Clayton-le-Woods Church of England Primary School

Design Technology

Long term overview and Statement of Intent

Together we inspire one another to live life to its fullness, rooted and built up in Christ, so that every member of our school community can learn, develop and flourish, to live in the world as

the unique individuals God created us to be.

Intent of the teaching and learning of Design and Technology

In our school, we see Design and Technology as an inspiring and practical subject. Using creativity and imagination, we want our pupils to design and make products that solve real and relevant problems, within a variety of contexts. We encourage our children to perhaps one day feel like they can be designers of the future and also for them to foster enjoyment, satisfaction and purpose in what they design and make. Our learning develops both the substantive and disciplinary concepts as set out in the long term overview and a substantive concept is shared with the children posed as an enquiry question.

We deliver programmes of study for Key Stages 1 and 2 of the National Curriculum in Design and Technology and Expressive Arts and Design from Development Matters through developing imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making. The units are progressive and sequenced to build on previous learning. We want children to talk about how things work, and to draw and model their ideas. We feel it is important to explore attitudes towards the made world and how we live and work within it.

Implementation of the teaching and learning of Design and Technology

At our school, children are taught to select and use appropriate tools safely and effectively to make a product. The experiences are carefully sequenced ensuring that there is clear progression ensuring children succeed and flourish in their learning. In all areas of Design and Technology, the children are encouraged to consider the effectiveness of their designs and requirements of the product. Every child will have the opportunity to learn and extend their understanding, experience and application in the use of technology, including I.C.T, in as wide a variety of situations as possible.

We encourage children to take on a problem and find a solution. A solution can be found through designs they create. We use the Key Principles of: user, purpose, design decisions made, function, innovation and authenticity. These are the disciplinary concepts that we aim for the children to embed through all their DT units. Key vocabulary is pre-taught through the use of front covers, in Key Stage 1 and Key Stage 2, that are shared with the children, these also share with the children the key knowledge and skills that will be explored through the teaching and learning of each project.

We teach DT through the following repeated process:

- Investigating and evaluating products
- Focused tasks in order to develop skills and/or practical knowledge
- Design, make and evaluate projects
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We use adaptive teaching approaches, taking into account recommendations from external agencies, across the curriculum. Approaches such as chunking learning into smaller steps, frequent repetition of learning ensures all pupils, including those with SEND, are able to access the learning and gain granular knowledge within the subject to the same high-standard as their peers, providing a flexible, ambitious and robust curriculum for all.

Assessment in Design Technology is an ongoing process. Through feedback provided to the children along with effective questions, discussion and the seeking of children's views in pupil voice interviews, we ascertain their knowledge, understanding and personal views on Design Technology that is then used to inform future learning opportunities. Knowledge and skills maps are completed at the end of each unit to identify children working at different standards and next steps for the children and for the teaching and learning of the unit. These are shared with the subject leader and curriculum lead and are reviewed termly to ensure opportunities to move the subject along are considered.

Impact of the teaching and learning of Design and Technology

The impact of the teaching and learning of Design technology can be identified through the children's own books, through pupil voice and through discussions with the class teacher, subject and curriculum leads. We believe that Design Technology is about providing opportunities for our children, from 3 to 11, to develop their capability, combining their designing and making skills with knowledge and understanding in order to create quality products. Through high-quality teaching and learning our aim is to ensure that the children know more and remember more.

