Design and Technology

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Design and Technology Statement of Intent

Our Design and Technology curriculum is delivered through well-planned and resourced projects and experiences. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts.

At Folksworth Church of England (VC) Primary School, all projects are based in the context of solving real-world, age appropriate problems and meeting relevant design criteria. Pupils are encouraged to design, make and evaluate both their own work and existing products using their embedded technical knowledge that builds and develops as they progress through their journey at school. Children generate, develop, model and communicate their ideas through discussion, annotated sketches and double spread sheets. The interactive process of designing and making, enables pupils to critique, evaluate and test their ideas and products as well as the ideas of others. Our curriculum creates opportunities for the children to design, explore and create under the umbrellas of textiles, construction, mechanisms, electrical systems and finally cooking and nutrition. This enables pupils to make meaningful connections with mathematics, science, computing and art as appropriate. Our intent is to enable pupils to develop their communicative and reasoning skills and to apply their information and knowledge to real life situations.

Design and Technology Unit Overview

YEAR A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Magical Me	Celebrations	Around the World	Come Outside! Growing	Amazing Animals	Fun at the Seaside/ journeys
	Junk Modelling	Shadow Puppets/ Joining	Rocket Models/ Animal Homes	Designing Scarecrows/ Testing Structures	Construction using different tools and material	Vehicles
Years 1 & 2	Paddington at the Tower *Michael Bond*	Toby and the Great Fire of London *Margaret Nash & Jane Cope*	The Jolly Postman *Janet & Allan Ahlberg*	The Magic Faraway Tree *Enid Blyton*	The Lighthouse Keepers' Lunch *Ronda & David Armitage*	George's Marvellous Medicine *Roald Dahl*
	X	Structures	X	X	Cooking and Nutrition Mechanisms	X
Years 3 & 4	Charlie and The Chocolate Factory *Roald Dahl*	Demon Dentist *David Walliams*	Beowulf *Rob Lloyd Jones and Victor Tavares*	The Saga of Erik The Viking *Terry Jones*	Poems to Perform *Julia Donaldson*	The Time Travelling Cat and the Egyptian Goddess *Julia Jarman*
	Cooking and Nutrition	Structures	Mechanical Systems	Electrical Systems	X	X
Years 5 & 6	Cosmic *Frank Cottrell Boyce*	The Nowhere Emporium *Ross MacKenzie*	Rain Player *David Wisniewski*		Goodnight Mr Tom *Michelle Magorian*	Macbeth (A Shakespeare Story) *Andrew Matthews and Tony Ross*
	Structures Electrical Systems Computer Programming	Mechanical Systems	X		Cooking and Nutrition	X

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YEAR B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Magical Me	Celebrations	Around the World	Come Outside! Growing	Amazing Animals	Fun at the Seaside/ journeys
	Junk Modelling	Shadow Puppets/ Joining	Rocket Models/ Animal Homes	Designing Scarecrows/ Testing Structures	Construction using different tools and material	Vehicles
Years 1 & 2	Dogger *Shirley Hughes*	The Owl Who was Afraid of the Dark *Jill Tomlinson*	The Tiger who came to tea *Judith Kerr*	Handa's Surprise *Eileen Browne*	The Day the Crayons Quit *Drew Daywalt & Oliver Jeffers*	The Owl and the Pussycat *Edward Lear*
	Mechanisms	X	Cooking and Nutrition	X	X	Structures
Years 3 & 4	Stig of the Dump *Clive King*	The Firework Makers Daughter *Philip Pullman*	The Iron Man *Ted Hughes*	Run Wild *Gill Lewis*	Avoid Being a Roman Soldier *David Stewart*	The Thieves of Ostia *Caroline Lawrence*
	Structures	X	Mechanical Systems Computer Programming	Electrical Systems	x	Cooking and Nutrition
Years 5 & 6	Tudor Tales: The Thief, the Fool and the Big Fat King *Terry Deary*	The Spy Master: First Blood *Jan Burchett & Sara Vogler*	The Storm Keeper's Island *Catherine Doyle*	The Highwayman *Alfred Noyes*	Beasts of Olympus: Beastkeeper Lucy Coats & David Roberts	Percy Jackson and the Lightning Thief *Rick Riordan*
	Mechanical Systems	Structures Computer Programming	X	X	Cooking and Nutrition	Electrical Systems

All Design Technology Units Cover elements of the Design, Make and Evaluate Process

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Design and Technology Progression of Knowledge and Skills

