Wembdon St George's Church School

Our Learning in Design and Technology

Wembdon St George's Church School Curriculum Intent:
We encourage our children to be creative thinkers and have the skills and knowledge to undertake purposeful design projects. Design and Technology is an enjoyable, inspiring, rigorous and practical subject. It encourages children to learn to think and to solve problems creatively both as individuals and as members of a team.

At Wembdon St George's, we encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and the needs of others'. Through their understanding of the designing process, pupils will become more resilient, resourceful and reflective learners, as they evaluate their own and the work of others.

We aim to, wherever appropriate, to link work to other disciplines such as English, mathematics, science, ICT and art. A wide variety of teaching and learning approaches and styles are used to promote pupil engagement with the curriculum and to deepen understanding. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers. Our Christian values of wisdom, Trust, Service, Compassion, Forgiveness, Koinonia weave throughout our curriculum including Design Technology.

Our Design and Technology curriculum is based on the following principles:

- That children develop their knowledge of design technology through collaborative approaches.
- That children become problem solvers and question posers.
- That they learn how to investigate before drawing conclusions, becoming informed innovators.
- That they learn to use a multidisciplinary approach when designing and originating.

- That children develop a knowledge of design from the past, present and future and become confident to take a positive role in the ever-changing world.

Wembdon Curriculum Overview

2022-2023	Term One	Term Two	Term Three	Term Four	Term Five	Term Six
Year 1		**Fruit kebabs** **United Kingdom** Great Britain Where does our food come from? Where does it grow? **Skills** Tasting, evaluating existing products, health and wellbeing, preparing food & evaluating. use the basic principles of a healthy and varied diet to prepare dishes Design, make, evaluate.	**Moving monsters** **Skills** -Assemble simple mechanisms. Design, make and evaluate products. -Design purposeful, functional, appealing products for themselves and other users based on design criteria -Generate, develop, model and communicate their ideas through talking, drawing.			**Fabric puppets** Design puppet **Skills** Evaluating existing products, design, make Sewing, joining materials.
Year 2/3	**Great Bread Bake off** The Empire strikes back (Romans) – bread was a key part of their diet Skills History of bread, investigate existing products, design make and evaluate bread (Roman style) Understand where food comes from -prepare and cook		**Making a kite** Skills Frame and structure strengthening. Evaluating existing products, design, make Sewing, joining materials Design purposeful, functional, appealing products for themselves and other users, make and evaluate a kite.			**Periscopes** Shaping and joining Design, make, joining materials Design purposeful, functional, appealing products for themselves and other users, make and evaluate a periscope.
Year 4/5		**Build a carnival cart** **Mechanisms** - wheels movement • select tools and equipment suitable for the task • explain their choice of tools and equipment in relation to the skills and techniques they will be using • select materials and components suitable for the task • explain their choice of materials and components according to functional		**Global food** Healthy eating Nutritional similarities between food from around the word. Follow recipes. Assemble savoury dishes.	**Battery operated lights** Making simple circuits Carry out research, using surveys, interviews, questionnaires and web-based resources Identify the needs, wants, preferences and values of particular individuals and groups.	

		properties and aesthetic qualities				
Year 6	-	**Circuits and mechanism structures** **Making fairground ride for Bridgwater fair** - Understanding and the use of mechanical systems - Understand use of electrical systems in their products		**3D frames** **Reinforce and strengthen** **Habitat for animals** Strengthen stiffen and reinforce 3D structures - Select from a wide range of tools and equipment to preform practical tasks. - Use research and develop design - Generate a model and communicate ideas.		**Seasonal cooking** **Pasta Salads** Know when different fruit and vegetables are in season in the United Kingdom. Explain where and how a variety of ingredients are grown, reared, caught and processed. Generate a range of ideas for balanced seasonal recipes. Prepare ingredients hygienically and understand how to store and handle meat and fish correctly. Use a wide range of preparation and cooking techniques. Carry out research, using surveys, interviews, questionnaires and web-based resources

The National Curriculum		
EYFS Framework	**KS1**	**KS2**
Expressive arts and Design **Exploring and using media and materials** • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	**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.	**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.
Being imaginative • Use what they have learnt about media and materials in original ways, thinking about uses and purposes. • Represent their own ideas, thoughts and feelings through design and 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.	**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 • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria	**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.
Cooking and nutrition • Talk about ways to keep healthy and safe.	**Cooking and nutrition** • use the basic principles of a healthy and varied diet to prepare dishes. • understand where food comes from.	**Cooking and nutrition** • 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.
KUW **Technology** • To recognise a range of technology is	**Technical knowledge** • build structures, exploring how they can be made stronger, stiffer and more stable.	**Technical knowledge** • apply their understanding of how to strengthen, stiffen and reinforce more complex structures

used in places such as homes and schools. • Select and use technology for a particular purpose. **Physical Development** **Health and self-care** • Understand the importance of a healthy diet.	• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	• 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.

<table>
<tr><th>Skills</th><th>EYFS</th><th>Year 1</th><th>Year 2</th><th>Year 3</th><th>Year 4</th><th>Year 5</th><th>Year 6</th></tr>
<tr><td colspan="8">Designing</td></tr>
<tr><td>Understanding contexts, users and purposes</td><td>Gain confidence in representing their ideas.