Mrs E Gibson

July 2024

How we live out our British and Christian Values in Design Technology				
Democracy	**The Rule of Law and Forgiveness**	**Individual Liberty and Courage**	**Mutual Respect, Respect and Friendship**	**Tolerance of those of different faiths and Beliefs, Thankfulness and Truthfulness**
In the Design Technology classroom the views and opinions of all members are taken into account but children still have the right to make their own choices. They are encouraged to take turns both in speech and practically with others and they are supported to understand that it is not always possible or right to have their own way and understand the value of compromise.	Design technology facilitates opportunities to understand the importance of safety rules when using tools and to understand and accept that if these rules are not followed there are concerns regarding health and safety. They will demonstrate **Forgiveness** through accepting if things go wrong including in teamwork situations.	**Individual liberty** is promoted through the ability of children to listen to others but that they can use their own ideas and design choices when making an object. They will have the **Courage** to make decisions and to use a range of tools to create their project. Children will also be supported to accept that others ideas may not be the same as their own but are able to accept this.	**Mutual Respect** is promoted through the children's need to listen to and consider the ideas and opinions of others even if they differ from your own. They will show **Friendship** when taking turns during discussions to resolve difficulties or make decisions. They will demonstrate **Respect** when offering supportive comments in evaluations that will improve learning outcomes in a way that is objective but sensitive to the listener.	In Design Technology children will be encouraged to tolerate ideas from others that are different to their own whilst being **Truthful** to their own thoughts and ideas. They will be supported to understand that many great design ideas originate from other cultures and be **Thankful** for the different products they can create.

Clayton-le-Woods CEP Long Term Overview – Design Technology

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Willow Class (Pre-School)	Textiles and materials – How will you use the workshop area? Investigate, focused task, design, make Development Matters - Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Explore and investigate different materials, using all senses in Welly Wednesdays and adult-led activities. Explore and create simple models which express their ideas.	Textiles and materials – Can you join materials? Investigate, focused task, design, make Development Matters - Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. Uses various construction materials. Joining different materials	Freestanding structures – stability and strength – How can you test out your creations? Investigate, focused task, design, make Development Matters - Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. Explore 3D and 2D structures.	Freestanding structures – stability and strength – Can you self-evaluate your work? (is your creation strong and stable?) Investigate, evaluate, focused task, design, make, evaluate final product Development Matters - Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. Uses 3D and 2D structures to explore and/or to express.	Textiles and materials – Can you talk about your creation? Investigate, focused task, design, make Development Matters - Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. Experiment with scissors independently. Discuss creations	Mechanisms – Can you describe the process of making your creation? Investigate, evaluate, focused task, design, make, evaluate final product Development Matters - Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. Using scissors. Designing and creating representations using junk modelling, drawing etc. Talk about creations.

Clayton-le-Woods CEP Long Term Overview – Design Technology

Ash Class (Reception)	Freestanding Structures – Can you use materials that allow your structure to stand freely? Investigate, focused task, design, make Reception - using scissors - Junk modelling Development Matters - Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.	Textiles and materials – Can you demonstrate your ideas through your creations? Investigate, focused task, design, make Reception - joining using sellotape, masking tape, glue. Explore use of hole punch, split pins, treasury tags Development Matters - Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.	Freestanding Structures – How can you strengthen your freestanding structure? Investigate, focused task, design, make Reception - junk modelling Development Matters - Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.	Textiles and materials – Can you create collaboratively using a range of textiles and materials? Investigate, focused task, design, make Reception - paper techniques – bend, fringe, scrunch, link, fold, curl etc Development Matters - Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.	Textiles and materials – Can you discover which materials would be most suitable for a superhero? Investigate, focused task, design, make Reception – use a stapler safely Development Matters - Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.	Textiles and materials – Can you refine your ideas by reviewing your first draft? Investigate, focused task, design, make Development Matters - Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.
Year 1		How can I make sliders and levers? Mechanisms – sliders and levers	What ingredients go in a fruit smoothy? Food – preparing fruit and vegetables		How do I make my structure stable and strong? Freestanding structures – stability and strength	

		Investigate, evaluate, focused task, design, make, evaluate final product pop up and simple card levers. Design • 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] Evaluate	Investigate, evaluate, focused task, design, make, evaluate final product Fruit kebab/fruit smoothies Cooking and nutrition • use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from. 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		Investigate, evaluate, focused task, design, make, evaluate final product – visiting a playground Playground equipment/ a house Design • 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	

		• explore and evaluate a range of existing products • evaluate their ideas and products against design criteria Technical knowledge • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	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		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	