By Year Group

Design Technical Knowledge Make Evaluate Cooking & Nutrition

Year Group	Standardised Objectives
Year R	ELG Managing Self • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge ELG Self Regulation • Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate; ELG Creating with Materials • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function ELG Fine Motor • Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases • Use a range of small toys, including scissors, paint brushes and cutlery • Begin to show accuracy and care when drawing ELG Creating with Materials • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function ELG Speaking • Offer explanations for why things might happen, making use of recently introduced vocabulary ELG Creating with Materials • Share their creations, explaining the process they have used

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Year 1	• Design simple products that work and look appealing • Discuss and draw ideas and use ICT to communicate • Start to build structures, exploring ways to stiffen, stabilise and strengthen • Explore simple mechanisms • Use a range of materials and components • Use a range of tools and equipment to perform practical tasks • Explore existing products eg *in school, at home* • Discuss own ideas and designs • Begin to understand where food comes from • Prepare simple dishes using knowledge of healthy food
Year 2	• Design products for themselves and others that are purposeful, functional and appealing • Generate, develop, model and communicate ideas through talking, drawing, templates and ICT • Build structures, exploring ways to stiffen, stabilise and strengthen • Explore and use mechanisms • Select from and use a wide range of materials and components according to their characteristics • Select from and use a wide range of tools and equipment to perform practical tasks • Explore and evaluate a range of existing products eg *home, school* • Evaluate own ideas and designs against given design criteria • Use basic principles of a healthy and varied diet to prepare dishes • Understand where food comes from

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Year 3	• Take risks to become innovative and resourceful • Communicate ideas using different strategies eg *discussion, sketching* • Use research to inform design • Apply understanding of how to strengthen, stiffen and stabilise structures • Identify a range of mechanical systems and how they work • Select from and use a wide range of tools, equipment, materials and components accurately • Evaluate own ideas and designs against given design criteria and consider the views of others to improve their work • Investigate a range of existing products that address real/relevant problems in a range of relevant contexts eg *home, leisure, school* • Apply principles of a healthy, varied diet when preparing a variety of savoury dishes • Apply understanding of seasonality and its links to ingredients
Year 4	• Take risks to become innovative and resourceful • Communicate, generate and develop ideas using a range of strategies eg *prototypes, pattern pieces* • Use research to inform design and develop design criteria • Apply understanding of how to strengthen and stiffen to reinforce more complex structures • Identify wider range of mechanical systems and how they work • Use understanding of electrical systems • Use computing to program, monitor and control products • Select from and use a wider range of tools, equipment, materials and components accurately to make prototypes • Evaluate own and others' work suggesting improvements and considering the views of others to help improve their work • Investigate a range of existing products in a range of relevant contexts eg *culture, industry* • Know where and how a variety of ingredients is grown, reared, caught and processed

Year 5	• Communicate, generate, develop and model ideas using a range of strategies eg *CAD, exploded and cross- sectional diagrams* • Use research to inform design and generate own design criteria • Communicate, generate and develop ideas drawing on other disciplines eg *science, maths, computing* • Confidently take calculated risks to become innovative, resourceful and enterprising • Construct more complex structures by applying a range of strategies to solve real/relevant problems • Making connections to real and relevant problems, apply understanding of a wider range of mechanical systems • Making connections to real and relevant problems, apply understanding of electrical systems • Drawing on disciplines and making connections to wider subject areas, apply understanding of computing to program, monitor and control products • According to their functional properties and aesthetic qualities, select from and use a wide range of tools, equipment, materials and components accurately to make high-quality prototypes • Generate own design criteria and evaluate ideas and products against these • Investigate and analyse a range of existing products that address real and relevant problems in a range of contexts • Understand how key events and individuals in D&T helped to shape the world • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

Year 6	• Use research to inform innovative design and generate own design criteria • Communicate, generate and develop ideas drawing on other disciplines eg *science, maths, computing* • Confidently take calculated risks to become innovative, resourceful and enterprising • Construct more complex structures by applying a range of strategies to solve real/relevant problems • Making connections to real and relevant problems, apply understanding of a wider range of mechanical systems • Making connections to real and relevant problems, apply understanding of electrical systems • Drawing on disciplines and making connections to wider subject areas, apply understanding of computing to program, monitor and control products • According to their functional properties and aesthetic qualities, select from and use a wide range of tools, equipment, materials and components accurately to make high-quality prototypes • Generate own design criteria and critique ideas and products against these • Explain and understand how key events and individuals in D&T helped to shape the world • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Know where and how a variety of ingredients is grown, reared, caught and processed • Develop crucial life skill of feeding themselves and others affordably and well

