



Design & Technology Curriculum Progression

National curriculum objectives

Statutory Framework for the EYFS:

Pupils should be taught to:

Communication and Language

- understanding and being able to use the relevant language, ask questions, talk about what they know and understand)

Physical Development – Health and Self Care

- healthy eating and hygiene

Understanding the World

- Exploring and describing materials.

National Curriculum Subject Content for Key Stage 1:

Pupils should be taught to:

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

National Curriculum Subject Content for Key Stage 2:

Pupils should be taught to:

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

	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.	• 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.
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Significant figures and planned enrichment opportunities							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Goldilocks (exploring food preferences and evaluating products)	Jamie Oliver (1975–present)	Jamie Oliver (1975–present)	Ruth Graves Wakefield (1903–1977)	Stephanie Kwolek (1923–2014)	Dame Zaha Hadid (1950–2016)	Frei Otto (1925–2015)	Sir James Dyson (1947–present)
The Three Little Pigs (houses and structures)	Bob the Builder (construction and tools)	Dame Zandra Rhodes (1940–present)	Sir David Adjaye (1966–present)	Fanny Cradock (1909–1994)	Lewis Latimer (1848–1928)	Isambard Kingdom Brunel (1806–1859)	Bethany Williams (1989–present)
		Archimedes (c.287 BC–c.212 BC)	Karl Benz (1844–1929))	Rube Goldberg (1883–1970)	Gennaro Contaldo (1949–present)	Madhur Jaffrey (1933–present)	Dr Elsie Widdowson (1906–2000)

Vocabulary							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Cooking and Nutrition - food - healthy - fruit - vegetable - taste - texture - crunchy - soft - spoon - plate - cup	Cooking and Nutrition - healthy - unhealthy - ingredient - recipe - taste - texture - sweet - sour - crunchy - smooth - mix - chop - knife - fork	Cooking and Nutrition - healthy - unhealthy - fruit - vegetable - ingredient - recipe - spread - chop - cut - hygiene - equipment - diet	Cooking and Nutrition - knead - dough - Yeast - flour - prove - bake - measure - ingredients - recipe - texture - appearance - taste - carbohydrates	Textiles - seam - seam allowance - fastening - template - zip - button - reinforce - durable - fabric - stitch - evaluate	Structures - prototype - reinforcement - function - purpose - accuracy - rigidity - support - join - construct	Structures - triangulation - waterproof - durability - load - tension - compression - environmental impact - sustainability - frame structure	Structures, Mechanisms, Electrical Systems & CAD - specification - prototype - CAD - sustainability - manufacture - innovation - mechanism - circuit - resources - reinforce - stability
Making and Joining - build - make - join - stick - glue - scissors - cut - box - paper - card	Making and Joining - design - make - join - attach - tape - glue - cut - shape - material - tool	Textiles - fabric - textile - template - stitch - needle - thread - join - cut - decorate - material - puppet - design	Structures - structure - strong - stable - weak - strengthen - support - enclosure - frame - materials	Cooking and Nutrition - nutrition - season - ingredient - storage - refrigerate - hygiene - flavour - seasoning - substitute - nutrients	Electrical Systems - circuit - battery - bulb - buzzer - switch - conductor - electricity - input - output - component	Mechanisms - cam - follower - motion - crank handle - axle - mechanism	Textiles - Fabric - Pattern pieces - adaptation - repurpose - sustainability - construction - manufacture - assemble - function - prototype - stitch
Structures - strong - weak - balance - stack	Structures - structure - strong - stable - support	Mechanisms - mechanism - movement - slider - lever	Mechanisms - wheel - axle - vehicle - rotate - turn - fixed axle - moving axle	Mechanisms - linkage - lever - pivot - fixed pivot - loose pivot - input - output	Cooking and Nutrition - nutrients - balanced diet - Eatwell Guide - protein - dairy - fibre - savoury - preparation - utensils	Cooking and Nutrition - seasonality - herbs - spices - aromatic - pungent - ratio - scaling - consumer - best before / use by	