Year 2			Can I make my own Moon buggy?Mechanisms – wheels and axles Investigate, evaluate, focused task, design, make, evaluate final product Moon buggy Design and make a moon buggy using glue gun, saw, scissors Design • 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		What different ways can I join materials? Textiles – templates and joining techniques Investigate, evaluate, focused task, design, make, evaluate final product Design and make a puppet (sewing) 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	Mini project How do I make a healthy snack? Food – preparing fruit and vegetables focused task, design, make, evaluate final product Dips and dippers Cooking and nutrition • use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from. 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,

			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 • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.		• 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	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

					• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	
Year 3		How can I make a healthy meal? Food – healthy and varied diet Investigate, evaluate, focused task, design, make, evaluate final product Nadia Hussain – Bake Off Bread – making a healthy sandwich. 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		How do linkages and levers make things move? Mechanical systems – levers and linkages Investigate, evaluate, focused task, design, make, evaluate final product Moving picture (possibly linked to book e.g. Iron Man) 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		How can I design a structure using CAD? Structures – shell structures using computer aided design Investigate, evaluate, focused task, design, make, evaluate final product Making a box for seed pellets – wildflower seed 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

		know where and how a variety of ingredients are grown, reared, caught and processed. Design • 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		• 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 Evaluate • investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and		• 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

		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 Technical knowledge		consider the views of others to improve their work Technical knowledge • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]		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 Technical knowledge • apply their understanding of how to strengthen, stiffen and reinforce more complex structures
Year 4	How do I transfer a 2D shape to a 3D product? Textiles – 2-D shape to 3-D product Investigate, evaluate, focused task, design, make, evaluate final product			Can I make a night light using circuits? Electrical systems – simple circuits and switches Investigate, evaluate, focused task, design,		Mini project How do I make a healthy product? Food – healthy and varied diet focused task, design, make

	Money containers – purses/wallets 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			make, evaluate final product Night light 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		Savoury scones 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. Make • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately

	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			• 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		• 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 • 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

	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			Technical knowledge • apply their understanding of computing to program, monitor and control their products		
Year 5		What is 'seasonal' food? Food – Celebrating culture and seasonality Investigate, evaluate, focused task, design, make, evaluate final product Hugh Fearnley Whittingstall Winter vegetable soup Cooking and nutrition • understand and apply the principles of a healthy and varied diet		How can cams make parts move? Mechanical systems – cams Investigate, evaluate, focused task, design, make, evaluate final product Design • use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular	How can I design a product using CAD? Textiles – Using computer-aided design and textiles Investigate, evaluate, focused task, design, make, evaluate final product – Design • use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at	

		• 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. 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,		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	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	

		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 • evaluate their ideas and products		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 • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	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 Technical knowledge • apply their understanding of how to strengthen, stiffen and reinforce more complex structures	

		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				
Year 6		How can we control a light? Electrical systems – monitoring and control Investigate, evaluate, focused task, design, make, evaluate final product Design • use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular			Mini project Can food celebrate culture? Food – Celebrating culture and seasonality Investigate, evaluate, focused task, design, make, evaluate final product Summer salad pitta bread Cooking and nutrition • understand and apply the principles of a healthy and varied diet • prepare and cook a variety of	How can we make a tent more stable? Structures – Frame structure Investigate, evaluate, focused task, design, make, evaluate final product Tents Design • use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for

		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,			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. 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	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

		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 computing to program, monitor and control their products. • understand and use electrical systems in their products [for			properties and aesthetic qualities Evaluate • 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	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

		example, series circuits incorporating switches, bulbs, buzzers and motors]				

When undertaking the planning, teaching and learning of Design Technology, we respond to the Design Technology Principles of:

- User
- Purpose
- Design decision made
- Function
- Innovative
- Authentic

Substantive concept

Disciplinary concept

Significant people

Books/poems

Wow moments -trips/visits/visitors