

## Long term plans for: Design Technology

Our Curriculum Drivers are:

Wellbeing

Aspirations

Outdoor Learning

These key drivers are integral to all that we do at Glade, to ensure that all of our pupils leave us as happy, healthy and well-rounded individuals.



**"Growing, Learning, Achieving with Dedication and Enthusiasm**

Exploring and Developing Ideas	
KS1	KS2
<p><b>Design</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> </ul> <p><b>Make</b></p> <ul style="list-style-type: none"> <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> </ul>	<p><b>Design</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>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> <p><b>Make</b></p> <ul style="list-style-type: none"> <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>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>
Evaluating and Developing Work	
KS1	KS2
<p><b>Evaluate</b></p> <ul style="list-style-type: none"> <li>explore and evaluate a range of existing products</li> <li>evaluate their ideas and products against design criteria</li> </ul> <p><b>Technical knowledge</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 [for example, levers, sliders, wheels and axles], in their products.</li> </ul>	<p><b>Evaluate</b></p> <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> <p><b>Technical knowledge</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 [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul>



## Subject Overview – Progression of Skills – D&T

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and health eating. Pupils should be taught to:

Cooking and Nutrition	
KS1	KS2
<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>	<ul style="list-style-type: none"> <li>Understand 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>

	Autumn	Spring	Summer
R			
1	<b>Mechanism</b> Sliders and Levers	<b>Structures</b> Freestanding structures	<b>Food</b> Preparing fruit and vegetables (Including cooking and nutrition requirements for KS1)
2	<b>Mechanism</b> Wheels and Axles	<b>Food</b> Preparing fruits and vegetables (Including cooking and nutrition requirements for KS1)	<b>Textiles</b> Templates and joining techniques
3	<b>Mechanical Systems</b> Levers and Linkages	<b>Food</b> Healthy and varied diet (Including cooking and nutrition requirements for KS2)	<b>Textiles</b> 2D shapes and 3D Product
4	<b>Food</b> Healthy and varied diet (Including cooking and nutrition requirement for KS2)	<b>Electrical Systems</b> Simple circuits and switches (Including programming and control)	<b>Structures</b> Shell structures (Including computer aided design)
5	<b>Structures</b> Frame structures	<b>Food</b> Celebrating culture and seasonality (Including cooking and nutrition requirements for KS2)	<b>Electrical Systems</b> Using more complex switches and circuits (Including programming, control and monitoring)
6	<b>Textiles</b> Combining different fabric shapes (including computer- aided design)	<b>Mechanical Systems</b> Pulleys, gears or cams	<b>Food</b> Celebrating culture and seasonality (Including cooking and nutrition requirement for KS2)



