



Thurlaston CE (Aided) Primary School
Teaching and Living the Christian Way of Life
Building Our Lives on Jesus

Design and Technology Policy

Approved

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This policy is written to set out the principles and approaches to teaching Design and Technology at Thurlaston C.E. (Aided) Primary School. Details of what is being taught are in the curriculum overview documents and schemes of work.

INTENT:

Design and technology prepares children to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. The subject encourages children to become autonomous and creative problem-solvers, both as individuals and as part of a team. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. The aims of design and technology are:

- To develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making;
- To enable children to talk about how things work and to draw, model and write about their ideas;
- To encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures;
- To encourage children to use the correct vocabulary and terminology when designing, making and evaluating their products;
- To explore attitudes towards the 'made' world and how we live and work within it;
- To develop an understanding of technological processes, products and their manufacture, as well as their contribution to our society;
- To foster enjoyment, satisfaction and purpose in designing and making.

Early Years Expressive Arts and Design is one of the 4 key areas of the EYFS framework. It involves supporting children to explore and play with a wide range of media and materials, as well as providing opportunities and encouragement for sharing their thoughts, ideas, and feelings through a variety of activities in art, music, movement, dance, role-play, and design and technology.

Key Stage 1 Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts (for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment). When designing and making, 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.

Key Stage 2 Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, 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

IMPLEMENTATION:

All children will be taught the skills and principles of Design Technology as outlined in the programmes of study in the National Curriculum for Design Technology. In Reception the children follow guidelines for creative development as set out in the Early Learning Goals. At key stage one and two design technology is often rotated or sometimes combined with art and design depending on the relevant links with the class' current topic area Additional to this, creativity should be encouraged in all subjects. Teachers ensure that investigating and making includes exploring and developing ideas and evaluating and developing work. Knowledge and understanding informs this process. Every opportunity is taken for the key aspects of Design technology to be integrated into learning; Design - Make - Evaluate

Technical Knowledge: By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programmes of study, taken from the National Curriculum and reiterated in the school's subject overview document (Appendix 1)

What do Design Technology lessons look like at Thurlaston C of E Primary School? Design Technology lessons will follow a similar structure across school:

1. Researching and looking at focus designers / focus inspiration
2. Technical practice of design and construction skills linked to work taken from the focus designer/ inspiration focus
3. Practice ideas in sketchbooks, topic books or making mock-ups
4. Final piece building
5. Self / peer evaluation of the final piece

IMPACT:

Assessments will be made by class teachers after each project and these will be used to support an end of year assessment judgement for effort and attainment that is seen in school reports. However, the main impact should be in fostering the pupils' love of investigating, making and improving designs using the skills and knowledge they have learnt and practised during D&T sessions, in their wider experience.

Appendix 1 Subject Overview

Class	Unit	Key Skills and Knowledge	Key Vocabulary
1	Design Technology Cycle	<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	<p>Diagram</p> <p>Plan</p> <p>Label</p> <p>tools</p>

		<p>ingredients, according to their characteristics</p> <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 	
1	Cooking and Nutrition	<p>use the basic principles of a healthy and varied diet to prepare dishes</p> <ul style="list-style-type: none"> • How to use a knife • How to prepare fruit and vegetables <p>understand where food comes from.</p> <ul style="list-style-type: none"> • How to buy fruit and vegetables at a market • Where different foods come from 	<p>Vitamins , minerals, fruit, vegetable</p> <p>Farm, market, countryside</p> <p>Preparing Fruit & Vegetables:</p> <p>Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging</p>
	Puppets and Textiles	<p>Make</p> <ul style="list-style-type: none"> • Cut material accurately using scissors safely • Use running stitch to join material together • Use appropriate glue to embellish a design 	<p>Scissors, pattern, template, fabric</p> <p>Needle, cotton, thread</p> <p>Pin, glue PVA</p> <p>Pattern, join, mark out, decorate, running stitch, needle, fabric.</p>
	Design and Make an Aeroplane	<p>Make</p> <ul style="list-style-type: none"> • Explore and use wheels and axles • Explore how structures can be made stiffer and stronger 	<p>Cardboard, folding, supports, Wheel, axel, fixed, free, design, make, cutting, joining, hacksaw, vice, dowel, body, shaping</p>
	Continuous Provision	<p>Children will cover all skills outlined throughout the year through planned out weekly activities set up on the art table. Children will explore these skills independently during their own choosing time.</p>	
2	Design Technology Cycle	<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 	<p>Diagram</p> <p>Mock-up</p> <p>Plan</p> <p>Label</p> <p>Tools</p> <p>Evaluate purpose</p>

