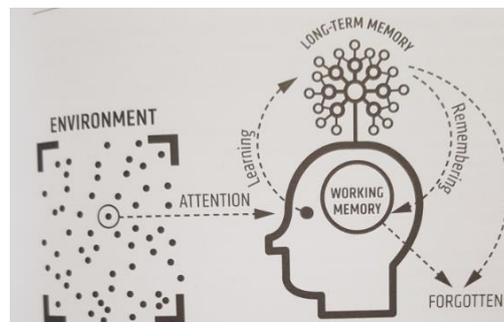


DT Curriculum Delivery Document

Intent	<p>We take the National curriculum statements for design and Technology and provide an enhanced version of this that is inspiring, rigours and practical. Design and Technology encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. it requires children to be active learners with the confidence to 'have a go' and the resilience to persist with a problem when challenges occur as such pupils develop their creativity and imagination to design products that solve real and relevant problems within a variety of contexts consider their own and other's needs, wants and values. Pupils will draw from a variety of disciplines such as, maths, science, computing and art to develop a broad subject knowledge in order to design and make high quality products for a wide range of uses.</p> <p>Teachers then plan at a more detailed level the sequencing of content to be taught across each unit so that over time children know more and remember more</p>
Implementation	<p>We ensure that teachers have excellent DT subject knowledge, and leadership supports that acquisition of this for NQT and non-specialist teachers. Subject matter is presented clearly, teachers carefully check learning and identify misconceptions, providing direct feedback. Teaching is designed to ensure children know more and remember more. DT is carefully resourced to ensure we have all the specialism and resources required. Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in an interactive process of designing and making. We ensure the pupils are familiar with the design cycle:</p> <p>Design – use research and develop design criteria to design for a purpose and communicate their ideas through a range of mediums.</p> <p>Make – use a wider range of tools and equipment with accuracy and use a wider range of materials and components according to their qualities</p> <p>Evaluate – evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Through this process, the aim is to develop the pupils' technical knowledge and vocabulary in relation to structural design, mechanical and electrical systems, the integration of technology and food production and nutrition. Through knowledge organisers Children have access to key knowledge, language and meanings to understand Design Technology and to use these skills across the curriculum.</p> <p>With key links to British Values and PSHE, children will learn and revisit the importance of our world and how it should be treated.</p>
Impact	<p>Learners develop detailed knowledge and skills and will achieve age related expectations in DT at the end of their cohort year.</p> <p>Children will Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users and critique, evaluate and test their ideas and products and the work of others. <i>They will also</i> Understand and apply the principles of nutrition and learn how to cook. Children will design and make a range of products.</p> <p>We check this through regular pupil voice and collecting evidence of outcomes which we measure against our age-based progression grids. Pupils are well prepared at each stage to be ready for the next stage of learning.</p>

How do we ensure that knowledge gained is transferred from working memory into long term memory?

Staff in school have based their strategies on Rosenshine's principles in action (bridging research and classroom practice):



Strategies identified	What do we expect to see in our DT lessons?
Regular review	Academic or subject vocabulary that has been taught will be modelled throughout regular teaching and contact (see class guides for detail)
Present new materials using small steps	DT planning is provided that breaks all material down into achievable, repeatable steps to build children's confidence, competence and retention.

Ask questions	Questions help students practice new information and connect new material to their prior learning. The teacher would question children around the specific knowledge and vocabulary they have been using in this and other modules.
Provide models	Expert teachers / peer models identified in the learning would exemplify the specific skills / knowledge required for the task.
Guide student practice	Successful teachers spend more time guiding students' practice of new material. It will be forgotten unless time is given for rehearsal. We revisit tasks over and over again, allowing children lots of chance to practice. This is always guided and supported by expert teaching. This leads into opportunities to apply in other products both within school and with peers from across the region.
Check for student understanding	Checking understanding at each point can help students learn the material with few errors. We would expect to see tasks / skills broken down into very small chunks, with regular assessment checking from teachers throughout.
Obtain a high success rate	In DT, we would expect to see that a skill is successfully taught before moving on. We take our time to achieve consistent success.
Provide scaffolds for difficult tasks	The teacher provides students with temporary supports and scaffolds to assist them when they learn difficult tasks. So, for example in year 2, children learn to use a peeler, learn to grate, learn to chop and learn slice. Then, in year 3, once they have mastered this knowledge, they move onto dicing, slicing, deseeding and skinning. Careful scaffolding from adults is in place, and skills are mastered before moving on.
Independent practice	Students should have the opportunity to practice regularly and independently to transfer the knowledge into their long term memory. In DT lessons, there is opportunity for this.
Weekly and Monthly Review	Students need to be involved in extensive practice in order to develop well connected and automatic knowledge. Weekly reviews can take place in DT lessons, where teachers return to knowledge learned in a previous unit, and following a period of forgetfulness the children use that knowledge again.