## Subject Overview – Progression of Skills – D&T - EYFS & KS1

	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
R					
1	<p><b>Understanding contexts, users and purposes &amp; generating, developing, modelling &amp; communicating ideas</b></p> <ul style="list-style-type: none"> <li>• Begin to draw on their own experience to help generate ideas and research conducted on criteria.</li> <li>• Begin to understand the development of existing products. Start to suggest ideas and explain what they are going to do.</li> <li>• Understand how to identify a target group for what they intend to design and make based on a design criterion.</li> <li>• Begin to develop their ideas through talk and drawings. Make templates and mock ups of their ideas in card and paper or using ICT.</li> </ul>	<p><b>Planning</b></p> <ul style="list-style-type: none"> <li>• Begin to make their design using appropriate techniques.</li> </ul> <p><b>Practical skills and techniques</b></p> <ul style="list-style-type: none"> <li>• Begin to build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> <li>• With help measure, mark out, cut and shape a range of materials.</li> <li>• Explore using tools e.g. scissors and a hole punch safely.</li> <li>• Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape.</li> <li>• Begin to use simple finishing techniques to improve the appearance of their product.</li> </ul>	<p><b>Own ideas and products</b></p> <ul style="list-style-type: none"> <li>• Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria).</li> <li>• Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.</li> </ul> <p><b>Existing products</b></p> <ul style="list-style-type: none"> <li>• When looking at existing products explain what they like and dislike about products and why.</li> </ul>	<ul style="list-style-type: none"> <li>• know about the simple working characteristics of materials and components,</li> <li>• know the movement of simple mechanisms,</li> <li>• understand how freestanding structures can be made stronger, stiffer and more stable;</li> <li>• use the correct technical vocabulary</li> </ul>	<p><b>Where food comes from</b></p> <ul style="list-style-type: none"> <li>• Begin to understand that all food comes from plants or animals.</li> <li>• Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught.</li> </ul> <p><b>Food preparation cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Start to understand how to name and sort foods into the five groups in ‘The Eat well plate’</li> <li>• Begin to understand that everyone should eat at least five portions of fruit and vegetables every day.</li> <li>• Know how to prepare simple dishes safely and hygienically, without using a heat source.</li> <li>• Know how to use techniques such as cutting, peeling and grating.</li> </ul>
2	<p><b>Understanding contexts, users and purposes &amp; generating, developing, modelling &amp; communicating ideas</b></p> <ul style="list-style-type: none"> <li>• Start to generate ideas by drawing on their own and other people's experiences.</li> <li>• Begin to develop their design ideas through discussion, observation, drawing and modelling.</li> <li>• Identify a purpose for what they intend to design and make.</li> <li>• Understand how to identify a target group for what they intend to design and make based on a design criterion.</li> <li>• Develop their ideas through talk and drawings and label parts. Make templates and mock ups of their ideas in card and paper or using ICT.</li> </ul>	<p><b>Planning</b></p> <ul style="list-style-type: none"> <li>• Begin to select tools and materials; use correct vocabulary to name and describe them</li> </ul> <p><b>Practical skills and techniques</b></p> <ul style="list-style-type: none"> <li>• Build structures, exploring how they can be made stronger, stiffer and more stable.</li> <li>• With help measure, cut and score with some accuracy.</li> <li>• Learn to use hand tools safely and appropriately.</li> <li>• Start to assemble, join and combine materials in order to make a product. Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques.</li> <li>• Start to choose and use appropriate</li> </ul>	<p><b>Own ideas and products</b></p> <ul style="list-style-type: none"> <li>• Evaluate their work against their design criteria.</li> <li>• Start to evaluate their products as they are developed, identifying strengths and possible changes they might make.</li> <li>• With confidence talk about their ideas, saying what they like and dislike about them.</li> </ul> <p><b>Existing products</b></p> <ul style="list-style-type: none"> <li>• Look at a range of existing products explain what they like and dislike about products and why.</li> </ul>	<ul style="list-style-type: none"> <li>• know about the simple working characteristics of materials and components,</li> <li>• know the movement of simple mechanisms,</li> <li>• understand how freestanding structures can be made stronger, stiffer and more stable;</li> <li>• use the correct technical vocabulary</li> </ul>	<p><b>Where food comes from</b></p> <ul style="list-style-type: none"> <li>• Understand that all food comes from plants or animals.</li> <li>• Know that food has to be farmed, grown elsewhere (e.g. home) or caught.</li> </ul> <p><b>Food preparation cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Understand how to name and sort foods into the five groups in ‘The Eat well plate’</li> <li>• Know that everyone should eat at least five portions of fruit and vegetables every day. Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source.</li> <li>• Demonstrate how to use techniques such as cutting, peeling and</li> </ul>

finishing techniques based on own ideas.

grating.

