



Curriculum Intent Statement

“Design and technology is a phenomenally important subject. Logical, creative and practical, it’s the only opportunity students have to apply what they learn in maths and science - directly preparing them for a career in engineering.” James Dyson

The Design and Technology curriculum prepares our children to deal with the rapidly changing world. DT encourages children to work independently and within a team to think creatively and solve problems. It enables them to identify needs and opportunities and encourages them to develop a range of ideas and by making new products. As James Dyson says it brings together their learning in maths and science and it allows the children to reflect on and evaluate existing products.

Design Technology should provide children with a real-life context for learning. At Brookhurst we want to allow children to aspire to be more through creative opportunities for them in the wider world. Through our Design Technology curriculum, children should be inspired by engineers, designers, chefs and architects to enable them to create a range of structures, mechanisms, textiles, electrical systems and food products with a real-life purpose.

The intent at Brookhurst Primary School is for Design Technology to be taught in all year groups, once per term, which includes at least one topic related to food.

Curriculum Implementation



Aims of the National Curriculum

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims

The national curriculum for design and technology aims to ensure that all pupils:

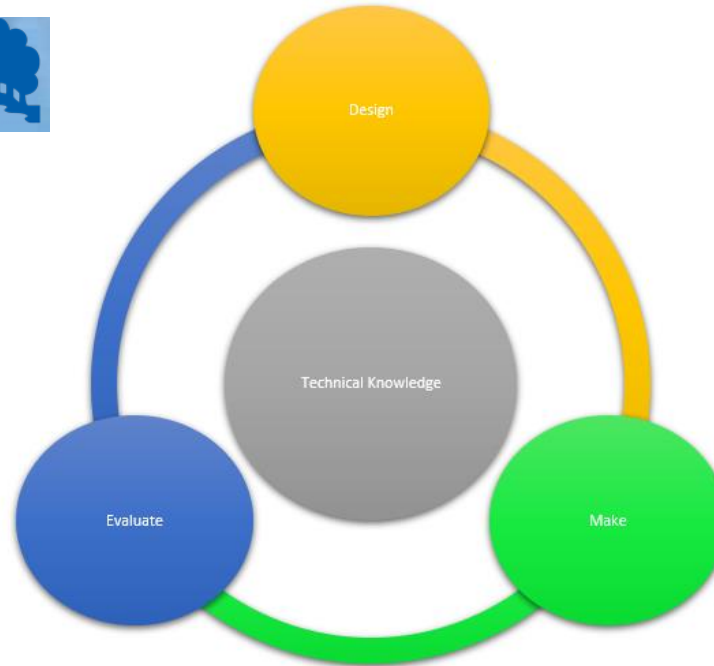
- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook

All teaching of Design Technology should follow the design, make and evaluate cycle. Each stage should be rooted in technical knowledge. The design process should be rooted in real life, relevant contexts to give meaning to learning. While making, children should



be given choice and a range of tools to choose freely from. To evaluate, children should be able to evaluate their own products against a design criteria. Each of these steps should be rooted in technical knowledge and vocabulary. Design Technology should be taught to a high standard, where each of the stages should be given equal weight. There should be evidence in each of these stages in the children's Learning Journals.

	KS1	KS2
Design	<ul style="list-style-type: none">• Design should be rooted in real life, relevant contexts to give meaning to the learning.• Planned through appropriate formats: drawing, templates, talking and mock-ups	<ul style="list-style-type: none">• Rooted in real life, relevant contexts to give meaning to the learning.• Researched designs based on functional, appealing products with purpose.• Planned by appropriate methods; annotated sketches, cross-sectional diagrams, prototypes, pattern pieces and computer aided design.
Make	<ul style="list-style-type: none">• Children should be given a range of tools for their projects to choose from.• Children should use a wide range of materials and components; textiles, construction equipment and ingredients.	<ul style="list-style-type: none">• Children can select from a wider range of tools than KS1.• Children should use from and select a wider range of materials and components; textiles, construction equipment and ingredients.
Evaluate	<ul style="list-style-type: none">• Evaluate existing products.• Evaluate their own products against design criteria.	<ul style="list-style-type: none">• Evaluations should be in comparison to existing products.• Children should evaluate against a design criteria.• Children should understand how key events and individuals have helped shape design and technology globally - products are in context!