DT overview

Phase	Year A Autumn	Year A Spring	Year A Summer	Year B Autumn	Year B Spring	Year B Summer
Early Years						
Key stage one	Templates & Joining		Free standing structures	Sliders & Leavers	Wheels & Axles	Fruit & Veg
Lower Key stage two	Healthy & Varied Diet	Shell Structures	Simple circuits & Switches	2D & 3D product	Levers & linkages	
Upper Key stage two	Frame Structures	Celebrate Culture and seasonality	Pulleys or gears	More complex switches	Combining Different fabric shapes	

Why are they taught in this order? DT is split into different aspects, we ensure that the appropriate prior knowledge and vocabulary is taught before moving onto the next stage:

Strand	Unit	Prior learning needed	Vocabulary to teach	When is this taught?
Food	Fruit & Veg (Y1 2)	Experience of common fruit & vegetables Undertaking sensory activities i.e. appearance, taste, smell Experience of cutting soft fruit & vegetables using appropriate utensils	Fruit & vegetable names, names of equipment & 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, planning, investigating, tasting, arranging, popular, design, evaluate, criteria	Year B KS1
	Healthy & Varied Diet (Y3 4)	<ul style="list-style-type: none"> Know some ways to prepare ingredients safely and hygienically. Have some basic knowledge and understanding about healthy eating and The eatwell plate. Have used some equipment and utensils and prepared and combined ingredients to make a product. 	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 planning, design criteria, purpose, user, annotated sketch, sensory evaluations	Year A LKS2

Celebrating culture & Seasonality (y5 6)	<ul style="list-style-type: none"> • Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. • Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients. 	<p>ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs</p> <p>fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality</p> <p>utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble</p> <p>design specification, innovative, research, evaluate, design brief</p>	Year A UKS2
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Strand	Unit	Prior learning needed	Vocabulary to teach	When is this taught?
Textiles	Templates and joining techniques Y1 2)	<ul style="list-style-type: none"> • Explored and used different fabrics. • Cut and joined fabrics with simple techniques. • Thought about the user and purpose of products. 	<p>names of existing products, joining and finishing techniques, tools, fabrics and components</p> <p>template, pattern pieces, mark out, join, decorate, finish</p> <p>features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function</p>	Year A KS1
	Shape to 3D product Y3 4) 2	<ul style="list-style-type: none"> • Have joined fabric in simple ways by gluing and stitching. • Have used simple patterns and templates for marking out. • Have evaluated a range of textile products. 	<p>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance</p> <p>user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces</p>	Year B LKS2
	Combining different fabric shapes y5 6)	<ul style="list-style-type: none"> • Experience of basic stitching, joining textiles and finishing techniques. • Experience of making and using simple pattern pieces. 	<p>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces</p> <p>name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper</p> <p>design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mockup, prototype</p>	Year B UKS2