## Subject Overview – Progression of Skills – D&T - LKS2

	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
<b>3</b>	<p><b>Understanding contexts, users and purposes &amp; generating, developing, modelling &amp; communicating ideas</b></p> <ul style="list-style-type: none"> <li>• Generate ideas for an item, considering its purpose &amp; the user/s.</li> <li>• Start to order the main stages of making a product.</li> <li>• Identify a purpose and establish criteria for a successful product. Understand how well products have been designed, made, what materials have been used and the construction technique.</li> <li>• Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</li> <li>• Start to understand whether products can be recycled or reused.</li> <li>• Know to make drawings with labels when designing.</li> <li>• When planning explain their choice of materials and components including function and aesthetics.</li> </ul>	<p><b>Planning</b></p> <ul style="list-style-type: none"> <li>• Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components.</li> <li>• Explain their choice of tools and equipment in relation to the skills and techniques they will be using.</li> </ul> <p><b>Practical skills and techniques</b></p> <ul style="list-style-type: none"> <li>• Measure, mark out, cut, score and assemble components with more accuracy.</li> <li>• Start to work safely and accurately with a range of simple tools.</li> <li>• Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work.</li> <li>• Start to measure, tape or pin, cut and join fabric with some accuracy.</li> </ul>	<p><b>Own ideas and products</b></p> <ul style="list-style-type: none"> <li>• Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose.</li> </ul> <p><b>Existing products</b></p> <ul style="list-style-type: none"> <li>• Begin to disassemble and evaluate familiar products and consider the views of others to improve them.</li> </ul> <p><b>Key events and individuals</b></p> <ul style="list-style-type: none"> <li>• Evaluate the key designs of individuals in design and technology has helped shape the world.</li> </ul>	<ul style="list-style-type: none"> <li>• Start to understand that mechanical and electrical systems have an input, process and output.</li> <li>• Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. Know how simple electrical circuits and components can be used to create functional products</li> </ul>	<p><b>Where food comes from</b></p> <ul style="list-style-type: none"> <li>• Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</li> </ul> <p><b>Food preparation cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>• Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>• Start to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate'</li> <li>• Begin to know that to be active and healthy, food and drink are needed to provide energy for the body.</li> </ul>
<b>4</b>	<ul style="list-style-type: none"> <li>• Start to generate ideas, considering the purposes for which they are designing-link with Mathematics and Science. Confidently make labelled drawings from different views showing specific features. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail.</li> <li>• Identify the strengths and areas for development in their ideas and products.</li> <li>• When planning considers the views of others, including intended users, to improve their work.</li> <li>• Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground -breaking products.</li> <li>• When planning explain their choice of</li> </ul>	<p><b>Planning</b></p> <ul style="list-style-type: none"> <li>• Select a wider range of tools and techniques for making their product safely.</li> <li>• Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.</li> <li>• Start to join and combine materials and components accurately in temporary and permanent ways.</li> </ul> <p><b>Practical skills and techniques</b></p> <ul style="list-style-type: none"> <li>• Understand how to reinforce and strengthen a 3D framework.</li> <li>• Now sew using a range of different stitches, to weave and knit. Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy.</li> </ul>	<p><b>Own ideas and products</b></p> <ul style="list-style-type: none"> <li>• Evaluate their products carrying out appropriate tests.</li> <li>• Start to evaluate their work both during and at the end of the assignment.</li> </ul> <p><b>Existing products</b></p> <ul style="list-style-type: none"> <li>• Be able to disassemble and evaluate familiar products and consider the views of others to improve them. Evaluate the key designs of individuals in design and technology has helped shape the world. Investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; why materials have been chosen, the methods of construction used and how well they work.</li> </ul> <p><b>Key events and individuals</b></p>	<ul style="list-style-type: none"> <li>• Know how mechanical systems such as cams or pulleys or gears create movement.</li> <li>• Understand how more complex electrical circuits and components can be used to create functional products. Continue to learn how to program a computer to monitor changes in the environment and control their products.</li> </ul>	<p><b>Where food comes from</b></p> <ul style="list-style-type: none"> <li>• Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</li> </ul> <p><b>Food preparation cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>• Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> <li>• Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted</li> </ul>

materials and components according to function and aesthetic	<ul style="list-style-type: none"> <li>Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</li> </ul>	<ul style="list-style-type: none"> <li>Know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</li> </ul>		<p>in 'The Eat well plate'</p> <ul style="list-style-type: none"> <li>Know that to be active and healthy, food and drink are needed to provide energy for the body.</li> </ul>
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## Subject Overview – Progression of Skills – D&T - UKS2

	Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
<b>5</b>	<ul style="list-style-type: none"> <li>Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces.</li> <li>Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</li> <li>With growing confidence apply a range of finishing techniques, including those from art and design. Draw up a specification for their design- link with Mathematics and Science.</li> <li>Use results of investigations, information sources, including ICT when developing design ideas.</li> <li>With growing confidence select appropriate materials, tools and techniques.</li> <li>Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</li> </ul>	<p><b>Planning</b></p> <ul style="list-style-type: none"> <li>Select appropriate materials, tools and techniques 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 &amp; aesthetic qualities.</li> <li>Understand how mechanical systems such as cams or pulleys or gears create movement.</li> </ul> <p><b>Practical skills and techniques</b></p> <ul style="list-style-type: none"> <li>Begin to measure &amp; mark out more accurately.</li> <li>Demonstrate how to use skills in using different tools and equipment safely and accurately with growing confidence cut and join with accuracy to ensure a good-quality finish to the product.</li> <li>Weigh and measure accurately (time, dry ingredients, liquids).</li> <li>Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</li> </ul>	<p><b>Own ideas and products</b></p> <ul style="list-style-type: none"> <li>Start to evaluate a product against the original design specification and by carrying out tests.</li> <li>Evaluate their work both during and at the end of the assignment.</li> </ul> <p><b>Existing products</b></p> <ul style="list-style-type: none"> <li>Begin to evaluate it personally and seek evaluation from others. Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests.</li> <li>Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels.</li> <li>Evaluate against their original criteria and suggest ways that their product could be improved.</li> </ul> <p><b>Key events and individuals</b></p> <ul style="list-style-type: none"> <li>Evaluate the key designs of individuals in design and technology has helped shape the world.</li> </ul>	<ul style="list-style-type: none"> <li>Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products.</li> <li>Understand that mechanical and electrical systems have an input, process and output.</li> </ul>	<p><b>Where food comes from</b></p> <ul style="list-style-type: none"> <li>Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Begin to understand that seasons may affect the food available.</li> </ul> <p><b>Food preparation cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>Understand how food is processed into ingredients that can be eaten or used in cooking.</li> <li>Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</li> </ul>
<b>6</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.</li> <li>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Accurately apply a range of finishing techniques, including those from art and design.</li> <li>Draw up a specification for their design-link with Mathematics and Science.</li> <li>Plan the order of their work, choosing appropriate materials, tools and techniques.</li> <li>Suggest alternative methods of making if the first attempts fail. Identify the strengths and areas for development in their ideas</li> </ul>	<p><b>Planning</b></p> <ul style="list-style-type: none"> <li>Confidently select appropriate tools, materials, components and techniques and use them.</li> </ul> <p><b>Practical skills and techniques</b></p> <ul style="list-style-type: none"> <li>Use tools safely and accurately. Assemble components to make working models. Aim to make and to achieve a quality product. With confidence pin, sew and stitch materials together to create a product. Demonstrate when make modifications as they go along. Construct products using permanent joining techniques.</li> </ul>	<p><b>Own ideas and products</b></p> <ul style="list-style-type: none"> <li>Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests.</li> <li>Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels.</li> <li>Evaluate against their original criteria and suggest ways that their product could be improved.</li> </ul> <p><b>Existing products</b></p> <ul style="list-style-type: none"> <li>Investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; why materials have been chosen, the methods of construction used, how well they work, and how</li> </ul>	<ul style="list-style-type: none"> <li>Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products.</li> <li>Know how to reinforce and strengthen a 3D framework. Understand that mechanical and electrical systems have an input, process and output.</li> <li>Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</li> <li>Understand how mechanical systems such as cams or pulleys or gears create movement</li> </ul>	<p><b>Where food comes from</b></p> <ul style="list-style-type: none"> <li>Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand that seasons may affect the food available.</li> </ul> <p><b>Food preparation cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>Understand how food is processed into ingredients that can be eaten or used in cooking.</li> <li>Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>Understand how to use a range of techniques such as peeling, chopping,</li> </ul>

<p>and products.</p> <ul style="list-style-type: none"><li>• Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</li></ul>		<p>innovative and sustainable they are.</p> <p><b>Key events and individuals</b></p> <ul style="list-style-type: none"><li>• Evaluate the key designs of individuals in design and technology has helped shape the world.</li></ul>		<p>slicing, grating, mixing, spreading, kneading and baking.</p> <ul style="list-style-type: none"><li>• Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</li></ul>
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