Children will know more, remember more and understand more about Design Technology. This will be evidenced through regular pupil voice, monitoring and looking at outcomes. Children are to retain prior-learning and explicitly make connections between what they have previously learned and what they are currently learning. The impact and measure of this is to ensure that children at Brookhurst are equipped with skills and knowledge that will enable them to be ready for the curriculum in the next Year Group, into Key Stage 3 and for life as an adult in the wider world.

Year group	Autumn	Spring	Summer
N			

EYFS

Expressive Arts and Design

Exploring and Using Media and Materials

30-60 months

- Explores and learns how sounds can be changed.
- Explores colour and how colours can be changed.
- Understands that they can use lines to enclose a space, and then begin to use these shapes to represent objects.
- Beginning to be interested in and describe the texture of things.
- Uses various construction materials.
- Beginning to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces.
- Joins construction pieces together to build and balance.
- Realises tools can be used for a purpose.

40-60 months

- Explores what happens when they mix colours.



- Experiments to create different textures.
- Understands that different media can be combined to create new effects
- Manipulates materials to achieve a planned effect.
- Constructs with a purpose in mind, using a variety of resources.
- Uses simple tools and techniques competently and appropriately.
- Selects appropriate resources and adapts work where necessary.
- Selects tools and techniques needed to shape, assemble and join materials they are using.

Early Learning Goal

Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

EYFS	Design and make a toy Design and make a mode of transport	Design and make a home for an animal and a person	Design and make furniture for Goldilocks and the 3 Bears Design and make a recycling machine
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KS1

When designing and making, KS1 pupils should be taught to:

Design

· 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

Make

· 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

Evaluate



- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- 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.

Food element - Understand where food comes from.

Use basic principles of a healthy and varied diet to prepare dishes.

Y1	Homes - Free standing structures	Sliders and levers	Preparing fruit and vegetables
Y2	Preparing fruit and vegetables - celebration food - History link	Wheels and axles	Templates and joining techniques

KS2

When designing and making, KS2 pupils should be taught to:

Design

- 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
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- 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

Evaluate

- 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

- 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]
- 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.

Food element - 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

Y3	Textiles 2D-3D product - xmas decoration Structures - shell structures (using CAD) - gift box	Mechanical systems - pneumatics	Food - healthy and varied diet
Understand how key events and individuals in DT have helped shape the world. This can be an extra session added to one or more of your topics as you see fit.			
Y4	Electrical systems - simple circuits and switches (use strengthening methods - struts / shelves & sci knowledge - reflection)	Mechanical systems - levers and linkages Food - healthy and varied diet (anglo-saxon stew)	Textiles 2D-3D product - beach bag - Geography link
Understand how key events and individuals in DT have helped shape the world. This can be an extra session added to one or more of your topics as you see fit.			
Y5	Structures - frame structures	Mechanical systems - pulleys or gears	Food - Celebrating culture and seasonality
Understand how key events and individuals in DT have helped shape the world. This can be an extra session added to one or more of your topics as you see fit.			



Y6	Electrical systems - monitoring and control / more complex switches and circuits (extra for WW2 day) Food - Celebrating culture and seasonality	Mechanical systems - Cams	Textiles - combining different fabric shapes / using CAD in textiles
Apply understanding of computing to program, monitor and control products – LEGOwedo Understand how key events and individuals in DT have helped shape the world. This can be an extra session added to one or more of your topics as you see fit.			

Progression of Skills, KS1

Area of Design and Technology	Year 1	Year 2
Developing, planning and communicating ideas	<ul style="list-style-type: none"> • Draw on their own experience to help generate ideas • Suggest ideas and explain what they are going to do • Identify a target group for what they intend to design and make • Model their ideas in card and paper • Develop their design ideas applying findings from their earlier research 	<ul style="list-style-type: none"> • Generate ideas by drawing on their own and other people's experiences • Develop their design ideas through discussion, observation, drawing and modelling • Identify a purpose for what they intend to design and make • Identify simple design criteria • Make simple drawings and label parts
Working with tools, equipment, materials and components to make quality products (including food)	<ul style="list-style-type: none"> • Make their design using appropriate techniques • With help measure, mark out, 	<ul style="list-style-type: none"> • Begin to select tools and materials; use vocabulary to name and describe them