		<p>characteristics</p> <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 	
	Vehicles	<p>Make</p> <ul style="list-style-type: none"> Build structures that are more stable Explore and use wheels and axles Explore how structures can be made stiffer and stronger Use a saw to cut dowel Drill a hole in wood 	<p>Stable, unstable</p> <p>Fixed axle, centre, off centre</p> <p>Chassis, props</p> <p>Supports</p> <p>Wheel, axel, fixed, free, design, make, cutting, joining, hacksaw, vice, dowel, body, cab, shaping</p>
	Christmas Sewing	<p>Make</p> <ul style="list-style-type: none"> Cut material accurately using scissors safely Use running stitch to join material together Sew on buttons Use appropriate glue to embellish a design 	<p>Scissors, pattern, template</p> <p>Needle, cotton, thread</p> <p>Pin, glue PVA</p> <p>Template, quality, suitable, features, dye, overstitch, design, fray, mock-up, seam.</p>
	Moving Pictures and Levers	<p>Make</p> <ul style="list-style-type: none"> Create mechanisms with sliders Create mechanisms to a lever Create mechanisms with 2 levers 	<p>Split pin, pivot</p> <p>Lever mechanism, lever, slider, slot, pivot, guide/bridge, masking tape, fastener, pull/push, down, straight, work, design, evalu</p> <p>Slider</p>
	Cooking-School Garden Ingredients	<p>use the basic principles of a healthy and varied diet to prepare dishes</p> <ul style="list-style-type: none"> How to use a knife How to prepare fruit and vegetables How to cook vegetable and fruit <p>understand where food comes from.</p> <ul style="list-style-type: none"> How to harvest various vegetables and fruit Where different foods come from 	<p>Vitamins , minerals, fruit, vegetable</p> <p>Farm, market, countryside</p> <p>Slice, peel</p> <p>Bake, stew, boil, Hob, oven</p> <p>Preparing Fruit & Vegetables:</p> <p>Fruit, vegetables, soft, juicy, crunchy, sticky, smooth, sharp, crisp, sour hard, flesh, skin, seed pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, tasting, arranging</p> <p>Pick, dig, snap, cut, wash</p>
3	Design Technology Cycle	<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 particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross- 	<p>Research</p> <p>Criteria</p> <p>audience</p> <p>Diagram</p> <p>Cross-section</p> <p>Exploded diagram</p> <p>Mock-up</p> <p>Plan</p> <p>Label</p> <p>Investigate</p>

		<p>sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <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>Tools</p> <p>Evaluate purpose</p>
	Moving Monsters	<p>Make</p> <p>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>	<p>Pneumatic, hydraulic</p> <p>Cylinder, Master, Slave, syringe</p> <p>Tubing, pressure , force</p>
	Mini-Greenhouses	<p>Make</p> <ul style="list-style-type: none"> • Build structures that are more stable • Consider the light properties of materials • Use a hacksaw to cut wood • Use a hot glue gun to join materials 	<p>Glass, plastic sheeting, rigid plastic, Perspex, cling film bottles, tubing, shape</p> <p>Stable, structure, strong, glue, hacksaw, vice, sand</p> <p>Clear, transparent, translucent, opaque Shell, structure, net, marking out, material, joining, three dimensional, stiff</p>
	Sandwich Snacks	<ul style="list-style-type: none"> • understand and apply the principles of a healthy and varied diet • <i>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</i> • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 	<p>Bread, pitta, tortilla, wrap, white bread, brown bread, wholemeal, seeded bread, baguette, roll, bap, cob</p> <p>Margarine, butter, spread, olive oil</p> <p>Filling, mayonnaise, ketchup</p> <p>Healthy & Varied Diet: Texture, taste, appearance, preference, greasy, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested</p>
	Torches/light boxes	<p>understand and use electrical systems in their products [for example, series circuits incorporating switches and</p>	<p>Structure, strength, reinforce, attach Series circuit, connection,</p>