	• build • frame	• pivot • push • pull • picture • moving part • slot • curve	• chassis • transport	• mechanism • movement			Cooking and Nutrition • nutrients • vitamins • minerals • budget • value for money • dietary needs • availability • texture • flavour
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Progression of knowledge and skills				
	Designing skills	Evaluating skills	Making skills	Technical knowledge
Nursery	Make simple models which express their ideas. (EAD Dev Matters)	Be able to simply express a point of view (Dev Matters, Comm & Lang)	- Join materials and explore different textures. (EAD Dev Matters) - Use tools for a purpose. (EAD Birth to 5 Matters)	- Know what we use scissors, plates, cups, spoons and knives for. - Try a wider range of foods, with different tastes and textures. - To begin to understand healthy choices. (objectives from PD health and self-care)
Reception	- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form & function; (Objective from EAD creating with materials ELG) - Create collaboratively, sharing ideas, resources and skills. (EAD, Dev Matters)	Share creations, explaining the process they have used (Objective from EAD creating with materials ELG)	- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form & function; (Objective from EAD creating with materials ELG) - Learn how to use a knife and fork.	- How to join materials e.g. using glue, tape or string. - How to cut with scissors - Know and talk about the different factors that support their overall health and wellbeing, including healthy eating. - Describes a range of different food textures and tastes when cooking and notices changes when they are combined or exposed to hot and cold temperatures. (objectives from PD health and self-care)
Year 1	- Use the basic principles of a healthy and varied diet. - Understand where food comes from. - Name and sort foods into the main food groups. - Begin to think about purpose and user. - Generate ideas through drawing and discussion. - Select appropriate materials. - Understand how sliders and levers create movement. - Create a moving mechanism for a specific purpose.	- Talk about what they like and dislike about existing products. - Evaluate their sandwich and suggest improvements. - Willing to taste different foods. - Evaluate their product and suggest improvements. - Explore and evaluate existing textile products for their purpose and user. - Investigate moving books and pictures. - Evaluate how effectively the mechanism works.	- Follow a simple recipe with support. - Prepare simple dishes safely and hygienically. - Use simple food preparation techniques such as cutting and spreading. - Name a range of basic cooking equipment. - Join textiles using glue and simple stitches. - Use templates to cut shapes. - Understand simple textile joining techniques. - Measure, cut and join materials with support. - Use simple fixing methods.	- Know that food comes from plants or animals. - Understand that different foods contribute to a healthy diet. - Recognise basic food preparation tools and their uses. - Understand basic food hygiene rules. - Know that fabrics have different properties. - Understand that textiles can be joined in different ways. - Identify common textile materials. - Understand the purpose of a template.

				• Understand that mechanisms create movement. • Know the difference between a slider and a lever. • Recognise where sliders and levers are used in everyday products. • Understand that pivots help parts move.
Year 2	• Understand how ingredients combine to create new products. • Know where food comes from. • Understand that recipes can be adapted. • Generate ideas from design criteria. • Develop ideas through drawings and mock-ups. • Understand how structures can be strengthened and stabilised. • Generate ideas from a design brief. • Understand how wheels and axles work together. • Know the difference between fixed and rotating axles.	• Evaluate appearance, texture and taste. • Explain how their product meets a user's needs. • Describe foods using simple sensory vocabulary. • Explore existing structures. • Evaluate against design criteria and intended purpose. • Explore existing vehicles. • Test and evaluate movement. • Suggest improvements to increase performance.	• Follow a recipe with increasing independence. • Measure ingredients using simple equipment. • Select and use appropriate materials. • Measure, mark out, cut and join materials safely. • Use technical vocabulary related to structures. • Select appropriate materials and components. • Assemble wheels and axles accurately.	• Understand that ingredients can be combined and changed through mixing and baking. • Know that bread is made from grains. • Understand that recipes contain ingredients and instructions. • Recognise how measuring helps achieve consistent results. • Understand that structures must be stable and strong. • Know that different materials have different properties. • Recognise ways to strengthen structures. • Understand the importance of a secure base. • Understand that wheels and axles work together. • Know that an axle allows a wheel to rotate. • Understand the difference between fixed and rotating axles. • Recognise how wheel size can affect movement.
Year 3	• Generate realistic ideas using design criteria. • Plan the main stages of making. • Understand and apply healthy eating principles.	• Test products with intended users. • Evaluate against design criteria. • Explore and evaluate existing soup products.	• Strengthen and reinforce fabric. • Join fabrics securely using sewing techniques. • Understand seam allowance and pattern pieces.	• Understand the function of seams. • Know how reinforcement increases strength and durability.

	• Know where ingredients are grown, reared and caught. • Adapt recipes by adding, removing or substituting ingredients. • Explain the purpose of common cooking equipment. • Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Generate realistic ideas. • Plan making stages.	• Evaluate appearance, taste, texture and smell. • Test products with intended users. • Use sensory vocabulary to evaluate food products. • Test products against design criteria. • Evaluate effectiveness and user response.	• Select tools and equipment appropriately. • Measure ingredients accurately. • Use peeling, chopping, grating, mixing and seasoning skills. • Follow hygiene and safety procedures. • Identify foods that should be stored in a fridge, cupboard or freezer. • Construct working mechanisms.	• Recognise the purpose of fastening devices. • Understand how pattern pieces are used in manufacture. • Understand how heat changes food. • Know that ingredients are grown, reared or caught. • Recognise the importance of food storage. • Understand how ingredients contribute to flavour and nutrition. • Understand how levers transfer movement. • Know how linkages connect moving parts. • Recognise fixed and loose pivots. • Understand how different linkages create different motions.
Year 4	• Gather information about user needs. • Develop design criteria. • Use annotated sketches and prototypes. • Explain material choices. • Consider opportunities to reuse or recycle materials. • Gather information about user needs. • Develop design criteria. • Use sketches and diagrams to communicate ideas. • Understand input and output devices. • Plan and prepare a balanced savoury meal. • Understand the nutritional value of ingredients. • Select ingredients for a specific purpose.	• Investigate existing products. • Evaluate strengths and weaknesses. • Consider views of users. • Investigate existing electrical products. • Test and troubleshoot circuits. • Evaluate products against user needs and design criteria. • Evaluate products against design criteria. • Explain how their product meets user needs.	• Measure, mark out and cut accurately. • Assemble structures with increasing precision. • Understand and use simple series circuits. • Understand the function of switches, bulbs, buzzers and batteries. • Secure electrical components safely in structures. • Select and use appropriate tools and equipment safely. • Prepare and cook food safely. • Follow storage instructions found on food packaging. • Select the most appropriate equipment for a given task.	• Understand how shape affects strength. • Know different methods of joining materials. • Recognise how structures can be reinforced. • Understand the relationship between form and function. • Understand how electricity flows around a simple series circuit. • Know the purpose of switches, bulbs, batteries and buzzers. • Understand the terms input and output. • Recognise how electrical products meet user needs. • Understand the principles of the Eatwell Guide. • Know that savoury dishes form part of a healthy diet.