Design Technology Long Term Plan

	<ul style="list-style-type: none">cut and shape a range of materials• Use tools <i>eg scissors and a hole punch</i> safely• Assemble, join and combine materials and components together using a variety of temporary methods <i>e.g. glues or masking tape</i>• Select and use appropriate fruit and vegetables, processes and tools• Use basic food handling, hygienic practices and personal hygiene• Use simple finishing techniques to improve the appearance of their product	<ul style="list-style-type: none">• Measure, cut and score with some accuracy• Use hand tools safely and appropriately• Assemble, join and combine materials in order to make a product• Cut, shape and join fabric to make a simple garment. Use basic sewing techniques• Follow safe procedures for food safety and hygiene• Choose and use appropriate finishing techniques
Evaluating processes and products	<ul style="list-style-type: none">• Evaluate their product by discussing how well it works in relation to the purpose• Evaluate their products as they are developed, identifying strengths and possible changes they might make• Evaluate their product by asking questions about what they have made and how they have gone about it	<ul style="list-style-type: none">• Evaluate against their design criteria• Evaluate their products as they are developed, identifying strengths and possible changes they might make• Talk about their ideas, saying what they like and dislike about them



Progression of Skills, LKS2

Area of Design and Technology	Year 3	Year 4
Developing, planning and communicating ideas	<ul style="list-style-type: none">• Generate ideas for an item, considering its purpose and the user/s• Identify a purpose and establish criteria for a successful product.• Plan the order of their work before starting• Explore, develop and communicate design proposals by modelling ideas• Make drawings with labels when designing	<ul style="list-style-type: none">• Generate ideas, considering the purposes for which they are designing• 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• Evaluate products and identify criteria that can be used for their own designs
Working with tools, equipment, materials	<ul style="list-style-type: none">• Select tools and techniques for	<ul style="list-style-type: none">• Select appropriate tools and



Design Technology Long Term Plan

<p>and components to make quality products (including food)</p>	<p>making their product</p> <ul style="list-style-type: none">• Measure, mark out, cut, score and assemble components with more accuracy• Work safely and accurately with a range of simple tools• Think about their ideas as they make progress and be willing change things if this helps them improve their work• Measure, tape or pin, cut and join fabric with some accuracy• Demonstrate hygienic food preparation and storage• Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT	<p>techniques for making their product</p> <ul style="list-style-type: none">• Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques• Join and combine materials and components accurately in temporary and permanent ways• Sew using a range of different stitches, weave and knit• Measure, tape or pin, cut and join fabric with some accuracy• Use simple graphical communication techniques
<p>Evaluating processes and products</p>	<ul style="list-style-type: none">• Evaluate their product against original design criteria <i>e.g. how well it meets its intended purpose</i>• Disassemble and evaluate familiar products	<ul style="list-style-type: none">• Evaluate their work both during and at the end of the assignment• Evaluate their products carrying out appropriate tests



Progression of Skills, UKS2

Area of Design and Technology	Year 5	Year 6
Developing, planning and communicating ideas	<ul style="list-style-type: none">• Generate ideas through brainstorming and identify a purpose for their product• Draw up a specification for their design• 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• Use results of investigations, information sources, including ICT when developing design ideas	<ul style="list-style-type: none">• Communicate their ideas through detailed labelled drawings• Develop a design specification• Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways• Plan the order of their work, choosing appropriate materials, tools and techniques
Working with tools, equipment, materials and components to make quality products (including food)	<ul style="list-style-type: none">• Select appropriate materials, tools and techniques• Measure and mark out accurately	<ul style="list-style-type: none">• Select appropriate tools, materials, components and techniques



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	<ul style="list-style-type: none">• Use skills in using different tools and equipment safely and accurately• Weigh and measure accurately (time, dry ingredients, liquids)• Apply the rules for basic food hygiene and other safe practices <i>e.g. hazards relating to the use of ovens</i>• Cut and join with accuracy to ensure a good-quality finish to the product	<ul style="list-style-type: none">• Assemble components make working models• Use tools safely and accurately• Construct products using permanent joining techniques• Make modifications as they go along• Pin, sew and stitch materials together create a product• Achieve a quality product
Evaluating processes and products	<ul style="list-style-type: none">• Evaluate a product against the original design specification• Evaluate it personally and seek evaluation from others	<ul style="list-style-type: none">• Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests• Record their evaluations using drawings with labels• Evaluate against their original criteria and suggest ways that their product could be improved