Explain what they are going to make and which materials they will use.

Select and name the tools needed to work the materials e.g. scissors for paper.</td><td colspan="2">Across KS1 pupils should:

work confidently within a range of contexts,

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</td><td colspan="4">Across KS2 pupils should:

work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment

describe the purpose of their products

indicate the design features of their products that will appeal to intended users

explain how particular parts of their products work</td></tr>
<tr><td colspan="4"></td><td colspan="2">In early KS2 pupils should also:

gather information about the needs and wants of particular individuals and groups

develop their own design criteria and use these to inform their ideas</td><td colspan="2">In late KS2 pupils should also:

carry out research, using surveys, interviews, questionnaires and web-based resources

identify the needs, wants, preferences and values of particular individuals and groups</td></tr>
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				develop a simple design specification to guide their thinking
Generating, developing, modelling and communicating ideas		Across KS1 pupils should: 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	Across KS2 pupils should: share and clarify ideas through discussion model their ideas using prototypes and pattern pieces use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas use computer-aided design to develop and communicate their ideas In early KS2 pupils should also: generate realistic ideas, focusing on the needs of the user make design decisions that take account of the availability of resources	In late KS2 pupils should also: generate innovative ideas, drawing on research make design decisions, taking account of constraints such as time, resources and cost
Making				
Planning		Across KS1 pupils should: plan by suggesting what to do next select from a range of tools and equipment, explaining their choices	Across KS2 pupils should: • select tools and equipment suitable for the task • explain their choice of tools and equipment in relation to the skills and techniques they will be using • select materials and components suitable for the task • explain their choice of materials and components according to functional properties and aesthetic qualities	

		select from a range of materials and components according to their characteristics	In early KS2 pupils should also: order the main stages of making	In late KS2 pupils should also: produce appropriate lists of tools, equipment and materials that they need formulate step-by-step plans as a guide to making
Practical skills and techniques		Across KS1 pupils should: follow procedures for safety and hygiene 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	Across KS2 pupils should: follow procedures for safety and hygiene use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components	
			In early KS2 pupils should also: 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	In late KS2 pupils should also: 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 use techniques that involve a number of steps demonstrate resourcefulness when tackling practical problems
Evaluating				
Own ideas and products	Communicate their design ideas as they develop.	**Across KS1 pupils should:** talk about their design ideas and what they are making	**Across KS2 pupils should:** identify the strengths and areas for development in their ideas and products	

<table>
<tr><td></td><td></td><td>make simple judgements about their products and ideas against design criteria

suggest how their products could be improved</td><td colspan="2">consider the views of others, including intended users, to improve their work</td></tr>
<tr><td></td><td></td><td></td><td>In early KS2 pupils should also:

refer to their design criteria as they design and make

use their design criteria to evaluate their completed products</td><td>In late KS2 pupils should also:

critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make

evaluate their ideas and products against their original design specification</td></tr>
<tr><td>Existing products</td><td></td><td>Across KS1 pupils should explore:
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</td><td colspan="2">Across KS2 pupils should investigate and analyse:
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
how well products meet user needs and wants</td></tr>
<tr><td></td><td></td><td></td><td>In early KS2 pupils should also investigate and analyse:
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</td><td>In late KS2 pupils should also investigate and analyse:
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</td></tr>
<tr><td>Key events and individuals</td><td colspan="2">Not a requirement in EYFS or KS1</td><td colspan="2">Across KS2 pupils should know:

about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</td></tr>
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Technical knowledge				
Making products work		**Across KS1 pupils should know:** 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 that a 3-D textiles product can be assembled from two identical fabric shapes that food ingredients should be combined according to their sensory characteristics the correct technical vocabulary for the projects they are undertaking	**Across KS2 pupils should know**: how to use learning from science to help design and make products that work how to use learning from mathematics to help design and make products that work that materials have both functional properties and aesthetic qualities that materials can be combined and mixed to create more useful characteristics that mechanical and electrical systems have an input, process and output the correct technical vocabulary for the projects they are undertaking	
			In early KS2 pupils should also know: 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 that a single fabric shape can be used to make a 3D textiles product that food ingredients can be fresh, pre-cooked and processed	**In late KS2 pupils should also know:** 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 that a 3D textiles product can be made from a combination of fabric shapes that a recipe can be adapted by adding or substituting one or more ingredients

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<table>
<tr><th colspan="5">Cooking and Nutrition</th></tr>
<tr><td>Where food comes from</td><td></td><td>Across KS1 pupils should know:
• that all food comes from plants or animals
• that food has to be farmed, grown elsewhere (e.g. home) or caught</td><td colspan="2">Across KS2 pupils should 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 In late KS2 pupils should also know:
• that seasons may affect the food available
• how food is processed into ingredients that can be eaten or used in cooking</td></tr>
<tr><td rowspan="2">Food preparation, cooking and nutrition</td><td rowspan="2"></td><td rowspan="2">Across KS1 pupils should know:

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</td><td colspan="2">Across KS2 pupils should know:
how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source

how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</td></tr>
<tr><td>In early KS2 pupils should also know:
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</td><td>In late KS2 pupils should also know:
that recipes can be adapted to change the appearance, taste, texture and aroma
that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</td></tr>
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