

Brookside Design and Technology (D&T) Curriculum Sequencing

National Curriculum Objectives	KS1		KS2	
	Year 1/Year 2	Year 3/Year 4	Year 5/Year 6	Year 5/Year 6
Design, make, evaluate	<p>Design</p> <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <p>Make</p> <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria 	<p>Design</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately 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 <p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world 	<p>Design</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately 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 <p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world 	<p>Design</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately 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 <p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world
Technical knowledge	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	<ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	<ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

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		<ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products. 	<ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products.
Cooking and nutrition	<ul style="list-style-type: none"> use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from. 	<ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed 	<ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

Skills Progression	KS1	KS2	
	Year 1/Year 2	Year 3/Year 4	Year 5/Year 6
Design, make, evaluate	<p>Designing <i>Understanding contexts users and purposes:</i></p> <ul style="list-style-type: none"> work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment state what products they are designing and making say whether their products are for themselves or other users describe what their products are for say how their products will work say how they will make their products suitable for their intended users use simple design criteria to help develop their ideas 	<p>Designing <i>Understanding contexts users and purposes:</i></p> <ul style="list-style-type: none"> gather information about the needs and wants of particular individuals and groups develop their own design criteria and use these to inform their ideas <p><i>Generating, developing, modelling and communicating ideas:</i></p> <ul style="list-style-type: none"> generate realistic ideas, focusing on the needs of the user 	<p>Designing <i>Understanding contexts users and purposes:</i></p> <ul style="list-style-type: none"> carry out research, using surveys, interviews, questionnaires and web-based resources identify the needs, wants, preferences and values of particular individuals and groups <p><i>Generating, developing, modelling and communicating ideas:</i></p> <ul style="list-style-type: none"> generate innovative ideas, drawing on research

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	<p><i>Generating, developing, modelling and communicating ideas:</i></p> <ul style="list-style-type: none"> • generate ideas by drawing on their own experiences • use knowledge of existing products to help come up with ideas • develop and communicate ideas by talking and drawing • model ideas by exploring materials, components and construction kits and by making templates and mockups • use information and communication technology, where appropriate, to develop and communicate their ideas 		
	<p>Making <i>Planning:</i></p> <ul style="list-style-type: none"> • select from a range of tools and equipment • select from a range of materials and components according to their characteristics <p><i>Practical skills and techniques:</i> follow procedures for safety and hygiene</p> <ul style="list-style-type: none"> • use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components • measure, mark out, cut and shape materials and components • assemble, join and combine materials and components • use finishing techniques, including those from art and design 	<p>Making <i>Planning:</i></p> <ul style="list-style-type: none"> • order the main stages of making <p><i>Practical skills and techniques:</i></p> <ul style="list-style-type: none"> • measure, mark out, cut and shape materials and components with some accuracy • assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques, including those from art and design, with some accuracy 	<p>Making <i>Planning:</i></p> <ul style="list-style-type: none"> • produce appropriate lists of tools, equipment and materials that they need • formulate step-by-step plans as a guide to making <p><i>Practical skills and techniques:</i></p> <ul style="list-style-type: none"> • accurately measure, mark out, cut and shape materials and components • accurately assemble, join and combine materials and components • accurately apply a range of finishing techniques, including those from art and design • demonstrate resourcefulness when tackling practical problems
	<p>Evaluating <i>Own ideas and products:</i></p> <ul style="list-style-type: none"> • talk about their design ideas and what they are making 	<p>Evaluating <i>Own ideas and products:</i></p> <ul style="list-style-type: none"> • refer to their design criteria as they design and make 	<p>Evaluating <i>Own ideas and products:</i></p> <ul style="list-style-type: none"> • critically evaluate the quality of the design, manufacture and fitness for

