equipment to weigh and measure Ingredients</i></p> <p><i>Prepare simple dishes safely and hygienically, without using a heat source</i></p> <p><i>Use techniques such as cutting</i></p> <p><i>Name, group and sort foods</i></p> <p><i>Know that everyone should eat at least five portions of fruit and vegetables every day</i></p> <p><i>Understand how foods can be combined together for taste e.g.</i></p>	<p><i>Use appropriate equipment to weigh and measure Ingredients</i></p> <p><i>Prepare simple dishes safely and hygienically, without using a heat source</i></p> <p><i>Use techniques such as cutting</i></p> <p><i>Name and sort foods into the five groups of the 'eat well' plate</i></p> <p><i>Know that everyone should eat at least five portions of fruit and vegetables every day</i></p>	<p><i>Know that food ingredients can be fresh, pre-cooked and processed</i></p> <p><i>How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</i></p> <p><i>Know that a healthy diet is made up from a variety and balance of different foods and drinks, as depicted in the 'eat well' plate</i></p> <p><i>Know that to be active and healthy, food is needed to provide energy for the body</i></p> <p><i>Measure using grams</i></p>	<p><i>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading</i></p> <p><b>*Nacho making (fairground snack)</b></p> <p><i>Know that a healthy diet is made up from a variety and balance of different foods and drinks, as depicted in the 'eat well' plate</i></p> <p><i>Know that to be active and healthy, food is needed to provide energy for the body</i></p> <p><b>*Links with the pulse rate investigation - Science.</b></p> <p><i>Measure using grams</i></p> <p><b>*Nacho making</b></p> <p><i>Follow a recipe</i></p>	<p><i>Know that a recipe can be adapted a by adding or substituting one or more ingredients</i></p> <p><i>How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</i></p> <p><i>How to use a range of techniques such as kneading and baking - Y5 = bread making/cornish pasties</i></p> <p><i>Measure accurately</i></p>	<p><i>Know that recipes can be adapted to change the appearance, taste, texture and aroma</i></p> <p><i>Know that different foods contain different substances - nutrients, water and fibre - that are needed for health</i></p> <p><i>Understand the need for correct storage</i></p> <p><i>Measure accurately</i></p> <p><i>Work out ratios in recipes</i></p>

	<i>making a fruit salad/fruit kebab</i>	<i>Understand that food ingredients should be combined according to their sensory characteristics</i> <b>Florence Nightingale - Healthy Soup</b>	<i>Follow a recipe</i>	<b>*Nacho making</b>		
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