	- Adapt recipes to improve taste, appearance or nutrition. - Understand the Eatwell Guide and the importance of a balanced diet.			- Understand that ingredients contain different nutrients. - Recognise factors affecting food choice.
Year 5	- Gather information about user needs. - Develop design criteria. - Use annotated sketches and diagrams. - Understand how structures are strengthened and reinforced. - Understand material properties including durability and water resistance. - Consider environmental impact when selecting materials. - Gather information about user needs. - Develop design criteria. - Use annotated sketches and diagrams. - Understand how cams convert rotary motion into linear motion. - Understand that mechanical systems can be combined to create more complex movement. - Adapt recipes to meet user preferences. - Understand seasonality and food origins. - Select ingredients for flavour and nutrition. - Understand how ingredients are grown, produced or	- Investigate shelters and waterproof structures. - Test structures for strength, stability and waterproofing. - Evaluate products against design criteria and intended purpose. - Investigate different cam profiles and their effects. - Test and refine movement. - Evaluate against user needs and design criteria. - Evaluate products against design criteria. - Justify ingredient choices. - Compare products through tasting evaluations.	- Select materials according to functional properties. - Measure, mark out, cut and shape accurately. - Assemble, join and combine materials effectively. - Select suitable materials and components. - Measure, mark out and cut accurately. - Assemble mechanisms with precision. - Follow recipes independently. - Scale recipes using ratio. - Use food labelling safely. - Understand and use 'best before' and 'use by' dates appropriately.	- Understand how triangulation strengthens structures. - Know the properties of waterproof materials. - Recognise how environmental factors affect design decisions. - Understand methods used to reinforce large structures. - Understand that cams convert rotary motion into linear or oscillating motion. - Know that different cam profiles produce different movements. - Recognise how followers interact with cams. - Understand how multiple mechanisms can work together. - Understand seasonality and food provenance. - Know how ingredients are processed before reaching consumers. - Understand food labelling information. - Recognise how flavour, texture and nutrition influence recipe design.

	processed before reaching consumers.			
Year 6	- Carry out research using surveys and questionnaires. - Develop a design specification. - Generate innovative ideas from research. - Understand how mechanical and electrical systems work together. - Understand how circuits can be incorporated into structures. - Use a programmable device to monitor and control outputs. - Understand how CAD can be used to develop and refine ideas. - Use CAD to communicate designs. - Make decisions considering time, cost and resources. - Develop prototypes. - Develop a design specification. - Create and adapt pattern pieces. - Select materials according to function and sustainability. - Plan and prepare a nutritious savoury meal. - Select ingredients according to nutrition, cost and availability. - Adapt recipes confidently. - Consider budget and value for money. - Understand that nutrients, vitamins, minerals and water are needed for health.	- Evaluate against design specifications. - Critically evaluate sustainability, functionality and quality. - Research sustainable textile products. - Evaluate against user needs and design specification. - Consider environmental impacts of design choices. - Evaluate products against nutritional, functional and aesthetic criteria. - Justify design decisions and improvements. - Use extensive sensory vocabulary to justify evaluations.	- Accurately measure, mark out, cut and shape materials. - Combine structures, mechanisms and circuits effectively. - Refine products throughout manufacture. - Use knowledge and skills to work out how unfamiliar equipment functions. - Assemble accurately using appropriate textile techniques. - Refine products during manufacture. - Work independently using a range of cooking techniques.	- Understand how structural, mechanical and electrical systems can be integrated into one product. - Know how CAD supports designing, modifying and communicating ideas. - Understand how circuits can be incorporated into structures. - Recognise the relationship between function, cost, sustainability and manufacture. - Understand how prototypes are used to test and refine designs. - Understand how 2D pattern pieces create 3D products. - Know how textiles can be reused and repurposed. - Recognise the environmental impact of textile production. - Understand how material properties influence product performance. - Understand the functions of nutrients, vitamins, minerals and water. - Know how budget influences food choices. - Understand how to compare value for money when selecting ingredients. - Recognise how cooking methods affect nutrition, flavour and texture. - Understand food safety and storage requirements.