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	<ul style="list-style-type: none"> make simple judgements about their products and ideas against design criteria <p><i>Existing products:</i> Across KS1 pupils should explore:</p> <ul style="list-style-type: none"> what products are who products are for what products are for how products work how products are used where products might be used what materials products are made from what they like and dislike about products 	<ul style="list-style-type: none"> use their design criteria to evaluate their completed products <p><i>Existing products:</i></p> <ul style="list-style-type: none"> who designed and made the products where products were designed and made when products were designed and made whether products can be recycled or reused <p><i>Key events and individuals:</i> Across KS2 pupils should know:</p> <ul style="list-style-type: none"> about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products 	<p>purpose of their products as they design and make</p> <p><i>Existing products:</i></p> <ul style="list-style-type: none"> how much products cost to make how innovative products are how sustainable the materials in products are what impact products have beyond their intended purpose <p><i>Key events and individuals:</i> Across KS2 pupils should know:</p> <ul style="list-style-type: none"> about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products
Technical knowledge	<p>Making products work</p> <ul style="list-style-type: none"> about the simple working characteristics of materials and components about the movement of simple mechanisms such as levers, sliders, wheels and axles <ul style="list-style-type: none"> how freestanding structures can be made stronger, stiffer and more stable 	<p>Making products work</p> <ul style="list-style-type: none"> how mechanical systems such as levers and linkages or pneumatic systems create movement how simple electrical circuits and components can be used to create functional products how to program a computer to control their products how to make strong, stiff shell structures 	<p>Making products work</p> <ul style="list-style-type: none"> how mechanical systems such as cams or pulleys or gears create movement how more complex electrical circuits and components can be used to create functional products how to program a computer to monitor changes in the environment and control their products how to reinforce and strengthen a 3D framework
Cooking and nutrition	<p>Where food comes from</p> <ul style="list-style-type: none"> that all food comes from plants or animals that food has to be farmed, grown elsewhere (e.g. home) or caught <p>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> how to name and sort foods into the five groups in the eatwell plate that everyone should eat at least five portions of fruit and vegetables every day how to prepare simple dishes safely and hygienically, without using a heat source how to use techniques such as cutting, peeling and grating 	<p>Where food comes from</p> <p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> 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 <p>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eatwell plate that to be active and healthy, food and drink are needed to provide energy for the body 	<p>Where food comes from</p> <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> that seasons may affect the food available how food is processed into ingredients that can be eaten or used in cooking <p>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> that different food and drink contain different substances – nutrients, water and fibre – that are needed for health

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Where skills & objectives are taught.	KS1	KS2	
	Year 1/Year 2	Year 3/Year 4	Year 5/Year 6
Design, make, evaluate	<p><u>Year A</u></p> <p>Mechanisms – sliders and levers</p> <p>Pop-up books</p> <ul style="list-style-type: none"> I can fold, draw and design a pop up tab. I can generate and develop my ideas. I can select from and use a range of tools and equipment to perform practical tasks. I can select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] I can collate my pop-up book. I can evaluate my pop- up book <p>Structures – freestanding structures</p> <ul style="list-style-type: none"> I understand what a structure is and the functions of free-standing structures. I can design a structure. I can design a bridge. I can create a prototype. I can investigate and test my design <p><u>Year B</u></p> <p>Textiles – templates and joining techniques</p> <p>Puppets</p> <ul style="list-style-type: none"> Research different puppets and compare design a purposeful, functional and appealing puppet 	<p><u>Year A</u></p> <p>Mechanical systems – levers and linkages</p> <ul style="list-style-type: none"> To explore a lever and how it creates movement To research and design To make To evaluate <p>Textiles – 2-D- 3-D product</p> <p>Wallets</p> <ul style="list-style-type: none"> To research and design a wallet/purse To practise sewing techniques To make a wallet/purse (3D product) from a 2D shape To evaluate my design <p><u>Year B</u></p> <p>Structures –</p> <ul style="list-style-type: none"> Egg drop challenge Selecting appropriate materials Designing a suitable structure Testing and evaluating effectiveness <p>Mechanisms – axles and wheels</p> <p>Roman chariot</p> <ul style="list-style-type: none"> To investigate Roman entertainment from a range of sources. To join wheels and axles effectively and explain how they work Generating a design based on research and prior knowledge Use appropriate tools and equipment to put together a Roman Chariot Evaluate and test effectiveness 	<p><u>Year A</u></p> <p>Structures – Frame structures</p> <p>Automata animals</p> <ul style="list-style-type: none"> Understand and use mechanical systems in their products Use research and design criteria to inform a design Select from and use a wider range of materials Building frameworks Evaluate ideas and products <p>Textiles – combining different fabric shapes (including computer aided design)</p> <p>Weaving (Anglo-Saxon link)</p> <ul style="list-style-type: none"> Understanding techniques Selecting appropriate materials Investigating how dyes can be created from everyday materials Weaving colour schemes & patterns Evaluating technique & design <p>Electrical systems/cross-curricular computing:</p> <ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products. <p><u>Year B</u></p> <p>Air powered balloons</p> <ul style="list-style-type: none"> Understand how a balloon can be used to power a small vehicle