By Theme

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design						
(Managing Self) Be confident to try new activities and show independence, resilience and perseverance in the face of challenge **(Self Regulation)** Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate **(Creating with Materials)** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	Design simple products that work and look appealing Discuss and draw ideas and use ICT to communicate	Design products for others and themselves that are purposeful, functional and appealing Generate, develop, model and communicate ideas through talking, drawing, templates and ICT	Communicate ideas using different strategies eg *discussion, sketch* Use research to inform design Take risks to become innovative and resourceful	Communicate, generate and develop ideas using a range of strategies eg prototypes, pattern pieces Use research to inform design and develop design criteria Take risks to become innovative and resourceful	Communicate, generate, develop and model ideas using a range of strategies eg computer-aideddesign, cross-sectional and exploded diagrams Use research to inform design and generate own design criteria Communicate, generate and develop ideas, drawing on other disciplines eg science, maths, computing Confidently take calculated risks to become innovative, resourceful and enterprising	Communicate, generate and develop ideas, drawing on other disciplines eg science, maths, computing Use research to inform innovative design and generate own design criteria Confidently take calculated risks to become innovative, resourceful and enterprising
Evaluate						
(Speaking) Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate **(Creating with Materials)** Share their creations, explaining the process they have used	Explore existing products eg *home, school Discuss own ideas and designs*	Explore and evaluate a range of existing products eg home, school Evaluate own ideas and designs against given design criteria	Evaluate own ideas and designs against given design criteria and consider the views of others to improve their work Investigate a range of existing products that address real/ relevant problems, in a range of relevant contexts eg *home, leisure, school*	Evaluate own and others' work suggesting improvements and consider the views of others to improve their work Investigate a range of existing products in a range of relevant contexts eg *culture, industry*	Generate own design criteria and evaluate ideas and products against these Investigate and analyse a range of existing products that address real/relevant problems, in a range of relevant contexts Understand how key events and individuals in D&T helped to shape the world	Generate own design criteria and critique ideas and products against these Explain and understand how key events and individuals in D&T helped to shape the world

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EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Technical Knowledge			
	Start to build structures, exploring ways to stiffen, stable and strengthen Explore simple mechanisms	Build structures, exploring ways to stiffen, stabilise and strengthen Explore and use mechanisms eg *levers, wheels and axles*	Apply understanding of how to strengthen, stiffen and reinforce structures Identify range of mechanical systems and how they work (gears, pulleys, cams, levers and linkages)	Apply understanding of how to strengthen, stiffen in order to reinforce more complex structures Use computing to program, monitor and control products Identify wider range of mechanical systems and how they work (gears, pulleys, cams, levers and linkages) Use understanding of electrical systems (series circuits, switches, bulbs and motors)	Construct more complex structures by applying range of strategies in order to solve real/ relevant problems Drawing on disciplines & making connections to wider subject areas, apply understanding of computing to program, monitor and control products Making connections to real & relevant problems, apply understanding of wider range of mechanical systems (gears, pulleys, cams, levers and linkages) Making connections to real & relevant problems, apply understanding of electrical systems (series circuits, switches, bulbs and motors)	Construct more complex structures by applying range of strategies in order to solve real / relevant problems Drawing on disciplines & making connections to wider subject areas, apply understanding of computing to program, monitor and control products Making connections to real & relevant problems, apply understanding of wider range of mechanical systems (gears, pulleys, cams, levers and linkages) Making connections to real & relevant problems, apply understanding of electrical systems (series circuits, switches, bulbs and motors)

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Make						
(Fine Motor) Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases - Use a range of small toys, including scissors, paint brushes and cutlery - Begin to show accuracy and care when drawing (Creating with Materials) Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function	Use a range of materials and components eg construction, textiles and ingredients Use a range of tools and equipment to perform practical tasks eg *cut, shape, join and finish*	Select from and use a wide range of materials and components (according to their characteristics) eg *construction, textiles and ingredients* Select from and use a wide range of tools and equipment to perform practical tasks eg cut, shape, join and finish	Select from and use a wide range of tools, equipment, materials and components accurately	Select from and use a wider range of tools, equipment, materials and components accurately to make prototypes	According to their functional properties and aesthetic qualities, select from and use a wide range of tools, equipment, materials and components accurately to make high quality prototypes	According to their functional properties and aesthetic qualities, select from and use a wide range of tools, equipment, materials and components accurately to make high Safely use and explore a variety of quality prototypes
Food Technology						
	Begin to understand where food comes from Prepare simple dishes using knowledge of healthy food	Use basic principles of a healthy and varied diet to prepare dishes Understand where food comes from	Apply principles pf a healthy, varied diet when preparing variety of savoury dishes Apply understanding of seasonality and its link to ingredients	Know where and how a variety of ingredients is grown, reared, caught and processed	Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Know where and how a variety of ingredients are grown, reared, caught and processed and its impact on meal design Develop crucial life skill of feeding themselves and others affordably and well

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