		bulbs]	push-to-make switch, pushto-break switch, innovative, appealing, control box, input device, output device
4	Design Technology Cycle	<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 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 <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>Research</p> <p>Criteria</p> <p>audience</p> <p>Diagram</p> <p>Cross-section</p> <p>Exploded diagram</p> <p>Mock-up</p> <p>Prototype</p> <p>Plan</p> <p>Label</p> <p>Investigate</p> <p>Analyse</p> <p>Tools</p> <p>Evaluate</p> <p>purpose</p>
	Cams	<ul style="list-style-type: none"> • Investigate different shapes for cams and select and use in a design. • explain how mechanical systems, such as cams, create movement and use mechanical systems in their products; 	Cam, offset, Follower, rotary motion, linear motion, Pulley, gear, driver, follower, rotation, motor, belt, spindle, motor, circuit, switch, ratio, transmit, annotated drawings, exploded diagrams, functionality
	South American Cooking	<ul style="list-style-type: none"> • know, explain and give examples of food that is grown in the UK, Europe and the wider world. • demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source; 	Celebrating Culture & Seasonality: Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, seasonality, pour, mix, knead, whisk, beat,

		<ul style="list-style-type: none"> explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes; adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; 	combine, fold, rubbing in
	Mother's Day cooking	<ul style="list-style-type: none"> complete detailed competitor analysis of other products adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; alter methods, cooking times and/or temperatures; measure accurately and calculate ratios of ingredients to scale up or down from a recipe; independently follow a recipe. 	Ingredients, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, seasonality, pour, mix, knead, whisk, beat, combine, fold, rubbing in, recipe, ratio,
	Motors and computer control	<ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches and motors] apply their understanding of computing to program, monitor and control their products. understand and demonstrate that mechanical and electrical systems have an input, process and output; 	Parallel circuit, light emitting diode, monitor, flowchart, design specification, reed switch, tilt switch
	Christmas Crafts Cork trees	<ul style="list-style-type: none"> refine the finish using techniques to improve the appearance of their product assemble, join and combine materials and components with accuracy; 	Join, adhesives
	Cooking to live- Bread and Pizza	<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. 	Dough, yeast, prove, rise, seasonality: Ingredients, yeast, dough, wholemeal, unleavened, baking soda, spice, herbs, carbohydrate, sugar, fat, protein, vitamins, nutrients, gluten, allergy, intolerance, savoury, pour, mix, knead, whisk, beat, combine, fold, rubbing in
	Structures	<ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; 	Strengthen, stiffen, reinforce, width, base, footings, weight, flat, circular, materials Reinforce, triangulation, stability, temporary, permanent, prototype, innovation, functional, design brief

	Tudor Textiles (See Art skills)	<ul style="list-style-type: none"> • demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product; • join textiles using a greater variety of stitches, such as backstitch, whip stitch, chain stitch 	Specification, tacking, working drawing, clasp, pinking shears, design criteria, hem, reinforce, stem stitch, satin stitch, applique, functionality, renewable, authentic
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Development of policy-

This policy was revised by the D&T coordinator and adopted by the Governing body in 2022.

It was written for-

- ☐ Teaching staff
- ☐ Non-teaching staff
- ☐ Headteacher
- ☐ Governors
- ☐ Parents

Equal opportunities

Every child in the school has a full entitlement to develop their skills in D&T and when planning, teachers should respond to the pupil's diverse needs by:

- Creating effective learning environments.
- Securing their motivation and concentration.
- Providing equality of opportunity through teaching approaches.
- Using appropriate assessment approaches.
- Adapting activities to overcome difficulties with manipulating tools, equipment or materials

Organisation

- The progression in skills, knowledge and vocabulary for Key Stage 1 and 2 is set out in the subject overview for D&T.
- D&T is taught as cross-curricular lessons within other topics and for a variety of purposes throughout the year e.g. Mothering Sunday cards.
- Knowledge-based curriculum may be taught outside the Foundation subject curriculum e.g. the life of artists and designers may be taught when writing biographies in English.

Assessment, Recording and Record Keeping

- Children are assessed at the end of a block of work. Comments are made by teachers on the children's performance with regards to descriptors in the National Curriculum.
- A child's progress is reported to parents annually through a written report to parents and may be reported as needed in parents meetings termly.

Monitoring and Evaluation

Monitoring by the Curriculum co-ordinator happens throughout the year and includes conducting pupil interviews, book trawls and scrutinising planning.