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	<ul style="list-style-type: none"> • select from and use a range of tools and equipment to perform tasks and make a puppet • evaluate my puppet against a design criteria <p>Mechanisms- axles and wheels Pull toys</p> <ul style="list-style-type: none"> • Explore, explain and evaluate a wheel and axle mechanism • Design, make and evaluate a product with a wheel and axle mechanism 		<ul style="list-style-type: none"> • Design and make own balloon powered car • Evaluate effectiveness and design <p>Mechanisms – pulleys and levers</p> <ul style="list-style-type: none"> • K'nex construction kits • Comparing lever mechanisms • How levers change direction • Where levers are used • Types of pulley system • How pulleys change the amount of force used <p>Textiles – combining different fabric shapes (including computer aided design) Poppies</p> <ul style="list-style-type: none"> • Understanding sewing techniques • Selecting appropriate materials • Putting together and evaluating design and practical use
<p>Technical knowledge</p>	<p>Making products work</p> <ul style="list-style-type: none"> • about the simple working characteristics of materials and components • about the movement of simple mechanisms such as levers, sliders, wheels and axles • how freestanding structures can be made stronger, stiffer and more stable 	<p>Making products work</p> <ul style="list-style-type: none"> • how mechanical systems such as levers and linkages or pneumatic systems create movement • how simple electrical circuits and components can be used to create functional products • how to program a computer to control their products • how to make strong, stiff shell structures 	<p>Making products work</p> <ul style="list-style-type: none"> • how mechanical systems such as cams or pulleys or gears create movement • how more complex electrical circuits and components can be used to create functional products • how to program a computer to monitor changes in the environment and control their products • how to reinforce and strengthen a 3D framework
<p>Cooking and nutrition</p>	<p>Year A and B</p> <p>Food- preparing fruit and vegetables (including cooking and nutritional requirements for KS1)</p> <p>Year A – Fruit smoothies</p> <ul style="list-style-type: none"> • Investigate and evaluate fruit and vegetables • Explore the Eatwell plate in relation to a smoothie 	<p>Year A and B</p> <p>Food - Healthy and varied diet (including cooking and nutrition requirements for KS2)</p> <p>Year A – Sandwich for a picnic</p> <ul style="list-style-type: none"> • Investigate a range of food products • Link to Eatwell plate • Sensory evaluation on the contents of the food • How are ingredients used in products grown, harvested, reared and caught. 	<p>Year A and B</p> <p>Food – Celebrating culture and seasonality (including cooking and nutrition requirements for KS2)</p> <p>Year A – Pasta dish</p> <p>Seasonality of food</p> <ul style="list-style-type: none"> • Understand seasonality and when foods are grown in the UK • How ingredients are reared, caught and processed • Plate proportions and protein choices

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	<ul style="list-style-type: none"> Investigate and plan how to make smoothie Make and evaluate a smoothie Design and create a label for my smoothie <p>Year B – Biscuits</p> <ul style="list-style-type: none"> Discuss ingredients and tools used to measure Preparing hygienically 	<ul style="list-style-type: none"> Selecting, using a range of utensils and techniques appropriately Designing a sandwich for a summer picnic Food hygiene <p>Year B- Bicester Market Stall</p> <ul style="list-style-type: none"> Investigate a range of food products Link to Eatwell plate Sensory evaluation on the contents of the food How are ingredients used in products grown, harvested, reared and caught. Selecting, using a range of utensils and techniques appropriately Food hygiene 	<ul style="list-style-type: none"> Designing a seasonal meal How to store and prepare food safely Prepare and cook a savoury dish using a range of cooking techniques Evaluate a meal <p>Year B – Cooking</p> <ul style="list-style-type: none"> Greek honey bread Preparing ingredients Using utensils Applying heat in different ways
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Brookside Primary School

Long term plan for Design and Technology (DT) KS1 and KS2 2022/2023

Key Stage 1

A	<p>Mechanisms Sliders and levers</p>	<p>Structures Freestanding structures</p>	<p>Food Preparing fruit and vegetables (including cooking and nutrition requirements for KS1)</p>
B	<p>Mechanisms Wheels and axles</p>	<p>Food Preparing fruit and vegetables (including cooking and nutrition requirements for KS1)</p>	<p>Textiles Templates and joining techniques</p>

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LKS2

A	<p>Mechanical Systems Levers and linkages</p>	<p>Food Healthy and varied diet (including cooking and nutrition requirements for KS2)</p>	<p>Textiles 2-D shape to 3-D product</p>
B	<p>Structures Shell structures (including computer-aided design)</p>	<p>Electrical Systems Simple circuits and switches (including programming and control)</p>	<p>Food Healthy and varied diet (including cooking and nutrition requirements for KS2)</p>

UKS2

A	<p>Structures Frame structures</p>	<p>Food Celebrating culture and seasonality (including cooking and nutrition requirements for KS2)</p>	<p>Electrical Systems More complex switches and circuits (including programming, monitoring and control)</p>
B	<p>Textiles Combining different fabric shapes (including computer-aided design)</p>	<p>Mechanical Systems Pulleys or gears</p>	<p>Food Celebrating culture and seasonality (including cooking and nutrition requirements for KS2)</p>