



St Marks's CE Primary School

Design and Technology

Curriculum Progression

Design and Technology Subject Guide

The national curriculum states:

“Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others’ needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.” Dfe 2013

This should be the basis for all teaching of Design and Technology taught at St. Mark’s.

Our new focus is on skills and knowledge progression. The skills required for each of the topics have been mapped for you on the overview and they link with the assessment criteria on scholar pack.

The following is a step by step guide of how we would like Design and Technology to be delivered at St. Mark’s. These steps can be spread across several lessons depending on the needs of the class or the complexity of the task.

Step 1: coverage and teacher preparation

Check your coverage document to check the skills you need to cover and the outcomes which link to the Connected Curriculum. Check that you have all the resources you need – the design and technology cupboard is located in the hall.

Step 2: Explore existing products

It is important that the children understand the purpose of the product they are designing and/or making and what problems it solves for the consumer. Show the children a range of existing products and discuss their features (like a D and T WAGOLL).

Step 3: Designing

Give children time to explore and discuss ideas. Children could work in groups to share ideas; they could sketch ideas or make notes.

Step 4: teaching new skills

Children should be taught any new skills they need to make their product. For example: safe cutting, joining techniques or measuring accurately. It may also be useful to explore any materials they use to make their product at this stage.

Step 5: making

Now that children have both the context and the discrete skills needed, they are ready to create their product. In some cases you may wish to allow additional sessions for planning before children create their ‘final outcome’.

Step 6: evaluating

Provide an opportunity for children to reflect on their work and the work of others. This could be through discussion, a class exhibition, or a written evaluation.

Evidence Expectations

Design and Technology should be recorded in the children's connected curriculum books.

Step 3: designing

This stage of the design process should be evidenced in their connected curriculum journals through notes, sketches or photos.

Step 5: making

Photographs of either the end product of the process of making should be taken- these could be displayed in your classroom, in connected curriculum books or saved in a folder in your year group areas on one drive as 'Design and Technology Evidence'. Once Design and Technology outcomes have been recorded then they can be sent home.

Step 6: evaluating

KS1- discussion based, possibly recorded/scribed- *What went well? What did you learn?*

LKS2- written comment/scribed- *What when well? What could be improved?*

UKS2- written evaluation- *How successful was your product? How does it compare to existing products? What were the challenges you faced in the designing and making process?*

Clear evidence of **Step 3: designing** and **Step 6: evaluating** in connected curriculum books. Labelled with a WALT and date (can be a sticker in KS1).

Not all connected curriculum topics have a design and technology component. Please check your coverage documents carefully (below).

Assessment, marking and feedback expectations

Live feedback and verbal guidance should be given during each lesson. This feedback should be focussed on helping the child to develop their design ideas or improving their making techniques. No expectation for written feedback.

Progress should be entered against the assessment criteria on scholar pack after each design cycle. These skills are termly so please do not forget to enter your data!

EYFS- DT		
Three and Four-	Personal, Social and Emotional Development	• Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.
	Physical Development (PD)	• Use large-muscle movements to wave flags and streamers, paint and make marks. • Choose the right resources to carry out their own plan.

			• Use one-handed tools and equipment, for example, making snips in paper with scissors.
	Understanding the World		• Explore how things work.
	Expressive Arts and Design (EAD)		• Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. • Explore different materials freely, in order 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. • Create closed shapes with continuous lines, and begin to use these shapes to represent objects.
Reception	Physical Development		• Progress towards a more fluent style of moving, with developing control and grace. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor
	Expressive Arts and Design		• 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.
ELG	PD	Fine Motor Skills	• Use a range of small tools, including scissors, paintbrushes and cutlery.
	EAD	Creating with Materials	• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used.

Year 1 Progression of Skills, knowledge and Vocabulary: Design and Technology

Year 1	<u>National Curriculum</u> When designing and making, pupils should be taught to: <u>Design</u> • 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 <u>Make</u> • 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 <u>Evaluate</u> • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria • 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. <u>Food</u> • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from.		
Focus:	Step 1: coverage and teacher preparation Step 2: explore existing products Step 3: designing Step 4: teaching new skills Step 5: making Step 6: evaluating		
Topics:	Autumn 1: Textiles	Spring 2: Resistant Materials	Summer 2: Food
Outcome	Dinosaur puppets	Jack in the Box	Foods of UK

<i>Skills:</i>	Can cut and join textiles to make a puppet	Can design and make a model considering layout and scale.	Can use basic food handling, hygienic practices and personal hygiene. Can assemble components using an appropriate method of joining
<i>Vocabulary:</i>	Centimetre/metre Fabric crayons Fabric pens Needle Pattern Pin Ribbon Silk Stitch Tape measure Thread Velcro Wool	Structures Stronger Stiffer Stable/ stability	fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients,