Strand	Unit	Prior learning needed	Vocabulary to teach	When is this taught?
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Mechanisms (KS1) Mechanical Systems (KS2)				
Mechanisms (KS1) Mechanical Systems (KS2)	Sliders and Levers (Y1 2)	<ul style="list-style-type: none"> • Early experiences of working with paper and card to make simple flaps and hinges. • Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape 	slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards design, make, evaluate, user, purpose, ideas, design criteria, product, function	Year B KS1
	Wheels and Axles (Y1 4)	<ul style="list-style-type: none"> • Assembled vehicles with moving wheels using construction kits. • Explore moving vehicles through play. • Gained some experience of designing, making and evaluating products for a specified user and purpose. • Developed some cutting, joining and finishing skills with card. 	vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used design, make, evaluate, purpose, user, criteria, functional	Year B KS1
	Levers and linkages (Y3 4)	<ul style="list-style-type: none"> • Explored and used mechanisms such as flaps, sliders and levers. • Gained experience of basic cutting, joining and finishing techniques with paper and card. 	mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating user, purpose, function prototype, design criteria, innovative, appealing, design brief	Year B LKS2
	Pulleys or Gears (Y5 6)	<ul style="list-style-type: none"> • Experience of axles, axle holders and wheels that are fixed or free moving. • Basic understanding of electrical circuits, simple switches and components. • Experience of cutting and joining techniques with a range of materials including card, plastic and wood. • An understanding of how to strengthen and stiffen structures. 	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 design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief	Year A UKS2

Strand	Unit	Prior learning needed	Vocabulary to teach	When is this taught?
Structures	Freestanding structures (Y1 2)	<ul style="list-style-type: none"> • Experience of using construction kits to build walls, towers and frameworks. • Experience of using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card. • Experience of different methods of joining card and paper. 	cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder design, make, evaluate, user, purpose, ideas, design criteria, product, function	Year A KS1
	Shell Structures (Y3 4)	<ul style="list-style-type: none"> • Experience of using different joining, cutting and finishing techniques with paper and card. • A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science. 	shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype	Year A LKS2

Frame Structures (y5 6)	<ul style="list-style-type: none"> • Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials. • Basic understanding of what structures are and how they can be made stronger, stiffer and more stable. 	<p>frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent</p> <p>design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional</p>	Year A UKS2
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Strand	Unit	Prior learning needed	Vocabulary to teach	When is this taught?
Electrical Systems	Simple circuits and switches (Y1 2)	<ul style="list-style-type: none"> • Constructed a simple series electrical circuit in science, using bulbs, switches and buzzers. • Cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue. 	<p>series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip</p> <p>control, program, system, input device, output device</p> <p>user, purpose, function, prototype, design criteria, innovative, appealing, design brief</p>	Year A KS1
	More complex switches and circuits (Y3 4)	<ul style="list-style-type: none"> • Understanding of the essential characteristics of a series circuit and experience of creating a battery powered, functional, electrical product. • Initial experience of using computer control software and an interface box or a standalone box, e.g. writing and modifying a program to make a light flash on and off. 	<p>series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart</p> <p>function, innovative, design specification, design brief, user, purpose</p> <p>18</p>	Year B LKS2

Frequently asked questions about DT

- 1) How does prior content prepare pupils for current learning?
 - a. *Each topic strand identifies what prior learning is required.*
 - b. *Topics are broken down into 3 or 4 phase sections, allowing a thread (e.g. food) to be developed over the child's journey through the academy*
 - c. *Skills and knowledge (like chopping etc) are carefully developed through a knowledge progression.*
 - d. *Teachers work from a progressive plan of academic and subject specific vocabulary to ensure children acquire the vocabulary they need to succeed. ..*
- 2) What should pupils already know, and does this build on it?
 - a. *See the academy and subject vocab, and the progression of knowledge grids.*
 - 3) Are content choices and activities appropriate for the subject?
 - a. *Clear, appropriate, consistent in-lesson sequence that all staff can follow*
 - b. *Clear, appropriate, consistent long term planning sequences ensuring coherence and logical progression*
 - c. *Exciting learning journeys – clear, measurable learning journeys for all abilities.*
- 4) Does assessment check that the necessary components are learned, and how do you respond to what assessment is telling you?
 - a. *Assessment is in built into the lesson plans, and is broken down into: Designing; Making; Evaluating; Technical Knowledge and understanding.*
 - b. *Teachers check the children's attainment against these and the knowledge progression; this helps to identify next steps for planning and ensures that children who need additional support can be met.*
- 5) How do you ensure your subject staff have the expertise to deliver your curriculum, and what support is there for nonspecialists?
 - a. *We provide carefully sourced planning schemes, with progressive and compliant coverage of the national curriculum. The DT leader attends appropriate training and feeds back on an annual basis, and supports NQT and non-specialists as needed. The DT leader audits staff needs annually, and works with the CPD providers to ensure it meets staff needs and any needs identified in monitoring.*