Year 2 Progression of Skills, knowledge and Vocabulary: Design and Technology

Year 2	<u>National Curriculum</u> When designing and making, pupils should be taught to: <u>Design</u> • 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 <u>Make</u> • 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 <u>Evaluate</u> • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria • 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. <u>Food</u> • use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from.		
Focus:	Step 1: coverage and teacher preparation Step 2: Explore existing products Step 3: Designing Step 4: teaching new skills Step 5: making Step 6: evaluating		
Topics:	Autumn 1: Resistant Materials	Spring 1: Textiles	Summer 1: Food
Outcome	Vehicle scale model	Batik animal fabric	Healthy food

<i>Skills:</i>	Can assemble, join and combine materials in order to make a product	Can develop design ideas through discussion, observation , architectural drawing and modelling	Can follow safe procedures for food safety and hygiene
<i>Vocabulary:</i>	Investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function	Centimetre/metre Fabric crayons Fabric pens Needle Pattern Pin Ribbon Silk Stitch Tape measure Thread Velcro Wool	Fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients

Year 3 Progression of Skills, knowledge and Vocabulary: Design and Technology

Year 3	<u>National Curriculum</u> <u>Design</u> • 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 <u>Make</u> • 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 <u>Evaluate</u> • 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 <u>Food</u> • 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.		
Focus:	Step 1: coverage and teacher preparation Step 2: Explore existing products Step 3: Designing Step 4: teaching new skills Step 5: making Step 6: evaluating		
Topics:	Autumn 2: Resistant Materials	Spring 2: Food	Summer 2: Textiles
Outcome:	Magnet game	Food- Egyptian bread or cakes	Sewing

<i>Skills:</i>	Can measure, mark out and cut a range of materials with help Can use tools eg scissors and a hole punch safely Can assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape	Can select and use appropriate ingredients, processes and tools.	Can select the appropriate materials and technique for their design.
<i>Vocabulary:</i>	investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing	name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative,

Year 4 Progression of Skills, knowledge and Vocabulary: Design and Technology

Year 4	<u>National Curriculum</u> <u>Design</u> • 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 <u>Make</u> • 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 <u>Evaluate</u> • 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 <u>Food</u> • 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.		
Focus:	Step 1: coverage and teacher preparation Step 2: Explore existing products Step 3: Designing Step 4: teaching new skills Step 5: making Step 6: evaluating		
Topics:	Autumn 1:	Spring1: Textiles	Summer 1: Resistant Materials
Outcome	Chocolate bars and packaging	Weaving	Speaker

<i>Skills:</i>	Can make labelled drawings from different views showing specific features.	Can cut, shape and join fabric to make a simple product.	Can measure, cut and score paper and card with some accuracy
<i>Vocabulary:</i>	font, lettering, text, graphics, decision, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	design brief, planning, annotated sketch, sensory evaluations	evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing

Year 5 Progression of Skills, knowledge and Vocabulary: Design and Technology

Year 5	<u>National Curriculum</u> <u>Design</u> • 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 <u>Make</u> • 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 <u>Evaluate</u> • 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 <u>Food</u> • 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.		
Focus:	Step 1: coverage and teacher preparation Step 2: Explore existing products Step 3: Designing Step 4: teaching new skills Step 5: making Step 6: evaluating		
Topics:	Autumn 2: Resistant Materials	Autumn 2: Textiles	Spring 2: Food

Outcome:	Helmet	Embroidery	North American Food
Skills:	Can use results of investigations, information sources, including ICT when developing design ideas	. Can develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail	Can follow safe procedures for food safety and hygiene
Vocabulary:	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	Centimetre/metre Fabric crayons Fabric pens Needle Pattern Pin Ribbon Silk Stitch Tape measure Thread Velcro Wool	fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble

Year 6 Progression of Skills, knowledge and Vocabulary: Design and Technology

Year 6	<u>National Curriculum</u> <u>Design</u> • 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 <u>Make</u> • 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 <u>Evaluate</u> • 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 <u>Food</u> • 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.		
Focus:	Step 1: coverage and teacher preparation Step 2: Explore existing products Step 3: Designing Step 4: teaching new skills Step 5: making Step 6: evaluating		
Topics:	Autumn 1: Food	Spring 1: Textiles	Summer 1: Resistant Materials

Outcome:	Cooking Methods Meal	Screen Print T-shirt	Rocket
Skills:	Can weigh and measure accurately (time, dry ingredients, liquids) Can apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens	Can explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways	Can assemble components to make working models Can select appropriate tools, materials, components and techniques
Vocabulary:	ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape,	pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output	prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype function, innovative, design specification, design brief, user, purpose design brief, design specification

	sprinkle, crumble		
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